Studer Modbus Addresses

Object Model Version : 10.153

Generation time : 2026-02-04 13:53:12.260221

Index

Studer Object-Property organization

For the new Next series, all information and parameters are stored in Properties. Properties are stored in Objects, allowing to group them by subject. This system is called the ObjectModel.

Property size and type

A Property designates a specific data of the ObjectModel. This data can be of different types, and the size of the data contained in the Property can vary depending on the type. The list of property types is given in the table below:

Type name	Type description	Modbus size
bool	Boolean	1 register
int	Integer	2 registers
uint	Unsigned Integer	2 registers
float	Floating-point number	2 registers
enum	Enumeration	2 registers
bitfield	Bitfield	2 registers
int64	64 bits Integer	4 registers
uint64	64 bits Unsigned Integer	4 registers
float64	64 bits Floating-point number	4 registers
char[size]	String Property	2 registers or more
uint8_t[size]	ByteArray Property	2 registers or more
signal	Signal Property	1 register

The String and Byte Array Properties are used respectively to transfer strings (name of a device, serial number, etc...) and byte arrays (for example the encoding of the topology descriptor of the installation). Both types require a maximum size, given in [square brackets]).

Properties of type "Signal" allow to trigger a remote action on a device. Data byte is not significant, it can have any value.

A Property is either in "Read only" mode (R) or in "Read/write" mode (R/W).

External ID

The next system provides a system of external identifiers, used to present Objects and Properties to the user (via Modbus, as a reference on the GUI, in manuals, etc.). This external ID system can be used to uniquely identify each Property of each Object running on each control board of the next system. External IDs can be represented with the following format.

Each external identifier is mapped to one or several modbus register depending of the size of property.

- FIRST number: **The Group** (element of a system). The different objects each belong to one of the following groups:
  - 0: System
  - 1: Battery
  - 2: AC input
  - 3: FlexLoads
  - 4 to 9: unused yet, future elements
  - 10 Next3
  - 11 Next1
  - 12 to 19: unused yet, future devices
  - 20 nx gateway
- SECOND number: **The Instance** (element of a group). If several objects of the same type are present in the installation, such as two Batteries for example, the second is addressed with x.2.y.z
- THIRD number: **The Object ID** for each element. It is given in the following pages, for example for the battery group:
  - BatteryCommon: *ID = 1*
  - Battery: *ID = 2*
  - BatteryCycle: *ID = 3*

    - ...
- FOURTH number: **The Property ID** in the object. If we take the Solar object (ID23 for solar1) as an example, the different properties are each defined by an ID: *Voltage (ID0), Average Voltage (ID1), Max Voltage (ID2), Current (ID3) etc...*

Examples:

- The voltage of the second battery of a system with 2 Next3 is referenced with ID 1.2.2.9 (Group: 1 Battery, Instance: 2nd Battery, Object ID: ObjIdBattery = 2, Property Voltage: 9)
- The daily energy production of the 2nd PV input on the third next3 of a system is referenced with ID 10.3.62.10 (Group: 10 Next3, Instance: 3rd Next, Object ID: ObjIdSolarCommon2 = 21, Property Day energy: 10)

Addressing Studer devices

The following tables shows the address range and the corresponding Object Group instances

Address offset	Devices	Object Group external ID
1	System	0.1.x.x
2 to 6	Battery	1.x.x.x
7 to 8	AcSource	2.x.x.x
9 to 13	AcFlexLoad	3.x.x.x
14 to 28	Next3	10.x.x.x
29 to 58	Next1	11.x.x.x
59 to 60	NextGateway	20.x.x.x
89 to 94	Powermeters	30.x.x.x

Correspondance between External ID and modbus addresses

Hereafter is the explanation of the correspondance between the External ID above-mentioned and the modbus addresses available in the next pages:

The "Addressing Studer devices" table is used to determine the group ID and the instance:

- **Group ID :** Using one of the device address defined under "Addressing Studer devices" allows to reach the corresponding group ID.
- **Instance :** Several device addresses are available for each group ID. Using different device addresses for a given group allows to reach the correct element of this group. For example if two batteries are available, the first one will have the first modbus device address defined for the battery group and the second one will have the second address. Note that the instance is represented by a 'x' because the number of elements by groups is unknown in advance.

The "Modbus addresses" defined in the next pages is used to determine the object ID and the property ID:

- **Object ID :** For each object, a table provides the corresponding Modbus addresses according to the required object or object ID.
- **Property ID :** In the next pages, the column ID of the property list corresponds to the property ID for the given object.

Notes:

- Some objects have properties of type "Enum", meaning that they can take different values from a given list. In this documentation, if the object has properties of type "Enum", a list of possible enum values is given after the list of properties

Please visit the whole documentation at www.studer-innotec.com.

earthing scheme

Group : System
Modbus device address : 1
*External ID : 0.1.3.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1200	2	R:Basic W:Expert	0	Earthing mode selection	OffgridSelfManaged		-	Selection of the earthing mode.	enum	R/W	0
1202	1	Expert	1	Disable check	false		-	Disable the continuity and discontinuity check during on-grid and off-grid transition.	bool	R/W	-
1203	1	Expert	2	Is earthing manager master	false		-	True if this device is the earthing manager master.	bool	R	-
1204	1	Basic	3	Relay is closed	false		-	True if the actual state of the earthing relay is closed.	bool	R	-
1205	2	Basic	4	Earthing errors	NoError		-	Current earthing manager errors.	bitfield	R	1
1218	2	Basic	14	Earthing warnings	NoWarning		-	Current earthing manager warnings.	bitfield	R	3
1220	2	Expert	15	Discontinuity check Ok count	0	ms	-	Total time where the discontinuity test has succeeded	int	R	-
1222	2	Expert	16	Discontinuity check nOk count	0	ms	-	Total time where the discontinuity test has failed	int	R	-

List of items of Enum 0 (EarthingModeSelection)

Value	Label	Description
0	Off-grid self managed	Earthing relay will automatically close during off-grid operation.
1	Solid neutral	This mode should be selected in systems where the neutral wire is not switched. In this case, a bridge needs to be wired between AC input N and AC loads N. The earthing relay remains open but the neutral to earth bonding is still checked each off-grid and on-grid transition.
2	Disabled	Earthing manager is disabled. The earthing relay remains open and the neutral to earth bonding is not checked.

List of items of Enum 1 (Error)

Value	Label	Description
0	End of error	No earthing error.
1	AC input continuity failed OSM	Missing grounding path during connection to the AC input (Offgrid self managed mode). Possible root cause: the AC input does not have a neutral to earth bonding, the earth is not connected to device.
2	AC input continuity failed SN	Missing grounding path (Solid neutral mode). Possible root cause: the AC input does not have a neutral to earth bonding, the earth is not connected to device or the bonding between AC input N and AC loads N is not made.
4	Relay continuity failed	Missing grounding path. Failure of the internal earthing relay: stuck open.
8	Discontinuity failed	Neutral port connected to earth. Root cause can be due to a bonding between AC input N and AC loads N, a second neutral grounding connection on AC loads or the earthing relay stuck closed.
16	Earth supply error	Error with internal earthing detection power supply.
32	Grid connection timeout	Grid connection timeout.
64	Solar disconnection timeout	Solar disconnection timeout.
128	Inconsistent request	Inconsistent request appeared in earthing process.
256	Device fault	A device fault is preventing the proper operation of the earthing scheme.

List of items of Enum 3 (Warning)

Value	Label	Description
0	End of warning	No earthing warning.
1	AC input continuity failed OSM	Missing grounding path during connection to the AC input (Offgrid self managed mode). Possible root cause: the AC input does not have a neutral to earth bonding, the earth is not connected to device.
2	AC input continuity failed SN	Missing grounding path (Solid neutral mode). Possible root cause: the AC input does not have a neutral to earth bonding, the earth is not connected to device or the bonding between AC input N and AC loads N is not made.
4	Relay continuity failed	Missing grounding path. Failure of the internal earthing relay: stuck open.
8	Discontinuity failed	Neutral port connected to earth. Root cause can be due to a bonding between AC input N and AC loads N, a second neutral grounding connection on AC loads or the earthing relay stuck closed.
16	Earth supply error	Error with internal earthing detection power supply.
32	Grid connection timeout	Grid connection timeout.

Value	Label	Description
64	Solar disconnection timeout	Solar disconnection timeout.

energy policy

Group : System
Modbus device address : 1
*External ID : 0.1.5.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1800	2	Basic	0	AC input priority	PriorityToGrid		-	When several AC inputs exists, the one that will be used is determined according to this setting.	enum	R/W	0
1802	2	ViewOnly	1	Currently active AC input	0		-	Currently active AC input index.	int	R	-

List of items of Enum 0 (SourcePriority)

Value	Label	Description
0	Priority to grid	The AC input fulfilling all connections conditions (voltage and frequency requirements) is used. If both grid and genset fulfill connection conditions, the grid is used.
1	Priority to genset	The AC input fulfilling all connections conditions (voltage and frequency requirements) is used. If both grid and genset fulfill connection conditions, the genset is used.

installation configuration

Group : System
Modbus device address : 1
*External ID : 0.1.6.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
2103	18	R:ViewOnly W:Expert	2	Installation GUID	""		-	The GUID of this installation.	char[36]	R/W	-
2121	1	R:ViewOnly W:Expert	3	Date/time internet update	false		-	Automatic date/time internet update. When available, internet date/time will be used to set installation date/time.	bool	R/W	-
2122	2	R:ViewOnly W:Expert	4	Country	0		-	Country of this installation.	int	R/W	-
2124	25	R:ViewOnly W:Expert	5	Time zone	"UTC"		-	Time zone of this installation (IANA ID).	char[50]	R/W	-

all devices

Group : System
Modbus device address : 1
*External ID : 0.1.7.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
2403	1	Basic	2	Buzzers enabled	true		-	Indicates all buzzers state. If disabled, buzzers don't beep when the led panel central red light is blinking.	bool	R/W	-
2404	1	Basic	3	Front panel buttons enabled	true		-	Indicates all front panel buttons state. If disabled, pressing on the front panel buttons has no effect.	bool	R/W	-
2405	2	ViewOnly	4	Number of cmd inputs	-1		-	Total number of command inputs in the system.	int	R	-
2407	2	ViewOnly	5	Number of devices	0		-	Number of power electronics devices.	uint	R	-
2409	2	ViewOnly	6	Number of next3	0		-	Current next3 devices.	uint	R	-
2411	2	ViewOnly	7	Next3 status	NoWarningsOrErrors		-	Current Next3 status.	bitfield	R	0
2413	2	ViewOnly	8	Number of next1	0		-	Number of next1 devices.	uint	R	-
2415	2	ViewOnly	9	Next1 status	NoWarningsOrErrors		-	Current Next1 status.	bitfield	R	0

List of items of Enum 0 (Status)

Value	Label	Description
1	No warning(s) or error(s)	No warning(s) or error(s).
2	At least one device in warning	At least one device is in warning.
4	At least one device in error restarting	At least one device is temporarily maintained in error and will restart automatically once the error(s) leaved.
8	At least one device in error halted	At least one device is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).

3-phase inverters

Group : System
Modbus device address : 1
*External ID : 0.1.8.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
2703	1	Basic	2	Turn on all phases	-		-	Turn on all phases.	signal	W	-
2704	1	Basic	3	Turn off all phases	-		-	Turn off all phases.	signal	W	-
2705	1	ViewOnly	4	ON/OFF state all phases	false		-	Indicates all phases ON/OFF state.	bool	R	-
2706	1	Basic	5	Turn on L1	-		-	Turn on phase L1. Note that "Allow individual phase operation" (id 56) must be true to enable L1 individually.	signal	W	-
2707	1	Basic	6	Turn off L1	-		-	Turn off phase L1.	signal	W	-
2708	1	ViewOnly	7	ON/OFF state L1	false		-	Indicates phase L1 ON/OFF state.	bool	R	-
2709	1	Basic	8	Turn on L2	-		-	Turn on phase L2. Note that "Allow individual phase operation" (id 56) must be true to enable L2 individually.	signal	W	-
2710	1	Basic	9	Turn off L2	-		-	Turn off phase L2.	signal	W	-
2711	1	ViewOnly	10	ON/OFF state L2	false		-	Indicates phase L2 ON/OFF state.	bool	R	-
2712	1	Basic	11	Turn on L3	-		-	Turn on phase L3. Note that "Allow individual phase operation" (id 56) must be true to enable L3 individually.	signal	W	-
2713	1	Basic	12	Turn off L3	-		-	Turn off phase L3.	signal	W	-
2714	1	ViewOnly	13	ON/OFF state L3	false		-	Indicates phase L3 ON/OFF state.	bool	R	-
2717	2	R:ViewOnly W:Expert	15	3-phase system configuration	Symetric		-	3-phase system configuration.	enum	R/W	0
2719	2	R:ViewOnly W:Expert	16	Nominal line voltage	398.371686	V	[10,478]	Nominal line voltage.	float	R/W	-
2721	2	R:ViewOnly W:Expert	17	L1 nominal phase voltage	230	V	[0,275]	L1 nominal phase voltage (also used for AC input ports nominal voltage).	float	R/W	-
2723	2	R:ViewOnly W:Expert	18	L2 nominal phase voltage	230	V	[0,275]	L2 nominal phase voltage (also used for AC input ports nominal voltage).	float	R/W	-
2725	2	R:ViewOnly W:Expert	19	L3 nominal phase voltage	230	V	[0,275]	L3 nominal phase voltage (also used for AC input ports nominal voltage).	float	R/W	-
2727	2	R:ViewOnly W:Expert	20	Relative angle for L2	-120	°	[-180,180]	L2 voltage phase angle relative to L1.	float	R/W	-
2729	2	R:ViewOnly W:Expert	21	Relative angle for L3	120	°	[-180,180]	L3 voltage phase angle relative to L1.	float	R/W	-
2731	2	R:ViewOnly W:Expert	22	Nominal frequency	50	Hz	[45,65]	Nominal frequency.	float	R/W	-
2733	2	Expert	23	Maximum RoCoF	10	Hz/s	[0.5,50]	Maximal rate of change of frequency.	float	R/W	-
2784	2	R:ViewOnly W:Expert	49	Alternate frequency	50	Hz	[35,65]	Alternate frequency. See property "Cmd input idx for alternate frequency" (id 50) for more details.	float	R/W	-
2786	2	Expert	50	Cmd input idx for alternate frequency	0		[0,10]	Index of the command input used to switch to the alternate frequency "Alternate frequency" (id 49) (a value of 0 disables remote operation).	int	R/W	-
2788	1	R:ViewOnly W:Expert	51	Allow power prod. on ACLoad	false		-	Allows power production on ACLoad or FlexLoad ports (e.g. when solar inverter is connected on ACLoad/FlexLoad). If false, a backfeed power dectection causes an error.	bool	R/W	-
2789	2	R:ViewOnly W:Expert	52	Freq. incr. to reduce produced power	0	Hz	[0,15]	When power is produced on ACLoad or FlexLoad port (e.g. when solar inverter is connected on on ACLoad/FlexLoad) and this power can't be absorbed by the system, the frequency must be increased to limit this power.	float	R/W	-
2793	2	Basic	54	Standby sensitivity	None		-	Standby sensitivity.	enum	R/W	2

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
2795	2	Expert	55	Standby detection	1	%	[-1,10]	Standby detection expressed in % of nominal power. A negative value disables the standby.	float	R/W	-
2797	1	Basic	56	Allow individual phase operation	false		-	Allow individual phase operation even if another phase is halted or in error state.	bool	R/W	-
2798	2	Expert	57	Overload threshold stage1	50	%	[20,90]	Voltage threshold stage 1 for overload detection.	float	R/W	-
2800	2	Expert	58	Overload operate time stage1	0.5	s	[0.05,3]	Overload operate time stage 1.	float	R/W	-
2802	2	Expert	59	Overload threshold stage2	80	%	[40,95]	Voltage threshold stage 2 for overload detection.	float	R/W	-
2804	2	Expert	60	Overload operate time stage2	3	s	[0.5,5]	Overload operate time stage 2.	float	R/W	-
2806	2	Expert	61	Overload restart delay	1	s	[1,10]	Delay before automatic restarting after an overload occurs.	float	R/W	-
2808	2	R:Basic W:Expert	62	Max overloads during obs. period	3		[0,30]	Maximum number of overloads allowed during the defined observation period before stopping.	int	R/W	-
2810	2	R:Basic W:Expert	63	Obs. period for overload detection	30	s	[5,600]	Observation period for overload detection.	int	R/W	-
2812	2	Expert	64	Error restart delay	3	s	[1,10]	Delay before automatic restarting after an error.	float	R/W	-
2814	2	Expert	65	Max errors during obs. period	5		[0,30]	Maximum number of errors allowed during the defined observation period before stopping.	int	R/W	-
2816	2	Expert	66	Observation period for errors detection	60	s	[5,600]	Observation period for errors detection.	int	R/W	-
2832	2	Expert	74	Inertial smoothing strength	2		[0.1,20]	Strength of inertial smoothing feature (smoothing of transient current of genset, used to improve stability of genset during transients).	float	R/W	-
2834	2	ViewOnly	75	Status	AtLeastOnePhaseDisabled		-	Contains the current status of the 3-phase inverter. Several values are possible simultaneously.	bitfield	R	3
2836	2	ViewOnly	76	Phase existance	PhaseL1Exists|PhaseL2Exists|PhaseL3Exists		-	Indicates which phase(s) is(are) used for inverters / AC-Loads.	bitfield	R	4
2844	2	Expert	80	Overvoltage threshold	125	%	[110,150]	AC Load over-voltage threshold in percentage of the nominal voltage. The applied value used for the protection will be the maximum of this threshold and the one in "Over-voltage curve U1" (id 22) (if AC input is present).	float	R/W	-

List of items of Enum 0 (ThreePhaseConfig)

Value	Label	Description
0	User defined	User defined with "L1 nominal phase voltage" (id 17), "L2 nominal phase voltage" (id 18), "L3 nominal phase voltage" (id 19), "Relative angle for L2" (id 20) and "Relative angle for L3" (id 21).
1	Symmetric	Standard symmetric three phase system with line voltage defined by "Nominal line voltage" (id 16).
2	High-leg delta	High-leg delta configuration with a line voltage u defined by "Nominal line voltage" (id 16), L1-N voltage is u/2, L2-N voltage is u*√3/2 ∠ -90°, L3-N voltage is u/2 ∠ 180°.

List of items of Enum 2 (StandbySensitivity)

Value	Label	Description
0	User defined	User defined standby threshold level (defined with "Standby detection" (id 55)).
1	None	None (The standby is disabled).
2	Very fine	Very fine (detection threshold is 0.1% of nominal power).
3	Fine	Fine (detection threshold is 0.3% of nominal power).
4	Coarse	Coarse (detection threshold is 1% of nominal power).

Value	Label	Description
5	Very coarse	Very coarse (detection threshold is 3% of nominal power).

List of items of Enum 3 (Status)

Value	Label	Description
1	At least one phase disabled	At least one phase is disabled.
2	At least one phase enabled	At least one phase is enabled.
4	At least one phase has warning(s)	At least one phase has warning(s).
8	At least one phase in error restarting	At least one phase is temporarily maintained in error and will restart automatically once the error(s) leave.
16	At least one phase in error halted	At least one phase is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).

List of items of Enum 4 (PhasesExistanceBitfield)

Value	Label	Description
1	Phase L1 exists	Inverters / AC-Loads have an L1 phase.
2	Phase L2 exists	Inverters / AC-Loads have an L2 phase.
4	Phase L3 exists	Inverters / AC-Loads have an L3 phase.

inverter L1

Group : System
Modbus device address : 1
*External ID : 0.1.9.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3000	2	ViewOnly	0	Status	Disabled		-	Current status.	enum	R	0
3002	2	ViewOnly	1	Warnings	NoWarnings		-	Current warnings.	bitfield	R	1
3004	2	ViewOnly	2	Cause of error	NoErrors		-	Indicates the cause of error.	bitfield	R	2

List of items of Enum 0 (Status)

Value	Label	Description
0	Enabled	The phase is enabled.
1	Disabled	The phase is disabled.
2	Error restarting	The phase is temporarily maintained in error and will restart automatically once the error(s) leaved.
3	Error halted	The phase is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).

List of items of Enum 1 (Warnings)

Value	Label	Description
0	End of warning	The phase has no warnings.
1	Overload	Overload situation. Will halt soon if the overload persists.
2	Overtemperature	Overtemperature. The power/voltage could be reduced to protect the power converter unit.

List of items of Enum 2 (Errors)

Value	Label	Description
0	End of error	The phase has no errors.
1	Overload	Halted due to an overload.
2	device fault	The device was stopped to protect himself against abnormal situation.
4	Communication error	Too many communication errors on studer system bus. Inverter halted for self-protection.
8	Earthing error	Earthing error detected.
16	Backfeed power error	Produced active power was detected on a loads port but not allowed by "Allow power prod. on ACLoad" (id 51).
32	AC source error	Halted due to an error of the AC source.
2147483648	Other error	Inverters are stopped due ot another error. See on the GUI for more information.

inverter L2

Group : System
Modbus device address : 1
*External ID : 0.1.10.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3300	2	ViewOnly	0	Status	Disabled		-	Current status.	enum	R	0
3302	2	ViewOnly	1	Warnings	NoWarnings		-	Current warnings.	bitfield	R	1
3304	2	ViewOnly	2	Cause of error	NoErrors		-	Indicates the cause of error.	bitfield	R	2

List of items of Enum 0 (Status)

Value	Label	Description
0	Enabled	The phase is enabled.
1	Disabled	The phase is disabled.
2	Error restarting	The phase is temporarily maintained in error and will restart automatically once the error(s) leaved.
3	Error halted	The phase is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).

List of items of Enum 1 (Warnings)

Value	Label	Description
0	End of warning	The phase has no warnings.
1	Overload	Overload situation. Will halt soon if the overload persists.
2	Overtemperature	Overtemperature. The power/voltage could be reduced to protect the power converter unit.

List of items of Enum 2 (Errors)

Value	Label	Description
0	End of error	The phase has no errors.
1	Overload	Halted due to an overload.
2	device fault	The device was stopped to protect himself against abnormal situation.
4	Communication error	Too many communication errors on studer system bus. Inverter halted for self-protection.
8	Earthing error	Earthing error detected.
16	Backfeed power error	Produced active power was detected on a loads port but not allowed by "Allow power prod. on ACLoad" (id 51).
32	AC source error	Halted due to an error of the AC source.
2147483648	Other error	Inverters are stopped due ot another error. See on the GUI for more information.

inverter L3

Group : System
Modbus device address : 1
*External ID : 0.1.11.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3600	2	ViewOnly	0	Status	Disabled		-	Current status.	enum	R	0
3602	2	ViewOnly	1	Warnings	NoWarnings		-	Current warnings.	bitfield	R	1
3604	2	ViewOnly	2	Cause of error	NoErrors		-	Indicates the cause of error.	bitfield	R	2

List of items of Enum 0 (Status)

Value	Label	Description
0	Enabled	The phase is enabled.
1	Disabled	The phase is disabled.
2	Error restarting	The phase is temporarily maintained in error and will restart automatically once the error(s) leaved.
3	Error halted	The phase is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).

List of items of Enum 1 (Warnings)

Value	Label	Description
0	End of warning	The phase has no warnings.
1	Overload	Overload situation. Will halt soon if the overload persists.
2	Overtemperature	Overtemperature. The power/voltage could be reduced to protect the power converter unit.

List of items of Enum 2 (Errors)

Value	Label	Description
0	End of error	The phase has no errors.
1	Overload	Halted due to an overload.
2	device fault	The device was stopped to protect himself against abnormal situation.
4	Communication error	Too many communication errors on studer system bus. Inverter halted for self-protection.
8	Earthing error	Earthing error detected.
16	Backfeed power error	Produced active power was detected on a loads port but not allowed by "Allow power prod. on ACLoad" (id 51).
32	AC source error	Halted due to an error of the AC source.
2147483648	Other error	Inverters are stopped due ot another error. See on the GUI for more information.

3-phase AC-Loads

Group : System
Modbus device address : 1
*External ID : 0.1.12.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3900	2	ViewOnly	0	Frequency	0	Hz	-	Frequency measured.	float	R	-
3902	2	ViewOnly	4	Line voltage L1-L2	0	V	-	Line voltage L1-L2 measured.	float	R	-
3904	2	ViewOnly	8	Line voltage L2-L3	0	V	-	Line voltage L2-L3 measured.	float	R	-
3906	2	ViewOnly	12	Line voltage L3-L1	0	V	-	Line voltage L3-L1 measured.	float	R	-
3908	2	ViewOnly	16	Total active power	0	W	-	Total active power measured.	float	R	-
3910	2	ViewOnly	20	Total apparent power	0	VA	-	Total apparent power measured.	float	R	-
3912	2	ViewOnly	24	Angle L2 relative to L1	0	degree	-	Angle L2 relative to L1 measured.	float	R	-
3914	2	ViewOnly	25	Angle L3 relative to L1	0	degree	-	Angle L3 relative to L1 measured.	float	R	-
3916	2	ViewOnly	26	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
3918	2	ViewOnly	27	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
3920	4	ViewOnly	28	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
3924	4	ViewOnly	29	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
3928	2	ViewOnly	30	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
3930	2	ViewOnly	31	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
3932	4	ViewOnly	32	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
3936	4	ViewOnly	33	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-
3940	2	ViewOnly	34	Day runtime	0	h	-	Day runtime measured.	float	R	-
3942	2	ViewOnly	35	Total runtime	0	h	-	Total runtime measured.	float	R	-
3944	2	ViewOnly	36	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
3946	2	ViewOnly	37	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
3948	2	ViewOnly	38	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
3950	2	ViewOnly	39	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
3952	2	ViewOnly	40	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
3954	2	ViewOnly	41	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
3956	2	ViewOnly	42	Produced active power	0	W	-	Produced active power measured.	float	R	-
3958	2	ViewOnly	44	Consumed active power	0	W	-	Consumed active power measured.	float	R	-

AC-Loads L1

Group : System
Modbus device address : 1
*External ID : 0.1.13.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
4200	2	ViewOnly	0	Phase voltage	0	V	-	Phase voltage RMS measured.	float	R	-
4202	2	ViewOnly	4	Current	0	A	-	Current RMS measured.	float	R	-
4204	2	ViewOnly	8	Active power	0	W	-	Active power measured.	float	R	-
4206	2	ViewOnly	12	Reactive power	0	VAR	-	Reactive power measured.	float	R	-
4208	2	ViewOnly	16	Apparent power	0	VA	-	Apparent power measured.	float	R	-
4210	2	ViewOnly	20	Power factor	0		-	Power factor measured.	float	R	-
4212	2	ViewOnly	24	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
4214	2	ViewOnly	25	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
4216	2	ViewOnly	26	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
4218	2	ViewOnly	27	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
4220	2	ViewOnly	28	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
4222	2	ViewOnly	29	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
4228	2	ViewOnly	32	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
4230	2	ViewOnly	33	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
4232	4	ViewOnly	34	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
4236	4	ViewOnly	35	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
4240	2	ViewOnly	36	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
4242	2	ViewOnly	37	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
4244	4	ViewOnly	38	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
4248	4	ViewOnly	39	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-

AC-Loads L2

Group : System
Modbus device address : 1
*External ID : 0.1.14.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
4500	2	ViewOnly	0	Phase voltage	0	V	-	Phase voltage RMS measured.	float	R	-
4502	2	ViewOnly	4	Current	0	A	-	Current RMS measured.	float	R	-
4504	2	ViewOnly	8	Active power	0	W	-	Active power measured.	float	R	-
4506	2	ViewOnly	12	Reactive power	0	VAR	-	Reactive power measured.	float	R	-
4508	2	ViewOnly	16	Apparent power	0	VA	-	Apparent power measured.	float	R	-
4510	2	ViewOnly	20	Power factor	0		-	Power factor measured.	float	R	-
4512	2	ViewOnly	24	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
4514	2	ViewOnly	25	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
4516	2	ViewOnly	26	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
4518	2	ViewOnly	27	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
4520	2	ViewOnly	28	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
4522	2	ViewOnly	29	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
4528	2	ViewOnly	32	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
4530	2	ViewOnly	33	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
4532	4	ViewOnly	34	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
4536	4	ViewOnly	35	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
4540	2	ViewOnly	36	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
4542	2	ViewOnly	37	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
4544	4	ViewOnly	38	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
4548	4	ViewOnly	39	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-

AC-Loads L3

Group : System
Modbus device address : 1
*External ID : 0.1.15.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
4800	2	ViewOnly	0	Phase voltage	0	V	-	Phase voltage RMS measured.	float	R	-
4802	2	ViewOnly	4	Current	0	A	-	Current RMS measured.	float	R	-
4804	2	ViewOnly	8	Active power	0	W	-	Active power measured.	float	R	-
4806	2	ViewOnly	12	Reactive power	0	VAR	-	Reactive power measured.	float	R	-
4808	2	ViewOnly	16	Apparent power	0	VA	-	Apparent power measured.	float	R	-
4810	2	ViewOnly	20	Power factor	0		-	Power factor measured.	float	R	-
4812	2	ViewOnly	24	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
4814	2	ViewOnly	25	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
4816	2	ViewOnly	26	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
4818	2	ViewOnly	27	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
4820	2	ViewOnly	28	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
4822	2	ViewOnly	29	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
4828	2	ViewOnly	32	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
4830	2	ViewOnly	33	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
4832	4	ViewOnly	34	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
4836	4	ViewOnly	35	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
4840	2	ViewOnly	36	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
4842	2	ViewOnly	37	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
4844	4	ViewOnly	38	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
4848	4	ViewOnly	39	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-

3-phase inverters measure

Group : System
Modbus device address : 1
*External ID : 0.1.16.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
5100	2	ViewOnly	0	Frequency	0	Hz	-	Frequency measured.	float	R	-
5102	2	ViewOnly	4	Line voltage L1-L2	0	V	-	Line voltage L1-L2 measured.	float	R	-
5104	2	ViewOnly	8	Line voltage L2-L3	0	V	-	Line voltage L2-L3 measured.	float	R	-
5106	2	ViewOnly	12	Line voltage L3-L1	0	V	-	Line voltage L3-L1 measured.	float	R	-
5108	2	ViewOnly	16	Total active power	0	W	-	Total active power measured.	float	R	-
5110	2	ViewOnly	20	Total apparent power	0	VA	-	Total apparent power measured.	float	R	-
5112	2	ViewOnly	24	Angle L2 relative to L1	0	degree	-	Angle L2 relative to L1 measured.	float	R	-
5114	2	ViewOnly	25	Angle L3 relative to L1	0	degree	-	Angle L3 relative to L1 measured.	float	R	-
5116	2	ViewOnly	26	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
5118	2	ViewOnly	27	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
5120	4	ViewOnly	28	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
5124	4	ViewOnly	29	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
5128	2	ViewOnly	30	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
5130	2	ViewOnly	31	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
5132	4	ViewOnly	32	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
5136	4	ViewOnly	33	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-
5140	2	ViewOnly	34	Day runtime	0	h	-	Day runtime measured.	float	R	-
5142	2	ViewOnly	35	Total runtime	0	h	-	Total runtime measured.	float	R	-
5144	2	ViewOnly	36	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
5146	2	ViewOnly	37	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
5148	2	ViewOnly	38	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
5150	2	ViewOnly	39	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
5152	2	ViewOnly	40	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
5154	2	ViewOnly	41	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
5156	2	ViewOnly	42	Produced active power	0	W	-	Produced active power measured.	float	R	-
5158	2	ViewOnly	44	Consumed active power	0	W	-	Consumed active power measured.	float	R	-

inverter measure L1

Group : System
Modbus device address : 1
*External ID : 0.1.17.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
5400	2	ViewOnly	0	Phase voltage	0	V	-	Phase voltage RMS measured.	float	R	-
5402	2	ViewOnly	4	Current	0	A	-	Current RMS measured.	float	R	-
5404	2	ViewOnly	8	Active power	0	W	-	Active power measured.	float	R	-
5406	2	ViewOnly	12	Reactive power	0	VAR	-	Reactive power measured.	float	R	-
5408	2	ViewOnly	16	Apparent power	0	VA	-	Apparent power measured.	float	R	-
5410	2	ViewOnly	20	Power factor	0		-	Power factor measured.	float	R	-
5412	2	ViewOnly	24	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
5414	2	ViewOnly	25	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
5416	2	ViewOnly	26	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
5418	2	ViewOnly	27	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
5420	2	ViewOnly	28	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
5422	2	ViewOnly	29	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
5428	2	ViewOnly	32	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
5430	2	ViewOnly	33	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
5432	4	ViewOnly	34	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
5436	4	ViewOnly	35	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
5440	2	ViewOnly	36	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
5442	2	ViewOnly	37	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
5444	4	ViewOnly	38	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
5448	4	ViewOnly	39	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-

inverter measure L2

Group : System
Modbus device address : 1
*External ID : 0.1.18.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
5700	2	ViewOnly	0	Phase voltage	0	V	-	Phase voltage RMS measured.	float	R	-
5702	2	ViewOnly	4	Current	0	A	-	Current RMS measured.	float	R	-
5704	2	ViewOnly	8	Active power	0	W	-	Active power measured.	float	R	-
5706	2	ViewOnly	12	Reactive power	0	VAR	-	Reactive power measured.	float	R	-
5708	2	ViewOnly	16	Apparent power	0	VA	-	Apparent power measured.	float	R	-
5710	2	ViewOnly	20	Power factor	0		-	Power factor measured.	float	R	-
5712	2	ViewOnly	24	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
5714	2	ViewOnly	25	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
5716	2	ViewOnly	26	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
5718	2	ViewOnly	27	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
5720	2	ViewOnly	28	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
5722	2	ViewOnly	29	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
5728	2	ViewOnly	32	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
5730	2	ViewOnly	33	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
5732	4	ViewOnly	34	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
5736	4	ViewOnly	35	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
5740	2	ViewOnly	36	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
5742	2	ViewOnly	37	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
5744	4	ViewOnly	38	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
5748	4	ViewOnly	39	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-

inverter measure L3

Group : System
Modbus device address : 1
*External ID : 0.1.19.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6000	2	ViewOnly	0	Phase voltage	0	V	-	Phase voltage RMS measured.	float	R	-
6002	2	ViewOnly	4	Current	0	A	-	Current RMS measured.	float	R	-
6004	2	ViewOnly	8	Active power	0	W	-	Active power measured.	float	R	-
6006	2	ViewOnly	12	Reactive power	0	VAR	-	Reactive power measured.	float	R	-
6008	2	ViewOnly	16	Apparent power	0	VA	-	Apparent power measured.	float	R	-
6010	2	ViewOnly	20	Power factor	0		-	Power factor measured.	float	R	-
6012	2	ViewOnly	24	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
6014	2	ViewOnly	25	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
6016	2	ViewOnly	26	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
6018	2	ViewOnly	27	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
6020	2	ViewOnly	28	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
6022	2	ViewOnly	29	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
6028	2	ViewOnly	32	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
6030	2	ViewOnly	33	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
6032	4	ViewOnly	34	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
6036	4	ViewOnly	35	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
6040	2	ViewOnly	36	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
6042	2	ViewOnly	37	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
6044	4	ViewOnly	38	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
6048	4	ViewOnly	39	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-

all 3-phase FlexLoads measure

Group : System
Modbus device address : 1
*External ID : 0.1.20.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6300	2	ViewOnly	0	Frequency	0	Hz	-	Frequency measured.	float	R	-
6302	2	ViewOnly	4	Line voltage L1-L2	0	V	-	Line voltage L1-L2 measured.	float	R	-
6304	2	ViewOnly	8	Line voltage L2-L3	0	V	-	Line voltage L2-L3 measured.	float	R	-
6306	2	ViewOnly	12	Line voltage L3-L1	0	V	-	Line voltage L3-L1 measured.	float	R	-
6308	2	ViewOnly	16	Total active power	0	W	-	Total active power measured.	float	R	-
6310	2	ViewOnly	20	Total apparent power	0	VA	-	Total apparent power measured.	float	R	-
6312	2	ViewOnly	24	Angle L2 relative to L1	0	degree	-	Angle L2 relative to L1 measured.	float	R	-
6314	2	ViewOnly	25	Angle L3 relative to L1	0	degree	-	Angle L3 relative to L1 measured.	float	R	-
6316	2	ViewOnly	26	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
6318	2	ViewOnly	27	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
6320	4	ViewOnly	28	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
6324	4	ViewOnly	29	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
6328	2	ViewOnly	30	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
6330	2	ViewOnly	31	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
6332	4	ViewOnly	32	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
6336	4	ViewOnly	33	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-
6340	2	ViewOnly	34	Day runtime	0	h	-	Day runtime measured.	float	R	-
6342	2	ViewOnly	35	Total runtime	0	h	-	Total runtime measured.	float	R	-
6344	2	ViewOnly	36	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
6346	2	ViewOnly	37	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
6348	2	ViewOnly	38	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
6350	2	ViewOnly	39	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
6352	2	ViewOnly	40	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
6354	2	ViewOnly	41	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
6356	2	ViewOnly	42	Produced active power	0	W	-	Produced active power measured.	float	R	-
6358	2	ViewOnly	44	Consumed active power	0	W	-	Consumed active power measured.	float	R	-

all FlexLoads measure L1

Group : System
Modbus device address : 1
*External ID : 0.1.21.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6600	2	ViewOnly	0	Phase voltage	0	V	-	Phase voltage RMS measured.	float	R	-
6602	2	ViewOnly	4	Current	0	A	-	Current RMS measured.	float	R	-
6604	2	ViewOnly	8	Active power	0	W	-	Active power measured.	float	R	-
6606	2	ViewOnly	12	Reactive power	0	VAR	-	Reactive power measured.	float	R	-
6608	2	ViewOnly	16	Apparent power	0	VA	-	Apparent power measured.	float	R	-
6610	2	ViewOnly	20	Power factor	0		-	Power factor measured.	float	R	-
6612	2	ViewOnly	24	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
6614	2	ViewOnly	25	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
6616	2	ViewOnly	26	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
6618	2	ViewOnly	27	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
6620	2	ViewOnly	28	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
6622	2	ViewOnly	29	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
6628	2	ViewOnly	32	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
6630	2	ViewOnly	33	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
6632	4	ViewOnly	34	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
6636	4	ViewOnly	35	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
6640	2	ViewOnly	36	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
6642	2	ViewOnly	37	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
6644	4	ViewOnly	38	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
6648	4	ViewOnly	39	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-

all FlexLoads measure L2

Group : System
Modbus device address : 1
*External ID : 0.1.22.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6900	2	ViewOnly	0	Phase voltage	0	V	-	Phase voltage RMS measured.	float	R	-
6902	2	ViewOnly	4	Current	0	A	-	Current RMS measured.	float	R	-
6904	2	ViewOnly	8	Active power	0	W	-	Active power measured.	float	R	-
6906	2	ViewOnly	12	Reactive power	0	VAR	-	Reactive power measured.	float	R	-
6908	2	ViewOnly	16	Apparent power	0	VA	-	Apparent power measured.	float	R	-
6910	2	ViewOnly	20	Power factor	0		-	Power factor measured.	float	R	-
6912	2	ViewOnly	24	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
6914	2	ViewOnly	25	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
6916	2	ViewOnly	26	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
6918	2	ViewOnly	27	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
6920	2	ViewOnly	28	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
6922	2	ViewOnly	29	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
6928	2	ViewOnly	32	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
6930	2	ViewOnly	33	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
6932	4	ViewOnly	34	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
6936	4	ViewOnly	35	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
6940	2	ViewOnly	36	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
6942	2	ViewOnly	37	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
6944	4	ViewOnly	38	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
6948	4	ViewOnly	39	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-

all FlexLoads measure L3

Group : System
Modbus device address : 1
*External ID : 0.1.23.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
7200	2	ViewOnly	0	Phase voltage	0	V	-	Phase voltage RMS measured.	float	R	-
7202	2	ViewOnly	4	Current	0	A	-	Current RMS measured.	float	R	-
7204	2	ViewOnly	8	Active power	0	W	-	Active power measured.	float	R	-
7206	2	ViewOnly	12	Reactive power	0	VAR	-	Reactive power measured.	float	R	-
7208	2	ViewOnly	16	Apparent power	0	VA	-	Apparent power measured.	float	R	-
7210	2	ViewOnly	20	Power factor	0		-	Power factor measured.	float	R	-
7212	2	ViewOnly	24	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
7214	2	ViewOnly	25	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
7216	2	ViewOnly	26	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
7218	2	ViewOnly	27	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
7220	2	ViewOnly	28	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
7222	2	ViewOnly	29	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
7228	2	ViewOnly	32	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
7230	2	ViewOnly	33	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
7232	4	ViewOnly	34	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
7236	4	ViewOnly	35	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
7240	2	ViewOnly	36	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
7242	2	ViewOnly	37	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
7244	4	ViewOnly	38	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
7248	4	ViewOnly	39	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-

all solars common

Group : System
Modbus device address : 1
*External ID : 0.1.24.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
7500	1	Basic	0	Turn on	-		-	Turns on solar(s).	signal	W	-
7501	1	Basic	1	Turn off	-		-	Turns off solar(s).	signal	W	-
7502	1	ViewOnly	2	On off state	false		-	Indicates solar(s) on/off state.	bool	R	-
7503	1	Expert	3	Enable depolarization	-		-	Enables depolarization.	signal	W	-
7504	1	Expert	4	Disable depolarization	-		-	Disables depolarization.	signal	W	-
7505	2	ViewOnly	5	Power	0	W	-	Power produced.	float	R	-
7507	2	ViewOnly	8	Previous day energy	0	Wh	-	Energy produced for the previous day.	float	R	-
7509	2	ViewOnly	9	Max power limit	0	W	-	Solar(s) max power limit.	uint	R	-
7511	2	ViewOnly	10	Day energy	0	Wh	-	Energy produced for the current day.	float	R	-
7515	4	ViewOnly	12	Resetable energy	0	Wh	-	Energy produced (can be reset).	float64	R/W	-
7519	4	ViewOnly	13	Total energy	0	Wh	-	Total energy produced (whole life).	float64	R	-

all solars group

Group : System
Modbus device address : 1
*External ID : 0.1.25.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
7800	2	ViewOnly	0	Number	0		-	Number of converters.	uint	R	-
7802	2	ViewOnly	1	Status	AtLeastOneSolarDisabled		-	Current status.	bitfield	R	0
7804	2	R:ViewOnly W:Studer	2	Number of vt40	0		-	Number of vt40.	uint	R/W	-
7806	2	R:ViewOnly W:Studer	3	Number of vt65	0		-	Number of vt65.	uint	R/W	-
7808	2	R:ViewOnly W:Studer	4	Number of vt80	0		-	Number of vt80.	uint	R/W	-
7810	2	R:ViewOnly W:Studer	5	Number of vs70	0		-	Number of vs70.	uint	R/W	-
7812	2	R:ViewOnly W:Studer	6	Number of vs120	0		-	Number of vs120.	uint	R/W	-
7814	1	Expert	7	Update external numbers	-		-	Update the numbers of external solar chargers.	signal	W	-

List of items of Enum 0 (Status)

Value	Label	Description
1	At least one solar disabled	At least one solar is disabled.
2	At least one solar has warning(s)	At least one solar has warning(s).
4	At least one solar in error restarting	At least one solar is temporarily maintained in error and will restart automatically once the error(s) leaved.
8	At least one solar in error halted	At least one solar is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).
16	At least one solar in night	At least one solar is in night.
32	At least one solar in dawn/dusk	At least one solar is in dawn/dusk.
64	At least one solar in production	At least one solar is in production.
128	At least one solar in production limited	At least one solar is in production limited.
256	At least one solar in solar excess	At least one solar is in production limited due to solar excess.
512	At least one external solar not compatible	At least one external solar charger is not compatible.
1024	At least one external solar added	At least one external solar charger has been added.
2048	At least one external solar disappeared	At least one external solar charger has disappeared.

system total

Group : System
Modbus device address : 1
*External ID : 0.1.26.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
8100	1	Basic	0	Clear errors	-		-	Clear all errors for this installation. Note that battery charging recovery mode will be enabled if "Charging recovery mode" (id 90) was "Disabled and activatable" (value 1) before sending this signal.	signal	W	-
8101	1	Basic	1	Turn on	-		-	Turns on all converters.	signal	W	-
8102	1	Basic	2	Turn off	-		-	Turns off all converters.	signal	W	-
8103	1	ViewOnly	3	On off state	false		-	Indicates all converters on/off state.	bool	R	-
8104	2	ViewOnly	4	AC input power	0	W	-	Power of the currently used AC input (AcSource or AcFlex used as FlexSource).	float	R	-
8106	2	ViewOnly	6	Loads+FlexLoads total power	0	W	-	AC Loads and FlexLoads total power (consumed - produced).	float	R	-
8108	2	ViewOnly	8	Loads+FlexLoads appar. power	0	VA	-	AC Loads and FlexLoads apparent power.	float	R	-
8110	2	ViewOnly	10	Warning(s)	None		-	Current warning(s).	bitfield	R	0
8112	2	ViewOnly	11	Error(s) (function retrying)	None		-	Current error(s) (the function keeps retrying).	bitfield	R	0
8114	2	ViewOnly	12	AC input day consumed energy	0	Wh	-	Day consumed energy of all AC inputs (AcSource and AcFlex used as FlexSource).	float	R	-
8116	2	ViewOnly	13	AC input day produced energy	0	Wh	-	Day produced energy of all AC inputs (AcSource and AcFlex used as FlexSource).	float	R	-
8118	2	ViewOnly	14	Error(s) (function halted)	None		-	Current error(s) (the function is halted).	bitfield	R	0
8120	2	ViewOnly	15	Error(s) (function halted/retrying)	None		-	Current error(s) (the function is either halted or restarting).	bitfield	R	0
8122	2	R:Basic W:Expert	16	CEI for emergency stop	0		[0,10]	Index of the command entry interface used for emergency stop. (0 value disable remote operation).	int	R/W	-
8124	2	ViewOnly	17	Number of AC inputs	0		-	Number of AC inputs used in the installation. How much and which used phases is shown in "Phase existance" (id 126)	int	R	-
8126	2	ViewOnly	18	Loads+FlexLoads day total ener.	0	Wh	-	AC Loads and FlexLoads day total energy (consumed - produced).	float	R	-
8128	2	ViewOnly	19	Number of FlexLoads	0		-	Number of AC FlexLoads used in the installation. How much and which used phases is shown in "Phase existance" (id 0)	int	R	-
8130	2	ViewOnly	20	Status	NoWarningsOrErrors		-	Current status.	enum	R	1
8132	2	ViewOnly	21	Loads+FlexLoads consum. power	0	W	-	AC Loads and FlexLoads consumed power.	float	R	-
8134	2	ViewOnly	22	Loads+FlexLoads produc. power	0	W	-	AC Loads and FlexLoads produced power.	float	R	-
8136	2	ViewOnly	25	Loads+FlexLoads day cons. ener.	0	Wh	-	AC Loads and FlexLoads day consumed energy.	float	R	-
8138	2	ViewOnly	26	Loads+FlexLoads day prod. ener.	0	Wh	-	AC Loads and FlexLoads day produced energy.	float	R	-
8144	2	ViewOnly	29	Number of powermeters	0		-	Number of powermeters.	uint	R	-

List of items of Enum 0 (WarningsErrors)

Value	Label	Description
0	None	None.
1	At least one device	At least one device.
2	At least one battery	At least one battery.
4	At least one solar	At least one solar.
8	At least one phase	At least one phase.

Value	Label	Description
16	At least one AC input phase	At least one AC input phase.
32	At least one flex AC input phase	At least one flex AC input phase.
64	At least one FlexLoad phase	At least one flex load phase.
128	At least one AC Input 1 phase	At least one AC Input 1 phase.
256	At least one AC Input 2 phase	At least one AC Input 2 phase.
512	At least one powermeter	At least one powermeter.

List of items of Enum 1 (Status)

Value	Label	Description
0	No warning(s) or error(s)	No warning(s) or error(s).
1	In warning	The system is in warning.
2	In error restarting	The system is temporarily maintained in error and will restart automatically once the error(s) leaved.
3	In error halted	The system is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).
4	In emergency stop	The system is in emergency stop.

all batteries common

Group : System
Modbus device address : 1
*External ID : 0.1.27.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
8400	2	ViewOnly	0	Charging power	0	W	-	Charging power measured.	float	R	-
8402	2	ViewOnly	4	Day charging energy	0	Wh	-	Day charging energy measured.	float	R	-
8404	2	ViewOnly	5	Previous day charging energy	0	Wh	-	Previous day charging energy measured.	float	R	-
8406	4	ViewOnly	6	Resetable charging energy	0	Wh	-	Resetable charging energy measured.	float64	R/W	-
8410	4	ViewOnly	7	Total charging energy	0	Wh	-	Total charging energy measured.	float64	R	-
8414	2	ViewOnly	8	Day discharging energy	0	Wh	-	Day discharging energy measured.	float	R	-
8416	2	ViewOnly	9	Previous day discharging energy	0	Wh	-	Previous day discharging energy measured.	float	R	-
8418	4	ViewOnly	10	Resetable discharging energy	0	Wh	-	Resetable discharging energy measured.	float64	R/W	-
8422	4	ViewOnly	11	Total discharging energy	0	Wh	-	Total discharging energy measured.	float64	R	-
8426	2	ViewOnly	12	State of Charge	0	%	-	State of charge measured.	float	R	-

all batteries group

Group : System
Modbus device address : 1
*External ID : 0.1.28.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
8700	2	ViewOnly	0	Number	0		-	Number of batteries.	uint	R	-
8702	2	ViewOnly	1	Status	NoWarningsOrErrors		-	Current status.	bitfield	R	0

List of items of Enum 0 (Status)

Value	Label	Description
1	No warning(s) or error(s)	No warning(s) or error(s).
2	At least one battery in warning	At least one battery is in warning.
4	At least one battery in error restarting	At least one battery is temporarily maintained in error and will restart automatically once the error(s) leaved.
8	At least one battery in error halted	At least one battery is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).
16	At least one battery has charging recovery mode activatable	At least one battery has charging recovery mode activatable.

battery common

Group : Battery
Modbus device address : 2 to 6
*External ID : 1.x.1.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
0	2	ViewOnly	0	Charging power	0	W	-	Charging power measured.	float	R	-
2	2	ViewOnly	4	Day charging energy	0	Wh	-	Day charging energy measured.	float	R	-
4	2	ViewOnly	5	Previous day charging energy	0	Wh	-	Previous day charging energy measured.	float	R	-
6	4	ViewOnly	6	Resetable charging energy	0	Wh	-	Resetable charging energy measured.	float64	R/W	-
10	4	ViewOnly	7	Total charging energy	0	Wh	-	Total charging energy measured.	float64	R	-
14	2	ViewOnly	8	Day discharging energy	0	Wh	-	Day discharging energy measured.	float	R	-
16	2	ViewOnly	9	Previous day discharging energy	0	Wh	-	Previous day discharging energy measured.	float	R	-
18	4	ViewOnly	10	Resetable discharging energy	0	Wh	-	Resetable discharging energy measured.	float64	R/W	-
22	4	ViewOnly	11	Total discharging energy	0	Wh	-	Total discharging energy measured.	float64	R	-
26	2	ViewOnly	12	State of Charge	0	%	-	State of charge measured.	float	R	-

battery

Group : Battery
Modbus device address : 2 to 6
*External ID : 1.x.2.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
300	2	ViewOnly	0	Status	NoWarningsOrErrors		-	Current status.	enum	R	0
302	2	ViewOnly	1	Errors	NoErrors		-	Current errors.	bitfield	R	1
304	2	ViewOnly	2	Warnings	NoWarnings		-	Current warnings.	bitfield	R	2
306	2	R:Basic W:Expert	3	Target charging current low limit	0	A	-	Target charging current low limit sent to the power flow dispatcher.	float	R	-
308	2	R:Basic W:Expert	4	Target charging current high limit	0	A	-	Target charging current high limit sent to the power flow dispatcher.	float	R	-
310	2	R:Basic W:Expert	5	Charging current low limit	0	A	-	Charging current low limit sent to the power flow dispatcher.	float	R	-
312	2	R:Basic W:Expert	6	Charging current high limit	0	A	-	Charging current high limit sent to the power flow dispatcher.	float	R	-
314	2	R:Basic W:Expert	7	Target voltage max	0	V	-	Target voltage used to clamp "Charging current high limit" (id 6) dynamically in function of the voltage error to avoid overshoot.	float	R	-
316	2	R:Basic W:Expert	8	Target voltage min	0	V	-	Target voltage used to clamp "Charging current low limit" (id 5) dynamically in function of the voltage error to avoid undershoot.	float	R	-
318	2	ViewOnly	9	Voltage	0	V	-	Voltage measured.	float	R	-
320	2	ViewOnly	13	Charging current	0	A	-	Charging current measured.	float	R	-
322	4	ViewOnly	17	Cycles number	0		-	Number of cycles since the battery was configured. Note that one cycle corresponds to 'Nominal capacity' electric charges injected into the battery.	float64	R	-
326	2	ViewOnly	18	State of health	100	%	-	State of health measured.	float	R	-
328	1	ViewOnly	19	Temp available	false		-	True if at least one battery contributor has a temperature sensor connected with non communicating battery. Not used with communicating battery.	bool	R	-
329	2	ViewOnly	20	Temp	0	°C	-	Temperature measured.	float	R	-
331	1	R:Basic W:Expert	24	Manual current limits	false		-	Useful only with communicating batteries. With non communicating batteries, the value can't be changed and is maintained to true. If enabled, "Discharging current limit" (id 25) and "Charging current limit" (id 26) can be manually set. If disabled, the limits used are those received by the bms. Note that the limits set by the user are ignored if the limits received by the bms are lower.	bool	R/W	-
332	2	R:Basic W:Expert	25	Discharging current limit	0	A	[0, 1e9]	Sets the discharging current limit.	float	R/W	-
334	2	R:Basic W:Expert	26	Charging current limit	0	A	[0, 1e9]	Sets the charging current limit.	float	R/W	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
336	2	R:Basic W:Expert	27	Current limits marging factor	0.8		-	With non communicating batteries, this ratio is used to keep a marging between the operating range ('Discharging current limit' and 'Charging current limit') and the 'Overcurrent' threshold. With communicating batteries, this ratio is used to keep a marging between "BMS max charging current" (id 85) and "BMS max discharging current" (id 86) and the limits actually used by the power flow dispatcher.	float	R/W	-
338	2	R:Basic W:Expert	28	Conditions for energy management	AllConditions		-	Used to select conditions used for energy management.	bitfield	R/W	8
340	2	R:Basic W:Expert	29	SOC slope for limits	0	A/%	-	Value used to change linearly the "Target charging current low limit" (id 3) around "SOC for backup" (id 32) and the "Target charging current high limit" (id 4) around "SOC for grid feeding" (id 31) from chargingCurrentLimit to -dischargingCurrentLimit. Also used to change linearly the "Charging current high limit" (id 6) around "SOC for end of charge" (id 30) from 100% to 0%.	float	R/W	-
342	2	R:Basic W:Expert	30	SOC for end of charge	100	%	-	SOC over which the "Charging current high limit" (id 6) is set to 0 if "SOC for end of charge" (value 1) is activated. This prevents the SOC to increase further even if solar power is available. Note that it's recommended to keep a value of 100% for non communicating battery.	float	R/W	-
344	2	R:Basic W:Expert	31	SOC for grid feeding	100	%	-	SOC over which energy is taken from battery to be sourced into grid if "SOC for grid feeding" (value 2) is activated. Note that it's recommended to keep a value of 100% for non communicating battery.	float	R/W	-
346	2	Basic	32	SOC for backup	0	%	-	SOC under which energy is taken from the AC input to charge batteries if "SOC for backup" (value 4) is activated.	float	R/W	-
348	1	R:Basic W:Expert	33	Adaptive SOC for backup	false		-	Used to increase each day "Current SOC for backup" (id 38) by the quantity set via "Adaptive SOC for backup slope" (id 34) if the SOC is less than "SOC to increase adaptive SOC for backup" (id 37). "Current SOC for backup" (id 38) is also increased by 15% if an undervoltage has been detected. "Current SOC for backup" (id 38) is reset to "SOC for backup" (id 32) if the SOC is greather than or equal to "SOC to reset adaptive SOC for backup" (id 36) for at least "Time before reseting adaptive SOC for backup" (id 35) seconds.	bool	R/W	-
349	2	R:Basic W:Expert	34	Adaptive SOC for backup slope	0	%/day	[0, 100]	"Current SOC for backup" (id 38) is increased each day by this amount if the SOC is less than "SOC to increase adaptive SOC for backup" (id 37) and if "Adaptive SOC for backup" (id 33) is enabled.	uint	R/W	-
351	2	R:Basic W:Expert	35	Time before reseting adaptive SOC for backup	0	s	[0, 86400]	"Current SOC for backup" (id 38) is reset to "SOC for backup" (id 32) if the SOC is greather than or equal to "SOC to reset adaptive SOC for backup" (id 36) for at least this amount of time.	uint	R/W	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
353	2	R:Basic W:Expert	36	SOC to reset adaptive SOC for backup	0	%	-	"Current SOC for backup" (id 38) is reset to "SOC for backup" (id 32) if the SOC is greather than or equal to this value during "Time before reseting adaptive SOC for backup" (id 35).	float	R/W	-
355	2	R:Basic W:Expert	37	SOC to increase adaptive SOC for backup	0	%	-	"Current SOC for backup" (id 38) is increased each day by the value of "Adaptive SOC for backup slope" (id 34) if the SOC is less than this value and if "Adaptive SOC for backup" (id 33) is enabled.	float	R/W	-
357	2	R:Basic W:Expert	38	Current SOC for backup	0	%	-	Indicate the current value of the SOC for backup.	float	R	-
359	2	R:Basic W:Expert	39	Voltage for grid feeding	0	V	-	Voltage over which energy is taken from battery to be sourced into grid if "Voltage for grid feeding" (value 8) is activated. Note that the battery may never reach a fully charged state if this feature is activated.	float	R/W	-
361	2	R:Basic W:Expert	40	Voltage for backup	0	V	-	Voltage under which energy is taken from an AC input to charge batteries if "Voltage for backup" (value 16) is activated.	float	R/W	-
363	2	R:Basic W:Expert	41	Nominal temp	25	°C	[-20, 45]	Battery nominal temperature.	float	R/W	-
365	2	R:Basic W:Expert	42	Temp coefficient	0	V/°C	-	Sets the temperature coefficient used to correct the charging voltage level.	float	R/W	-
367	1	R:Basic W:Expert	43	Forced mode	false		-	Use given values instead of automatic ones for target min/max voltages and charging current.	bool	R/W	-
368	2	R:Basic W:Expert	44	Forced target voltage max	0	V	-	Forced value for "Target voltage max" (id 7) when "Forced mode" (id 43).	float	R/W	-
370	2	R:Basic W:Expert	45	Forced target voltage min	0	V	-	Forced value for "Target voltage min" (id 8) when "Forced mode" (id 43).	float	R/W	-
372	2	R:Basic W:Expert	46	Forced target current	0	A	-	Forced value for "Target charging current low limit" (id 3) and "Target charging current high limit" (id 4) when "Forced mode" (id 43). Please enter a positive value to set a target charging current and a negative value to set a target discharging current.	float	R/W	-
374	2	R:Basic W:Expert	47	Low limit level	0		-	Low limit level sent to the power flow dispatcher.	uint	R/W	-
376	2	R:Basic W:Expert	48	Setpoints level	0		-	Setpoints level sent to the power flow dispatcher.	uint	R/W	-
383	2	R:ViewOnly W:Studer	52	Communication interface	NotCommunicating		-	Indicates if the battery is communicating or not and if yes, indicates which communication interface is used. This property must be changed only by the wizard and never by the user !	enum	R/W	3
385	2	R:ViewOnly W:Studer	53	Nominal voltage	0	V	-	Battery nominal voltage. This property must be changed only by the wizard and never by the user !	float	R	-
389	2	R:ViewOnly W:Studer	55	Nominal capacity	0	Ah	-	Battery nominal capacity. This property must be changed only by the wizard and never by the user !	float	R/W	-
391	2	R:Expert W:Studer	56	CAN protocol	Studer		-	Indicates which CAN protocol is used. This property must be changed only by the wizard and never by the user !	enum	R/W	4
393	2	R:Expert W:Studer	57	RS485 protocol	ToImplement		-	Indicates which RS485 protocol is used. This property must be changed only by the wizard and never by the user !	enum	R/W	5

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
395	2	R:ViewOnly W:Studer	58	Battery brand	Weco		-	Battery brand. This property must be changed only by the wizard and never by the user !	enum	R/W	6
397	2	R:Expert W:Studer	59	Baud rate	0	kbps	-	Communication baud rate. This property must be changed only by the wizard and never by the user !	uint	R/W	-
400	2	R:ViewOnly W:Studer	61	Technology	FloodedLeadAcid		-	Battery technology. This property must be changed only by the wizard and never by the user !	enum	R/W	7
411	2	R:Basic W:Expert	67	Adaptive SOC for backup undervoltage increment	15	%	[0, 100]	Used to try to recharge the battery when an undervoltage has been detected. "Current SOC for backup" (id 38) is set higher than the current SOC by a quantity set via this property. This function is disabled if "Adaptive SOC for backup" (id 33) is set to false or if this value is set to 0.	uint	R/W	-
413	1	R:Basic W:Expert	72	Periodical charge and discharge	true		-	Used to perform periodic charges (for example in applications where the soc for grid feeding is set lower than 100%) and periodic discharges (for example in backup applications). To be able to use this function, "SOC for grid feeding" (value 2) must be activated in "Conditions for energy management" (id 28). Configuration is done via "Delay before periodical charge" (id 73), "Delay before periodical discharge" (id 98), "Time before reseting periodical (dis)charge" (id 74), "Periodical charge SOC" (id 95), "Periodical discharge SOC" (id 96) and "Use AC input during periodical (dis)charge transitions" (id 97). How it works: If the function is activated and if the SOC has not reached "Periodical charge SOC" (id 95) after "Delay before periodical charge" (id 73) seconds, "Periodical charge SOC" (id 95) is used instead of "SOC for grid feeding" (id 31). Periodic charge ends when the SOC equals "Periodical charge SOC" (id 95) for "Time before reseting periodical (dis)charge" (id 74) seconds. The working principle of the periodical discharge is the same but the properties used are "Periodical discharge SOC" (id 96) and "Delay before periodical discharge" (id 98). The use or not of the AC input during the transition from the normal operation to the periodical charge or discharge is done via "Use AC input during periodical (dis)charge transitions" (id 97). Please refer to the manual for more informations.	bool	R/W	-
414	2	R:Basic W:Expert	73	Delay before periodical charge	604800	s	[3600, 31536000]	See explanation of "Periodical charge and discharge" (id 72).	uint	R/W	-
416	2	R:Basic W:Expert	74	Time before reseting periodical (dis)charge	600	s	[0, 86400]	See explanation of "Periodical charge and discharge" (id 72).	uint	R/W	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
418	2	R:Basic W:Expert	75	SOC for end of discharge	0	%	-	SOC under which "SOC < SOC for end of discharge" (value 262144) is set if "SOC for end of discharge" (value 32) is activated. The error is reset if the SOC is greather than or equal to the SOC for backup.	float	R/W	-
420	2	R:Basic W:Expert	77	Command input index	0		[0,10]	Index of the command input interface. (0 value disable remote operation).	int	R/W	-
422	1	R:Basic W:Expert	84	Ignore BMS recommended currents	false		-	Used only with communicating batteries. If true, "BMS recommended charging current" (id 87) and "BMS recommended discharging current" (id 88) received by the BMS are ignored.	bool	R/W	-
423	2	R:Basic W:Expert	85	BMS max charging current	0	A	-	Always 0 with non communicating batteries. Max charging current received by the BMS.	float	R	-
425	2	R:Basic W:Expert	86	BMS max discharging current	0	A	-	Always 0 with non communicating batteries. Max discharging current received by the BMS.	float	R	-
427	2	R:Basic W:Expert	87	BMS recommended charging current	0	A	-	Always 0 with non communicating batteries. Recommended charging current received by the BMS. This property is ignored if "Ignore BMS recommended currents" (id 84) is set to true.	float	R	-
429	2	R:Basic W:Expert	88	BMS recommended discharging current	0	A	-	Always 0 with non communicating batteries. Recommended discharging current received by the BMS. This property is ignored if "Ignore BMS recommended currents" (id 84) is set to true.	float	R	-
431	2	R:Basic W:Expert	89	BMS communication loss timeout	0	s	[2, 30]	Useful only with communicating battery. Error : "Communication lost" (value 16384) is set if the elapsed time between two consecutives frames received is greather than or equal to this value.	uint	R/W	-
433	2	ViewOnly	90	Charging recovery mode	Disabled		-	Indicates the charging recovery mode state.	enum	R	9
435	1	Basic	91	Stop charging recovery mode	-		-	Stop charging recovery mode.	signal	W	-
437	2	R:Basic W:Expert	93	Current SOC for end of charge	0	%	-	Indicate the current value of the SOC for end of charge.	float	R	-
439	2	R:Basic W:Expert	94	Current SOC for grid feeding	0	%	-	Indicate the current value of the SOC for grid feeding.	float	R	-
441	2	R:Basic W:Expert	95	Periodical charge SOC	100	%	[0, 100]	See explanation of "Periodical charge and discharge" (id 72). Note that this value must be greather than "SOC for grid feeding" (id 31) to perform a periodical charge.	float	R/W	-
443	2	R:Basic W:Expert	96	Periodical discharge SOC	100	%	[0, 100]	See explanation of "Periodical charge and discharge" (id 72). Note that this value must be lower than "SOC for grid feeding" (id 31) to perform a periodical discharge.	float	R/W	-
445	2	R:Basic W:Expert	97	Use AC input during periodical (dis)charge transitions	AcSourceNotUsedDuringPeriodicalChargeAndDischargeTransitions		-	Used to select if AC input is used during periodical charge and periodical discharge transitions.	bitfield	R/W	10
447	2	R:Basic W:Expert	98	Delay before periodical discharge	7776000	s	[3600, 31536000]	See explanation of "Periodical charge and discharge" (id 72).	uint	R/W	-
449	2	R:Basic W:Expert	103	Command input function	ChargingCurrentLimitReducedByCmdEntry		-	Function associated with the command input.	enum	R/W	11

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
451	2	R:Basic W:Expert	104	Value used when command input is activated	0		-	Value used when command input is activated. The unit depends on the associated function of the command input and is indicated in the description of "Command input function" (id 103).	float	R/W	-
453	2	R:Basic W:Expert	105	Current SOC for end of discharge	0	%	-	Indicate the current value of the SOC for end of discharge.	float	R	-
455	2	R:Basic W:Expert	106	Abnormal voltage level	0	V	-	Useful only if at least two devices are connected to the battery. Set the voltage level at which "Abnormal measured voltage" (value 524288) is raised. The error is set if the highest battery voltage measured by one device - the lowest battery voltage measured by another device is greather than this value for 5s. If a current is flowing, the level is automatically adapted to take into account the voltage drop on the cables.	float	R/W	-
457	2	R:Basic W:Expert	107	Abnormal temperature level	5	°C	[1, 50]	Useful only with non communicating battery and if at least two devices are measuring the battery temperature. Set the temperature level at which "Abnormal measured temperature" (value 65536) is raised. The warning is set if the highest battery temperature measured by one device - the lowest battery temperature measured by another device is greather than this value.	float	R/W	-
459	1	R:Basic W:Expert	108	Ignore BMS charge request	false		-	Used only with communicating batteries. If true, the charge request received by the BMS is ignored.	bool	R/W	-
460	2	R:Basic W:Expert	109	High limit level	0		-	High limit level sent to the power flow dispatcher.	uint	R/W	-

List of items of Enum 0 (Status)

Value	Label	Description
0	No warning(s) or error(s)	No warning(s) or error(s).
1	In warning	The battery is in warning.
2	In error restarting	The battery is temporarily maintained in error and will restart automatically once the error(s) leaved.
3	In error halted	The battery is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).

List of items of Enum 1 (Errors)

Value	Label	Description
0	End of error	The battery has no errors.
1	Overvoltage	An error overvoltage has been detected.
2	Undervoltage	An error undervoltage has been detected.
4	Charging overcurrent	An error charging overcurrent has been detected.
8	Discharging overcurrent	An error discharging overcurrent has been detected.
16	Charging overtemperature	An error charging overtemperature has been detected.
32	Discharging overtemperature	An error discharging overtemperature has been detected.
64	Charging undertemperature	An error charging undertemperature has been detected.
128	Discharging undertemperature	An error discharging undertemperature has been detected.
256	Contactor	The battery internal contactor is damaged. Please contact the battery manufacturer for more details.
512	Short circuit	The BMS has detected a short circuit error.
1024	BMS internal	The BMS has an internal error. Please contact the battery manufacturer for more details.
2048	Cell imbalance	A voltage imbalance error between cells has been detected.
4096	SMA general	An SMA general error has been received. Please contact the battery manufacturer for more details.

Value	Label	Description
8192	Battery damaged	The BMS has detected that the battery is damaged. Please contact the battery manufacturer for more details.
16384	Communication lost	The communication with the BMS has been lost. Please check that the communication cable is correctly connected.
32768	Emergency stop	An emergency stop has been received by the BMS.
65536	Charging not allowed	Charging not allowed has been sent by the communicating battery.
131072	Discharging not allowed	Discharging not allowed has been sent by the communicating battery.
262144	SOC < SOC for end of discharge	The SOC is lower than the SOC for end of discharge. The error is reset if the SOC is greather than or equal to the SOC for backup.
524288	Abnormal measured voltage	An abnormal difference between the measured voltage of the devices has been detected. Please check the tightening of the cables between the devices and the battery.

List of items of Enum 2 (Warnings)

Value	Label	Description
0	End of warning	The battery has no warnings.
1	Overvoltage	A warning overvoltage has been detected.
2	Undervoltage	A warning undervoltage has been detected.
4	Charging overcurrent	A warning charging overcurrent has been detected.
8	Discharging overcurrent	A warning discharging overcurrent has been detected.
16	Charging overtemperature	A warning charging overtemperature has been detected.
32	Discharging overtemperature	A warning discharging overtemperature has been detected.
64	Charging undertemperature	A warning charging undertemperature has been detected.
128	Discharging undertemperature	A warning discharging undertemperature has been detected.
256	Contactor	The battery internal contactor might be damaged. Please contact the battery manufacturer for more details.
512	Short circuit	The BMS has detected a short circuit warning.
1024	BMS internal	The BMS has an internal warning. Please contact the battery manufacturer for more details.
2048	Cell imbalance	A voltage imbalance warning between cells has been detected.
4096	SMA general	An SMA general warning has been received. Please contact the battery manufacturer for more details.
8192	Charging recommended	Charging the battery is recommended.
16384	Discharging recommended	Discharging the battery is recommended.
32768	Full charging recommended	Charging the battery fully is recommended.
65536	Abnormal measured temperature	An abnormal difference between the measured temperature of the devices has been detected. Please check the temperature of the battery modules on which the sensors are placed.
131072	Soon disconnected	The battery will be soon disconnected.

List of items of Enum 3 (ComInterface)

Value	Label	Description
0	Not communicating	The battery is not communicating.
1	CAN	The battery is communicating via CAN.
2	RS-485	The battery is communicating via RS-485.

List of items of Enum 4 (CanProtocol)

Value	Label	Description
0	Studer	The CAN protocol implemented with this battery is the Studer protocol.
1	SMA	The CAN protocol implemented with this battery is the SMA protocol.

List of items of Enum 5 (Rs485Protocol)

Value	Label	Description
0	To implement	To implement.

List of items of Enum 6 (ManufacturerName)

Value	Label	Description
26	Aliant Battery	The manufacturer is : Aliant Battery.
16	Archimede Energia	The manufacturer is : Archimede Energia.
0	AutarcTech	The manufacturer is : AutarcTech.
1	BlueNova	The manufacturer is : BlueNova.
2	BMZ	The manufacturer is : BMZ.

Value	Label	Description
3	BYD	The manufacturer is : BYD.
4	Cegasa	The manufacturer is : Cegasa.
5	Cosun	The manufacturer is : Cosun.
6	Discover	The manufacturer is : Discover.
17	DLG	The manufacturer is : DLG.
7	FreedomWon	The manufacturer is : FreedomWon.
18	GS HUB	The manufacturer is : GS HUB.
30	Hanchu ESS	The manufacturer is : Hanchu ESS.
8	IPS	The manufacturer is : IPS.
19	Midac	The manufacturer is : Midac.
24	Modual AG	The manufacturer is : Modual AG.
9	Pallas	The manufacturer is : Pallas.
10	PowerTech	The manufacturer is : PowerTech.
11	Pylontech	The manufacturer is : Pylontech.
31	Ritar	The manufacturer is : Ritar.
20	SolarMD	The manufacturer is : SolarMD.
12	Soltaro	The manufacturer is : Soltaro.
21	Sunlight	The manufacturer is : Sunlight.
13	SuperB (with BCI)	The manufacturer is : SuperB with battery communication interface (BCI).
14	TesVolt	The manufacturer is : TesVolt.
29	UFLEX	The manufacturer is : UFLEX.
25	UZ Energy	The manufacturer is : UZ Energy.
23	Vision mechatronics	The manufacturer is : Vision mechatronics.
15	Weco	The manufacturer is : Weco.
27	Zetara Battery	The manufacturer is : Zetara.
22	Zruipower	The manufacturer is : Zruipower.
28	ZYC Energy	The manufacturer is : ZYC Energy.
1000	Orion BMS	The BMS manufacturer is : Orion BMS.
1001	REC BMS (model Q BMS 16S)	The BMS manufacturer is : REC.
800	Studer protocol 250kbps	Generic 250kbps Studer protocol used for tests.
801	Studer protocol 500kbps	Generic 500kbps Studer protocol used for tests.

List of items of Enum 7 (Technology)

Value	Label	Description
0	Flooded Lead Acid	The technology is : Flooded Lead Acid.
1	Absorbent Glass Mat (AGM)	The technology is : Absorbent Glass Mat (AGM).
2	Gel	The technology is : Gel.

List of items of Enum 8 (ManagementOfEnergy)

Value	Label	Description
0	All conditions	All conditions are activated.
1	SOC for end of charge	SOC for end of charge condition is activated. Note that "SOC for grid feeding" (value 2) must be activated to activate this condition.
2	SOC for grid feeding	SOC for grid feeding condition is activated.
4	SOC for backup	SOC for backup condition is activated.
32	SOC for end of discharge	SOC for end of discharge condition is activated. Note that "SOC for backup" (value 4) must be activated to activate this condition.
8	Voltage for grid feeding	Voltage for grid feeding condition is activated.
16	Voltage for backup	Voltage for backup condition is activated.

List of items of Enum 9 (ChargingRecoveryMode)

Value	Label	Description
0	Disabled	The charging recovery mode is disabled and not activatable.
1	Disabled and activatable	The charging recovery mode is disabled and can be enabled either if the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0). Before activation, disconnect all the loads and ensure that the grid or genset is ready to charge the battery!

Value	Label	Description
2	Enabled	The charging recovery mode is enabled. The inverters are allowed to run but only for charging the battery. The soc for backup is forced to 100%. The charging recovery mode is stopped once the battery has been recovered properly, if the signal "Stop charging recovery mode" (id 91) is sent, if the charge is prohibited by a battery warning/error or if the charging of the battery has failed (discharge current >= C/10 during 2s, discharge current >= 0 during 120s).

List of items of Enum 10 (UseAcSourceDuringPeriodicalChargeOrDischargeTransitions)

Value	Label	Description
0	No	AC input is not used during periodical charge and periodical discharge transitions.
1	When entering periodical charge	AC input is used to charge the battery when periodical charge starts.
2	When leaving periodical charge	AC input is used to discharge the battery when periodical charge is over.
4	When entering periodical discharge	AC input is used to discharge the battery when periodical discharge starts.
8	When leaving periodical discharge	AC input is used to charge the battery when periodical discharge is over.

List of items of Enum 11 (CmdEntryFunction)

Value	Label	Description
0	Reduce charging current limit	Reduce the charging current limit to the value of "Value used when command input is activated" (id 104) in [A] when the command input is activated.
1	Reduce discharging current limit	Reduce the discharging current limit to the value of "Value used when command input is activated" (id 104) in [A] when the command input is activated.
2	SOC for end of charge	Set the SOC for end of charge to the value of "Value used when command input is activated" (id 104) in [%] when the command input is activated.
3	SOC for grid feeding	Set the SOC for grid feeding to the value of "Value used when command input is activated" (id 104) in [%] when the command input is activated.
4	SOC for backup	Set the SOC for backup to the value of "Value used when command input is activated" (id 104) in [%] when the command input is activated.
5	SOC for end of discharge	Set the SOC for end of discharge to the value of "Value used when command input is activated" (id 104) in [%] when the command input is activated.
6	Voltage for grid feeding	Set the voltage for grid feeding to the value of "Value used when command input is activated" (id 104) in [V] when the command input is activated.
7	Voltage for backup	Set the voltage for backup to the value of "Value used when command input is activated" (id 104) in [V] when the command input is activated.
8	Prohibit discharge	Set the discharging current limit to 0A and force the low limit level to LimitsHighPriority.

battery cycle

Group : Battery
Modbus device address : 2 to 6
*External ID : 1.x.3.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
600	1	Expert	0	Request floating	-		-	Forces the battery cycle to go in "Floating phase" (value 2).	signal	W	-
601	1	Expert	1	Request reduced floating	-		-	Forces the battery cycle to go in "Reduced floating phase" (value 1). This signal has no effect if "Reduced Floating" (id 5) is not enabled.	signal	W	-
602	1	Expert	2	Request absorption	-		-	Forces the battery cycle to go in "Absorption phase" (value 4). This signal has no effect if "Absorption" (id 12) is not enabled.	signal	W	-
603	1	Expert	3	Request equalization	-		-	Forces the battery cycle to go in "Equalization phase" (value 5). This signal has no effect if "Equalization" (id 22) is not enabled.	signal	W	-
604	2	R:Basic W:Expert	4	Floating voltage	0	V	-	Battery target voltage in "Floating phase" (value 2).	float	R/W	-
606	1	Expert	5	Reduced Floating	false		-	Enables "Reduced floating phase" (value 1).	bool	R/W	-
607	2	Expert	6	Reduced floating voltage	0	V	-	Battery target voltage in "Reduced floating phase" (value 1).	float	R/W	-
609	2	Expert	7	Time in floating before going in reduced floating	0	s	-	Time spent in "Floating phase" (value 2) before going in "Reduced floating phase" (value 1). "Reduced Floating" (id 5) must be enabled for the transition to happen.	uint	R/W	-
611	1	Expert	8	Periodical absorption	false		-	Enables "Periodical absorption phase" (value 3). This property has no effect if "Reduced Floating" (id 5) is not enabled.	bool	R/W	-
612	2	Expert	9	Periodical absorption voltage	0	V	-	Battery target voltage in "Periodical absorption phase" (value 3).	float	R/W	-
614	2	Expert	10	Periodical absorption max duration	0	s	-	Sets "Periodical absorption phase" (value 3) max duration. Note that the duration can be lower than this value if "Absorption terminated by current" (id 19) is enabled or the duration can be higher than this value if the voltage is not maintained at "Periodical absorption voltage" (id 9).	uint	R/W	-
616	2	Expert	11	Time in reduced floating before going in periodical absorption	0	s	-	Time spent in "Reduced floating phase" (value 1) before going in "Periodical absorption phase" (value 3). "Periodical absorption" (id 8) must be enabled for the transition to happen.	uint	R/W	-
618	1	R:Basic W:Expert	12	Absorption	false		-	Enables "Absorption phase" (value 4).	bool	R/W	-
619	2	Expert	13	Absorption conditions	AbsorptionTriggeredByAllConditions		-	Selects condition(s) to go in "Absorption phase" (value 4). These conditions have no effect if "Absorption" (id 12) is not enabled.	bitfield	R/W	3
621	2	R:Basic W:Expert	14	Absorption voltage	0	V	-	Battery target voltage in "Absorption phase" (value 4).	float	R/W	-
623	2	Expert	15	Ahs discharged for asking absorption	0	Ah	-	"Absorption phase" (value 4) is started if the amp hours discharged since last absorption or periodical absorption is above this value, "Absorption triggered by Ahs" (value 1) in "Absorption conditions" (id 13) is set and "Absorption" (id 12) is enabled.	float	R/W	-
625	2	Expert	16	Voltage for asking absorption	0	V	-	"Absorption phase" (value 4) is started if the voltage is lower than this value for a duration greater than "Voltage duration before asking absorption" (id 17), "Absorption triggered by voltage" (value 4) in "Absorption conditions" (id 13) is set and "Absorption" (id 12) is enabled.	float	R/W	-
627	2	Expert	17	Voltage duration before asking absorption	0	s	-	"Absorption phase" (value 4) is started if the voltage is lower than "Voltage for asking absorption" (id 16) for a duration greater than this value, "Absorption triggered by voltage" (value 4) in "Absorption conditions" (id 13) is set and "Absorption" (id 12) is enabled.	uint	R/W	-
629	2	Expert	18	Absorption max duration	0	s	-	Sets "Absorption phase" (value 4) max duration. Note that the duration can be lower than this value if "Absorption terminated by current" (id 19) is enabled or the duration can be higher than this value if the voltage is not maintained at "Absorption voltage" (id 14).	uint	R/W	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
631	1	Expert	19	Absorption terminated by current	false		-	Enables the function allowing to stop "Absorption phase" (value 4) or "Periodical absorption phase" (value 3) based on the battery charging current.	bool	R/W	-
632	2	Expert	20	Current to terminate absorption	0	A	-	"Absorption phase" (value 4) or "Periodical absorption phase" (value 3) are stopped if the "Absorption terminated by current" (id 19) is enabled and if the battery charging current is lower than this value at a battery voltage equal to "Absorption voltage" (id 14) in "Absorption phase" (value 4) or "Periodical absorption voltage" (id 9) in "Periodical absorption phase" (value 3).	float	R/W	-
634	2	Expert	21	Minimum time between absorptions	0	s	-	"Absorption phase" (value 4) can't be automatically started if the time since the end of the previous absorption or periodical absorption is smaller than this value. Note that this minimum waiting time is ignored if a signal is sent via "Request absorption" (id 2).	uint	R/W	-
636	1	R:Basic W:Expert	22	Equalization	false		-	Enables "Equalization phase" (value 5).	bool	R/W	-
637	2	Expert	23	Equalization conditions	EqualizationTriggeredByAllConditions		-	Selects condition(s) to go in "Equalization phase" (value 5). These conditions have no effect if "Equalization" (id 22) is not enabled.	bitfield	R/W	4
639	2	R:Basic W:Expert	24	Equalization voltage	0	V	-	Battery target voltage in "Equalization phase" (value 5).	float	R/W	-
641	2	Expert	25	Time for asking equalization	0	s	-	"Equalization phase" (value 5) is started if the time since the last equalization is above this value, "Equalization triggered by period" (value 1) in "Equalization conditions" (id 23) is set and "Equalization" (id 22) is enabled.	uint	R/W	-
643	2	Expert	26	Ahs discharged for asking equalization	0	Ah	-	"Equalization phase" (value 5) is started if the amp hours discharged since the last equalization is above this value, "Equalization triggered by Ahs" (value 2) in "Equalization conditions" (id 23) is set and "Equalization" (id 22) is enabled.	float	R/W	-
645	2	Expert	27	Equalization duration	0	s	-	Sets "Equalization phase" (value 5) duration. Note that the duration can be higher than this value if the voltage is not maintained at "Equalization voltage" (id 24).	uint	R/W	-
647	1	Expert	28	Equalization after absorption	false		-	Sets if "Equalization phase" (value 5) must be done after "Absorption phase" (value 4).	bool	R/W	-
648	2	Expert	29	Equalization current if equalization after absorption	0	A	-	Transition from "Absorption phase" (value 4) to "Equalization phase" (value 5) if the battery charging current is lower than this value at a battery voltage equal to "Equalization voltage" (id 24), "Equalization after absorption" (id 28) is set to true, at least one condition in "Equalization conditions" (id 23) is true and "Equalization" (id 22) is enabled.	float	R/W	-
650	2	ViewOnly	30	Phase	Floating		-	Actual phase.	enum	R	0
652	2	Expert	31	Time spent in actual phase	0	s	-	Time spent in the actual phase. Note that the time is slow down if the battery voltage is lower than the target voltage in "Absorption phase" (value 4), "Periodical absorption phase" (value 3) or "Equalization phase" (value 5).	uint	R	-
654	2	Expert	32	Transition	NoTransition		-	Used to indicate from which phase to which phase the battery cycle has jumped.	enum	R	1
656	2	Expert	33	Transition reasons	NoTransitionReasons		-	Used to indicate the reason(s) of the transition.	bitfield	R	2
658	2	Expert	34	Remaining time before next absorption allowed	0	s	-	Stores the remaining time before "Absorption phase" (value 4) can be triggered by the condition(s) in "Absorption conditions" (id 13). The value is infinite if "Absorption" (id 12) is disabled. Note that "Absorption phase" (value 4) can be manually requested via "Request absorption" (id 2) even if this time is not 0.	uint	R	-
660	2	Expert	35	Remaining Ahs discharged before absorption triggered	0	Ah	-	Stores the remaining amp hours discharged before "Absorption phase" (value 4) is triggered. The value is infinite if "Absorption" (id 12) is disabled or "Absorption triggered by Ahs" (value 1) is not set.	float	R	-
662	2	Expert	36	Remaining time before absorption triggered by low SOC	0	s	-	Stores the remaining time before "Absorption phase" (value 4) is triggered by low SOC. The value is infinite if "Absorption" (id 12) is disabled, "Absorption triggered by SOC" (value 2) is not set or the SOC is greather than 80%.	uint	R	-
664	2	Expert	37	Remaining time before absorption triggered by voltage	0	s	-	Stores the remaining time before "Absorption phase" (value 4) is triggered by voltage. The value is infinite if "Absorption" (id 12) is disabled or "Absorption triggered by voltage" (value 4) is not set.	uint	R	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
666	2	Expert	38	Remaining time before equalization triggered by time period	0	s	-	Stores the remaining time before "Equalization phase" (value 5) is triggered by time period. The value is infinite if "Equalization" (id 22) is disabled or "Equalization triggered by period" (value 1) is not set.	uint	R	-
668	2	Expert	39	Remaining Ahs discharged before equalization triggered	0	Ah	-	Stores the remaining amp hours discharged before "Equalization phase" (value 5) is triggered. The value is infinite if "Equalization" (id 22) is disabled or "Equalization triggered by Ahs" (value 2) is not set.	float	R	-
670	2	Expert	40	Remaining time before equalization triggered by low SOC	0	s	-	Stores the remaining time before "Equalization phase" (value 5) is triggered by low SOC. The value is infinite if "Equalization" (id 22) is disabled, "Equalization triggered by SOC" (value 4) is not set or the SOC is greather than 80%.	uint	R	-

List of items of Enum 0 (Phase)

Value	Label	Description
0	Bulk phase	Bulk phase.
1	Reduced floating phase	Reduced floating phase.
2	Floating phase	Floating phase.
3	Periodical absorption phase	Periodical absorption phase.
4	Absorption phase	Absorption phase.
5	Equalization phase	Equalization phase.

List of items of Enum 1 (Transition)

Value	Label	Description
0	No transition	For now, no transition has been detected.
1	Bulk to reduced floating	Transition from bulk to reduced floating.
2	Bulk to floating	Transition from bulk to floating.
4	Bulk to absorption	Transition from bulk to absorption.
5	Bulk to equalization	Transition from bulk to equalization.
8	Reduced floating to bulk	Transition from reduced floating to bulk.
10	Reduced floating to floating	Transition from reduced floating to floating.
11	Reduced floating to periodical absorption	Transition from reduced floating to periodical absorption.
16	Floating to bulk	Transition from floating to bulk.
17	Floating to reduced floating	Transition from floating to reduced floating.
24	Periodical absorption to bulk	Transition from periodical absorption to bulk.
25	Periodical absorption to reduced floating	Transition from periodical absorption to reduced floating.
26	Periodical absorption to floating	Transition from periodical absorption to floating.
33	Absorption to reduced floating	Transition from absorption to reduced floating.
34	Absorption to floating	Transition from absorption to floating.
37	Absorption to equalization	Transition from absorption to equalization.
41	Equalization to reduced floating	Transition from equalization to reduced floating.
42	Equalization to floating	Transition from equalization to floating.
44	Equalization to absorption	Transition from equalization to absorption.

List of items of Enum 2 (TransitionReasons)

Value	Label	Description
0	No transition reasons	No transition reasons.
1	Floating requested	The reason of the transition is : floating requested.
2	Reduced floating requested	The reason of the transition is : reduced floating requested.
4	Absorption requested	The reason of the transition is : absorption requested.
8	Equalization requested	The reason of the transition is : equalization requested.
16	Reduced floating disabled	The reason of the transition is : reduced floating disabled.

Value	Label	Description
32	Periodical absorption disabled	The reason of the transition is : periodical absorption disabled.
64	Period for periodical absorption reached	The reason of the transition is : period for periodical absorption reached.
128	Waiting duration in floating reached	The reason of the transition is : waiting duration in floating reached.
256	First absorption after reset	The reason of the transition is : first absorption after reset.
512	Absorption Ahs discharged reached	The reason of the transition is : absorption Ahs discharged reached.
1024	Absorption low SOC reached	The reason of the transition is : absorption low SOC reached.
2048	Absorption disabled	The reason of the transition is : absorption disabled.
4096	Absorption max. duration reached	The reason of the transition is : absorption max. duration reached.
8192	Periodical absorption max. duration reached	The reason of the transition is : periodical absorption max. duration reached.
16384	Absorption terminated by current	The reason of the transition is : absorption terminated by current.
32768	Current lower than equalization current	The reason of the transition is : current lower than equalization current.
65536	Equalization time period reached	The reason of the transition is : equalization time period reached.
131072	Equalization Ahs discharged reached	The reason of the transition is : equalization Ahs discharged reached.
262144	Equalization low SOC reached	The reason of the transition is : equalization low SOC reached.
524288	Equalization disabled	The reason of the transition is : equalization disabled.
1048576	Equalization duration reached	The reason of the transition is : equalization duration reached.
2097152	Absorption and Equalization not desired anymore	The reason of the transition is : absorption and Equalization not desired anymore.
4194304	Absorption low voltage duration reached	The reason of the transition is : absorption low voltage duration reached.

List of items of Enum 3 (AbsorptionConditions)

Value	Label	Description
0	Absorption triggered by all conditions	"Absorption phase" (value 4) is triggered by all the following conditions.
1	Absorption triggered by Ahs	"Absorption phase" (value 4) is triggered if the amp hours discharged since the last absorption or periodical absorption are greather than "Ahs discharged for asking absorption" (id 15). Note that the amp hours discharged are incremented only if the discharging current is greather than C/100.
2	Absorption triggered by SOC	"Absorption phase" (value 4) is triggered based on the SOC algorithm (look at the manual for more informations). The algorithm is reset at the end of "Absorption phase" (value 4) or "Periodical absorption phase" (value 3).
4	Absorption triggered by voltage	"Absorption phase" (value 4) is triggered if the voltage is lower than "Voltage for asking absorption" (id 16) for a duration greater than "Voltage duration before asking absorption" (id 17).

List of items of Enum 4 (EqualizationConditions)

Value	Label	Description
0	Equalization triggered by all conditions	"Equalization phase" (value 5) is triggered by all the following conditions.
1	Equalization triggered by period	"Equalization phase" (value 5) is triggered if the time since last equalization is greather than "Time for asking equalization" (id 25).
2	Equalization triggered by Ahs	"Equalization phase" (value 5) is triggered if the amp hours discharged since the last equalization are greather than "Ahs discharged for asking equalization" (id 26). Note that the amp hours discharged are incremented only if the discharging current is greather than C/100.
4	Equalization triggered by SOC	"Equalization phase" (value 5) is triggered based on the SOC algorithm (look at the manual for more informations). The algorithm is reset at the end of "Equalization phase" (value 5).

battery protection

Group : Battery
Modbus device address : 2 to 6
*External ID : 1.x.4.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
900	2	R:Basic W:Expert	0	Undervoltage at rest	0	V	-	If the battery voltage is below this value when no current is flowing, warning : "Undervoltage" (value 2) is raised and if the warning is maintained for more than "Undervoltage delay before error" (id 2) seconds, error : "Undervoltage" (value 2) is raised.	float	R/W	-
902	2	Expert	1	Undervoltage at C/5	0	V	-	If the battery voltage is below this value when C/5 amp is flowing, warning : "Undervoltage" (value 2) is raised and if the warning is maintained for more than "Undervoltage delay before error" (id 2) seconds, error : "Undervoltage" (value 2) is raised.	float	R/W	-
904	2	R:Basic W:Expert	2	Undervoltage delay before error	0	s	[0, 3600]	Error : "Undervoltage" (value 2) is raised once the duration with warning : "Undervoltage" (value 2) reaches this value.	uint	R/W	-
906	2	Expert	3	Time for clearing UV cnt	0	s	[0, 3000]	The "Undervoltage cnt" (id 20) is reset once the time since the first undervoltage occured is greather than this value and if automatic restart is not prohibited.	uint	R/W	-
908	2	Expert	4	UV nbr for perm. stop	1		[1, 20]	Automatic restart is prohibited if the "Undervoltage cnt" (id 20) reaches this value.	uint	R/W	-
910	2	Expert	5	Time for clearing critical UV cnt	0	s	[0, 3000]	The "Critical undervoltage cnt" (id 21) is reset once the time since the first critical undervoltage occured is greather than this value and if automatic restart is not prohibited.	uint	R/W	-
912	2	Expert	6	Critical UV nbr for perm. stop	1		[1, 20]	Automatic restart is prohibited if the "Critical undervoltage cnt" (id 21) reaches this value.	uint	R/W	-
914	2	Expert	7	Voltage for clearing undervoltage	0	V	-	If the battery voltage is above this value, warning : "Undervoltage" (value 2) is cleared and if an automatic restart is allowed, error : "Undervoltage" (value 2) is cleared. Automatic restart is allowed if "Undervoltage cnt" (id 20) is smaller than "UV nbr for perm. stop" (id 4) and "Critical undervoltage cnt" (id 21) is smaller than "Critical UV nbr for perm. stop" (id 6).	float	R/W	-
916	1	R:Basic W:Expert	8	BLO	false		-	Enables the BLO (Battery Lifetime Optimizer) algorithm.	bool	R/W	-
917	2	Expert	9	BLO increment step	0	V	-	At each shut down by undervoltage, the undervoltage threshold is inreased by this value.	float	R/W	-
919	2	Expert	10	BLO max voltage	0	V	-	The undervoltage threshold is increased at each shut down by undervoltage, but never higher than this value.	float	R/W	-
921	2	R:Basic W:Expert	11	BLO reset voltage	0	V	-	The battery undervoltage threshold returns to its original value if the battery voltage reaches this value.	float	R/W	-
923	2	R:Basic W:Expert	12	Overvoltage	0	V	-	If the battery voltage is above this value, warning : "Overvoltage" (value 1) is raised and if the warning is maintained for more than 5s, error : "Overvoltage" (value 1) is raised.	float	R/W	-
925	2	Expert	13	High temp for warning	0	°C	[-100, 100]	If the battery temperature is above this value, warnings : "Charging overtemperature" (value 16) and "Discharging overtemperature" (value 32) are raised and a current derating is applied.	float	R/W	-
927	2	Expert	14	High temp for error	0	°C	[-100, 100]	If the battery temperature is above this value, errors "Charging overtemperature" (value 16) and "Discharging overtemperature" (value 32) are raised and no current flow is allowed.	float	R/W	-
929	2	Expert	15	Low temp for warning	0	°C	[-100, 100]	If the battery temperature is below this value, warnings : "Charging undertemperature" (value 64) and "Discharging undertemperature" (value 128) are raised and a current derating is applied.	float	R/W	-
931	2	Expert	16	Low temp for error	0	°C	[-100, 100]	If the battery temperature is below this value, errors : "Charging undertemperature" (value 64) and "Discharging undertemperature" (value 128) are raised and no current flow is allowed.	float	R/W	-
933	2	Expert	17	Overcurrent	0	A	[0, 1e9]	If the battery charging/discharging current is above this value, warning : "Charging overcurrent" (value 4)/"Discharging overcurrent" (value 8) is raised and if the warning is maintained for more than 2s, error : "Charging overcurrent" (value 4)/"Discharging overcurrent" (value 8) is raised.	float	R/W	-
935	2	Expert	18	Undervoltage at rest with BLO	0	V	-	The undervoltage threshold when no current is flowing. Note that this value can be different from "Undervoltage at rest" (id 0) when the BLO is activated.	float	R	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
937	2	Expert	19	Undervoltage at C/5 with BLO	0	V	-	The undervoltage threshold when C/5 amp is flowing. Note that this value can be different from "Undervoltage at C/5" (id 1) when the BLO is activated.	float	R	-
939	2	Expert	20	Undervoltage cnt	0		-	Undervoltage counter value. The counter is reset if "UV nbr for perm. stop" (id 4) is not reached and if the time since the first undervoltage occured is greather than "Time for clearing UV cnt" (id 3).	uint	R	-
941	2	Expert	21	Critical undervoltage cnt	0		-	Critical undervoltage counter value. The counter is reset if "Critical UV nbr for perm. stop" (id 6) is not reached and if the time since the first critical undervoltage occured is greather than "Time for clearing critical UV cnt" (id 5).	uint	R	-
943	2	R:Basic W:Expert	22	Overvoltage mode	Enhanced		-	Used to select the overvoltage algorithm. Note that regardless of the selected algorithm, the battery will enter a halted error state if more than 3 overvoltages occur within 24 hours.	enum	R/W	0

List of items of Enum 0 (OverVoltageAlgorithm)

Value	Label	Description
0	Enhanced	With this enhanced algorithm, the allowed overvoltage duration before generating an error automatically adjusts based on the current target voltage and the overvoltage level. The higher the overvoltage level, the shorter the duration before an error occurs.
1	Basic	Basic overvoltage detection algorithm where the detection threshold can be set using "Overvoltage" (id 12).

SOC estimator

Group : Battery
Modbus device address : 2 to 6
*External ID : 1.x.5.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1226	2	Expert	13	Peukert's exponent	0		[1, 2]	Used to take into account the fact that the capacity goes down when the discharge current increases.	float	R/W	-
1228	2	Expert	14	Self-discharge rate	0	%Cnom/month	[0, 100]	A battery gets discharged over time even when no current is consumed. This property allows to take this phenomenon into account.	float	R/W	-
1230	1	Expert	15	End of charge synchronization	false		-	This property activates the function of synchronization at 100 % of SOC under certain conditions of end of charge. The synchronization occurs if the voltage is above "End of charge voltage level" (id 16) and if the current is below "End of charge current level" (id 17) and this during a period defined by "Minimum time before end of charge" (id 18).	bool	R/W	-
1231	2	Expert	16	End of charge voltage level	0	V	-	See explanation of "End of charge synchronization" (id 15).	float	R/W	-
1233	2	Expert	17	End of charge current level	0	A	-	See explanation of "End of charge synchronization" (id 15).	float	R/W	-
1235	2	Expert	18	Minimum time before end of charge	0	s	[1 604800]	See explanation of "End of charge synchronization" (id 15).	uint	R/W	-
1237	1	Expert	19	Reset SOC	-		-	the SOC is reset to the value "Desired SOC value" (id 20) if this signal is sent.	signal	W	-
1238	2	Expert	20	Desired SOC value	100	%	[0, 100]	Value at which the SOC is reset if the signal "Reset SOC" (id 19) is sent.	float	R/W	-
1240	1	Expert	21	Configured as simple counter	false		-	If true, the algorithm works as a simple coulomb counter. Note that "Self-discharge rate" (id 14) and "End of charge synchronization" (id 15) can also be used in this mode.	bool	R/W	-

3-phase measure

Group : AcSource
Modbus device address : 7 to 8
*External ID : 2.x.1.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
0	2	ViewOnly	0	Frequency	0	Hz	-	Frequency measured.	float	R	-
2	2	ViewOnly	4	Line voltage L1-L2	0	V	-	Line voltage L1-L2 measured.	float	R	-
4	2	ViewOnly	8	Line voltage L2-L3	0	V	-	Line voltage L2-L3 measured.	float	R	-
6	2	ViewOnly	12	Line voltage L3-L1	0	V	-	Line voltage L3-L1 measured.	float	R	-
8	2	ViewOnly	16	Total active power	0	W	-	Total active power measured.	float	R	-
10	2	ViewOnly	20	Total apparent power	0	VA	-	Total apparent power measured.	float	R	-
12	2	ViewOnly	24	Angle L2 relative to L1	0	degree	-	Angle L2 relative to L1 measured.	float	R	-
14	2	ViewOnly	25	Angle L3 relative to L1	0	degree	-	Angle L3 relative to L1 measured.	float	R	-
16	2	ViewOnly	26	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
18	2	ViewOnly	27	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
20	4	ViewOnly	28	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
24	4	ViewOnly	29	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
28	2	ViewOnly	30	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
30	2	ViewOnly	31	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
32	4	ViewOnly	32	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
36	4	ViewOnly	33	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-
40	2	ViewOnly	34	Day runtime	0	h	-	Day runtime measured.	float	R	-
42	2	ViewOnly	35	Total runtime	0	h	-	Total runtime measured.	float	R	-
44	2	ViewOnly	36	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
46	2	ViewOnly	37	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
48	2	ViewOnly	38	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
50	2	ViewOnly	39	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
52	2	ViewOnly	40	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
54	2	ViewOnly	41	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
56	2	ViewOnly	42	Produced active power	0	W	-	Produced active power measured.	float	R	-
58	2	ViewOnly	44	Consumed active power	0	W	-	Consumed active power measured.	float	R	-

measure L1

Group : AcSource
Modbus device address : 7 to 8
*External ID : 2.x.2.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
300	2	ViewOnly	0	Phase voltage	0	V	-	Phase voltage RMS measured.	float	R	-
302	2	ViewOnly	4	Current	0	A	-	Current RMS measured.	float	R	-
304	2	ViewOnly	8	Active power	0	W	-	Active power measured.	float	R	-
306	2	ViewOnly	12	Reactive power	0	VAR	-	Reactive power measured.	float	R	-
308	2	ViewOnly	16	Apparent power	0	VA	-	Apparent power measured.	float	R	-
310	2	ViewOnly	20	Power factor	0		-	Power factor measured.	float	R	-
312	2	ViewOnly	24	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
314	2	ViewOnly	25	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
316	2	ViewOnly	26	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
318	2	ViewOnly	27	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
320	2	ViewOnly	28	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
322	2	ViewOnly	29	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
328	2	ViewOnly	32	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
330	2	ViewOnly	33	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
332	4	ViewOnly	34	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
336	4	ViewOnly	35	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
340	2	ViewOnly	36	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
342	2	ViewOnly	37	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
344	4	ViewOnly	38	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
348	4	ViewOnly	39	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-

measure L2

Group : AcSource
Modbus device address : 7 to 8
*External ID : 2.x.3.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
600	2	ViewOnly	0	Phase voltage	0	V	-	Phase voltage RMS measured.	float	R	-
602	2	ViewOnly	4	Current	0	A	-	Current RMS measured.	float	R	-
604	2	ViewOnly	8	Active power	0	W	-	Active power measured.	float	R	-
606	2	ViewOnly	12	Reactive power	0	VAR	-	Reactive power measured.	float	R	-
608	2	ViewOnly	16	Apparent power	0	VA	-	Apparent power measured.	float	R	-
610	2	ViewOnly	20	Power factor	0		-	Power factor measured.	float	R	-
612	2	ViewOnly	24	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
614	2	ViewOnly	25	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
616	2	ViewOnly	26	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
618	2	ViewOnly	27	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
620	2	ViewOnly	28	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
622	2	ViewOnly	29	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
628	2	ViewOnly	32	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
630	2	ViewOnly	33	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
632	4	ViewOnly	34	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
636	4	ViewOnly	35	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
640	2	ViewOnly	36	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
642	2	ViewOnly	37	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
644	4	ViewOnly	38	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
648	4	ViewOnly	39	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-

measure L3

Group : AcSource
Modbus device address : 7 to 8
*External ID : 2.x.4.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
900	2	ViewOnly	0	Phase voltage	0	V	-	Phase voltage RMS measured.	float	R	-
902	2	ViewOnly	4	Current	0	A	-	Current RMS measured.	float	R	-
904	2	ViewOnly	8	Active power	0	W	-	Active power measured.	float	R	-
906	2	ViewOnly	12	Reactive power	0	VAR	-	Reactive power measured.	float	R	-
908	2	ViewOnly	16	Apparent power	0	VA	-	Apparent power measured.	float	R	-
910	2	ViewOnly	20	Power factor	0		-	Power factor measured.	float	R	-
912	2	ViewOnly	24	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
914	2	ViewOnly	25	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
916	2	ViewOnly	26	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
918	2	ViewOnly	27	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
920	2	ViewOnly	28	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
922	2	ViewOnly	29	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
928	2	ViewOnly	32	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
930	2	ViewOnly	33	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
932	4	ViewOnly	34	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
936	4	ViewOnly	35	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
940	2	ViewOnly	36	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
942	2	ViewOnly	37	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
944	4	ViewOnly	38	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
948	4	ViewOnly	39	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-

3-phase input config

Group : AcSource
Modbus device address : 7 to 8
*External ID : 2.x.5.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1203	2	R:ViewOnly W:Studer	2	Type	TypeNone		-	Type	enum	R/W	0
1205	2	R:ViewOnly W:Expert	3	Grid code	GridCodeNone		-	Grid code	enum	R/W	1
1207	1	R:ViewOnly W:Basic	4	Connection allowed	true		-	Used to allowed or not the connection to the AC input.	bool	R/W	-
1208	1	R:ViewOnly W:Basic	5	Grid-feeding allowed	true		-	Used to allowed or not the grid-feeding.	bool	R/W	-
1209	2	R:ViewOnly W:Expert	6	Rated current	32	A	[6,80]	Rated current (minimum value of circuit breaker nominal current and grid/genset nominal current).	float	R/W	-
1211	2	Expert	7	Relative angle tolerance	15	°	[5,60]	Tolerance of the relative angle in between phases	float	R/W	-
1213	1	Basic	8	Allow individual phase connection	true		-	Allow individual phase connection. If false, connect only when all phases meets required conditions.	bool	R/W	-
1214	2	Expert	9	Min. discon. time before new connection	3	s	[0.5,5]	Minimum disconneted time before allowing a new connection.	float	R/W	-
1216	1	Expert	10	Activate inertial smoothing	false		-	Activate transient smoothing. When severe power consumption variations occur, this can cause severe voltage and frequency fluctuation of gensets. This feature help to reduce such fluctuations.	bool	R/W	-
1217	1	Expert	11	Compensate load DC current	false		-	Compensation of the AcLoad d.c. current	bool	R/W	-
1220	1	Expert	13	True sine envelope detection	false		-	Enable fast loss of grid detection based on the comparisson of instantaneous voltage and a true sinusoidal envelope. Note that this function may interfere with UVRT, OVRT, and interface protection. However, an enhanced and universally compatible envelope detection is always active, whereas the tolerance can be set with "Envelope detection tolerance" (id 14).	bool	R/W	-
1221	2	Expert	14	Envelope detection tolerance	60	%	[5,100]	Tolerance for the envelope detection in percentage of the nominal voltage. This value will be used for the universal method (always active), and also for the true sine envelope (when "True sine envelope detection" (id 13) is activated). However, a value of 100% will disable the function.	float	R/W	-
1224	2	Expert	16	Anti-islanding detection level	0.5	%	[0.001,20]	Anti-islanding detection level used by the "vector shift" method.	float	R/W	-
1226	2	Expert	17	Anti-islanding frequency	13	Hz	[6,30]	Anti-islanding frequency used by the "vector shift" method.	float	R/W	-
1228	2	Expert	18	Anti-islanding perturb. amplitude	10	%	[0,20]	Anti-islanding perturbation amplitude used by the "vector shift" method.	float	R/W	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1230	2	Expert	19	Anti-islanding min. amplitude	4	%	[0,10]	Anti-islanding minimal amplitude used by the "vector shift" method.	float	R/W	-
1235	2	Expert	22	Over-voltage curve U1	125	%	[105,135]	P1 voltage of OV curve. EN 50549-1 chapter 4.5.4. VDE-AR-N 4105 chapter 5.7.3.2.	float	R/W	-
1237	2	Expert	23	Over-voltage curve T1	0.1	s	[0.1,2]	P1 time of OV curve. EN 50549-1 chapter 4.5.4. VDE-AR-N 4105 chapter 5.7.3.2.	float	R/W	-
1239	2	Expert	24	Over-voltage curve U2	120	%	[105,135]	P2 voltage of OV curve. EN 50549-1 chapter 4.5.4. VDE-AR-N 4105 chapter 5.7.3.2.	float	R/W	-
1241	2	Expert	25	Over-voltage curve T2	5	s	[0.5,60]	P2 time of OV curve. EN 50549-1 chapter 4.5.4. VDE-AR-N 4105 chapter 5.7.3.2.	float	R/W	-
1243	2	Expert	26	Over-voltage curve U3	115	%	[105,135]	P3 voltage of OV curve. EN 50549-1 chapter 4.5.4. VDE-AR-N 4105 chapter 5.7.3.2.	float	R/W	-
1245	2	Expert	27	Over-voltage curve T3	60	s	[1,120]	P3 time of OV curve. EN 50549-1 chapter 4.5.4. VDE-AR-N 4105 chapter 5.7.3.2.	float	R/W	-
1247	2	Expert	28	Max. voltage fault onset	115	%	[105,134]	Maximum voltage for fault onset. EN 50549-1 chapter 4.5.4.	float	R/W	-
1249	2	Expert	29	Max. permanent voltage	110	%	[105,120]	Maximum permanent voltage. EN 50549-1 chapter 4.4.4.	float	R/W	-
1251	2	Expert	30	Min. permanent voltage	85	%	[30,95]	Mininum permanent voltage. EN 50549-1 chapter 4.4.4.	float	R/W	-
1253	2	Expert	31	Min. voltage fault onset	85	%	[2,95]	Minimum voltage for fault onset. EN 50549-1 chapter 4.5.3.2.	float	R/W	-
1255	2	Expert	32	Under-voltage curve T2	1.5	s	[0.5,20]	P2 time of UV curve. EN 50549-1 chapter 4.5.3.2. VDE-AR-N 4105 chapter 5.7.3.2.	float	R/W	-
1257	2	Expert	33	Under-voltage curve U1	15	%	[1,90]	P1 voltage of UV curve. EN 50549-1 chapter 4.5.3.2. VDE-AR-N 4105 chapter 5.7.3.2.	float	R/W	-
1259	2	Expert	34	Under-voltage curve T1	0.2	s	[0.1,2]	P1 time of UV curve. EN 50549-1 chapter 4.5.3.2. VDE-AR-N 4105 chapter 5.7.3.2.	float	R/W	-
1261	1	Expert	35	Zero current mode	false		-	Zero current mode. EN 50549-1 chapter 4.7.4.2.2. VDE-AR-N chapter 5.7.3.1.	bool	R/W	-
1262	2	Expert	36	OVRT or ZCM over-volt. threshold	120	%	[100,120]	Static voltage range overvoltage for zero current mode. EN 50549-1 chapter 4.7.4.2.2. Behaviour during fault (OVRT) acrrording to VDE AR N 4105 chapter 5.7.3.1.	float	R/W	-
1264	2	Expert	37	UVRT or ZCM under-volt. threshold	50	%	[20,100]	Static voltage range undervoltage for zero current mode. EN 50549-1 chapter 4.7.4.2.2. Behaviour during fault (UVRT) acrrording to VDE AR N 4105 chapter 5.7.3.1.	float	R/W	-
1266	2	Expert	38	Threshold frequency for OF	0.2	Hz	[0.1,10]	Threshold frequency (relative to "Nominal frequency" (id 22)) of frequency-dependant active power during over-frequency situation. Use a huge value to disable the feature. EN 50549-1 chapter 4.6.1. VDE-AR-N 4105 chapter 5.7.4.2.3 figure15. AS/NZS 4777.2 section 4.5.3.3 (f ULCO, upper limit of the continous operation range for frequency).	float	R/W	-
1268	2	Expert	39	Statism for over-frequency	5	%	[1,12]	Static value of frequency-dependant active power during over-frequency situation. EN 50549-1 chapter 4.6.1. VDE-AR-N 4105 chapter 5.7.4.2.3 figure15.	float	R/W	-
1270	2	Expert	40	Intensional delay for over-freq.	0	s	[0,2]	Intentional delay before activation of the function of active power adjustmen at over-frequency. EN 50549-1 chapter 4.6.1.	float	R/W	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1272	2	Expert	41	Disabling threshold freq. for OF	2	Hz	[0,10]	Disabling threshold frequency fstop (relative to "Nominal frequency" (id 22)) of frequency-dependant active power during over-frequency situation. Disabled if value is greather or equal than "Threshold frequency for OF" (id 38). EN 50549-1 chapter 4.6.1. AS/NZS 4777.2 section 4.5.3.1 (f ULCO - f hyst, frequency for returning to continous operation).	float	R/W	-
1274	2	Expert	42	Disabling delay for over-freq.	0	s	[0,600]	Disabling delay (tstop) of frequency-dependant active power during over-frequency situation. EN 50549-1 chapter 4.6.1. AS/NZS 4777.2 section 4.5.3.3.	float	R/W	-
1276	2	Expert	43	Pref for over-frequency	Pmax		-	Power reference of frequency-dependant active power during over-frequency situation. EN 50549-1 chapter 4.6.1	enum	R/W	4
1278	2	Expert	44	Threshold frequency for UF	-0.2	Hz	[-10,-0.1]	Threshold frequency (relative to "Nominal frequency" (id 22)) of frequency-dependant active power during under-frequency situation. Use a small value to disable the feature. EN 50549-1 chapter 4.6.2. VDE-AR-N 4105 chapter 5.7.4.2.3 figure15. AS/NZS 4777.2 section 4.5.3.2 (f LLCO, lower limit of the continous operation range for frequency).	float	R/W	-
1280	2	Expert	45	Statism for under-freq.	2	%	[1,12]	Static value of frequency-dependant active power during under-frequency situation. EN 50549-1 chapter 4.6.2. VDE-AR-N 4105 chapter 5.7.4.2.3 figure15.	float	R/W	-
1282	2	Expert	46	Intensional delay for under-freq.	0	s	[0,2]	Intentional delay before activation of the function of active power adjustmen at under-frequency. EN 50549-1 chapter 4.6.2.	float	R/W	-
1284	2	Expert	47	Pref for under-freq.	Pmax		-	Power reference of frequency-dependant active power during under-frequency situation. EN 50549-1 chapter 4.6.2	enum	R/W	4
1286	2	Expert	48	Over-excited cos(φ) capacity	0.6		[0,1]	Over-excited displacement factor minimal capacity. EN 50549-1 chapter 4.7.2.2. VDE-AR-N 4105 chapter 5.7.2.2.2 and 5.7.2.3. AS/NZS 4777.2 section 2.6	float	R/W	-
1288	2	Expert	49	Under-excited cos(φ) capacity	0.6		[0,1]	Under-excited displacement factor minimal capacity. EN 50549-1 chapter 4.7.2.2. VDE-AR-N 4105 chapter 5.7.2.2.2. AS/NZS 4777.2 section 2.6	float	R/W	-
1290	2	Expert	50	Reactive power method	ReactivePowerMethodNone		-	Reactive power method. EN 50549-1 chapter 4.7.2.3. VDE-AR-N 4105 chapter 5.7.2.4.	enum	R/W	2
1292	2	Expert	51	Reactive power setpoint	0	%	[-60,60]	Produced reactive power setpoint, percentage of rated active power. Negative value for a consummed reactive power. EN 50549-1 chapter 4.7.2.3.2. VDE-AR-N 4105 chapter 5.7.2.5	float	R/W	-
1294	2	Expert	52	cos(φ) setpoint	1		[0.7,1]	Displacement factor cos(φ) setpoint. EN-50549-1 chapter 4.7.2.3.2. VDE-AR-N 4105 chapter 5.7.2.4 Re:c)	float	R/W	-
1296	2	Expert	53	Reactive power direction	UnderExcited		-	Reactive power direction (over-excited or under-excited) for displacement factor and reactive power setpoints. EN 50549-1 chapter 4.7.2.3.2. VDE-AR-N 4105 chapter 5.7.2.4 Re:c)	enum	R/W	3
1298	2	Expert	54	Reactive power curve Q1	100	%	[0,100]	Point 1 ordinate, produced normalised reactive power of Q(U) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.3. VDE-AR-N 4105 chapter 5.7.2.4 Re: a). AS/NZS 4777.2 section 3.3.2.3	float	R/W	-
1300	2	Expert	55	Reactive power curve Q2	0	%	[0,100]	Point 2 ordinate, produced normalised reactive power of Q(U) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.3. VDE-AR-N 4105 chapter 5.7.2.4 Re: a). AS/NZS 4777.2 section 3.3.2.3	float	R/W	-
1302	2	Expert	56	Reactive power curve Q3	0	%	[-100,0]	Point 3 ordinate, produced normalised reactive power of Q(U) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.3. VDE-AR-N 4105 chapter 5.7.2.4 Re: a). AS/NZS 4777.2 section 3.3.2.3	float	R/W	-
1304	2	Expert	57	Reactive power curve Q4	-100	%	[-100,0]	Point 4 ordinate, produced normalised reactive power of Q(U) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.3. VDE-AR-N 4105 chapter 5.7.2.4 Re: a). AS/NZS 4777.2 section 3.3.2.3	float	R/W	-
1306	2	Expert	58	Reactive power curve U1	93	%	[50,100]	Point 1 abscissa, normalised voltage of Q(U) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.3. VDE-AR-N 4105 chapter 5.7.2.4 Re: a)	float	R/W	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1308	2	Expert	59	Reactive power curve U2	97	%	[50,100]	Point 2 abscissa, normalised voltage of Q(U) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.3. VDE-AR-N 4105 chapter 5.7.2.4 Re: a)	float	R/W	-
1310	2	Expert	60	Reactive power curve U3	103	%	[100,120]	Point 3 abscissa, normalised voltage of Q(U) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.3. VDE-AR-N 4105 chapter 5.7.2.4 Re: a)	float	R/W	-
1312	2	Expert	61	Reactive power curve U4	107	%	[100,120]	Point 4 abscissa, normalised voltage of Q(U) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.3. VDE-AR-N 4105 chapter 5.7.2.4 Re: a)	float	R/W	-
1314	2	Expert	62	React. pow. control time behaviour	10	s	[0.1,180]	Time behaviour of reactive power control (3 Tau of PT-1). EN 50549-1 chapter 4.7.2.3.3. VDE-AR-N 4105 chapter 5.7.2.5 figure10. AS/NZS 4777.2 section 3.3.2.1	float	R/W	-
1316	2	Expert	63	React. pow. control cos(φ) min.	0.9		[0,1]	Minimum displacement factor in Q(U) mode. EN50549-1 chapter 4.7.2.3.3. VDE-AR-N 4105 chapter 5.7.2.5. AS/NZS 4777.2 section 2.6	float	R/W	-
1318	2	Expert	64	React. pow. control lock-in P	20	%	[0,20]	Lock-in active power in Q(U) mode, percentage of rated active power. EN 50549-1 chapter 4.7.2.3.3. VDE-AR-N 4108 chapter 5.7.2.5.	float	R/W	-
1320	2	Expert	65	React. pow. control lock-out P	15	%	[0,20]	Lock-out active power in Q(U) mode, percentage of rated active power. EN 50549-1 chapter 4.7.2.3.3. VDE-AR-N 4108 chapter 5.7.2.5.	float	R/W	-
1322	2	Expert	66	React. pow. curve cos(φ) 1	1		[0.7,1]	Point 1 ordinate, over- or under-excited (depending on voltage lock-in/-out thresholds) displacement factor of cos(φ)=f(P) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.4. VDE-AR-N 4105 chapter 5.7.2.4 Re: b)	float	R/W	-
1324	2	Expert	67	React. pow. curve cos(φ) 2	1		[0.7,1]	Point 2 ordinate, over- or under-excited (depending on voltage lock-in/-out thresholds) displacement factor of cos(φ)=f(P) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.4. VDE-AR-N 4105 chapter 5.7.2.4 Re: b)	float	R/W	-
1326	2	Expert	68	React. pow. curve cos(φ) 3	1		[0.7,1]	Point 3 ordinate, under- or over-excited (depending on voltage lock-in/-out thresholds) displacement factor of cos(φ)=f(P) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.4. VDE-AR-N 4105 chapter 5.7.2.4 Re: b)	float	R/W	-
1328	2	Expert	69	React. pow. curve cos(φ) 4	0.9		[0.7,1]	Point 4 ordinate, under- or over-excited (depending on voltage lock-in/-out thresholds) displacement factor of cos(φ)=f(P) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.4. VDE-AR-N 4105 chapter 5.7.2.4 Re: b)	float	R/W	-
1330	2	Expert	70	Reactive power curve P1	0	%	[0,100]	Point 1 abscissa, normalised produced active power of cos(φ)=f(P) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.4. VDE-AR-N 4105 chapter 5.7.2.4 Re: b)	float	R/W	-
1332	2	Expert	71	Reactive power curve P2	0	%	[0,100]	Point 2 abscissa, normalised produced active power of cos(φ)=f(P) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.4. VDE-AR-N 4105 chapter 5.7.2.4 Re: b)	float	R/W	-
1334	2	Expert	72	Reactive power curve P3	20	%	[0,100]	Point 3 abscissa, normalised produced active power of cos(φ)=f(P) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.4. VDE-AR-N 4105 chapter 5.7.2.4 Re: b)	float	R/W	-
1336	2	Expert	73	Reactive power curve P4	50	%	[0,100]	Point 4 abscissa, normalised produced active power of cos(φ)=f(P) reactive power characteristic curve. EN 50549-1 figure 16, chapter 4.7.2.3.4. VDE-AR-N 4105 chapter 5.7.2.4 Re: b)	float	R/W	-
1338	2	R:Basic W:Expert	74	Over-volt. threshold stage 2	120	%	[100,130]	Overvoltage threshold stage 2 [59 >>] of overvoltage protection. EN 50549-1 chapter 4.9.3.3.	float	R/W	-
1340	2	R:Basic W:Expert	75	Over-volt. operate time stage 2	0.1	s	[0,180]	Overvoltage operate time stage 2 [59 >>] of overvoltage protection. EN 50549-1 chapter 4.9.3.3.	float	R/W	-
1342	2	R:Basic W:Expert	76	Over-volt. threshold stage 1	115	%	[100,125]	Overvoltage threshold stage 1 [59 >] of overvoltage protection. EN 50549-1 chapter 4.9.3.3.	float	R/W	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1344	2	R:Basic W:Expert	77	Over-volt. operate time stage 1	0.5	s	[0,200]	Overvoltage operate time stage 1 [59 >] of overvoltage protection. EN 50549-1 chapter 4.9.3.3.	float	R/W	-
1346	2	R:Basic W:Expert	78	Over-volt. threshold 10min mean	110	%	[100,120]	Overvoltage threshold 10 min mean protection. EN 50549-1 chapter 4.9.3.4.	float	R/W	-
1348	2	R:Basic W:Expert	79	Under-volt. threshold stage 1	60	%	[10,100]	Undervoltage threshold stage 1 [27 <] of undervoltage protection. EN 50549-1 chapter 4.9.3.2.	float	R/W	-
1350	2	R:Basic W:Expert	80	Under-volt. operate time stage 1	0.5	s	[0,200]	Undervoltage operate time stage 1 [27 <] of undervoltage protection. EN 50549-1 chapter 4.9.3.2.	float	R/W	-
1352	2	R:Basic W:Expert	81	Under-volt. threshold stage 2	80	%	[5,100]	Undervoltage threshold stage 2 [27 <<] of undervoltage protection. EN 50549-1 chapter 4.9.3.2.	float	R/W	-
1354	2	R:Basic W:Expert	82	Under-volt. operate time stage 2	0.1	s	[0,180]	Undervoltage operate time stage 12[27 <<] of undervoltage protection. EN 50549-1 chapter 4.9.3.2.	float	R/W	-
1358	2	R:Basic W:Expert	84	Over-freq. threshold stage 1	1	Hz	[0,10]	Overfrequency threshold (relative to "Nominal frequency" (id 22)) stage 1 [81 >] of overfrequency protection. EN 50549-1 chapter 4.9.3.6.	float	R/W	-
1360	2	R:Basic W:Expert	85	Over-freq. operate time stage 1	1	s	[0,100]	Overfrequency operate time stage 1 [81 >] of overfrequency protection. EN 50549-1 chapter 4.9.3.6.	float	R/W	-
1362	2	R:Basic W:Expert	86	Over-freq. threshold stage 2	2	Hz	[0,12]	Overfrequency threshold (relative to "Nominal frequency" (id 22)) stage 2 [81 >>] of overfrequency protection. EN 50549-1 chapter 4.9.3.6.	float	R/W	-
1364	2	R:Basic W:Expert	87	Over-freq. operate time stage 2	0.5	s	[0,5]	Overfrequency operate time stage 2 [81 >>] of overfrequency protection. EN 50549-1 chapter 4.9.3.6.	float	R/W	-
1366	2	R:Basic W:Expert	88	Under-freq. threshold stage 2	-3	Hz	[-10,0]	Underfrequency threshold (relative to "Nominal frequency" (id 22)) stage 2 [81 <<] of underfrequency protection. EN 50549-1 chapter 4.9.3.5.	float	R/W	-
1368	2	R:Basic W:Expert	89	Under-freq. operate time stage 2	0.5	s	[0,5]	Underfrequency operate time stage 2 [81 <<] of underfrequency protection. EN 50549-1 chapter 4.9.3.5.	float	R/W	-
1370	2	R:Basic W:Expert	90	Under-freq. threshold stage 1	-2	Hz	[-10,0]	Underfrequency threshold (relative to "Nominal frequency" (id 22)) stage 1 [81 <] of underfrequency protection. EN 50549-1 chapter 4.9.3.5.	float	R/W	-
1372	2	R:Basic W:Expert	91	Under-freq. operate time stage 1	1	s	[0,100]	Underfrequency operate time stage 1 [81 <] of underfrequency protection. EN 50549-1 chapter 4.9.3.5.	float	R/W	-
1376	2	Expert	93	CEI to switch to narrow freq. band	0		[0,10]	Index of the command input interface used to switching to the narrow frequency band. (0 value disable remote operation). EN 50549-1 chapter 4.9.5	int	R/W	-
1378	2	Expert	94	Over-freq. threshold narrow band	0.5	Hz	[0,10]	Overfrequency threshold (relative to "Nominal frequency" (id 22)) for the narrow band of overfrequency protection. EN 50549-1 chapter 4.9.5.	float	R/W	-
1380	2	Expert	95	Over-freq. operate time narrow band	0.5	s	[0.1,100]	Overfrequency operate time for the narrow band of overfrequency protection. EN 50549-1 chapter 4.9.5.	float	R/W	-
1382	2	Expert	96	Under-freq. threshold narrow band	-1	Hz	[-10,0]	Underfrequency threshold (relative to "Nominal frequency" (id 22)) for the narrow band of underfrequency protection. EN 50549-1 chapter 4.9.5.	float	R/W	-
1384	2	Expert	97	Under-freq. operate time narrow band	0.5	s	[0.1,100]	Underfrequency operate time for the narrow band of underfrequency protection. EN 50549-1 chapter 4.9.5.	float	R/W	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1386	2	R:Basic W:Expert	98	Upper volt. for auto reconnection	110	%	[100,120]	Upper voltage for automatic reconnection after tripping. EN 50549-1 chapter 4.10.2.	float	R/W	-
1388	2	R:Basic W:Expert	99	Lower volt. for auto reconnection	85	%	[50,100]	Lower voltage for automatic reconnection after tripping. EN 50549-1 chapter 4.10.2.	float	R/W	-
1390	2	R:Basic W:Expert	100	Upper freq. for auto reconnection	0.2	Hz	[0,10]	Upper frequency (relative to "Nominal frequency" (id 22)) for automatic reconnection after tripping. EN 50549-1 chapter 4.10.2.	float	R/W	-
1392	2	R:Basic W:Expert	101	Lower freq. for auto reconnection	-0.5	Hz	[-10,0]	Lower frequency (relative to "Nominal frequency" (id 22)) for automatic reconnection after tripping. EN 50549-1 chapter 4.10.2.	float	R/W	-
1394	2	R:Basic W:Expert	102	Observation time for auto reconnection	60	s	[10,600]	Observation time for automatic reconnection after tripping. EN 50549-1 chapter 4.10.2.	float	R/W	-
1396	2	Expert	103	P increase gradient for auto reconnection	10	%/min	[5,3000]	Active power increase gradient when automatic reconnection after tripping or at the end of an over/under frequency situation. EN 50549-1 chapter 4.10.2. AS/NZS 4777.2 section 4.5.3	float	R/W	-
1398	2	Expert	104	Upper volt. for start generation	110	%	[100,120]	Upper voltage for automatic reconnection after tripping. EN 50549-1 chapter 4.10.3.	float	R/W	-
1400	2	Expert	105	Lower volt. for start generation	85	%	[50,100]	Lower voltage for automatic reconnection after tripping. EN 50549-1 chapter 4.10.3.	float	R/W	-
1402	2	Expert	106	Upper freq. for start generation	0.1	Hz	[0,10]	Upper frequency (relative to "Nominal frequency" (id 22)) for automatic reconnection after tripping. EN 50549-1 chapter 4.10.3.	float	R/W	-
1404	2	Expert	107	Lower freq. for start generation	-0.5	Hz	[-10,0]	Lower frequency (relative to "Nominal frequency" (id 22)) for automatic reconnection after tripping. EN 50549-1 chapter 4.10.3.	float	R/W	-
1406	2	R:Basic W:Expert	108	Observ. time for start generation	60	s	[10,600]	Observation time for connection. EN 50549-1 chapter 4.10.3.	float	R/W	-
1408	2	Expert	109	P increase gradient for start generation	3000	%/min	[6,3000]	Active power increase gradient after connection. EN 50549-1 chapter 4.10.3.	float	R/W	-
1410	2	Expert	110	CEI to allow transfer tripping DRM0	0		[0,10]	Index of the command input interface used to allow transfer trip. DRED port index used for DRM0. (0 value disable remote operation). EN 50549-1 chapter 4.9.5. AS/NZS 4777.2 section 3.2.	int	R/W	-
1412	2	Expert	111	CEI for ceasing produced P	0		[0,10]	Index of the command input interface used for ceasing produced active power (0 value disable remote operation). EN 50549-1 chapter 4.11.1.	int	R/W	-
1414	2	Expert	112	CEI for reduction of produced P	0		[0,10]	Index of the command input interface used for reduction of produced active power (0 value disable remote operation). EN 50549-1 chapter 4.11.2.	int	R/W	-
1416	2	Expert	113	Reduction of produced P	0	%	[0,100]	Reduced produced active power in case of remote operation. EN 50549-1 chapter 4.11.2.	float	R/W	-
1418	2	Expert	114	Reduction of produced P slope	0.5	%/s	[0,500]	Slope for the reduction of produced active power in case of remote operation. Slope limitation is disable if this value is set to 0. EN 50549-1 chapter 4.11.2.	float	R/W	-
1420	2	Expert	115	Volt. to start produced P reduction	103	%	[100,130]	Voltage at which the the produced normalised active power start to be reduced. EN 50549-1 chapter 4.7.3. AS/NZS 4777.2 section 3.3.2.2	float	R/W	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1422	2	Expert	116	Voltage for reduced produced P	107	%	[100,130]	Voltage over which the produced normalised active power is reduced to "Reduced produced active power" (id 130). AS/NZS 4777.2 section 3.3.2.2	float	R/W	-
1424	2	Expert	117	Time constant for P(U) curves	5	s	[1,60]	Time constant of voltage-dependant active power curves P(U). TOR Erzeuger Typ A chapter 5.3.6. EN 50549-1 chapter 4.7.3. AS/NZS 4777.2 section 3.3.2.1	float	R/W	-
1426	2	Expert	118	Pref for P(U) curves	Pmax		-	Power reference of voltage-dependant active power curves P(U). TOR Erzeuger Typ A chapter 5.3.6.	enum	R/W	4
1429	1	Expert	120	Use triphase target active power	true		-	Use of "Target active power per phase" (id 121) instead of "Target active power" (id 13).	bool	R/W	-
1430	2	Expert	121	Target active power per phase	0	W	-	Target active power per phase. Positive when the AC input is generating active power and negative when the AC input is consumming active power.	float	R/W	-
1432	2	Expert	122	Setpoints priority level	2	Level	-	setpoints priority level	int	R/W	-
1440	2	ViewOnly	126	Phase existance	PhaseL1Exists|PhaseL2Exists|PhaseL3Exists		-	Indicate which phase(s) is(are) used for this AcSource	bitfield	R	5
1442	2	Expert	127	Anti-islanding	AntiIslandingDisabled		-	Anti-islanding function activation and choice of the detection method.	enum	R/W	6
1444	2	Expert	128	Anti-islanding RoCoF thresh.	1.6	Hz/s	[0.1,20]	Anti-islanding RoCoF threshold used by the "RoCoF tripping" method.	float	R/W	-
1446	2	Expert	129	Anti-isl. RoCoF operate time	0.2	s	[0.1,2]	Anti-islanding RoCoF operate time used by the "RoCoF tripping" method.	float	R/W	-
1448	2	Expert	130	Reduced produced active power	100	%	[-100,100]	Reduced produced normalised active power at voltages over "Voltage for reduced produced P" (id 116). EN 50549-1 chapter 4.7.3. AS/NZS 4777.2 section 3.3.2.2. Note that values < 0% correspond to inverting the power sign, i.e. switching to consumption. (CEI 0-21 chapter 8.5.3.1 / Bbis.7.1)	float	R/W	-
1450	2	Expert	131	Reduced consummed active power	100	%	[-100,100]	Reduced consummed normalised active power at voltage under "Voltage for reduced consummed P" (id 132). AS/NZS 4777.2 section 3.4.3. Note that values < 0% correspond to inverting the power sign, i.e. switching to prduction.	float	R/W	-
1452	2	Expert	132	Voltage for reduced consummed P	50	%	[50,100]	Voltage under which the normalised consummed active power is reduced to "Reduced consummed active power" (id 131). AS/NZS 4777.2 section 3.4.3	float	R/W	-
1454	2	Expert	133	Volt. to start consummed P reduction	60	%	[50,100]	Voltage at which the the consummed normalised active power start to be reduced. AS/NZS 4777.2 section 3.4.3	float	R/W	-
1456	2	Expert	134	Transition frequency for OF	0.75	Hz	[0.1,10]	Frequency (relative to "Nominal frequency" (id 22)) where power output level is zero of frequency-dependant active power during over-frequency situation. Use a huge value to disable the feature. AS/NZS 4777.2 section 4.5.3.3 (f transition).	float	R/W	-
1458	2	Expert	135	Pmin frequency for OF	2	Hz	[0.1,10]	Frequency (relative to "Nominal frequency" (id 22)) where power input level is maximum of frequency-dependant active power during over-frequency situation. Use a huge value to disable the feature. AS/NZS 4777.2 section 4.5.3.3 (f Pmin).	float	R/W	-
1460	2	Expert	136	Stop-ch frequency for UF	-1	Hz	[-10,-0.1]	Frequency (relative to "Nominal frequency" (id 22)) where power output level is zero of frequency-dependant active power during under-frequency situation. Use a huge value to disable the feature. AS/NZS 4777.2 section 4.5.3.2 (f stop-ch).	float	R/W	-
1462	2	Expert	137	Pmax frequency for UF	-2	Hz	[-10,-0.1]	Frequency (relative to "Nominal frequency" (id 22)) where power output level is maximum of frequency-dependant active power during under-frequency situation. Use a huge value to disable the feature. AS/NZS 4777.2 section 4.5.3.2 (f Pmax).	float	R/W	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1464	2	Expert	138	Freq. hysteresis for OF/UF	0.1	Hz	[0.01,0.5]	Frequency hystereris for returning in continous operation after over/under-frequency situation. AS/NZS 4777.2 section 4.5.3.1 (f hyst).	float	R/W	-
1466	1	Expert	139	Compensate current harmonics	false		-	Compensation of the invreter current harmonics	bool	R/W	-
1467	2	Expert	140	CEI for reduction of produced P at 10%	0		[0,30]	Index of the command input interface used for reduction of produced active power at 10% percent of the rated power (0 value disable remote operation).	int	R/W	-
1469	2	Expert	141	CEI for reduction of produced P at 20%	0		[0,30]	Index of the command input interface used for reduction of produced active power at 20% percent of the rated power (0 value disable remote operation).	int	R/W	-
1471	2	Expert	142	CEI for reduction of produced P at 30%	0		[0,30]	Index of the command input interface used for reduction of produced active power at 30% percent of the rated power (0 value disable remote operation).	int	R/W	-
1473	2	Expert	143	CEI for reduction of produced P at 40%	0		[0,30]	Index of the command input interface used for reduction of produced active power at 40% percent of the rated power (0 value disable remote operation).	int	R/W	-
1475	2	Expert	144	CEI for reduction of produced P at 50%	0		[0,30]	Index of the command input interface used for reduction of produced active power at 50% percent of the rated power (0 value disable remote operation).	int	R/W	-
1477	2	Expert	145	CEI for reduction of produced P at 60%	0		[0,30]	Index of the command input interface used for reduction of produced active power at 60% percent of the rated power (0 value disable remote operation).	int	R/W	-
1479	2	Expert	146	CEI for reduction of produced P at 70%	0		[0,30]	Index of the command input interface used for reduction of produced active power at 70% percent of the rated power (0 value disable remote operation).	int	R/W	-
1481	2	Expert	147	CEI for reduction of produced P at 80%	0		[0,30]	Index of the command input interface used for reduction of produced active power at 80% percent of the rated power (0 value disable remote operation).	int	R/W	-
1483	2	Expert	148	CEI for reduction of produced P at 90%	0		[0,30]	Index of the command input interface used for reduction of produced active power at 90% percent of the rated power (0 value disable remote operation).	int	R/W	-
1485	2	R:ViewOnly W:Expert	149	Phase balancing	PhaseBalancingDisabled		-	Method used to distribute the total required power to each phase.	enum	R/W	7
1487	2	R:ViewOnly W:Expert	150	Voltage and frequency tolerance	FaultsToleranceNormal		-	Tolarance to voltage and frequency faults.	enum	R/W	8
1489	2	Expert	151	Synchro. threshold	20	V	[10,100]	The voltage differance in between AC-Loads and AC input must be smaller than "Synchro. threshold" (id 151) during "Synchro. duration" (id 152) to allow the connection.	float	R/W	-
1491	2	Expert	152	Synchro. duration	0.2	s	[0.1,3]	The voltage differance in between AC-Loads and AC input must be smaller than "Synchro. threshold" (id 151) during "Synchro. duration" (id 152) to allow the connection.	float	R/W	-
1493	2	Expert	153	Under-voltage curve U2	15	%	[1,90]	UVRT voltage extension at "Under-voltage curve T1" (id 34). This modification of the UVRT curve corresponds to CEI 0-21 chapter 8.5.1(b) Fig. 29 (Uclear). To disable this extension set this value equal to "Under-voltage curve U1" (id 33).	float	R/W	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1495	2	Expert	154	React. pow. control lock-in volt. UE	100	%	[90,110]	Normalised lock-in voltage of cos(φ) = f(P) control (under-excited mode) according to CEI 0-21 chapter E.2 and Corrigendum CEI 0-21:V2 (2024-01). This feature can be disabled by setting the value equal to "React. pow. control lock-out volt. UE" (id 155).	float	R/W	-
1497	2	Expert	155	React. pow. control lock-out volt. UE	100	%	[90,110]	Normalised lock-out voltage of cos(φ) = f(P) control (under-excited mode) according to CEI 0-21 chapter E.2 and Corrigendum CEI 0-21:V2 (2024-01). This feature can be disabled by setting the value equal to "React. pow. control lock-in volt. UE" (id 154).	float	R/W	-
1499	2	Expert	156	Clearing delay of OF/UF	0	s	[0,600]	Delay before returning into continous operation after over/under-frequency situation. AS/NZS 4777.2 section 4.5.3.2/4.5.3.3. CEI 0-21 chapter 8.5.3.4. Note that this is similar to tstop (EN 50549-1 Ch. 4.6.1 Fig. 10), but applied in over- and under-frequency conditions.	float	R/W	-
1501	1	Basic	157	Activate interface self-test	-		-	Activation of the voltage and frequency interface protection self-test according to CEI 0-21 A.4.4. Note that this test can take several minutes and the AC source relays will open/close multiple times, as well as errors and warnings will be present. If the test is passed, the device reconnects automatically to the grid. The test can be interrupted by disconnecting the AC input manually (turn-off system total or disable "Connection allowed" (id 4)).	signal	W	-
1502	2	Expert	158	Self-test voltage gradient	0.5	%/s	[0.1,5]	Voltage gradient for the threshold variation of voltage protection functions during self-test (CEI 0-21 A.4.4).	float	R/W	-
1504	2	Expert	159	Self-test frequency gradient	50	mHz/s	[1,50]	Frequency gradient for the threshold variation of frequency protection functions during self-test (CEI 0-21 A.4.4).	float	R/W	-
1506	2	ViewOnly	160	Self-test status	StoppedNewTestAllowed		-	Indicates the current state of the interface protection self-test. Note that a new test is only authorized when the AC input is connected without errors/warnings.	bitfield	R	9
1508	2	Expert	161	CEI for reduction of consumed P	0		[0,10]	Index of the command input interface used for reduction of consumed active power (0 value disable remote operation).	int	R/W	-
1510	2	Expert	162	Reduction of consumed P	0	W	-	Reduced consumed active power in case of remote operation. Unlike "Reduction of produced P" (id 113), which is expressed as a percentage of the nominal power of inverters connected to the phase (governed by grid connection standards), the reduction of consumed power is expressed in W (per phase).	float	R/W	-
1512	2	R:ViewOnly W:Expert	163	Transferred mode	NotAllowed		-	Used to allowed or not the transferred mode.	enum	R/W	10
1514	2	Expert	164	React. pow. control offset factor	0		[-1,1]	Offset factor 'k' used to shift the standard curve of CEI 0-21 Figure 93 by the amount of k*Qmax. This is only applicable with CEI 0-21 and thus, the parameters "Reactive power curve Q1" (id 54) to "Reactive power curve Q4" (id 57) will take no effect.	float	R/W	-
1516	2	Expert	165	React. pow. control activation delay	0	s	[0,60]	Activation delay in seconds used as intentional delay for reactive power response in Q(U) mode.	float	R/W	-
1518	2	Expert	166	React. pow. control lock-in volt. OE	100	%	[90,110]	Normalised lock-in voltage of cos(φ) = f(P) control (over-excited mode) according to CEI 0-21 chapter E.2 and Corrigendum CEI 0-21:V2 (2024-01). This feature can be disabled by setting the value equal to "React. pow. control lock-out volt. OE" (id 167).	float	R/W	-
1520	2	Expert	167	React. pow. control lock-out volt. OE	100	%	[90,110]	Normalised lock-out voltage of cos(φ) = f(P) control (over-excited mode) according to CEI 0-21 chapter E.2 and Corrigendum CEI 0-21:V2 (2024-01). This feature can be disabled by setting the value equal to "React. pow. control lock-in volt. OE" (id 166).	float	R/W	-
1522	2	Expert	168	Anti-isl. Vector Shift operate time	0	s	[0,2]	Anti-islanding Vector Shift operate time used by the "Vector shift" method.	float	R/W	-

List of items of Enum 0 (Type)

Value	Label	Description
0	None	None
1	Grid	Grid
2	Genset	Genset

List of items of Enum 1 (GridCode)

Value	Label	Description
0	None	None
11	Switzerland (EN-50549-1, AES RR/IPE-NR 7 - CH Type A)	Grid code for Switzerland according to EN-50549-1.
18	Australia A (AS/NZS 4777.2)	Grid code for Australia regian A according to AS/NZS 4777.2.
19	Australia B (AS/NZS 4777.2)	Grid code for Australia regian B according to AS/NZS 4777.2.
20	Australia C (AS/NZS 4777.2)	Grid code for Australia regian C according to AS/NZS 4777.2.
8	Austria (TOR Erzeuger Typ A)	Grid code for Austria according to TOR Erzeuger Typ A.
4	Belgium (C10/11 Synergrid)	Grid code for Belgium according to C10/11 Synergrid.
22	Belgium <10kW (C10/11 Synergrid)	Grid code for Belgium according to C10/11 Synergrid and with an injected power limited to 10kW.
24	Croatia (EN-50549-1)	Grid code for Croatia according to EN-50549-1.
10	Cyprus (CY EN-50549-1 EAC)	Grid code for Cyprus according to EN-50549-1 and default values provided by E.A.C (Electricity Authority of Cyprus).
12	Czech Republic (EN-50549-1)	Grid code for Czech Republic according to EN-50549-1.
2	Europe (EN-50549-1)	Grid code for Europe according to EN-50549-1.
28	Finland (EN-50549-1)	Grid code for Finland according to EN-50549-1.
1	Germany (VDE-AR-N 4105)	Grid code for Germany according to VDE-AR-N 4105.
26	Greece (EN-50549-1)	Grid code for Greece according to EN-50549-1.
13	Ireland (EN-50549-1)	Grid code for Ireland according to EN-50549-1 (not limited).
31	Ireland <6kW (EN-50549-1)	Grid code for Ireland according to EN-50549-1 for single-phased systems with max grid injection power limited to 6kW (25A).
32	Ireland <11kW (EN-50549-1)	Grid code for Ireland according to EN-50549-1 for three-phased systems with max grid injection power limited to 11kW (3x 16A).
30	Italy (CEI 0-21)	Grid code for Italy according to CEI 0-21.
16	Hungary (EN-50549-1)	Grid code for Hungary according to EN-50549-1.
15	Netherlands (EN-50549-1)	Grid code for Netherlands according to EN-50549-1.
21	New Zealand (AS/NZS 4777.2)	Grid code for New Zealand according to AS/NZS 4777.2.
27	Norway (EN-50549-1)	Grid code for Norway according to EN-50549-1.
25	Serbia industrial (EN-50549-1)	Grid code for Serbia industrial application according to EN-50549-1. The grid injection power is not limited.
29	Serbia <10.8kW (EN-50549-1)	Grid code for Serbia residential application according to EN-50549-1. The grid injection power is limited to 10.8 kW.
14	Slovakia (EN-50549-1)	Grid code for Slovakia according to EN-50549-1.
23	Slovenia (EN-50549-1)	Grid code for Slovenia according to EN-50549-1.
9	Spain (RD 1699/2011, UNE 206007-1 and UNE 217002)	Grid code for Spain according to RD 1699/2011, UNE 206007-1 and UNE 217002.
17	Sweden (EN-50549-1 and EIFS 2018-2)	Grid code for Sweden according to EN-50549-1 and EIFS 2018-2.

List of items of Enum 2 (ReactivePowerMethod)

Value	Label	Description
0	Fixed reactive power	Fixed reactive power. EN 50549-1 chapter 4.7.2.3.2. VDE-AR-N 4105 chapter 5.7.2.5.
1	Q=f(U) curve	Reactive power versus voltage characteristic curve, Q=f(U). EN 50549-1 chapter 4.7.2.3.3. VDE-AR-N 4105 chapter 5.7.2.4 Re:a)
2	Fixed cos(φ)	Fixed displacement factor cos(φ). EN 50549-1 chapter 4.7.2.3.2. VDE-AR-N 4105 chapter 5.7.2.4 Re:c)
3	cos(φ)=f(P) curve	Displacement factor versus active power characteristic curve, cos(φ)=f(P). EN 50549-1 4.7.2.3.4. VDE-AR-N 4105 chapter 5.7.2.4 Re:b)
4	None	Supply of reactive power disabled.

List of items of Enum 3 (DisplacementFactor)

Value	Label	Description
0	Under-excited	Under-excited
1	Over-excited	Over-excited

List of items of Enum 4 (PrefActivePowerResponseEnum)

Value	Label	Description
0	P maximum	Power reference of frequency/voltage-dependant active power during over/under-frequency or over-voltage situation is Pmax (nominal power of inverters). EN 50549-1 chapter 4.6.1. TOR Erzeuger Typ A chapter 5.3.6.
1	P momentary	Power reference of frequency/voltage-dependant active power during over/under-frequency or over-voltage situation is Pm (active power produced when the frequqency cross the defined threshold). EN 50549-1 chapter 4.6.1. TOR Erzeuger Typ A chapter 5.3.6.

Value	Label	Description

List of items of Enum 5 (PhasesExistanceBitfield)

Value	Label	Description
1	Phase L1 exists	This AcSource has an L1 phase.
2	Phase L2 exists	This AcSource has an L2 phase.
4	Phase L3 exists	This AcSource has an L3 phase.

List of items of Enum 6 (AntiIslandingMethod)

Value	Label	Description
0	Disabled	The detection of islanding situation is disabled
1	Vector shift	The detection of islanding situation is active and the "vector shift" method is used.
2	RoCoF tripping	The detection of islanding situation is active and the "RoCoF tripping" method is used.

List of items of Enum 7 (PhaseBalancing)

Value	Label	Description
0	Disabled	Disable the active balancing of AC input power of each phase. This minimizes the power losses due to power conversion efficiency but can lead to inconsistent power flow directions for individual phases.
1	Enabled	Enable the active balancing of AC input power of each phase. Powers of individual phases are well balanced but this can lead to additionnel power losses due to power conversion efficiency.
2	Smart	Smartly balance the AC input power of each phase. This reduces the power losses due to power conversion efficiency and keeps power flow directions for individual phases consistant.

List of items of Enum 8 (FaultsTolerance)

Value	Label	Description
0	Custom settings	Custom settings.
1	Very sensitive	Very sensitive to voltage or frequency faults.
2	Sensitive	Sensitive to voltage or frequency faults.
3	Normal	Normal behaviour to voltage or frequency faults.
4	Robust	Robust against voltage or frequency faults.
5	Very robust	Very robust against voltage or frequency faults.

List of items of Enum 9 (SelfTestStatusBitfield)

Value	Label	Description
1	Start signal received	The signal for starting a new test has been received.
2	Running and processing	The test is running and the threshold variation is in progress.
4	Running and finishing	The test is running and waiting for reconnection.
8	Stopped and new test allowed	No test is in progress but a new one could be started.
16	Stopped and new test forbidden	No test is in progress and a new one is currently forbidden.

List of items of Enum 10 (TransferredMode)

Value	Label	Description
0	Not allowed	Transferred mode is not allowed.
1	Allowed only if phase is enabled	Transferred mode is allowed only if the inverters connected to this phase are enabled.
2	Allowed even if phase is disabled	Transferred mode is allowed even if the inverters connected to this phase are disabled.

L1 input config

Group : AcSource
Modbus device address : 7 to 8
*External ID : 2.x.6.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	En ID
1800	2	ViewOnly	0	Status	Disconnected		-	Current status.	enum	R	4
1802	2	ViewOnly	1	Unconnected reasons	NoReasons		-	Reasons explaining why the AC input is not connected.	bitfield	R	0
1804	2	ViewOnly	2	Warnings	NoWarnings		-	Current warnings.	bitfield	R	1
1806	2	ViewOnly	3	Errors	NoErrors		-	Current errors.	bitfield	R	2
1808	2	ViewOnly	4	Causes of disconnection	NoDisconnection		-	Causes of the AC input disconnection. Note that the value is initialized to 0 (no items checked in the list) until the first connection to the AC input.	bitfield	R	3
1812	2	Basic	6	Voltage 10min mean	0	%	-	Compute a 10min period moving average of the voltage.	float	R	-
1814	1	Basic	7	Connection allowed	true		-	Used to allowed or not the connection to the AC input.	bool	R/W	-
1815	1	Basic	8	Grid-feeding allowed	true		-	Used to allowed or not the grid-feeding.	bool	R/W	-
1816	2	Expert	9	Max import active power	3000	W	[0,100000]	Maximum active power the inverter is allowed to take from the AC input.	float	R/W	-
1818	2	Expert	10	Max export active power	3000	W	[0,100000]	Maximum active power the inverter is allowed to export into the AC input.	float	R/W	-
1820	2	Expert	11	Max import reactive power	2000	VAr	[0,100000]	Maximum reactive power the inverter is allowed to take from the AC input.	float	R/W	-
1822	2	Expert	12	Max export reactive power	2000	VAr	[0,100000]	Maximum reactive power the inverter is allowed to export into the AC input.	float	R/W	-
1824	2	Expert	13	Target active power	0	W	-	Desired active power the inverter aims to take from the AC input or export into it, using the sign convention where import power is positive and export power is negative.	float	R/W	-
1828	2	Expert	15	Export limit level	5		-	Priority level of the export limit sent to the power flow dispatcher.	int	R/W	-
1830	2	Expert	16	Setpoints level	2		-	Priority level of the setpoints sent to the power flow dispatcher.	int	R/W	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	En ID
1832	50	ViewOnly	17	Self-test results	"FFF:FFF:FFF:FFF:FFF:FFF:FFF:FFFnFFF:FFF:FFF:FFF:FFF:FFF:FFF:FFFnFFF:FFF:FFF:FFF:FFF:FFF:FFF:FFF"		-	The displayed values show encoded results of the interface protection self-test in hexadecimal format (FFF = invalid value). For Decoding (C=Column,R=Row): (C1,R1):(C2,R1):(C3,R1): (C4,R1) : Measured voltages at tripping, RealValue = 125/4095*DisplayValue [%]. (C5,R1):(C6,R1):(C7,R1): (C8,R1) : Measured frequencies at tripping, RealValue = 10/4095*DisplayValue + NominalFreq - 5 [Hz]. (C1,R2):(C2,R2):(C3,R2): (C4,R2) : Absolute errors on voltage thresholds, RealValue = 5/4095*DisplayValue [%]. (C5,R2):(C6,R2):(C7,R2): (C8,R2) : Absolute errors on frequency thresholds, RealValue = 20/4095*DisplayValue [mHz]. All Row3 : Absolute errors on trip time, RealValue = 1000/4095*DisplayValue [ms]. Note the test order per column : C1=UnderVoltageStage1, C2=UnderVoltageStage2, C3=OverVoltageStage1, C4=OverVoltageStage2, C5=UnderFrequencyStage1, C6=UnderFrequencyStage2, C7=OverFrequencyStage1, C8=OverFrequencyStage2. For more details see user manual.	char[99]	R	-
1884	2	Expert	19	Import limit level	5		-	Priority level of the import limit sent to the power flow dispatcher.	int	R/W	-
1886	2	R:ViewOnly W:Studer	20	Device identifier	-1		-	The ID of the device associated with this AC input.	int	R	-

List of items of Enum 0 (UnconnectedReasons)

Value	Label	Description
0	No reasons (connected/connecting)	No reason(s) because the AC input is connected or connecting.
1	No voltage	No voltage detected on the AC input.
2	Waiting observation time	Waiting the required observation time before reconnection.
4	Individual phase not allowed	Individual phase connection is not allowed.
8	Unconnected due to the user	Unconnected due to the user.
16	Unconnected due to command entry	Unconnected due to the command input.
32	Unconnected due to inverter	The inverter must be turned on and ready for connexion in order to connect the AC input.

Value	Label	Description
64	Unconnected due to the energy policy	Another AC input is chosen according to the energy policy.
256	Unconnected due to another cause	Unconnected due to another cause.
2147483648	Unconnected due to an error	Unconnected due to an error.

List of items of Enum 1 (Warnings)

Value	Label	Description
0	End of warning	The AC input has no warning(s).
1	Active power response to overfrequency	The actual active power is limited in response to an overfrequency.
2	Active power response to underfrequency	The actual active power is limited in response to an underfrequency.
4	Reactive power response to voltage	The actual reactive power is adjusted in response to voltage fluctuation, according to the chosen method.
8	Undervoltage ride through	Undervoltage ride through. The voltage is below "Min. voltage fault onset" (id 31) but over the defined undervoltage curve.
16	Overvoltage ride through	Overvoltage ride through. The voltage is over "Max. voltage fault onset" (id 28) but under the defined overvoltage curve.
32	Power limited by increase gradient	Power is limited by the power increase gradient after a re-connection.
64	Ceasing active power	Ceasing active power. EN 50549-1 chapter 4.11.1.
128	Reduced active power on setpoint	Reduction of active power on setpoint. EN 50549-1 chapter 4.11.2.
256	Active power response to overvoltage	The actual active power is limited in response to an overvoltage. EN 50549-1 chapter 4.7.3.
512	Overtemperature	Will disconnect soon if the current doesn't decrease in order to protect against over-temperature.
1024	Self-test in progress	A self-test of the interface protection is in progress. Relays will open/close and warnings/errors will be present. The device switches automatically to normal operation if test is passed. CEI 0-21 A.4.4.

List of items of Enum 2 (Errors)

Value	Label	Description
0	End of error	The AC input has no error(s).
512	Overfrequency	Frequency is over "Upper freq. for start generation" (id 106) or "Upper freq. for auto reconnection" (id 100).
1024	Underfrequency	Frequency is below "Lower freq. for start generation" (id 107) or "Lower freq. for auto reconnection" (id 101).
2048	Overvoltage	Voltage is over "Upper volt. for start generation" (id 104) or "Upper volt. for auto reconnection" (id 98).
4096	Undervoltage	Voltage is under "Lower volt. for start generation" (id 105) or "Lower volt. for auto reconnection" (id 99).
8192	Synchronization loss	A loss of synchronization between the inverter and the AC input has been detected.
16384	Outside of envelope	The voltage is outside of the permitted envelope defined by "Envelope detection tolerance" (id 14).
32768	Islanding detected	An islanded network has been detected.
65536	Phase error	The relative position in between phases is outside of "Relative angle tolerance" (id 7).
131072	Excessive dc voltage	DC voltage is over "Max. DC voltage" (id 12)
262144	Earthing error	An earthing error has been detected. Check the earthing scheme and configuration "Earthing mode selection" (id 0).
524288	Error relay failure 1	A relay failure (connection broken) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
1048576	Synchronization failed	The synchronization has failed and will retry automatically soon
2097152	Error relay failure 2	A relay failure (relay on AC input side is stuck open) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
4194304	Error relay failure 3	A relay failure (relay on load side is stuck open) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
8388608	Error relay failure 4	A relay failure (both relays on AC input and load side are stuck open) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
16777216	Error relay failure 5	A relay failure (one relay on AC input or load side is stuck close) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
33554432	Error relay failure 6	A relay supervision circuit failure has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
67108864	Error too large current at rel. open.	A relay opening was aborted due to a too large current to protect the relay integrity. If the current drop rapidly, the error will be cleared automatically.
134217728	Overtemperature	Unconnected due to overheating caused by a too large current.
268435456	Self-test failed	The self-test of the interface protection has failed. Verify that the grid conditions are stable during test.
536870912	Error indicator 1	Indicator for additional error-related information for Studer support.
1073741824	Error indicator 2	Indicator for additional error-related information for Studer support.

List of items of Enum 3 (CauseOfDisconnection)

Value	Label	Description
0	No disconnection	No disconnection happened.
4	Another phase disconnects	Another phase disconnects and individual phase connection isn't allowed.

Value	Label	Description
8	Disconnected by the user	Disconnected by the user.
16	Disconnected by command entry	Disconnected by the command input.
32	Disconnected due to inverter	The inverter must be turned on to be able to connect the AC input.
64	Disconnected due to the energy policy	Another AC input was chosen according to the energy policy.
256	Disconnected due to another cause	Disconnected due to another cause.
512	Overfrequency	Frequency crossed the limit defined with "Over-freq. threshold stage 1" (id 84) and "Over-freq. threshold stage 2" (id 86).
1024	Underfrequency	Frequency crossed the limit defined with "Under-freq. threshold stage 1" (id 90) and "Under-freq. threshold stage 2" (id 88).
2048	Overvoltage	Voltage crossed the limit defined with "Over-volt. threshold stage 1" (id 76) and "Over-volt. threshold stage 2" (id 74) or the overvoltage fault ride-through curve.
4096	Undervoltage	Voltage crossed the limit defined with "Under-volt. threshold stage 1" (id 79) and "Under-volt. threshold stage 2" (id 81) or the undervoltage fault ride-through curve.
8192	Synchronization loss	A loss of synchronization between the inverter and the AC input has been detected.
16384	Outside of envelope	The voltage is outside of the permitted envelope.
32768	Islanding detected	An islanded network has been detected.
65536	Phase error	The relative position in between phases is outside of "Relative angle tolerance" (id 7).
131072	Excessive dc voltage	DC voltage is over "Max. DC voltage" (id 12)
262144	Earthing fault	An earthing fault has been detected. Check the earthing scheme and configuration "Earthing mode selection" (id 0).
524288	Error relay failure 1	A relay failure (connection broken) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
134217728	Thermal protection	Disconnection due to overheating caused by a too large current.
268435456	Self-test failed	The self-test of the interface protection has failed. Verify that the grid conditions are stable during test.

List of items of Enum 4 (Status)

Value	Label	Description
0	Disconnected	The AC input is disconnected.
1	Connected	The AC input is connected.
2	Error restarting	The AC input is temporarily maintained in error and will restart automatically once the error(s) leaved.
4	Error halted	The AC input is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).

L2 input config

Group : AcSource
Modbus device address : 7 to 8
*External ID : 2.x.7.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	En ID
2100	2	ViewOnly	0	Status	Disconnected		-	Current status.	enum	R	4
2102	2	ViewOnly	1	Unconnected reasons	NoReasons		-	Reasons explaining why the AC input is not connected.	bitfield	R	0
2104	2	ViewOnly	2	Warnings	NoWarnings		-	Current warnings.	bitfield	R	1
2106	2	ViewOnly	3	Errors	NoErrors		-	Current errors.	bitfield	R	2
2108	2	ViewOnly	4	Causes of disconnection	NoDisconnection		-	Causes of the AC input disconnection. Note that the value is initialized to 0 (no items checked in the list) until the first connection to the AC input.	bitfield	R	3
2112	2	Basic	6	Voltage 10min mean	0	%	-	Compute a 10min period moving average of the voltage.	float	R	-
2114	1	Basic	7	Connection allowed	true		-	Used to allowed or not the connection to the AC input.	bool	R/W	-
2115	1	Basic	8	Grid-feeding allowed	true		-	Used to allowed or not the grid-feeding.	bool	R/W	-
2116	2	Expert	9	Max import active power	3000	W	[0,100000]	Maximum active power the inverter is allowed to take from the AC input.	float	R/W	-
2118	2	Expert	10	Max export active power	3000	W	[0,100000]	Maximum active power the inverter is allowed to export into the AC input.	float	R/W	-
2120	2	Expert	11	Max import reactive power	2000	VAr	[0,100000]	Maximum reactive power the inverter is allowed to take from the AC input.	float	R/W	-
2122	2	Expert	12	Max export reactive power	2000	VAr	[0,100000]	Maximum reactive power the inverter is allowed to export into the AC input.	float	R/W	-
2124	2	Expert	13	Target active power	0	W	-	Desired active power the inverter aims to take from the AC input or export into it, using the sign convention where import power is positive and export power is negative.	float	R/W	-
2128	2	Expert	15	Export limit level	5		-	Priority level of the export limit sent to the power flow dispatcher.	int	R/W	-
2130	2	Expert	16	Setpoints level	2		-	Priority level of the setpoints sent to the power flow dispatcher.	int	R/W	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	En ID
2132	50	ViewOnly	17	Self-test results	"FFF:FFF:FFF:FFF:FFF:FFF:FFF:FFFnFFF:FFF:FFF:FFF:FFF:FFF:FFF:FFFnFFF:FFF:FFF:FFF:FFF:FFF:FFF:FFF"		-	The displayed values show encoded results of the interface protection self-test in hexadecimal format (FFF = invalid value). For Decoding (C=Column,R=Row): (C1,R1):(C2,R1):(C3,R1): (C4,R1) : Measured voltages at tripping, RealValue = 125/4095*DisplayValue [%]. (C5,R1):(C6,R1):(C7,R1): (C8,R1) : Measured frequencies at tripping, RealValue = 10/4095*DisplayValue + NominalFreq - 5 [Hz]. (C1,R2):(C2,R2):(C3,R2): (C4,R2) : Absolute errors on voltage thresholds, RealValue = 5/4095*DisplayValue [%]. (C5,R2):(C6,R2):(C7,R2): (C8,R2) : Absolute errors on frequency thresholds, RealValue = 20/4095*DisplayValue [mHz]. All Row3 : Absolute errors on trip time, RealValue = 1000/4095*DisplayValue [ms]. Note the test order per column : C1=UnderVoltageStage1, C2=UnderVoltageStage2, C3=OverVoltageStage1, C4=OverVoltageStage2, C5=UnderFrequencyStage1, C6=UnderFrequencyStage2, C7=OverFrequencyStage1, C8=OverFrequencyStage2. For more details see user manual.	char[99]	R	-
2184	2	Expert	19	Import limit level	5		-	Priority level of the import limit sent to the power flow dispatcher.	int	R/W	-
2186	2	R:ViewOnly W:Studer	20	Device identifier	-1		-	The ID of the device associated with this AC input.	int	R	-

List of items of Enum 0 (UnconnectedReasons)

Value	Label	Description
0	No reasons (connected/connecting)	No reason(s) because the AC input is connected or connecting.
1	No voltage	No voltage detected on the AC input.
2	Waiting observation time	Waiting the required observation time before reconnection.
4	Individual phase not allowed	Individual phase connection is not allowed.
8	Unconnected due to the user	Unconnected due to the user.
16	Unconnected due to command entry	Unconnected due to the command input.
32	Unconnected due to inverter	The inverter must be turned on and ready for connexion in order to connect the AC input.

Value	Label	Description
64	Unconnected due to the energy policy	Another AC input is chosen according to the energy policy.
256	Unconnected due to another cause	Unconnected due to another cause.
2147483648	Unconnected due to an error	Unconnected due to an error.

List of items of Enum 1 (Warnings)

Value	Label	Description
0	End of warning	The AC input has no warning(s).
1	Active power response to overfrequency	The actual active power is limited in response to an overfrequency.
2	Active power response to underfrequency	The actual active power is limited in response to an underfrequency.
4	Reactive power response to voltage	The actual reactive power is adjusted in response to voltage fluctuation, according to the chosen method.
8	Undervoltage ride through	Undervoltage ride through. The voltage is below "Min. voltage fault onset" (id 31) but over the defined undervoltage curve.
16	Overvoltage ride through	Overvoltage ride through. The voltage is over "Max. voltage fault onset" (id 28) but under the defined overvoltage curve.
32	Power limited by increase gradient	Power is limited by the power increase gradient after a re-connection.
64	Ceasing active power	Ceasing active power. EN 50549-1 chapter 4.11.1.
128	Reduced active power on setpoint	Reduction of active power on setpoint. EN 50549-1 chapter 4.11.2.
256	Active power response to overvoltage	The actual active power is limited in response to an overvoltage. EN 50549-1 chapter 4.7.3.
512	Overtemperature	Will disconnect soon if the current doesn't decrease in order to protect against over-temperature.
1024	Self-test in progress	A self-test of the interface protection is in progress. Relays will open/close and warnings/errors will be present. The device switches automatically to normal operation if test is passed. CEI 0-21 A.4.4.

List of items of Enum 2 (Errors)

Value	Label	Description
0	End of error	The AC input has no error(s).
512	Overfrequency	Frequency is over "Upper freq. for start generation" (id 106) or "Upper freq. for auto reconnection" (id 100).
1024	Underfrequency	Frequency is below "Lower freq. for start generation" (id 107) or "Lower freq. for auto reconnection" (id 101).
2048	Overvoltage	Voltage is over "Upper volt. for start generation" (id 104) or "Upper volt. for auto reconnection" (id 98).
4096	Undervoltage	Voltage is under "Lower volt. for start generation" (id 105) or "Lower volt. for auto reconnection" (id 99).
8192	Synchronization loss	A loss of synchronization between the inverter and the AC input has been detected.
16384	Outside of envelope	The voltage is outside of the permitted envelope defined by "Envelope detection tolerance" (id 14).
32768	Islanding detected	An islanded network has been detected.
65536	Phase error	The relative position in between phases is outside of "Relative angle tolerance" (id 7).
131072	Excessive dc voltage	DC voltage is over "Max. DC voltage" (id 12)
262144	Earthing error	An earthing error has been detected. Check the earthing scheme and configuration "Earthing mode selection" (id 0).
524288	Error relay failure 1	A relay failure (connection broken) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
1048576	Synchronization failed	The synchronization has failed and will retry automatically soon
2097152	Error relay failure 2	A relay failure (relay on AC input side is stuck open) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
4194304	Error relay failure 3	A relay failure (relay on load side is stuck open) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
8388608	Error relay failure 4	A relay failure (both relays on AC input and load side are stuck open) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
16777216	Error relay failure 5	A relay failure (one relay on AC input or load side is stuck close) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
33554432	Error relay failure 6	A relay supervision circuit failure has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
67108864	Error too large current at rel. open.	A relay opening was aborted due to a too large current to protect the relay integrity. If the current drop rapidly, the error will be cleared automatically.
134217728	Overtemperature	Unconnected due to overheating caused by a too large current.
268435456	Self-test failed	The self-test of the interface protection has failed. Verify that the grid conditions are stable during test.
536870912	Error indicator 1	Indicator for additional error-related information for Studer support.
1073741824	Error indicator 2	Indicator for additional error-related information for Studer support.

List of items of Enum 3 (CauseOfDisconnection)

Value	Label	Description
0	No disconnection	No disconnection happened.
4	Another phase disconnects	Another phase disconnects and individual phase connection isn't allowed.

Value	Label	Description
8	Disconnected by the user	Disconnected by the user.
16	Disconnected by command entry	Disconnected by the command input.
32	Disconnected due to inverter	The inverter must be turned on to be able to connect the AC input.
64	Disconnected due to the energy policy	Another AC input was chosen according to the energy policy.
256	Disconnected due to another cause	Disconnected due to another cause.
512	Overfrequency	Frequency crossed the limit defined with "Over-freq. threshold stage 1" (id 84) and "Over-freq. threshold stage 2" (id 86).
1024	Underfrequency	Frequency crossed the limit defined with "Under-freq. threshold stage 1" (id 90) and "Under-freq. threshold stage 2" (id 88).
2048	Overvoltage	Voltage crossed the limit defined with "Over-volt. threshold stage 1" (id 76) and "Over-volt. threshold stage 2" (id 74) or the overvoltage fault ride-through curve.
4096	Undervoltage	Voltage crossed the limit defined with "Under-volt. threshold stage 1" (id 79) and "Under-volt. threshold stage 2" (id 81) or the undervoltage fault ride-through curve.
8192	Synchronization loss	A loss of synchronization between the inverter and the AC input has been detected.
16384	Outside of envelope	The voltage is outside of the permitted envelope.
32768	Islanding detected	An islanded network has been detected.
65536	Phase error	The relative position in between phases is outside of "Relative angle tolerance" (id 7).
131072	Excessive dc voltage	DC voltage is over "Max. DC voltage" (id 12)
262144	Earthing fault	An earthing fault has been detected. Check the earthing scheme and configuration "Earthing mode selection" (id 0).
524288	Error relay failure 1	A relay failure (connection broken) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
134217728	Thermal protection	Disconnection due to overheating caused by a too large current.
268435456	Self-test failed	The self-test of the interface protection has failed. Verify that the grid conditions are stable during test.

List of items of Enum 4 (Status)

Value	Label	Description
0	Disconnected	The AC input is disconnected.
1	Connected	The AC input is connected.
2	Error restarting	The AC input is temporarily maintained in error and will restart automatically once the error(s) leaved.
4	Error halted	The AC input is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).

L3 input config

Group : AcSource
Modbus device address : 7 to 8
*External ID : 2.x.8.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	En ID
2400	2	ViewOnly	0	Status	Disconnected		-	Current status.	enum	R	4
2402	2	ViewOnly	1	Unconnected reasons	NoReasons		-	Reasons explaining why the AC input is not connected.	bitfield	R	0
2404	2	ViewOnly	2	Warnings	NoWarnings		-	Current warnings.	bitfield	R	1
2406	2	ViewOnly	3	Errors	NoErrors		-	Current errors.	bitfield	R	2
2408	2	ViewOnly	4	Causes of disconnection	NoDisconnection		-	Causes of the AC input disconnection. Note that the value is initialized to 0 (no items checked in the list) until the first connection to the AC input.	bitfield	R	3
2412	2	Basic	6	Voltage 10min mean	0	%	-	Compute a 10min period moving average of the voltage.	float	R	-
2414	1	Basic	7	Connection allowed	true		-	Used to allowed or not the connection to the AC input.	bool	R/W	-
2415	1	Basic	8	Grid-feeding allowed	true		-	Used to allowed or not the grid-feeding.	bool	R/W	-
2416	2	Expert	9	Max import active power	3000	W	[0,100000]	Maximum active power the inverter is allowed to take from the AC input.	float	R/W	-
2418	2	Expert	10	Max export active power	3000	W	[0,100000]	Maximum active power the inverter is allowed to export into the AC input.	float	R/W	-
2420	2	Expert	11	Max import reactive power	2000	VAr	[0,100000]	Maximum reactive power the inverter is allowed to take from the AC input.	float	R/W	-
2422	2	Expert	12	Max export reactive power	2000	VAr	[0,100000]	Maximum reactive power the inverter is allowed to export into the AC input.	float	R/W	-
2424	2	Expert	13	Target active power	0	W	-	Desired active power the inverter aims to take from the AC input or export into it, using the sign convention where import power is positive and export power is negative.	float	R/W	-
2428	2	Expert	15	Export limit level	5		-	Priority level of the export limit sent to the power flow dispatcher.	int	R/W	-
2430	2	Expert	16	Setpoints level	2		-	Priority level of the setpoints sent to the power flow dispatcher.	int	R/W	-

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	En ID
2432	50	ViewOnly	17	Self-test results	"FFF:FFF:FFF:FFF:FFF:FFF:FFF:FFFnFFF:FFF:FFF:FFF:FFF:FFF:FFF:FFFnFFF:FFF:FFF:FFF:FFF:FFF:FFF:FFF"		-	The displayed values show encoded results of the interface protection self-test in hexadecimal format (FFF = invalid value). For Decoding (C=Column,R=Row): (C1,R1):(C2,R1):(C3,R1): (C4,R1) : Measured voltages at tripping, RealValue = 125/4095*DisplayValue [%]. (C5,R1):(C6,R1):(C7,R1): (C8,R1) : Measured frequencies at tripping, RealValue = 10/4095*DisplayValue + NominalFreq - 5 [Hz]. (C1,R2):(C2,R2):(C3,R2): (C4,R2) : Absolute errors on voltage thresholds, RealValue = 5/4095*DisplayValue [%]. (C5,R2):(C6,R2):(C7,R2): (C8,R2) : Absolute errors on frequency thresholds, RealValue = 20/4095*DisplayValue [mHz]. All Row3 : Absolute errors on trip time, RealValue = 1000/4095*DisplayValue [ms]. Note the test order per column : C1=UnderVoltageStage1, C2=UnderVoltageStage2, C3=OverVoltageStage1, C4=OverVoltageStage2, C5=UnderFrequencyStage1, C6=UnderFrequencyStage2, C7=OverFrequencyStage1, C8=OverFrequencyStage2. For more details see user manual.	char[99]	R	-
2484	2	Expert	19	Import limit level	5		-	Priority level of the import limit sent to the power flow dispatcher.	int	R/W	-
2486	2	R:ViewOnly W:Studer	20	Device identifier	-1		-	The ID of the device associated with this AC input.	int	R	-

List of items of Enum 0 (UnconnectedReasons)

Value	Label	Description
0	No reasons (connected/connecting)	No reason(s) because the AC input is connected or connecting.
1	No voltage	No voltage detected on the AC input.
2	Waiting observation time	Waiting the required observation time before reconnection.
4	Individual phase not allowed	Individual phase connection is not allowed.
8	Unconnected due to the user	Unconnected due to the user.
16	Unconnected due to command entry	Unconnected due to the command input.
32	Unconnected due to inverter	The inverter must be turned on and ready for connexion in order to connect the AC input.

Value	Label	Description
64	Unconnected due to the energy policy	Another AC input is chosen according to the energy policy.
256	Unconnected due to another cause	Unconnected due to another cause.
2147483648	Unconnected due to an error	Unconnected due to an error.

List of items of Enum 1 (Warnings)

Value	Label	Description
0	End of warning	The AC input has no warning(s).
1	Active power response to overfrequency	The actual active power is limited in response to an overfrequency.
2	Active power response to underfrequency	The actual active power is limited in response to an underfrequency.
4	Reactive power response to voltage	The actual reactive power is adjusted in response to voltage fluctuation, according to the chosen method.
8	Undervoltage ride through	Undervoltage ride through. The voltage is below "Min. voltage fault onset" (id 31) but over the defined undervoltage curve.
16	Overvoltage ride through	Overvoltage ride through. The voltage is over "Max. voltage fault onset" (id 28) but under the defined overvoltage curve.
32	Power limited by increase gradient	Power is limited by the power increase gradient after a re-connection.
64	Ceasing active power	Ceasing active power. EN 50549-1 chapter 4.11.1.
128	Reduced active power on setpoint	Reduction of active power on setpoint. EN 50549-1 chapter 4.11.2.
256	Active power response to overvoltage	The actual active power is limited in response to an overvoltage. EN 50549-1 chapter 4.7.3.
512	Overtemperature	Will disconnect soon if the current doesn't decrease in order to protect against over-temperature.
1024	Self-test in progress	A self-test of the interface protection is in progress. Relays will open/close and warnings/errors will be present. The device switches automatically to normal operation if test is passed. CEI 0-21 A.4.4.

List of items of Enum 2 (Errors)

Value	Label	Description
0	End of error	The AC input has no error(s).
512	Overfrequency	Frequency is over "Upper freq. for start generation" (id 106) or "Upper freq. for auto reconnection" (id 100).
1024	Underfrequency	Frequency is below "Lower freq. for start generation" (id 107) or "Lower freq. for auto reconnection" (id 101).
2048	Overvoltage	Voltage is over "Upper volt. for start generation" (id 104) or "Upper volt. for auto reconnection" (id 98).
4096	Undervoltage	Voltage is under "Lower volt. for start generation" (id 105) or "Lower volt. for auto reconnection" (id 99).
8192	Synchronization loss	A loss of synchronization between the inverter and the AC input has been detected.
16384	Outside of envelope	The voltage is outside of the permitted envelope defined by "Envelope detection tolerance" (id 14).
32768	Islanding detected	An islanded network has been detected.
65536	Phase error	The relative position in between phases is outside of "Relative angle tolerance" (id 7).
131072	Excessive dc voltage	DC voltage is over "Max. DC voltage" (id 12)
262144	Earthing error	An earthing error has been detected. Check the earthing scheme and configuration "Earthing mode selection" (id 0).
524288	Error relay failure 1	A relay failure (connection broken) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
1048576	Synchronization failed	The synchronization has failed and will retry automatically soon
2097152	Error relay failure 2	A relay failure (relay on AC input side is stuck open) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
4194304	Error relay failure 3	A relay failure (relay on load side is stuck open) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
8388608	Error relay failure 4	A relay failure (both relays on AC input and load side are stuck open) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
16777216	Error relay failure 5	A relay failure (one relay on AC input or load side is stuck close) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
33554432	Error relay failure 6	A relay supervision circuit failure has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
67108864	Error too large current at rel. open.	A relay opening was aborted due to a too large current to protect the relay integrity. If the current drop rapidly, the error will be cleared automatically.
134217728	Overtemperature	Unconnected due to overheating caused by a too large current.
268435456	Self-test failed	The self-test of the interface protection has failed. Verify that the grid conditions are stable during test.
536870912	Error indicator 1	Indicator for additional error-related information for Studer support.
1073741824	Error indicator 2	Indicator for additional error-related information for Studer support.

List of items of Enum 3 (CauseOfDisconnection)

Value	Label	Description
0	No disconnection	No disconnection happened.
4	Another phase disconnects	Another phase disconnects and individual phase connection isn't allowed.

Value	Label	Description
8	Disconnected by the user	Disconnected by the user.
16	Disconnected by command entry	Disconnected by the command input.
32	Disconnected due to inverter	The inverter must be turned on to be able to connect the AC input.
64	Disconnected due to the energy policy	Another AC input was chosen according to the energy policy.
256	Disconnected due to another cause	Disconnected due to another cause.
512	Overfrequency	Frequency crossed the limit defined with "Over-freq. threshold stage 1" (id 84) and "Over-freq. threshold stage 2" (id 86).
1024	Underfrequency	Frequency crossed the limit defined with "Under-freq. threshold stage 1" (id 90) and "Under-freq. threshold stage 2" (id 88).
2048	Overvoltage	Voltage crossed the limit defined with "Over-volt. threshold stage 1" (id 76) and "Over-volt. threshold stage 2" (id 74) or the overvoltage fault ride-through curve.
4096	Undervoltage	Voltage crossed the limit defined with "Under-volt. threshold stage 1" (id 79) and "Under-volt. threshold stage 2" (id 81) or the undervoltage fault ride-through curve.
8192	Synchronization loss	A loss of synchronization between the inverter and the AC input has been detected.
16384	Outside of envelope	The voltage is outside of the permitted envelope.
32768	Islanding detected	An islanded network has been detected.
65536	Phase error	The relative position in between phases is outside of "Relative angle tolerance" (id 7).
131072	Excessive dc voltage	DC voltage is over "Max. DC voltage" (id 12)
262144	Earthing fault	An earthing fault has been detected. Check the earthing scheme and configuration "Earthing mode selection" (id 0).
524288	Error relay failure 1	A relay failure (connection broken) has been detected and has disconnected the AC input. This error must be cleared using the front panel, the user interface or by sending a signal via the property "Clear errors" (id 0).
134217728	Thermal protection	Disconnection due to overheating caused by a too large current.
268435456	Self-test failed	The self-test of the interface protection has failed. Verify that the grid conditions are stable during test.

List of items of Enum 4 (Status)

Value	Label	Description
0	Disconnected	The AC input is disconnected.
1	Connected	The AC input is connected.
2	Error restarting	The AC input is temporarily maintained in error and will restart automatically once the error(s) leaved.
4	Error halted	The AC input is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).

3-phase measure

Group : AcFlexLoad
Modbus device address : 9 to 13
*External ID : 3.x.1.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
0	2	ViewOnly	0	Frequency	0	Hz	-	Frequency measured.	float	R	-
2	2	ViewOnly	4	Line voltage L1-L2	0	V	-	Line voltage L1-L2 measured.	float	R	-
4	2	ViewOnly	8	Line voltage L2-L3	0	V	-	Line voltage L2-L3 measured.	float	R	-
6	2	ViewOnly	12	Line voltage L3-L1	0	V	-	Line voltage L3-L1 measured.	float	R	-
8	2	ViewOnly	16	Total active power	0	W	-	Total active power measured.	float	R	-
10	2	ViewOnly	20	Total apparent power	0	VA	-	Total apparent power measured.	float	R	-
12	2	ViewOnly	24	Angle L2 relative to L1	0	degree	-	Angle L2 relative to L1 measured.	float	R	-
14	2	ViewOnly	25	Angle L3 relative to L1	0	degree	-	Angle L3 relative to L1 measured.	float	R	-
16	2	ViewOnly	26	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
18	2	ViewOnly	27	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
20	4	ViewOnly	28	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
24	4	ViewOnly	29	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
28	2	ViewOnly	30	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
30	2	ViewOnly	31	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
32	4	ViewOnly	32	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
36	4	ViewOnly	33	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-
40	2	ViewOnly	34	Day runtime	0	h	-	Day runtime measured.	float	R	-
42	2	ViewOnly	35	Total runtime	0	h	-	Total runtime measured.	float	R	-
44	2	ViewOnly	36	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
46	2	ViewOnly	37	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
48	2	ViewOnly	38	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
50	2	ViewOnly	39	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
52	2	ViewOnly	40	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
54	2	ViewOnly	41	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
56	2	ViewOnly	42	Produced active power	0	W	-	Produced active power measured.	float	R	-
58	2	ViewOnly	44	Consumed active power	0	W	-	Consumed active power measured.	float	R	-

measure L1

Group : AcFlexLoad
Modbus device address : 9 to 13
*External ID : 3.x.2.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
300	2	ViewOnly	0	Phase voltage	0	V	-	Phase voltage RMS measured.	float	R	-
302	2	ViewOnly	4	Current	0	A	-	Current RMS measured.	float	R	-
304	2	ViewOnly	8	Active power	0	W	-	Active power measured.	float	R	-
306	2	ViewOnly	12	Reactive power	0	VAR	-	Reactive power measured.	float	R	-
308	2	ViewOnly	16	Apparent power	0	VA	-	Apparent power measured.	float	R	-
310	2	ViewOnly	20	Power factor	0		-	Power factor measured.	float	R	-
312	2	ViewOnly	24	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
314	2	ViewOnly	25	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
316	2	ViewOnly	26	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
318	2	ViewOnly	27	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
320	2	ViewOnly	28	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
322	2	ViewOnly	29	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
328	2	ViewOnly	32	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
330	2	ViewOnly	33	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
332	4	ViewOnly	34	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
336	4	ViewOnly	35	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
340	2	ViewOnly	36	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
342	2	ViewOnly	37	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
344	4	ViewOnly	38	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
348	4	ViewOnly	39	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-

measure L2

Group : AcFlexLoad
Modbus device address : 9 to 13
*External ID : 3.x.3.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
600	2	ViewOnly	0	Phase voltage	0	V	-	Phase voltage RMS measured.	float	R	-
602	2	ViewOnly	4	Current	0	A	-	Current RMS measured.	float	R	-
604	2	ViewOnly	8	Active power	0	W	-	Active power measured.	float	R	-
606	2	ViewOnly	12	Reactive power	0	VAR	-	Reactive power measured.	float	R	-
608	2	ViewOnly	16	Apparent power	0	VA	-	Apparent power measured.	float	R	-
610	2	ViewOnly	20	Power factor	0		-	Power factor measured.	float	R	-
612	2	ViewOnly	24	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
614	2	ViewOnly	25	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
616	2	ViewOnly	26	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
618	2	ViewOnly	27	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
620	2	ViewOnly	28	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
622	2	ViewOnly	29	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
628	2	ViewOnly	32	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
630	2	ViewOnly	33	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
632	4	ViewOnly	34	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
636	4	ViewOnly	35	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
640	2	ViewOnly	36	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
642	2	ViewOnly	37	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
644	4	ViewOnly	38	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
648	4	ViewOnly	39	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-

measure L3

Group : AcFlexLoad
Modbus device address : 9 to 13
*External ID : 3.x.4.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
900	2	ViewOnly	0	Phase voltage	0	V	-	Phase voltage RMS measured.	float	R	-
902	2	ViewOnly	4	Current	0	A	-	Current RMS measured.	float	R	-
904	2	ViewOnly	8	Active power	0	W	-	Active power measured.	float	R	-
906	2	ViewOnly	12	Reactive power	0	VAR	-	Reactive power measured.	float	R	-
908	2	ViewOnly	16	Apparent power	0	VA	-	Apparent power measured.	float	R	-
910	2	ViewOnly	20	Power factor	0		-	Power factor measured.	float	R	-
912	2	ViewOnly	24	Day peak power	0	VA	-	Peak power of the current day.	float	R	-
914	2	ViewOnly	25	Previous day peak power	0	VA	-	Peak power of the previous day.	float	R	-
916	2	ViewOnly	26	Day minimum active power	0	W	-	Minimum active power of the current day.	float	R	-
918	2	ViewOnly	27	Previous day minimum active power	0	W	-	Minimum active power of the previous day.	float	R	-
920	2	ViewOnly	28	Day maximum active power	0	W	-	Maximum active power of the current day.	float	R	-
922	2	ViewOnly	29	Previous day maximum active power	0	W	-	Maximum active power of the previous day.	float	R	-
928	2	ViewOnly	32	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
930	2	ViewOnly	33	Previous day consumed energy	0	Wh	-	Consumed energy of the previous day.	float	R	-
932	4	ViewOnly	34	Resetable consumed energy	0	Wh	-	Resetable consumed energy.	float64	R/W	-
936	4	ViewOnly	35	Total consumed energy	0	Wh	-	Total consumed energy.	float64	R	-
940	2	ViewOnly	36	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-
942	2	ViewOnly	37	Previous day produced energy	0	Wh	-	Produced energy of the previous day.	float	R	-
944	4	ViewOnly	38	Resetable produced energy	0	Wh	-	Resetable produced energy.	float64	R/W	-
948	4	ViewOnly	39	Total produced energy	0	Wh	-	Total produced energy.	float64	R	-

L1 controlled relay

Group : AcFlexLoad
Modbus device address : 9 to 13
*External ID : 3.x.5.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1200	1	ViewOnly	0	Is connected	false		-	Shows the relay current state.	bool	R	-
1201	2	ViewOnly	1	Position	SafeStateOff		-	Current position.	enum	R	5
1203	2	ViewOnly	2	Errors	NoErrors		-	Relay aux list of errors.	enum	R	6
1207	2	Basic	4	Operating mode	ManualOff		-	Selection of controlled relay operating mode.	enum	R/W	0
1209	2	Basic	5	Auto mode selection	PresetBatVolt		-	Selection of the automatic configuration.	enum	R/W	1
1211	2	Basic	6	Safe state selection	SafeOff		-	Selection of the controlled relay safe state position in case of problem or undetermined condition.	enum	R/W	2
1213	2	Basic	7	Battery voltage act. thresh.	42	V	[32,70]	Pre-set battery voltage activation threshold voltage.	float	R/W	-
1215	2	Basic	8	Battery voltage deact. thresh.	52	V	[32,70]	Pre-set battery voltage deactivation threshold voltage.	float	R/W	-
1217	2	Basic	9	Battery SOC act. thresh.	10	%	[0,100]	Pre-set battery SOC activation threshold SOC.	uint	R/W	-
1219	2	Basic	10	Battery SOC deact. thresh.	90	%	[0,100]	Pre-set battery SOC deactivation threshold SOC.	uint	R/W	-
1221	2	Basic	11	Battery temp. act. thresh.	50	°C	[0,150]	Pre-set battery temperature activation threshold temperature.	uint	R/W	-
1223	2	Basic	12	Battery temp. deact. thresh.	30	°C	[0,150]	Pre-set battery temperature deactivation threshold temperature.	uint	R/W	-
1225	2	Basic	13	Bat. charg. state selection	None		-	Pre-set battery charging state selection of the triggering states. Multiple choice possible.	bitfield	R/W	8
1227	2	Basic	14	Power AC selection	AcInput1All		-	Pre-set power AC selection of the AC input/load active power for comparison.	enum	R/W	3
1229	2	Basic	15	Power AC activ. thresh.	1000	W	[-200000,200000]	Pre-set power AC activation threshold power.	float	R/W	-
1231	2	Basic	16	Power AC deact. thresh.	0	W	[-200000,200000]	Pre-set power AC deactivation threshold power.	float	R/W	-
1233	2	Basic	17	Solar excess on-grid act. thresh.	1000	W	-	Pre-set solar excess on-grid activation threshold power.	float	R/W	-
1235	2	Basic	18	Solar excess on-grid deact. thresh.	500	W	-	Pre-set solar excess on-grid deactivation threshold power.	float	R/W	-
1241	2	Basic	21	Cmd input select index	0		[0,10]	Index of the command input interface used to control the relay.	uint	R/W	-
1243	2	Basic	22	Errors and warnings select signal	TrigOnErrorsHalted		-	Pre-set errors and warnings selection of the triggering signal.	bitfield	R/W	4
1245	2	Basic	23	AC input selection	OnAcInput1Connection		-	Pre-set on AC input selection.	enum	R/W	9
1247	2	Basic	24	AC coupling blanking time	5	s.	[5,10000]	Pre-set AC-coupling time during which the relay remains open during on-grid to off-grid transition.	uint	R/W	-
1249	1	ViewOnly	25	Is virtual	false		-	Shows if the relay is a virtual relay.	bool	R	-
1250	2	Basic	26	Advanced logics combination	0		-	Pre-set advanced logics, combination function (see advanced documentation).	uint	R/W	-
1254	2	Basic	28	Solar power activ. thresh.	5000	W	[0,200000]	Pre-set solar power activation threshold.	float	R/W	-
1256	2	Basic	29	Solar power deact. thresh.	500	W	[0,200000]	Pre-set solar power deactivation threshold power.	float	R/W	-
1258	2	Basic	30	Bat. index	ConnectedBatteryIdx		-	Index of the battery from which the values for the pre-set battery must be read.	enum	R/W	10

List of items of Enum 0 (OperatingMode)

Value	Label	Description
0	Manual Off	Relay is permanently deactivated (position NC).
1	Manual On	Relay is permanently activated (position NO).
2	Auto	Relay is activated according to a preset conditional mode.

List of items of Enum 1 (AutoMode)

Value	Label	Description

Value	Label	Description
0	Battery voltage	Relay is activated when the battery voltage reaches the activation threshold voltage. Relay is deactivated when the battery voltage reaches deactivation threshold voltage.
1	Battery SOC	Relay is activated when the battery SOC (state of charge) reaches the activation threshold SOC. Relay is deactivated when the SOC voltage reaches deactivation threshold SOC.
2	Battery temperature	Relay is activated when the battery temperature reaches the activation threshold temperature. Relay is deactivated when the battery temperature reaches deactivation threshold temperature.
3	Battery charg. state	Relay is activated depending on battery charging state.
4	Power AC	Relay is activated when the active power AC reaches the activation threshold power. Relay is deactivated when the power AC reaches the deactivation threshold power. The power used for this comparison can be selected between AC inputs, AC-Flex or AC-Loads.
15	Solar power	Relay is activated when the solar total power reaches the activation threshold power. Relay is deactivated when the solar total power reaches the deactivation threshold power.
5	On-Source	Relay is activated when the device is operating on an AC input. The type of AC input can be selected with "AC input selection" (id 23).
12	Off-Source	Relay is activated when the device is operating and the AC input is disconnected(offgrid).
6	Solar excess on-grid	Relay is activated with the following conditions: the activation threshold power is reached on AC input, the transfer is connected to the AC input (ongrid). Relay is disabled once one of the folowing condition is true: AC input power reaches the deactivation power threshold, the inverter is offgrid.
7	Solar excess	Relay is activated when at least one solar converter in the system is limited due to a solar excess.
8	Schedule time	Relay is activated during a daily time frame.
9	Cmd input	Relay is activated depending on command input state. It is possible to combine the 2 command entries using boolean logic.
10	Errors and warnings	Relay is activated using the device errors and/or the warnings.
11	Ext bypass	Relay is activated when all phases of the inverter are connected to AC-Loads and working. The purpose of this function is for example to enable an external bypass.
13	AC Coupling	Relay is configured to control AC coupled devices. Relay opens during on-grid to off-grid transitions to prevent overload of the battery.
14	Advanced logics	Relay is activated using advanced logics from the state of up to 5 inputs.

List of items of Enum 2 (SafeState)

Value	Label	Description
0	Safe Off	Relay is deactivated in case of undetermined condition or problem.
1	Safe On	Relay is activated in case of undetermined condition or problem.
2	Last manual	Relay takes the state of the last manual operation in case of undetermined condition or problem.

List of items of Enum 3 (PresetPacSelection)

Value	Label	Description
0	AC input 1 all	Power detection on AC input 1. Total active power on all phases.
1	AC input 1 L1	Power detection on L1 of AC input 1.
2	AC input 1 L2	Power detection on L2 of AC input 1.
3	AC input 1 L3	Power detection on L3 of AC input 1.
4	AC input 2 all	Power detection on AC input 2. Total active power on all phases.
5	AC input 2 L1	Power detection on L1 of AC input 2.
6	AC input 2 L2	Power detection on L2 of AC input 2.
7	AC input 2 L3	Power detection on L3 of AC input 2.
8	FlexLoads all	Power detection on total FlexLoads of the system. Total active power on all phases.
9	FlexLoads L1	Power detection on all L1 FlexLoads of the system.
10	FlexLoads L2	Power detection on all L2 FlexLoads of the system.
11	FlexLoads L3	Power detection on all L3 FlexLoads of the system.
12	AC-Loads all	Power detection on AC-Loads. Total active power on all phases.
13	AC-Loads L1	Power detection on L1 of AC-Loads.
14	AC-Loads L2	Power detection on L2 of AC-Loads.
15	AC-Loads L3	Power detection on L3 of AC-Loads.

List of items of Enum 4 (PresetErrorsWarnings)

Value	Label	Description
0	Trig on all conditions	Activation triggered by all conditions.
1	Trig on warnings	Activation triggered by warnings.
2	Trig on errors restarting	Activation triggered by errors restarting.
4	Trig on errors halted	Activation triggered by errors halted.

List of items of Enum 5 (RelayState)

Value	Label	Description
0	Safe state opened	Actual position of relay: safe state on.
1	Safe state closed	Actual position of relay: safe state off.
2	Rel. man. opened	Actual position of relay: Manually opened.
3	Rel. man. closed	Actual position of relay: Manually closed.
4	Rel. auto. opened	Actual position of relay: Automatically opened.
5	Rel. auto. closed	Actual position of relay: Automatically closed.

List of items of Enum 6 (Errors)

Value	Label	Description
0	End of error	No error.
1	No hysteresis	Different trigger values are required in order to have an hysteresis.
2	Property access error	Failed to access to the required property.
3	Undefined error	Undefined error.
4	Advanced logics not available	Advanced logics not available.
5	Wrong advanced logics indexes	Wrong advanced logics indexes.

List of items of Enum 8 (BatChargeState)

Value	Label	Description
0	None	Battery charging state: no charging state selected.
1	Bulk	Battery charging state: bulk.
2	Reduced floating	Battery charging state: reduced floating.
4	Floating	Battery charging state: floating.
8	Periodical absorption	Battery charging state: periodical absorption.
16	Absorption	Battery charging state: absorption.
32	Equalization	Battery charging state: equalization.

List of items of Enum 9 (PresetOnSourceSelect)

Value	Label	Description
0	On AC input 1 connection	Activate relay when connected to AC input 1.
1	On AC input 2 connection	Activate relay when connected to AC input 2.
2	On any AC input connection	Activate relay when connected to either AC inputs.

List of items of Enum 10 (BatIndex)

Value	Label	Description
0	Connected battery idx	Index of the battery connected to this device.
1	Battery idx 0	Use battery index 0.
2	Battery idx 1	Use battery index 1.
3	Battery idx 2	Use battery index 2.
4	Battery idx 3	Use battery index 3.
5	Battery idx 4	Use battery index 4.

L2 controlled relay

Group : AcFlexLoad
Modbus device address : 9 to 13
*External ID : 3.x.6.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1500	1	ViewOnly	0	Is connected	false		-	Shows the relay current state.	bool	R	-
1501	2	ViewOnly	1	Position	SafeStateOff		-	Current position.	enum	R	5
1503	2	ViewOnly	2	Errors	NoErrors		-	Relay aux list of errors.	enum	R	6
1507	2	Basic	4	Operating mode	ManualOff		-	Selection of controlled relay operating mode.	enum	R/W	0
1509	2	Basic	5	Auto mode selection	PresetBatVolt		-	Selection of the automatic configuration.	enum	R/W	1
1511	2	Basic	6	Safe state selection	SafeOff		-	Selection of the controlled relay safe state position in case of problem or undetermined condition.	enum	R/W	2
1513	2	Basic	7	Battery voltage act. thresh.	42	V	[32,70]	Pre-set battery voltage activation threshold voltage.	float	R/W	-
1515	2	Basic	8	Battery voltage deact. thresh.	52	V	[32,70]	Pre-set battery voltage deactivation threshold voltage.	float	R/W	-
1517	2	Basic	9	Battery SOC act. thresh.	10	%	[0,100]	Pre-set battery SOC activation threshold SOC.	uint	R/W	-
1519	2	Basic	10	Battery SOC deact. thresh.	90	%	[0,100]	Pre-set battery SOC deactivation threshold SOC.	uint	R/W	-
1521	2	Basic	11	Battery temp. act. thresh.	50	°C	[0,150]	Pre-set battery temperature activation threshold temperature.	uint	R/W	-
1523	2	Basic	12	Battery temp. deact. thresh.	30	°C	[0,150]	Pre-set battery temperature deactivation threshold temperature.	uint	R/W	-
1525	2	Basic	13	Bat. charg. state selection	None		-	Pre-set battery charging state selection of the triggering states. Multiple choice possible.	bitfield	R/W	8
1527	2	Basic	14	Power AC selection	AcInput1All		-	Pre-set power AC selection of the AC input/load active power for comparison.	enum	R/W	3
1529	2	Basic	15	Power AC activ. thresh.	1000	W	[-200000,200000]	Pre-set power AC activation threshold power.	float	R/W	-
1531	2	Basic	16	Power AC deact. thresh.	0	W	[-200000,200000]	Pre-set power AC deactivation threshold power.	float	R/W	-
1533	2	Basic	17	Solar excess on-grid act. thresh.	1000	W	-	Pre-set solar excess on-grid activation threshold power.	float	R/W	-
1535	2	Basic	18	Solar excess on-grid deact. thresh.	500	W	-	Pre-set solar excess on-grid deactivation threshold power.	float	R/W	-
1541	2	Basic	21	Cmd input select index	0		[0,10]	Index of the command input interface used to control the relay.	uint	R/W	-
1543	2	Basic	22	Errors and warnings select signal	TrigOnErrorsHalted		-	Pre-set errors and warnings selection of the triggering signal.	bitfield	R/W	4
1545	2	Basic	23	AC input selection	OnAcInput1Connection		-	Pre-set on AC input selection.	enum	R/W	9
1547	2	Basic	24	AC coupling blanking time	5	s.	[5,10000]	Pre-set AC-coupling time during which the relay remains open during on-grid to off-grid transition.	uint	R/W	-
1549	1	ViewOnly	25	Is virtual	false		-	Shows if the relay is a virtual relay.	bool	R	-
1550	2	Basic	26	Advanced logics combination	0		-	Pre-set advanced logics, combination function (see advanced documentation).	uint	R/W	-
1554	2	Basic	28	Solar power activ. thresh.	5000	W	[0,200000]	Pre-set solar power activation threshold.	float	R/W	-
1556	2	Basic	29	Solar power deact. thresh.	500	W	[0,200000]	Pre-set solar power deactivation threshold power.	float	R/W	-
1558	2	Basic	30	Bat. index	ConnectedBatteryIdx		-	Index of the battery from which the values for the pre-set battery must be read.	enum	R/W	10

List of items of Enum 0 (OperatingMode)

Value	Label	Description
0	Manual Off	Relay is permanently deactivated (position NC).
1	Manual On	Relay is permanently activated (position NO).
2	Auto	Relay is activated according to a preset conditional mode.

List of items of Enum 1 (AutoMode)

Value	Label	Description

Value	Label	Description
0	Battery voltage	Relay is activated when the battery voltage reaches the activation threshold voltage. Relay is deactivated when the battery voltage reaches deactivation threshold voltage.
1	Battery SOC	Relay is activated when the battery SOC (state of charge) reaches the activation threshold SOC. Relay is deactivated when the SOC voltage reaches deactivation threshold SOC.
2	Battery temperature	Relay is activated when the battery temperature reaches the activation threshold temperature. Relay is deactivated when the battery temperature reaches deactivation threshold temperature.
3	Battery charg. state	Relay is activated depending on battery charging state.
4	Power AC	Relay is activated when the active power AC reaches the activation threshold power. Relay is deactivated when the power AC reaches the deactivation threshold power. The power used for this comparison can be selected between AC inputs, AC-Flex or AC-Loads.
15	Solar power	Relay is activated when the solar total power reaches the activation threshold power. Relay is deactivated when the solar total power reaches the deactivation threshold power.
5	On-Source	Relay is activated when the device is operating on an AC input. The type of AC input can be selected with "AC input selection" (id 23).
12	Off-Source	Relay is activated when the device is operating and the AC input is disconnected(offgrid).
6	Solar excess on-grid	Relay is activated with the following conditions: the activation threshold power is reached on AC input, the transfer is connected to the AC input (ongrid). Relay is disabled once one of the folowing condition is true: AC input power reaches the deactivation power threshold, the inverter is offgrid.
7	Solar excess	Relay is activated when at least one solar converter in the system is limited due to a solar excess.
8	Schedule time	Relay is activated during a daily time frame.
9	Cmd input	Relay is activated depending on command input state. It is possible to combine the 2 command entries using boolean logic.
10	Errors and warnings	Relay is activated using the device errors and/or the warnings.
11	Ext bypass	Relay is activated when all phases of the inverter are connected to AC-Loads and working. The purpose of this function is for example to enable an external bypass.
13	AC Coupling	Relay is configured to control AC coupled devices. Relay opens during on-grid to off-grid transitions to prevent overload of the battery.
14	Advanced logics	Relay is activated using advanced logics from the state of up to 5 inputs.

List of items of Enum 2 (SafeState)

Value	Label	Description
0	Safe Off	Relay is deactivated in case of undetermined condition or problem.
1	Safe On	Relay is activated in case of undetermined condition or problem.
2	Last manual	Relay takes the state of the last manual operation in case of undetermined condition or problem.

List of items of Enum 3 (PresetPacSelection)

Value	Label	Description
0	AC input 1 all	Power detection on AC input 1. Total active power on all phases.
1	AC input 1 L1	Power detection on L1 of AC input 1.
2	AC input 1 L2	Power detection on L2 of AC input 1.
3	AC input 1 L3	Power detection on L3 of AC input 1.
4	AC input 2 all	Power detection on AC input 2. Total active power on all phases.
5	AC input 2 L1	Power detection on L1 of AC input 2.
6	AC input 2 L2	Power detection on L2 of AC input 2.
7	AC input 2 L3	Power detection on L3 of AC input 2.
8	FlexLoads all	Power detection on total FlexLoads of the system. Total active power on all phases.
9	FlexLoads L1	Power detection on all L1 FlexLoads of the system.
10	FlexLoads L2	Power detection on all L2 FlexLoads of the system.
11	FlexLoads L3	Power detection on all L3 FlexLoads of the system.
12	AC-Loads all	Power detection on AC-Loads. Total active power on all phases.
13	AC-Loads L1	Power detection on L1 of AC-Loads.
14	AC-Loads L2	Power detection on L2 of AC-Loads.
15	AC-Loads L3	Power detection on L3 of AC-Loads.

List of items of Enum 4 (PresetErrorsWarnings)

Value	Label	Description
0	Trig on all conditions	Activation triggered by all conditions.
1	Trig on warnings	Activation triggered by warnings.
2	Trig on errors restarting	Activation triggered by errors restarting.
4	Trig on errors halted	Activation triggered by errors halted.

List of items of Enum 5 (RelayState)

Value	Label	Description
0	Safe state opened	Actual position of relay: safe state on.
1	Safe state closed	Actual position of relay: safe state off.
2	Rel. man. opened	Actual position of relay: Manually opened.
3	Rel. man. closed	Actual position of relay: Manually closed.
4	Rel. auto. opened	Actual position of relay: Automatically opened.
5	Rel. auto. closed	Actual position of relay: Automatically closed.

List of items of Enum 6 (Errors)

Value	Label	Description
0	End of error	No error.
1	No hysteresis	Different trigger values are required in order to have an hysteresis.
2	Property access error	Failed to access to the required property.
3	Undefined error	Undefined error.
4	Advanced logics not available	Advanced logics not available.
5	Wrong advanced logics indexes	Wrong advanced logics indexes.

List of items of Enum 8 (BatChargeState)

Value	Label	Description
0	None	Battery charging state: no charging state selected.
1	Bulk	Battery charging state: bulk.
2	Reduced floating	Battery charging state: reduced floating.
4	Floating	Battery charging state: floating.
8	Periodical absorption	Battery charging state: periodical absorption.
16	Absorption	Battery charging state: absorption.
32	Equalization	Battery charging state: equalization.

List of items of Enum 9 (PresetOnSourceSelect)

Value	Label	Description
0	On AC input 1 connection	Activate relay when connected to AC input 1.
1	On AC input 2 connection	Activate relay when connected to AC input 2.
2	On any AC input connection	Activate relay when connected to either AC inputs.

List of items of Enum 10 (BatIndex)

Value	Label	Description
0	Connected battery idx	Index of the battery connected to this device.
1	Battery idx 0	Use battery index 0.
2	Battery idx 1	Use battery index 1.
3	Battery idx 2	Use battery index 2.
4	Battery idx 3	Use battery index 3.
5	Battery idx 4	Use battery index 4.

L3 controlled relay

Group : AcFlexLoad
Modbus device address : 9 to 13
*External ID : 3.x.7.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1800	1	ViewOnly	0	Is connected	false		-	Shows the relay current state.	bool	R	-
1801	2	ViewOnly	1	Position	SafeStateOff		-	Current position.	enum	R	5
1803	2	ViewOnly	2	Errors	NoErrors		-	Relay aux list of errors.	enum	R	6
1807	2	Basic	4	Operating mode	ManualOff		-	Selection of controlled relay operating mode.	enum	R/W	0
1809	2	Basic	5	Auto mode selection	PresetBatVolt		-	Selection of the automatic configuration.	enum	R/W	1
1811	2	Basic	6	Safe state selection	SafeOff		-	Selection of the controlled relay safe state position in case of problem or undetermined condition.	enum	R/W	2
1813	2	Basic	7	Battery voltage act. thresh.	42	V	[32,70]	Pre-set battery voltage activation threshold voltage.	float	R/W	-
1815	2	Basic	8	Battery voltage deact. thresh.	52	V	[32,70]	Pre-set battery voltage deactivation threshold voltage.	float	R/W	-
1817	2	Basic	9	Battery SOC act. thresh.	10	%	[0,100]	Pre-set battery SOC activation threshold SOC.	uint	R/W	-
1819	2	Basic	10	Battery SOC deact. thresh.	90	%	[0,100]	Pre-set battery SOC deactivation threshold SOC.	uint	R/W	-
1821	2	Basic	11	Battery temp. act. thresh.	50	°C	[0,150]	Pre-set battery temperature activation threshold temperature.	uint	R/W	-
1823	2	Basic	12	Battery temp. deact. thresh.	30	°C	[0,150]	Pre-set battery temperature deactivation threshold temperature.	uint	R/W	-
1825	2	Basic	13	Bat. charg. state selection	None		-	Pre-set battery charging state selection of the triggering states. Multiple choice possible.	bitfield	R/W	8
1827	2	Basic	14	Power AC selection	AcInput1All		-	Pre-set power AC selection of the AC input/load active power for comparison.	enum	R/W	3
1829	2	Basic	15	Power AC activ. thresh.	1000	W	[-200000,200000]	Pre-set power AC activation threshold power.	float	R/W	-
1831	2	Basic	16	Power AC deact. thresh.	0	W	[-200000,200000]	Pre-set power AC deactivation threshold power.	float	R/W	-
1833	2	Basic	17	Solar excess on-grid act. thresh.	1000	W	-	Pre-set solar excess on-grid activation threshold power.	float	R/W	-
1835	2	Basic	18	Solar excess on-grid deact. thresh.	500	W	-	Pre-set solar excess on-grid deactivation threshold power.	float	R/W	-
1841	2	Basic	21	Cmd input select index	0		[0,10]	Index of the command input interface used to control the relay.	uint	R/W	-
1843	2	Basic	22	Errors and warnings select signal	TrigOnErrorsHalted		-	Pre-set errors and warnings selection of the triggering signal.	bitfield	R/W	4
1845	2	Basic	23	AC input selection	OnAcInput1Connection		-	Pre-set on AC input selection.	enum	R/W	9
1847	2	Basic	24	AC coupling blanking time	5	s.	[5,10000]	Pre-set AC-coupling time during which the relay remains open during on-grid to off-grid transition.	uint	R/W	-
1849	1	ViewOnly	25	Is virtual	false		-	Shows if the relay is a virtual relay.	bool	R	-
1850	2	Basic	26	Advanced logics combination	0		-	Pre-set advanced logics, combination function (see advanced documentation).	uint	R/W	-
1854	2	Basic	28	Solar power activ. thresh.	5000	W	[0,200000]	Pre-set solar power activation threshold.	float	R/W	-
1856	2	Basic	29	Solar power deact. thresh.	500	W	[0,200000]	Pre-set solar power deactivation threshold power.	float	R/W	-
1858	2	Basic	30	Bat. index	ConnectedBatteryIdx		-	Index of the battery from which the values for the pre-set battery must be read.	enum	R/W	10

List of items of Enum 0 (OperatingMode)

Value	Label	Description
0	Manual Off	Relay is permanently deactivated (position NC).
1	Manual On	Relay is permanently activated (position NO).
2	Auto	Relay is activated according to a preset conditional mode.

List of items of Enum 1 (AutoMode)

Value	Label	Description

Value	Label	Description
0	Battery voltage	Relay is activated when the battery voltage reaches the activation threshold voltage. Relay is deactivated when the battery voltage reaches deactivation threshold voltage.
1	Battery SOC	Relay is activated when the battery SOC (state of charge) reaches the activation threshold SOC. Relay is deactivated when the SOC voltage reaches deactivation threshold SOC.
2	Battery temperature	Relay is activated when the battery temperature reaches the activation threshold temperature. Relay is deactivated when the battery temperature reaches deactivation threshold temperature.
3	Battery charg. state	Relay is activated depending on battery charging state.
4	Power AC	Relay is activated when the active power AC reaches the activation threshold power. Relay is deactivated when the power AC reaches the deactivation threshold power. The power used for this comparison can be selected between AC inputs, AC-Flex or AC-Loads.
15	Solar power	Relay is activated when the solar total power reaches the activation threshold power. Relay is deactivated when the solar total power reaches the deactivation threshold power.
5	On-Source	Relay is activated when the device is operating on an AC input. The type of AC input can be selected with "AC input selection" (id 23).
12	Off-Source	Relay is activated when the device is operating and the AC input is disconnected(offgrid).
6	Solar excess on-grid	Relay is activated with the following conditions: the activation threshold power is reached on AC input, the transfer is connected to the AC input (ongrid). Relay is disabled once one of the folowing condition is true: AC input power reaches the deactivation power threshold, the inverter is offgrid.
7	Solar excess	Relay is activated when at least one solar converter in the system is limited due to a solar excess.
8	Schedule time	Relay is activated during a daily time frame.
9	Cmd input	Relay is activated depending on command input state. It is possible to combine the 2 command entries using boolean logic.
10	Errors and warnings	Relay is activated using the device errors and/or the warnings.
11	Ext bypass	Relay is activated when all phases of the inverter are connected to AC-Loads and working. The purpose of this function is for example to enable an external bypass.
13	AC Coupling	Relay is configured to control AC coupled devices. Relay opens during on-grid to off-grid transitions to prevent overload of the battery.
14	Advanced logics	Relay is activated using advanced logics from the state of up to 5 inputs.

List of items of Enum 2 (SafeState)

Value	Label	Description
0	Safe Off	Relay is deactivated in case of undetermined condition or problem.
1	Safe On	Relay is activated in case of undetermined condition or problem.
2	Last manual	Relay takes the state of the last manual operation in case of undetermined condition or problem.

List of items of Enum 3 (PresetPacSelection)

Value	Label	Description
0	AC input 1 all	Power detection on AC input 1. Total active power on all phases.
1	AC input 1 L1	Power detection on L1 of AC input 1.
2	AC input 1 L2	Power detection on L2 of AC input 1.
3	AC input 1 L3	Power detection on L3 of AC input 1.
4	AC input 2 all	Power detection on AC input 2. Total active power on all phases.
5	AC input 2 L1	Power detection on L1 of AC input 2.
6	AC input 2 L2	Power detection on L2 of AC input 2.
7	AC input 2 L3	Power detection on L3 of AC input 2.
8	FlexLoads all	Power detection on total FlexLoads of the system. Total active power on all phases.
9	FlexLoads L1	Power detection on all L1 FlexLoads of the system.
10	FlexLoads L2	Power detection on all L2 FlexLoads of the system.
11	FlexLoads L3	Power detection on all L3 FlexLoads of the system.
12	AC-Loads all	Power detection on AC-Loads. Total active power on all phases.
13	AC-Loads L1	Power detection on L1 of AC-Loads.
14	AC-Loads L2	Power detection on L2 of AC-Loads.
15	AC-Loads L3	Power detection on L3 of AC-Loads.

List of items of Enum 4 (PresetErrorsWarnings)

Value	Label	Description
0	Trig on all conditions	Activation triggered by all conditions.
1	Trig on warnings	Activation triggered by warnings.
2	Trig on errors restarting	Activation triggered by errors restarting.
4	Trig on errors halted	Activation triggered by errors halted.

List of items of Enum 5 (RelayState)

Value	Label	Description
0	Safe state opened	Actual position of relay: safe state on.
1	Safe state closed	Actual position of relay: safe state off.
2	Rel. man. opened	Actual position of relay: Manually opened.
3	Rel. man. closed	Actual position of relay: Manually closed.
4	Rel. auto. opened	Actual position of relay: Automatically opened.
5	Rel. auto. closed	Actual position of relay: Automatically closed.

List of items of Enum 6 (Errors)

Value	Label	Description
0	End of error	No error.
1	No hysteresis	Different trigger values are required in order to have an hysteresis.
2	Property access error	Failed to access to the required property.
3	Undefined error	Undefined error.
4	Advanced logics not available	Advanced logics not available.
5	Wrong advanced logics indexes	Wrong advanced logics indexes.

List of items of Enum 8 (BatChargeState)

Value	Label	Description
0	None	Battery charging state: no charging state selected.
1	Bulk	Battery charging state: bulk.
2	Reduced floating	Battery charging state: reduced floating.
4	Floating	Battery charging state: floating.
8	Periodical absorption	Battery charging state: periodical absorption.
16	Absorption	Battery charging state: absorption.
32	Equalization	Battery charging state: equalization.

List of items of Enum 9 (PresetOnSourceSelect)

Value	Label	Description
0	On AC input 1 connection	Activate relay when connected to AC input 1.
1	On AC input 2 connection	Activate relay when connected to AC input 2.
2	On any AC input connection	Activate relay when connected to either AC inputs.

List of items of Enum 10 (BatIndex)

Value	Label	Description
0	Connected battery idx	Index of the battery connected to this device.
1	Battery idx 0	Use battery index 0.
2	Battery idx 1	Use battery index 1.
3	Battery idx 2	Use battery index 2.
4	Battery idx 3	Use battery index 3.
5	Battery idx 4	Use battery index 4.

L1 time control

Group : AcFlexLoad
Modbus device address : 9 to 13
*External ID : 3.x.8.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
2100	2	Expert	0	Time controlled mode	Bypass		-	Time Controlled object working mode.	enum	R	0
2102	2	Basic	1	Temp. restr. act. min delay	5	s	-	Temporal restriction: Minimum delay before activation. The signal must be high during all this period.	uint	R/W	-
2104	2	Basic	2	Temp. restr. deact. min delay	5	s	-	Temporal restriction: Minimum delay before deactivation. The signal must be low during all this period.	uint	R/W	-
2106	2	Basic	3	Temp. restr. act. min time	0	s	-	Temporal restriction: Output signal minimum activation time.	uint	R/W	-
2108	2	Basic	4	Temp. restr. deact. min time	0	s	-	Temporal restriction: Output signal minimum deactivation time.	uint	R/W	-
2110	2	Basic	5	Temp. restr. act. max time	-1	s	-	Temporal restriction: Output signal maximum activation time.	int	R/W	-
2112	2	Basic	6	Temp. restr. act. allowed hour1	43200	s	[0,86399]	Temporal restriction: Daily time range hour 1. Given in seconds from midnight.	uint	R/W	-
2114	2	Basic	7	Temp. restr. act. allowed hour2	43200	s	[0,86399]	Temporal restriction: Daily time range hour 2. Given in seconds from midnight.	uint	R/W	-
2116	2	Basic	8	Temp. restr. act. allowed week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Temporal restriction: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
2118	2	Basic	9	Sch. time starting date	18250	days	-	Schedule time: Starting date. Given in days since 01.01.1970.	uint	R/W	-
2120	2	Basic	10	Sch. time starting time	43200	s	[0,86399]	Schedule time: Activation starting hour. Given in seconds from midnight.	uint	R/W	-
2122	2	Basic	11	Sch. time ending time	43200	s	[0,86399]	Schedule time: Activation ending hour. Given in seconds from midnight.	uint	R/W	-
2124	2	Basic	12	Sch. time selected week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Schedule time: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
2126	2	Basic	13	Sch. time recurrence weeks	1		-	Schedule time: Activation weeks recurrences.	uint	R/W	-
2128	2	Basic	14	Sch. time range of recurrence select.	NoEndDate		-	Schedule time: Selection of recurrence before deactivation.	enum	R/W	1
2130	2	Basic	15	Sch. time ending date	18251	days	-	Schedule time: Activations ending date. Given in days since 01.01.1970.	uint	R/W	-
2132	2	Basic	16	Sch. time nbr of occurrences	1		-	Schedule time: Number of occurrences.	uint	R/W	-
2134	1	Basic	17	Reset time controlled	-		-	Reset all time controlled counters. For exampe the occurences counts.	signal	W	-

List of items of Enum 0 (TimeControlledMode)

Value	Label	Description
0	Bypass	The time controlled block is bypassed. No time restriction is applied to the input signal.
1	Temporal restriction	Temporal restriction is applied to the input signal.
2	Schedule time	The output is enabled and disabled according to scheduled conditions.

List of items of Enum 1 (RangeOfRecurrence)

Value	Label	Description

Value	Label	Description
0	No end date	The scheduled activation-desactivation is indefinitely repeated.
1	End after occurrence	The scheduled activation-desactivation is repeated a given number of times "Sch. time nbr of occurrences" (id 16).
2	End date	The scheduled activation-desactivation is repeated until a given date "Sch. time ending date" (id 15).

List of items of Enum 2 (WeekDays)

Value	Label	Description
64	Monday	Monday selected.
32	Tuesday	Tuesday selected.
16	Wednesday	Wednesday selected.
8	Thursday	Thursday selected.
4	Friday	Friday selected.
2	Saturday	Saturday selected.
1	Sunday	Sunday selected.

L2 time control

Group : AcFlexLoad
Modbus device address : 9 to 13
*External ID : 3.x.9.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
2400	2	Expert	0	Time controlled mode	Bypass		-	Time Controlled object working mode.	enum	R	0
2402	2	Basic	1	Temp. restr. act. min delay	5	s	-	Temporal restriction: Minimum delay before activation. The signal must be high during all this period.	uint	R/W	-
2404	2	Basic	2	Temp. restr. deact. min delay	5	s	-	Temporal restriction: Minimum delay before deactivation. The signal must be low during all this period.	uint	R/W	-
2406	2	Basic	3	Temp. restr. act. min time	0	s	-	Temporal restriction: Output signal minimum activation time.	uint	R/W	-
2408	2	Basic	4	Temp. restr. deact. min time	0	s	-	Temporal restriction: Output signal minimum deactivation time.	uint	R/W	-
2410	2	Basic	5	Temp. restr. act. max time	-1	s	-	Temporal restriction: Output signal maximum activation time.	int	R/W	-
2412	2	Basic	6	Temp. restr. act. allowed hour1	43200	s	[0,86399]	Temporal restriction: Daily time range hour 1. Given in seconds from midnight.	uint	R/W	-
2414	2	Basic	7	Temp. restr. act. allowed hour2	43200	s	[0,86399]	Temporal restriction: Daily time range hour 2. Given in seconds from midnight.	uint	R/W	-
2416	2	Basic	8	Temp. restr. act. allowed week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Temporal restriction: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
2418	2	Basic	9	Sch. time starting date	18250	days	-	Schedule time: Starting date. Given in days since 01.01.1970.	uint	R/W	-
2420	2	Basic	10	Sch. time starting time	43200	s	[0,86399]	Schedule time: Activation starting hour. Given in seconds from midnight.	uint	R/W	-
2422	2	Basic	11	Sch. time ending time	43200	s	[0,86399]	Schedule time: Activation ending hour. Given in seconds from midnight.	uint	R/W	-
2424	2	Basic	12	Sch. time selected week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Schedule time: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
2426	2	Basic	13	Sch. time recurrence weeks	1		-	Schedule time: Activation weeks recurrences.	uint	R/W	-
2428	2	Basic	14	Sch. time range of recurrence select.	NoEndDate		-	Schedule time: Selection of recurrence before deactivation.	enum	R/W	1
2430	2	Basic	15	Sch. time ending date	18251	days	-	Schedule time: Activations ending date. Given in days since 01.01.1970.	uint	R/W	-
2432	2	Basic	16	Sch. time nbr of occurrences	1		-	Schedule time: Number of occurrences.	uint	R/W	-
2434	1	Basic	17	Reset time controlled	-		-	Reset all time controlled counters. For exampe the occurences counts.	signal	W	-

List of items of Enum 0 (TimeControlledMode)

Value	Label	Description
0	Bypass	The time controlled block is bypassed. No time restriction is applied to the input signal.
1	Temporal restriction	Temporal restriction is applied to the input signal.
2	Schedule time	The output is enabled and disabled according to scheduled conditions.

List of items of Enum 1 (RangeOfRecurrence)

Value	Label	Description

Value	Label	Description
0	No end date	The scheduled activation-desactivation is indefinitely repeated.
1	End after occurrence	The scheduled activation-desactivation is repeated a given number of times "Sch. time nbr of occurrences" (id 16).
2	End date	The scheduled activation-desactivation is repeated until a given date "Sch. time ending date" (id 15).

List of items of Enum 2 (WeekDays)

Value	Label	Description
64	Monday	Monday selected.
32	Tuesday	Tuesday selected.
16	Wednesday	Wednesday selected.
8	Thursday	Thursday selected.
4	Friday	Friday selected.
2	Saturday	Saturday selected.
1	Sunday	Sunday selected.

L3 time control

Group : AcFlexLoad
Modbus device address : 9 to 13
*External ID : 3.x.10.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
2700	2	Expert	0	Time controlled mode	Bypass		-	Time Controlled object working mode.	enum	R	0
2702	2	Basic	1	Temp. restr. act. min delay	5	s	-	Temporal restriction: Minimum delay before activation. The signal must be high during all this period.	uint	R/W	-
2704	2	Basic	2	Temp. restr. deact. min delay	5	s	-	Temporal restriction: Minimum delay before deactivation. The signal must be low during all this period.	uint	R/W	-
2706	2	Basic	3	Temp. restr. act. min time	0	s	-	Temporal restriction: Output signal minimum activation time.	uint	R/W	-
2708	2	Basic	4	Temp. restr. deact. min time	0	s	-	Temporal restriction: Output signal minimum deactivation time.	uint	R/W	-
2710	2	Basic	5	Temp. restr. act. max time	-1	s	-	Temporal restriction: Output signal maximum activation time.	int	R/W	-
2712	2	Basic	6	Temp. restr. act. allowed hour1	43200	s	[0,86399]	Temporal restriction: Daily time range hour 1. Given in seconds from midnight.	uint	R/W	-
2714	2	Basic	7	Temp. restr. act. allowed hour2	43200	s	[0,86399]	Temporal restriction: Daily time range hour 2. Given in seconds from midnight.	uint	R/W	-
2716	2	Basic	8	Temp. restr. act. allowed week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Temporal restriction: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
2718	2	Basic	9	Sch. time starting date	18250	days	-	Schedule time: Starting date. Given in days since 01.01.1970.	uint	R/W	-
2720	2	Basic	10	Sch. time starting time	43200	s	[0,86399]	Schedule time: Activation starting hour. Given in seconds from midnight.	uint	R/W	-
2722	2	Basic	11	Sch. time ending time	43200	s	[0,86399]	Schedule time: Activation ending hour. Given in seconds from midnight.	uint	R/W	-
2724	2	Basic	12	Sch. time selected week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Schedule time: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
2726	2	Basic	13	Sch. time recurrence weeks	1		-	Schedule time: Activation weeks recurrences.	uint	R/W	-
2728	2	Basic	14	Sch. time range of recurrence select.	NoEndDate		-	Schedule time: Selection of recurrence before deactivation.	enum	R/W	1
2730	2	Basic	15	Sch. time ending date	18251	days	-	Schedule time: Activations ending date. Given in days since 01.01.1970.	uint	R/W	-
2732	2	Basic	16	Sch. time nbr of occurrences	1		-	Schedule time: Number of occurrences.	uint	R/W	-
2734	1	Basic	17	Reset time controlled	-		-	Reset all time controlled counters. For exampe the occurences counts.	signal	W	-

List of items of Enum 0 (TimeControlledMode)

Value	Label	Description
0	Bypass	The time controlled block is bypassed. No time restriction is applied to the input signal.
1	Temporal restriction	Temporal restriction is applied to the input signal.
2	Schedule time	The output is enabled and disabled according to scheduled conditions.

List of items of Enum 1 (RangeOfRecurrence)

Value	Label	Description

Value	Label	Description
0	No end date	The scheduled activation-desactivation is indefinitely repeated.
1	End after occurrence	The scheduled activation-desactivation is repeated a given number of times "Sch. time nbr of occurrences" (id 16).
2	End date	The scheduled activation-desactivation is repeated until a given date "Sch. time ending date" (id 15).

List of items of Enum 2 (WeekDays)

Value	Label	Description
64	Monday	Monday selected.
32	Tuesday	Tuesday selected.
16	Wednesday	Wednesday selected.
8	Thursday	Thursday selected.
4	Friday	Friday selected.
2	Saturday	Saturday selected.
1	Sunday	Sunday selected.

3-phase FlexLoads

Group : AcFlexLoad
Modbus device address : 9 to 13
*External ID : 3.x.11.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3000	2	ViewOnly	0	Phase existance	PhaseL1Exists|PhaseL2Exists|PhaseL3Exists		-	Indicate which phase(s) is(are) used for this AcFlexLoad	bitfield	R	0
3002	1	Basic	1	Allow individual phase operation	false		-	Allow individual phase operation. Otherwise, all phases operates synchonously.	bool	R/W	-

List of items of Enum 0 (PhasesExistanceBitfield)

Value	Label	Description
1	Phase L1 exists	This AcFlexLoad has a L1 phase.
2	Phase L2 exists	This AcFlexLoad has a L2 phase.
4	Phase L3 exists	This AcFlexLoad has a L3 phase.

L1 FlexLoads

Group : AcFlexLoad
Modbus device address : 9 to 13
*External ID : 3.x.12.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3300	2	ViewOnly	0	Status	NoWarningsOrErrors		-	Current status.	enum	R	0
3302	2	ViewOnly	1	Errors	NoErrors		-	Current errors.	bitfield	R	1
3304	2	ViewOnly	2	Warnings	NoWarnings		-	Current warnings.	bitfield	R	2
3306	2	R:ViewOnly W:Studer	3	Device identifier	-1		-	The ID of the device associated with this FlexLoad port.	int	R	-

List of items of Enum 0 (Status)

Value	Label	Description
0	No warning(s) or error(s)	No warning(s) or error(s).
1	In warning	The FlexLoad is in warning.
2	In error restarting	The FlexLoad is temporarily maintained in error and will restart automatically once the error(s) leaved.
3	In error halted	The FlexLoad is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).

List of items of Enum 1 (Errors)

Value	Label	Description
0	End of error	The FlexLoad has no errors.
1	Overcurrent	The current was been larger than the rated current during more than 30s causing this error. Please verify that the total current of the loads connected to the AC-Flex port does not exceed the rated current.
2	Overtemperature	Unconnected due to overheating caused by a too large current. The FlexLoad will be automatically reconnected soon.
4	Abnormal voltage detected	A voltage has been detected on AC-Flex port while the relay is open. Check that no power source is connected on AC-Flex port.
8	Error relay failure	A relay failure (connexion broken) has been detected and forbidded connection of the FlexLoad. This error must be cleared with the front panel, the nx interface or by sending a signal via the property "Clear errors" (id 0).
16	Error too large current at rel. open.	A relay opening was aborted due to a too large current to protect the relay integrity. If the current drop rapidly, the error will be cleared automatically.

List of items of Enum 2 (Warnings)

Value	Label	Description
0	End of warning	The FlexLoad has no warnings.
1	Overtemperature	Will disconnect soon if the current doesn't decrease in order to protect against over-temperature.
2	Overcurrent	The current was been larger than the rated current during more than 5s causing this warning. Please verify that the total current of the loads connected to the AC-Flex port does not exceed the rated current.

L2 FlexLoads

Group : AcFlexLoad
Modbus device address : 9 to 13
*External ID : 3.x.13.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3600	2	ViewOnly	0	Status	NoWarningsOrErrors		-	Current status.	enum	R	0
3602	2	ViewOnly	1	Errors	NoErrors		-	Current errors.	bitfield	R	1
3604	2	ViewOnly	2	Warnings	NoWarnings		-	Current warnings.	bitfield	R	2
3606	2	R:ViewOnly W:Studer	3	Device identifier	-1		-	The ID of the device associated with this FlexLoad port.	int	R	-

List of items of Enum 0 (Status)

Value	Label	Description
0	No warning(s) or error(s)	No warning(s) or error(s).
1	In warning	The FlexLoad is in warning.
2	In error restarting	The FlexLoad is temporarily maintained in error and will restart automatically once the error(s) leaved.
3	In error halted	The FlexLoad is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).

List of items of Enum 1 (Errors)

Value	Label	Description
0	End of error	The FlexLoad has no errors.
1	Overcurrent	The current was been larger than the rated current during more than 30s causing this error. Please verify that the total current of the loads connected to the AC-Flex port does not exceed the rated current.
2	Overtemperature	Unconnected due to overheating caused by a too large current. The FlexLoad will be automatically reconnected soon.
4	Abnormal voltage detected	A voltage has been detected on AC-Flex port while the relay is open. Check that no power source is connected on AC-Flex port.
8	Error relay failure	A relay failure (connexion broken) has been detected and forbidded connection of the FlexLoad. This error must be cleared with the front panel, the nx interface or by sending a signal via the property "Clear errors" (id 0).
16	Error too large current at rel. open.	A relay opening was aborted due to a too large current to protect the relay integrity. If the current drop rapidly, the error will be cleared automatically.

List of items of Enum 2 (Warnings)

Value	Label	Description
0	End of warning	The FlexLoad has no warnings.
1	Overtemperature	Will disconnect soon if the current doesn't decrease in order to protect against over-temperature.
2	Overcurrent	The current was been larger than the rated current during more than 5s causing this warning. Please verify that the total current of the loads connected to the AC-Flex port does not exceed the rated current.

L3 FlexLoads

Group : AcFlexLoad
Modbus device address : 9 to 13
*External ID : 3.x.14.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3900	2	ViewOnly	0	Status	NoWarningsOrErrors		-	Current status.	enum	R	0
3902	2	ViewOnly	1	Errors	NoErrors		-	Current errors.	bitfield	R	1
3904	2	ViewOnly	2	Warnings	NoWarnings		-	Current warnings.	bitfield	R	2
3906	2	R:ViewOnly W:Studer	3	Device identifier	-1		-	The ID of the device associated with this FlexLoad port.	int	R	-

List of items of Enum 0 (Status)

Value	Label	Description
0	No warning(s) or error(s)	No warning(s) or error(s).
1	In warning	The FlexLoad is in warning.
2	In error restarting	The FlexLoad is temporarily maintained in error and will restart automatically once the error(s) leaved.
3	In error halted	The FlexLoad is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).

List of items of Enum 1 (Errors)

Value	Label	Description
0	End of error	The FlexLoad has no errors.
1	Overcurrent	The current was been larger than the rated current during more than 30s causing this error. Please verify that the total current of the loads connected to the AC-Flex port does not exceed the rated current.
2	Overtemperature	Unconnected due to overheating caused by a too large current. The FlexLoad will be automatically reconnected soon.
4	Abnormal voltage detected	A voltage has been detected on AC-Flex port while the relay is open. Check that no power source is connected on AC-Flex port.
8	Error relay failure	A relay failure (connexion broken) has been detected and forbidded connection of the FlexLoad. This error must be cleared with the front panel, the nx interface or by sending a signal via the property "Clear errors" (id 0).
16	Error too large current at rel. open.	A relay opening was aborted due to a too large current to protect the relay integrity. If the current drop rapidly, the error will be cleared automatically.

List of items of Enum 2 (Warnings)

Value	Label	Description
0	End of warning	The FlexLoad has no warnings.
1	Overtemperature	Will disconnect soon if the current doesn't decrease in order to protect against over-temperature.
2	Overcurrent	The current was been larger than the rated current during more than 5s causing this warning. Please verify that the total current of the loads connected to the AC-Flex port does not exceed the rated current.

converter ID card

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.1.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
4	8	ViewOnly	2	Serial Number	"Invalid"		-	Serial Number of this Studer Innotec device.	char[15]	R	-
14	2	ViewOnly	4	Software package version	0		-	Software package version in this format : MAJOR.MIDDLE.MINOR.PATCH, encoded as follows from MSB to LSB : MAJOR (8 bits), MIDDLE (8bits), MINOR (12 bits), PATCH (4 bits).	uint	R	-
18	4	ViewOnly	6	Software revision	""		-	SHA-1 of the software project commit	char[7]	R	-
30	2	ViewOnly	8	ObjectModel version	0		-	Version of the currently used ObjectModel in this format : MAJOR.MINOR, encoded as follows from MSB to LSB : MAJOR (16 bits), MINOR (16 bits).	uint	R	-

transfer ID card

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.2.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
304	8	ViewOnly	2	Serial Number	"Invalid"		-	Serial Number of this Studer Innotec device.	char[15]	R	-
314	2	ViewOnly	4	Software package version	0		-	Software package version in this format : MAJOR.MIDDLE.MINOR.PATCH, encoded as follows from MSB to LSB : MAJOR (8 bits), MIDDLE (8bits), MINOR (12 bits), PATCH (4 bits).	uint	R	-
318	4	ViewOnly	6	Software revision	""		-	SHA-1 of the software project commit	char[7]	R	-
330	2	ViewOnly	8	ObjectModel version	0		-	Version of the currently used ObjectModel in this format : MAJOR.MINOR, encoded as follows from MSB to LSB : MAJOR (16 bits), MINOR (16 bits).	uint	R	-

converter application

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.3.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
605	2	ViewOnly	5	Warnings	NoWarnings		-	Current warnings.	bitfield	R	0
615	1	Expert	10	Restore all NVM values	-		-	Restore the original value (from Non-Volatile Memory) for all properties that were changed with WriteInRAM.	signal	W	-

List of items of Enum 0 (Warnings)

Value	Label	Description
0	End of warning	The card has no warnings.
1	Warning MCU not secure	MCU security status is unsecure.
2	Warning FPGA not configured	Unpossible to configure the FPGA.
4	Communication error on studer bus	An error occured on the studer nx communication bus. Verify that the bus termination switches are correctly positionned.
8	Warning end of day logs take too long	End of day logs take too long.

transfer application

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.4.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
905	2	ViewOnly	5	Warnings	NoWarnings		-	Current warnings.	bitfield	R	0
915	1	Expert	10	Restore all NVM values	-		-	Restore the original value (from Non-Volatile Memory) for all properties that were changed with WriteInRAM.	signal	W	-

List of items of Enum 0 (Warnings)

Value	Label	Description
0	End of warning	The card has no warnings.
1	Warning MCU not secure	MCU security status is unsecure.
2	Warning FPGA not configured	Unpossible to configure the FPGA.
4	Communication error on studer bus	An error occured on the studer nx communication bus. Verify that the bus termination switches are correctly positionned.
8	Warning end of day logs take too long	End of day logs take too long.

converter CAN node

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.7.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1802	2	Expert	1	Status	ErrorActive		-	Stores the node status.	enum	R	0
1804	2	Expert	2	Tx error counter	0		-	Counter of the TX errors.	int	R	-
1806	2	Expert	3	Rx error counter	0		-	Counter of the RX errors.	int	R	-
1808	1	ViewOnly	4	Bus termination status	false		-	Bus termination status for this node.	bool	R	-

List of items of Enum 0 (NodeStatus)

Value	Label	Description
0	Error active	The node is in error active state.
1	Error passive	The node is in error passive state.
2	Bus off	The node is in bus off state.

transfer CAN node

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.8.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
2102	2	Expert	1	Status	ErrorActive		-	Stores the node status.	enum	R	0
2104	2	Expert	2	Tx error counter	0		-	Counter of the TX errors.	int	R	-
2106	2	Expert	3	Rx error counter	0		-	Counter of the RX errors.	int	R	-
2108	1	ViewOnly	4	Bus termination status	false		-	Bus termination status for this node.	bool	R	-

List of items of Enum 0 (NodeStatus)

Value	Label	Description
0	Error active	The node is in error active state.
1	Error passive	The node is in error passive state.
2	Bus off	The node is in bus off state.

device

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.14.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
4200	1	Basic	0	Blink	false		-	If set, the device LEDs will blink.	bool	R/W	-
4201	2	R:ViewOnly W:Studer	1	Device identifier	-1		-	System-wide ID of the device in topology.	int	R	-
4203	2	R:ViewOnly W:Studer	2	Battery identifier	-1		-	System-wide ID of the battery in topology.	int	R	-
4205	2	ViewOnly	3	Total functioning time	0	s	-	Total functioning time in this device's life.	uint	R	-

next3 converter

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.17.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
5100	2	ViewOnly	0	Status	NoWarningsOrErrors		-	Current status.	enum	R	1
5102	2	ViewOnly	1	Errors	NoErrors		-	Current errors.	bitfield	R	0
5104	2	Basic	2	Fan 1 speed	0	RPM	-	Revolution speed of fan 1 measured.	float	R	-
5106	2	Basic	3	Fan 2 speed	0	RPM	-	Revolution speed of fan 2 measured.	float	R	-
5108	2	Basic	4	Fan 3 speed	0	RPM	-	Revolution speed of fan 3 measured.	float	R	-
5110	2	Basic	5	Fan 4 speed	0	RPM	-	Revolution speed of fan 4 measured.	float	R	-
5112	2	Basic	6	Fan 5 speed	0	RPM	-	Revolution speed of fan 5 measured.	float	R	-
5114	2	Basic	7	External power supply current	0	A	-	External power supply current measured.	float	R	-
5116	2	Expert	8	Power supply voltage	0	V	-	Power supply voltage measured.	float	R	-
5156	2	ViewOnly	28	Warning noised ADC channels	NoAdcChannel		-	Channels for which the noise exceeds "ADC noise warning threshold" (id 32).	bitfield	R	2
5158	2	ViewOnly	29	Error noised ADC channels	NoAdcChannel		-	Channels for which the noise exceeds "ADC noise error threshold" (id 33).	bitfield	R	2
5160	2	ViewOnly	30	ADC channel selection	Meas40kHzUInv1		-	Choose which ADC channel is showed by "Noise of the selected ADC channel" (id 31)	enum	R/W	2
5162	2	ViewOnly	31	Noise of the selected ADC channel	0	‰	-	Noise of the ADC channel choosed by "ADC channel selection" (id 30).	float	R	-

List of items of Enum 0 (Errors)

Value	Label	Description
0	End of error	No errors.
1	Fans failure	Fans failure. The power should be limited to protect against overheating.
2	Internal temperature sensor failure	Internal temperature sensor failure. The device must be serviced. The power is limited to protect against overheating.
4	Abnormal voltage detected on acLoad port	A voltage has been detected on AcLoad port before starting inverter. Check that no power source is connected on AcLoad port.
8	AcLoad port broken connexion	The AcLoad port of this device is disconnected.
16	Battery port broken connexion	The battery port of this device is disconnected.
32	Battery contactor failure	Battery contactor failure.
64	Inverter1 overcurrent	Over current of the inverter 1. The device was halted for self-protection.
128	Inverter2 overcurrent	Over current of the inverter 2. The device was halted for self-protection.
256	Inverter3 overcurrent	Over current of the inverter 3. The device was halted for self-protection.
512	Inverter1 failure	Abnormal operation of inverter 1. The device was halted for self-protection.
1024	Inverter2 failure	Abnormal operation of inverter 2. The device was halted for self-protection.
2048	Inverter3 failure	Abnormal operation of inverter 3. The device was halted for self-protection.
4096	Inverters disconnected by residual current	A residual current has been detected and avoids the inverters to run.
8192	Solars disconnected by residual current	A residual current has been detected and avoids the solars to run.
16384	Residual current critical failure	A critical residual current failure has been detected. A "Clear errors" is necessary to restart converters.
32768	Internal power supply failure	Failure of the internal power supply. The device was halted for self-protection.
65536	Internal power supply overvoltage	Over-voltage on the internal power supply. The device was halted for self-protection.
131072	Internal power supply undervoltage	Under-voltage on the internal power supply. The device was halted for self-protection.
262144	Battery capacitors preload failed	Unable to preload the battery capacitors. Check that the battery could supply at least two amps.
524288	Battery overvoltage	Over-voltage on the battery port. The device was halted for self-protection.
1048576	Battery undervoltage	Under-voltage on the battery port. The device was halted for self-protection.
2097152	Internal dclink overvoltage	Over voltage on the internal DcLink. The device was halted for self-protection.
4194304	Internal dclink undervoltage	Under voltage on the internal DcLink. The device was halted for self-protection.
8388608	Internal dclink voltage unbalanced	Unbalanced voltages on the internal DcLink. The device was halted for self-protection.
16777216	Internal dcdc converter failure	The internal DcDc converter failed.
33554432	Communication error	Too many communication errors on studer system bus. The device was halted for self-protection.
67108864	Battery temperature sensor in short circuit	The battery temperature sensor is defective.
134217728	Battery fault	A battery fault prevents normal operation. Please see warning(s)/error(s) of the corresponding battery for more informations.
268435456	Inverters disconnected by solar	A solar critical error has been detected and avoids the inverters to run. A "Clear errors" is necessary to restart converters.

Value	Label	Description
536870912	Internal ADC noised	The device is faulty, please contact your installer for part replacement.
1073741824	AC Load overvoltage	Overvoltage detected on the AC Load port. The measured voltage was higher than the maximum of the thresholds in "Overvoltage threshold" (id 80) and "Over-voltage curve U1" (id 22).

List of items of Enum 1 (Status)

Value	Label	Description
0	No warning(s) or error(s)	No warning(s) or error(s).
1	In warning	The device is in warning.
2	In error restarting	The device is temporarily maintained in error and will restart automatically once the error(s) leaved.
3	In error halted	The device is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).

List of items of Enum 2 (AdcChannel)

Value	Label	Description
0	No noisy ADC channel	No ADC channel is noisy/selected.
1	uInv1 sampled at 40kHz	uInv1 sampled at 40kHz.
2	uInv2 sampled at 40kHz	uInv2 sampled at 40kHz.
4	uInv3 sampled at 40kHz	uInv3 sampled at 40kHz.
8	iInv1 sampled at 40kHz	iInv1 sampled at 40kHz.
16	iInv2 sampled at 40kHz	iInv2 sampled at 40kHz.
32	iInv3 sampled at 40kHz	iInv3 sampled at 40kHz.
32768	uBat sampled at 20kHz	uBat sampled at 20kHz.
16384	uDcLinkH sampled at 20kHz	uDcLinkH sampled at 20kHz.
8192	uDcLinkL sampled at 20kHz	uDcLinkL sampled at 20kHz.
512	uAcOut1 sampled at 20kHz	uAcOut1 sampled at 20kHz.
1024	uAcOut2 sampled at 20kHz	uAcOut2 sampled at 20kHz.
2048	uAcOut3 sampled at 20kHz	uAcOut3 sampled at 20kHz.
4096	uPv1 sampled at 20kHz	uPv1 sampled at 20kHz.
524288	uPv2 sampled at 20kHz	uPv2 sampled at 20kHz.
1048576	iLPv1 sampled at 20kHz	iLPv1 sampled at 20kHz.
64	iLPv2 sampled at 20kHz	iLPv2 sampled at 20kHz.
128	uMainPowerSupply sampled at 20kHz	uMainPowerSupply sampled at 20kHz.
65536	uCapBat sampled at 20kHz	uCapBat sampled at 20kHz.
256	uIsoPS sampled at 20kHz	uIsoPS sampled at 20kHz.
131072	iExtPSCurrent sampled at 20kHz	iExtPSCurrent sampled at 20kHz.
262144	iEarth sampled at 20kHz	iEarth sampled at 20kHz.
2097152	uBatNegEarth sampled at 1kHz	uBatNegEarth sampled at 1kHz.
4194304	uPv1PosEarth sampled at 1kHz	uPv1PosEarth sampled at 1kHz.
8388608	uPv2PosEarth sampled at 1kHz	uPv2PosEarth sampled at 1kHz.
16777216	temperatureTransfoH sampled at 1kHz	temperatureTransfoH sampled at 1kHz.
33554432	temperatureBattery sampled at 1kHz	temperatureBattery sampled at 1kHz.
67108864	temperatureSelfSolar1 sampled at 1/8kHz	temperatureSelfSolar1 sampled at 1/8kHz.
134217728	temperatureSelfSolar2 sampled at 1/8kHz	temperatureSelfSolar2 sampled at 1/8kHz.
268435456	temperatureCoolerPlate1 sampled at 200Hz	temperatureCoolerPlate1 sampled at 200Hz.
536870912	temperatureCoolerPlate2 sampled at 200Hz	temperatureCoolerPlate2 sampled at 200Hz.
1073741824	temperatureBatPwr sampled at 200Hz	temperatureBatPwr sampled at 200Hz.

device solar common

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.19.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
5700	1	Basic	0	Turn on	-		-	Turns on solar(s).	signal	W	-
5701	1	Basic	1	Turn off	-		-	Turns off solar(s).	signal	W	-
5702	1	ViewOnly	2	On off state	false		-	Indicates solar(s) on/off state.	bool	R	-
5703	1	Expert	3	Enable depolarization	-		-	Enables depolarization.	signal	W	-
5704	1	Expert	4	Disable depolarization	-		-	Disables depolarization.	signal	W	-
5705	2	ViewOnly	5	Power	0	W	-	Power produced.	float	R	-
5707	2	ViewOnly	8	Previous day energy	0	Wh	-	Energy produced for the previous day.	float	R	-
5709	2	ViewOnly	9	Max power limit	0	W	-	Solar(s) max power limit.	uint	R	-
5711	2	ViewOnly	10	Day energy	0	Wh	-	Energy produced for the current day.	float	R	-
5715	4	ViewOnly	12	Resetable energy	0	Wh	-	Energy produced (can be reset).	float64	R/W	-
5719	4	ViewOnly	13	Total energy	0	Wh	-	Total energy produced (whole life).	float64	R	-

solar common 1

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.20.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6000	1	Basic	0	Turn on	-		-	Turns on solar(s).	signal	W	-
6001	1	Basic	1	Turn off	-		-	Turns off solar(s).	signal	W	-
6002	1	ViewOnly	2	On off state	false		-	Indicates solar(s) on/off state.	bool	R	-
6003	1	Expert	3	Enable depolarization	-		-	Enables depolarization.	signal	W	-
6004	1	Expert	4	Disable depolarization	-		-	Disables depolarization.	signal	W	-
6005	2	ViewOnly	5	Power	0	W	-	Power produced.	float	R	-
6007	2	ViewOnly	8	Previous day energy	0	Wh	-	Energy produced for the previous day.	float	R	-
6009	2	ViewOnly	9	Max power limit	0	W	-	Solar(s) max power limit.	uint	R	-
6011	2	ViewOnly	10	Day energy	0	Wh	-	Energy produced for the current day.	float	R	-
6015	4	ViewOnly	12	Resetable energy	0	Wh	-	Energy produced (can be reset).	float64	R/W	-
6019	4	ViewOnly	13	Total energy	0	Wh	-	Total energy produced (whole life).	float64	R	-

solar common 2

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.21.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6300	1	Basic	0	Turn on	-		-	Turns on solar(s).	signal	W	-
6301	1	Basic	1	Turn off	-		-	Turns off solar(s).	signal	W	-
6302	1	ViewOnly	2	On off state	false		-	Indicates solar(s) on/off state.	bool	R	-
6303	1	Expert	3	Enable depolarization	-		-	Enables depolarization.	signal	W	-
6304	1	Expert	4	Disable depolarization	-		-	Disables depolarization.	signal	W	-
6305	2	ViewOnly	5	Power	0	W	-	Power produced.	float	R	-
6307	2	ViewOnly	8	Previous day energy	0	Wh	-	Energy produced for the previous day.	float	R	-
6309	2	ViewOnly	9	Max power limit	0	W	-	Solar(s) max power limit.	uint	R	-
6311	2	ViewOnly	10	Day energy	0	Wh	-	Energy produced for the current day.	float	R	-
6315	4	ViewOnly	12	Resetable energy	0	Wh	-	Energy produced (can be reset).	float64	R/W	-
6319	4	ViewOnly	13	Total energy	0	Wh	-	Total energy produced (whole life).	float64	R	-

device solar group

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.22.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6600	2	ViewOnly	0	Number	0		-	Number of converters.	uint	R	-
6602	2	ViewOnly	1	Status	AtLeastOneSolarDisabled		-	Current status.	bitfield	R	0
6604	2	R:ViewOnly W:Studer	2	Number of vt40	0		-	Number of vt40.	uint	R/W	-
6606	2	R:ViewOnly W:Studer	3	Number of vt65	0		-	Number of vt65.	uint	R/W	-
6608	2	R:ViewOnly W:Studer	4	Number of vt80	0		-	Number of vt80.	uint	R/W	-
6610	2	R:ViewOnly W:Studer	5	Number of vs70	0		-	Number of vs70.	uint	R/W	-
6612	2	R:ViewOnly W:Studer	6	Number of vs120	0		-	Number of vs120.	uint	R/W	-
6614	1	Expert	7	Update external numbers	-		-	Update the numbers of external solar chargers.	signal	W	-

List of items of Enum 0 (Status)

Value	Label	Description
1	At least one solar disabled	At least one solar is disabled.
2	At least one solar has warning(s)	At least one solar has warning(s).
4	At least one solar in error restarting	At least one solar is temporarily maintained in error and will restart automatically once the error(s) leaved.
8	At least one solar in error halted	At least one solar is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).
16	At least one solar in night	At least one solar is in night.
32	At least one solar in dawn/dusk	At least one solar is in dawn/dusk.
64	At least one solar in production	At least one solar is in production.
128	At least one solar in production limited	At least one solar is in production limited.
256	At least one solar in solar excess	At least one solar is in production limited due to solar excess.
512	At least one external solar not compatible	At least one external solar charger is not compatible.
1024	At least one external solar added	At least one external solar charger has been added.
2048	At least one external solar disappeared	At least one external solar charger has disappeared.

solar 1

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.23.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6900	2	ViewOnly	0	Voltage	0	V	-	Voltage measured.	float	R	-
6902	2	ViewOnly	3	Current	0	A	-	Current measured.	float	R	-
6904	2	ViewOnly	6	Day sunshine	0	s	-	Sun radiation for the current day.	uint	R	-
6906	2	ViewOnly	7	Previous day sunshine	0	s	-	Sun radiation for the previous day.	uint	R	-
6908	2	ViewOnly	8	Status	Disabled		-	Current status.	enum	R	0
6910	2	ViewOnly	9	Cause of error	NoErrors		-	Memorizes why the converter entered "Error halted" (value 6) or "Error restarting" (value 7) state. The bitfield is cleared once the converter leaved one of these states.	bitfield	R	1
6912	2	ViewOnly	10	Errors	NoErrors		-	Current errors.	bitfield	R	1
6914	2	ViewOnly	11	Warnings	NoWarnings		-	Current warnings.	bitfield	R	2
6916	2	Expert	12	Depolarization	NotAvailable		-	Indicates the depolarization state.	enum	R	3
6918	2	ViewOnly	13	Limitation state	NotLimited		-	Indicates if there is a limitation and the reason of the limitation.	enum	R	4
6920	2	Expert	14	Current limit	-1	A	[0 100]	Set the current limit.	float	R/W	-
6922	2	Expert	15	Power limit	-1	W	[0 100000]	Set the power limit.	float	R/W	-

List of items of Enum 0 (Status)

Value	Label	Description
0	Production	The solar converter is running.
1	Night	The solar converter is turned on and in night mode because very low voltage is detected.
2	Dawn/dusk	The solar converter is turned on and in dawn/dusk mode because voltage is detected but lower than the starting voltage.
3	Disabled	The solar converter is disabled.
4	Starting	The solar converter is starting.
5	Stopping	The solar converter is stopping.
6	Error halted	The solar converter is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).
7	Error restarting	The solar converter is temporarily maintained in error and will restart automatically once the error(s) leaved.

List of items of Enum 1 (Errors)

Value	Label	Description
0	End of error	The solar converter has no errors.
1	overvoltage	An error overvoltage has been detected. Please reduce the number of strings in serie.
2	overcurrent	An error overcurrent has been detected.
4	polarity inversion	A polarity inversion has been detected. Please verify the wiring.
8	insulation default	An insulation default has been detected. Please verify the insulation between PV+ and earth and PV- and earth.
16	stop failed	The converter stop has failed.
32	start failed	The converter start has failed.
64	device fault	The device was stopped to protect himself against abnormal situation.
128	depolarization failed	The depolarization has failed. A new attempt will be made the next time the converter leaves the "Production" (value 0) state.
256	Negativ current	A negativ current has been measured. Please try to disconnect the solar panels from the device. If the error persists, the device must be serviced.

List of items of Enum 2 (Warnings)

Value	Label	Description
0	End of warning	The solar converter has no warnings.
1	overvoltage	A warning overvoltage has been detected. Please consider to reduce the number of strings in serie.
2	no production for 48h	No production for 48h has been detected.
4	overtemperature	Overtemperature. The power could be reduced to protect the power converter unit.

List of items of Enum 3 (DepolarizationState)

Value	Label	Description
0	Not available	Option is not available on this device.
1	Disabled	The depolarization is disabled.
2	Enabled	The depolarization is enabled but not currently depolarizing.
3	Depolarizing	The depolarization is currently running.

List of items of Enum 4 (LimitationState)

Value	Label	Description
0	Not limited	The solar converter is not limited and all the solar power is available.
1	Temperature limited	The solar converter is limited by the device temperature.
2	Max power reached	The solar converter maximum power has been reached.
3	Max current reached	The solar converter maximum current has been reached.
4	Solar excess	The solar converter is limited because the system can't absorb all the solar power. For example if the grid feeding is not allowed and the batteries are full, the solar power will be limited to the value of the loads.

solar 2

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.24.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
7200	2	ViewOnly	0	Voltage	0	V	-	Voltage measured.	float	R	-
7202	2	ViewOnly	3	Current	0	A	-	Current measured.	float	R	-
7204	2	ViewOnly	6	Day sunshine	0	s	-	Sun radiation for the current day.	uint	R	-
7206	2	ViewOnly	7	Previous day sunshine	0	s	-	Sun radiation for the previous day.	uint	R	-
7208	2	ViewOnly	8	Status	Disabled		-	Current status.	enum	R	0
7210	2	ViewOnly	9	Cause of error	NoErrors		-	Memorizes why the converter entered "Error halted" (value 6) or "Error restarting" (value 7) state. The bitfield is cleared once the converter leaved one of these states.	bitfield	R	1
7212	2	ViewOnly	10	Errors	NoErrors		-	Current errors.	bitfield	R	1
7214	2	ViewOnly	11	Warnings	NoWarnings		-	Current warnings.	bitfield	R	2
7216	2	Expert	12	Depolarization	NotAvailable		-	Indicates the depolarization state.	enum	R	3
7218	2	ViewOnly	13	Limitation state	NotLimited		-	Indicates if there is a limitation and the reason of the limitation.	enum	R	4
7220	2	Expert	14	Current limit	-1	A	[0 100]	Set the current limit.	float	R/W	-
7222	2	Expert	15	Power limit	-1	W	[0 100000]	Set the power limit.	float	R/W	-

List of items of Enum 0 (Status)

Value	Label	Description
0	Production	The solar converter is running.
1	Night	The solar converter is turned on and in night mode because very low voltage is detected.
2	Dawn/dusk	The solar converter is turned on and in dawn/dusk mode because voltage is detected but lower than the starting voltage.
3	Disabled	The solar converter is disabled.
4	Starting	The solar converter is starting.
5	Stopping	The solar converter is stopping.
6	Error halted	The solar converter is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).
7	Error restarting	The solar converter is temporarily maintained in error and will restart automatically once the error(s) leaved.

List of items of Enum 1 (Errors)

Value	Label	Description
0	End of error	The solar converter has no errors.
1	overvoltage	An error overvoltage has been detected. Please reduce the number of strings in serie.
2	overcurrent	An error overcurrent has been detected.
4	polarity inversion	A polarity inversion has been detected. Please verify the wiring.
8	insulation default	An insulation default has been detected. Please verify the insulation between PV+ and earth and PV- and earth.
16	stop failed	The converter stop has failed.
32	start failed	The converter start has failed.
64	device fault	The device was stopped to protect himself against abnormal situation.
128	depolarization failed	The depolarization has failed. A new attempt will be made the next time the converter leaves the "Production" (value 0) state.
256	Negativ current	A negativ current has been measured. Please try to disconnect the solar panels from the device. If the error persists, the device must be serviced.

List of items of Enum 2 (Warnings)

Value	Label	Description
0	End of warning	The solar converter has no warnings.
1	overvoltage	A warning overvoltage has been detected. Please consider to reduce the number of strings in serie.
2	no production for 48h	No production for 48h has been detected.
4	overtemperature	Overtemperature. The power could be reduced to protect the power converter unit.

List of items of Enum 3 (DepolarizationState)

Value	Label	Description
0	Not available	Option is not available on this device.
1	Disabled	The depolarization is disabled.
2	Enabled	The depolarization is enabled but not currently depolarizing.
3	Depolarizing	The depolarization is currently running.

List of items of Enum 4 (LimitationState)

Value	Label	Description
0	Not limited	The solar converter is not limited and all the solar power is available.
1	Temperature limited	The solar converter is limited by the device temperature.
2	Max power reached	The solar converter maximum power has been reached.
3	Max current reached	The solar converter maximum current has been reached.
4	Solar excess	The solar converter is limited because the system can't absorb all the solar power. For example if the grid feeding is not allowed and the batteries are full, the solar power will be limited to the value of the loads.

MPPT algorithm 1

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.25.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
7500	2	Basic	0	Algorithm	LeastSquareFit		-	Used to select the MPPT algorithm.	enum	R/W	0
7502	2	Basic	1	Voltage setpoint	-1	V	[0, 1000]	Converter voltage setpoint applied when "Algorithm" (id 0) is set to "Fixed voltage" (value 1).	float	R/W	-
7504	1	Basic	2	Check for global MPP	true		-	Enables periodical check for global maximum power point to avoid power reduction due to partial shading. Note that this property is used only when "Algorithm" (id 0) is set to "Least square fit" (value 0).	bool	R/W	-
7505	2	Basic	3	Period for global MPP check	3600	s	[60 36000]	Sets the period for global maximum power point check. Note that this property is used only when "Algorithm" (id 0) is set to "Least square fit" (value 0).	uint	R/W	-
7507	2	Basic	4	Voltage ratio	0.8		[0 1.5]	Ratio voltage setpoint/open-circuit voltage. Note that this property is used only when "Algorithm" (id 0) is set to "Fixed open-circuit voltage ratio" (value 2).	float	R/W	-
7509	2	Basic	5	Period for measuring OCV	300	s	[60 36000]	Sets the period for measuring open-circuit voltage. Note that this property is used only when "Algorithm" (id 0) is set to "Fixed open-circuit voltage ratio" (value 2).	uint	R/W	-

List of items of Enum 0 (AlgoSelected)

Value	Label	Description
0	Least square fit	Improved version of the well-known perturb and observe algorithm.
1	Fixed voltage	Allows the user to set manually the converter voltage setpoint.
2	Fixed open-circuit voltage ratio	Allows the user to set manually a ratio between the converter voltage setpoint and the open-circuit voltage. The converter returns periodically at the open-circuit voltage for measuring the voltage. The setpoint is then set to the measured voltage times "Voltage ratio" (id 4).

MPPT algorithm 2

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.26.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
7800	2	Basic	0	Algorithm	LeastSquareFit		-	Used to select the MPPT algorithm.	enum	R/W	0
7802	2	Basic	1	Voltage setpoint	-1	V	[0, 1000]	Converter voltage setpoint applied when "Algorithm" (id 0) is set to "Fixed voltage" (value 1).	float	R/W	-
7804	1	Basic	2	Check for global MPP	true		-	Enables periodical check for global maximum power point to avoid power reduction due to partial shading. Note that this property is used only when "Algorithm" (id 0) is set to "Least square fit" (value 0).	bool	R/W	-
7805	2	Basic	3	Period for global MPP check	3600	s	[60 36000]	Sets the period for global maximum power point check. Note that this property is used only when "Algorithm" (id 0) is set to "Least square fit" (value 0).	uint	R/W	-
7807	2	Basic	4	Voltage ratio	0.8		[0 1.5]	Ratio voltage setpoint/open-circuit voltage. Note that this property is used only when "Algorithm" (id 0) is set to "Fixed open-circuit voltage ratio" (value 2).	float	R/W	-
7809	2	Basic	5	Period for measuring OCV	300	s	[60 36000]	Sets the period for measuring open-circuit voltage. Note that this property is used only when "Algorithm" (id 0) is set to "Fixed open-circuit voltage ratio" (value 2).	uint	R/W	-

List of items of Enum 0 (AlgoSelected)

Value	Label	Description
0	Least square fit	Improved version of the well-known perturb and observe algorithm.
1	Fixed voltage	Allows the user to set manually the converter voltage setpoint.
2	Fixed open-circuit voltage ratio	Allows the user to set manually a ratio between the converter voltage setpoint and the open-circuit voltage. The converter returns periodically at the open-circuit voltage for measuring the voltage. The setpoint is then set to the measured voltage times "Voltage ratio" (id 4).

aux relay 1

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.27.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
8100	1	ViewOnly	0	Is connected	false		-	Shows the relay current state.	bool	R	-
8101	2	ViewOnly	1	Position	SafeStateOff		-	Current position.	enum	R	5
8103	2	ViewOnly	2	Errors	NoErrors		-	Relay aux list of errors.	enum	R	6
8107	2	Basic	4	Operating mode	ManualOff		-	Selection of controlled relay operating mode.	enum	R/W	0
8109	2	Basic	5	Auto mode selection	PresetBatVolt		-	Selection of the automatic configuration.	enum	R/W	1
8111	2	Basic	6	Safe state selection	SafeOff		-	Selection of the controlled relay safe state position in case of problem or undetermined condition.	enum	R/W	2
8113	2	Basic	7	Battery voltage act. thresh.	42	V	[32,70]	Pre-set battery voltage activation threshold voltage.	float	R/W	-
8115	2	Basic	8	Battery voltage deact. thresh.	52	V	[32,70]	Pre-set battery voltage deactivation threshold voltage.	float	R/W	-
8117	2	Basic	9	Battery SOC act. thresh.	10	%	[0,100]	Pre-set battery SOC activation threshold SOC.	uint	R/W	-
8119	2	Basic	10	Battery SOC deact. thresh.	90	%	[0,100]	Pre-set battery SOC deactivation threshold SOC.	uint	R/W	-
8121	2	Basic	11	Battery temp. act. thresh.	50	°C	[0,150]	Pre-set battery temperature activation threshold temperature.	uint	R/W	-
8123	2	Basic	12	Battery temp. deact. thresh.	30	°C	[0,150]	Pre-set battery temperature deactivation threshold temperature.	uint	R/W	-
8125	2	Basic	13	Bat. charg. state selection	None		-	Pre-set battery charging state selection of the triggering states. Multiple choice possible.	bitfield	R/W	8
8127	2	Basic	14	Power AC selection	AcInput1All		-	Pre-set power AC selection of the AC input/load active power for comparison.	enum	R/W	3
8129	2	Basic	15	Power AC activ. thresh.	1000	W	[-200000,200000]	Pre-set power AC activation threshold power.	float	R/W	-
8131	2	Basic	16	Power AC deact. thresh.	0	W	[-200000,200000]	Pre-set power AC deactivation threshold power.	float	R/W	-
8133	2	Basic	17	Solar excess on-grid act. thresh.	1000	W	-	Pre-set solar excess on-grid activation threshold power.	float	R/W	-
8135	2	Basic	18	Solar excess on-grid deact. thresh.	500	W	-	Pre-set solar excess on-grid deactivation threshold power.	float	R/W	-
8141	2	Basic	21	Cmd input select index	0		[0,10]	Index of the command input interface used to control the relay.	uint	R/W	-
8143	2	Basic	22	Errors and warnings select signal	TrigOnErrorsHalted		-	Pre-set errors and warnings selection of the triggering signal.	bitfield	R/W	4
8145	2	Basic	23	AC input selection	OnAcInput1Connection		-	Pre-set on AC input selection.	enum	R/W	9
8147	2	Basic	24	AC coupling blanking time	5	s.	[5,10000]	Pre-set AC-coupling time during which the relay remains open during on-grid to off-grid transition.	uint	R/W	-
8149	1	ViewOnly	25	Is virtual	false		-	Shows if the relay is a virtual relay.	bool	R	-
8150	2	Basic	26	Advanced logics combination	0		-	Pre-set advanced logics, combination function (see advanced documentation).	uint	R/W	-
8154	2	Basic	28	Solar power activ. thresh.	5000	W	[0,200000]	Pre-set solar power activation threshold.	float	R/W	-
8156	2	Basic	29	Solar power deact. thresh.	500	W	[0,200000]	Pre-set solar power deactivation threshold power.	float	R/W	-
8158	2	Basic	30	Bat. index	ConnectedBatteryIdx		-	Index of the battery from which the values for the pre-set battery must be read.	enum	R/W	10

List of items of Enum 0 (OperatingMode)

Value	Label	Description
0	Manual Off	Relay is permanently deactivated (position NC).
1	Manual On	Relay is permanently activated (position NO).
2	Auto	Relay is activated according to a preset conditional mode.

List of items of Enum 1 (AutoMode)

Value	Label	Description

Value	Label	Description
0	Battery voltage	Relay is activated when the battery voltage reaches the activation threshold voltage. Relay is deactivated when the battery voltage reaches deactivation threshold voltage.
1	Battery SOC	Relay is activated when the battery SOC (state of charge) reaches the activation threshold SOC. Relay is deactivated when the SOC voltage reaches deactivation threshold SOC.
2	Battery temperature	Relay is activated when the battery temperature reaches the activation threshold temperature. Relay is deactivated when the battery temperature reaches deactivation threshold temperature.
3	Battery charg. state	Relay is activated depending on battery charging state.
4	Power AC	Relay is activated when the active power AC reaches the activation threshold power. Relay is deactivated when the power AC reaches the deactivation threshold power. The power used for this comparison can be selected between AC inputs, AC-Flex or AC-Loads.
15	Solar power	Relay is activated when the solar total power reaches the activation threshold power. Relay is deactivated when the solar total power reaches the deactivation threshold power.
5	On-Source	Relay is activated when the device is operating on an AC input. The type of AC input can be selected with "AC input selection" (id 23).
12	Off-Source	Relay is activated when the device is operating and the AC input is disconnected(offgrid).
6	Solar excess on-grid	Relay is activated with the following conditions: the activation threshold power is reached on AC input, the transfer is connected to the AC input (ongrid). Relay is disabled once one of the folowing condition is true: AC input power reaches the deactivation power threshold, the inverter is offgrid.
7	Solar excess	Relay is activated when at least one solar converter in the system is limited due to a solar excess.
8	Schedule time	Relay is activated during a daily time frame.
9	Cmd input	Relay is activated depending on command input state. It is possible to combine the 2 command entries using boolean logic.
10	Errors and warnings	Relay is activated using the device errors and/or the warnings.
11	Ext bypass	Relay is activated when all phases of the inverter are connected to AC-Loads and working. The purpose of this function is for example to enable an external bypass.
13	AC Coupling	Relay is configured to control AC coupled devices. Relay opens during on-grid to off-grid transitions to prevent overload of the battery.
14	Advanced logics	Relay is activated using advanced logics from the state of up to 5 inputs.

List of items of Enum 2 (SafeState)

Value	Label	Description
0	Safe Off	Relay is deactivated in case of undetermined condition or problem.
1	Safe On	Relay is activated in case of undetermined condition or problem.
2	Last manual	Relay takes the state of the last manual operation in case of undetermined condition or problem.

List of items of Enum 3 (PresetPacSelection)

Value	Label	Description
0	AC input 1 all	Power detection on AC input 1. Total active power on all phases.
1	AC input 1 L1	Power detection on L1 of AC input 1.
2	AC input 1 L2	Power detection on L2 of AC input 1.
3	AC input 1 L3	Power detection on L3 of AC input 1.
4	AC input 2 all	Power detection on AC input 2. Total active power on all phases.
5	AC input 2 L1	Power detection on L1 of AC input 2.
6	AC input 2 L2	Power detection on L2 of AC input 2.
7	AC input 2 L3	Power detection on L3 of AC input 2.
8	FlexLoads all	Power detection on total FlexLoads of the system. Total active power on all phases.
9	FlexLoads L1	Power detection on all L1 FlexLoads of the system.
10	FlexLoads L2	Power detection on all L2 FlexLoads of the system.
11	FlexLoads L3	Power detection on all L3 FlexLoads of the system.
12	AC-Loads all	Power detection on AC-Loads. Total active power on all phases.
13	AC-Loads L1	Power detection on L1 of AC-Loads.
14	AC-Loads L2	Power detection on L2 of AC-Loads.
15	AC-Loads L3	Power detection on L3 of AC-Loads.

List of items of Enum 4 (PresetErrorsWarnings)

Value	Label	Description
0	Trig on all conditions	Activation triggered by all conditions.
1	Trig on warnings	Activation triggered by warnings.
2	Trig on errors restarting	Activation triggered by errors restarting.
4	Trig on errors halted	Activation triggered by errors halted.

List of items of Enum 5 (RelayState)

Value	Label	Description
0	Safe state opened	Actual position of relay: safe state on.
1	Safe state closed	Actual position of relay: safe state off.
2	Rel. man. opened	Actual position of relay: Manually opened.
3	Rel. man. closed	Actual position of relay: Manually closed.
4	Rel. auto. opened	Actual position of relay: Automatically opened.
5	Rel. auto. closed	Actual position of relay: Automatically closed.

List of items of Enum 6 (Errors)

Value	Label	Description
0	End of error	No error.
1	No hysteresis	Different trigger values are required in order to have an hysteresis.
2	Property access error	Failed to access to the required property.
3	Undefined error	Undefined error.
4	Advanced logics not available	Advanced logics not available.
5	Wrong advanced logics indexes	Wrong advanced logics indexes.

List of items of Enum 8 (BatChargeState)

Value	Label	Description
0	None	Battery charging state: no charging state selected.
1	Bulk	Battery charging state: bulk.
2	Reduced floating	Battery charging state: reduced floating.
4	Floating	Battery charging state: floating.
8	Periodical absorption	Battery charging state: periodical absorption.
16	Absorption	Battery charging state: absorption.
32	Equalization	Battery charging state: equalization.

List of items of Enum 9 (PresetOnSourceSelect)

Value	Label	Description
0	On AC input 1 connection	Activate relay when connected to AC input 1.
1	On AC input 2 connection	Activate relay when connected to AC input 2.
2	On any AC input connection	Activate relay when connected to either AC inputs.

List of items of Enum 10 (BatIndex)

Value	Label	Description
0	Connected battery idx	Index of the battery connected to this device.
1	Battery idx 0	Use battery index 0.
2	Battery idx 1	Use battery index 1.
3	Battery idx 2	Use battery index 2.
4	Battery idx 3	Use battery index 3.
5	Battery idx 4	Use battery index 4.

aux relay 2

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.28.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
8400	1	ViewOnly	0	Is connected	false		-	Shows the relay current state.	bool	R	-
8401	2	ViewOnly	1	Position	SafeStateOff		-	Current position.	enum	R	5
8403	2	ViewOnly	2	Errors	NoErrors		-	Relay aux list of errors.	enum	R	6
8407	2	Basic	4	Operating mode	ManualOff		-	Selection of controlled relay operating mode.	enum	R/W	0
8409	2	Basic	5	Auto mode selection	PresetBatVolt		-	Selection of the automatic configuration.	enum	R/W	1
8411	2	Basic	6	Safe state selection	SafeOff		-	Selection of the controlled relay safe state position in case of problem or undetermined condition.	enum	R/W	2
8413	2	Basic	7	Battery voltage act. thresh.	42	V	[32,70]	Pre-set battery voltage activation threshold voltage.	float	R/W	-
8415	2	Basic	8	Battery voltage deact. thresh.	52	V	[32,70]	Pre-set battery voltage deactivation threshold voltage.	float	R/W	-
8417	2	Basic	9	Battery SOC act. thresh.	10	%	[0,100]	Pre-set battery SOC activation threshold SOC.	uint	R/W	-
8419	2	Basic	10	Battery SOC deact. thresh.	90	%	[0,100]	Pre-set battery SOC deactivation threshold SOC.	uint	R/W	-
8421	2	Basic	11	Battery temp. act. thresh.	50	°C	[0,150]	Pre-set battery temperature activation threshold temperature.	uint	R/W	-
8423	2	Basic	12	Battery temp. deact. thresh.	30	°C	[0,150]	Pre-set battery temperature deactivation threshold temperature.	uint	R/W	-
8425	2	Basic	13	Bat. charg. state selection	None		-	Pre-set battery charging state selection of the triggering states. Multiple choice possible.	bitfield	R/W	8
8427	2	Basic	14	Power AC selection	AcInput1All		-	Pre-set power AC selection of the AC input/load active power for comparison.	enum	R/W	3
8429	2	Basic	15	Power AC activ. thresh.	1000	W	[-200000,200000]	Pre-set power AC activation threshold power.	float	R/W	-
8431	2	Basic	16	Power AC deact. thresh.	0	W	[-200000,200000]	Pre-set power AC deactivation threshold power.	float	R/W	-
8433	2	Basic	17	Solar excess on-grid act. thresh.	1000	W	-	Pre-set solar excess on-grid activation threshold power.	float	R/W	-
8435	2	Basic	18	Solar excess on-grid deact. thresh.	500	W	-	Pre-set solar excess on-grid deactivation threshold power.	float	R/W	-
8441	2	Basic	21	Cmd input select index	0		[0,10]	Index of the command input interface used to control the relay.	uint	R/W	-
8443	2	Basic	22	Errors and warnings select signal	TrigOnErrorsHalted		-	Pre-set errors and warnings selection of the triggering signal.	bitfield	R/W	4
8445	2	Basic	23	AC input selection	OnAcInput1Connection		-	Pre-set on AC input selection.	enum	R/W	9
8447	2	Basic	24	AC coupling blanking time	5	s.	[5,10000]	Pre-set AC-coupling time during which the relay remains open during on-grid to off-grid transition.	uint	R/W	-
8449	1	ViewOnly	25	Is virtual	false		-	Shows if the relay is a virtual relay.	bool	R	-
8450	2	Basic	26	Advanced logics combination	0		-	Pre-set advanced logics, combination function (see advanced documentation).	uint	R/W	-
8454	2	Basic	28	Solar power activ. thresh.	5000	W	[0,200000]	Pre-set solar power activation threshold.	float	R/W	-
8456	2	Basic	29	Solar power deact. thresh.	500	W	[0,200000]	Pre-set solar power deactivation threshold power.	float	R/W	-
8458	2	Basic	30	Bat. index	ConnectedBatteryIdx		-	Index of the battery from which the values for the pre-set battery must be read.	enum	R/W	10

List of items of Enum 0 (OperatingMode)

Value	Label	Description
0	Manual Off	Relay is permanently deactivated (position NC).
1	Manual On	Relay is permanently activated (position NO).
2	Auto	Relay is activated according to a preset conditional mode.

List of items of Enum 1 (AutoMode)

Value	Label	Description

Value	Label	Description
0	Battery voltage	Relay is activated when the battery voltage reaches the activation threshold voltage. Relay is deactivated when the battery voltage reaches deactivation threshold voltage.
1	Battery SOC	Relay is activated when the battery SOC (state of charge) reaches the activation threshold SOC. Relay is deactivated when the SOC voltage reaches deactivation threshold SOC.
2	Battery temperature	Relay is activated when the battery temperature reaches the activation threshold temperature. Relay is deactivated when the battery temperature reaches deactivation threshold temperature.
3	Battery charg. state	Relay is activated depending on battery charging state.
4	Power AC	Relay is activated when the active power AC reaches the activation threshold power. Relay is deactivated when the power AC reaches the deactivation threshold power. The power used for this comparison can be selected between AC inputs, AC-Flex or AC-Loads.
15	Solar power	Relay is activated when the solar total power reaches the activation threshold power. Relay is deactivated when the solar total power reaches the deactivation threshold power.
5	On-Source	Relay is activated when the device is operating on an AC input. The type of AC input can be selected with "AC input selection" (id 23).
12	Off-Source	Relay is activated when the device is operating and the AC input is disconnected(offgrid).
6	Solar excess on-grid	Relay is activated with the following conditions: the activation threshold power is reached on AC input, the transfer is connected to the AC input (ongrid). Relay is disabled once one of the folowing condition is true: AC input power reaches the deactivation power threshold, the inverter is offgrid.
7	Solar excess	Relay is activated when at least one solar converter in the system is limited due to a solar excess.
8	Schedule time	Relay is activated during a daily time frame.
9	Cmd input	Relay is activated depending on command input state. It is possible to combine the 2 command entries using boolean logic.
10	Errors and warnings	Relay is activated using the device errors and/or the warnings.
11	Ext bypass	Relay is activated when all phases of the inverter are connected to AC-Loads and working. The purpose of this function is for example to enable an external bypass.
13	AC Coupling	Relay is configured to control AC coupled devices. Relay opens during on-grid to off-grid transitions to prevent overload of the battery.
14	Advanced logics	Relay is activated using advanced logics from the state of up to 5 inputs.

List of items of Enum 2 (SafeState)

Value	Label	Description
0	Safe Off	Relay is deactivated in case of undetermined condition or problem.
1	Safe On	Relay is activated in case of undetermined condition or problem.
2	Last manual	Relay takes the state of the last manual operation in case of undetermined condition or problem.

List of items of Enum 3 (PresetPacSelection)

Value	Label	Description
0	AC input 1 all	Power detection on AC input 1. Total active power on all phases.
1	AC input 1 L1	Power detection on L1 of AC input 1.
2	AC input 1 L2	Power detection on L2 of AC input 1.
3	AC input 1 L3	Power detection on L3 of AC input 1.
4	AC input 2 all	Power detection on AC input 2. Total active power on all phases.
5	AC input 2 L1	Power detection on L1 of AC input 2.
6	AC input 2 L2	Power detection on L2 of AC input 2.
7	AC input 2 L3	Power detection on L3 of AC input 2.
8	FlexLoads all	Power detection on total FlexLoads of the system. Total active power on all phases.
9	FlexLoads L1	Power detection on all L1 FlexLoads of the system.
10	FlexLoads L2	Power detection on all L2 FlexLoads of the system.
11	FlexLoads L3	Power detection on all L3 FlexLoads of the system.
12	AC-Loads all	Power detection on AC-Loads. Total active power on all phases.
13	AC-Loads L1	Power detection on L1 of AC-Loads.
14	AC-Loads L2	Power detection on L2 of AC-Loads.
15	AC-Loads L3	Power detection on L3 of AC-Loads.

List of items of Enum 4 (PresetErrorsWarnings)

Value	Label	Description
0	Trig on all conditions	Activation triggered by all conditions.
1	Trig on warnings	Activation triggered by warnings.
2	Trig on errors restarting	Activation triggered by errors restarting.
4	Trig on errors halted	Activation triggered by errors halted.

List of items of Enum 5 (RelayState)

Value	Label	Description
0	Safe state opened	Actual position of relay: safe state on.
1	Safe state closed	Actual position of relay: safe state off.
2	Rel. man. opened	Actual position of relay: Manually opened.
3	Rel. man. closed	Actual position of relay: Manually closed.
4	Rel. auto. opened	Actual position of relay: Automatically opened.
5	Rel. auto. closed	Actual position of relay: Automatically closed.

List of items of Enum 6 (Errors)

Value	Label	Description
0	End of error	No error.
1	No hysteresis	Different trigger values are required in order to have an hysteresis.
2	Property access error	Failed to access to the required property.
3	Undefined error	Undefined error.
4	Advanced logics not available	Advanced logics not available.
5	Wrong advanced logics indexes	Wrong advanced logics indexes.

List of items of Enum 8 (BatChargeState)

Value	Label	Description
0	None	Battery charging state: no charging state selected.
1	Bulk	Battery charging state: bulk.
2	Reduced floating	Battery charging state: reduced floating.
4	Floating	Battery charging state: floating.
8	Periodical absorption	Battery charging state: periodical absorption.
16	Absorption	Battery charging state: absorption.
32	Equalization	Battery charging state: equalization.

List of items of Enum 9 (PresetOnSourceSelect)

Value	Label	Description
0	On AC input 1 connection	Activate relay when connected to AC input 1.
1	On AC input 2 connection	Activate relay when connected to AC input 2.
2	On any AC input connection	Activate relay when connected to either AC inputs.

List of items of Enum 10 (BatIndex)

Value	Label	Description
0	Connected battery idx	Index of the battery connected to this device.
1	Battery idx 0	Use battery index 0.
2	Battery idx 1	Use battery index 1.
3	Battery idx 2	Use battery index 2.
4	Battery idx 3	Use battery index 3.
5	Battery idx 4	Use battery index 4.

aux relay 1 time control

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.29.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
8700	2	Expert	0	Time controlled mode	Bypass		-	Time Controlled object working mode.	enum	R	0
8702	2	Basic	1	Temp. restr. act. min delay	5	s	-	Temporal restriction: Minimum delay before activation. The signal must be high during all this period.	uint	R/W	-
8704	2	Basic	2	Temp. restr. deact. min delay	5	s	-	Temporal restriction: Minimum delay before deactivation. The signal must be low during all this period.	uint	R/W	-
8706	2	Basic	3	Temp. restr. act. min time	0	s	-	Temporal restriction: Output signal minimum activation time.	uint	R/W	-
8708	2	Basic	4	Temp. restr. deact. min time	0	s	-	Temporal restriction: Output signal minimum deactivation time.	uint	R/W	-
8710	2	Basic	5	Temp. restr. act. max time	-1	s	-	Temporal restriction: Output signal maximum activation time.	int	R/W	-
8712	2	Basic	6	Temp. restr. act. allowed hour1	43200	s	[0,86399]	Temporal restriction: Daily time range hour 1. Given in seconds from midnight.	uint	R/W	-
8714	2	Basic	7	Temp. restr. act. allowed hour2	43200	s	[0,86399]	Temporal restriction: Daily time range hour 2. Given in seconds from midnight.	uint	R/W	-
8716	2	Basic	8	Temp. restr. act. allowed week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Temporal restriction: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
8718	2	Basic	9	Sch. time starting date	18250	days	-	Schedule time: Starting date. Given in days since 01.01.1970.	uint	R/W	-
8720	2	Basic	10	Sch. time starting time	43200	s	[0,86399]	Schedule time: Activation starting hour. Given in seconds from midnight.	uint	R/W	-
8722	2	Basic	11	Sch. time ending time	43200	s	[0,86399]	Schedule time: Activation ending hour. Given in seconds from midnight.	uint	R/W	-
8724	2	Basic	12	Sch. time selected week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Schedule time: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
8726	2	Basic	13	Sch. time recurrence weeks	1		-	Schedule time: Activation weeks recurrences.	uint	R/W	-
8728	2	Basic	14	Sch. time range of recurrence select.	NoEndDate		-	Schedule time: Selection of recurrence before deactivation.	enum	R/W	1
8730	2	Basic	15	Sch. time ending date	18251	days	-	Schedule time: Activations ending date. Given in days since 01.01.1970.	uint	R/W	-
8732	2	Basic	16	Sch. time nbr of occurrences	1		-	Schedule time: Number of occurrences.	uint	R/W	-
8734	1	Basic	17	Reset time controlled	-		-	Reset all time controlled counters. For exampe the occurences counts.	signal	W	-

List of items of Enum 0 (TimeControlledMode)

Value	Label	Description
0	Bypass	The time controlled block is bypassed. No time restriction is applied to the input signal.
1	Temporal restriction	Temporal restriction is applied to the input signal.
2	Schedule time	The output is enabled and disabled according to scheduled conditions.

List of items of Enum 1 (RangeOfRecurrence)

Value	Label	Description

Value	Label	Description
0	No end date	The scheduled activation-desactivation is indefinitely repeated.
1	End after occurrence	The scheduled activation-desactivation is repeated a given number of times "Sch. time nbr of occurrences" (id 16).
2	End date	The scheduled activation-desactivation is repeated until a given date "Sch. time ending date" (id 15).

List of items of Enum 2 (WeekDays)

Value	Label	Description
64	Monday	Monday selected.
32	Tuesday	Tuesday selected.
16	Wednesday	Wednesday selected.
8	Thursday	Thursday selected.
4	Friday	Friday selected.
2	Saturday	Saturday selected.
1	Sunday	Sunday selected.

aux relay 2 time control

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.30.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
9000	2	Expert	0	Time controlled mode	Bypass		-	Time Controlled object working mode.	enum	R	0
9002	2	Basic	1	Temp. restr. act. min delay	5	s	-	Temporal restriction: Minimum delay before activation. The signal must be high during all this period.	uint	R/W	-
9004	2	Basic	2	Temp. restr. deact. min delay	5	s	-	Temporal restriction: Minimum delay before deactivation. The signal must be low during all this period.	uint	R/W	-
9006	2	Basic	3	Temp. restr. act. min time	0	s	-	Temporal restriction: Output signal minimum activation time.	uint	R/W	-
9008	2	Basic	4	Temp. restr. deact. min time	0	s	-	Temporal restriction: Output signal minimum deactivation time.	uint	R/W	-
9010	2	Basic	5	Temp. restr. act. max time	-1	s	-	Temporal restriction: Output signal maximum activation time.	int	R/W	-
9012	2	Basic	6	Temp. restr. act. allowed hour1	43200	s	[0,86399]	Temporal restriction: Daily time range hour 1. Given in seconds from midnight.	uint	R/W	-
9014	2	Basic	7	Temp. restr. act. allowed hour2	43200	s	[0,86399]	Temporal restriction: Daily time range hour 2. Given in seconds from midnight.	uint	R/W	-
9016	2	Basic	8	Temp. restr. act. allowed week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Temporal restriction: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
9018	2	Basic	9	Sch. time starting date	18250	days	-	Schedule time: Starting date. Given in days since 01.01.1970.	uint	R/W	-
9020	2	Basic	10	Sch. time starting time	43200	s	[0,86399]	Schedule time: Activation starting hour. Given in seconds from midnight.	uint	R/W	-
9022	2	Basic	11	Sch. time ending time	43200	s	[0,86399]	Schedule time: Activation ending hour. Given in seconds from midnight.	uint	R/W	-
9024	2	Basic	12	Sch. time selected week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Schedule time: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
9026	2	Basic	13	Sch. time recurrence weeks	1		-	Schedule time: Activation weeks recurrences.	uint	R/W	-
9028	2	Basic	14	Sch. time range of recurrence select.	NoEndDate		-	Schedule time: Selection of recurrence before deactivation.	enum	R/W	1
9030	2	Basic	15	Sch. time ending date	18251	days	-	Schedule time: Activations ending date. Given in days since 01.01.1970.	uint	R/W	-
9032	2	Basic	16	Sch. time nbr of occurrences	1		-	Schedule time: Number of occurrences.	uint	R/W	-
9034	1	Basic	17	Reset time controlled	-		-	Reset all time controlled counters. For exampe the occurences counts.	signal	W	-

List of items of Enum 0 (TimeControlledMode)

Value	Label	Description
0	Bypass	The time controlled block is bypassed. No time restriction is applied to the input signal.
1	Temporal restriction	Temporal restriction is applied to the input signal.
2	Schedule time	The output is enabled and disabled according to scheduled conditions.

List of items of Enum 1 (RangeOfRecurrence)

Value	Label	Description

Value	Label	Description
0	No end date	The scheduled activation-desactivation is indefinitely repeated.
1	End after occurrence	The scheduled activation-desactivation is repeated a given number of times "Sch. time nbr of occurrences" (id 16).
2	End date	The scheduled activation-desactivation is repeated until a given date "Sch. time ending date" (id 15).

List of items of Enum 2 (WeekDays)

Value	Label	Description
64	Monday	Monday selected.
32	Tuesday	Tuesday selected.
16	Wednesday	Wednesday selected.
8	Thursday	Thursday selected.
4	Friday	Friday selected.
2	Saturday	Saturday selected.
1	Sunday	Sunday selected.

cmd input 1

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.31.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
9302	1	ViewOnly	2	Current state	false		-	Current command input state.	bool	R	-
9303	2	ViewOnly	3	Cmd input system index	-1		-	Index in the system of this command input.	int	R	-
9305	2	Basic	4	Cmd input configuration	AnalogMode		-	Configuration of this command input.	enum	R/W	0
9307	2	Basic	5	Mirrored internal aux relay index	-1		-	Index of the internal aux relay mirorred by this command input, if configuration is set to "Active when internal aux relay connected" (value 32). 0 corresponds to the first internal aux relay, 1 to the second and so on.	int	R/W	-
9309	2	ViewOnly	6	Available configurations	ActiveWhenInternalAuxRelayConnected | ActiveWhenInternalAuxRelayDisconnected		-	Available configurations of this command input.	bitfield	R	1
9311	2	ViewOnly	7	Current analog value	1		-	Current command input analog value. 0 when the measured analog voltage is 0V. 1 when the measured analog voltage is "Max analog voltage" (id 8). Always 1 if analog mode is not available or "Cmd input configuration" (id 4) is not set to "Analog mode" (value 128).	float	R	-
9313	2	Basic	8	Max analog voltage	10	V	[10,60]	Maximum voltage value of the power supply used. "Current analog value" (id 7) is 1 when the measured analog voltage is greater than or equal to this value.	float	R/W	-

List of items of Enum 0 (ConfigurationEnum)

Value	Label	Description
1	Active when dry contact closed	The function associated with this remote input is active when the dry contact is closed.
2	Active when dry contact opened	The function associated with this remote input is active when the dry contact is opened.
4	Active when a voltage is supplied	The function associated with this remote input is active when a voltage is supplied.
8	Active when no voltage is supplied	The function associated with this remote input is active when no voltage is supplied.
16	DRED port for DRM0	Port used with a Demand Response Enabling Device for the Demand Response Mode 0 (Australain/New Zeland standard).
32	Active when internal aux relay connected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is connected.
64	Active when internal aux relay disconnected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is disconnected.
128	Analog mode	The cmd input is used in analog mode. "Current analog value" (id 7) varies linearly from 0 to 1 when the measured analog voltage ranges from 0V to "Max analog voltage" (id 8).

List of items of Enum 1 (AvailableConfigurationsBitfield)

Value	Label	Description
1	Active when dry contact closed	The function associated with this remote input is active when the dry contact is closed.
2	Active when dry contact opened	The function associated with this remote input is active when the dry contact is opened.
4	Active when a voltage is supplied	The function associated with this remote input is active when a voltage is supplied.
8	Active when no voltage is supplied	The function associated with this remote input is active when no voltage is supplied.
16	DRED port for DRM0	Port used with a Demand Response Enabling Device for the Demand Response Mode 0 (Australain/New Zeland standard).
32	Active when internal aux relay connected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is connected.
64	Active when internal aux relay disconnected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is disconnected.
128	Analog mode	The cmd input is used in analog mode. "Current analog value" (id 7) varies linearly from 0 to 1 when the measured analog voltage ranges from 0V to "Max analog voltage" (id 8).

cmd input 2

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.32.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
9602	1	ViewOnly	2	Current state	false		-	Current command input state.	bool	R	-
9603	2	ViewOnly	3	Cmd input system index	-1		-	Index in the system of this command input.	int	R	-
9605	2	Basic	4	Cmd input configuration	AnalogMode		-	Configuration of this command input.	enum	R/W	0
9607	2	Basic	5	Mirrored internal aux relay index	-1		-	Index of the internal aux relay mirorred by this command input, if configuration is set to "Active when internal aux relay connected" (value 32). 0 corresponds to the first internal aux relay, 1 to the second and so on.	int	R/W	-
9609	2	ViewOnly	6	Available configurations	ActiveWhenInternalAuxRelayConnected | ActiveWhenInternalAuxRelayDisconnected		-	Available configurations of this command input.	bitfield	R	1
9611	2	ViewOnly	7	Current analog value	1		-	Current command input analog value. 0 when the measured analog voltage is 0V. 1 when the measured analog voltage is "Max analog voltage" (id 8). Always 1 if analog mode is not available or "Cmd input configuration" (id 4) is not set to "Analog mode" (value 128).	float	R	-
9613	2	Basic	8	Max analog voltage	10	V	[10,60]	Maximum voltage value of the power supply used. "Current analog value" (id 7) is 1 when the measured analog voltage is greater than or equal to this value.	float	R/W	-

List of items of Enum 0 (ConfigurationEnum)

Value	Label	Description
1	Active when dry contact closed	The function associated with this remote input is active when the dry contact is closed.
2	Active when dry contact opened	The function associated with this remote input is active when the dry contact is opened.
4	Active when a voltage is supplied	The function associated with this remote input is active when a voltage is supplied.
8	Active when no voltage is supplied	The function associated with this remote input is active when no voltage is supplied.
16	DRED port for DRM0	Port used with a Demand Response Enabling Device for the Demand Response Mode 0 (Australain/New Zeland standard).
32	Active when internal aux relay connected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is connected.
64	Active when internal aux relay disconnected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is disconnected.
128	Analog mode	The cmd input is used in analog mode. "Current analog value" (id 7) varies linearly from 0 to 1 when the measured analog voltage ranges from 0V to "Max analog voltage" (id 8).

List of items of Enum 1 (AvailableConfigurationsBitfield)

Value	Label	Description
1	Active when dry contact closed	The function associated with this remote input is active when the dry contact is closed.
2	Active when dry contact opened	The function associated with this remote input is active when the dry contact is opened.
4	Active when a voltage is supplied	The function associated with this remote input is active when a voltage is supplied.
8	Active when no voltage is supplied	The function associated with this remote input is active when no voltage is supplied.
16	DRED port for DRM0	Port used with a Demand Response Enabling Device for the Demand Response Mode 0 (Australain/New Zeland standard).
32	Active when internal aux relay connected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is connected.
64	Active when internal aux relay disconnected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is disconnected.
128	Analog mode	The cmd input is used in analog mode. "Current analog value" (id 7) varies linearly from 0 to 1 when the measured analog voltage ranges from 0V to "Max analog voltage" (id 8).

battery contributor

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.33.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
9900	2	ViewOnly	0	Charging current	0	A	-	Charging current measured.	float	R	-
9902	2	ViewOnly	1	Temp sensor	Disconnected		-	Indicates the temperature sensor state.	enum	R	0
9904	2	ViewOnly	2	Temp	-30	°C	-	Temperature measured.	float	R	-
9910	2	ViewOnly	5	Voltage	0	V	-	Voltage measured.	float	R	-

List of items of Enum 0 (State)

Value	Label	Description
0	Disconnected	The temperature sensor is disconnected.
1	Connected	The temperature sensor is connected.
2	ShortCircuit	The temperature sensor has a problem. A short circuit has been detected.

RS 485i bus

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.34.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
10202	1	ViewOnly	1	Bus termination status	false		-	Bus termination status for this communication bus.	bool	R	-
10203	2	Expert	2	Baudrate	Baudrate9600bps		-	Connection baudrate.	enum	R/W	1
10205	2	Expert	3	Parity	ParityEven		-	Parity type to be used.	enum	R/W	2
10207	2	Expert	4	Stop bits	StopBitsOne		-	Number of stop bits per transmitted character.	enum	R/W	3
10209	2	Expert	5	Data bits	DataBitsData8		-	Number of data bits per transmitted character.	enum	R/W	4

List of items of Enum 1 (BaudrateType)

Value	Label	Description
9600	9600bps	Baudrate set to 9600bps.
19200	19200bps	Baudrate set to 19200bps.
38400	38400bps	Baudrate set to 38400bps.
115200	115200bps	Baudrate set to 115200bps.
4294967295	Not configurable	The baudrate is automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 2 (ParityType)

Value	Label	Description
0	None	No parity.
2	Even	Parity even.
3	Odd	Parity odd.
4	Space	Parity space.
5	Mark	Parity mark.
4294967295	Not configurable	The parity is automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 3 (StopBitsType)

Value	Label	Description
1	One	One stop bit.
2	Two	Two stop bits.
3	One and a half	One and half stop bit.
4294967295	Not configurable	The stop bits are automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 4 (DataBitsType)

Value	Label	Description
5	Five	Five data bits.
6	Six	Six data bits.
7	Seven	Seven data bits.
8	Eight	Eight data bits.
4294967295	Not configurable	The data bits are automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

CANi bus

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.35.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
10502	1	ViewOnly	1	Bus termination status	false		-	Bus termination status for this communication bus.	bool	R	-
10503	2	Expert	2	Baudrate	Baudrate9600bps		-	Connection baudrate.	enum	R/W	1
10505	2	Expert	3	Parity	ParityEven		-	Parity type to be used.	enum	R/W	2
10507	2	Expert	4	Stop bits	StopBitsOne		-	Number of stop bits per transmitted character.	enum	R/W	3
10509	2	Expert	5	Data bits	DataBitsData8		-	Number of data bits per transmitted character.	enum	R/W	4

List of items of Enum 1 (BaudrateType)

Value	Label	Description
9600	9600bps	Baudrate set to 9600bps.
19200	19200bps	Baudrate set to 19200bps.
38400	38400bps	Baudrate set to 38400bps.
115200	115200bps	Baudrate set to 115200bps.
4294967295	Not configurable	The baudrate is automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 2 (ParityType)

Value	Label	Description
0	None	No parity.
2	Even	Parity even.
3	Odd	Parity odd.
4	Space	Parity space.
5	Mark	Parity mark.
4294967295	Not configurable	The parity is automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 3 (StopBitsType)

Value	Label	Description
1	One	One stop bit.
2	Two	Two stop bits.
3	One and a half	One and half stop bit.
4294967295	Not configurable	The stop bits are automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 4 (DataBitsType)

Value	Label	Description
5	Five	Five data bits.
6	Six	Six data bits.
7	Seven	Seven data bits.
8	Eight	Eight data bits.
4294967295	Not configurable	The data bits are automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

virtual aux relay 3

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.36.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
10800	1	ViewOnly	0	Is connected	false		-	Shows the relay current state.	bool	R	-
10801	2	ViewOnly	1	Position	SafeStateOff		-	Current position.	enum	R	5
10803	2	ViewOnly	2	Errors	NoErrors		-	Relay aux list of errors.	enum	R	6
10807	2	Basic	4	Operating mode	ManualOff		-	Selection of controlled relay operating mode.	enum	R/W	0
10809	2	Basic	5	Auto mode selection	PresetBatVolt		-	Selection of the automatic configuration.	enum	R/W	1
10811	2	Basic	6	Safe state selection	SafeOff		-	Selection of the controlled relay safe state position in case of problem or undetermined condition.	enum	R/W	2
10813	2	Basic	7	Battery voltage act. thresh.	42	V	[32,70]	Pre-set battery voltage activation threshold voltage.	float	R/W	-
10815	2	Basic	8	Battery voltage deact. thresh.	52	V	[32,70]	Pre-set battery voltage deactivation threshold voltage.	float	R/W	-
10817	2	Basic	9	Battery SOC act. thresh.	10	%	[0,100]	Pre-set battery SOC activation threshold SOC.	uint	R/W	-
10819	2	Basic	10	Battery SOC deact. thresh.	90	%	[0,100]	Pre-set battery SOC deactivation threshold SOC.	uint	R/W	-
10821	2	Basic	11	Battery temp. act. thresh.	50	°C	[0,150]	Pre-set battery temperature activation threshold temperature.	uint	R/W	-
10823	2	Basic	12	Battery temp. deact. thresh.	30	°C	[0,150]	Pre-set battery temperature deactivation threshold temperature.	uint	R/W	-
10825	2	Basic	13	Bat. charg. state selection	None		-	Pre-set battery charging state selection of the triggering states. Multiple choice possible.	bitfield	R/W	8
10827	2	Basic	14	Power AC selection	AcInput1All		-	Pre-set power AC selection of the AC input/load active power for comparison.	enum	R/W	3
10829	2	Basic	15	Power AC activ. thresh.	1000	W	[-200000,200000]	Pre-set power AC activation threshold power.	float	R/W	-
10831	2	Basic	16	Power AC deact. thresh.	0	W	[-200000,200000]	Pre-set power AC deactivation threshold power.	float	R/W	-
10833	2	Basic	17	Solar excess on-grid act. thresh.	1000	W	-	Pre-set solar excess on-grid activation threshold power.	float	R/W	-
10835	2	Basic	18	Solar excess on-grid deact. thresh.	500	W	-	Pre-set solar excess on-grid deactivation threshold power.	float	R/W	-
10841	2	Basic	21	Cmd input select index	0		[0,10]	Index of the command input interface used to control the relay.	uint	R/W	-
10843	2	Basic	22	Errors and warnings select signal	TrigOnErrorsHalted		-	Pre-set errors and warnings selection of the triggering signal.	bitfield	R/W	4
10845	2	Basic	23	AC input selection	OnAcInput1Connection		-	Pre-set on AC input selection.	enum	R/W	9
10847	2	Basic	24	AC coupling blanking time	5	s.	[5,10000]	Pre-set AC-coupling time during which the relay remains open during on-grid to off-grid transition.	uint	R/W	-
10849	1	ViewOnly	25	Is virtual	false		-	Shows if the relay is a virtual relay.	bool	R	-
10850	2	Basic	26	Advanced logics combination	0		-	Pre-set advanced logics, combination function (see advanced documentation).	uint	R/W	-
10854	2	Basic	28	Solar power activ. thresh.	5000	W	[0,200000]	Pre-set solar power activation threshold.	float	R/W	-
10856	2	Basic	29	Solar power deact. thresh.	500	W	[0,200000]	Pre-set solar power deactivation threshold power.	float	R/W	-
10858	2	Basic	30	Bat. index	ConnectedBatteryIdx		-	Index of the battery from which the values for the pre-set battery must be read.	enum	R/W	10

List of items of Enum 0 (OperatingMode)

Value	Label	Description
0	Manual Off	Relay is permanently deactivated (position NC).
1	Manual On	Relay is permanently activated (position NO).
2	Auto	Relay is activated according to a preset conditional mode.

List of items of Enum 1 (AutoMode)

Value	Label	Description

Value	Label	Description
0	Battery voltage	Relay is activated when the battery voltage reaches the activation threshold voltage. Relay is deactivated when the battery voltage reaches deactivation threshold voltage.
1	Battery SOC	Relay is activated when the battery SOC (state of charge) reaches the activation threshold SOC. Relay is deactivated when the SOC voltage reaches deactivation threshold SOC.
2	Battery temperature	Relay is activated when the battery temperature reaches the activation threshold temperature. Relay is deactivated when the battery temperature reaches deactivation threshold temperature.
3	Battery charg. state	Relay is activated depending on battery charging state.
4	Power AC	Relay is activated when the active power AC reaches the activation threshold power. Relay is deactivated when the power AC reaches the deactivation threshold power. The power used for this comparison can be selected between AC inputs, AC-Flex or AC-Loads.
15	Solar power	Relay is activated when the solar total power reaches the activation threshold power. Relay is deactivated when the solar total power reaches the deactivation threshold power.
5	On-Source	Relay is activated when the device is operating on an AC input. The type of AC input can be selected with "AC input selection" (id 23).
12	Off-Source	Relay is activated when the device is operating and the AC input is disconnected(offgrid).
6	Solar excess on-grid	Relay is activated with the following conditions: the activation threshold power is reached on AC input, the transfer is connected to the AC input (ongrid). Relay is disabled once one of the folowing condition is true: AC input power reaches the deactivation power threshold, the inverter is offgrid.
7	Solar excess	Relay is activated when at least one solar converter in the system is limited due to a solar excess.
8	Schedule time	Relay is activated during a daily time frame.
9	Cmd input	Relay is activated depending on command input state. It is possible to combine the 2 command entries using boolean logic.
10	Errors and warnings	Relay is activated using the device errors and/or the warnings.
11	Ext bypass	Relay is activated when all phases of the inverter are connected to AC-Loads and working. The purpose of this function is for example to enable an external bypass.
13	AC Coupling	Relay is configured to control AC coupled devices. Relay opens during on-grid to off-grid transitions to prevent overload of the battery.
14	Advanced logics	Relay is activated using advanced logics from the state of up to 5 inputs.

List of items of Enum 2 (SafeState)

Value	Label	Description
0	Safe Off	Relay is deactivated in case of undetermined condition or problem.
1	Safe On	Relay is activated in case of undetermined condition or problem.
2	Last manual	Relay takes the state of the last manual operation in case of undetermined condition or problem.

List of items of Enum 3 (PresetPacSelection)

Value	Label	Description
0	AC input 1 all	Power detection on AC input 1. Total active power on all phases.
1	AC input 1 L1	Power detection on L1 of AC input 1.
2	AC input 1 L2	Power detection on L2 of AC input 1.
3	AC input 1 L3	Power detection on L3 of AC input 1.
4	AC input 2 all	Power detection on AC input 2. Total active power on all phases.
5	AC input 2 L1	Power detection on L1 of AC input 2.
6	AC input 2 L2	Power detection on L2 of AC input 2.
7	AC input 2 L3	Power detection on L3 of AC input 2.
8	FlexLoads all	Power detection on total FlexLoads of the system. Total active power on all phases.
9	FlexLoads L1	Power detection on all L1 FlexLoads of the system.
10	FlexLoads L2	Power detection on all L2 FlexLoads of the system.
11	FlexLoads L3	Power detection on all L3 FlexLoads of the system.
12	AC-Loads all	Power detection on AC-Loads. Total active power on all phases.
13	AC-Loads L1	Power detection on L1 of AC-Loads.
14	AC-Loads L2	Power detection on L2 of AC-Loads.
15	AC-Loads L3	Power detection on L3 of AC-Loads.

List of items of Enum 4 (PresetErrorsWarnings)

Value	Label	Description
0	Trig on all conditions	Activation triggered by all conditions.
1	Trig on warnings	Activation triggered by warnings.
2	Trig on errors restarting	Activation triggered by errors restarting.
4	Trig on errors halted	Activation triggered by errors halted.

List of items of Enum 5 (RelayState)

Value	Label	Description
0	Safe state opened	Actual position of relay: safe state on.
1	Safe state closed	Actual position of relay: safe state off.
2	Rel. man. opened	Actual position of relay: Manually opened.
3	Rel. man. closed	Actual position of relay: Manually closed.
4	Rel. auto. opened	Actual position of relay: Automatically opened.
5	Rel. auto. closed	Actual position of relay: Automatically closed.

List of items of Enum 6 (Errors)

Value	Label	Description
0	End of error	No error.
1	No hysteresis	Different trigger values are required in order to have an hysteresis.
2	Property access error	Failed to access to the required property.
3	Undefined error	Undefined error.
4	Advanced logics not available	Advanced logics not available.
5	Wrong advanced logics indexes	Wrong advanced logics indexes.

List of items of Enum 8 (BatChargeState)

Value	Label	Description
0	None	Battery charging state: no charging state selected.
1	Bulk	Battery charging state: bulk.
2	Reduced floating	Battery charging state: reduced floating.
4	Floating	Battery charging state: floating.
8	Periodical absorption	Battery charging state: periodical absorption.
16	Absorption	Battery charging state: absorption.
32	Equalization	Battery charging state: equalization.

List of items of Enum 9 (PresetOnSourceSelect)

Value	Label	Description
0	On AC input 1 connection	Activate relay when connected to AC input 1.
1	On AC input 2 connection	Activate relay when connected to AC input 2.
2	On any AC input connection	Activate relay when connected to either AC inputs.

List of items of Enum 10 (BatIndex)

Value	Label	Description
0	Connected battery idx	Index of the battery connected to this device.
1	Battery idx 0	Use battery index 0.
2	Battery idx 1	Use battery index 1.
3	Battery idx 2	Use battery index 2.
4	Battery idx 3	Use battery index 3.
5	Battery idx 4	Use battery index 4.

virtual aux relay 4

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.37.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
11100	1	ViewOnly	0	Is connected	false		-	Shows the relay current state.	bool	R	-
11101	2	ViewOnly	1	Position	SafeStateOff		-	Current position.	enum	R	5
11103	2	ViewOnly	2	Errors	NoErrors		-	Relay aux list of errors.	enum	R	6
11107	2	Basic	4	Operating mode	ManualOff		-	Selection of controlled relay operating mode.	enum	R/W	0
11109	2	Basic	5	Auto mode selection	PresetBatVolt		-	Selection of the automatic configuration.	enum	R/W	1
11111	2	Basic	6	Safe state selection	SafeOff		-	Selection of the controlled relay safe state position in case of problem or undetermined condition.	enum	R/W	2
11113	2	Basic	7	Battery voltage act. thresh.	42	V	[32,70]	Pre-set battery voltage activation threshold voltage.	float	R/W	-
11115	2	Basic	8	Battery voltage deact. thresh.	52	V	[32,70]	Pre-set battery voltage deactivation threshold voltage.	float	R/W	-
11117	2	Basic	9	Battery SOC act. thresh.	10	%	[0,100]	Pre-set battery SOC activation threshold SOC.	uint	R/W	-
11119	2	Basic	10	Battery SOC deact. thresh.	90	%	[0,100]	Pre-set battery SOC deactivation threshold SOC.	uint	R/W	-
11121	2	Basic	11	Battery temp. act. thresh.	50	°C	[0,150]	Pre-set battery temperature activation threshold temperature.	uint	R/W	-
11123	2	Basic	12	Battery temp. deact. thresh.	30	°C	[0,150]	Pre-set battery temperature deactivation threshold temperature.	uint	R/W	-
11125	2	Basic	13	Bat. charg. state selection	None		-	Pre-set battery charging state selection of the triggering states. Multiple choice possible.	bitfield	R/W	8
11127	2	Basic	14	Power AC selection	AcInput1All		-	Pre-set power AC selection of the AC input/load active power for comparison.	enum	R/W	3
11129	2	Basic	15	Power AC activ. thresh.	1000	W	[-200000,200000]	Pre-set power AC activation threshold power.	float	R/W	-
11131	2	Basic	16	Power AC deact. thresh.	0	W	[-200000,200000]	Pre-set power AC deactivation threshold power.	float	R/W	-
11133	2	Basic	17	Solar excess on-grid act. thresh.	1000	W	-	Pre-set solar excess on-grid activation threshold power.	float	R/W	-
11135	2	Basic	18	Solar excess on-grid deact. thresh.	500	W	-	Pre-set solar excess on-grid deactivation threshold power.	float	R/W	-
11141	2	Basic	21	Cmd input select index	0		[0,10]	Index of the command input interface used to control the relay.	uint	R/W	-
11143	2	Basic	22	Errors and warnings select signal	TrigOnErrorsHalted		-	Pre-set errors and warnings selection of the triggering signal.	bitfield	R/W	4
11145	2	Basic	23	AC input selection	OnAcInput1Connection		-	Pre-set on AC input selection.	enum	R/W	9
11147	2	Basic	24	AC coupling blanking time	5	s.	[5,10000]	Pre-set AC-coupling time during which the relay remains open during on-grid to off-grid transition.	uint	R/W	-
11149	1	ViewOnly	25	Is virtual	false		-	Shows if the relay is a virtual relay.	bool	R	-
11150	2	Basic	26	Advanced logics combination	0		-	Pre-set advanced logics, combination function (see advanced documentation).	uint	R/W	-
11154	2	Basic	28	Solar power activ. thresh.	5000	W	[0,200000]	Pre-set solar power activation threshold.	float	R/W	-
11156	2	Basic	29	Solar power deact. thresh.	500	W	[0,200000]	Pre-set solar power deactivation threshold power.	float	R/W	-
11158	2	Basic	30	Bat. index	ConnectedBatteryIdx		-	Index of the battery from which the values for the pre-set battery must be read.	enum	R/W	10

List of items of Enum 0 (OperatingMode)

Value	Label	Description
0	Manual Off	Relay is permanently deactivated (position NC).
1	Manual On	Relay is permanently activated (position NO).
2	Auto	Relay is activated according to a preset conditional mode.

List of items of Enum 1 (AutoMode)

Value	Label	Description

Value	Label	Description
0	Battery voltage	Relay is activated when the battery voltage reaches the activation threshold voltage. Relay is deactivated when the battery voltage reaches deactivation threshold voltage.
1	Battery SOC	Relay is activated when the battery SOC (state of charge) reaches the activation threshold SOC. Relay is deactivated when the SOC voltage reaches deactivation threshold SOC.
2	Battery temperature	Relay is activated when the battery temperature reaches the activation threshold temperature. Relay is deactivated when the battery temperature reaches deactivation threshold temperature.
3	Battery charg. state	Relay is activated depending on battery charging state.
4	Power AC	Relay is activated when the active power AC reaches the activation threshold power. Relay is deactivated when the power AC reaches the deactivation threshold power. The power used for this comparison can be selected between AC inputs, AC-Flex or AC-Loads.
15	Solar power	Relay is activated when the solar total power reaches the activation threshold power. Relay is deactivated when the solar total power reaches the deactivation threshold power.
5	On-Source	Relay is activated when the device is operating on an AC input. The type of AC input can be selected with "AC input selection" (id 23).
12	Off-Source	Relay is activated when the device is operating and the AC input is disconnected(offgrid).
6	Solar excess on-grid	Relay is activated with the following conditions: the activation threshold power is reached on AC input, the transfer is connected to the AC input (ongrid). Relay is disabled once one of the folowing condition is true: AC input power reaches the deactivation power threshold, the inverter is offgrid.
7	Solar excess	Relay is activated when at least one solar converter in the system is limited due to a solar excess.
8	Schedule time	Relay is activated during a daily time frame.
9	Cmd input	Relay is activated depending on command input state. It is possible to combine the 2 command entries using boolean logic.
10	Errors and warnings	Relay is activated using the device errors and/or the warnings.
11	Ext bypass	Relay is activated when all phases of the inverter are connected to AC-Loads and working. The purpose of this function is for example to enable an external bypass.
13	AC Coupling	Relay is configured to control AC coupled devices. Relay opens during on-grid to off-grid transitions to prevent overload of the battery.
14	Advanced logics	Relay is activated using advanced logics from the state of up to 5 inputs.

List of items of Enum 2 (SafeState)

Value	Label	Description
0	Safe Off	Relay is deactivated in case of undetermined condition or problem.
1	Safe On	Relay is activated in case of undetermined condition or problem.
2	Last manual	Relay takes the state of the last manual operation in case of undetermined condition or problem.

List of items of Enum 3 (PresetPacSelection)

Value	Label	Description
0	AC input 1 all	Power detection on AC input 1. Total active power on all phases.
1	AC input 1 L1	Power detection on L1 of AC input 1.
2	AC input 1 L2	Power detection on L2 of AC input 1.
3	AC input 1 L3	Power detection on L3 of AC input 1.
4	AC input 2 all	Power detection on AC input 2. Total active power on all phases.
5	AC input 2 L1	Power detection on L1 of AC input 2.
6	AC input 2 L2	Power detection on L2 of AC input 2.
7	AC input 2 L3	Power detection on L3 of AC input 2.
8	FlexLoads all	Power detection on total FlexLoads of the system. Total active power on all phases.
9	FlexLoads L1	Power detection on all L1 FlexLoads of the system.
10	FlexLoads L2	Power detection on all L2 FlexLoads of the system.
11	FlexLoads L3	Power detection on all L3 FlexLoads of the system.
12	AC-Loads all	Power detection on AC-Loads. Total active power on all phases.
13	AC-Loads L1	Power detection on L1 of AC-Loads.
14	AC-Loads L2	Power detection on L2 of AC-Loads.
15	AC-Loads L3	Power detection on L3 of AC-Loads.

List of items of Enum 4 (PresetErrorsWarnings)

Value	Label	Description
0	Trig on all conditions	Activation triggered by all conditions.
1	Trig on warnings	Activation triggered by warnings.
2	Trig on errors restarting	Activation triggered by errors restarting.
4	Trig on errors halted	Activation triggered by errors halted.

List of items of Enum 5 (RelayState)

Value	Label	Description
0	Safe state opened	Actual position of relay: safe state on.
1	Safe state closed	Actual position of relay: safe state off.
2	Rel. man. opened	Actual position of relay: Manually opened.
3	Rel. man. closed	Actual position of relay: Manually closed.
4	Rel. auto. opened	Actual position of relay: Automatically opened.
5	Rel. auto. closed	Actual position of relay: Automatically closed.

List of items of Enum 6 (Errors)

Value	Label	Description
0	End of error	No error.
1	No hysteresis	Different trigger values are required in order to have an hysteresis.
2	Property access error	Failed to access to the required property.
3	Undefined error	Undefined error.
4	Advanced logics not available	Advanced logics not available.
5	Wrong advanced logics indexes	Wrong advanced logics indexes.

List of items of Enum 8 (BatChargeState)

Value	Label	Description
0	None	Battery charging state: no charging state selected.
1	Bulk	Battery charging state: bulk.
2	Reduced floating	Battery charging state: reduced floating.
4	Floating	Battery charging state: floating.
8	Periodical absorption	Battery charging state: periodical absorption.
16	Absorption	Battery charging state: absorption.
32	Equalization	Battery charging state: equalization.

List of items of Enum 9 (PresetOnSourceSelect)

Value	Label	Description
0	On AC input 1 connection	Activate relay when connected to AC input 1.
1	On AC input 2 connection	Activate relay when connected to AC input 2.
2	On any AC input connection	Activate relay when connected to either AC inputs.

List of items of Enum 10 (BatIndex)

Value	Label	Description
0	Connected battery idx	Index of the battery connected to this device.
1	Battery idx 0	Use battery index 0.
2	Battery idx 1	Use battery index 1.
3	Battery idx 2	Use battery index 2.
4	Battery idx 3	Use battery index 3.
5	Battery idx 4	Use battery index 4.

virtual aux relay 3 time control

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.38.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
11400	2	Expert	0	Time controlled mode	Bypass		-	Time Controlled object working mode.	enum	R	0
11402	2	Basic	1	Temp. restr. act. min delay	5	s	-	Temporal restriction: Minimum delay before activation. The signal must be high during all this period.	uint	R/W	-
11404	2	Basic	2	Temp. restr. deact. min delay	5	s	-	Temporal restriction: Minimum delay before deactivation. The signal must be low during all this period.	uint	R/W	-
11406	2	Basic	3	Temp. restr. act. min time	0	s	-	Temporal restriction: Output signal minimum activation time.	uint	R/W	-
11408	2	Basic	4	Temp. restr. deact. min time	0	s	-	Temporal restriction: Output signal minimum deactivation time.	uint	R/W	-
11410	2	Basic	5	Temp. restr. act. max time	-1	s	-	Temporal restriction: Output signal maximum activation time.	int	R/W	-
11412	2	Basic	6	Temp. restr. act. allowed hour1	43200	s	[0,86399]	Temporal restriction: Daily time range hour 1. Given in seconds from midnight.	uint	R/W	-
11414	2	Basic	7	Temp. restr. act. allowed hour2	43200	s	[0,86399]	Temporal restriction: Daily time range hour 2. Given in seconds from midnight.	uint	R/W	-
11416	2	Basic	8	Temp. restr. act. allowed week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Temporal restriction: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
11418	2	Basic	9	Sch. time starting date	18250	days	-	Schedule time: Starting date. Given in days since 01.01.1970.	uint	R/W	-
11420	2	Basic	10	Sch. time starting time	43200	s	[0,86399]	Schedule time: Activation starting hour. Given in seconds from midnight.	uint	R/W	-
11422	2	Basic	11	Sch. time ending time	43200	s	[0,86399]	Schedule time: Activation ending hour. Given in seconds from midnight.	uint	R/W	-
11424	2	Basic	12	Sch. time selected week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Schedule time: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
11426	2	Basic	13	Sch. time recurrence weeks	1		-	Schedule time: Activation weeks recurrences.	uint	R/W	-
11428	2	Basic	14	Sch. time range of recurrence select.	NoEndDate		-	Schedule time: Selection of recurrence before deactivation.	enum	R/W	1
11430	2	Basic	15	Sch. time ending date	18251	days	-	Schedule time: Activations ending date. Given in days since 01.01.1970.	uint	R/W	-
11432	2	Basic	16	Sch. time nbr of occurrences	1		-	Schedule time: Number of occurrences.	uint	R/W	-
11434	1	Basic	17	Reset time controlled	-		-	Reset all time controlled counters. For exampe the occurences counts.	signal	W	-

List of items of Enum 0 (TimeControlledMode)

Value	Label	Description
0	Bypass	The time controlled block is bypassed. No time restriction is applied to the input signal.
1	Temporal restriction	Temporal restriction is applied to the input signal.
2	Schedule time	The output is enabled and disabled according to scheduled conditions.

List of items of Enum 1 (RangeOfRecurrence)

Value	Label	Description

Value	Label	Description
0	No end date	The scheduled activation-desactivation is indefinitely repeated.
1	End after occurrence	The scheduled activation-desactivation is repeated a given number of times "Sch. time nbr of occurrences" (id 16).
2	End date	The scheduled activation-desactivation is repeated until a given date "Sch. time ending date" (id 15).

List of items of Enum 2 (WeekDays)

Value	Label	Description
64	Monday	Monday selected.
32	Tuesday	Tuesday selected.
16	Wednesday	Wednesday selected.
8	Thursday	Thursday selected.
4	Friday	Friday selected.
2	Saturday	Saturday selected.
1	Sunday	Sunday selected.

virtual aux relay 4 time control

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.39.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
11700	2	Expert	0	Time controlled mode	Bypass		-	Time Controlled object working mode.	enum	R	0
11702	2	Basic	1	Temp. restr. act. min delay	5	s	-	Temporal restriction: Minimum delay before activation. The signal must be high during all this period.	uint	R/W	-
11704	2	Basic	2	Temp. restr. deact. min delay	5	s	-	Temporal restriction: Minimum delay before deactivation. The signal must be low during all this period.	uint	R/W	-
11706	2	Basic	3	Temp. restr. act. min time	0	s	-	Temporal restriction: Output signal minimum activation time.	uint	R/W	-
11708	2	Basic	4	Temp. restr. deact. min time	0	s	-	Temporal restriction: Output signal minimum deactivation time.	uint	R/W	-
11710	2	Basic	5	Temp. restr. act. max time	-1	s	-	Temporal restriction: Output signal maximum activation time.	int	R/W	-
11712	2	Basic	6	Temp. restr. act. allowed hour1	43200	s	[0,86399]	Temporal restriction: Daily time range hour 1. Given in seconds from midnight.	uint	R/W	-
11714	2	Basic	7	Temp. restr. act. allowed hour2	43200	s	[0,86399]	Temporal restriction: Daily time range hour 2. Given in seconds from midnight.	uint	R/W	-
11716	2	Basic	8	Temp. restr. act. allowed week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Temporal restriction: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
11718	2	Basic	9	Sch. time starting date	18250	days	-	Schedule time: Starting date. Given in days since 01.01.1970.	uint	R/W	-
11720	2	Basic	10	Sch. time starting time	43200	s	[0,86399]	Schedule time: Activation starting hour. Given in seconds from midnight.	uint	R/W	-
11722	2	Basic	11	Sch. time ending time	43200	s	[0,86399]	Schedule time: Activation ending hour. Given in seconds from midnight.	uint	R/W	-
11724	2	Basic	12	Sch. time selected week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Schedule time: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
11726	2	Basic	13	Sch. time recurrence weeks	1		-	Schedule time: Activation weeks recurrences.	uint	R/W	-
11728	2	Basic	14	Sch. time range of recurrence select.	NoEndDate		-	Schedule time: Selection of recurrence before deactivation.	enum	R/W	1
11730	2	Basic	15	Sch. time ending date	18251	days	-	Schedule time: Activations ending date. Given in days since 01.01.1970.	uint	R/W	-
11732	2	Basic	16	Sch. time nbr of occurrences	1		-	Schedule time: Number of occurrences.	uint	R/W	-
11734	1	Basic	17	Reset time controlled	-		-	Reset all time controlled counters. For exampe the occurences counts.	signal	W	-

List of items of Enum 0 (TimeControlledMode)

Value	Label	Description
0	Bypass	The time controlled block is bypassed. No time restriction is applied to the input signal.
1	Temporal restriction	Temporal restriction is applied to the input signal.
2	Schedule time	The output is enabled and disabled according to scheduled conditions.

List of items of Enum 1 (RangeOfRecurrence)

Value	Label	Description

Value	Label	Description
0	No end date	The scheduled activation-desactivation is indefinitely repeated.
1	End after occurrence	The scheduled activation-desactivation is repeated a given number of times "Sch. time nbr of occurrences" (id 16).
2	End date	The scheduled activation-desactivation is repeated until a given date "Sch. time ending date" (id 15).

List of items of Enum 2 (WeekDays)

Value	Label	Description
64	Monday	Monday selected.
32	Tuesday	Tuesday selected.
16	Wednesday	Wednesday selected.
8	Thursday	Thursday selected.
4	Friday	Friday selected.
2	Saturday	Saturday selected.
1	Sunday	Sunday selected.

battery contributor ext. solar chargers

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.40.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
12000	2	ViewOnly	0	Charging current	0	A	-	Charging current measured.	float	R	-
12002	2	ViewOnly	1	Temp sensor	Disconnected		-	Indicates the temperature sensor state.	enum	R	0
12004	2	ViewOnly	2	Temp	-30	°C	-	Temperature measured.	float	R	-
12010	2	ViewOnly	5	Voltage	0	V	-	Voltage measured.	float	R	-

List of items of Enum 0 (State)

Value	Label	Description
0	Disconnected	The temperature sensor is disconnected.
1	Connected	The temperature sensor is connected.
2	ShortCircuit	The temperature sensor has a problem. A short circuit has been detected.

solar common ext. solar chargers

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.41.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
12300	1	Basic	0	Turn on	-		-	Turns on solar(s).	signal	W	-
12301	1	Basic	1	Turn off	-		-	Turns off solar(s).	signal	W	-
12302	1	ViewOnly	2	On off state	false		-	Indicates solar(s) on/off state.	bool	R	-
12303	1	Expert	3	Enable depolarization	-		-	Enables depolarization.	signal	W	-
12304	1	Expert	4	Disable depolarization	-		-	Disables depolarization.	signal	W	-
12305	2	ViewOnly	5	Power	0	W	-	Power produced.	float	R	-
12307	2	ViewOnly	8	Previous day energy	0	Wh	-	Energy produced for the previous day.	float	R	-
12309	2	ViewOnly	9	Max power limit	0	W	-	Solar(s) max power limit.	uint	R	-
12311	2	ViewOnly	10	Day energy	0	Wh	-	Energy produced for the current day.	float	R	-
12315	4	ViewOnly	12	Resetable energy	0	Wh	-	Energy produced (can be reset).	float64	R/W	-
12319	4	ViewOnly	13	Total energy	0	Wh	-	Total energy produced (whole life).	float64	R	-

ext. solar chargers group

Group : Next3
Modbus device address : 14 to 28
*External ID : 10.x.42.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
12600	2	ViewOnly	0	Number	0		-	Number of converters.	uint	R	-
12602	2	ViewOnly	1	Status	AtLeastOneSolarDisabled		-	Current status.	bitfield	R	0
12604	2	R:ViewOnly W:Studer	2	Number of vt40	0		-	Number of vt40.	uint	R/W	-
12606	2	R:ViewOnly W:Studer	3	Number of vt65	0		-	Number of vt65.	uint	R/W	-
12608	2	R:ViewOnly W:Studer	4	Number of vt80	0		-	Number of vt80.	uint	R/W	-
12610	2	R:ViewOnly W:Studer	5	Number of vs70	0		-	Number of vs70.	uint	R/W	-
12612	2	R:ViewOnly W:Studer	6	Number of vs120	0		-	Number of vs120.	uint	R/W	-
12614	1	Expert	7	Update external numbers	-		-	Update the numbers of external solar chargers.	signal	W	-

List of items of Enum 0 (Status)

Value	Label	Description
1	At least one solar disabled	At least one solar is disabled.
2	At least one solar has warning(s)	At least one solar has warning(s).
4	At least one solar in error restarting	At least one solar is temporarily maintained in error and will restart automatically once the error(s) leaved.
8	At least one solar in error halted	At least one solar is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).
16	At least one solar in night	At least one solar is in night.
32	At least one solar in dawn/dusk	At least one solar is in dawn/dusk.
64	At least one solar in production	At least one solar is in production.
128	At least one solar in production limited	At least one solar is in production limited.
256	At least one solar in solar excess	At least one solar is in production limited due to solar excess.
512	At least one external solar not compatible	At least one external solar charger is not compatible.
1024	At least one external solar added	At least one external solar charger has been added.
2048	At least one external solar disappeared	At least one external solar charger has disappeared.

ID card

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.1.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
4	8	ViewOnly	2	Serial Number	"Invalid"		-	Serial Number of this Studer Innotec device.	char[15]	R	-
14	2	ViewOnly	4	Software package version	0		-	Software package version in this format : MAJOR.MIDDLE.MINOR.PATCH, encoded as follows from MSB to LSB : MAJOR (8 bits), MIDDLE (8bits), MINOR (12 bits), PATCH (4 bits).	uint	R	-
18	4	ViewOnly	6	Software revision	""		-	SHA-1 of the software project commit	char[7]	R	-
30	2	ViewOnly	8	ObjectModel version	0		-	Version of the currently used ObjectModel in this format : MAJOR.MINOR, encoded as follows from MSB to LSB : MAJOR (16 bits), MINOR (16 bits).	uint	R	-

application

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.2.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
305	2	ViewOnly	5	Warnings	NoWarnings		-	Current warnings.	bitfield	R	0
315	1	Expert	10	Restore all NVM values	-		-	Restore the original value (from Non-Volatile Memory) for all properties that were changed with WriteInRAM.	signal	W	-

List of items of Enum 0 (Warnings)

Value	Label	Description
0	End of warning	The card has no warnings.
1	Warning MCU not secure	MCU security status is unsecure.
2	Warning FPGA not configured	Unpossible to configure the FPGA.
4	Communication error on studer bus	An error occured on the studer nx communication bus. Verify that the bus termination switches are correctly positionned.
8	Warning end of day logs take too long	End of day logs take too long.

CAN node

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.4.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
902	2	Expert	1	Status	ErrorActive		-	Stores the node status.	enum	R	0
904	2	Expert	2	Tx error counter	0		-	Counter of the TX errors.	int	R	-
906	2	Expert	3	Rx error counter	0		-	Counter of the RX errors.	int	R	-
908	1	ViewOnly	4	Bus termination status	false		-	Bus termination status for this node.	bool	R	-

List of items of Enum 0 (NodeStatus)

Value	Label	Description
0	Error active	The node is in error active state.
1	Error passive	The node is in error passive state.
2	Bus off	The node is in bus off state.

device

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.7.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1800	1	Basic	0	Blink	false		-	If set, the device LEDs will blink.	bool	R/W	-
1801	2	R:ViewOnly W:Studer	1	Device identifier	-1		-	System-wide ID of the device in topology.	int	R	-
1803	2	R:ViewOnly W:Studer	2	Battery identifier	-1		-	System-wide ID of the battery in topology.	int	R	-
1805	2	ViewOnly	3	Total functioning time	0	s	-	Total functioning time in this device's life.	uint	R	-

next1

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.10.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
2700	2	ViewOnly	0	Status	NoWarningsOrErrors		-	Current status.	enum	R	1
2702	2	ViewOnly	1	Errors	NoErrors		-	Current errors.	bitfield	R	0
2718	2	Expert	9	Temperature transfo.	0	°C	-	Temperature of the transformer.	float	R	-
2720	2	Expert	10	Temperature inductor	0	°C	-	Temperature of the inductor.	float	R	-
2722	2	Expert	11	Temperature internal	0	°C	-	Temperature of the internal air.	float	R	-
2724	2	Expert	12	Temperature power bridge A	0	°C	-	Temperature power bridge A measured.	float	R	-
2726	2	Expert	13	Temperature power bridge B	0	°C	-	Temperature power bridge B measured.	float	R	-
2728	2	Expert	14	Temperature power bridge C	0	°C	-	Temperature power bridge C measured.	float	R	-
2732	2	Basic	16	Fan 1 speed	0	RPM	-	Revolution speed of fan 1 measured.	float	R	-
2734	2	Basic	17	Fan 2 speed	0	RPM	-	Revolution speed of fan 2 measured.	float	R	-
2742	2	Basic	21	External power supply current	0	A	-	External power supply current measured.	float	R	-
2744	2	Expert	22	Temp. Max AC Board	0	°C	-	Maximal temperature measured on AC board.	float	R	-
2746	2	Expert	23	Temp MCU	0	°C	-	Temperature of MCU.	float	R	-
2748	2	Basic	25	Power limitation cause	NotPowerLimited		-	Describes the origin of the power limitation.	enum	R	2
2750	2	Expert	26	Temperature 1	0	°C	-	Temperature 1.	float	R	-
2752	2	Expert	27	Temperature 2	0	°C	-	Temperature 2.	float	R	-
2754	2	Expert	28	Temperature 3	0	°C	-	Temperature 3.	float	R	-
2756	2	Expert	29	Temperature 4	0	°C	-	Temperature 4.	float	R	-
2758	2	Expert	30	Temperature 5	0	°C	-	Temperature 5.	float	R	-
2770	2	Expert	37	Inverter power limit for shutdown	-1	W	-	Inverter power limit to perform a shutdown instead of derating. Note that the device will follow the specified derating curve down to this value and will then shutdown immediately. To deactivate the shutdown this value can be set to 0.	float	R/W	-

List of items of Enum 0 (Errors)

Value	Label	Description
0	End of error	No errors.
1	Fans failure	Fans failure. The power should be limited to protect against overheating.
2	Internal temperature sensor failure	Internal temperature sensor failure. The device must be serviced. The power is limited to protect against overheating.
4	Abnormal voltage detected on acLoad port	A voltage has been detected on AcLoad port before starting inverter. Check that no power source is connected on AcLoad port.
8	AcLoad port broken connexion	The AcLoad port of this device is disconnected.
16	Battery port broken connexion	The battery port of this device is disconnected.
32	Inverter overcurrent	Over current of the inverter. The device was halted for self-protection.
64	Inverter failure	Abnormal operation of inverter. The device was halted for self-protection.
128	Internal power supply failure	Failure of the internal power supply. The device was halted for self-protection.
256	Internal power supply overvoltage	Over-voltage on the internal power supply. The device was halted for self-protection.
512	Internal power supply undervoltage	Under-voltage on the internal power supply. The device was halted for self-protection.
1024	Battery overvoltage	Over-voltage on the battery port. The device was halted for self-protection.
2048	Battery undervoltage	Under-voltage on the battery port. The device was halted for self-protection.
4096	Communication error	Too many communication errors on studer system bus. The device was halted for self-protection.

Value	Label	Description
8192	Battery temperature sensor in short circuit	The battery temperature sensor is defective.
16384	battery fault	A battery fault prevents normal operation. Please see warning(s)/error(s) of the corresponding battery for more informations.
32768	Studer bus overload	An overload has been detected on the Studer bus. Please check that the cables and the devices powered by the Studer bus are not short-circuited. Then briefly press the button on the front panel to clear the error and reset the external power supply.
65536	Internal error	An internal error has been detected. If the error persists, please contact Studer Innotec.
131072	Power limit below shutdown threshold	Power derating of the inverter is disabled and the inverter power limit is lower than the specified threshold in "Inverter power limit for shutdown" (id 37).
262144	AC Load overvoltage	Overvoltage detected on the AC Load port. The measured voltage was higher than the maximum of the thresholds in "Overvoltage threshold" (id 80) and "Over-voltage curve U1" (id 22).

List of items of Enum 1 (Status)

Value	Label	Description
0	No warning(s) or error(s)	No warning(s) or error(s).
1	In warning	The device is in warning.
2	In error restarting	The device is temporarily maintained in error and will restart automatically once the error(s) leaved.
3	In error halted	The device is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).

List of items of Enum 2 (PowerLimitationCauseEnum)

Value	Label	Description
0	Not limited	The inverter is not power limited.
1	Time derating	The power is limited by the time vs power function.
2	Fan failure	The power is limited due to a fan failure.
3	Sensor failure	The power is limited due to a temperature sensor failure.
4	Transfo. temp.	The power is limited due to a transformer overtemperature.
5	Inductor temp.	The power is limited due to an inductor overtemperature.
6	Internal temp.	The power is limited due to excessive ambient temperature inside the device.
7	Power bridge temp.	The power is limited due to a power bridge overtemperature.
8	Ac board temp.	The power is limited due to excessive Ac board temperature.
9	Mcu temp.	The power is limited due to a microcontroller overtemperature.

aux relay 1

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.11.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3000	1	ViewOnly	0	Is connected	false		-	Shows the relay current state.	bool	R	-
3001	2	ViewOnly	1	Position	SafeStateOff		-	Current position.	enum	R	5
3003	2	ViewOnly	2	Errors	NoErrors		-	Relay aux list of errors.	enum	R	6
3007	2	Basic	4	Operating mode	ManualOff		-	Selection of controlled relay operating mode.	enum	R/W	0
3009	2	Basic	5	Auto mode selection	PresetBatVolt		-	Selection of the automatic configuration.	enum	R/W	1
3011	2	Basic	6	Safe state selection	SafeOff		-	Selection of the controlled relay safe state position in case of problem or undetermined condition.	enum	R/W	2
3013	2	Basic	7	Battery voltage act. thresh.	42	V	[32,70]	Pre-set battery voltage activation threshold voltage.	float	R/W	-
3015	2	Basic	8	Battery voltage deact. thresh.	52	V	[32,70]	Pre-set battery voltage deactivation threshold voltage.	float	R/W	-
3017	2	Basic	9	Battery SOC act. thresh.	10	%	[0,100]	Pre-set battery SOC activation threshold SOC.	uint	R/W	-
3019	2	Basic	10	Battery SOC deact. thresh.	90	%	[0,100]	Pre-set battery SOC deactivation threshold SOC.	uint	R/W	-
3021	2	Basic	11	Battery temp. act. thresh.	50	°C	[0,150]	Pre-set battery temperature activation threshold temperature.	uint	R/W	-
3023	2	Basic	12	Battery temp. deact. thresh.	30	°C	[0,150]	Pre-set battery temperature deactivation threshold temperature.	uint	R/W	-
3025	2	Basic	13	Bat. charg. state selection	None		-	Pre-set battery charging state selection of the triggering states. Multiple choice possible.	bitfield	R/W	8
3027	2	Basic	14	Power AC selection	AcInput1All		-	Pre-set power AC selection of the AC input/load active power for comparison.	enum	R/W	3
3029	2	Basic	15	Power AC activ. thresh.	1000	W	[-200000,200000]	Pre-set power AC activation threshold power.	float	R/W	-
3031	2	Basic	16	Power AC deact. thresh.	0	W	[-200000,200000]	Pre-set power AC deactivation threshold power.	float	R/W	-
3033	2	Basic	17	Solar excess on-grid act. thresh.	1000	W	-	Pre-set solar excess on-grid activation threshold power.	float	R/W	-
3035	2	Basic	18	Solar excess on-grid deact. thresh.	500	W	-	Pre-set solar excess on-grid deactivation threshold power.	float	R/W	-
3041	2	Basic	21	Cmd input select index	0		[0,10]	Index of the command input interface used to control the relay.	uint	R/W	-
3043	2	Basic	22	Errors and warnings select signal	TrigOnErrorsHalted		-	Pre-set errors and warnings selection of the triggering signal.	bitfield	R/W	4
3045	2	Basic	23	AC input selection	OnAcInput1Connection		-	Pre-set on AC input selection.	enum	R/W	9
3047	2	Basic	24	AC coupling blanking time	5	s.	[5,10000]	Pre-set AC-coupling time during which the relay remains open during on-grid to off-grid transition.	uint	R/W	-
3049	1	ViewOnly	25	Is virtual	false		-	Shows if the relay is a virtual relay.	bool	R	-
3050	2	Basic	26	Advanced logics combination	0		-	Pre-set advanced logics, combination function (see advanced documentation).	uint	R/W	-
3054	2	Basic	28	Solar power activ. thresh.	5000	W	[0,200000]	Pre-set solar power activation threshold.	float	R/W	-
3056	2	Basic	29	Solar power deact. thresh.	500	W	[0,200000]	Pre-set solar power deactivation threshold power.	float	R/W	-
3058	2	Basic	30	Bat. index	ConnectedBatteryIdx		-	Index of the battery from which the values for the pre-set battery must be read.	enum	R/W	10

List of items of Enum 0 (OperatingMode)

Value	Label	Description
0	Manual Off	Relay is permanently deactivated (position NC).
1	Manual On	Relay is permanently activated (position NO).
2	Auto	Relay is activated according to a preset conditional mode.

List of items of Enum 1 (AutoMode)

Value	Label	Description

Value	Label	Description
0	Battery voltage	Relay is activated when the battery voltage reaches the activation threshold voltage. Relay is deactivated when the battery voltage reaches deactivation threshold voltage.
1	Battery SOC	Relay is activated when the battery SOC (state of charge) reaches the activation threshold SOC. Relay is deactivated when the SOC voltage reaches deactivation threshold SOC.
2	Battery temperature	Relay is activated when the battery temperature reaches the activation threshold temperature. Relay is deactivated when the battery temperature reaches deactivation threshold temperature.
3	Battery charg. state	Relay is activated depending on battery charging state.
4	Power AC	Relay is activated when the active power AC reaches the activation threshold power. Relay is deactivated when the power AC reaches the deactivation threshold power. The power used for this comparison can be selected between AC inputs, AC-Flex or AC-Loads.
15	Solar power	Relay is activated when the solar total power reaches the activation threshold power. Relay is deactivated when the solar total power reaches the deactivation threshold power.
5	On-Source	Relay is activated when the device is operating on an AC input. The type of AC input can be selected with "AC input selection" (id 23).
12	Off-Source	Relay is activated when the device is operating and the AC input is disconnected(offgrid).
6	Solar excess on-grid	Relay is activated with the following conditions: the activation threshold power is reached on AC input, the transfer is connected to the AC input (ongrid). Relay is disabled once one of the folowing condition is true: AC input power reaches the deactivation power threshold, the inverter is offgrid.
7	Solar excess	Relay is activated when at least one solar converter in the system is limited due to a solar excess.
8	Schedule time	Relay is activated during a daily time frame.
9	Cmd input	Relay is activated depending on command input state. It is possible to combine the 2 command entries using boolean logic.
10	Errors and warnings	Relay is activated using the device errors and/or the warnings.
11	Ext bypass	Relay is activated when all phases of the inverter are connected to AC-Loads and working. The purpose of this function is for example to enable an external bypass.
13	AC Coupling	Relay is configured to control AC coupled devices. Relay opens during on-grid to off-grid transitions to prevent overload of the battery.
14	Advanced logics	Relay is activated using advanced logics from the state of up to 5 inputs.

List of items of Enum 2 (SafeState)

Value	Label	Description
0	Safe Off	Relay is deactivated in case of undetermined condition or problem.
1	Safe On	Relay is activated in case of undetermined condition or problem.
2	Last manual	Relay takes the state of the last manual operation in case of undetermined condition or problem.

List of items of Enum 3 (PresetPacSelection)

Value	Label	Description
0	AC input 1 all	Power detection on AC input 1. Total active power on all phases.
1	AC input 1 L1	Power detection on L1 of AC input 1.
2	AC input 1 L2	Power detection on L2 of AC input 1.
3	AC input 1 L3	Power detection on L3 of AC input 1.
4	AC input 2 all	Power detection on AC input 2. Total active power on all phases.
5	AC input 2 L1	Power detection on L1 of AC input 2.
6	AC input 2 L2	Power detection on L2 of AC input 2.
7	AC input 2 L3	Power detection on L3 of AC input 2.
8	FlexLoads all	Power detection on total FlexLoads of the system. Total active power on all phases.
9	FlexLoads L1	Power detection on all L1 FlexLoads of the system.
10	FlexLoads L2	Power detection on all L2 FlexLoads of the system.
11	FlexLoads L3	Power detection on all L3 FlexLoads of the system.
12	AC-Loads all	Power detection on AC-Loads. Total active power on all phases.
13	AC-Loads L1	Power detection on L1 of AC-Loads.
14	AC-Loads L2	Power detection on L2 of AC-Loads.
15	AC-Loads L3	Power detection on L3 of AC-Loads.

List of items of Enum 4 (PresetErrorsWarnings)

Value	Label	Description
0	Trig on all conditions	Activation triggered by all conditions.
1	Trig on warnings	Activation triggered by warnings.
2	Trig on errors restarting	Activation triggered by errors restarting.
4	Trig on errors halted	Activation triggered by errors halted.

List of items of Enum 5 (RelayState)

Value	Label	Description
0	Safe state opened	Actual position of relay: safe state on.
1	Safe state closed	Actual position of relay: safe state off.
2	Rel. man. opened	Actual position of relay: Manually opened.
3	Rel. man. closed	Actual position of relay: Manually closed.
4	Rel. auto. opened	Actual position of relay: Automatically opened.
5	Rel. auto. closed	Actual position of relay: Automatically closed.

List of items of Enum 6 (Errors)

Value	Label	Description
0	End of error	No error.
1	No hysteresis	Different trigger values are required in order to have an hysteresis.
2	Property access error	Failed to access to the required property.
3	Undefined error	Undefined error.
4	Advanced logics not available	Advanced logics not available.
5	Wrong advanced logics indexes	Wrong advanced logics indexes.

List of items of Enum 8 (BatChargeState)

Value	Label	Description
0	None	Battery charging state: no charging state selected.
1	Bulk	Battery charging state: bulk.
2	Reduced floating	Battery charging state: reduced floating.
4	Floating	Battery charging state: floating.
8	Periodical absorption	Battery charging state: periodical absorption.
16	Absorption	Battery charging state: absorption.
32	Equalization	Battery charging state: equalization.

List of items of Enum 9 (PresetOnSourceSelect)

Value	Label	Description
0	On AC input 1 connection	Activate relay when connected to AC input 1.
1	On AC input 2 connection	Activate relay when connected to AC input 2.
2	On any AC input connection	Activate relay when connected to either AC inputs.

List of items of Enum 10 (BatIndex)

Value	Label	Description
0	Connected battery idx	Index of the battery connected to this device.
1	Battery idx 0	Use battery index 0.
2	Battery idx 1	Use battery index 1.
3	Battery idx 2	Use battery index 2.
4	Battery idx 3	Use battery index 3.
5	Battery idx 4	Use battery index 4.

aux relay 2

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.12.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3300	1	ViewOnly	0	Is connected	false		-	Shows the relay current state.	bool	R	-
3301	2	ViewOnly	1	Position	SafeStateOff		-	Current position.	enum	R	5
3303	2	ViewOnly	2	Errors	NoErrors		-	Relay aux list of errors.	enum	R	6
3307	2	Basic	4	Operating mode	ManualOff		-	Selection of controlled relay operating mode.	enum	R/W	0
3309	2	Basic	5	Auto mode selection	PresetBatVolt		-	Selection of the automatic configuration.	enum	R/W	1
3311	2	Basic	6	Safe state selection	SafeOff		-	Selection of the controlled relay safe state position in case of problem or undetermined condition.	enum	R/W	2
3313	2	Basic	7	Battery voltage act. thresh.	42	V	[32,70]	Pre-set battery voltage activation threshold voltage.	float	R/W	-
3315	2	Basic	8	Battery voltage deact. thresh.	52	V	[32,70]	Pre-set battery voltage deactivation threshold voltage.	float	R/W	-
3317	2	Basic	9	Battery SOC act. thresh.	10	%	[0,100]	Pre-set battery SOC activation threshold SOC.	uint	R/W	-
3319	2	Basic	10	Battery SOC deact. thresh.	90	%	[0,100]	Pre-set battery SOC deactivation threshold SOC.	uint	R/W	-
3321	2	Basic	11	Battery temp. act. thresh.	50	°C	[0,150]	Pre-set battery temperature activation threshold temperature.	uint	R/W	-
3323	2	Basic	12	Battery temp. deact. thresh.	30	°C	[0,150]	Pre-set battery temperature deactivation threshold temperature.	uint	R/W	-
3325	2	Basic	13	Bat. charg. state selection	None		-	Pre-set battery charging state selection of the triggering states. Multiple choice possible.	bitfield	R/W	8
3327	2	Basic	14	Power AC selection	AcInput1All		-	Pre-set power AC selection of the AC input/load active power for comparison.	enum	R/W	3
3329	2	Basic	15	Power AC activ. thresh.	1000	W	[-200000,200000]	Pre-set power AC activation threshold power.	float	R/W	-
3331	2	Basic	16	Power AC deact. thresh.	0	W	[-200000,200000]	Pre-set power AC deactivation threshold power.	float	R/W	-
3333	2	Basic	17	Solar excess on-grid act. thresh.	1000	W	-	Pre-set solar excess on-grid activation threshold power.	float	R/W	-
3335	2	Basic	18	Solar excess on-grid deact. thresh.	500	W	-	Pre-set solar excess on-grid deactivation threshold power.	float	R/W	-
3341	2	Basic	21	Cmd input select index	0		[0,10]	Index of the command input interface used to control the relay.	uint	R/W	-
3343	2	Basic	22	Errors and warnings select signal	TrigOnErrorsHalted		-	Pre-set errors and warnings selection of the triggering signal.	bitfield	R/W	4
3345	2	Basic	23	AC input selection	OnAcInput1Connection		-	Pre-set on AC input selection.	enum	R/W	9
3347	2	Basic	24	AC coupling blanking time	5	s.	[5,10000]	Pre-set AC-coupling time during which the relay remains open during on-grid to off-grid transition.	uint	R/W	-
3349	1	ViewOnly	25	Is virtual	false		-	Shows if the relay is a virtual relay.	bool	R	-
3350	2	Basic	26	Advanced logics combination	0		-	Pre-set advanced logics, combination function (see advanced documentation).	uint	R/W	-
3354	2	Basic	28	Solar power activ. thresh.	5000	W	[0,200000]	Pre-set solar power activation threshold.	float	R/W	-
3356	2	Basic	29	Solar power deact. thresh.	500	W	[0,200000]	Pre-set solar power deactivation threshold power.	float	R/W	-
3358	2	Basic	30	Bat. index	ConnectedBatteryIdx		-	Index of the battery from which the values for the pre-set battery must be read.	enum	R/W	10

List of items of Enum 0 (OperatingMode)

Value	Label	Description
0	Manual Off	Relay is permanently deactivated (position NC).
1	Manual On	Relay is permanently activated (position NO).
2	Auto	Relay is activated according to a preset conditional mode.

List of items of Enum 1 (AutoMode)

Value	Label	Description

Value	Label	Description
0	Battery voltage	Relay is activated when the battery voltage reaches the activation threshold voltage. Relay is deactivated when the battery voltage reaches deactivation threshold voltage.
1	Battery SOC	Relay is activated when the battery SOC (state of charge) reaches the activation threshold SOC. Relay is deactivated when the SOC voltage reaches deactivation threshold SOC.
2	Battery temperature	Relay is activated when the battery temperature reaches the activation threshold temperature. Relay is deactivated when the battery temperature reaches deactivation threshold temperature.
3	Battery charg. state	Relay is activated depending on battery charging state.
4	Power AC	Relay is activated when the active power AC reaches the activation threshold power. Relay is deactivated when the power AC reaches the deactivation threshold power. The power used for this comparison can be selected between AC inputs, AC-Flex or AC-Loads.
15	Solar power	Relay is activated when the solar total power reaches the activation threshold power. Relay is deactivated when the solar total power reaches the deactivation threshold power.
5	On-Source	Relay is activated when the device is operating on an AC input. The type of AC input can be selected with "AC input selection" (id 23).
12	Off-Source	Relay is activated when the device is operating and the AC input is disconnected(offgrid).
6	Solar excess on-grid	Relay is activated with the following conditions: the activation threshold power is reached on AC input, the transfer is connected to the AC input (ongrid). Relay is disabled once one of the folowing condition is true: AC input power reaches the deactivation power threshold, the inverter is offgrid.
7	Solar excess	Relay is activated when at least one solar converter in the system is limited due to a solar excess.
8	Schedule time	Relay is activated during a daily time frame.
9	Cmd input	Relay is activated depending on command input state. It is possible to combine the 2 command entries using boolean logic.
10	Errors and warnings	Relay is activated using the device errors and/or the warnings.
11	Ext bypass	Relay is activated when all phases of the inverter are connected to AC-Loads and working. The purpose of this function is for example to enable an external bypass.
13	AC Coupling	Relay is configured to control AC coupled devices. Relay opens during on-grid to off-grid transitions to prevent overload of the battery.
14	Advanced logics	Relay is activated using advanced logics from the state of up to 5 inputs.

List of items of Enum 2 (SafeState)

Value	Label	Description
0	Safe Off	Relay is deactivated in case of undetermined condition or problem.
1	Safe On	Relay is activated in case of undetermined condition or problem.
2	Last manual	Relay takes the state of the last manual operation in case of undetermined condition or problem.

List of items of Enum 3 (PresetPacSelection)

Value	Label	Description
0	AC input 1 all	Power detection on AC input 1. Total active power on all phases.
1	AC input 1 L1	Power detection on L1 of AC input 1.
2	AC input 1 L2	Power detection on L2 of AC input 1.
3	AC input 1 L3	Power detection on L3 of AC input 1.
4	AC input 2 all	Power detection on AC input 2. Total active power on all phases.
5	AC input 2 L1	Power detection on L1 of AC input 2.
6	AC input 2 L2	Power detection on L2 of AC input 2.
7	AC input 2 L3	Power detection on L3 of AC input 2.
8	FlexLoads all	Power detection on total FlexLoads of the system. Total active power on all phases.
9	FlexLoads L1	Power detection on all L1 FlexLoads of the system.
10	FlexLoads L2	Power detection on all L2 FlexLoads of the system.
11	FlexLoads L3	Power detection on all L3 FlexLoads of the system.
12	AC-Loads all	Power detection on AC-Loads. Total active power on all phases.
13	AC-Loads L1	Power detection on L1 of AC-Loads.
14	AC-Loads L2	Power detection on L2 of AC-Loads.
15	AC-Loads L3	Power detection on L3 of AC-Loads.

List of items of Enum 4 (PresetErrorsWarnings)

Value	Label	Description
0	Trig on all conditions	Activation triggered by all conditions.
1	Trig on warnings	Activation triggered by warnings.
2	Trig on errors restarting	Activation triggered by errors restarting.
4	Trig on errors halted	Activation triggered by errors halted.

List of items of Enum 5 (RelayState)

Value	Label	Description
0	Safe state opened	Actual position of relay: safe state on.
1	Safe state closed	Actual position of relay: safe state off.
2	Rel. man. opened	Actual position of relay: Manually opened.
3	Rel. man. closed	Actual position of relay: Manually closed.
4	Rel. auto. opened	Actual position of relay: Automatically opened.
5	Rel. auto. closed	Actual position of relay: Automatically closed.

List of items of Enum 6 (Errors)

Value	Label	Description
0	End of error	No error.
1	No hysteresis	Different trigger values are required in order to have an hysteresis.
2	Property access error	Failed to access to the required property.
3	Undefined error	Undefined error.
4	Advanced logics not available	Advanced logics not available.
5	Wrong advanced logics indexes	Wrong advanced logics indexes.

List of items of Enum 8 (BatChargeState)

Value	Label	Description
0	None	Battery charging state: no charging state selected.
1	Bulk	Battery charging state: bulk.
2	Reduced floating	Battery charging state: reduced floating.
4	Floating	Battery charging state: floating.
8	Periodical absorption	Battery charging state: periodical absorption.
16	Absorption	Battery charging state: absorption.
32	Equalization	Battery charging state: equalization.

List of items of Enum 9 (PresetOnSourceSelect)

Value	Label	Description
0	On AC input 1 connection	Activate relay when connected to AC input 1.
1	On AC input 2 connection	Activate relay when connected to AC input 2.
2	On any AC input connection	Activate relay when connected to either AC inputs.

List of items of Enum 10 (BatIndex)

Value	Label	Description
0	Connected battery idx	Index of the battery connected to this device.
1	Battery idx 0	Use battery index 0.
2	Battery idx 1	Use battery index 1.
3	Battery idx 2	Use battery index 2.
4	Battery idx 3	Use battery index 3.
5	Battery idx 4	Use battery index 4.

aux relay 1 time control

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.13.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3600	2	Expert	0	Time controlled mode	Bypass		-	Time Controlled object working mode.	enum	R	0
3602	2	Basic	1	Temp. restr. act. min delay	5	s	-	Temporal restriction: Minimum delay before activation. The signal must be high during all this period.	uint	R/W	-
3604	2	Basic	2	Temp. restr. deact. min delay	5	s	-	Temporal restriction: Minimum delay before deactivation. The signal must be low during all this period.	uint	R/W	-
3606	2	Basic	3	Temp. restr. act. min time	0	s	-	Temporal restriction: Output signal minimum activation time.	uint	R/W	-
3608	2	Basic	4	Temp. restr. deact. min time	0	s	-	Temporal restriction: Output signal minimum deactivation time.	uint	R/W	-
3610	2	Basic	5	Temp. restr. act. max time	-1	s	-	Temporal restriction: Output signal maximum activation time.	int	R/W	-
3612	2	Basic	6	Temp. restr. act. allowed hour1	43200	s	[0,86399]	Temporal restriction: Daily time range hour 1. Given in seconds from midnight.	uint	R/W	-
3614	2	Basic	7	Temp. restr. act. allowed hour2	43200	s	[0,86399]	Temporal restriction: Daily time range hour 2. Given in seconds from midnight.	uint	R/W	-
3616	2	Basic	8	Temp. restr. act. allowed week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Temporal restriction: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
3618	2	Basic	9	Sch. time starting date	18250	days	-	Schedule time: Starting date. Given in days since 01.01.1970.	uint	R/W	-
3620	2	Basic	10	Sch. time starting time	43200	s	[0,86399]	Schedule time: Activation starting hour. Given in seconds from midnight.	uint	R/W	-
3622	2	Basic	11	Sch. time ending time	43200	s	[0,86399]	Schedule time: Activation ending hour. Given in seconds from midnight.	uint	R/W	-
3624	2	Basic	12	Sch. time selected week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Schedule time: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
3626	2	Basic	13	Sch. time recurrence weeks	1		-	Schedule time: Activation weeks recurrences.	uint	R/W	-
3628	2	Basic	14	Sch. time range of recurrence select.	NoEndDate		-	Schedule time: Selection of recurrence before deactivation.	enum	R/W	1
3630	2	Basic	15	Sch. time ending date	18251	days	-	Schedule time: Activations ending date. Given in days since 01.01.1970.	uint	R/W	-
3632	2	Basic	16	Sch. time nbr of occurrences	1		-	Schedule time: Number of occurrences.	uint	R/W	-
3634	1	Basic	17	Reset time controlled	-		-	Reset all time controlled counters. For exampe the occurences counts.	signal	W	-

List of items of Enum 0 (TimeControlledMode)

Value	Label	Description
0	Bypass	The time controlled block is bypassed. No time restriction is applied to the input signal.
1	Temporal restriction	Temporal restriction is applied to the input signal.
2	Schedule time	The output is enabled and disabled according to scheduled conditions.

List of items of Enum 1 (RangeOfRecurrence)

Value	Label	Description

Value	Label	Description
0	No end date	The scheduled activation-desactivation is indefinitely repeated.
1	End after occurrence	The scheduled activation-desactivation is repeated a given number of times "Sch. time nbr of occurrences" (id 16).
2	End date	The scheduled activation-desactivation is repeated until a given date "Sch. time ending date" (id 15).

List of items of Enum 2 (WeekDays)

Value	Label	Description
64	Monday	Monday selected.
32	Tuesday	Tuesday selected.
16	Wednesday	Wednesday selected.
8	Thursday	Thursday selected.
4	Friday	Friday selected.
2	Saturday	Saturday selected.
1	Sunday	Sunday selected.

aux relay 2 time control

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.14.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3900	2	Expert	0	Time controlled mode	Bypass		-	Time Controlled object working mode.	enum	R	0
3902	2	Basic	1	Temp. restr. act. min delay	5	s	-	Temporal restriction: Minimum delay before activation. The signal must be high during all this period.	uint	R/W	-
3904	2	Basic	2	Temp. restr. deact. min delay	5	s	-	Temporal restriction: Minimum delay before deactivation. The signal must be low during all this period.	uint	R/W	-
3906	2	Basic	3	Temp. restr. act. min time	0	s	-	Temporal restriction: Output signal minimum activation time.	uint	R/W	-
3908	2	Basic	4	Temp. restr. deact. min time	0	s	-	Temporal restriction: Output signal minimum deactivation time.	uint	R/W	-
3910	2	Basic	5	Temp. restr. act. max time	-1	s	-	Temporal restriction: Output signal maximum activation time.	int	R/W	-
3912	2	Basic	6	Temp. restr. act. allowed hour1	43200	s	[0,86399]	Temporal restriction: Daily time range hour 1. Given in seconds from midnight.	uint	R/W	-
3914	2	Basic	7	Temp. restr. act. allowed hour2	43200	s	[0,86399]	Temporal restriction: Daily time range hour 2. Given in seconds from midnight.	uint	R/W	-
3916	2	Basic	8	Temp. restr. act. allowed week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Temporal restriction: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
3918	2	Basic	9	Sch. time starting date	18250	days	-	Schedule time: Starting date. Given in days since 01.01.1970.	uint	R/W	-
3920	2	Basic	10	Sch. time starting time	43200	s	[0,86399]	Schedule time: Activation starting hour. Given in seconds from midnight.	uint	R/W	-
3922	2	Basic	11	Sch. time ending time	43200	s	[0,86399]	Schedule time: Activation ending hour. Given in seconds from midnight.	uint	R/W	-
3924	2	Basic	12	Sch. time selected week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Schedule time: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
3926	2	Basic	13	Sch. time recurrence weeks	1		-	Schedule time: Activation weeks recurrences.	uint	R/W	-
3928	2	Basic	14	Sch. time range of recurrence select.	NoEndDate		-	Schedule time: Selection of recurrence before deactivation.	enum	R/W	1
3930	2	Basic	15	Sch. time ending date	18251	days	-	Schedule time: Activations ending date. Given in days since 01.01.1970.	uint	R/W	-
3932	2	Basic	16	Sch. time nbr of occurrences	1		-	Schedule time: Number of occurrences.	uint	R/W	-
3934	1	Basic	17	Reset time controlled	-		-	Reset all time controlled counters. For exampe the occurences counts.	signal	W	-

List of items of Enum 0 (TimeControlledMode)

Value	Label	Description
0	Bypass	The time controlled block is bypassed. No time restriction is applied to the input signal.
1	Temporal restriction	Temporal restriction is applied to the input signal.
2	Schedule time	The output is enabled and disabled according to scheduled conditions.

List of items of Enum 1 (RangeOfRecurrence)

Value	Label	Description

Value	Label	Description
0	No end date	The scheduled activation-desactivation is indefinitely repeated.
1	End after occurrence	The scheduled activation-desactivation is repeated a given number of times "Sch. time nbr of occurrences" (id 16).
2	End date	The scheduled activation-desactivation is repeated until a given date "Sch. time ending date" (id 15).

List of items of Enum 2 (WeekDays)

Value	Label	Description
64	Monday	Monday selected.
32	Tuesday	Tuesday selected.
16	Wednesday	Wednesday selected.
8	Thursday	Thursday selected.
4	Friday	Friday selected.
2	Saturday	Saturday selected.
1	Sunday	Sunday selected.

cmd input 1

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.15.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
4202	1	ViewOnly	2	Current state	false		-	Current command input state.	bool	R	-
4203	2	ViewOnly	3	Cmd input system index	-1		-	Index in the system of this command input.	int	R	-
4205	2	Basic	4	Cmd input configuration	AnalogMode		-	Configuration of this command input.	enum	R/W	0
4207	2	Basic	5	Mirrored internal aux relay index	-1		-	Index of the internal aux relay mirorred by this command input, if configuration is set to "Active when internal aux relay connected" (value 32). 0 corresponds to the first internal aux relay, 1 to the second and so on.	int	R/W	-
4209	2	ViewOnly	6	Available configurations	ActiveWhenInternalAuxRelayConnected | ActiveWhenInternalAuxRelayDisconnected		-	Available configurations of this command input.	bitfield	R	1
4211	2	ViewOnly	7	Current analog value	1		-	Current command input analog value. 0 when the measured analog voltage is 0V. 1 when the measured analog voltage is "Max analog voltage" (id 8). Always 1 if analog mode is not available or "Cmd input configuration" (id 4) is not set to "Analog mode" (value 128).	float	R	-
4213	2	Basic	8	Max analog voltage	10	V	[10,60]	Maximum voltage value of the power supply used. "Current analog value" (id 7) is 1 when the measured analog voltage is greater than or equal to this value.	float	R/W	-

List of items of Enum 0 (ConfigurationEnum)

Value	Label	Description
1	Active when dry contact closed	The function associated with this remote input is active when the dry contact is closed.
2	Active when dry contact opened	The function associated with this remote input is active when the dry contact is opened.
4	Active when a voltage is supplied	The function associated with this remote input is active when a voltage is supplied.
8	Active when no voltage is supplied	The function associated with this remote input is active when no voltage is supplied.
16	DRED port for DRM0	Port used with a Demand Response Enabling Device for the Demand Response Mode 0 (Australain/New Zeland standard).
32	Active when internal aux relay connected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is connected.
64	Active when internal aux relay disconnected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is disconnected.
128	Analog mode	The cmd input is used in analog mode. "Current analog value" (id 7) varies linearly from 0 to 1 when the measured analog voltage ranges from 0V to "Max analog voltage" (id 8).

List of items of Enum 1 (AvailableConfigurationsBitfield)

Value	Label	Description
1	Active when dry contact closed	The function associated with this remote input is active when the dry contact is closed.
2	Active when dry contact opened	The function associated with this remote input is active when the dry contact is opened.
4	Active when a voltage is supplied	The function associated with this remote input is active when a voltage is supplied.
8	Active when no voltage is supplied	The function associated with this remote input is active when no voltage is supplied.
16	DRED port for DRM0	Port used with a Demand Response Enabling Device for the Demand Response Mode 0 (Australain/New Zeland standard).
32	Active when internal aux relay connected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is connected.
64	Active when internal aux relay disconnected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is disconnected.
128	Analog mode	The cmd input is used in analog mode. "Current analog value" (id 7) varies linearly from 0 to 1 when the measured analog voltage ranges from 0V to "Max analog voltage" (id 8).

cmd input 2

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.16.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
4502	1	ViewOnly	2	Current state	false		-	Current command input state.	bool	R	-
4503	2	ViewOnly	3	Cmd input system index	-1		-	Index in the system of this command input.	int	R	-
4505	2	Basic	4	Cmd input configuration	AnalogMode		-	Configuration of this command input.	enum	R/W	0
4507	2	Basic	5	Mirrored internal aux relay index	-1		-	Index of the internal aux relay mirorred by this command input, if configuration is set to "Active when internal aux relay connected" (value 32). 0 corresponds to the first internal aux relay, 1 to the second and so on.	int	R/W	-
4509	2	ViewOnly	6	Available configurations	ActiveWhenInternalAuxRelayConnected | ActiveWhenInternalAuxRelayDisconnected		-	Available configurations of this command input.	bitfield	R	1
4511	2	ViewOnly	7	Current analog value	1		-	Current command input analog value. 0 when the measured analog voltage is 0V. 1 when the measured analog voltage is "Max analog voltage" (id 8). Always 1 if analog mode is not available or "Cmd input configuration" (id 4) is not set to "Analog mode" (value 128).	float	R	-
4513	2	Basic	8	Max analog voltage	10	V	[10,60]	Maximum voltage value of the power supply used. "Current analog value" (id 7) is 1 when the measured analog voltage is greater than or equal to this value.	float	R/W	-

List of items of Enum 0 (ConfigurationEnum)

Value	Label	Description
1	Active when dry contact closed	The function associated with this remote input is active when the dry contact is closed.
2	Active when dry contact opened	The function associated with this remote input is active when the dry contact is opened.
4	Active when a voltage is supplied	The function associated with this remote input is active when a voltage is supplied.
8	Active when no voltage is supplied	The function associated with this remote input is active when no voltage is supplied.
16	DRED port for DRM0	Port used with a Demand Response Enabling Device for the Demand Response Mode 0 (Australain/New Zeland standard).
32	Active when internal aux relay connected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is connected.
64	Active when internal aux relay disconnected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is disconnected.
128	Analog mode	The cmd input is used in analog mode. "Current analog value" (id 7) varies linearly from 0 to 1 when the measured analog voltage ranges from 0V to "Max analog voltage" (id 8).

List of items of Enum 1 (AvailableConfigurationsBitfield)

Value	Label	Description
1	Active when dry contact closed	The function associated with this remote input is active when the dry contact is closed.
2	Active when dry contact opened	The function associated with this remote input is active when the dry contact is opened.
4	Active when a voltage is supplied	The function associated with this remote input is active when a voltage is supplied.
8	Active when no voltage is supplied	The function associated with this remote input is active when no voltage is supplied.
16	DRED port for DRM0	Port used with a Demand Response Enabling Device for the Demand Response Mode 0 (Australain/New Zeland standard).
32	Active when internal aux relay connected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is connected.
64	Active when internal aux relay disconnected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is disconnected.
128	Analog mode	The cmd input is used in analog mode. "Current analog value" (id 7) varies linearly from 0 to 1 when the measured analog voltage ranges from 0V to "Max analog voltage" (id 8).

battery contributor

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.17.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
4800	2	ViewOnly	0	Charging current	0	A	-	Charging current measured.	float	R	-
4802	2	ViewOnly	1	Temp sensor	Disconnected		-	Indicates the temperature sensor state.	enum	R	0
4804	2	ViewOnly	2	Temp	-30	°C	-	Temperature measured.	float	R	-
4810	2	ViewOnly	5	Voltage	0	V	-	Voltage measured.	float	R	-

List of items of Enum 0 (State)

Value	Label	Description
0	Disconnected	The temperature sensor is disconnected.
1	Connected	The temperature sensor is connected.
2	ShortCircuit	The temperature sensor has a problem. A short circuit has been detected.

RS 485i bus

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.18.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
5102	1	ViewOnly	1	Bus termination status	false		-	Bus termination status for this communication bus.	bool	R	-
5103	2	Expert	2	Baudrate	Baudrate9600bps		-	Connection baudrate.	enum	R/W	1
5105	2	Expert	3	Parity	ParityEven		-	Parity type to be used.	enum	R/W	2
5107	2	Expert	4	Stop bits	StopBitsOne		-	Number of stop bits per transmitted character.	enum	R/W	3
5109	2	Expert	5	Data bits	DataBitsData8		-	Number of data bits per transmitted character.	enum	R/W	4

List of items of Enum 1 (BaudrateType)

Value	Label	Description
9600	9600bps	Baudrate set to 9600bps.
19200	19200bps	Baudrate set to 19200bps.
38400	38400bps	Baudrate set to 38400bps.
115200	115200bps	Baudrate set to 115200bps.
4294967295	Not configurable	The baudrate is automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 2 (ParityType)

Value	Label	Description
0	None	No parity.
2	Even	Parity even.
3	Odd	Parity odd.
4	Space	Parity space.
5	Mark	Parity mark.
4294967295	Not configurable	The parity is automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 3 (StopBitsType)

Value	Label	Description
1	One	One stop bit.
2	Two	Two stop bits.
3	One and a half	One and half stop bit.
4294967295	Not configurable	The stop bits are automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 4 (DataBitsType)

Value	Label	Description
5	Five	Five data bits.
6	Six	Six data bits.
7	Seven	Seven data bits.
8	Eight	Eight data bits.
4294967295	Not configurable	The data bits are automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

CANi bus

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.19.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
5402	1	ViewOnly	1	Bus termination status	false		-	Bus termination status for this communication bus.	bool	R	-
5403	2	Expert	2	Baudrate	Baudrate9600bps		-	Connection baudrate.	enum	R/W	1
5405	2	Expert	3	Parity	ParityEven		-	Parity type to be used.	enum	R/W	2
5407	2	Expert	4	Stop bits	StopBitsOne		-	Number of stop bits per transmitted character.	enum	R/W	3
5409	2	Expert	5	Data bits	DataBitsData8		-	Number of data bits per transmitted character.	enum	R/W	4

List of items of Enum 1 (BaudrateType)

Value	Label	Description
9600	9600bps	Baudrate set to 9600bps.
19200	19200bps	Baudrate set to 19200bps.
38400	38400bps	Baudrate set to 38400bps.
115200	115200bps	Baudrate set to 115200bps.
4294967295	Not configurable	The baudrate is automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 2 (ParityType)

Value	Label	Description
0	None	No parity.
2	Even	Parity even.
3	Odd	Parity odd.
4	Space	Parity space.
5	Mark	Parity mark.
4294967295	Not configurable	The parity is automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 3 (StopBitsType)

Value	Label	Description
1	One	One stop bit.
2	Two	Two stop bits.
3	One and a half	One and half stop bit.
4294967295	Not configurable	The stop bits are automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 4 (DataBitsType)

Value	Label	Description
5	Five	Five data bits.
6	Six	Six data bits.
7	Seven	Seven data bits.
8	Eight	Eight data bits.
4294967295	Not configurable	The data bits are automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

virtual aux relay 3

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.20.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
5700	1	ViewOnly	0	Is connected	false		-	Shows the relay current state.	bool	R	-
5701	2	ViewOnly	1	Position	SafeStateOff		-	Current position.	enum	R	5
5703	2	ViewOnly	2	Errors	NoErrors		-	Relay aux list of errors.	enum	R	6
5707	2	Basic	4	Operating mode	ManualOff		-	Selection of controlled relay operating mode.	enum	R/W	0
5709	2	Basic	5	Auto mode selection	PresetBatVolt		-	Selection of the automatic configuration.	enum	R/W	1
5711	2	Basic	6	Safe state selection	SafeOff		-	Selection of the controlled relay safe state position in case of problem or undetermined condition.	enum	R/W	2
5713	2	Basic	7	Battery voltage act. thresh.	42	V	[32,70]	Pre-set battery voltage activation threshold voltage.	float	R/W	-
5715	2	Basic	8	Battery voltage deact. thresh.	52	V	[32,70]	Pre-set battery voltage deactivation threshold voltage.	float	R/W	-
5717	2	Basic	9	Battery SOC act. thresh.	10	%	[0,100]	Pre-set battery SOC activation threshold SOC.	uint	R/W	-
5719	2	Basic	10	Battery SOC deact. thresh.	90	%	[0,100]	Pre-set battery SOC deactivation threshold SOC.	uint	R/W	-
5721	2	Basic	11	Battery temp. act. thresh.	50	°C	[0,150]	Pre-set battery temperature activation threshold temperature.	uint	R/W	-
5723	2	Basic	12	Battery temp. deact. thresh.	30	°C	[0,150]	Pre-set battery temperature deactivation threshold temperature.	uint	R/W	-
5725	2	Basic	13	Bat. charg. state selection	None		-	Pre-set battery charging state selection of the triggering states. Multiple choice possible.	bitfield	R/W	8
5727	2	Basic	14	Power AC selection	AcInput1All		-	Pre-set power AC selection of the AC input/load active power for comparison.	enum	R/W	3
5729	2	Basic	15	Power AC activ. thresh.	1000	W	[-200000,200000]	Pre-set power AC activation threshold power.	float	R/W	-
5731	2	Basic	16	Power AC deact. thresh.	0	W	[-200000,200000]	Pre-set power AC deactivation threshold power.	float	R/W	-
5733	2	Basic	17	Solar excess on-grid act. thresh.	1000	W	-	Pre-set solar excess on-grid activation threshold power.	float	R/W	-
5735	2	Basic	18	Solar excess on-grid deact. thresh.	500	W	-	Pre-set solar excess on-grid deactivation threshold power.	float	R/W	-
5741	2	Basic	21	Cmd input select index	0		[0,10]	Index of the command input interface used to control the relay.	uint	R/W	-
5743	2	Basic	22	Errors and warnings select signal	TrigOnErrorsHalted		-	Pre-set errors and warnings selection of the triggering signal.	bitfield	R/W	4
5745	2	Basic	23	AC input selection	OnAcInput1Connection		-	Pre-set on AC input selection.	enum	R/W	9
5747	2	Basic	24	AC coupling blanking time	5	s.	[5,10000]	Pre-set AC-coupling time during which the relay remains open during on-grid to off-grid transition.	uint	R/W	-
5749	1	ViewOnly	25	Is virtual	false		-	Shows if the relay is a virtual relay.	bool	R	-
5750	2	Basic	26	Advanced logics combination	0		-	Pre-set advanced logics, combination function (see advanced documentation).	uint	R/W	-
5754	2	Basic	28	Solar power activ. thresh.	5000	W	[0,200000]	Pre-set solar power activation threshold.	float	R/W	-
5756	2	Basic	29	Solar power deact. thresh.	500	W	[0,200000]	Pre-set solar power deactivation threshold power.	float	R/W	-
5758	2	Basic	30	Bat. index	ConnectedBatteryIdx		-	Index of the battery from which the values for the pre-set battery must be read.	enum	R/W	10

List of items of Enum 0 (OperatingMode)

Value	Label	Description
0	Manual Off	Relay is permanently deactivated (position NC).
1	Manual On	Relay is permanently activated (position NO).
2	Auto	Relay is activated according to a preset conditional mode.

List of items of Enum 1 (AutoMode)

Value	Label	Description

Value	Label	Description
0	Battery voltage	Relay is activated when the battery voltage reaches the activation threshold voltage. Relay is deactivated when the battery voltage reaches deactivation threshold voltage.
1	Battery SOC	Relay is activated when the battery SOC (state of charge) reaches the activation threshold SOC. Relay is deactivated when the SOC voltage reaches deactivation threshold SOC.
2	Battery temperature	Relay is activated when the battery temperature reaches the activation threshold temperature. Relay is deactivated when the battery temperature reaches deactivation threshold temperature.
3	Battery charg. state	Relay is activated depending on battery charging state.
4	Power AC	Relay is activated when the active power AC reaches the activation threshold power. Relay is deactivated when the power AC reaches the deactivation threshold power. The power used for this comparison can be selected between AC inputs, AC-Flex or AC-Loads.
15	Solar power	Relay is activated when the solar total power reaches the activation threshold power. Relay is deactivated when the solar total power reaches the deactivation threshold power.
5	On-Source	Relay is activated when the device is operating on an AC input. The type of AC input can be selected with "AC input selection" (id 23).
12	Off-Source	Relay is activated when the device is operating and the AC input is disconnected(offgrid).
6	Solar excess on-grid	Relay is activated with the following conditions: the activation threshold power is reached on AC input, the transfer is connected to the AC input (ongrid). Relay is disabled once one of the folowing condition is true: AC input power reaches the deactivation power threshold, the inverter is offgrid.
7	Solar excess	Relay is activated when at least one solar converter in the system is limited due to a solar excess.
8	Schedule time	Relay is activated during a daily time frame.
9	Cmd input	Relay is activated depending on command input state. It is possible to combine the 2 command entries using boolean logic.
10	Errors and warnings	Relay is activated using the device errors and/or the warnings.
11	Ext bypass	Relay is activated when all phases of the inverter are connected to AC-Loads and working. The purpose of this function is for example to enable an external bypass.
13	AC Coupling	Relay is configured to control AC coupled devices. Relay opens during on-grid to off-grid transitions to prevent overload of the battery.
14	Advanced logics	Relay is activated using advanced logics from the state of up to 5 inputs.

List of items of Enum 2 (SafeState)

Value	Label	Description
0	Safe Off	Relay is deactivated in case of undetermined condition or problem.
1	Safe On	Relay is activated in case of undetermined condition or problem.
2	Last manual	Relay takes the state of the last manual operation in case of undetermined condition or problem.

List of items of Enum 3 (PresetPacSelection)

Value	Label	Description
0	AC input 1 all	Power detection on AC input 1. Total active power on all phases.
1	AC input 1 L1	Power detection on L1 of AC input 1.
2	AC input 1 L2	Power detection on L2 of AC input 1.
3	AC input 1 L3	Power detection on L3 of AC input 1.
4	AC input 2 all	Power detection on AC input 2. Total active power on all phases.
5	AC input 2 L1	Power detection on L1 of AC input 2.
6	AC input 2 L2	Power detection on L2 of AC input 2.
7	AC input 2 L3	Power detection on L3 of AC input 2.
8	FlexLoads all	Power detection on total FlexLoads of the system. Total active power on all phases.
9	FlexLoads L1	Power detection on all L1 FlexLoads of the system.
10	FlexLoads L2	Power detection on all L2 FlexLoads of the system.
11	FlexLoads L3	Power detection on all L3 FlexLoads of the system.
12	AC-Loads all	Power detection on AC-Loads. Total active power on all phases.
13	AC-Loads L1	Power detection on L1 of AC-Loads.
14	AC-Loads L2	Power detection on L2 of AC-Loads.
15	AC-Loads L3	Power detection on L3 of AC-Loads.

List of items of Enum 4 (PresetErrorsWarnings)

Value	Label	Description
0	Trig on all conditions	Activation triggered by all conditions.
1	Trig on warnings	Activation triggered by warnings.
2	Trig on errors restarting	Activation triggered by errors restarting.
4	Trig on errors halted	Activation triggered by errors halted.

List of items of Enum 5 (RelayState)

Value	Label	Description
0	Safe state opened	Actual position of relay: safe state on.
1	Safe state closed	Actual position of relay: safe state off.
2	Rel. man. opened	Actual position of relay: Manually opened.
3	Rel. man. closed	Actual position of relay: Manually closed.
4	Rel. auto. opened	Actual position of relay: Automatically opened.
5	Rel. auto. closed	Actual position of relay: Automatically closed.

List of items of Enum 6 (Errors)

Value	Label	Description
0	End of error	No error.
1	No hysteresis	Different trigger values are required in order to have an hysteresis.
2	Property access error	Failed to access to the required property.
3	Undefined error	Undefined error.
4	Advanced logics not available	Advanced logics not available.
5	Wrong advanced logics indexes	Wrong advanced logics indexes.

List of items of Enum 8 (BatChargeState)

Value	Label	Description
0	None	Battery charging state: no charging state selected.
1	Bulk	Battery charging state: bulk.
2	Reduced floating	Battery charging state: reduced floating.
4	Floating	Battery charging state: floating.
8	Periodical absorption	Battery charging state: periodical absorption.
16	Absorption	Battery charging state: absorption.
32	Equalization	Battery charging state: equalization.

List of items of Enum 9 (PresetOnSourceSelect)

Value	Label	Description
0	On AC input 1 connection	Activate relay when connected to AC input 1.
1	On AC input 2 connection	Activate relay when connected to AC input 2.
2	On any AC input connection	Activate relay when connected to either AC inputs.

List of items of Enum 10 (BatIndex)

Value	Label	Description
0	Connected battery idx	Index of the battery connected to this device.
1	Battery idx 0	Use battery index 0.
2	Battery idx 1	Use battery index 1.
3	Battery idx 2	Use battery index 2.
4	Battery idx 3	Use battery index 3.
5	Battery idx 4	Use battery index 4.

virtual aux relay 4

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.21.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6000	1	ViewOnly	0	Is connected	false		-	Shows the relay current state.	bool	R	-
6001	2	ViewOnly	1	Position	SafeStateOff		-	Current position.	enum	R	5
6003	2	ViewOnly	2	Errors	NoErrors		-	Relay aux list of errors.	enum	R	6
6007	2	Basic	4	Operating mode	ManualOff		-	Selection of controlled relay operating mode.	enum	R/W	0
6009	2	Basic	5	Auto mode selection	PresetBatVolt		-	Selection of the automatic configuration.	enum	R/W	1
6011	2	Basic	6	Safe state selection	SafeOff		-	Selection of the controlled relay safe state position in case of problem or undetermined condition.	enum	R/W	2
6013	2	Basic	7	Battery voltage act. thresh.	42	V	[32,70]	Pre-set battery voltage activation threshold voltage.	float	R/W	-
6015	2	Basic	8	Battery voltage deact. thresh.	52	V	[32,70]	Pre-set battery voltage deactivation threshold voltage.	float	R/W	-
6017	2	Basic	9	Battery SOC act. thresh.	10	%	[0,100]	Pre-set battery SOC activation threshold SOC.	uint	R/W	-
6019	2	Basic	10	Battery SOC deact. thresh.	90	%	[0,100]	Pre-set battery SOC deactivation threshold SOC.	uint	R/W	-
6021	2	Basic	11	Battery temp. act. thresh.	50	°C	[0,150]	Pre-set battery temperature activation threshold temperature.	uint	R/W	-
6023	2	Basic	12	Battery temp. deact. thresh.	30	°C	[0,150]	Pre-set battery temperature deactivation threshold temperature.	uint	R/W	-
6025	2	Basic	13	Bat. charg. state selection	None		-	Pre-set battery charging state selection of the triggering states. Multiple choice possible.	bitfield	R/W	8
6027	2	Basic	14	Power AC selection	AcInput1All		-	Pre-set power AC selection of the AC input/load active power for comparison.	enum	R/W	3
6029	2	Basic	15	Power AC activ. thresh.	1000	W	[-200000,200000]	Pre-set power AC activation threshold power.	float	R/W	-
6031	2	Basic	16	Power AC deact. thresh.	0	W	[-200000,200000]	Pre-set power AC deactivation threshold power.	float	R/W	-
6033	2	Basic	17	Solar excess on-grid act. thresh.	1000	W	-	Pre-set solar excess on-grid activation threshold power.	float	R/W	-
6035	2	Basic	18	Solar excess on-grid deact. thresh.	500	W	-	Pre-set solar excess on-grid deactivation threshold power.	float	R/W	-
6041	2	Basic	21	Cmd input select index	0		[0,10]	Index of the command input interface used to control the relay.	uint	R/W	-
6043	2	Basic	22	Errors and warnings select signal	TrigOnErrorsHalted		-	Pre-set errors and warnings selection of the triggering signal.	bitfield	R/W	4
6045	2	Basic	23	AC input selection	OnAcInput1Connection		-	Pre-set on AC input selection.	enum	R/W	9
6047	2	Basic	24	AC coupling blanking time	5	s.	[5,10000]	Pre-set AC-coupling time during which the relay remains open during on-grid to off-grid transition.	uint	R/W	-
6049	1	ViewOnly	25	Is virtual	false		-	Shows if the relay is a virtual relay.	bool	R	-
6050	2	Basic	26	Advanced logics combination	0		-	Pre-set advanced logics, combination function (see advanced documentation).	uint	R/W	-
6054	2	Basic	28	Solar power activ. thresh.	5000	W	[0,200000]	Pre-set solar power activation threshold.	float	R/W	-
6056	2	Basic	29	Solar power deact. thresh.	500	W	[0,200000]	Pre-set solar power deactivation threshold power.	float	R/W	-
6058	2	Basic	30	Bat. index	ConnectedBatteryIdx		-	Index of the battery from which the values for the pre-set battery must be read.	enum	R/W	10

List of items of Enum 0 (OperatingMode)

Value	Label	Description
0	Manual Off	Relay is permanently deactivated (position NC).
1	Manual On	Relay is permanently activated (position NO).
2	Auto	Relay is activated according to a preset conditional mode.

List of items of Enum 1 (AutoMode)

Value	Label	Description

Value	Label	Description
0	Battery voltage	Relay is activated when the battery voltage reaches the activation threshold voltage. Relay is deactivated when the battery voltage reaches deactivation threshold voltage.
1	Battery SOC	Relay is activated when the battery SOC (state of charge) reaches the activation threshold SOC. Relay is deactivated when the SOC voltage reaches deactivation threshold SOC.
2	Battery temperature	Relay is activated when the battery temperature reaches the activation threshold temperature. Relay is deactivated when the battery temperature reaches deactivation threshold temperature.
3	Battery charg. state	Relay is activated depending on battery charging state.
4	Power AC	Relay is activated when the active power AC reaches the activation threshold power. Relay is deactivated when the power AC reaches the deactivation threshold power. The power used for this comparison can be selected between AC inputs, AC-Flex or AC-Loads.
15	Solar power	Relay is activated when the solar total power reaches the activation threshold power. Relay is deactivated when the solar total power reaches the deactivation threshold power.
5	On-Source	Relay is activated when the device is operating on an AC input. The type of AC input can be selected with "AC input selection" (id 23).
12	Off-Source	Relay is activated when the device is operating and the AC input is disconnected(offgrid).
6	Solar excess on-grid	Relay is activated with the following conditions: the activation threshold power is reached on AC input, the transfer is connected to the AC input (ongrid). Relay is disabled once one of the folowing condition is true: AC input power reaches the deactivation power threshold, the inverter is offgrid.
7	Solar excess	Relay is activated when at least one solar converter in the system is limited due to a solar excess.
8	Schedule time	Relay is activated during a daily time frame.
9	Cmd input	Relay is activated depending on command input state. It is possible to combine the 2 command entries using boolean logic.
10	Errors and warnings	Relay is activated using the device errors and/or the warnings.
11	Ext bypass	Relay is activated when all phases of the inverter are connected to AC-Loads and working. The purpose of this function is for example to enable an external bypass.
13	AC Coupling	Relay is configured to control AC coupled devices. Relay opens during on-grid to off-grid transitions to prevent overload of the battery.
14	Advanced logics	Relay is activated using advanced logics from the state of up to 5 inputs.

List of items of Enum 2 (SafeState)

Value	Label	Description
0	Safe Off	Relay is deactivated in case of undetermined condition or problem.
1	Safe On	Relay is activated in case of undetermined condition or problem.
2	Last manual	Relay takes the state of the last manual operation in case of undetermined condition or problem.

List of items of Enum 3 (PresetPacSelection)

Value	Label	Description
0	AC input 1 all	Power detection on AC input 1. Total active power on all phases.
1	AC input 1 L1	Power detection on L1 of AC input 1.
2	AC input 1 L2	Power detection on L2 of AC input 1.
3	AC input 1 L3	Power detection on L3 of AC input 1.
4	AC input 2 all	Power detection on AC input 2. Total active power on all phases.
5	AC input 2 L1	Power detection on L1 of AC input 2.
6	AC input 2 L2	Power detection on L2 of AC input 2.
7	AC input 2 L3	Power detection on L3 of AC input 2.
8	FlexLoads all	Power detection on total FlexLoads of the system. Total active power on all phases.
9	FlexLoads L1	Power detection on all L1 FlexLoads of the system.
10	FlexLoads L2	Power detection on all L2 FlexLoads of the system.
11	FlexLoads L3	Power detection on all L3 FlexLoads of the system.
12	AC-Loads all	Power detection on AC-Loads. Total active power on all phases.
13	AC-Loads L1	Power detection on L1 of AC-Loads.
14	AC-Loads L2	Power detection on L2 of AC-Loads.
15	AC-Loads L3	Power detection on L3 of AC-Loads.

List of items of Enum 4 (PresetErrorsWarnings)

Value	Label	Description
0	Trig on all conditions	Activation triggered by all conditions.
1	Trig on warnings	Activation triggered by warnings.
2	Trig on errors restarting	Activation triggered by errors restarting.
4	Trig on errors halted	Activation triggered by errors halted.

List of items of Enum 5 (RelayState)

Value	Label	Description
0	Safe state opened	Actual position of relay: safe state on.
1	Safe state closed	Actual position of relay: safe state off.
2	Rel. man. opened	Actual position of relay: Manually opened.
3	Rel. man. closed	Actual position of relay: Manually closed.
4	Rel. auto. opened	Actual position of relay: Automatically opened.
5	Rel. auto. closed	Actual position of relay: Automatically closed.

List of items of Enum 6 (Errors)

Value	Label	Description
0	End of error	No error.
1	No hysteresis	Different trigger values are required in order to have an hysteresis.
2	Property access error	Failed to access to the required property.
3	Undefined error	Undefined error.
4	Advanced logics not available	Advanced logics not available.
5	Wrong advanced logics indexes	Wrong advanced logics indexes.

List of items of Enum 8 (BatChargeState)

Value	Label	Description
0	None	Battery charging state: no charging state selected.
1	Bulk	Battery charging state: bulk.
2	Reduced floating	Battery charging state: reduced floating.
4	Floating	Battery charging state: floating.
8	Periodical absorption	Battery charging state: periodical absorption.
16	Absorption	Battery charging state: absorption.
32	Equalization	Battery charging state: equalization.

List of items of Enum 9 (PresetOnSourceSelect)

Value	Label	Description
0	On AC input 1 connection	Activate relay when connected to AC input 1.
1	On AC input 2 connection	Activate relay when connected to AC input 2.
2	On any AC input connection	Activate relay when connected to either AC inputs.

List of items of Enum 10 (BatIndex)

Value	Label	Description
0	Connected battery idx	Index of the battery connected to this device.
1	Battery idx 0	Use battery index 0.
2	Battery idx 1	Use battery index 1.
3	Battery idx 2	Use battery index 2.
4	Battery idx 3	Use battery index 3.
5	Battery idx 4	Use battery index 4.

virtual aux relay 3 time control

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.22.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6300	2	Expert	0	Time controlled mode	Bypass		-	Time Controlled object working mode.	enum	R	0
6302	2	Basic	1	Temp. restr. act. min delay	5	s	-	Temporal restriction: Minimum delay before activation. The signal must be high during all this period.	uint	R/W	-
6304	2	Basic	2	Temp. restr. deact. min delay	5	s	-	Temporal restriction: Minimum delay before deactivation. The signal must be low during all this period.	uint	R/W	-
6306	2	Basic	3	Temp. restr. act. min time	0	s	-	Temporal restriction: Output signal minimum activation time.	uint	R/W	-
6308	2	Basic	4	Temp. restr. deact. min time	0	s	-	Temporal restriction: Output signal minimum deactivation time.	uint	R/W	-
6310	2	Basic	5	Temp. restr. act. max time	-1	s	-	Temporal restriction: Output signal maximum activation time.	int	R/W	-
6312	2	Basic	6	Temp. restr. act. allowed hour1	43200	s	[0,86399]	Temporal restriction: Daily time range hour 1. Given in seconds from midnight.	uint	R/W	-
6314	2	Basic	7	Temp. restr. act. allowed hour2	43200	s	[0,86399]	Temporal restriction: Daily time range hour 2. Given in seconds from midnight.	uint	R/W	-
6316	2	Basic	8	Temp. restr. act. allowed week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Temporal restriction: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
6318	2	Basic	9	Sch. time starting date	18250	days	-	Schedule time: Starting date. Given in days since 01.01.1970.	uint	R/W	-
6320	2	Basic	10	Sch. time starting time	43200	s	[0,86399]	Schedule time: Activation starting hour. Given in seconds from midnight.	uint	R/W	-
6322	2	Basic	11	Sch. time ending time	43200	s	[0,86399]	Schedule time: Activation ending hour. Given in seconds from midnight.	uint	R/W	-
6324	2	Basic	12	Sch. time selected week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Schedule time: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
6326	2	Basic	13	Sch. time recurrence weeks	1		-	Schedule time: Activation weeks recurrences.	uint	R/W	-
6328	2	Basic	14	Sch. time range of recurrence select.	NoEndDate		-	Schedule time: Selection of recurrence before deactivation.	enum	R/W	1
6330	2	Basic	15	Sch. time ending date	18251	days	-	Schedule time: Activations ending date. Given in days since 01.01.1970.	uint	R/W	-
6332	2	Basic	16	Sch. time nbr of occurrences	1		-	Schedule time: Number of occurrences.	uint	R/W	-
6334	1	Basic	17	Reset time controlled	-		-	Reset all time controlled counters. For exampe the occurences counts.	signal	W	-

List of items of Enum 0 (TimeControlledMode)

Value	Label	Description
0	Bypass	The time controlled block is bypassed. No time restriction is applied to the input signal.
1	Temporal restriction	Temporal restriction is applied to the input signal.
2	Schedule time	The output is enabled and disabled according to scheduled conditions.

List of items of Enum 1 (RangeOfRecurrence)

Value	Label	Description

Value	Label	Description
0	No end date	The scheduled activation-desactivation is indefinitely repeated.
1	End after occurrence	The scheduled activation-desactivation is repeated a given number of times "Sch. time nbr of occurrences" (id 16).
2	End date	The scheduled activation-desactivation is repeated until a given date "Sch. time ending date" (id 15).

List of items of Enum 2 (WeekDays)

Value	Label	Description
64	Monday	Monday selected.
32	Tuesday	Tuesday selected.
16	Wednesday	Wednesday selected.
8	Thursday	Thursday selected.
4	Friday	Friday selected.
2	Saturday	Saturday selected.
1	Sunday	Sunday selected.

virtual aux relay 4 time control

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.23.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6600	2	Expert	0	Time controlled mode	Bypass		-	Time Controlled object working mode.	enum	R	0
6602	2	Basic	1	Temp. restr. act. min delay	5	s	-	Temporal restriction: Minimum delay before activation. The signal must be high during all this period.	uint	R/W	-
6604	2	Basic	2	Temp. restr. deact. min delay	5	s	-	Temporal restriction: Minimum delay before deactivation. The signal must be low during all this period.	uint	R/W	-
6606	2	Basic	3	Temp. restr. act. min time	0	s	-	Temporal restriction: Output signal minimum activation time.	uint	R/W	-
6608	2	Basic	4	Temp. restr. deact. min time	0	s	-	Temporal restriction: Output signal minimum deactivation time.	uint	R/W	-
6610	2	Basic	5	Temp. restr. act. max time	-1	s	-	Temporal restriction: Output signal maximum activation time.	int	R/W	-
6612	2	Basic	6	Temp. restr. act. allowed hour1	43200	s	[0,86399]	Temporal restriction: Daily time range hour 1. Given in seconds from midnight.	uint	R/W	-
6614	2	Basic	7	Temp. restr. act. allowed hour2	43200	s	[0,86399]	Temporal restriction: Daily time range hour 2. Given in seconds from midnight.	uint	R/W	-
6616	2	Basic	8	Temp. restr. act. allowed week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Temporal restriction: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
6618	2	Basic	9	Sch. time starting date	18250	days	-	Schedule time: Starting date. Given in days since 01.01.1970.	uint	R/W	-
6620	2	Basic	10	Sch. time starting time	43200	s	[0,86399]	Schedule time: Activation starting hour. Given in seconds from midnight.	uint	R/W	-
6622	2	Basic	11	Sch. time ending time	43200	s	[0,86399]	Schedule time: Activation ending hour. Given in seconds from midnight.	uint	R/W	-
6624	2	Basic	12	Sch. time selected week day	Monday|Tuesday|Wednesday|Thursday|Friday|Saturday|Sunday		-	Schedule time: Allowed week days. Given in a binary format such as each bits represents a day: (MSB) M T W T F S S (LSB).	bitfield	R/W	2
6626	2	Basic	13	Sch. time recurrence weeks	1		-	Schedule time: Activation weeks recurrences.	uint	R/W	-
6628	2	Basic	14	Sch. time range of recurrence select.	NoEndDate		-	Schedule time: Selection of recurrence before deactivation.	enum	R/W	1
6630	2	Basic	15	Sch. time ending date	18251	days	-	Schedule time: Activations ending date. Given in days since 01.01.1970.	uint	R/W	-
6632	2	Basic	16	Sch. time nbr of occurrences	1		-	Schedule time: Number of occurrences.	uint	R/W	-
6634	1	Basic	17	Reset time controlled	-		-	Reset all time controlled counters. For exampe the occurences counts.	signal	W	-

List of items of Enum 0 (TimeControlledMode)

Value	Label	Description
0	Bypass	The time controlled block is bypassed. No time restriction is applied to the input signal.
1	Temporal restriction	Temporal restriction is applied to the input signal.
2	Schedule time	The output is enabled and disabled according to scheduled conditions.

List of items of Enum 1 (RangeOfRecurrence)

Value	Label	Description

Value	Label	Description
0	No end date	The scheduled activation-desactivation is indefinitely repeated.
1	End after occurrence	The scheduled activation-desactivation is repeated a given number of times "Sch. time nbr of occurrences" (id 16).
2	End date	The scheduled activation-desactivation is repeated until a given date "Sch. time ending date" (id 15).

List of items of Enum 2 (WeekDays)

Value	Label	Description
64	Monday	Monday selected.
32	Tuesday	Tuesday selected.
16	Wednesday	Wednesday selected.
8	Thursday	Thursday selected.
4	Friday	Friday selected.
2	Saturday	Saturday selected.
1	Sunday	Sunday selected.

cmd input 3

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.24.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6902	1	ViewOnly	2	Current state	false		-	Current command input state.	bool	R	-
6903	2	ViewOnly	3	Cmd input system index	-1		-	Index in the system of this command input.	int	R	-
6905	2	Basic	4	Cmd input configuration	AnalogMode		-	Configuration of this command input.	enum	R/W	0
6907	2	Basic	5	Mirrored internal aux relay index	-1		-	Index of the internal aux relay mirorred by this command input, if configuration is set to "Active when internal aux relay connected" (value 32). 0 corresponds to the first internal aux relay, 1 to the second and so on.	int	R/W	-
6909	2	ViewOnly	6	Available configurations	ActiveWhenInternalAuxRelayConnected | ActiveWhenInternalAuxRelayDisconnected		-	Available configurations of this command input.	bitfield	R	1
6911	2	ViewOnly	7	Current analog value	1		-	Current command input analog value. 0 when the measured analog voltage is 0V. 1 when the measured analog voltage is "Max analog voltage" (id 8). Always 1 if analog mode is not available or "Cmd input configuration" (id 4) is not set to "Analog mode" (value 128).	float	R	-
6913	2	Basic	8	Max analog voltage	10	V	[10,60]	Maximum voltage value of the power supply used. "Current analog value" (id 7) is 1 when the measured analog voltage is greater than or equal to this value.	float	R/W	-

List of items of Enum 0 (ConfigurationEnum)

Value	Label	Description
1	Active when dry contact closed	The function associated with this remote input is active when the dry contact is closed.
2	Active when dry contact opened	The function associated with this remote input is active when the dry contact is opened.
4	Active when a voltage is supplied	The function associated with this remote input is active when a voltage is supplied.
8	Active when no voltage is supplied	The function associated with this remote input is active when no voltage is supplied.
16	DRED port for DRM0	Port used with a Demand Response Enabling Device for the Demand Response Mode 0 (Australain/New Zeland standard).
32	Active when internal aux relay connected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is connected.
64	Active when internal aux relay disconnected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is disconnected.
128	Analog mode	The cmd input is used in analog mode. "Current analog value" (id 7) varies linearly from 0 to 1 when the measured analog voltage ranges from 0V to "Max analog voltage" (id 8).

List of items of Enum 1 (AvailableConfigurationsBitfield)

Value	Label	Description
1	Active when dry contact closed	The function associated with this remote input is active when the dry contact is closed.
2	Active when dry contact opened	The function associated with this remote input is active when the dry contact is opened.
4	Active when a voltage is supplied	The function associated with this remote input is active when a voltage is supplied.
8	Active when no voltage is supplied	The function associated with this remote input is active when no voltage is supplied.
16	DRED port for DRM0	Port used with a Demand Response Enabling Device for the Demand Response Mode 0 (Australain/New Zeland standard).
32	Active when internal aux relay connected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is connected.
64	Active when internal aux relay disconnected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is disconnected.
128	Analog mode	The cmd input is used in analog mode. "Current analog value" (id 7) varies linearly from 0 to 1 when the measured analog voltage ranges from 0V to "Max analog voltage" (id 8).

cmd input 4

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.25.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
7202	1	ViewOnly	2	Current state	false		-	Current command input state.	bool	R	-
7203	2	ViewOnly	3	Cmd input system index	-1		-	Index in the system of this command input.	int	R	-
7205	2	Basic	4	Cmd input configuration	AnalogMode		-	Configuration of this command input.	enum	R/W	0
7207	2	Basic	5	Mirrored internal aux relay index	-1		-	Index of the internal aux relay mirorred by this command input, if configuration is set to "Active when internal aux relay connected" (value 32). 0 corresponds to the first internal aux relay, 1 to the second and so on.	int	R/W	-
7209	2	ViewOnly	6	Available configurations	ActiveWhenInternalAuxRelayConnected | ActiveWhenInternalAuxRelayDisconnected		-	Available configurations of this command input.	bitfield	R	1
7211	2	ViewOnly	7	Current analog value	1		-	Current command input analog value. 0 when the measured analog voltage is 0V. 1 when the measured analog voltage is "Max analog voltage" (id 8). Always 1 if analog mode is not available or "Cmd input configuration" (id 4) is not set to "Analog mode" (value 128).	float	R	-
7213	2	Basic	8	Max analog voltage	10	V	[10,60]	Maximum voltage value of the power supply used. "Current analog value" (id 7) is 1 when the measured analog voltage is greater than or equal to this value.	float	R/W	-

List of items of Enum 0 (ConfigurationEnum)

Value	Label	Description
1	Active when dry contact closed	The function associated with this remote input is active when the dry contact is closed.
2	Active when dry contact opened	The function associated with this remote input is active when the dry contact is opened.
4	Active when a voltage is supplied	The function associated with this remote input is active when a voltage is supplied.
8	Active when no voltage is supplied	The function associated with this remote input is active when no voltage is supplied.
16	DRED port for DRM0	Port used with a Demand Response Enabling Device for the Demand Response Mode 0 (Australain/New Zeland standard).
32	Active when internal aux relay connected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is connected.
64	Active when internal aux relay disconnected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is disconnected.
128	Analog mode	The cmd input is used in analog mode. "Current analog value" (id 7) varies linearly from 0 to 1 when the measured analog voltage ranges from 0V to "Max analog voltage" (id 8).

List of items of Enum 1 (AvailableConfigurationsBitfield)

Value	Label	Description
1	Active when dry contact closed	The function associated with this remote input is active when the dry contact is closed.
2	Active when dry contact opened	The function associated with this remote input is active when the dry contact is opened.
4	Active when a voltage is supplied	The function associated with this remote input is active when a voltage is supplied.
8	Active when no voltage is supplied	The function associated with this remote input is active when no voltage is supplied.
16	DRED port for DRM0	Port used with a Demand Response Enabling Device for the Demand Response Mode 0 (Australain/New Zeland standard).
32	Active when internal aux relay connected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is connected.
64	Active when internal aux relay disconnected	The function associated with this remote input is active when the internal aux relay selected by "Mirrored internal aux relay index" (id 5) is disconnected.
128	Analog mode	The cmd input is used in analog mode. "Current analog value" (id 7) varies linearly from 0 to 1 when the measured analog voltage ranges from 0V to "Max analog voltage" (id 8).

battery contributor ext. solar chargers

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.26.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
7500	2	ViewOnly	0	Charging current	0	A	-	Charging current measured.	float	R	-
7502	2	ViewOnly	1	Temp sensor	Disconnected		-	Indicates the temperature sensor state.	enum	R	0
7504	2	ViewOnly	2	Temp	-30	°C	-	Temperature measured.	float	R	-
7510	2	ViewOnly	5	Voltage	0	V	-	Voltage measured.	float	R	-

List of items of Enum 0 (State)

Value	Label	Description
0	Disconnected	The temperature sensor is disconnected.
1	Connected	The temperature sensor is connected.
2	ShortCircuit	The temperature sensor has a problem. A short circuit has been detected.

solar common ext. solar chargers

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.27.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
7800	1	Basic	0	Turn on	-		-	Turns on solar(s).	signal	W	-
7801	1	Basic	1	Turn off	-		-	Turns off solar(s).	signal	W	-
7802	1	ViewOnly	2	On off state	false		-	Indicates solar(s) on/off state.	bool	R	-
7803	1	Expert	3	Enable depolarization	-		-	Enables depolarization.	signal	W	-
7804	1	Expert	4	Disable depolarization	-		-	Disables depolarization.	signal	W	-
7805	2	ViewOnly	5	Power	0	W	-	Power produced.	float	R	-
7807	2	ViewOnly	8	Previous day energy	0	Wh	-	Energy produced for the previous day.	float	R	-
7809	2	ViewOnly	9	Max power limit	0	W	-	Solar(s) max power limit.	uint	R	-
7811	2	ViewOnly	10	Day energy	0	Wh	-	Energy produced for the current day.	float	R	-
7815	4	ViewOnly	12	Resetable energy	0	Wh	-	Energy produced (can be reset).	float64	R/W	-
7819	4	ViewOnly	13	Total energy	0	Wh	-	Total energy produced (whole life).	float64	R	-

ext. solar chargers group

Group : Next1
Modbus device address : 29 to 58
*External ID : 11.x.28.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
8100	2	ViewOnly	0	Number	0		-	Number of converters.	uint	R	-
8102	2	ViewOnly	1	Status	AtLeastOneSolarDisabled		-	Current status.	bitfield	R	0
8104	2	R:ViewOnly W:Studer	2	Number of vt40	0		-	Number of vt40.	uint	R/W	-
8106	2	R:ViewOnly W:Studer	3	Number of vt65	0		-	Number of vt65.	uint	R/W	-
8108	2	R:ViewOnly W:Studer	4	Number of vt80	0		-	Number of vt80.	uint	R/W	-
8110	2	R:ViewOnly W:Studer	5	Number of vs70	0		-	Number of vs70.	uint	R/W	-
8112	2	R:ViewOnly W:Studer	6	Number of vs120	0		-	Number of vs120.	uint	R/W	-
8114	1	Expert	7	Update external numbers	-		-	Update the numbers of external solar chargers.	signal	W	-

List of items of Enum 0 (Status)

Value	Label	Description
1	At least one solar disabled	At least one solar is disabled.
2	At least one solar has warning(s)	At least one solar has warning(s).
4	At least one solar in error restarting	At least one solar is temporarily maintained in error and will restart automatically once the error(s) leaved.
8	At least one solar in error halted	At least one solar is maintained in error until either the "Clear errors" button is pressed on the user interface, the device front panel button is pressed shortly or a signal is sent via the property "Clear errors" (id 0).
16	At least one solar in night	At least one solar is in night.
32	At least one solar in dawn/dusk	At least one solar is in dawn/dusk.
64	At least one solar in production	At least one solar is in production.
128	At least one solar in production limited	At least one solar is in production limited.
256	At least one solar in solar excess	At least one solar is in production limited due to solar excess.
512	At least one external solar not compatible	At least one external solar charger is not compatible.
1024	At least one external solar added	At least one external solar charger has been added.
2048	At least one external solar disappeared	At least one external solar charger has disappeared.

ID card

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.1.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
4	8	ViewOnly	2	Serial Number	"Invalid"		-	Serial Number of this Studer Innotec device.	char[15]	R	-
14	2	ViewOnly	4	Software package version	0		-	Software package version in this format : MAJOR.MIDDLE.MINOR.PATCH, encoded as follows from MSB to LSB : MAJOR (8 bits), MIDDLE (8bits), MINOR (12 bits), PATCH (4 bits).	uint	R	-
18	4	ViewOnly	6	Software revision	""		-	SHA-1 of the software project commit	char[7]	R	-
30	2	ViewOnly	8	ObjectModel version	0		-	Version of the currently used ObjectModel in this format : MAJOR.MINOR, encoded as follows from MSB to LSB : MAJOR (16 bits), MINOR (16 bits).	uint	R	-

application

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.2.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
305	2	ViewOnly	5	Warnings	NoWarnings		-	Current warnings.	bitfield	R	0
315	1	Expert	10	Restore all NVM values	-		-	Restore the original value (from Non-Volatile Memory) for all properties that were changed with WriteInRAM.	signal	W	-

List of items of Enum 0 (Warnings)

Value	Label	Description
0	End of warning	The card has no warnings.
1	Warning MCU not secure	MCU security status is unsecure.
2	Warning FPGA not configured	Unpossible to configure the FPGA.
4	Communication error on studer bus	An error occured on the studer nx communication bus. Verify that the bus termination switches are correctly positionned.
8	Warning end of day logs take too long	End of day logs take too long.

CAN node

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.3.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
602	2	Expert	1	Status	ErrorActive		-	Stores the node status.	enum	R	0
604	2	Expert	2	Tx error counter	0		-	Counter of the TX errors.	int	R	-
606	2	Expert	3	Rx error counter	0		-	Counter of the RX errors.	int	R	-
608	1	ViewOnly	4	Bus termination status	false		-	Bus termination status for this node.	bool	R	-

List of items of Enum 0 (NodeStatus)

Value	Label	Description
0	Error active	The node is in error active state.
1	Error passive	The node is in error passive state.
2	Bus off	The node is in bus off state.

device

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.4.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
900	1	Basic	0	Blink	false		-	If set, the device LEDs will blink.	bool	R/W	-
901	2	R:ViewOnly W:Studer	1	Device identifier	-1		-	System-wide ID of the device in topology.	int	R	-
903	2	R:ViewOnly W:Studer	2	Battery identifier	-1		-	System-wide ID of the battery in topology.	int	R	-
905	2	ViewOnly	3	Total functioning time	0	s	-	Total functioning time in this device's life.	uint	R	-

gateway module

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.5.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1200	2	ViewOnly	0	Errors	ErrorNoError		-	Current errors.	bitfield	R	0
1202	2	ViewOnly	1	Warnings	WarningNoWarning		-	Current warnings.	bitfield	R	1
1206	2	ViewOnly	3	eMMC total size	0	KiB	-	Total size of eMMC main area.	uint	R	-
1210	2	ViewOnly	5	Number of USB partitions	0		-	Number of mounted USB partitions.	uint	R	-
1216	2	ViewOnly	7	CPU temperature	0	°C	-	The current temperature of the CPU chip.	float	R	-
1220	2	ViewOnly	10	Internet status	Disconnected		-	The internet connection status.	enum	R	4
1222	1	Basic	11	Save config file	-		-	Signal used to save the config file on the gateway and the USB drive.	signal	W	-
1223	1	R:Expert W:Studer	12	First wizard done	false		-	Flag indicating that the first wizard configuration is done.	bool	R/W	-
1225	1	R:Expert W:Studer	14	Disabled gateway	false		-	Flag indicating that the gateway is disabled.	bool	R/W	-
1226	4	Expert	15	Debug data USB code	"0"		d{1,6}	Code input for saving debug data to USB drive..	char[7]	R/W	-

List of items of Enum 0 (Errors)

Value	Label	Description
0	End of error	No error is currently active.

List of items of Enum 1 (Warnings)

Value	Label	Description
0	End of warning	No warning is currently active.
1	eMMC end-of-life warning	eMMC chip pre-EndOfLife is in Warning state (80% reserved blocks used).
2	eMMC end-of-life urgence	eMMC chip pre-EndOfLife is in Urgent state (90% reserved blocks used).
4	eMMC lifetime warning	eMMC chip lifetime is 80% - 90% used.
8	eMMC lifetime urgence	eMMC chip lifetime is 90% - 100% used.
16	CPU over-temperature	CPU chip is in over-temperature.
32	High eMMC write rate	High write rate detected on eMMC chip.
64	High USB write rate	High write rate detected on USB chip.
128	Low eMMC lifetime estimate	Low lifetime estimate for eMMC chip.
256	No USB drive	Missing USB drive. Please insert the drive in one of the USB ports.
512	Low USB drive space	Free space on USB drive is low. Please remove files in order to free up space.

List of items of Enum 4 (InternetStatus)

Value	Label	Description
0	Disconnected	The interfaces are disconnected.
1	Connected	Connected to internet.
2	No connectivity	Interface available but no connectivity.
3	No DNS server	Internet connection but no DNS server.
4	Local only	Local connection only, no internet connection.
5	No route	The route is missing.

HMI display

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.6.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1500	2	ViewOnly	0	Display brightness	20	/20	[6,20]	Display brightness.	int	R/W	-
1502	2	Basic	1	Sleep delay	100	s.	[0,900]	Sleep delay in seconds.	int	R/W	-
1504	4	Expert	2	Unlock code	"0000"		d{4,6}	Unlock code to be entered when exiting sleep mode. Used only if "Use slider for unlocking after sleep" option is disabled.	char[7]	R/W	-
1508	2	Expert	3	Unlock mechanism	Slider		-	Unlock mechanism used when exiting sleep mode.	enum	R/W	0
1514	2	ViewOnly	6	Display ON time	0	s.	-	Total time this display was turned ON.	uint	R	-

List of items of Enum 0 (UnlockMechanism)

Value	Label	Description
0	Numeric code	A numeric code will be asked for unlocking.
1	Slider	A slider will need to be pulled for unlocking.

RS 485i bus

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.7.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
1802	1	ViewOnly	1	Bus termination status	false		-	Bus termination status for this communication bus.	bool	R	-
1803	2	Expert	2	Baudrate	Baudrate9600bps		-	Connection baudrate.	enum	R/W	1
1805	2	Expert	3	Parity	ParityEven		-	Parity type to be used.	enum	R/W	2
1807	2	Expert	4	Stop bits	StopBitsOne		-	Number of stop bits per transmitted character.	enum	R/W	3
1809	2	Expert	5	Data bits	DataBitsData8		-	Number of data bits per transmitted character.	enum	R/W	4

List of items of Enum 1 (BaudrateType)

Value	Label	Description
9600	9600bps	Baudrate set to 9600bps.
19200	19200bps	Baudrate set to 19200bps.
38400	38400bps	Baudrate set to 38400bps.
115200	115200bps	Baudrate set to 115200bps.
4294967295	Not configurable	The baudrate is automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 2 (ParityType)

Value	Label	Description
0	None	No parity.
2	Even	Parity even.
3	Odd	Parity odd.
4	Space	Parity space.
5	Mark	Parity mark.
4294967295	Not configurable	The parity is automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 3 (StopBitsType)

Value	Label	Description
1	One	One stop bit.
2	Two	Two stop bits.
3	One and a half	One and half stop bit.
4294967295	Not configurable	The stop bits are automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 4 (DataBitsType)

Value	Label	Description
5	Five	Five data bits.
6	Six	Six data bits.
7	Seven	Seven data bits.
8	Eight	Eight data bits.
4294967295	Not configurable	The data bits are automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

CANi bus

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.8.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
2102	1	ViewOnly	1	Bus termination status	false		-	Bus termination status for this communication bus.	bool	R	-
2103	2	Expert	2	Baudrate	Baudrate9600bps		-	Connection baudrate.	enum	R/W	1
2105	2	Expert	3	Parity	ParityEven		-	Parity type to be used.	enum	R/W	2
2107	2	Expert	4	Stop bits	StopBitsOne		-	Number of stop bits per transmitted character.	enum	R/W	3
2109	2	Expert	5	Data bits	DataBitsData8		-	Number of data bits per transmitted character.	enum	R/W	4

List of items of Enum 1 (BaudrateType)

Value	Label	Description
9600	9600bps	Baudrate set to 9600bps.
19200	19200bps	Baudrate set to 19200bps.
38400	38400bps	Baudrate set to 38400bps.
115200	115200bps	Baudrate set to 115200bps.
4294967295	Not configurable	The baudrate is automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 2 (ParityType)

Value	Label	Description
0	None	No parity.
2	Even	Parity even.
3	Odd	Parity odd.
4	Space	Parity space.
5	Mark	Parity mark.
4294967295	Not configurable	The parity is automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 3 (StopBitsType)

Value	Label	Description
1	One	One stop bit.
2	Two	Two stop bits.
3	One and a half	One and half stop bit.
4294967295	Not configurable	The stop bits are automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

List of items of Enum 4 (DataBitsType)

Value	Label	Description
5	Five	Five data bits.
6	Six	Six data bits.
7	Seven	Seven data bits.
8	Eight	Eight data bits.
4294967295	Not configurable	The data bits are automatically configured by a communicating battery connected to this external communication bus and therefore the value cannot be changed.

internal rootfs partition

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.9.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
2400	2	ViewOnly	0	Partition media	MediaInvalid		-	Media on which this partition is located.	enum	R	0
2402	2	ViewOnly	1	File system	FilesystemInvalid		-	File system of this partition.	enum	R	1
2404	2	ViewOnly	2	Total size	0	KiB	-	Total size of this partition.	uint	R	-
2406	2	ViewOnly	3	Used size	0	KiB	-	Used size of this partition.	uint	R	-

List of items of Enum 0 (PartitionMedia)

Value	Label	Description
0	Invalid	Invalid.
1	Internal memory	Internal memory (eMMC).
2	USB memory	USB memory drive.

List of items of Enum 1 (PartitionFilesystem)

Value	Label	Description
0	Invalid	Invalid.
1	FAT32	FAT32 file system.
2	ext4	ext4 file system.

internal config partition

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.10.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
2700	2	ViewOnly	0	Partition media	MediaInvalid		-	Media on which this partition is located.	enum	R	0
2702	2	ViewOnly	1	File system	FilesystemInvalid		-	File system of this partition.	enum	R	1
2704	2	ViewOnly	2	Total size	0	KiB	-	Total size of this partition.	uint	R	-
2706	2	ViewOnly	3	Used size	0	KiB	-	Used size of this partition.	uint	R	-

List of items of Enum 0 (PartitionMedia)

Value	Label	Description
0	Invalid	Invalid.
1	Internal memory	Internal memory (eMMC).
2	USB memory	USB memory drive.

List of items of Enum 1 (PartitionFilesystem)

Value	Label	Description
0	Invalid	Invalid.
1	FAT32	FAT32 file system.
2	ext4	ext4 file system.

internal data partition

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.11.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3000	2	ViewOnly	0	Partition media	MediaInvalid		-	Media on which this partition is located.	enum	R	0
3002	2	ViewOnly	1	File system	FilesystemInvalid		-	File system of this partition.	enum	R	1
3004	2	ViewOnly	2	Total size	0	KiB	-	Total size of this partition.	uint	R	-
3006	2	ViewOnly	3	Used size	0	KiB	-	Used size of this partition.	uint	R	-

List of items of Enum 0 (PartitionMedia)

Value	Label	Description
0	Invalid	Invalid.
1	Internal memory	Internal memory (eMMC).
2	USB memory	USB memory drive.

List of items of Enum 1 (PartitionFilesystem)

Value	Label	Description
0	Invalid	Invalid.
1	FAT32	FAT32 file system.
2	ext4	ext4 file system.

USB partition 1

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.12.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3300	2	ViewOnly	0	Partition media	MediaInvalid		-	Media on which this partition is located.	enum	R	0
3302	2	ViewOnly	1	File system	FilesystemInvalid		-	File system of this partition.	enum	R	1
3304	2	ViewOnly	2	Total size	0	KiB	-	Total size of this partition.	uint	R	-
3306	2	ViewOnly	3	Used size	0	KiB	-	Used size of this partition.	uint	R	-

List of items of Enum 0 (PartitionMedia)

Value	Label	Description
0	Invalid	Invalid.
1	Internal memory	Internal memory (eMMC).
2	USB memory	USB memory drive.

List of items of Enum 1 (PartitionFilesystem)

Value	Label	Description
0	Invalid	Invalid.
1	FAT32	FAT32 file system.
2	ext4	ext4 file system.

USB partition 2

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.13.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3600	2	ViewOnly	0	Partition media	MediaInvalid		-	Media on which this partition is located.	enum	R	0
3602	2	ViewOnly	1	File system	FilesystemInvalid		-	File system of this partition.	enum	R	1
3604	2	ViewOnly	2	Total size	0	KiB	-	Total size of this partition.	uint	R	-
3606	2	ViewOnly	3	Used size	0	KiB	-	Used size of this partition.	uint	R	-

List of items of Enum 0 (PartitionMedia)

Value	Label	Description
0	Invalid	Invalid.
1	Internal memory	Internal memory (eMMC).
2	USB memory	USB memory drive.

List of items of Enum 1 (PartitionFilesystem)

Value	Label	Description
0	Invalid	Invalid.
1	FAT32	FAT32 file system.
2	ext4	ext4 file system.

USB partition 3

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.14.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
3900	2	ViewOnly	0	Partition media	MediaInvalid		-	Media on which this partition is located.	enum	R	0
3902	2	ViewOnly	1	File system	FilesystemInvalid		-	File system of this partition.	enum	R	1
3904	2	ViewOnly	2	Total size	0	KiB	-	Total size of this partition.	uint	R	-
3906	2	ViewOnly	3	Used size	0	KiB	-	Used size of this partition.	uint	R	-

List of items of Enum 0 (PartitionMedia)

Value	Label	Description
0	Invalid	Invalid.
1	Internal memory	Internal memory (eMMC).
2	USB memory	USB memory drive.

List of items of Enum 1 (PartitionFilesystem)

Value	Label	Description
0	Invalid	Invalid.
1	FAT32	FAT32 file system.
2	ext4	ext4 file system.

Modbus server

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.15.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
4200	2	Expert	0	Base address	0		[0,135]	Base address for first object group instance.	uint	R/W	-
4202	2	Expert	1	Modbus TCP port	502		[0,65535]	The TCP port number.	uint	R	-
4214	2	Expert	3	Modbus TCP server status	ModbusUnknown		-	The current status of the connection to the Modbus TCP server	enum	R	0
4216	2	Expert	4	Modbus RTU server status	ModbusUnknown		-	The current status of the connection to the Modbus RTU server	enum	R	0
4218	2	Expert	5	Modbus mode	ModeOff		-	The current modbus server selected.	enum	R/W	1
4220	1	Expert	6	Write persistently by Modbus	false		-	Force writing persistently using Modbus.	bool	R/W	-
4221	2	Expert	7	Powermeter emulator address	-1		-	Address for powermeter emulator. If this address is positive and valid, a request to this address will emulate access to a powermeter on AC input 1.	int	R/W	-
4223	2	Expert	8	Emulator battery priority limit SoC	50	%	[0.0,100.0]	In powermeter emulator, battery state-of-charge above which the battery charging power is displayed as available (injected) power.	float	R/W	-
4225	2	Expert	9	Emulator battery charge power consign	500	W	-	In powermeter emulator, battery charging power consign for system battery when SoC is above "Emulator battery priority limit SoC" (id 8).	float	R/W	-

List of items of Enum 0 (ModbusStatus)

Value	Label	Description
0	Unknown	Unknown status.
1	Bad interface	Modbus server not connected due to a bad interface.
2	Connecting	Mobus server connection in progress.
3	Ready and listening	Modbus server ready and listening.
4	Closing	Modbus server is closing.
5	Client connected	Modbus TCP client connected to the server.

List of items of Enum 1 (Mode)

Value	Label	Description
0	Off	No modbus server.
1	RTU	Modbus server RTU selected.
2	TCP	Modbus server TCP selected.

Modbus user level

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.16.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
4500	2	ViewOnly	0	User level	UserLevelBasic		-	Current user level.	uint	R	-
4502	4	ViewOnly	1	User level code input	"0"		d{1,6}	Please enter here the user level code for changing the user level.	char[7]	R/W	-

terms and conditions

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.17.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
4800	6	R:ViewOnly W:Studer	0	Accepted version	""		-	Version of the Terms and Conditions that have been accepted by the user.	char[12]	R/W	-
4806	2	R:ViewOnly W:Studer	1	Acceptation date/time	0		-	Date and time of the customers acceptation of the Terms and Conditions.	uint	R/W	-
4808	2	R:ViewOnly W:Studer	2	Acceptation extent	NoAcceptation		-	Extent of the customer acceptation to the Terms and Conditions.	bitfield	R/W	0
4810	4	R:ViewOnly W:Studer	3	Acceptation origin	0		-	Origin of acceptation.	uint64	R/W	-

List of items of Enum 0 (Acceptation)

Value	Label	Description
0	Not accepted	User refuses all terms and conditions.
1	Fully accepted	User accepts all terms and conditions.

ethernet network interface

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.18.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
5102	2	Basic	1	Interface status	StatusInvalid		-	Current status of the interface.	enum	R	0
5104	10	Expert	2	Interface name	""		-	The internal name of this interface.	char[20]	R	-
5114	10	ViewOnly	3	Hardware address	"00:00:00:00:00:00"		-	The hardware (MAC) address of this interface.	char[20]	R	-
5124	10	ViewOnly	4	IP address	"0.0.0.0"		-	The current IP (v4) address of this interface.	char[20]	R	-
5134	10	Expert	5	Net mask	"0.0.0.0"		-	The net mask of this interface.	char[20]	R	-
5144	10	Expert	6	Broadcast address	"0.0.0.0"		-	The broadcast address of this interface.	char[20]	R	-
5154	2	R:ViewOnly W:Basic	7	Interface mode	ModeInvalid		-	The current interface mode selected (WLAN only).	enum	R/W	1
5156	1	Basic	8	Force disable	false		-	Force the interface to be disabled.	bool	R/W	-
5157	10	R:Basic W:Expert	9	Wished IP address	"0.0.0.0"		-	The wished IP (v4) address of this interface.	char[20]	R/W	-
5167	10	R:Basic W:Expert	10	Wished net mask	"255.255.255.0"		-	The wished net mask of this interface.	char[20]	R/W	-
5177	10	R:Basic W:Expert	11	Wished network gateway address	"0.0.0.0"		-	The wished network gateway IP (v4) address of this interface.	char[20]	R/W	-
5187	10	R:Basic W:Expert	12	DNS server IP address	"8.8.8.8"		-	The DNS server IP (v4) address of this interface.	char[20]	R/W	-
5197	1	R:Basic W:Expert	13	Enable static IP	false		-	Enable the static IP wished by the user.	bool	R/W	-

List of items of Enum 0 (Status)

Value	Label	Description
0	Invalid	Interface is invalid.
1	Down	Interface is down.
2	Up	Interface is up.
3	Up and running	Interface is up and running.

List of items of Enum 1 (Mode)

Value	Label	Description
0	Invalid	No mode selected.
1	Wireless client	Interface mode wireless client.
2	Access point	Interface mode access point.

wifi network interface

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.19.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
5402	2	Basic	1	Interface status	StatusInvalid		-	Current status of the interface.	enum	R	0
5404	10	Expert	2	Interface name	""		-	The internal name of this interface.	char[20]	R	-
5414	10	ViewOnly	3	Hardware address	"00:00:00:00:00:00"		-	The hardware (MAC) address of this interface.	char[20]	R	-
5424	10	ViewOnly	4	IP address	"0.0.0.0"		-	The current IP (v4) address of this interface.	char[20]	R	-
5434	10	Expert	5	Net mask	"0.0.0.0"		-	The net mask of this interface.	char[20]	R	-
5444	10	Expert	6	Broadcast address	"0.0.0.0"		-	The broadcast address of this interface.	char[20]	R	-
5454	2	R:ViewOnly W:Basic	7	Interface mode	ModeInvalid		-	The current interface mode selected (WLAN only).	enum	R/W	1
5456	1	Basic	8	Force disable	false		-	Force the interface to be disabled.	bool	R/W	-
5457	10	R:Basic W:Expert	9	Wished IP address	"0.0.0.0"		-	The wished IP (v4) address of this interface.	char[20]	R/W	-
5467	10	R:Basic W:Expert	10	Wished net mask	"255.255.255.0"		-	The wished net mask of this interface.	char[20]	R/W	-
5477	10	R:Basic W:Expert	11	Wished network gateway address	"0.0.0.0"		-	The wished network gateway IP (v4) address of this interface.	char[20]	R/W	-
5487	10	R:Basic W:Expert	12	DNS server IP address	"8.8.8.8"		-	The DNS server IP (v4) address of this interface.	char[20]	R/W	-
5497	1	R:Basic W:Expert	13	Enable static IP	false		-	Enable the static IP wished by the user.	bool	R/W	-

List of items of Enum 0 (Status)

Value	Label	Description
0	Invalid	Interface is invalid.
1	Down	Interface is down.
2	Up	Interface is up.
3	Up and running	Interface is up and running.

List of items of Enum 1 (Mode)

Value	Label	Description
0	Invalid	No mode selected.
1	Wireless client	Interface mode wireless client.
2	Access point	Interface mode access point.

external network interface

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.20.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
5702	2	Basic	1	Interface status	StatusInvalid		-	Current status of the interface.	enum	R	0
5704	10	Expert	2	Interface name	""		-	The internal name of this interface.	char[20]	R	-
5714	10	ViewOnly	3	Hardware address	"00:00:00:00:00:00"		-	The hardware (MAC) address of this interface.	char[20]	R	-
5724	10	ViewOnly	4	IP address	"0.0.0.0"		-	The current IP (v4) address of this interface.	char[20]	R	-
5734	10	Expert	5	Net mask	"0.0.0.0"		-	The net mask of this interface.	char[20]	R	-
5744	10	Expert	6	Broadcast address	"0.0.0.0"		-	The broadcast address of this interface.	char[20]	R	-
5754	2	R:ViewOnly W:Basic	7	Interface mode	ModeInvalid		-	The current interface mode selected (WLAN only).	enum	R/W	1
5756	1	Basic	8	Force disable	false		-	Force the interface to be disabled.	bool	R/W	-
5757	10	R:Basic W:Expert	9	Wished IP address	"0.0.0.0"		-	The wished IP (v4) address of this interface.	char[20]	R/W	-
5767	10	R:Basic W:Expert	10	Wished net mask	"255.255.255.0"		-	The wished net mask of this interface.	char[20]	R/W	-
5777	10	R:Basic W:Expert	11	Wished network gateway address	"0.0.0.0"		-	The wished network gateway IP (v4) address of this interface.	char[20]	R/W	-
5787	10	R:Basic W:Expert	12	DNS server IP address	"8.8.8.8"		-	The DNS server IP (v4) address of this interface.	char[20]	R/W	-
5797	1	R:Basic W:Expert	13	Enable static IP	false		-	Enable the static IP wished by the user.	bool	R/W	-

List of items of Enum 0 (Status)

Value	Label	Description
0	Invalid	Interface is invalid.
1	Down	Interface is down.
2	Up	Interface is up.
3	Up and running	Interface is up and running.

List of items of Enum 1 (Mode)

Value	Label	Description
0	Invalid	No mode selected.
1	Wireless client	Interface mode wireless client.
2	Access point	Interface mode access point.

gateway user level

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.21.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6000	2	ViewOnly	0	User level	UserLevelBasic		-	Current user level.	uint	R	-
6002	4	ViewOnly	1	User level code input	"0"		d{1,6}	Please enter here the user level code for changing the user level.	char[7]	R/W	-

gateway webportal

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.22.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6300	2	ViewOnly	0	Webportal connection status	WebportalUnknown		-	The current status of the connection to the Webportal.	enum	R	0
6302	2	ViewOnly	1	Webportal datalog synchronization status	DatalogSynchroUnknown		-	The current Webportal datalog synchronization status.	enum	R	1
6304	2	Expert	2	Effective date of the certificate	0	s	-	Absolute timestamp for certificate's effective date as number of seconds since Epoch (01.01.1970).	uint	R	-
6306	2	Expert	3	Expiry date of the certificate	0	s	-	Absolute timestamp for certificate's expiry date as number of seconds since Epoch (01.01.1970).	uint	R	-
6308	1	ViewOnly	4	Send debug data to Studer	-		-	Upload all debug data to Studer Innotec servers.	signal	W	-
6309	1	Basic	5	Webportal control as read-only	true		-	Used to set the properties access to read-only for Webportal control.	bool	R/W	-
6310	50	Expert	6	Certificate authority key identifier	"Invalid"		-	The authority key identifier field of the SSL certificate extension.	char[100]	R	-
6360	50	Expert	7	Certificate authority common name	"Invalid"		-	The certificate authority common name.	char[100]	R	-
6410	2	Expert	8	Max. number of days to synchronize	365	days	-	Max. number of days to synchronize the datalog.	uint	R/W	-

List of items of Enum 0 (WebportalConnectionStatus)

Value	Label	Description
0	Unknown	Unknown status.
1	Connecting	Connection to Webportal is in progress.
2	Connected	Webportal is connected and paired with the installation.
3	Connected but not paired	Webportal is connected but not paired with the installation.
4	Error at initialization	Webportal is not connected due to initialization error.
5	Host not found	Webportal cannot be contacted, host not found.
6	Connection refused	Webportal cannot be contacted, connection refused.
7	Timeout	Webportal cannot be contacted, timeout.
8	Communication failed	Communication with the Webportal failed.
9	Device disabled	Device is disabled and cannot communicate with the Webportal.
10	Assignation error	Webportal communication failed, unable to assign link.
11	Bad firmware	Webportal communication failed due to bad firmware.
12	Bad date/time	Webportal communication failed, bad date/time on device.
13	Error unknown	Webportal connection is in error state due to unknown cause.
14	Connection lost	Connection with the Webportal lost.
15	Connected (read-only)	Webportal is connected but in read-only.

List of items of Enum 1 (WebportalDatalogSynchroStatus)

Value	Label	Description
0	Unknown	Unknown status.
1	Synchronized	Datalog is synchronized with the Webportal.
2	Synchronizing...	Datalog synchronization with the Webportal is in progress.
3	Unreachable server	Webportal Datalog server cannot be reached.
4	No USB drive	Synchronization is impossible since USB drive is missing.
5	Synchronization failed	There was an error during the synchronization process.
6	Partially synchronized	Datalog is synchronized with the Webportal, but some files could not be uploaded.
7	No datalog file	No datalog file.
8	No Terms and Conditions acceptation	Terms and Conditions have not been accepted by the user.

USB interface 1

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.23.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6602	2	ViewOnly	1	USB device type	UsbDeviceNoDevice		-	Type of device connected to this USB port.	enum	R	0

List of items of Enum 0 (UsbDeviceType)

Value	Label	Description
0	No device	No device is plugged in.
1	Unknown	An unknown device is plugged in.
2	Memory drive	A USB memory drive is plugged in.
3	Mounted memory drive	A USB memory drive is plugged in and mounted.
4	Audio	An audio device is plugged in.
5	HID	A human interface device is plugged in.
6	Image drive	An image drive is plugged in.
7	USB Hub	A USB hub is plugged in.
8	Bluetooth	A bluetooth device is plugged in.
9	Wifi	A wifi device is plugged in.
10	Modem	A modem is plugged in.

USB interface 2

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.24.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
6902	2	ViewOnly	1	USB device type	UsbDeviceNoDevice		-	Type of device connected to this USB port.	enum	R	0

List of items of Enum 0 (UsbDeviceType)

Value	Label	Description
0	No device	No device is plugged in.
1	Unknown	An unknown device is plugged in.
2	Memory drive	A USB memory drive is plugged in.
3	Mounted memory drive	A USB memory drive is plugged in and mounted.
4	Audio	An audio device is plugged in.
5	HID	A human interface device is plugged in.
6	Image drive	An image drive is plugged in.
7	USB Hub	A USB hub is plugged in.
8	Bluetooth	A bluetooth device is plugged in.
9	Wifi	A wifi device is plugged in.
10	Modem	A modem is plugged in.

USB interface 3

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.25.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
7202	2	ViewOnly	1	USB device type	UsbDeviceNoDevice		-	Type of device connected to this USB port.	enum	R	0

List of items of Enum 0 (UsbDeviceType)

Value	Label	Description
0	No device	No device is plugged in.
1	Unknown	An unknown device is plugged in.
2	Memory drive	A USB memory drive is plugged in.
3	Mounted memory drive	A USB memory drive is plugged in and mounted.
4	Audio	An audio device is plugged in.
5	HID	A human interface device is plugged in.
6	Image drive	An image drive is plugged in.
7	USB Hub	A USB hub is plugged in.
8	Bluetooth	A bluetooth device is plugged in.
9	Wifi	A wifi device is plugged in.
10	Modem	A modem is plugged in.

USB interface 4

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.26.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
7502	2	ViewOnly	1	USB device type	UsbDeviceNoDevice		-	Type of device connected to this USB port.	enum	R	0

List of items of Enum 0 (UsbDeviceType)

Value	Label	Description
0	No device	No device is plugged in.
1	Unknown	An unknown device is plugged in.
2	Memory drive	A USB memory drive is plugged in.
3	Mounted memory drive	A USB memory drive is plugged in and mounted.
4	Audio	An audio device is plugged in.
5	HID	A human interface device is plugged in.
6	Image drive	An image drive is plugged in.
7	USB Hub	A USB hub is plugged in.
8	Bluetooth	A bluetooth device is plugged in.
9	Wifi	A wifi device is plugged in.
10	Modem	A modem is plugged in.

HMI settings

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.27.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
7800	2	ViewOnly	0	Language	English		-	Language used for the user interface.	enum	R/W	0
7802	2	ViewOnly	1	Default view	Synoptic		-	Default view that will be displayed at startup.	enum	R/W	1

List of items of Enum 0 (StuLanguage)

Value	Label	Description
31	English	English.
37	Français	Français.
42	Deutsch	Deutsch.
58	Italiano	Italiano.
111	Español	Español.

List of items of Enum 1 (DefaultView)

Value	Label	Description
0	Dashboard	Default view will be the Dashboard view.
1	Synoptic	Default view will be the Synoptic view.

system view

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.28.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
8100	2	ViewOnly	0	Installation status	MonitorRunning		-	Installation status.	enum	R	0
8102	2	Basic	1	Node Status	0		-	Status of the nodes provided by the installation monitor.	uint	R	-
8104	1	Expert	2	Enable timeout for ext. control	false		-	When an external controller is used (WriteInRAM operations), this setting activates a timeout mechanism that will automatically reset all externally modified settings to their original (NVM) values.	bool	R/W	-
8105	2	Expert	3	Ext. control timeout duration	900	s	-	When "Enable timeout for ext. control" (id 2) is active, this setting defines the timeout period in seconds. After this time has elapsed since the last WriteInRAM operation, all modified settings will automatically reset to their original (NVM) values.	uint	R/W	-
8107	1	Expert	4	Reset external modifications	-		-	Resets all settings modified through WriteInRAM to their original values from non-volatile memory (NVM). This restores settings that have been changed by an external controller.	signal	W	-

List of items of Enum 0 (InstallStatus)

Value	Label	Description
0	Monitor running	InstallationMonitor is not started yet.
1	Reading topology	Topology import, user-triggered or automatic, when InstallationMonitor is not started.
2	Writing topology	Topology export, automatic (wizard) or user-triggered, when Installation is not started.
3	Writing configuration	Installation configuration export, automatic (wizard), when Installation is not started.
4	Started	Installation is started.
5	Reading configuration	Installation configuration import, user-triggered or automatic, when InstallationMonitor is started.
6	Configuration R/W error	Configuration Read/Write operation failed. Stuck in this error state until user resets.

gateway webcommand

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.29.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
8400	13	Expert	0	Default username	"Invalid"		-	Default username for web interface.	char[25]	R	-
8413	8	Expert	1	Default password	"Invalid"		-	Default password for web interface.	char[15]	R	-
8421	2	Basic	2	Server status	StatusDisconnected		-	Web interface server status.	enum	R	0
8423	2	Basic	3	Connections	0		-	Number of established connections.	uint	R	-
8425	13	Basic	4	Access point name	"Invalid"		-	The access point name.	char[25]	R	-
8438	13	Basic	5	Access point password	"Invalid"		-	The access point password.	char[25]	R	-

List of items of Enum 0 (Status)

Value	Label	Description
0	Disconnected	The server is disconnected.
1	Ready and listening	The server is ready and listening.
2	Connected	The server has at least one connection established.

wifi access point network interface

Group : NextGateway
Modbus device address : 59 to 60
*External ID : 20.x.30.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
8702	2	Basic	1	Interface status	StatusInvalid		-	Current status of the interface.	enum	R	0
8704	10	Expert	2	Interface name	""		-	The internal name of this interface.	char[20]	R	-
8714	10	ViewOnly	3	Hardware address	"00:00:00:00:00:00"		-	The hardware (MAC) address of this interface.	char[20]	R	-
8724	10	ViewOnly	4	IP address	"0.0.0.0"		-	The current IP (v4) address of this interface.	char[20]	R	-
8734	10	Expert	5	Net mask	"0.0.0.0"		-	The net mask of this interface.	char[20]	R	-
8744	10	Expert	6	Broadcast address	"0.0.0.0"		-	The broadcast address of this interface.	char[20]	R	-
8754	2	R:ViewOnly W:Basic	7	Interface mode	ModeInvalid		-	The current interface mode selected (WLAN only).	enum	R/W	1
8756	1	Basic	8	Force disable	false		-	Force the interface to be disabled.	bool	R/W	-
8757	10	R:Basic W:Expert	9	Wished IP address	"0.0.0.0"		-	The wished IP (v4) address of this interface.	char[20]	R/W	-
8767	10	R:Basic W:Expert	10	Wished net mask	"255.255.255.0"		-	The wished net mask of this interface.	char[20]	R/W	-
8777	10	R:Basic W:Expert	11	Wished network gateway address	"0.0.0.0"		-	The wished network gateway IP (v4) address of this interface.	char[20]	R/W	-
8787	10	R:Basic W:Expert	12	DNS server IP address	"8.8.8.8"		-	The DNS server IP (v4) address of this interface.	char[20]	R/W	-
8797	1	R:Basic W:Expert	13	Enable static IP	false		-	Enable the static IP wished by the user.	bool	R/W	-

List of items of Enum 0 (Status)

Value	Label	Description
0	Invalid	Interface is invalid.
1	Down	Interface is down.
2	Up	Interface is up.
3	Up and running	Interface is up and running.

List of items of Enum 1 (Mode)

Value	Label	Description
0	Invalid	No mode selected.
1	Wireless client	Interface mode wireless client.
2	Access point	Interface mode access point.

powermeter

Group : Powermeters
Modbus device address : 89 to 94
*External ID : 30.x.1.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
0	2	Expert	0	Brand and model	None		-	The brand and model of the powermeter.	enum	R/W	0
2	2	Expert	1	Modbus device address	1		[1,127]	Modbus device address used by the powermeter.	uint	R/W	-
4	2	Expert	2	Function	NoFunction		-	The function of the powermeter.	enum	R/W	1
6	2	ViewOnly	3	Warning(s)	NoWarning		-	Current warning(s).	bitfield	R	2
8	2	ViewOnly	4	Error(s)	NoError		-	Current error(s).	bitfield	R	3
10	2	R:ViewOnly W:Studer	5	Device identifier	-1		-	The ID of the device connected to this powermeter.	int	R	-

List of items of Enum 0 (ModelBrand)

Value	Label	Description
0	None	No powermeter is present.
1	Carlo Gavazzi EM300 Series	Carlo Gavazzi EM300 series.
3	Carlo Gavazzi EM511	Carlo Gavazzi EM511.
7	Carlo Gavazzi EM530	Carlo Gavazzi EM530.
2	Carlo Gavazzi EM540	Carlo Gavazzi EM540.
4	Wago 879-3000	Wago 879-3000 4PU.
5	Wago 879-3020	Wago 879-3020 4PS.
6	Wago 879-3040	Wago 879-3040 2PU CT.

List of items of Enum 1 (Function)

Value	Label	Description
0	No function	No function.
1	Self-consumption	Minimization of the value read on powermeter (grid introduction).
2	Simple metering	Only read the powermeter for datalog metering.

List of items of Enum 2 (Warnings)

Value	Label	Description
0	No warning	No warning.

List of items of Enum 3 (Errors)

Value	Label	Description
0	No error	No error.
1	Communication lost	The communication has been lost with the powermeter.

powermeter measure

Group : Powermeters
Modbus device address : 89 to 94
*External ID : 30.x.2.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
300	2	ViewOnly	0	Active power L1	0	W	-	Active power L1 measured.	float	R	-
302	2	ViewOnly	2	Active power L2	0	W	-	Active power L2 measured.	float	R	-
304	2	ViewOnly	4	Active power L3	0	W	-	Active power L3 measured.	float	R	-
306	2	ViewOnly	6	Reactive power L1	0	VAR	-	Reactive power L1 measured.	float	R	-
308	2	ViewOnly	8	Reactive power L2	0	VAR	-	Reactive power L2 measured.	float	R	-
310	2	ViewOnly	10	Reactive power L3	0	VAR	-	Reactive power L3 measured.	float	R	-
312	2	ViewOnly	12	Day consumed energy L1	0	Wh	-	Consumed energy of the current day on L1.	float	R	-
314	2	ViewOnly	13	Day consumed energy L2	0	Wh	-	Consumed energy of the current day on L2.	float	R	-
316	2	ViewOnly	14	Day consumed energy L3	0	Wh	-	Consumed energy of the current day on L3.	float	R	-
318	2	ViewOnly	15	Day produced energy L1	0	Wh	-	Produced energy of the current day on L1.	float	R	-
320	2	ViewOnly	16	Day produced energy L2	0	Wh	-	Produced energy of the current day on L2.	float	R	-
322	2	ViewOnly	17	Day produced energy L3	0	Wh	-	Produced energy of the current day on L3.	float	R	-
324	2	ViewOnly	18	Active power total	0	W	-	Active power total measured.	float	R	-
326	2	ViewOnly	20	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
328	2	ViewOnly	21	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-

powermeter measure upstream

Group : Powermeters
Modbus device address : 89 to 94
*External ID : 30.x.3.**ID***

List of properties

Address	Size	User level	ID	Label	Default Value	Unit	Min-Max range	Description	Type	Read/Write	Enum ID
600	2	ViewOnly	0	Active power L1	0	W	-	Active power L1 measured.	float	R	-
602	2	ViewOnly	2	Active power L2	0	W	-	Active power L2 measured.	float	R	-
604	2	ViewOnly	4	Active power L3	0	W	-	Active power L3 measured.	float	R	-
606	2	ViewOnly	6	Reactive power L1	0	VAR	-	Reactive power L1 measured.	float	R	-
608	2	ViewOnly	8	Reactive power L2	0	VAR	-	Reactive power L2 measured.	float	R	-
610	2	ViewOnly	10	Reactive power L3	0	VAR	-	Reactive power L3 measured.	float	R	-
612	2	ViewOnly	12	Day consumed energy L1	0	Wh	-	Consumed energy of the current day on L1.	float	R	-
614	2	ViewOnly	13	Day consumed energy L2	0	Wh	-	Consumed energy of the current day on L2.	float	R	-
616	2	ViewOnly	14	Day consumed energy L3	0	Wh	-	Consumed energy of the current day on L3.	float	R	-
618	2	ViewOnly	15	Day produced energy L1	0	Wh	-	Produced energy of the current day on L1.	float	R	-
620	2	ViewOnly	16	Day produced energy L2	0	Wh	-	Produced energy of the current day on L2.	float	R	-
622	2	ViewOnly	17	Day produced energy L3	0	Wh	-	Produced energy of the current day on L3.	float	R	-
624	2	ViewOnly	18	Active power total	0	W	-	Active power total measured.	float	R	-
626	2	ViewOnly	20	Day consumed energy	0	Wh	-	Consumed energy of the current day.	float	R	-
628	2	ViewOnly	21	Day produced energy	0	Wh	-	Produced energy of the current day.	float	R	-