SCADA INTERFACE BLUE'LOG XM / XC

Item no.: 557.009

Access to live values via Modbus TCP

LICENSE DESCRIPTION

The SCADA interface is an open Modbus TCP interface. It provides external systems like SCADA or building management with simple and standardized access to all live measurement data of devices connected to the blue'Log.

No matter which communication protocol the connected device uses to communicate with blue'Log, the data can always be requested from the data logger by using the same Modbus protocol and register structure.

The SCADA Interface license activates this function on the data logger.

FEATURES

+ Modbus TCP interface
+ Standardized access to live measurement data
+ The respective Modbus SCADA address (Slave ID) for the connected devices can be freely configured if required
+ Access to all measured data which the data logger records from the connected devices
  Available device types: Inverter, Sensor, Meter, String monitoring, Status DI internal/ external, Tracker, Genset

PREREQUISITES

+ blue'Log XM / XC
+ License SCADA Interface
+ Configuration via the menu **Plant** > **SCADA Interface**:
  + Activate SCADA Interface.
  + If desired, change the preassigned SCADA Address (Slave ID).

* The license is linked to a specific device. When ordering, please provide the 14-digit hardware serial number of the data logger.

AVAILABLE MEASURED DATA

+ Depends on the connected device.
+ Available measured data are described in the Compatibility check *
+ Measured data that is not available will be transmitted as a "missing value". See table "Data types" in the section "Modbus specification" below.

* A list of measured values is not available for every device. This depends on whether the available measured values are transmitted dynamically by the device, for example SunSpec devices.

FUNCTION ASSIGNMENT SCADA ADDRESSES (SLAVE ID)

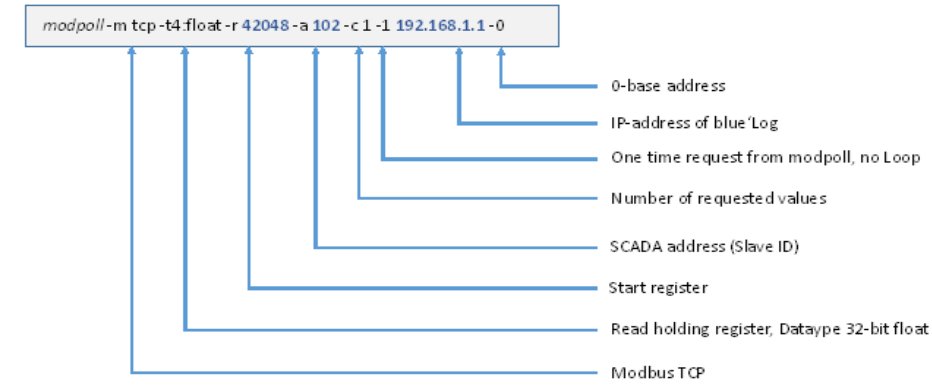
+ The SCADA addresses (Slave ID) will be automatically assigned the first time the SCADA interface is activated.
+ The SCADA addresses are not reassigned if the SCADA interface is deactivated and then reactivated.
+ If the SCADA interface is activated, new added devices are not automatically assigned to a SCADA address.
+ The **Reset SCADA address** function reassigns the SCADA addresses for the existing devices.
+ The SCADA addresses of a device can be changed manually at any time.

General register definition

+ Every device has a type-dependent value set.
+ If a device does not deliver a measured value, a missing value will be sent instead. See table "Data types".
+ Regardless of the device type, the section "General values" contains basic values such as device type, manufacturer, and device name.
+ Function Code 03 - "Read Holding Registers" must be used to read values.
+ Function Code 16 – "Write Multiple Holding Registers" must be used to write values.
+ The word order is LOW, byte order is HIGH → 0xCCDDAABB
+ Factor and offset: First the factor and then the offset must be calculated with the value.

Example request for a temperature value (Register 42048) of a sensor (Slave ID 102) at a blue'Log with Ip 192.168.1.1

Following request is built with the open soure tool modpoll



Data types

Abbreviation	Description	Missing values
U16	16Bit Unsigned integer	0xFFFF
U32	32Bit Unsigned integer	0xFFFFFFFF
I16	16Bit Signed integer	0x8000
I32	32Bit Signed integer	0x80000000
F32	32Bit Float	0x7FC00000
String	String, ASCII encoding. If the whole length of the field is used, then the end of the string will be filled with 0x00. If a value (for example model name) does not fit in the register, then it will be cut off.	0x00

SCADA INTERFACE REGISTER V2.24.0

GENERAL VALUES

READ VALUES (Function Code 03)

The blue'Log can be addressed via the Slave ID (SCADA address) 97.

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
40000	1		Device type		I16	[0; 8]	1	0	1.0.0	Possible values: 0 = Data logger (blue'Log) 1 = Inverter 2 = Sensor 3 = Meter 4 = String 5 = Tracker 6 = Status DI external 7 = Genset 8 = Battery
40001	32		Vendor	---	String		---	---	1.0.0	
40033	32		Model	---	String		---	---	1.0.0	
40065	16		Serial	---	String		---	---	1.0.0	
40081	16		Firmware version	---	String		---	---	1.0.0	Formatted firmware version of this device
40097	16		PortId	---	String		---	---	1.0.0	Internal Port-ID of the blue'Log, e.g. 'BM_RS485_1' or '192.168.23.42:502'
40113	1		Bus address	---	U16		1	0	1.0.0	
40114	2	QS_RX	Telegrams received (communication quality)	---	U32		1	0	2.24.0	
40116	2	QS_TX	Telegrams transmitted (communication quality)	---	U32		1	0	2.24.0	
40118-40489			Reserved							Unused. 0xFFFF
40490-40499	1	D_IN1-10	Digital input	---	U16	[0;1]	---	0	2.0.0 (deprecated with version ≥ 2.7.0)	Values: 0: Normal state 1: Active state

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
40500-40538	2	ERROR1-20	Error registers	---	U32		---	0	1.0.0	Raw value read from the device. To download the event mapping via the blue'Log user interface, navigate to **Devices** > Select a device > **Installed devices** > **Download events**. The event mapping depends on the specification of the individual device. With SCADA version 2.23.0 or later, you can also read events generated by the blue'Log. For mapping details, see the "blue'Log" section of this document.
40540-40578	2	STATE1-20	Status registers	---	U32		---	0	1.0.0	
40580	2	T	Temperature	°C	F32		---	0	1.0.1	Temperature of all devices except sensors
40582-40620	2	T1-20	Temperatures	°C	F32		---	0	1.0.0 (since 1.0.1 F32)	Temperatures of all devices except sensors
40622-40660	2	STATE21-40	Status registers	---	U32		---	0	2.2.0	
40662-40700	2	ERROR21-40	Error registers	---	U32		---	0	2.3.0	
40702-40741	1	D_IN1-40	Digital input	---	U16	[0;1]	---	0	2.7.0	Values: 0: Normal state 1: Active state

BLUE'LOG

The calculated values and PPC can be addressed via the Slave ID (SCADA address) 97.

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
10000	2	P_AC_INV_SUM	Sum of all inverters Power AC	W	F32		---	---	2.17.0	blue'Log XC as Master sums up also the inverters from the connected slaves.

INVERTER

READ VALUES (Function Code 03)

Address	Length in reg.	Abbreviation	Description	Unit	Data type	Factor	Offset	Range	SCADA version	Comment
41000	2	P_AC	Power AC	W	F32	1	0		1.0.0	
41002	2	Q_AC	Reactive power	VAr	F32	1	0		1.0.0	
41004	2	S_AC	Apparent power	VA	F32	1	0		1.0.0	
41006	2	COS_PHI	Power factor (cos phi)	---	F32	1	0		1.0.0	
41008	2	U_AC	Voltage AC	V	F32	1	0		1.0.0	
41010	2	I_AC	Current AC	A	F32	1	0		1.0.0	
41012	2	F_AC	Grid frequency	Hz	F32	1	0		1.0.0	
41014	2	R_ISO	Insulation resistance	Ohm	F32	1	0		1.0.0	
41016	2	P_AC1	Power AC phase 1	W	F32	1	0		1.0.0	
41018	2	P_AC2	Power AC phase 2	W	F32	1	0		1.0.0	
41020	2	P_AC3	Power AC phase 3	W	F32	1	0		1.0.0	
41022	2	Q_AC1	Reactive power phase 1	VAr	F32	1	0		1.0.0	
41024	2	Q_AC2	Reactive power phase 2	VAr	F32	1	0		1.0.0	
41026	2	Q_AC3	Reactive power phase 3	VAr	F32	1	0		1.0.0	
41028	2	S_AC1	Apparent power phase 1	VA	F32	1	0		1.0.0	
41030	2	S_AC2	Apparent power phase 2	VA	F32	1	0		1.0.0	
41032	2	S_AC3	Apparent power phase 3	VA	F32	1	0		1.0.0	
41034	2	COS_PHI1	Power factor (cos phi) phase 1	---	F32	1	0		1.0.0	
41036	2	COS_PHI2	Power factor (cos phi) phase 2	---	F32	1	0		1.0.0	
41038	2	COS_PHI3	Power factor (cos phi) phase 3	---	F32	1	0		1.0.0	
41040	2	U_AC1	Voltage AC phase 1	V	F32	1	0		1.0.0	
41042	2	U_AC2	Voltage AC phase 2	V	F32	1	0		1.0.0	
41044	2	U_AC3	Voltage AC phase 3	V	F32	1	0		1.0.0	
41046	2	U_AC_L1L2	Phase voltage L1L2	V	F32	1	0		1.0.0	
41048	2	U_AC_L2L3	Phase voltage L2L3	V	F32	1	0		1.0.0	
41050	2	U_AC_L3L1	Phase voltage L3L1	V	F32	1	0		1.0.0	
41052	2	I_AC1	Current AC phase 1	A	F32	1	0		1.0.0	
41054	2	I_AC2	Current AC phase 2	A	F32	1	0		1.0.0	
41056	2	I_AC3	Current AC phase 3	A	F32	1	0		1.0.0	
41058	2	F_AC1	Grid frequency phase 1	Hz	F32	1	0		1.0.0	

Address	Length in reg.	Abbreviation	Description	Unit	Data type	Factor	Offset	Range	SCADA version	Comment
41060	2	F_AC2	Grid frequency phase 2	Hz	F32	1	0		1.0.0	
41062	2	F_AC3	Grid frequency phase 3	Hz	F32	1	0		1.0.0	
41064	2	E_DAY	Energy generated per day	Wh	F32	1	0		1.0.0	
41066	2	E_TOTAL	Energy total	Wh	F32	1	0		1.0.0	
41068	2	OT_AC_TOTAL	Total operating hours	h	F32	1	0		1.0.0	
41070	2	FT_AC_TOTAL	Total feed-in hours	h	F32	1	0		1.0.0	
41072	2	U_DC_PE	Voltage DC positive pole to earth	V	F32	1	0		1.2.0	
41074	2	U_DC_NE	Voltage DC negative pole to earth	V	F32	1	0		1.2.0	
41076	2	P_AC_SET_ABS	Absolute active power setpoint	W	F32	1	0		2.6.0	
41078	2	P_AC_SET_REL	Relative active power setpoint	%	F32	1	0		2.6.0	
41080	2	P_DC	Power DC	W	F32	1	0		1.0.0	
41082	2	U_DC	Voltage DC	V	F32	1	0		1.0.0	
41084	2	I_DC	Current DC total	A	F32	1	0		1.0.0	
41086-41089	4		Reserved							Unused. 0xFFFF
41090	1		MPPT Count	---	U16	1	0	[1, 12]	1.0.0	MPPT Count: number of MPPTs at this inverter
41091	1		String Count	---	U16	1	0	[1, 48]	1.0.0	String Count: total number of strings
41092-41099	8		Reserved							Unused. 0xFFFF
41100-41xxx	2	P_DC1-12	Power DC MPPT 1-12	W	F32	1	0		1.0.0	**Repeating block:** Block of P_DCx, U_DCx and I_DCx will be repeated 12 times. Example: 41100: P_DC1 41102: U_DC1
41102-41xxx	2	U_DC1-12	Voltage DC MPPT 1-12	V	F32	1	0		1.0.0	41104: I_DC1 41106: P_DC2 41108: U_DC2 41110: I_DC2 41112: P_DC3
41104-41xxx	2	I_DC1-12	Current DC MPPT 1-12	A	F32	1	0		1.0.0	41114: U_DC3 41116: I_DC3 … 41166: P_DC12 41168: U_DC12 41170: I_DC12

Address	Length in reg.	Abbreviation	Description	Unit	Data type	Factor	Offset	Range	SCADA version	Comment
41172-41266	2	I_DCx_y	Current DC MPPT x input y	A	F32	1	0		1.0.0 extended with 2.8.0	**Repeating block:** Starts directly after the P_DCx, U_DCx and I_DCx Block (41172). Repeats for all String values of the MPPTs. String count is the total string count of all MPPTs and has to be dispensed evenly **Example:** - MPPT Count (Reg. 41090) = 4 - String Count (Reg. 41091) = 11 41172: I_DC1_1 41174: I_DC1_2 41176: I_DC1_3 41178: I_DC2_1 41180: I_DC2_2 41182: I_DC2_3 41184: I_DC3_1 41186: I_DC3_2 41188: I_DC3_3 41190: I_DC4_1 41192: I_DC4_2 // no I_DC4_3 because there are only 11 strings
... -41799			Reserved							Unused. 0xFFFF
41800	2	R_AC	Grid impedance	Ohm	F32	1	0		2.9.0	
41802-41998	197		Reserved							Unused. 0xFFFF

WRITE VALUES (Function Code 16)

Register	Length in registers	Abbreviation	Description	Unit	Data type	Factor	Offset	Range	SCADA version	Comment
41999	1	SCADA_START_STOP	Start/stop individual inverter	W	U16	1	0		2.17.0	0 = Stop 1 = Start If driver does not offer the start/stop feature: ModbusException with ErrorCode 4

SENSORS

READ VALUES (Function Code 03)

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
42000	2	E_W_D	Wind direction	°	F32		1	0	1.0.0	
42002	2	E_W_S	Wind speed	m/s	F32		1	0	1.0.0	
42004	2	E_ALT1	Altitude	m	F32		1	0	1.0.0	
42006	2	E_PRECIPITATION	Precipitation type	---	F32		1	0	1.0.0	
42008	2	E_RF_ABS1	Precipitation quantity absolute	mm	F32		1	0	1.0.0	
42010	2	E_RF_I1	Precipitation intensity	mm/h	F32		1	0	1.0.0	
42012	2	E_AH_ABS1	Humidity absolute 1	g/m²	F32		1	0	1.0.0	
42014	2	E_AH_REL1	Humidity relative	%	F32		1	0	1.0.0	
42016	2	E_AP_ABS1	Air pressure absolute	hPa	F32		1	0	1.0.0	
42018	2	E_AP_REL1	Air pressure relative	hPa	F32		1	0	1.0.0	
42020	2	E_IP_ABS	Internal air pressure	hPa	F32		1	0	1.0.0	
42022	2	E_IH_REL	Internal relative humidity	%	F32		1	0	1.0.0	
42024	2	E_F_S	Fan speed	rpm	F32		1	0	1.0.0	
42026	2	E_DEWPOINT	Dewpoint	°C	F32		1	0	2.18.0	
42028-42029	2		Reserved							Unused. 0xFFFF
42030	2	SUN_H	Sunshine duration	h	F32		1	0	1.0.0	
42032	2	E_TILT	Sensor tilt	°	F32		1	0	1.0.0	
42034	2	E_SRAD	Global irradiation energy	Wh/m²	F32		1	0	1.0.0	
42036	2	SRAD	Irradiance	W/m²	F32		1	0	1.0.0	
42038	2	SRAD1	Irradiance 1	W/m²	F32		1	0	1.0.0	
42040	2	SRAD2	Irradiance 2	W/m²	F32		1	0	1.0.0	
42042	2	SRAD3	Irradiance 3	W/m²	F32		1	0	1.0.0	
42044	2	SRAD4	Irradiance 4	W/m²	F32		1	0	1.0.0	
42046	2	SRAD5	Irradiance 5	W/m²	F32		1	0	1.0.0	
42048	2	T	Temperature	°C	F32		1	0	1.0.0	
42050	2	T1	Temperature 1	°C	F32		1	0	1.0.0	
42052	2	T2	Temperature 2	°C	F32		1	0	1.0.0	
42054	2	T3	Temperature 3	°C	F32		1	0	1.0.0	
42056	2	T4	Temperature 4	°C	F32		1	0	1.0.0	
42058	2	T5	Temperature 5	°C	F32		1	0	1.0.0	

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
42060	2	T6	Temperature 6	°C	F32		1	0	1.0.0	
42062	2	T7	Temperature 7	°C	F32		1	0	1.0.0	
42064	2	T8	Temperature 8	°C	F32		1	0	1.0.0	
42066	2	T9	Temperature 9	°C	F32		1	0	1.0.0	
42068	2	T10	Temperature 10	°C	F32		1	0	1.0.0	
42070	2	T11	Temperature 11	°C	F32		1	0	1.0.0	
42072	2	T12	Temperature 12	°C	F32		1	0	1.0.0	
42074	2	T13	Temperature 13	°C	F32		1	0	1.0.0	
42076	2	T14	Temperature 14	°C	F32		1	0	1.0.0	
42078	2	T15	Temperature 15	°C	F32		1	0	1.0.0	
42080	2	T16	Temperature 16	°C	F32		1	0	1.0.0	
42082	2	T17	Temperature 17	°C	F32		1	0	1.0.0	
42084	2	T18	Temperature 18	°C	F32		1	0	1.0.0	
42086	2	T19	Temperature 19	°C	F32		1	0	1.0.0	
42088	2	T20	Temperature 20	°C	F32		1	0	1.0.0	
42090	2	I_SC1	Short circuit current 1	A	F32		1	0	1.0.0	
42092	2	I_SC2	Short circuit current 2	A	F32		1	0	1.0.0	
42094	2	SLI_RAW	Soiling loss raw	%	F32		1	0	1.0.0	
42096	2	SLI	Soiling loss	%	F32		1	0	1.0.0	
42098	2	SLI1	Soiling loss 1	%	F32		1	0	1.0.0	
42100	2	SLI2	Soiling loss 2	%	F32		1	0	1.0.0	
42102	2	E_RF_DIF	Differential precipitation	mm	F32		1	0	1.1.0	
42104	2	E_RF_DIF1	Differential precipitation 1	mm	F32		1	0	1.1.0	
42106	2	E_RF_DIF2	Differential precipitation 2	mm	F32		1	0	1.1.0	
42108	2	E_RF_DIF3	Differential precipitation 3	mm	F32		1	0	1.1.0	
42110	2	E_RF_DIF4	Differential precipitation 4	mm	F32		1	0	1.1.0	
42112	2	E_RF_DIF5	Differential precipitation 5	mm	F32		1	0	1.1.0	
42114	2	E_W_S_MAX	Maximum wind speed	m/s	F32		1	0	1.1.0	
42116	2	E_W_S1_MAX	Wind speed (sensor 1)	m/s	F32		1	0	1.1.0	
42118	2	E_W_S2_MAX	Wind speed (sensor 2)	m/s	F32		1	0	1.1.0	
42120	2	E_W_S3_MAX	Wind speed (sensor 3)	m/s	F32		1	0	1.1.0	
42122	2	E_W_S4_MAX	Wind speed (sensor 4)	m/s	F32		1	0	1.1.0	
42124	2	E_W_S5_MAX	Wind speed (sensor 5)	m/s	F32		1	0	1.1.0	

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
42126	2	E_W_S1	Wind speed 1	m/s	F32		1	0	x.y.z	
42128	2	E_W_S2	Wind speed 2	m/s	F32		1	0	x.y.z	
42130	2	E_W_S3	Wind speed 3	m/s	F32		1	0	x.y.z	
42132	2	E_W_S4	Wind speed 4	m/s	F32		1	0	x.y.z	
42134	2	E_W_S5	Wind speed 5	m/s	F32		1	0	x.y.z	
42136	2	E_W_D1	Wind direction 1	°	F32		1	0	2.5.0	
42138	2	E_W_D2	Wind direction 2	°	F32		1	0	2.5.0	
42140	2	E_W_D3	Wind direction 3	°	F32		1	0	2.5.0	
42142	2	E_W_D4	Wind direction 4	°	F32		1	0	2.5.0	
42144	2	E_W_D5	Wind direction 5	°	F32		1	0	2.5.0	
42146	2	ILLUMINANCE	Illuminance	lx	F32		1	0	2.15.0	
42148-42149	2		Reserved							Unused. 0xFFFF
42150	2	E_SNOW_DEPTH	Snow depth	m	F32		1	0	1.0.0	
42152	2	SNOW_LOAD1	Snow load 1	g/m²	F32		1	0	1.0.0	
42154	2	SNOW_LOAD2	Snow load 2	g/m²	F32		1	0	1.0.0	
42156	2	SNOW_LOAD3	Snow load 3	g/m²	F32		1	0	1.0.0	
42158	2	SNOW_LOAD4	Snow load 4	g/m²	F32		1	0	1.0.0	
42160-42169	10		Reserved							Unused. 0xFFFF
42170	2	WATER_DEPTH	Water depth	m	F32		1	0	1.4.0	
42172-42179	8		Reserved							Unused. 0xFFFF
42180	2	SR1	Soiling ratio 1	%	F32		1	0	2.10.0	
42182	2	SR2	Soiling ratio 2	%	F32		1	0	2.10.0	
42184	2	SR3	Soiling ratio 3	%	F32		1	0	2.10.0	
42186	2	SR4	Soiling ratio 4	%	F32		1	0	2.10.0	
42188	2	SR5	Soiling ratio 5	%	F32		1	0	2.10.0	
42190	2	SR6	Soiling ratio 6	%	F32		1	0	2.10.0	
42192	2	SR7	Soiling ratio 7	%	F32		1	0	2.10.0	
42194	2	SR8	Soiling ratio 8	%	F32		1	0	2.10.0	
42196	2	SR9	Soiling ratio 9	%	F32		1	0	2.10.0	
42198-42299	102		Reserved							Unused. 0xFFFF
42300	2	A_IN1	Analog input 1		F32		1	0	2.9.0	
42302	2	A_IN2	Analog input 2		F32		1	0	2.9.0	
42304	2	A_IN3	Analog input 3		F32		1	0	2.9.0	

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
42306	2	A_IN4	Analog input 4		F32		1	0	2.9.0	
42306-42399			Reserved						2.19.0	Unused. 0xFFFF
42400	2	E_RF_PARTICLES	Total precipitation particles		F32		1	0	2.19.0	
42402	2	E_DROPS_TOTAL	Total drops		F32		1	0	2.19.0	
42404	2	E_DRIZZLE_PARTICLES	Drizzle particles		F32		1	0	2.19.0	
42406	2	E_SNOW_PARTICLES	Snow particles		F32		1	0	2.19.0	
42408	2	E_HAIL_PARTICLES	Hail particles		F32		1	0	2.19.0	
42410	2	E_DROP_COUNT_00_05	Drop size < 0.5 mm		F32		1	0	2.19.0	
42412	2	E_DROP_COUNT_05_10	Drop size 0.5...1.0 mm		F32		1	0	2.19.0	
42414	2	E_DROP_COUNT_10_15	Drop size 1.0...1.5 mm		F32		1	0	2.19.0	
42416	2	E_DROP_COUNT_15_20	Drop size 1.5...2.0 mm		F32		1	0	2.19.0	
42418	2	E_DROP_COUNT_20_25	Drop size 2.0...2.5 mm		F32		1	0	2.19.0	
42420	2	E_DROP_COUNT_25_30	Drop size 2.5...3.0 mm		F32		1	0	2.19.0	
42422	2	E_DROP_COUNT_30_35	Drop size 3.0...3.5 mm		F32		1	0	2.19.0	
42424	2	E_DROP_COUNT_35_40	Drop size 3.5...4.0 mm		F32		1	0	2.19.0	
42426	2	E_DROP_COUNT_40_45	Drop size 4.0...4.5 mm		F32		1	0	2.19.0	
42428	2	E_DROP_COUNT_45_50	Drop size 4.5...5.0 mm		F32		1	0	2.19.0	
42430	2	E_DROP_COUNT_50_55	Drop size 5.0... 5.5 mm		F32		1	0	2.19.0	
42432	2	E_DROP_COUNT_55	Drop size > 5.5 mm		F32		1	0	2.19.0	

METER

READ VALUES (Function Code 03)

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
43000	2	M_AC_P	Power AC	W	F32		1	0	1.0.0	
43002	2	M_AC_Q	Reactive power	VAr	F32		1	0	1.0.0	
43004	2	M_AC_S	Apparent power	VA	F32		1	0	1.0.0	
43006	2	M_AC_PF_COSPHI	Power factor (cos phi)	---	F32		1	0	1.0.0	
43008	2	M_AC_U	Voltage AC	V	F32		1	0	1.0.0	
43010	2	M_AC_I	Current AC	A	F32		1	0	1.0.0	
43012	2	M_AC_I_N	Current neutral conductor	A	F32		1	0	1.0.0	
43014	2	M_AC_F	Grid frequency	Hz	F32		1	0	1.0.0	
43016	2	M_AC_P1	Power AC phase 1	W	F32		1	0	1.0.0	
43018	2	M_AC_P2	Power AC phase 2	W	F32		1	0	1.0.0	
43020	2	M_AC_P3	Power AC phase 3	W	F32		1	0	1.0.0	
43022	2	M_AC_Q1	Reactive power phase 1	VAr	F32		1	0	1.0.0	
43024	2	M_AC_Q2	Reactive power phase 2	VAr	F32		1	0	1.0.0	
43026	2	M_AC_Q3	Reactive power phase 3	VAr	F32		1	0	1.0.0	
43028	2	M_AC_S1	Apparent power phase 1	VA	F32		1	0	1.0.0	
43030	2	M_AC_S2	Apparent power phase 2	VA	F32		1	0	1.0.0	
43032	2	M_AC_S3	Apparent power phase 3	VA	F32		1	0	1.0.0	
43034	2	M_AC_PF_COSPHI1	Power factor (cos phi) phase 1	---	F32		1	0	1.0.0	
43036	2	M_AC_PF_COSPHI2	Power factor (cos phi) phase 2	---	F32		1	0	1.0.0	
43038	2	M_AC_PF_COSPHI3	Power factor (cos phi) phase 3	---	F32		1	0	1.0.0	
43040	2	M_AC_U1	Voltage AC phase 1	V	F32		1	0	1.0.0	
43042	2	M_AC_U2	Voltage AC phase 2	V	F32		1	0	1.0.0	
43044	2	M_AC_U3	Voltage AC phase 3	V	F32		1	0	1.0.0	
43046	2	M_AC_U_L1L2	Phase voltage L1L2	V	F32		1	0	1.0.0	
43048	2	M_AC_U_L2L3	Phase voltage L2L3	V	F32		1	0	1.0.0	
43050	2	M_AC_U_L3L1	Phase voltage L3L1	V	F32		1	0	1.0.0	
43052	2	M_AC_I1	Current AC phase 1	A	F32		1	0	1.0.0	
43054	2	M_AC_I2	Current AC phase 2	A	F32		1	0	1.0.0	
43056	2	M_AC_I3	Current AC phase 3	A	F32		1	0	1.0.0	
43058	2	M_AC_F1	Grid frequency phase 1	Hz	F32		1	0	1.0.0	

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
43060	2	M_AC_F2	Grid frequency phase 2	Hz	F32		1	0	1.0.0	
43062	2	M_AC_F3	Grid frequency phase 3	Hz	F32		1	0	1.0.0	
43064	2	M_AC_E_EXP	Active energy (export)	Wh	F32		1	0	1.0.0	
43066	2	M_AC_E_IMP	Active energy (import)	Wh	F32		1	0	1.0.0	
43068	2	M_AC_ES_EXP	Apparent energy (exported)	VAh	F32		1	0	1.0.0	
43070	2	M_AC_ES_IMP	Apparent energy (imported)	VAh	F32		1	0	1.0.0	
43072	2	E_INT	Energy generated per interval	Wh	F32		1	0	1.0.0	only for S0 meters
43074	2	E_INT_MINUTE	Energy generated last minute	Wh	F32		1	0	1.4.0	only for S0 meters
43076	2	TIMESTAMP	TIMESTAMP last minute	s	U32		1	0	1.4.0	UNIX Timestamp from previous minute interval (Last change of E_INT_MINUTE)
43078	2	M_AC_E_EXP_T1	Active energy for Tariff 1 (export)	Wh	F32		1	0	2.5.0	
43080	2	M_AC_E_EXP_T2	Active energy for Tariff 2 (export)	Wh	F32		1	0	2.5.0	
43082	2	M_AC_E_IMP_T1	Active energy for Tariff 1 (import)	Wh	F32		1	0	2.5.0	
43084	2	M_AC_E_IMP_T2	Active energy for Tariff 2 (import)	Wh	F32		1	0	2.5.0	
43086	2	M_AC_EQ_CAP_EXP	Reactive energy (capacitive export)	VArh	F32		1	0	2.5.0	
43088	2	M_AC_EQ_CAP_IMP	Reactive energy (capacitive import)	VArh	F32		1	0	2.5.0	
43090	2	M_AC_EQ_IND_EXP	Reactive energy (inductive export)	VArh	F32		1	0	2.5.0	
43092	2	M_AC_EQ_IND_IMP	Reactive energy (inductive import)	VArh	F32		1	0	2.5.0	
43094	2	M_AC_E_MONTH_EXP	Active energy monthly (export)	Wh	F32		1	0	2.5.0	
43096	2	M_AC_E_MONTH_IMP	Active energy monthly (import)	Wh	F32		1	0	2.5.0	
43098	2	M_AC_P_DEMAND	Active power demand	W	F32		1	0	2.5.0	
43100	2	M_AC_P_DEMAND_T1	Active power demand (Tariff 1)	W	F32		1	0	2.5.0	
43102	2	M_AC_P_DEMAND_T2	Active power demand (Tariff 2)	W	F32		1	0	2.5.0	
43104	2	M_AC_Q_DEMAND	Reactive power demand	VAr	F32		1	0	2.5.0	
43106	2	M_AC_Q_DEMAND_T1	Reactive power demand (Tariff 1)	VAr	F32		1	0	2.5.0	
43108	2	M_AC_Q_DEMAND_T2	Reactive power demand (Tariff 2)	VAr	F32		1	0	2.5.0	
43110	2	M_AC_S_DEMAND	Apparent power demand	VA	F32		1	0	2.5.0	
43112	2	M_AC_S_DEMAND_T1	Apparent power demand (Tariff 1)	VA	F32		1	0	2.5.0	
43114	2	M_AC_S_DEMAND_T2	Apparent power demand (Tariff 2)	VA	F32		1	0	2.5.0	
43116	2	M_AC_EQ_CAP_EXP_T1	Negative - reactive energy capacitive exported (Tariff 1)	VArh	F32		1	0	2.5.0	
43118	2	M_AC_EQ_CAP_EXP_T2	Negative - reactive energy capacitive exported (Tariff 2)	VArh	F32		1	0	2.5.0	
43120	2	M_AC_EQ_CAP_IMP_T1	Positive - Reactive Energy capacitive imported (Tariff 1)	VArh	F32		1	0	2.5.0	

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
43122	2	M_AC_EQ_CAP_IMP_T2	Positive - reactive energy capacitive imported (Tariff 2)	VArh	F32		1	0	2.5.0	
43124	2	M_AC_EQ_IND_EXP_T1	Positive - reactive energy inductive exported (Tariff 1)	VArh	F32		1	0	2.5.0	
43126	2	M_AC_EQ_IND_EXP_T2	Positive - reactive rnergy inductive exported (Tariff 2)	VArh	F32		1	0	2.5.0	
43128	2	M_AC_EQ_IND_IMP_T1	Positive - reactive energy inductive imported (Tariff 1)	VArh	F32		1	0	2.5.0	
43130	2	M_AC_EQ_IND_IMP_T2	Positive - reactive energy inductive imported (Tariff 2)	VArh	F32		1	0	2.5.0	
43132	2	M_AC_EQ_EXP	Reactive energy (export)	Varh	F32		1	0	2.7.0	
43134	2	M_AC_EQ_IMP	Reactive energy (import)	Varh	F32		1	0	2.7.0	
43136	2	M_AC_EQ_TOTAL	Reactive energy total	Varh	F32		1	0	2.10.0	
43138	2	M_AC_U_N	Zero phase voltage	V	F32		1	0	2.14.0	
43140	2	M_AC_OT_TOTAL	Operation Time TOTAL	h	F32		1	0	2.16.0	
43200	2	M_DC_P	Power DC	W	F32		1	0	2.13.0	
43202	2	M_DC_U	Voltage DC	V	F32		1	0	2.13.0	
43204	2	M_DC_I	Current DC	A	F32		1	0	2.13.0	
43206	2	M_DC_E_EXP	Energy DC (export)	Wh	F32		1	0	2.13.0	
43208	2	M_DC_E_IMP	Energy DC (import)	Wh	F32		1	0	2.13.0	
43210-43299	90		Reserved							Unused. 0xFFFF
43300	2	M_EV_E_EXP	Consumption of charging infrastructure	Wh	F32		1	0	2.9.0	
43302-43399	98		Reserved							Unused. 0xFFFF
43400-43416	2	M_AC_E_EXP_T1-9	Active energy for Tariff 1-9 (export)	Wh	F32		1	0	2.11.0	
43418-43419	2		Reserved							Unused. 0xFFFF
43420-43436	2	M_AC_E_IMP_T1-9	Active energy for Tariff 1-9 (import)	Wh	F32		1	0	2.11.0	
43438-43439	2		Reserved							Unused. 0xFFFF
43440-43456	2	M_AC_EQ_EXP_T1-9	Reactive energy for Tariff 1-9 (export)	VArh	F32		1	0	2.11.0	
43458-43459			Reserved							Unused. 0xFFFF
43460-43476	2	M_AC_EQ_IMP_T1-9	Reactive energy for Tariff 1-9 (import)	VArh	F32		1	0	2.11.0	
43478-43479			Reserved							Unused. 0xFFFF
43480-43496	2	M_AC_ES_EXP_T1-9	Apparent energy for Tariff 1-9 (export)	VAh	F32		1	0	2.11.0	
43498-43499	2		Reserved							Unused. 0xFFFF
43500-43516	2	M_AC_ES_IMP_T1-9	Apparent energy for Tariff 1-9 (import)	VAh	F32		1	0	2.11.0	

STRING MONITORING

READ VALUES (Function Code 03)

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
44000	2	P_DC	Power DC	W	F32		1	0	1.0.0	
44002	2	U_DC	Voltage DC	V	F32		1	0	1.0.0	
44004	2	I_SUM	Sum of currents	A	F32		1	0	1.0.0	
44006-44028	23		Reserved							Unused. 0xFFFF
44029	1	---	String count	---	U16	[1, 40]	1	0	1.0.0	String count: number of strings
44030-44xxx		I1-x	Current1-x	A	F32				1.0.0	**Repeating block:** Repeats for each string **Example:** - String count (Reg 44029) = 6 44030: I1 44032: I2 44034: I3 44036: I4 44038: I5 44040: I6

TRACKER

READ VALUES via TCP port 503 (Function Code 03).

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
45000	2	ELEVATION	Elevation	°	F32		1	0	2.1.0	
45002	2	ELEVATION_TARGET	Elevation target value	°	F32		1	0	2.1.0	
45004	2	ELEVATION_MANUAL	Elevation manually	°	F32		1	0	2.1.0	
45006	2	AZIMUTH	Azimuth	°	F32		1	0	2.1.0	
45008	2	AZIMUTH_TARGET	Azimuth target value	°	F32		1	0	2.1.0	
45010	2	AZIMUTH_MANUAL	Azimuth manually	°	F32		1	0	2.1.0	
45012	2	I_MOTOR	Tracker motor current	A	F32		1	0	2.20.0	
45014	2	U_PANEL	Tracker panel voltage	V	F32		1	0	2.20.0	
45016-45099	84		Reserved		F32				2.20.0	Unused 0xFFFF
45100	2	TB_SOC	Tracker battery SOC	%	F32		1	0	2.20.0	
45102	2	TB_SOH	Tracker battery SOH	%	F32		1	0	2.20.0	
45104	2	TB_REM_CAP	Tracker battery remaining capacity	mAh	F32		1	0	2.20.0	
45106	2	TB_CAPACITY	Tracker battery full capacity	mAh	F32		1	0	2.20.0	
45108	2	TB_U	Tracker battery voltage	V	F32		1	0	2.20.0	
45110	2	TB_I	Tracker battery current	A	F32		1	0	2.20.0	

STATUS DI INTERNAL

READ VALUES (Function Code 03)

The digital inputs can be addressed via the Slave ID (SCADA address) 99.

Values: 0x0000: Normal state | 0x0001: Active state | 0xFFFF: Not available

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
40000	1	---	BM: DI-1		U16				1.0.0	
40001	1	---	BM: DI-2		U16				1.0.0	
40002	1	---	BM: DI-3		U16				1.0.0	
40003	1	---	BM: DI-4		U16				1.0.0	
40004	1	---	BM: MI-1		U16				1.0.0	
40005	1	---	BM: MI-2		U16				1.0.0	
40006	1	---	BM: MI-3		U16				1.0.0	
40007	1	---	BM: MI-4		U16				1.0.0	
40008	1	---	MX-1: MI-1		U16				1.0.0	
40009	1	---	MX-1: MI-2		U16				1.0.0	
40010	1	---	MX-1: MI-3		U16				1.0.0	
40011	1	---	MX-1: MI-4		U16				1.0.0	
40012	1	---	MX-2: MI-1		U16				1.0.0	
40013	1	---	MX-2: MI-2		U16				1.0.0	
40014	1	---	MX-2: MI-3		U16				1.0.0	
40015	1	---	MX-2: MI-4		U16				1.0.0	
40016	1	---	MX-3: MI-1		U16				1.0.0	
40017	1	---	MX-3: MI-2		U16				1.0.0	
40018	1	---	MX-3: MI-3		U16				1.0.0	
40019	1	---	MX-3: MI-4		U16				1.0.0	
40020	1	---	MX-4: MI-1		U16				1.0.0	
40021	1	---	MX-4: MI-2		U16				1.0.0	
40022	1	---	MX-4: MI-3		U16				1.0.0	
40023	1	---	MX-4: MI-4		U16				1.0.0	
40024	1	---	MX-5: MI-1		U16				1.0.0	
40025	1	---	MX-5: MI-2		U16				1.0.0	
40026	1	---	MX-5: MI-3		U16				1.0.0	
40027	1	---	MX-5: MI-4		U16				1.0.0	

STATUS DI EXTERNAL

READ VALUES (Function Code 03)

For reading of values from device "Status DI external", see section "General values".

DIGITAL OUTPUT

WRITE VALUES (Function Code 16)

The digital outputs can be addressed via the Slave ID (SCADA address) 98.

You must first assign digital outputs on the blue'Log under **Devices** > **Digital output** > **Activation** > **Select SCADA interface**.

Commands: 0x0000 and 0x0001

The signal to activate a digital output via SCADA interface must be sent at least once every 60 seconds. If the blue'Log does not receive a signal within 60 seconds the digital output will switch off.

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
30000	1	---	BM: DO-1		U16				2.12.0	
30001	1	---	BM: DO-2		U16				2.12.0	
30002	1	---	BM: DO-3		U16				2.12.0	
30003	1	---	BM: DO-4		U16				2.12.0	
30004	1	---	MX-1: DO-1		U16				2.12.0	
30005	1	---	MX-1: DO-2		U16				2.12.0	
30006	1	---	MX-1: DO-3		U16				2.12.0	
30007	1	---	MX-1: DO-4		U16				2.12.0	
30008	1	---	MX-2: DO-1		U16				2.12.0	
30009	1	---	MX-2: DO-2		U16				2.12.0	
30010	1	---	MX-2: DO-3		U16				2.12.0	
30011	1	---	MX-2: DO-4		U16				2.12.0	
30012	1	---	MX-3: DO-1		U16				2.12.0	
30013	1	---	MX-3: DO-2		U16				2.12.0	
30014	1	---	MX-3: DO-3		U16				2.12.0	
30015	1	---	MX-3: DO-4		U16				2.12.0	
30016	1	---	MX-4: DO-1		U16				2.12.0	
30017	1	---	MX-4: DO-2		U16				2.12.0	
30018	1	---	MX-4: DO-3		U16				2.12.0	
30019	1	---	MX-4: DO-4		U16				2.12.0	
30020	1	---	MX-5: DO-1		U16				2.12.0	
30021	1	---	MX-5: DO-2		U16				2.12.0	
30022	1	---	MX-5: DO-3		U16				2.12.0	
30023	1	---	MX-5: DO-4		U16				2.12.0	

GENSET

READ VALUES (Function Code 03)

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
47000	2	P_AC	Power AC	W	F32		1	0	2.8.0	
47002	2	Q_AC	Reactive power	VAr	F32		1	0	2.8.0	
47004	2	S_AC	Apparent power	VA	F32		1	0	2.8.0	
47006	2	COS_PHI	Power factor (cos phi)	---	F32		1	0	2.8.0	
47008	2	U_AC	Voltage AC	V	F32		1	0	2.8.0	
47010	2	I_AC	Current AC	A	F32		1	0	2.8.0	
47012	2	F_AC	Grid frequency	Hz	F32		1	0	2.8.0	
47014	2	P_AC1	Power AC phase 1	W	F32		1	0	2.8.0	
47016	2	P_AC2	Power AC phase 2	W	F32		1	0	2.8.0	
47018	2	P_AC3	Power AC phase 3	W	F32		1	0	2.8.0	
47020	2	Q_AC1	Reactive power phase 1	VAr	F32		1	0	2.8.0	
47022	2	Q_AC2	Reactive power phase 2	VAr	F32		1	0	2.8.0	
47024	2	Q_AC3	Reactive power phase 3	VAr	F32		1	0	2.8.0	
47026	2	S_AC1	Apparent power phase 1	VA	F32		1	0	2.8.0	
47028	2	S_AC2	Apparent power phase 2	VA	F32		1	0	2.8.0	
47030	2	S_AC3	Apparent power phase 3	VA	F32		1	0	2.8.0	
47032	2	COS_PHI1	Power factor (cos phi) phase 1	---	F32		1	0	2.8.0	
47034	2	COS_PHI2	Power factor (cos phi) phase 2	---	F32		1	0	2.8.0	
47036	2	COS_PHI3	Power factor (cos phi) phase 3	---	F32		1	0	2.8.0	
47038	2	U_AC1	Voltage AC phase 1	V	F32		1	0	2.8.0	
47040	2	U_AC2	Voltage AC phase 2	V	F32		1	0	2.8.0	
47042	2	U_AC3	Voltage AC phase 3	V	F32		1	0	2.8.0	
47044	2	U_AC_L1L2	Phase voltage L1L2	V	F32		1	0	2.8.0	
47046	2	U_AC_L2L3	Phase voltage L2L3	V	F32		1	0	2.8.0	
47048	2	U_AC_L3L1	Phase voltage L3L1	V	F32		1	0	2.8.0	
47050	2	I_AC1	Current AC phase 1	A	F32		1	0	2.8.0	
47052	2	I_AC2	Current AC phase 2	A	F32		1	0	2.8.0	
47054	2	I_AC3	Current AC phase 3	A	F32		1	0	2.8.0	
47056	2	F_AC1	Grid frequency phase 1	Hz	F32		1	0	2.8.0	
47058	2	F_AC2	Grid frequency phase 2	Hz	F32		1	0	2.8.0	

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
47060	2	F_AC3	Grid frequency phase 3	Hz	F32		1	0	2.8.0	
47062-47091	32		Reserved							Unused. 0xFFFF
47092	2	P_AC_SET_ABS	Absolute active power setpoint	W	F32		1	0	2.9.0	
47094	2	P_AC_SET_REL	Relative active power setpoint	%	F32		1	0	2.9.0	
47096	2	Q_AC_SET_ABS	Absolute reactive power setpoint	VAr	F32		1	0	2.9.0	
47098	2		Reserved							Unused. 0xFFFF
47100	2	E_TOTAL	Total yield	Wh	F32		1	0	2.8.0	
47102	2	OT_TOTAL	Operation hours	h	F32		1	0	2.8.0	
47104	2	OT_REMAINING	Operation hours remaining	h	F32		1	0	2.8.0	
47106-47109	4		Reserved						2.8.0	Unused. 0xFFFF
47110	2	FUEL_CONSUMPTION	Fuel consumption	l/h	F32		1	0	2.8.0	
47112	2	FUEL_REMAINING	Fuel remaining	%	F32		1	0	2.8.0	
47114	2	FUEL_EFFICIENCY	Fuel efficiency	Wh/l	F32		1	0	2.8.0	

BATTERY

READ VALUES (Function Code 03)

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
48000	2	B_CAPACITY	Nominal capacity	Ah	F32		1	0	2.24.0	
48002	2	B_E_CHARGE_AC	Chargeable energy	Wh	F32		1	0	2.24.0	
48004	2	B_E_DISCHARGE_AC	Dischargeable energy	Wh					2.24.0	
48006	2	B_E_EXP	Energy export from storage system DC	Wh	F32		1	0	2.24.0	
48008	2	B_E_EXP_AC	Energy export from storage system AC	Wh	F32		1	0	2.24.0	
48010	2	B_E_IMP	Energy import to storage system DC	Wh	F32		1	0	2.24.0	
48012	2	B_E_IMP_AC	Energy import to storage system AC	Wh	F32		1	0	2.24.0	
48014	2	B_E_INT_EXP	Energy export from storage system (interval) DC	Wh	F32		1	0	2.24.0	
48016	2	B_E_INT_EXP_AC	Energy export from storage system (interval) AC	Wh	F32		1	0	2.24.0	
48018	2	B_E_INT_IMP	Energy import to storage system (interval) DC	Wh	F32		1	0	2.24.0	
48020	2	B_E_INT_IMP_AC	Energy import from storage system (interval) AC	Wh	F32		1	0	2.24.0	
48022	2	B_E_STORED	Currently stored energy	Wh	F32		1	0	2.24.0	
48024	2	B_F_AC	Grid frequency	Hz	F32		1	0	2.24.0	
48026	2	B_I_AC	Battery AC current	A	F32		1	0	2.24.0	
48028	2	B_I_DC	Charging current DC	A	F32		1	0	2.24.0	
48030	2	B_I_DIS_DC	Discharging current DC	A	F32		1	0	2.24.0	
48032	2	B_LIM_I_CHARGE	Maximum charging current	A	F32		1	0	2.24.0	
48034	2	B_LIM_I_DISCHARGE	Maximum discharging current	A	F32		1	0	2.24.0	
48036	2	B_LIM_P_CHARGE	Maximum charging power	W	F32		1	0	2.24.0	
48038	2	B_LIM_P_DISCHARGE	Maximum discharging power	W	F32		1	0	2.24.0	
48040	2	B_LIM_U_CHARGE	Charge end voltage	V	F32		1	0	2.24.0	
48042	2	B_LIM_U_DISCHARGE	Discharge end voltage	V	F32		1	0	2.24.0	
48044	2	B_OT_TOTAL	Operating hours	h	F32		1	0	2.24.0	
48046	2	B_P_AC	Battery power AC	W	F32		1	0	2.24.0	
48048	2	B_P_DC	Total battery power	W	F32		1	0	2.24.0	
48050	2	B_Q_AC	Battery reactive power AC	VAr	F32		1	0	2.24.0	
48052	2	B_S_AC	Battery apparent power AC	VA	F32		1	0	2.24.0	
48054	2	B_SOC	State of charge	%	F32		1	0	2.24.0	

Register	Length in reg.	Abbreviation	Description	Unit	Data type	Range	Factor	Offset	SCADA version	Comment
48056	2	B_SOCH	State of charge (nominal capacity)	%	F32		1	0	2.24.0	
48058	2	B_SOH	State of health	%	F32		1	0	2.24.0	
48060	2	B_U_AC	Battery AC voltage	V	F32		1	0	2.24.0	
48062	2	B_U_BULK	Battery charging voltage DC	V	F32		1	0	2.24.0	
48064	2	B_U_CELL_AVG	Average cell voltage	V	F32		1	0	2.24.0	
48066	2	B_U_DC	Battery voltage	V	F32		1	0	2.24.0	
48068	2	B_U_OC	Open circuit voltage	V	F32		1	0	2.24.0	
48068-48999										

BLUE'LOG - ERROR CODES

SYSTEM ERRORS

Error code	Bitcode	Description
MAX_POWER_EXCEEDED	0x0001	Maximum allowed total power exceeded
POWER_CONTROl_ALARM_DB_FULL	0x0002	The database for power control alarms is full
ALARM_DB_FULL	0x0004	Alarm database is full / the device alarming was deactivated
STATE_DB_FULL	0x0008	State database is full / the device alarming was deactivated
SYSTEM_ALARM_DB_FULL	0x0010	The DB for system alarms is full

POWER CONTROL ERRORS

Error code	Bitcode	Description
P_SET_POINT_MISSING	0x0004	Setpoint value for active power control is missing
Q_SET_POINT_MISSING	0x0008	Setpoint value for reactive power control is missing
CABLE_BREAKAGE	0x0010	Setpoint value cannot be determined as cable breakage was detected
TRANSMITTER_FAULT	0x0020	Setpoint value cannot be determined as transmitter fault (overcurrent) was detected.
FEED_IN_METER_FAILURE	0x0040	Actual value for measured value feedback is missing
GRID_DISCONNECT	0x0080	Automatic grid disconnection tripped
LFSMO_ACTIVATED	0x0100	Limited frequency sensitive mode - overfrequency (LFSM-O) activated because the actual system frequency is above the configured frequency threshold.
LFSMU_ACTIVATED	0x0200	Limited frequency sensitive mode - overfrequency (LFSM-U) activated because the actual system frequency is under the configured frequency threshold.