Operating Manual

for professionals

ModBUS

Pelletronic TOUCH
ENGLISH

PE723EN

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1 ModBUS

General description

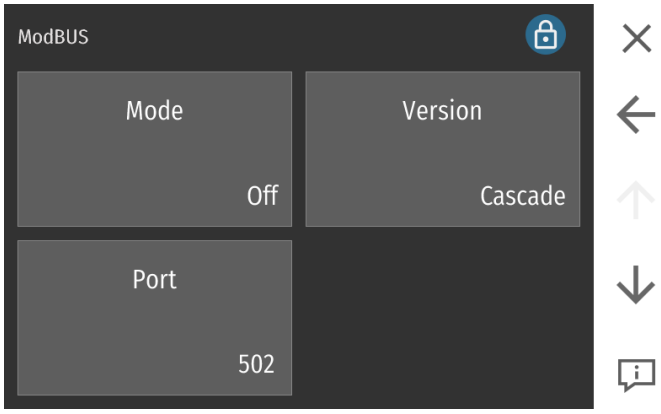
The Modbus TCP establishes a client-server communication (one or more clients/ masters query one or more servers/slaves).

Requirements

The Smarthome system and the heating circuit controller must be in the same local network.
Also, the IP addresses must be from the same IP range.
The IP addresses can be assigned via DHCP.

The ModBUS protocol is a communication protocol based on a master/slave or client/server architecture.

ModBUS is in the menu General.



Note:
Periodic write requests on the Modbus interface can have a negative effect on the lifetime of the touch operating device.

Off: ModBUS inactive

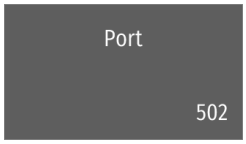
TCP Server Connection can be established with the Touch operating device.

Version 0: ModBUS-Version for software version V2.03.

Kaskade: Cascade control via ModBUS (from software version V2.05).

Home Auto.: Interface for Home Automation.

Home Simpl.: Interface for Home Simpl. Automation
(simplified version of the Home Automation interface)



Default port for ModBUS is 502.

ModBUS Variables:

Reg	Variable	r/w	Unit	Range	Description	
					EXTERNAL_CASCADE_CONTR 0	EXTERNAL_CASCADE_CONTR 1
1	VERSION	r/w		0..1	(0) V2.03 compatible (1) current	
2	AMBIENT TEMP	r	1/10°C		Ambient Temperature	
3	PLANT_MODE	r/w		0..2	(0) Off (1) Auto (2) Domestic Hot Water	
5	FA_COUNT	r		1..4	Number of connected FA	
6	PU_COUNT	r		0..3	Number of connected Accu	
10	ERROR 1	r			See error description	
11	ERROR 2	r			See error description	
12	ERROR 3	r			See error description	
13	ERROR 4	r			See error description	
14	ERROR 5	r			See error description	
15	EXTERNAL_CASCADE_CONTR	r/w		0..1	(0) Oekofen Touch Controlled	(1) Modbus Controlled
16	CASCADE_SET	r/w	1/10°C	8°C .. 90°C	Cascade set temperature	no function
17	CASCADE_ON_TEMP	r	1/10°C		Cascade Sensor (R1 on FA)	Temp R1
18	CASCADE_OFF_TEMP	r	1/10°C		Cascade Sensor (R1/R2 on FA)	Temp R2
20	FA1_MODE 1	r/w		0..2	(0) Off (1) Auto (2) On	
21	FA_TEMP	r	1/10°C		Current boiler temperature	
22	FA_TEMP_SET	r/w	1/10°C	8°C .. 90°C	Set temp for boiler (r)	Set temp for boiler (r/w)
23	MODULATION	r	%	30% .. 100%	Modulation	
24	STATE	r		0 .. 99	Boilerstate	
25	FA_REGEL_TEMP	r/w	1/10°C	28°C .. 85°C	Boiler default temperature	
26	FA_OFF_TEMP	r/w	1/10°C	35°C .. 90°C	Boiler switch off temperature	

Reg	Variable	r/w	Unit	Range	Description	
					EXTERNAL_CASCADE_ CONTR 0	EXTERNAL_CASCADE_ CONTR 1
27	FA_UW_TEMP_O N	r/w	1/10°C	20°C .. 90°C	Pump switch temperature	
28	FA_UW_POST-RUN	r/w	min	0 .. 50 min	Postrun of pump	
29	FA_UW_REG_RA NGE	r/w	1/10°C	2K .. 15K	UW regulation range	
30	FA_UW_MIN_RP M	r/w	%	10% .. 70%	Lower speed limit of UW pump	
31	FA_RUNTIME	r	h		total burner runtime	
32	FA_STARTS	r			total burner starts	
33	FA_TYPE	r	kW	see boiler-type	boilertype	
34	FA_POWER	r/w		8 .. 56	current boiler power setting	
35	FA_ENERGY_HO LD	r		100 / -100	-100 if boilertemp > max temp / 100 if boilertemp < pump temp	
36	FA_MAINTE-NANCE	r/w		0 .. 1	Maintenance (0 restarts Maintenance Intervall)	
37	FA_MODE 2	r/w		0..2	(0) Off (1) Auto (2) On	
38	FA_TEMP	r	1/10°C		Current boiler temperature	
39	FA_TEMP_SET	r/w	1/10°C	8°C .. 90°C	Set temp for boiler (r)	Set temp for boiler (r/w)
40	MODULATION	r	%	30% .. 100%	Modulation	
41	STATE	r		0 .. 99	Boilerstate	
42	FA_REGEL_TEMP	r/w	1/10°C	28°C .. 85°C	Boiler default temperature	
43	FA_OFF_TEMP	r/w	1/10°C	35°C .. 90°C	Boiler switch off temperature	
44	FA_UW_TEMP_O N	r/w	1/10°C	20°C .. 90°C	Pump switch temperature	
45	FA_UW_POST-RUN	r/w	min	0 .. 50 min	Postrun of pump	
46	FA_UW_REG_RA NGE	r/w	1/10°C	2K .. 15K	UW regulation range	
47	FA_UW_MIN_RP M	r/w	%	10% .. 70%	Lower speed limit of UW pump	

Reg	Variable	r/w	Unit	Range	Description	
					EXTERNAL_CASCADE_ CONTR 0	EXTERNAL_CASCADE_ CONTR 1
48	FA_RUNTIME	r	h		total burner runtime	
49	FA_STARTS	r			total burner starts	
50	FA_TYPE	r	kW	see boiler-type	boilertype	
51	FA_POWER	r/w		8 .. 56	current boiler power setting	
52	FA_ENERGY_HOLD	r		100 / -100	-100 if boilertemp > max temp / 100 if boilertemp < pump temp	
53	FA_MAINTE-NANCE	r/w		0 .. 1	Maintenance (0 restarts Maintenance Intervall)	
54	FA_MODE 3	r/w		0..2	(0) Off (1) Auto (2) On	
55	FA_TEMP	r	1/10°C		Current boiler temperature	
56	FA_TEMP_SET	r/w	1/10°C	8°C .. 90°C	Set temp for boiler (r)	Set temp for boiler (r/w)
57	MODULATION	r	%	30% .. 100%	Modulation	
58	STATE	r		0 .. 99	Boilerstate	
59	FA_REGEL_TEMP	r/w	1/10°C	28°C .. 85°C	Boiler default temperature	
60	FA_OFF_TEMP	r/w	1/10°C	35°C .. 90°C	Boiler switch off temperature	
61	FA_UW_TEMP_ON	r/w	1/10°C	20°C .. 90°C	Pump switch temperature	
62	A_UW_POSTRUN	r/w	min	0 .. 50 min	Postrun of pump	
63	A_UW_REG_RANGE	r/w	1/10°C	2K .. 15K	UW regulation range	
64	FA_UW_MIN_RPM	r/w	%	10% .. 70%	Lower speed limit of UW pump	
65	FA_RUNTIME	r	h	0	total burner runtime	
66	FA_STARTS	r			total burner starts	
67	FA_TYPE	r	kW	see boiler-type	boilertype*	
68	FA_POWER	r/w		8 .. 56	current boiler power setting	

Reg	Variable	r/w	Unit	Range	Description	
					EXTERNAL_CASCADE_ CONTR 0	EXTERNAL_CASCADE_ CONTR 1
69	FA_ENERGY_HO LD	r		100 / -100	-100 if boilertemp > max temp / 100 if boilertemp < pump temp	
70	FA_MAINTE-NANCE	r/w		0 .. 1	Maintenance (0 restarts Maintenance Intervall)	
71	FA_MODE 4	r/w		0..2	(0) Off (1) Auto (2) On	
72	FA_TEMP	r	1/10°C		Current boiler temperature	
73	FA_TEMP_SET	r/w	1/10°C	8°C .. 90°C	Set temp for boiler (r)	Set temp for boiler (r/w)
74	MODULATION	r	%	30% .. 100%	Modulation	
75	STATE	r		0 .. 99	Boilerstate	
76	FA_REGEL_TEMP	r/w	1/10°C	28°C .. 85°C	Boiler default temperature	
77	FA_OFF_TEMP	r/w	1/10°C	35°C .. 90°C	Boiler switch off temperature	
78	FA_UW_TEMP_O N	r/w	1/10°C	20°C .. 90°C	Pump switch temperature	
79	FA_UW_POST-RUN	r/w	min	0 .. 50 min	Postrun of pump	
80	FA_UW_REG_RA NGE	r/w	1/10°C	2K .. 15K	UW regulation range	
81	FA_UW_MIN_RP M	r/w	%	10% .. 70%	Lower speed limit of UW pump	
82	FA_RUNTIME	r	h	0	total burner runtime	
83	FA_STARTS	r			total burner starts	
84	FA_TYPE	r	kW	see boiler-type	boilertype	
85	FA_POWER	r/w		8 .. 56	current boiler power setting	
86	FA_ENERGY_HO LD	r		100 / -100	-100 if boilertemp > max temp / 100 if boilertemp < pump temp	
87	FA_MAINTE-NANCE	r/w		0 .. 1	Maintenance (0 restarts Maintenance Intervall)	
88	PU_TPO_IST	r	1/10°C		current upper temp	no function
89	PU_TPM_IST	r	1/10°C		current middle temp	no function

Reg	Variable	r/w	Unit	Range	Description	
					EXTERNAL_CASCADE_ CONTR 0	EXTERNAL_CASCADE_ CONTR 1
90	PU_MIN-TEMP_ON	r/w	1/10°C	8 .. 90°C	min switch on temp	no function
91	PU_MIN-TEMP_OFF	r/w	1/10°C	8 .. 90°C	max switch off temp	no function
92	PU_PUMPTEMP	r/w	1/10°C	10 .. 80°C	pump switch on temp	no function
93	PU_HYSTERESIS	r/w	1/10°C	1 .. 10°C	pump regulation hyst.	no function
94	PU_POSTRUN	r/w	min	0 .. 50 min	post run time	no function
96	PU_TPO_IST	r	1/10°C		current upper temp	no function
97	PU_TPM_IST	r	1/10°C		current middle temp	no function
98	PU_MIN-TEMP_ON	r/w	1/10°C	8 .. 90°C	min switch on temp	no function
99	PU_MIN-TEMP_OFF	r/w	1/10°C	8 .. 90°C	max switch off temp	no function
100	PU_PUMPTEMP	r/w	1/10°C	10 .. 80°C	pump switch on temp	no function
101	PU_HYSTERESIS	r/w	1/10°C	1 .. 10°C	pump regulation hyst.	no function
102	PU_POSTRUN	r/w	min	0 .. 50 min	post run time	no function
104	PU_TPO_IST	r	1/10°C		current upper temp	no function
105	PU_TPM_IST	r	1/10°C		current middle temp	no function
106	PU_MIN-TEMP_ON	r/w	1/10°C	8 .. 90°C	min switch on temp	no function
107	PU_MIN-TEMP_OFF	r/w	1/10°C	8 .. 90°C	max switch off temp	no function
108	PU_PUMPTEMP	r/w	1/10°C	10 .. 80°C	pump switch on temp	no function
109	PU_HYSTERESIS	r/w	1/10°C	1 .. 10°C	pump regulation hyst.	no function
110	PU_POSTRUN	r/w	min	0 .. 50 min	post run time	no function

Reg	Variable	r/w	Unit	Range	Description	
					EXTERNAL_CASCADE_CONTR 0	EXTERNAL_CASCADE_CONTR 1
112	ST_CURRENT	r	W		Current Stirling Power	
114	ST_TODAY	r	Wh		Todays Stirling Power	
115	ST_YESTERDAY	r	Wh		Yesterdays Stirling Power	
116	ST_STATE	r			Current state	
117	ST_RUNTIME	r			Total Stirling Runtime	
118	ST_STARTS	r			Stirling starts	
119	ST_ERRORCODE	r			Errorcode	
120	ST_FORCE_POWER	r/w		0 .. 1	If set to 1 buffer will be loaded to force temp	
121	ST_FORCE_TEMP	r/w	1/10°C	40 .. 85 °C	set temperature of buffer if forced run	

*Boiler Mode	
0	Cont. run
1	Start
2	Ignition
3	Softstart
4	Powerburn
5	Shutdown
6	Off
7	Suction
8	Ash Clean
9	Pellets
10	Pellets Switch
11	Error
12	Calibrate
13..99	Offus

*Boilertype (UNSIGNED Integer)	
digit	
1*	(0)PE, (1)PES, (2)PEK, (3)PESK, (4)SMART V1, (5)SMART V2, (6)PEK2
2*, 3	min Power in kW
4, 5	max Power in kW

* if only 3, 4 digit, boilertype = 0

**Error description (UNSIGNED Integer)	
digit	
1, 2, 3, 4,	Errorcode (see error manual)
5	Index of Boiler/Accu starting at 0

ModBUS Variables Home Automation:

Reg	Variable	r/w	Unit	Range	Description
1	VERSION	r/w		0..2	(0) V2.03 compatible (1) Cascade (2) Home Automation
2	AMBIENT TEMP	r	1/10°C		Ambient Temperature
3	PLANT_MODE	r/w		0..2	(0) Off (1) Auto (2) Domestic Hot Water
4	IO-BOX INDEX	r/w		0..2	Switch between the IO Boxes
5	ERROR 1	r			See error description
6	ERROR 2	r			See error description
7	ERROR 3	r			See error description
8	ERROR 4	r			See error description
9	ERROR 5	r			See error description
10	Heating Circuit Index	r		0,1,3,5	(0) not available, else index
11	HC Mode	r/w		0 .. 3	(0) Off, (1) Auto, (2) Heat, (3) Set-back
12	HC Heating Temp	r/w	1/10°C	5°C .. 40°C	Heating Temperature
13	HC Setback Temp	r/w	1/10°C	5°C .. 40°C	Setback Temperature
14	HC Remote Control Override	r	1/10°C	-5°C .. 5°C	Remote control override
15	HC State	r			*See Description
16	HC External Demand	r/w		0..2	(0) Off, (1) External On, (2) External Inverted (if learned)
17	HC Eco Mode	r/w		0..3	(0)Off, (1)Comfort, (2)Minimum, (3) Eco
18	HC Time Program	r/w		0..1	Current Time Program
19	HC Current Room Set Temp	r	1/10°C		Current set temp
20	HC Current Room Temp	r	1/10°C		Current room temp
21	HC Current Flow Temp Set	r	1/10°C		Current flow temp set
22	HC Current Flow Temp	r	1/10°C		Current flow temp
23	HC Pump	r		0..1	Off/On Heating Circuit Pump

Reg	Variable	r/w	Unit	Range	Description
24	HC Solar Heating Mode	r/w		0..2	Off / Eco / On
25	HC Solar Heating Temp	r/w	1/10°C	0..2	Flow / Room Temperature
26					
27					
28					
29					
30	Heating Circuit Index	r		0,2,4,6	(0) not available, else index
31	HC Mode	r/w		0 .. 3	(0) Off, (1) Auto, (2) Heat, (3) Set-back
32	HC Heating Temp	r/w	1/10°C	5°C .. 40°C	Heating Temperature
33	HC Setback Temp	r/w	1/10°C	5°C .. 40°C	Setback Temperature
34	HC Remote Control Override	r	1/10°C	-5°C .. 5°C	Remote control override
35	HC State	r			*See Description
36	HC External Demand	r/w	0	0..2	(0) Off, (1) External On, (2) External Inverted (if learned)
37	HC Eco Mode	r/w		0..3	(0) Off, (1) Comfort, (2) Minimum, (3) Eco
38	HC Time Program	r/w		0..1	Current Time Program
39	HC Current Room Set Temp	r	1/10°C		Current set temp
40	HC Current Room Temp	r	1/10°C		Current room temp
41	HC Current Flow Temp Set	r	1/10°C		Current flow temp set
42	HC Current Flow Temp	r	1/10°C		Current flow temp
43	HC Pump	r		0..1	Off/On Heating Circuit Pump
44	HC Solar Heating Mode	r/w		0..2	Off / Eco / On
45	HC Solar Heating Temp	r/w	1/10°C	0..2	Flow / Room Temperature
46					

Reg	Variable	r/w	Unit	Range	Description
47					
48					
49					
50	DHW Index	r		0..3	(0) not available, else index
51	DHW Mode	r/w		0 .. 2	(0)Off, (1) Auto, (2) On
52	DHW Force Once	r/w		0 .. 1	Heatup water once
53	DHW Priority Mode	r/w		0 .. 1	Priority mode
54	DHW Set Temp	r/w	1/10°C	8°C .. 80°C	Set Temperature DHW
55	DHW Minimum Temp	r/w	1/10°C	8°C .. 80°C	Minimum Temperature DHW
56	DHW Time Program	r/w		0 .. 1	Current Time Program
57	DHW Legionella	r/w		0 .. 8	(0) Monday .. (7) Sunday, (8) Off
58	DHW State	r			*See Description
59	DHW External	r/w		0 .. 2	(0) Off, (1) External On, (2) External Inverted (if learned)
60	DHW On Temp	r	1/10°C		On Temperature
61	DHW Off Temp	r	1/10°C		Off Temperature
62	DHW Temp Set	r	1/10°C		Current set temp
63	DHW Solar Heating Mode	r/w		0..2	Off / Eco / On
64					
65	ACCU Index	r		0 .. 3	(0) not available, else index
66	ACCU use time program	r/w		0 .. 1	(0) only on demand, (1) time program
67	ACCU Min On	r/w	1/10°C	8°C .. 80°C	Minimum Temp Of Accu
68	ACCU Min Off	r/w	1/10°C	8°C .. 80°C	Minimum Switch of Temp
69	ACCU Min On (external/timeprg)	r/w	1/10°C	8°C .. 80°C	Minimum Temp ON Accu for TimeProg or ext Demand
70	ACCU Min Off (external/timeprg)	r/w	1/10°C	8°C .. 80°C	Maximum Temp OFF Accu for TimeProg or ext Demand
71	ACCU External	r		0 .. 2	(0) Off, (1) External On, (2) External Inverted (if learned)
72	ACCU TPO	r	1/10°C		UPPER Temperature

Reg	Variable	r/w	Unit	Range	Description
73	ACCU TPM	r	1/10°C		MIDDLE Temperature
74	ACCU State	r			*See Description
75	Solar Collector Temp	r	1/10°C		Collector Temperature
76	Solar Index	r		0,1,3,5	(0) not available, else index
77	Solar Mode	r/w		0 .. 1	(0) Off, (1) On
78	Solar Storage Temp	r	1/10°C		Temperature Store
79	Solar Cooling	r/w		0 .. 2	Off / Eco / On
80	Solar Pump	r	Off/On	0 .. 1	Solar Pump state
81	Solar State	r			*See Description
82					
83	Solar Index	r		0,2,4,6	(0) not available, else index
84	Solar Mode	r/w		0 .. 1	(0) Off, (1) On
85	Solar Storage Temp	r			Temperature Store
86	Solar Cooling	r/w		0 .. 2	Off / Eco / On
87	Solar Pump	r	Off/On	0 .. 1	Solar Pump state
88	Solar State	r			*See Description
89					
90	SolarGain index	r		0,1,2,3	(0) not available, else index
91	SolarGain current	r	0,1 kW		Current solar energy
92	SolarGain today	r	0,1 kWh		todays solar energy
93	SolarGain yesterday	r	0,1 kWh		yesterdays solar energy
94	SolarGain total		0,1 kWh		total solar energy
95	SolarGain flow rate	r	0.01 l/min		flow rate
96	SolarGain flow temp	r	1/10°C		Solar flow temperature
97	SolarGain return temp	r	1/10°C		Solar return temperature
98					
99					
100	FA Index	r/w		1,2,3	Index of FA (else 0)
101	FA Mode	r/w			(0) Off (1) Auto (2) On

Reg	Variable	r/w	Unit	Range	Description
102	FA Temp	r	1/10°C		Current boiler temperature
103	FA Temp set	r	1/10°C		Set temp for boiler
104	FA Modulation	r	%		Modulation
105	FA State	r			Boilerstate*
106	FA Runtime	r	h		total burner runtime
107	FA Starts	r			total burner starts
108	FA Maintenance	r/w		0 .. 1	Maintenance (0 restarts Maintenance Intervall)
109					
110	ECO Mode	r/w	Off/On	0 .. 1	Enable/Disable ECO Mode
111	ECO Temp	r	°C		Current Temp
112	ECO Clouds	r	%		Current Clouds
113	ECO Forecast Temp	r	°C		Forecast Temp
114	ECO Forecast Clouds	r	%		Forecast Clouds
115	ECO Starttime	r	hhmm		Ecomode Starttime
116	ECO Endtime	r	hhmm		Ecomode Endtime
117	ECO Cloud limit	r/w	%	10 .. 90	Enable/Disable ECO Cloud limitode
118	ECO Switch off temp hysteresys	r/w	°K	-20°K .. 0°K	Enable/Disable ECO Switch off temp hysteresysode
119	ECO Lead	r/w	min	0 .. 600 min	Enable/Disable ECO Leadode

*Boiler Mode	
0	Cont. run
1	Start
2	Ignition
3	Softstart
4	Powerburn
5	Shutdown
6	Off
7	Suction
8	Ash Clean
9	Pellets
10	Pellets Switch
11	Error
12	Calibrate
13..99	Off

**Error description (UNSIGNED Integer)	
digit	
1, 2, 3, 4,	Errorcode (see error manual)
5	Index of Boiler/Accu starting at 0

Status Bit	Heating circuit
0	Check Alarm Text
1	DHW Preference
2	Source Overheating / Collector Protection active
3	Operating Mode Off
4	HC Mode Set Back
5	HC Mode Heating On
6	Screed Program active
7	Vacation Function active
8	Party Function active
9	Frost Protection active
10	Outside Temp above Heating Limit
11	Room Temp reached
12	Free Wheel Scavening / Frost Scavening active
13	Source Temp below Pump Release Temp
14	External requirement active
15	Waiting for external requirement
16	Outer temp over setback temp
17	Solare heating active
18	Fine weather forecast. Temperature was reduced
19	Bad weather forecast. Solar heating inactive.
20	Pump postrun active
21	Advanced Run Up Active
22	Solar heating is disabled, room temperature reached
23	Source Temp over Flow Temp Max
24	Comfort temperature active

Status Bit	DHW
0	Check Alarm Text
1	Source Overheating / Collector Protection active
2	Operating Mode Off
3	Time Outside Time Program
4	Time within Time Program
5	Legionella Protection active
6	Frost Protection active
7	Run Down active
8	Source Temp below Pump Release Temp
9	Source Temp below Pump Temp
10	DHW Boost active
11	Free Wheel Scavening / Frost Scavening active
12	Priority Function active
13	Requirement Off
14	Requirement On
15	External requirement active
16	Waiting for external requirement
17	Solare heating active
18	Bad weather forecast. Solar heating inactive
19	Intelligent water heating active
20	Good weather forecast. Reduced set temp.

Status Bit	Accumulator
0	Check Alarm Text
1	Source Overheating / Collector Protection active
2	Frost Protection active
3	System Temp Maximum Reached
4	Run Down active
5	Free Wheel Scavening / Frost Scavening active
6	Source Temp below Pump Release Temp
7	Source Temp below Release Temp
8	Requirement On
9	Requirement Off
10	External requirement active
11	Waiting for external requirement
12	Power request Stirling is active
13	Time program active

Status Bit	Solar circuit
0	Check Alarm Text
1	Operating Mode Off
2	ACC Max reached
3	Limit Max reached
4	Coll Overheating
5	Difference Collecter-ACC too low
6	Operating Mode On
7	Frost Protection active
8	Priority Function: Run Time active
9	Priority Function: Rest Time active
10	Priority Function: Scavening active
11	Priority Function: Scavening active
12	Free Wheel Scavening active
13	Parallel Operation active
14	Pumpe because of Switch Valve active
15	Scavening active
16	Coll Temp Min not reached
17	Solar Circuit with Priority active
18	Good weather forecast solar cooling active

Simple - HomeAutomation Interface

Reg		Ident	r/w	Unit	Range	Description
1		VERSION	r/w		0..3	(0) V2.03 compatible (1) Cascade (2) Home Automation (3) Home Simpl.
2		AMBIENT TEMP	r	1/10 °C		Ambient Temperature
3		PLANT_MODE	r/w		0..2	(0) Off (1) Auto (2) Domestic Hot Water
4						
5	ERR	ERROR 1	r			See error description*
6		ERROR 2	r			See error description*
7		ERROR 3	r			See error description*
8		ERROR 4	r			See error description*
9		ERROR 5	r			See error description*
10	HC1	HC Mode (MainMode Auto)	r/w		0..3	(0) Off, (1) Auto, (2) Heat, (3) Setback
11		HC Heating Temp	r/w	1/10 °C	5 °C..40 °C	Heating Temperature
12		HC Setback Temp	r/w	1/10 °C	5 °C..40 °C	Setback Temperature
13		HC Current Room Temp	r	1/10 °C		Current room temp
14		HC Time Program	r/w		0..1	Current Time Program
15		HC Eco Mode	r/w		0..3	(0)Off, (1)Comfort, (2)Minimum, (3) Eco

Reg		Ident	r/w	Unit	Range	Description
16	HC2	HC Mode (MainMode Auto)	r/w		0..3	(0) Off, (1) Auto, (2) Heat, (3) Setback
17		HC Heating Temp	r/w	1/10 °C	5 °C..40 °C	Heating Temperature
18		HC Setback Temp	r/w	1/10 °C	5 °C..40 °C	Setback Temperature
19		HC Current Room Temp	r	1/10 °C	0	Current room temp
20		HC Time Program	r/w		0..1	Current Time Program
21		HC Eco Mode	r/w		0..3	(0)Off, (1)Comfort, (2)Minimum, (3) Eco
22	HC3	HC Mode (MainMode Auto)	r/w		0..3	(0) Off, (1) Auto, (2) Heat, (3) Setback
23		HC Heating Temp	r/w	1/10 °C	5 °C..40 °C	Heating Temperature
24		HC Setback Temp	r/w	1/10 °C	5 °C..40 °C	Setback Temperature
25		HC Current Room Temp	r	1/10 °C	0	Current room temp
26		HC Time Program	r/w		0..1	Current Time Program
27		HC Eco Mode	r/w		0..3	(0)Off, (1)Comfort, (2)Minimum, (3) Eco
28	HC4	HC Mode (MainMode Auto)	r/w		0..3	(0) Off, (1) Auto, (2) Heat, (3) Setback
29		HC Heating Temp	r/w	1/10 °C	5 °C..40 °C	Heating Temperature
30		HC Setback Temp	r/w	1/10 °C	5 °C..40 °C	Setback Temperature
31		HC Current Room Temp	r	1/10 °C	0	Current room temp
32		HC Time Program	r/w		0..1	Current Time Program
33		HC Eco Mode	r/w		0..3	(0)Off, (1)Comfort, (2)Minimum, (3) Eco

Reg		Ident	r/w	Unit	Range	Description
34	HC5	HC Mode (MainMode Auto)	r/w	1/10 °C	0..3	(0) Off, (1) Auto, (2) Heat, (3) Setback
35		HC Heating Temp	r/w	1/10 °C	5 °C..40 °C	Heating Temperature
36		HC Setback Temp	r/w	1/10 °C	5 °C..40 °C	Setback Temperature
37		HC Current Room Temp	r		0	Current room temp
38		HC Time Program	r/w		0..1	Current Time Program
39		HC Eco Mode	r/w		0..3	(0)Off, (1)Comfort, (2)Minimum, (3) Eco
40	HC6	HC Mode (MainMode Auto)	r/w	1/10 °C	0..3	(0) Off, (1) Auto, (2) Heat, (3) Setback
41		HC Heating Temp	r/w	1/10 °C	5 °C..40 °C	Heating Temperature
42		HC Setback Temp	r/w	1/10 °C	5 °C..40 °C	Setback Temperature
43		HC Current Room Temp	r		0	Current room temp
44		HC Time Program	r/w		0..1	Current Time Program
45		HC Eco Mode	r/w		0..3	(0)Off, (1)Comfort, (2)Minimum, (3) Eco
46						
47	DHW 1	DHW Mode (Mainmode WW)	r/w		0..2	(0)Off, (1) Auto, (2) On
48		DHW Mode (MainMode Auto)	r/w		0..2	(0)Off, (1) Auto, (2) On
49		DHW Force Once	r/w		0..1	Heatup water once
50		DHW On Temp	r	1/10 °C		On Temperature
51		DHW Time Program	r/w		0..1	Current Time Program
52	DHW 2	DHW Mode (Mainmode WW)	r/w		0..2	(0)Off, (1) Auto, (2) On
53		DHW Mode (MainMode Auto)	r/w		0..2	(0)Off, (1) Auto, (2) On
54		DHW Force Once	r/w		0..1	Heatup water once
55		DHW On Temp	r	1/10 °C	0	On Temperature
56		DHW Time Program	r/w		0..1	Current Time Program

Reg		Ident	r/w	Unit	Range	Description
57	DHW 3	DHW Mode (Mainmode WW)	r/w		0..2	(0)Off, (1) Auto, (2) On
58		DHW Mode (MainMode Auto)	r/w		0..2	(0)Off, (1) Auto, (2) On
59		DHW Force Once	r/w		0..1	Heatup water once
60		DHW On Temp	r	1/10 °C	0	On Temperature
61		DHW Time Program	r/w		0..1	Current Time Program
62	ACC1	ACCU TPO	r	1/10 °C		UPPER Temperature
63		ACCU TPM	r	1/10 °C		MIDDLE Temperature
64	ACC2	ACCU TPO	r	1/10 °C		UPPER Temperature
65		ACCU TPM	r	1/10 °C		MIDDLE Temperature
66	ACC3	ACCU TPO	r	1/10 °C		UPPER Temperature
67		ACCU TPM	r	1/10 °C		MIDDLE Temperature
68	SC1	Solar Collector Temp	r	1/10 °C		Collector Temperature
69		Solar Storage Temp 1	r	1/10 °C		Temperature Store 1
70		Solar Storage Temp 1	r	1/10 °C		Temperature Store 2
71	SC2	Solar Collector Temp	r	1/10 °C		Collector Temperature
72		Solar Storage Temp 1	r	1/10 °C		Temperature Store 1
73		Solar Storage Temp 1	r	1/10 °C		Temperature Store 2
74	SC3	Solar Collector Temp	r	1/10 °C		Collector Temperature
75		Solar Storage Temp 1	r	1/10 °C		Temperature Store 1
76		Solar Storage Temp 1	r	1/10 °C		Temperature Store 2

Reg		Ident	r/w	Unit	Range	Description
77	SG1	SolarGain current	r	0,1 kW		Current solar energy
78		SolarGain today	r	0,1 kWh		todays solar energy
79		SolarGain yesterday	r	0,1 kWh		yesterdays solar energy
80		SolarGain total	r	0,1 kWh		total solar energy
81	SG2	SolarGain current	r	0,1 kWh		Current solar energy
82		SolarGain today	r	0,1 kWh		todays solar energy
83		SolarGain yesterday	r	0,1 kWh		yesterdays solar energy
84		SolarGain total	r	0,1 kWh		total solar energy
85	SG3	SolarGain current	r	0,1 kWh		Current solar energy
86		SolarGain today	r	0,1 kWh		todays solar energy
87		SolarGain yesterday	r	0,1 kWh		yesterdays solar energy
88		SolarGain total	r	0,1 kWh		total solar energy
89	ECO	ECO Mode	r/w	Off/On	0..1	Enable/Disable ECO Mode
90		ECO Temp	r	°C		Current Temp
91		ECO Clouds	r	%		Current Clouds
92		ECO Forecast Temp	r	°C		Forecast Temp
93		ECO Forecast Clouds	r	%		Forecast Clouds
94						

Reg		Ident	r/w	Unit	Range	Description
95	ST	ST_CURRENT	r	W		Current Stirling Power
96		ST_TODAY	r	Wh		Todays Stirling Power
97		ST_YESTERDAY	r	Wh		Yesterdays Stirling Power
98		ST_STATE	r	Wh		Current state *
99		ST_RUNTIME	r			Total Stirling Runtime
100		ST_STARTS	r			Stirling starts
101		ST_ERRORCODE	r			Errorcode
102		ST_FORCE_POWER	r/w		0..1	If set to 1 buffer will be loaded to force temp
103		ST_FORCE_TEMP	r/w	1/10 °C	40 °C..85 °C	set temperature of buffer if forced run
104						
105	FA1	FA Mode	r/w			(0) Off (1) Auto (2) On
106		FA Temp	r	1/10 °C		Current boiler temperature
107		FA Modulation	r	%		Modulation
108		FA State	r			*see Boilerstate
109	FA2	FA Mode	r/w			(0) Off (1) Auto (2) On
110		FA Temp	r	1/10 °C		Current boiler temperature
111		FA Modulation	r	%		Modulation
112		FA State	r			*see Boilerstate
113	FA3	FA Mode	r/w			(0) Off (1) Auto (2) On
114		FA Temp	r	1/10 °C		Current boiler temperature
115		FA Modulation	r	%		Modulation
116		FA State	r			*see Boilerstate
117	FA4	FA Mode	r/w			(0) Off (1) Auto (2) On
118		FA Temp	r	1/10 °C		Current boiler temperature
119		FA Modulation	r	%		Modulation
120		FA State	r			*see Boilerstate
121						

*Boilerstate	
0	Permanent Op
1	Start
2	Ignition
3	Softstart
4	Heating Full Power
5	Run On Time
6	Off
7	Suction
8	Ash
9	Pellet
10	Pellet switch
11	Error
12	Measure
13..99	Off

Error description*		Examples
digit		20040 (2004/0)
1,2,3,4	Errorcode (see error manual)	20041 (2004/1)
5	Index of Boiler/Accu starting at 0	50100 (5010/0)

*Stirling state	
0	Off
1	Startup
2	Mains
3	Bypass
4	MainsClose
5	Operation
6	Overheating
7	Shutdown
8	Error