

# SCADA interface register V2.23.0

## General values

### READ VALUES (Function Code 03)

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

Index	Address	Length in registers	Datatype	Abbreviation	Description	Factor	Offset	Range	Unit	Comment	SCADA version
1	40000	1	U16		Device type	1	0	[0; 6]	---	Possible values: 0 = Datalogger (blue'Log) 1 = Inverter 2 = Sensor 3 = Meter 4 = String 5 = Tracker 6 = Status DI extern 7 = Genset	1.0.0
2	40001	32	String		Vendor	---	---		---		1.0.0
3	40033	32	String		Model	---	---		---		1.0.0
4	40065	16	String		Serial	---	---		---		1.0.0
5	40081	16	String		Firmware version	---	---		---	Formatted firmware version of this device	1.0.0
6	40097	16	String		PortId	---	---		---	Internal Port-ID of the blue'Log e.g. 'BM_RS485_1' or '192.168.23.42:502'	1.0.0
7	40113	1	U16		Bus address	1	0		---		1.0.0
8	40114 - 40489				Reserved					Unused. 0xFFFF	
9	40490 - 40499	1	U16	D_IN1-10	Digital input	---	0	[0;1]	---	Values: 0: Normal state 1: Active state	2.0.0 (deprecated with version ≥ 2.7.0)
10	40500 - 40538	2	U32	ERROR1-20	Error registers	---	0		---	Raw value read from the device.  To download the event mapping via the blue'Log user interface, navigate to <b>Devices</b> > Select a device > <b>Installed devices</b> > <b>Download events</b> . The event mapping depends on the specification of the individual device.	1.0.0
11	40540 - 40578	2	U32	STATE1-20	Status registers	---	0		---	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.	
12	40580	2	F32	T	Temperature	---	0		°C	Temperature of all devices except sensors	1.0.1
13	40582 - 40620	2	F32	T1-20	Temperatures	---	0		°C	Temperatures of all devices except sensors	1.0.0 (since 1.0.1 F32)
14	40622 - 40660	2	U32	STATE21-40	Status Registers	---	0		---		2.2.0
15	40662-40700	2	U32	ERROR21-40	Error registers	---	0		---		2.3.0
16	40702 - 40741	1	U16	D_IN1-40	Digital input	---	0	[0;1]	---	Values: 0: Normal state 1: Active state	2.7.0

## Inverter

READ VALUES (Function Code 03)

Index	Address	Length in registers	Datatype	Function Code	Abbreviation	Description	Factor	Offset	Range	Unit	Comment	SCADA version
1	41000	2	F32	FC3	P_AC	Power AC	1	0		W		1.0.0
2	41002	2	F32	FC3	Q_AC	Reactive power	1	0		VAr		1.0.0
3	41004	2	F32	FC3	S_AC	Apparent power	1	0		VA		1.0.0
4	41006	2	F32	FC3	COS_PHI	Power factor (cos phi)	1	0		---		1.0.0
5	41008	2	F32	FC3	U_AC	Voltage AC	1	0		V		1.0.0
6	41010	2	F32	FC3	I_AC	Current AC	1	0		A		1.0.0
7	41012	2	F32	FC3	F_AC	Grid frequency	1	0		Hz		1.0.0
8	41014	2	F32	FC3	R_ISO	Insulation resistance	1	0		Ohm		1.0.0
9	41016	2	F32	FC3	P_AC1	Power AC phase 1	1	0		W		1.0.0
10	41018	2	F32	FC3	P_AC2	Power AC phase 2	1	0		W		1.0.0
11	41020	2	F32	FC3	P_AC3	Power AC phase 3	1	0		W		1.0.0
12	41022	2	F32	FC3	Q_AC1	Reactive power phase 1	1	0		VAr		1.0.0
13	41024	2	F32	FC3	Q_AC2	Reactive power phase 2	1	0		VAr		1.0.0
14	41026	2	F32	FC3	Q_AC3	Reactive power phase 3	1	0		VAr		1.0.0
15	41028	2	F32	FC3	S_AC1	Apparent power phase 1	1	0		VA		1.0.0
16	41030	2	F32	FC3	S_AC2	Apparent power phase 2	1	0		VA		1.0.0
17	41032	2	F32	FC3	S_AC3	Apparent power phase 3	1	0		VA		1.0.0
18	41034	2	F32	FC3	COS_PHI1	Power factor (cos phi) phase 1	1	0		---		1.0.0
19	41036	2	F32	FC3	COS_PHI2	Power factor (cos phi) phase 2	1	0		---		1.0.0
20	41038	2	F32	FC3	COS_PHI3	Power factor (cos phi) phase 3	1	0		---		1.0.0
21	41040	2	F32	FC3	U_AC1	Voltage AC phase 1	1	0		V		1.0.0
22	41042	2	F32	FC3	U_AC2	Voltage AC phase 2	1	0		V		1.0.0
23	41044	2	F32	FC3	U_AC3	Voltage AC phase 3	1	0		V		1.0.0

Index	Address	Length in registers	Datatype	Function Code	Abbreviation	Description	Factor	Offset	Range	Unit	Comment	SCADA version
24	41046	2	F32	FC3	U_AC_L1L2	Phase voltage L1L2	1	0		V		1.0.0
25	41048	2	F32	FC3	U_AC_L2L3	Phase voltage L2L3	1	0		V		1.0.0
26	41050	2	F32	FC3	U_AC_L3L1	Phase voltage L3L1	1	0		V		1.0.0
27	41052	2	F32	FC3	I_AC1	Current AC phase 1	1	0		A		1.0.0
28	41054	2	F32	FC3	I_AC2	Current AC phase 2	1	0		A		1.0.0
29	41056	2	F32	FC3	I_AC3	Current AC phase 3	1	0		A		1.0.0
30	41058	2	F32	FC3	F_AC1	Grid frequency phase 1	1	0		Hz		1.0.0
31	41060	2	F32	FC3	F_AC2	Grid frequency phase 2	1	0		Hz		1.0.0
32	41062	2	F32	FC3	F_AC3	Grid frequency phase 3	1	0		Hz		1.0.0
33	41064	2	F32	FC3	E_DAY	Energy generated per day	1	0		Wh		1.0.0
34	41066	2	F32	FC3	E_TOTAL	Energy total	1	0		Wh		1.0.0
35	41068	2	F32	FC3	OT_AC_TOTAL	Total operating hours	1	0		h		1.0.0
36	41070	2	F32	FC3	FT_AC_TOTAL	Total feed-in hours	1	0		h		1.0.0

Index	Address	Length in registers	Datatype	Function Code	Abbreviation	Description	Factor	Offset	Range	Unit	Comment	SCADA version
37	41072	2	F32	FC3	U_DC_PE	Voltage DC positive pole to earth	1	0		V		1.2.0
38	41074	2	F32	FC3	U_DC_NE	Voltage DC negative pole to earth	1	0		V		1.2.0
39	41076	2	F32	FC3	P_AC_SET_ABS	Absolute active power setpoint	1	0		W		2.6.0
40	41078	2	F32	FC3	P_AC_SET_REL	Relative active power setpoint	1	0		%		2.6.0
41	41080	2	F32	FC3	P_DC	Power DC	1	0		W		1.0.0
42	41082	2	F32	FC3	U_DC	Voltage DC	1	0		V		1.0.0
43	41084	2	F32	FC3	I_DC	Current DC total	1	0		A		1.0.0
44	41086 - 41089	4				Reserved					Unused. 0xFFFF	
45	41090	1	U16	FC3		MPPT Count	1	0	[1, 12]	---	MPPT Count: number of MPPTs at this Inverter	1.0.0
46	41091	1	U16	FC3		String Count	1	0	[1, 48]	---	String Count: total number of strings	1.0.0
47	41092-41099	8				Reserved					Unused. 0xFFFF	
48	41100 - 41xxx	2	F32	FC3	P_DC1-12	Power DC MPPT 1-12	1	0		W	<b>Repeating block:</b> Block of P_DCx, U_DCx and I_DCx will be repeated 12 times.  <b>Example:</b>  41100: P_DC1 41102: U_DC1 41104: I_DC1  41106: P_DC2 41108: U_DC2 41110: I_DC2  41112: P_DC3 41114: U_DC3 41116: I_DC3 ... 41166: P_DC12 41168: U_DC12 41170: I_DC12	1.0.0
49	41102 - 41xxx	2	F32	FC3	U_DC1-12	Voltage DC MPPT 1-12	1	0		V		
50	41104 - 41xxx	2	F32	FC3	I_DC1-12	Current DC MPPT 1-12	1	0		A		

Index	Address	Length in registers	Datatype	Function Code	Abbreviation	Description	Factor	Offset	Range	Unit	Comment	SCADA version
51	41172-41266	2	F32	FC3	I_DCx_y	Current DC MPPT x input y	1	0		A	<b>Repeating block:</b> 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  <b>Example:</b> 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	1.0.0  extended with 2.8.0
52	... - 41799					Reserved					Unused. 0xFFFF	
53	41800	2	F32	FC3	R_AC	Grid impedance	1	0		Ohm		2.9.0
54	41802-41998	197				Reserved					Unused. 0xFFFF	

WRITE VALUES (Function Code 16)

55	41999	1	U16	FC16	SCADA_START_STOP	Start/Stop individual Inverter	1	0		-	0 = Stop 1 = Start If driver does not offer the Start/Stop feature: ModbusException with ErrorCode 4	1.3.0
----	-------	---	-----	------	------------------	--------------------------------	---	---	--	---	---	-------

## Sensor

READ VALUES (Function Code 03)

Index	Address	Length in registers	Datatype	Abbreviation	Description	Factor	Offset	Range	Unit	Comment	SCADA version
1	42000	2	F32	E_W_D	Wind direction	1	0		°		1.0.0
2	42002	2	F32	E_W_S	Wind speed	1	0		m/s		1.0.0
3	42004	2	F32	E_ALT1	Altitude	1	0		m		1.0.0
4	42006	2	F32	E_PRECIPITATION	Precipitation type	1	0		---		1.0.0
5	42008	2	F32	E_RF_ABS1	Precipitation quantity absolute	1	0		mm		1.0.0
6	42010	2	F32	E_RF_I1	Precipitation intensity	1	0		mm/h		1.0.0
7	42012	2	F32	E_AH_ABS1	Humidity absolute 1	1	0		g/m <sup>2</sup>		1.0.0
8	42014	2	F32	E_AH_REL1	Humidity relative	1	0		%		1.0.0
9	42016	2	F32	E_AP_ABS1	Air pressure absolute	1	0		hPa		1.0.0
10	42018	2	F32	E_AP_REL1	Air pressure relative	1	0		hPa		1.0.0
11	42020	2	F32	E_IP_ABS	Internal air pressure	1	0		hPa		1.0.0
12	42022	2	F32	E_IH_REL	Internal relative humidity	1	0		%		1.0.0
13	42024	2	F32	E_F_S	Fan speed	1	0		rpm		1.0.0
14	42026	2	F32	E_DEWPOINT	Dewpoint	1	0		°C		2.18.0
15	42028-42029	2			Reserved					Unused. 0xFFFF	
16	42030	2	F32	SUN_H	Sunshine duration	1	0		h		1.0.0
17	42032	2	F32	E_TILT	Sensor tilt	1	0		°		1.0.0
18	42034	2	F32	E_SRAD	Global irradiation energy	1	0		Wh/m <sup>2</sup>		1.0.0
19	42036	2	F32	SRAD	Irradiance	1	0		W/m <sup>2</sup>		1.0.0
20	42038	2	F32	SRAD1	Irradiance 1	1	0		W/m <sup>2</sup>		1.0.0
21	42040	2	F32	SRAD2	Irradiance 2	1	0		W/m <sup>2</sup>		1.0.0
22	42042	2	F32	SRAD3	Irradiance 3	1	0		W/m <sup>2</sup>		1.0.0
23	42044	2	F32	SRAD4	Irradiance 4	1	0		W/m <sup>2</sup>		1.0.0
24	42046	2	F32	SRAD5	Irradiance 5	1	0		W/m <sup>2</sup>		1.0.0
25	42048	2	F32	T	Temperature	1	0		°C		1.0.0
26	42050	2	F32	T1	Temperature 1	1	0		°C		1.0.0
27	42052	2	F32	T2	Temperature 2	1	0		°C		1.0.0
28	42054	2	F32	T3	Temperature 3	1	0		°C		1.0.0
29	42056	2	F32	T4	Temperature 4	1	0		°C		1.0.0
30	42058	2	F32	T5	Temperature 5	1	0		°C		1.0.0
31	42060	2	F32	T6	Temperature 6	1	0		°C		1.0.0
32	42062	2	F32	T7	Temperature 7	1	0		°C		1.0.0
33	42064	2	F32	T8	Temperature 8	1	0		°C		1.0.0
34	42066	2	F32	T9	Temperature 9	1	0		°C		1.0.0
35	42068	2	F32	T10	Temperature 10	1	0		°C		1.0.0
36	42070	2	F32	T11	Temperature 11	1	0		°C		1.0.0
37	42072	2	F32	T12	Temperature 12	1	0		°C		1.0.0
38	42074	2	F32	T13	Temperature 13	1	0		°C		1.0.0
39	42076	2	F32	T14	Temperature 14	1	0		°C		1.0.0
40	42078	2	F32	T15	Temperature 15	1	0		°C		1.0.0
41	42080	2	F32	T16	Temperature 16	1	0		°C		1.0.0
42	42082	2	F32	T17	Temperature 17	1	0		°C		1.0.0
43	42084	2	F32	T18	Temperature 18	1	0		°C		1.0.0
44	42086	2	F32	T19	Temperature 19	1	0		°C		1.0.0
45	42088	2	F32	T20	Temperature 20	1	0		°C		1.0.0
46	42090	2	F32	I_SC1	Short circuit current 1	1	0		A		1.0.0
47	42092	2	F32	I_SC2	Short circuit current 2	1	0		A		1.0.0
48	42094	2	F32	SLI_RAW	Soiling loss raw	1	0		%		1.0.0
49	42096	2	F32	SLI	Soiling loss	1	0		%		1.0.0
50	42098	2	F32	SLI1	Soiling loss 1	1	0		%		1.0.0
51	42100	2	F32	SLI2	Soiling loss 2	1	0		%		1.0.0
52	42102	2	F32	E_RF_DIF	Differential precipitation	1	0		mm		1.1.0
53	42104	2	F32	E_RF_DIF1	Differential precipitation 1	1	0		mm		1.1.0
54	42106	2	F32	E_RF_DIF2	Differential precipitation 2	1	0		mm		1.1.0
55	42108	2	F32	E_RF_DIF3	Differential precipitation 3	1	0		mm		1.1.0
56	42110	2	F32	E_RF_DIF4	Differential precipitation 4	1	0		mm		1.1.0

Index	Address	Length in registers	Datatype	Abbreviation	Description	Factor	Offset	Range	Unit	Comment	SCADA version
57	42112	2	F32	E RF DIF5	Differential precipitation 5	1	0		mm		1.1.0
58	42114	2	F32	E W S MAX	Maximum wind speed	1	0		m/s		1.1.0
59	42116	2	F32	E W S1 MAX	Wind speed (sensor 1)	1	0		m/s		1.1.0
60	42118	2	F32	E W S2 MAX	Wind speed (sensor 2)	1	0		m/s		1.1.0
61	42120	2	F32	E W S3 MAX	Wind speed (sensor 3)	1	0		m/s		1.1.0
62	42122	2	F32	E W S4 MAX	Wind speed (sensor 4)	1	0		m/s		1.1.0
63	42124	2	F32	E W S5 MAX	Wind speed (sensor 5)	1	0		m/s		1.1.0
64	42126	2	F32	E W S1	Wind speed 1	1	0		m/s		x.y.z
65	42128	2	F32	E W S2	Wind speed 2	1	0		m/s		x.y.z
66	42130	2	F32	E W S3	Wind speed 3	1	0		m/s		x.y.z
67	42132	2	F32	E W S4	Wind speed 4	1	0		m/s		x.y.z
68	42134	2	F32	E W S5	Wind speed 5	1	0		m/s		x.y.z
69	42136	2	F32	E W D1	Wind direction 1	1	0		°		2.5.0
70	42138	2	F32	E W D2	Wind direction 2	1	0		°		2.5.0
71	42140	2	F32	E W D3	Wind direction 3	1	0		°		2.5.0
72	42142	2	F32	E W D4	Wind direction 4	1	0		°		2.5.0
73	42144	2	F32	E W D5	Wind direction 5	1	0		°		2.5.0
74	42146	2	F32	ILLUMINANCE	Illuminance	1	0		lx		2.15.0
75	42148-42149	2			Reserved					Unused. 0xFFFF	
76	42150	2	F32	E SNOW_DEPTH	Snow depth	1	0		m		1.0.0
77	42152	2	F32	SNOW_LOAD1	Snow load 1	1	0		g/m²		1.0.0
78	42154	2	F32	SNOW_LOAD2	Snow load 2	1	0		g/m²		1.0.0
79	42156	2	F32	SNOW_LOAD3	Snow load 3	1	0		g/m²		1.0.0
80	42158	2	F32	SNOW_LOAD4	Snow load 4	1	0		g/m²		1.0.0
81	42160-42169	10			Reserved					Unused. 0xFFFF	
82	42170	2	F32	WATER_DEPTH	Water depth	1	0		m		1.4.0
83	42172-42179	8			Reserved					Unused. 0xFFFF	
84	42180	2	F32	SR1	Soiling ratio 1	1	0		%		2.10.0
85	42182	2	F32	SR2	Soiling ratio 2	1	0		%		2.10.0
86	42184	2	F32	SR3	Soiling ratio 3	1	0		%		2.10.0
87	42186	2	F32	SR4	Soiling ratio 4	1	0		%		2.10.0
88	42188	2	F32	SR5	Soiling ratio 5	1	0		%		2.10.0
89	42190	2	F32	SR6	Soiling ratio 6	1	0		%		2.10.0
90	42192	2	F32	SR7	Soiling ratio 7	1	0		%		2.10.0
91	42194	2	F32	SR8	Soiling ratio 8	1	0		%		2.10.0
92	42196	2	F32	SR9	Soiling ratio 9	1	0		%		2.10.0
93	42198-42299	102			Reserved					Unused. 0xFFFF	
94	42300	2	F32	A IN1	Analog input 1	1	0				2.9.0
95	42302	2	F32	A IN2	Analog input 2	1	0				2.9.0
96	42304	2	F32	A IN3	Analog input 3	1	0				2.9.0
97	42306	2	F32	A IN4	Analog input 4	1	0				2.9.0
98	42306-42399				Reserved					Unused. 0xFFFF	2.19.0
99	42400	2	F32	E RF PARTICLES	Total precipitation particles	1	0				2.19.0
100	42402	2	F32	E DROPS TOTAL	Total drops	1	0				2.19.0
101	42404	2	F32	E DRIZZLE PARTICLES	Drizzle particles	1	0				2.19.0
102	42406	2	F32	E SNOW PARTICLES	Snow particles	1	0				2.19.0
103	42408	2	F32	E HAIL PARTICLES	Hail particles	1	0				2.19.0
104	42410	2	F32	E DROP COUNT 00 05	Drop size < 0.5 mm	1	0				2.19.0
105	42412	2	F32	E DROP COUNT 05 10	Drop size 0.5 ... 1.0 mm	1	0				2.19.0
106	42414	2	F32	E DROP COUNT 10 15	Drop size 1.0 ... 1.5 mm	1	0				2.19.0
107	42416	2	F32	E DROP COUNT 15 20	Drop size 1.5 ... 2.0 mm	1	0				2.19.0
108	42418	2	F32	E DROP COUNT 20 25	Drop size 2.0 ... 2.5 mm	1	0				2.19.0
109	42420	2	F32	E DROP COUNT 25 30	Drop size 2.5 ... 3.0 mm	1	0				2.19.0
110	42422	2	F32	E DROP COUNT 30 35	Drop size 3.0 ... 3.5 mm	1	0				2.19.0
111	42424	2	F32	E DROP COUNT 35 40	Drop size 3.5 ... 4.0 mm	1	0				2.19.0
112	42426	2	F32	E DROP COUNT 40 45	Drop size 4.0 ... 4.5 mm	1	0				2.19.0
113	42428	2	F32	E DROP COUNT 45 50	Drop size 4.5 ... 5.0 mm	1	0				2.19.0
114	42430	2	F32	E DROP COUNT 50 55	Drop size 5.0 ... 5.5 mm	1	0				2.19.0

Index	Address	Length in registers	Datatype	Abbreviation	Description	Factor	Offset	Range	Unit	Comment	SCADA version
115	42432	2	F32	E DROP COUNT 55	Drop size > 5.5 mm	1	0				2.19.0



## Meter

READ VALUES (Function Code 03)

Index	Address	Length in registers	Datatype	Abbreviation	Description	Factor	Offset	Range	Unit	Comment	SCADA version
1	43000	2	F32	M_AC_P	Power AC	1	0		W		1.0.0
2	43002	2	F32	M_AC_Q	Reactive power	1	0		VAr		1.0.0
3	43004	2	F32	M_AC_S	Apparent power	1	0		VA		1.0.0
4	43006	2	F32	M_AC_PF_COSPHI	Power factor (cos phi)	1	0		---		1.0.0
5	43008	2	F32	M_AC_U	Voltage AC	1	0		V		1.0.0
6	43010	2	F32	M_AC_I	Current AC	1	0		A		1.0.0
7	43012	2	F32	M_AC_I_N	Current neutral conductor	1	0		A		1.0.0
8	43014	2	F32	M_AC_F	Grid frequency	1	0		Hz		1.0.0
9	43016	2	F32	M_AC_P1	Power AC phase 1	1	0		W		1.0.0
10	43018	2	F32	M_AC_P2	Power AC phase 2	1	0		W		1.0.0
11	43020	2	F32	M_AC_P3	Power AC phase 3	1	0		W		1.0.0
12	43022	2	F32	M_AC_Q1	Reactive power phase 1	1	0		VAr		1.0.0
13	43024	2	F32	M_AC_Q2	Reactive power phase 2	1	0		VAr		1.0.0
14	43026	2	F32	M_AC_Q3	Reactive power phase 3	1	0		VAr		1.0.0
15	43028	2	F32	M_AC_S1	Apparent power phase 1	1	0		VA		1.0.0
16	43030	2	F32	M_AC_S2	Apparent power phase 2	1	0		VA		1.0.0
17	43032	2	F32	M_AC_S3	Apparent power phase 3	1	0		VA		1.0.0
18	43034	2	F32	M_AC_PF_COSPHI1	Power factor (cos phi) phase 1	1	0		---		1.0.0
19	43036	2	F32	M_AC_PF_COSPHI2	Power factor (cos phi) phase 2	1	0		---		1.0.0
20	43038	2	F32	M_AC_PF_COSPHI3	Power factor (cos phi) phase 3	1	0		---		1.0.0
21	43040	2	F32	M_AC_U1	Voltage AC phase 1	1	0		V		1.0.0
22	43042	2	F32	M_AC_U2	Voltage AC phase 2	1	0		V		1.0.0
23	43044	2	F32	M_AC_U3	Voltage AC phase 3	1	0		V		1.0.0
24	43046	2	F32	M_AC_U_L1L2	Phase voltage L1L2	1	0		V		1.0.0
25	43048	2	F32	M_AC_U_L2L3	Phase voltage L2L3	1	0		V		1.0.0
26	43050	2	F32	M_AC_U_L3L1	Phase voltage L3L1	1	0		V		1.0.0
27	43052	2	F32	M_AC_I1	Current AC phase 1	1	0		A		1.0.0
28	43054	2	F32	M_AC_I2	Current AC phase 2	1	0		A		1.0.0
29	43056	2	F32	M_AC_I3	Current AC phase 3	1	0		A		1.0.0
30	43058	2	F32	M_AC_F1	Grid frequency phase 1	1	0		Hz		1.0.0
31	43060	2	F32	M_AC_F2	Grid frequency phase 2	1	0		Hz		1.0.0
32	43062	2	F32	M_AC_F3	Grid frequency phase 3	1	0		Hz		1.0.0
33	43064	2	F32	M_AC_E_EXP	Active energy (export)	1	0		Wh		1.0.0
34	43066	2	F32	M_AC_E_IMP	Active energy (import)	1	0		Wh		1.0.0
35	43068	2	F32	M_AC_ES_EXP	Apparent energy (exported)	1	0		VAh		1.0.0
36	43070	2	F32	M_AC_ES_IMP	Apparent energy (imported)	1	0		VAh		1.0.0
37	43072	2	F32	E_INT	Energy generated per interval	1	0		Wh	only for S0 meters	1.0.0
38	43074	2	F32	E_INT_MINUTE	Energy generated last minute	1	0		Wh	only for S0 meters	1.4.0
39	43076	2	U32	TIMESTAMP	TIMESTAMP last minute	1	0		s	UNIX Timestamp from previous minute interval (Last change of E_INT_MINUTE)	1.4.0
40	43078	2	F32	M_AC_E_EXP_T1	Active energy for Tariff 1 (export)	1	0		Wh		2.5.0
41	43080	2	F32	M_AC_E_EXP_T2	Active energy for Tariff 2 (export)	1	0		Wh		2.5.0
42	43082	2	F32	M_AC_E_IMP_T1	Active energy for Tariff 1 (import)	1	0		Wh		2.5.0
43	43084	2	F32	M_AC_E_IMP_T2	Active energy for Tariff 2 (import)	1	0		Wh		2.5.0
44	43086	2	F32	M_AC_EQ_CAP_EXP	Reactive energy (capacitive export)	1	0		VArh		2.5.0

Index	Address	Length in registers	Datatype	Abbreviation	Description	Factor	Offset	Range	Unit	Comment	SCADA version
45	43088	2	F32	M_AC_EQ_CAP_IMP	Reactive energy (capacitive import)	1	0		VArh		2.5.0
46	43090	2	F32	M_AC_EQ_IND_EXP	Reactive energy (inductive export)	1	0		VArh		2.5.0
47	43092	2	F32	M_AC_EQ_IND_IMP	Reactive energy (inductive import)	1	0		VArh		2.5.0
48	43094	2	F32	M_AC_E_MONTH_EXP	Active energy monthly (export)	1	0		Wh		2.5.0
49	43096	2	F32	M_AC_E_MONTH_IMP	Active energy monthly (import)	1	0		Wh		2.5.0
50	43098	2	F32	M_AC_P_DEMAND	Active power demand	1	0		W		2.5.0
51	43100	2	F32	M_AC_P_DEMAND_T1	Active power demand (Tariff 1)	1	0		W		2.5.0
52	43102	2	F32	M_AC_P_DEMAND_T2	Active power demand (Tariff 2)	1	0		W		2.5.0
53	43104	2	F32	M_AC_Q_DEMAND	Reactive power demand	1	0		VAr		2.5.0
54	43106	2	F32	M_AC_Q_DEMAND_T1	Reactive power demand (Tariff 1)	1	0		VAr		2.5.0
55	43108	2	F32	M_AC_Q_DEMAND_T2	Reactive power demand (Tariff 2)	1	0		VAr		2.5.0
56	43110	2	F32	M_AC_S_DEMAND	Apparent power demand	1	0		VA		2.5.0
57	43112	2	F32	M_AC_S_DEMAND_T1	Apparent power demand (Tariff 1)	1	0		VA		2.5.0
58	43114	2	F32	M_AC_S_DEMAND_T2	Apparent power demand (Tariff 2)	1	0		VA		2.5.0
59	43116	2	F32	M_AC_EQ_CAP_EXP_T1	Negative - reactive energy capacitive exported (Tariff 1)	1	0		VArh		2.5.0
60	43118	2	F32	M_AC_EQ_CAP_EXP_T2	Negative - reactive energy capacitive exported (Tariff 2)	1	0		VArh		2.5.0
61	43120	2	F32	M_AC_EQ_CAP_IMP_T1	Positive - Reactive Energy capacitive imported (Tariff 1)	1	0		VArh		2.5.0
62	43122	2	F32	M_AC_EQ_CAP_IMP_T2	Positive - reactive energy capacitive imported (Tariff 2)	1	0		VArh		2.5.0
63	43124	2	F32	M_AC_EQ_IND_EXP_T1	Positive - reactive energy inductive exported (Tariff 1)	1	0		VArh		2.5.0
64	43126	2	F32	M_AC_EQ_IND_EXP_T2	Positive - reactive energy inductive exported (Tariff 2)	1	0		VArh		2.5.0
65	43128	2	F32	M_AC_EQ_IND_IMP_T1	Positive - reactive energy inductive imported (Tariff 1)	1	0		VArh		2.5.0
66	43130	2	F32	M_AC_EQ_IND_IMP_T2	Positive - reactive energy inductive imported (Tariff 2)	1	0		VArh		2.5.0
67	43132	2	F32	M_AC_EQ_EXP	Reactive energy (export)	1	0		Varh		2.7.0
68	43134	2	F32	M_AC_EQ_IMP	Reactive energy (import)	1	0		Varh		2.7.0
69	43136	2	F32	M_AC_EQ_TOTAL	Reactive energy total	1	0		Varh		2.10.0
70	43138	2	F32	M_AC_U_N	Zero phase voltage	1	0		V		2.14.0
71	43140	2	F32	M_AC_OT_TOTAL	Operation Time TOTAL	1	0		h		2.16.0
72	43200	2	F32	M_DC_P	Power DC	1	0		W		2.13.0
73	43202	2	F32	M_DC_U	Voltage DC	1	0		V		2.13.0
74	43204	2	F32	M_DC_I	Current DC	1	0		A		2.13.0
75	43206	2	F32	M_DC_E_EXP	Energy DC (export)	1	0		Wh		2.13.0
76	43208	2	F32	M_DC_E_IMP	Energy DC (import)	1	0		Wh		2.13.0
77	43210-43299	90			Reserved					Unused. 0xFFFF	
78	43300	2	F32	M_EV_E_EXP	Consumption of charging infrastructure	1	0		Wh		2.9.0
79	43302-43399	98			Reserved					Unused. 0xFFFF	
80	43400-43416	2	F32	M_AC_E_EXP_T1-9	Active energy for Tariff 1-9 (export)	1	0		Wh		2.11.0
81	43418-43419	2			Reserved					Unused. 0xFFFF	
82	43420-43436	2	F32	M_AC_E_IMP_T1-9	Active energy for Tariff 1-9 (import)	1	0		Wh		2.11.0

Index	Address	Length in registers	Datatype	Abbreviation	Description	Factor	Offset	Range	Unit	Comment	SCADA version
83	43438-43439	2			Reserved					Unused. 0xFFFF	
84	43440-43456	2	F32	M_AC_EQ_EXP_T1-9	Reactive energy for Tariff 1-9 (export)	1	0		VArh		2.11.0
85	43458-43459				Reserved					Unused. 0xFFFF	
86	43460-43476	2	F32	M_AC_EQ_IMP_T1-9	Reactive energy for Tariff 1-9 (import)	1	0		VArh		2.11.0
87	43478-43479				Reserved					Unused. 0xFFFF	
88	43480-43496	2	F32	M_AC_ES_EXP_T1-9	Apparent energy for Tariff 1-9 (export)	1	0		VAh		2.11.0
89	43498-43499	2			Reserved					Unused. 0xFFFF	
90	43500-43516	2	F32	M_AC_ES_IMP_T1-9	Apparent energy for Tariff 1-9 (import)	1	0		VAh		2.11.0

## String monitoring

READ VALUES (Function Code 03)

Index	Address	Length in registers	Datatype	Abbreviation	Description	Factor	Offset	Range	Unit	Comment	SCADA version
1	44000	2	F32	P_DC	Power DC	1	0		W		1.0.0
2	44002	2	F32	U_DC	Voltage DC	1	0		V		1.0.0
3	44004	2	F32	I_SUM	Sum of currents	1	0		A		1.0.0
4	44006 - 44028	23			Reserved					Unused. 0xFFFF	
5	44029	1	U16	---	String count	1	0	[1, 40]	-	String count: number of strings	1.0.0
6	44030 - 44xxx		F32	I1-x	Current1-x				A	<b>Repeating block:</b> Repeats for each string.  <b>Example:</b>  String count (Reg 44029) = 6  44030: I1 44032: I2 44034: I3 44036: I4 44038: I5 44040: I6	1.0.0

## Status DI internal\_external

READ VALUES (Function Code 03)

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

Index	Address	Length in Registers	Datatype	Description	Factor/Offset	Comment	SCADA version
1	40000	1	U16	BM: DI-1	0	Values: 0x0000: Normal state 0x0001: Active state 0xFFFF: Not available	1.0.0
2	40001	1	U16	BM: DI-2	0		1.0.0
3	40002	1	U16	BM: DI-3	0		1.0.0
4	40003	1	U16	BM: DI-4	0		1.0.0
5	40004	1	U16	BM: MI-1	0		1.0.0
6	40005	1	U16	BM: MI-2	0		1.0.0
7	40006	1	U16	BM: MI-3	0		1.0.0
8	40007	1	U16	BM: MI-4	0		1.0.0
9	40008	1	U16	MX-1: MI-1	0		1.0.0
10	40009	1	U16	MX-1: MI-2	0		1.0.0
11	40010	1	U16	MX-1: MI-3	0		1.0.0
12	40011	1	U16	MX-1: MI-4	0		1.0.0
13	40012	1	U16	MX-2: MI-1	0		1.0.0
14	40013	1	U16	MX-2: MI-2	0		1.0.0
15	40014	1	U16	MX-2: MI-3	0		1.0.0
16	40015	1	U16	MX-2: MI-4	0		1.0.0
17	40016	1	U16	MX-3: MI-1	0		1.0.0
18	40017	1	U16	MX-3: MI-2	0		1.0.0
19	40018	1	U16	MX-3: MI-3	0		1.0.0
20	40019	1	U16	MX-3: MI-4	0		1.0.0
21	40020	1	U16	MX-4: MI-1	0		1.0.0
22	40021	1	U16	MX-4: MI-2	0		1.0.0
23	40022	1	U16	MX-4: MI-3	0		1.0.0
24	40023	1	U16	MX-4: MI-4	0		1.0.0
25	40024	1	U16	MX-5: MI-1	0		1.0.0
26	40025	1	U16	MX-5: MI-2	0		1.0.0
27	40026	1	U16	MX-5: MI-3	0		1.0.0
28	40027	1	U16	MX-5: MI-4	0		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 client ID (SCADA address) 98.

Index	Address	Length in Registers	Datatype	Description	Factor/offset	Comment	SCADA version
1	30000	1	U16	BM: DO-1	0	You must first assign	2.12.0
2	30001	1	U16	BM: DO-2	0	digital outputs on the	2.12.0
3	30002	1	U16	BM: DO-3	0	blue'Log under	2.12.0
4	30003	1	U16	BM: DO-4	0	<b>Devices &gt; Digital</b>	2.12.0
5	30004	1	U16	MX-1: DO-1	0	<b>output &gt; Activation &gt;</b>	2.12.0
6	30005	1	U16	MX-1: DO-2	0	Select <b>SCADA</b>	2.12.0
7	30006	1	U16	MX-1: DO-3	0	<b>interface.</b>	2.12.0
8	30007	1	U16	MX-1: DO-4	0		2.12.0
9	30008	1	U16	MX-2: DO-1	0	Commands: 0x0000	2.12.0
10	30009	1	U16	MX-2: DO-2	0	and 0x0001	2.12.0
11	30010	1	U16	MX-2: DO-3	0		2.12.0
12	30011	1	U16	MX-2: DO-4	0	The signal to activate a	2.12.0
13	30012	1	U16	MX-3: DO-1	0	digital output via	2.12.0
14	30013	1	U16	MX-3: DO-2	0	SCADA interface must	2.12.0
15	30014	1	U16	MX-3: DO-3	0	be sent at least once	2.12.0
16	30015	1	U16	MX-3: DO-4	0	every 60 seconds. If the	2.12.0
17	30016	1	U16	MX-4: DO-1	0	blue'Log does not	2.12.0
18	30017	1	U16	MX-4: DO-2	0	receive a signal within	2.12.0
19	30018	1	U16	MX-4: DO-3	0	60 seconds the digital	2.12.0
20	30019	1	U16	MX-4: DO-4	0	output will switch off.	2.12.0
21	30020	1	U16	MX-5: DO-1	0		2.12.0
22	30021	1	U16	MX-5: DO-2	0		2.12.0
23	30022	1	U16	MX-5: DO-3	0		2.12.0
24	30023	1	U16	MX-5: DO-4	0		2.12.0

## Tracker

READ VALUES via TCP port 503 (Function Code 03)

Index	Address	Length in registers	Datatype	Abbreviation	Description	Factor	Offset	Range	Unit	Comment	SCADA version
1	45000	2	F32	ELEVATION	Elevation	1	0		°		2.1.0
2	45002	2	F32	ELEVATION_TARGET	Elevation target value	1	0		°		2.1.0
3	45004	2	F32	ELEVATION_MANUAL	Elevation manually	1	0		°		2.1.0
4	45006	2	F32	AZIMUTH	Azimuth	1	0		°		2.1.0
5	45008	2	F32	AZIMUTH_TARGET	Azimuth target value	1	0		°		2.1.0
6	45010	2	F32	AZIMUTH_MANUAL	Azimuth manually	1	0		°		2.1.0
7	45012	2	F32	I_MOTOR	Tracker motor current	1	0		A		2.20.0
8	45014	2	F32	U_PANEL	Tracker panel voltage	1	0		V		2.20.0
9	45016 - 45099	84	F32		Reserved					Unused 0xFFFF	2.20.0
10	45100	2	F32	TB_SOC	Tracker battery SOC	1	0		%		2.20.0
11	45102	2	F32	TB_SOH	Tracker battery SOH	1	0		%		2.20.0
12	45104	2	F32	TB_REM_CAP	Tracker battery remaining capacity	1	0		mAh		2.20.0
13	45106	2	F32	TB_CAPACITY	Tracker battery full capacity	1	0		mAh		2.20.0
14	45108	2	F32	TB_U	Tracker battery voltage	1	0		V		2.20.0
15	45110	2	F32	TB_I	Tracker battery current	1	0		A		2.20.0

## Genset

READ VALUES (Function Code 03)

Index	Address	Length in registers	Datatype	Abbreviation	Description	Factor	Offset	Range	Unit	Comment	SCADA version
1	47000	2	F32	P_AC	Power AC	1	0		W		2.8.0
2	47002	2	F32	Q_AC	Reactive power	1	0		VAr		2.8.0
3	47004	2	F32	S_AC	Apparent power	1	0		VA		2.8.0
4	47006	2	F32	COS_PHI	Power factor (cos phi)	1	0		---		2.8.0
5	47008	2	F32	U_AC	Voltage AC	1	0		V		2.8.0
6	47010	2	F32	I_AC	Current AC	1	0		A		2.8.0
7	47012	2	F32	F_AC	Grid frequency	1	0		Hz		2.8.0
8	47014	2	F32	P_AC1	Power AC phase 1	1	0		W		2.8.0
9	47016	2	F32	P_AC2	Power AC phase 2	1	0		W		2.8.0
10	47018	2	F32	P_AC3	Power AC phase 3	1	0		W		2.8.0
11	47020	2	F32	Q_AC1	Reactive power phase 1	1	0		VAr		2.8.0
12	47022	2	F32	Q_AC2	Reactive power phase 2	1	0		VAr		2.8.0
13	47024	2	F32	Q_AC3	Reactive power phase 3	1	0		VAr		2.8.0
14	47026	2	F32	S_AC1	Apparent power phase 1	1	0		VA		2.8.0
15	47028	2	F32	S_AC2	Apparent power phase 2	1	0		VA		2.8.0
16	47030	2	F32	S_AC3	Apparent power phase 3	1	0		VA		2.8.0
17	47032	2	F32	COS_PHI1	Power factor (cos phi) phase 1	1	0		---		2.8.0
18	47034	2	F32	COS_PHI2	Power factor (cos phi) phase 2	1	0		---		2.8.0
19	47036	2	F32	COS_PHI3	Power factor (cos phi) phase 3	1	0		---		2.8.0
20	47038	2	F32	U_AC1	Voltage AC phase 1	1	0		V		2.8.0
21	47040	2	F32	U_AC2	Voltage AC phase 2	1	0		V		2.8.0
22	47042	2	F32	U_AC3	Voltage AC phase 3	1	0		V		2.8.0
23	47044	2	F32	U_AC_L1L2	Phase voltage L1L2	1	0		V		2.8.0
24	47046	2	F32	U_AC_L2L3	Phase voltage L2L3	1	0		V		2.8.0
25	47048	2	F32	U_AC_L3L1	Phase voltage L3L1	1	0		V		2.8.0
26	47050	2	F32	I_AC1	Current AC phase 1	1	0		A		2.8.0
27	47052	2	F32	I_AC2	Current AC phase 2	1	0		A		2.8.0
28	47054	2	F32	I_AC3	Current AC phase 3	1	0		A		2.8.0
29	47056	2	F32	F_AC1	Grid frequency phase 1	1	0		Hz		2.8.0
30	47058	2	F32	F_AC2	Grid frequency phase 2	1	0		Hz		2.8.0
31	47060	2	F32	F_AC3	Grid frequency phase 3	1	0		Hz		2.8.0
32	47062 - 47091	32			Reserved					Unused. 0xFFFF	2.8.0
33	47092	2	F32	P_AC_SET_ABS	Absolute active power setpoint	1	0		W		2.9.0
34	47094	2	F32	P_AC_SET_REL	Relative active power setpoint	1	0		%		2.9.0
35	47096	2	F32	Q_AC_SET_ABS	Absolute reactive power setpoint	1	0		VAr		2.9.0
36	47098	2			Reserved					Unused. 0xFFFF	
37	47100	2	F32	E_TOTAL	Total yield	1	0		Wh		2.8.0
38	47102	2	F32	OT_TOTAL	Operation hours	1	0		h		2.8.0
39	47104	2	F32	OT_REMAINING	Operation hours remaining	1	0		h		2.8.0
40	47106 - 47109	4			Reserved					Unused. 0xFFFF	2.8.0
41	47110	2	F32	FUEL_CONSUMPTION	Fuel consumption	1	0		l/h		2.8.0
42	47112	2	F32	FUEL_REMAINING	Fuel remaining	1	0		%		2.8.0
43	47114	2	F32	FUEL EFFICIENCY	Fuel efficiency	1	0		Wh/l		2.8.0



## blue'Log

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

Index	Address	Length in registers	Data type	Function code	Abbreviation	Description	Factor	Offset	Range	Unit	Comment	SCADA version
1	10000	2	F32	FC3	P_AC_INV_SUM	Sum of all inverters Power AC				W	blue'Log XC as Master sums up also the inverters from the connected slaves	2.17.0

### 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

### ERROR CODES - 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