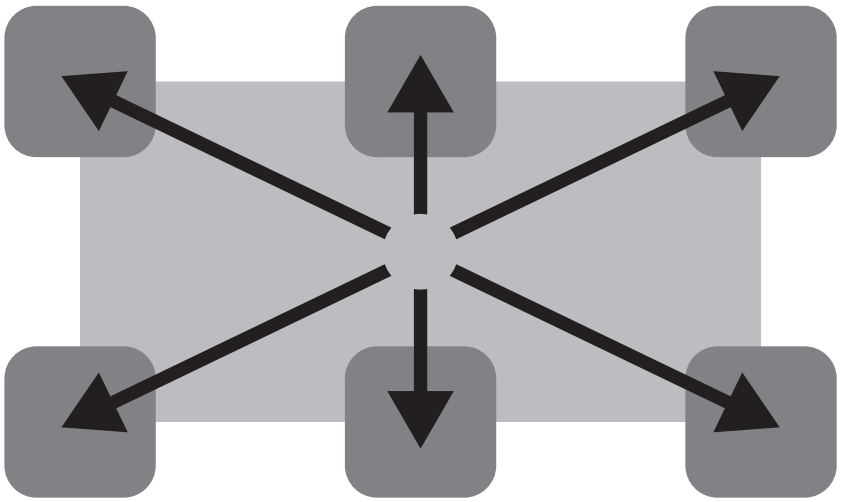
Communication Protocol

ModBus Lambdatronic 3200

V 50.04 - B 05.17



Translation of the original German operating instructions for technicians and operators

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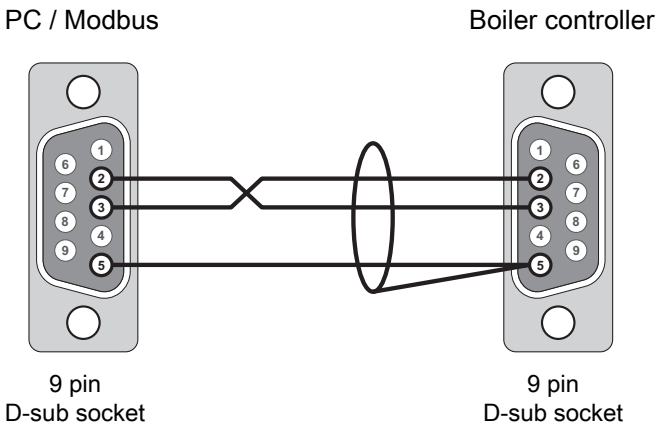
1 General

The controller type 3200 has 2 serial interfaces (RS-232).

- COM1 service interface, Visualisation Software 3200
- COM2 suitable for use with MODBUS

1.1 Data cable

A null modem cable with the following pin assignment is required for the connection:



1.2 Protocol 2014

The new ModBus protocol is available starting with software version V50.04 - B05.10. In this version, parameters can be written at the customer level. In addition, the element addresses have been reassigned and grouped thematically.

To activate the new functionality, the parameter “`Use MODBUS protocol 2014?` “ must be set to “`YES`“. If the parameter is set to “`NO`“, the functionality and th element addresses remain the same as in the previous version to ensure compatibility with existing systems in the event of software updates.

⇨ See "Required settings" [page 4]

1.3 UART settings

The following settings are used for the serial interface:

- Interface: RS-232
- Baud rate: 57600
- Data bits: 8
- Stop bits: 1
- Parity: NONE
- Handshake: NONE

1.4 ModBus settings

1.4.1 Supported protocols

The following ModBus protocols are supported:

- MODBUS RTU
- MODBUS ASCII

The protocol used must be set accordingly:

`System ⇒ Set ⇒ General settings ⇒ MODBUS settings ⇒ MODBUS Protocol (1 - RTU / 2 - ASCII)`

1.4.2 Slave address

In a ModBus network, the boiler functions as a “slave”. For this reason, a specific address must be set (address range 1 to 247).

`System ⇒ Set ⇒ General settings ⇒ MODBUS settings ⇒ MODBUS address`

1.4.3 Required settings

The following settings must be made to use the ModBus functionalities:

`System ⇒ Set ⇒ General settings ⇒ MODBUS settings ⇒`

- COM 2 is used as a MODBUS interface ⇒ YES
- Use MODBUS protocol 2014 ⇒ YES

1.5 Data format

The data transferred are available as 16 bit integers. Conversions for specific parameters and signals can be found in the following tables.

2 Commands

Depending on the system used on site, there are various options for data exchange addressing. Either an offset range or the complete address range is used.

Taking for example the current values of the “flue gas temperature“ (#30002) this means:

- Variant 1 – Statement of the offset address (default): **0001**
- Variant 2 – Statement of the complete Modbus address: **30002**
- Variant 3 – Statement of the offset address (exception): **0002**

Variant 1 is the one most often used. In this case the first value of the element is subtracted from the Modbus address (e.g. 30002 – 30001 = 0001; 30165 – 30001 = 0164). The addressing variant to be used can be found by consulting the documentation of the Modbus system used on site.

2.1 Error messages

Code	Name	Description
01	Illegal Function	Invalid function code. This error occurs even in cases where writing is attempted without having set the parameter “Use MODBUS protocol 2014” to “YES”.
02	Illegal Data Address	Address outside of the valid range. If an attempt is made to read an element not in the list, but which is nevertheless within the range, this error is not output, but is instead output as return value “-1”.
03	Illegal Data Value	The number of elements queried at once is too high.
04	Slave Device Failure	The value to be written is outside of the valid range. (Note the minimum and maximum limits in the table.)

2.2 Digital outputs

All of the digital outputs in the list can be read.

- Function: Read Coil Status (FC=01)
- Address range: 00001-01540

2.3 Digital inputs

All of the digital inputs in the list can be read.

- Function: Read Input Status (FC=02)
- Address range: 10001-10004

2.4 Current values

All of the current values in the list can be read. A single query can be used to read a maximum of 122 values at a time.

- Function: Read Input Elements (FC=04)
- Address range:

2.5 Read/write parameters

All the parameters on the list can be read and all parameters labelled with “R/W” can be written. A single query can be used to read a maximum of 122 values at a time.

- Functions: Read Holding Elements (FC=03) for reading / Write Single Element (FC=06) for writing
- Address range:

IMPORTANT! Parameters can only be written with protocol 2014!

2.6 ModBus boiler remote control

The flow temperature setpoints of the heating circuits as well as the DHW tank temperature setpoints can be specified using ModBus.

If one of the elements is written in the table, then the specified setpoint is active for all the available heating circuits and the DHW tank. If none of the elements is written for more than two minutes, the specified setpoint is deactivated again and the temperature setpoint calculation is executed once more according to the settings (heating curve and/or room sensor for heating circuits and temperatures for switching on/off for DHW tanks).

The setpoint 0 is used to switch off a DHW tank pump; a setpoint greater than 0 is used to switch it on. Heating circuits are switched on/off with the elements “Release heating circuits 1-18”. If a heating circuit is released and the flow temperature setpoint is specified with 0° at the same time, then the heating curve set on the controller is used and the flow temperature is calculated. In contrast to stand-alone operation, the outside air temperature is not active. All values above 0° are interpreted directly as the flow temperature setpoint.

A minimum switching period of 10 minutes is set to prevent switching on/off too frequently. If an attempt is made to change the switching condition within this period, the controller ignores the setpoint and the value -1 is now returned in the response packet instead of the transferred value.

Example:

Time	Element written		Return value
09:33	DHW tank 1 temperature setpoint 50°	OK	100
09:34	DHW tank 1 temperature setpoint 0°	OK	0
09:35	DHW tank 1 temperature setpoint 0°	OK	0
09:36	DHW tank 1 temperature setpoint 50°	Lower for 10 min	-1
09:37	DHW tank 1 temperature setpoint 0°	OK	0
09:39	Specified setpoint deactivated	Higher for 2 min	-1
09:40	DHW tank 1 temperature setpoint 0°	OK	0
09:41	DHW tank 1 temperature setpoint 50°	Lower for 10 min	-1
09:43	DHW tank 1 temperature setpoint 50°	OK	100
09:44	DHW tank 1 temperature setpoint 45°	OK	90
09:45	DHW tank 1 temperature setpoint 63°	OK	126
09:46	DHW tank 1 temperature setpoint 0°	Lower for 10 min	-1

If the heating circuit is switched off, the heating circuit will not be activated irrespective of the transferred setpoint. This parameter can be read and written as well at element 41031 for heating circuit 1, for example. Frost protection and running the safety pump (in the event that the temperature is too high) also take effect with the heating circuits even at a specified setpoint of 0°.

The DHW tank setpoint temperature is the temperature at which the DHW tank loading should be stopped. The switching temperatures are calculated as follows:

$T_{\text{Start DHW tank loading}} = T_{\text{DHW tank setpoint ModBus}} - (T_{\text{DHW tank desired}} - T_{\text{Reload DHW tank below}})$

$T_{\text{Stop DHW tank loading}} = T_{\text{DHW tank setpoint ModBus}}$

This procedure ensures that the difference between the temperature for switching on and switching off is as high as that defined by the setting parameters.

Even if the activation of the heating circuits is still being performed by the boiler controller, the mode of the heating circuit can still be changed or read via the Modbus. The modes are changed or read using the elements 48047-48064.

Function: Write Single Element (FC=06)
Address range

2.7 Error buffer

When the error history is read out, only the current messages are transferred. If the value of an element returns 0xFFFF (65535), there is no message at this position.

- Function: Read Input Registers (FC=04)
- Address range: 33001-33020

2.8 System and boiler status

The current system and boiler status can be read out.

- Function: Read Input Registers (FC=04)
- Address range: 34001-34002

3 Values lists

The following tables contain the following column names:

- **ID** ⇨ Address of the ModBus element (ModBus ID)
- **DESCRIPTION** ⇨ Name or explanation of the signal
- **UNIT** ⇨ Unit of measurement: Unit for the signal value
- **SCAL** ⇨ SCALING: Conversion factor for raw value to real value
- **DEC** ⇨ DECIMAL PLACES: Number of decimal places
- **MIN** ⇨ MINIMUM: Minimum value of the signal
- **MAX** ⇨ MAXIMUM: Maximum value of the signal
- **R/W** ⇨ READ/WRITE: Parameter access rights (R/W = reading and writing rights, R = reading rights only)

3.1 Digital outputs

The following table shows all of the available digital outputs.

ID	DESCRIPTION
0	Fault message
1	Common fault relay
1000	Heating circuit pump 0
1030	Heating circuit pump 1
1060	Heating circuit pump 2
1090	Heating circuit pump 3
1120	Heating circuit pump 4
1150	Heating circuit pump 5
1180	Heating circuit pump 6
1210	Heating circuit pump 7
1240	Heating circuit pump 8
1270	Heating circuit pump 9
1300	Heating circuit pump 10
1330	Heating circuit pump 11
1360	Heating circuit pump 12
1390	Heating circuit pump 13
1420	Heating circuit pump 14
1450	Heating circuit pump 15
1480	Heating circuit pump 16
1510	Heating circuit pump 17
1540	Heating circuit pump 18

3.2 Digital inputs

The following table shows all of the available digital inputs.

ID	DESCRIPTION
10001	Door switch
10002	Hi-limit stat input
10003	E-stop input
10004	Boiler enable

3.3 Current values

The following table shows all of the available current values:

ID	DESCRIPTION	UN	SCAL	DEC
30001	Boiler temperature	°C	2	0
30002	Flue gas temperature	°C	1	0
30003	Board Temperature	°C	2	0
30004	Residual oxygen content	%	10	1
30005	Position of primary air flap	%	1	0
30006	T4 Bgr2 - Position of secondary air flap	%	1	0
30007	ID fan speed	Upm	1	0
30008	Sensor 1	°C	2	0
30009	Flue gas temperature after condenser	°C	2	0
30010	Return sensor	°C	2	0
30011	Air speed at suction opening	m/s	100	2
30012	Primary air	%	1	0
30013	ID fan control	%	1	0
30014	Secondary air	%	1	0
30015	Boiler control variable	%	1	0
30016	Flue gas setpoint	°C	1	0
30017	Oxygen control	%	1	0
30018	Pellet module board temperature	°C	2	0
30019	Suction air temperature	°C	2	0
30020	Delivery screw current	A	1000	2
30021	Operation hours	h	1	0
30022	Pellet container level	%	207	1
30023	Number of burner starts		1	0
30024	S4 - Amount of ignition starts		1	0
30025	Operation hours in slumber	h	1	0
30026	Feed	%	1	0
30027	Slide-in control	%	1	0
30028	Calculated boiler setpoint	°C	2	0
30029	Solar temperature buffer tank bottom	°C	2	0

ID	DESCRIPTION	UN	SCAL	DEC
30030	Feed screw current	A	1000	2
30031	Rotary valve current	A	1000	2
30032	Stoker screw current	A	1000	2
30033	Comb. chamber under-pressure	Pa	1	0
30034	Slide valve position	%	10	0
30035	Position grate motor	%	10	0
30036	Feed correction control	%	1	0
30037	Return pump controller	%	1	0
30038	FD fan	%	1	0
30039	FD fan	%	1	0
30040	Operation hours stoker screw	h	1	0
30041	Operation hours feed screw	h	1	0
30042	Operation hours rotary valve	h	1	0
30043	Operation hours vibrator	min	1	0
30044	Tilting grate load cycle		1	0
30045	Operation hours WOS	h	1	0
30046	Operation hours ash screw	h	1	0
30047	Operation hours ignition	h	1	0
30048	Operation hours sambda probe	h	1	0
30049	Operation hours suction fan(s)	h	1	0
30050	Operation hours delivery screw	h	1	0
30051	Safety ventilation load cycle		1	0
30052	Operation hours ID fan	h	1	0
30053	BBF load cycle		1	0
30054	Measured path of slide valve	%	10	0
30055	Lambda probe voltage	mV	100	2
30056	Hours since last maintenance	h	1	0
30057	Boiler request via heating circuit or DHW tank pending		1	0
30058	CC cooling through secondary air	%	1	0
30059	Slide-in is limited to a maximum of	%	1	0
30060	Output boost using combustion chamber control	%	1	0
30061	Skim pump	%	1	0
30062	Lambda probe voltage corrected	mV	100	2
30063	Hours in pellet mode	h	1	0
30064	Hours of heating	h	1	0
30065	Sensor deflector top	°C	2	0
30066	Sensor deflector bottom	°C	2	0
30067	Return setpoint calculated	°C	2	0
30068	Boiler charging pump speed	%	1	0
30069	Broadband probe heating current	A	1000	2
30070	Broadband probe heating voltage	V	1000	2
30071	Broadband probe Nernst voltage	V	1000	3
30072	Broadband probe pump current	mA	1000	3

ID	DESCRIPTION	UN	SCAL	DEC
30073	Broadband probe internal resistance	Ohm	1	0
30074	Under-pressure setpoint	Pa	1	0
30075	Hours in partial load (Boiler control variable < 40 %)	h	1	0
30076	ID fan control	%	1	0
30077	Hours in firewood mode	h	1	0
30078	Eingang WOS Funktionsrückmeldung (Fühler 2)		1	0
30079	Under-pressure - actual	Pa	1	0
30080	Screw 0.1 current	A	1000	2
30081	Screw 0.2 current	A	1000	2
30082	Resetable kg-counter:	kg	1	0
30083	resetable t-counter:	t	1	0
30084	Total pellet consumption	t	10	1
30085	Todays yield [kWh]	kWh	1	0
30086	Total yield [kWh]	kWh	1	0
30087	Remaining hours in heating mode till ashbox full warning appear	h	1	0
30089	Combustion chamber temperature	°C	1	0
30090	Boardtemperatur wood chip module	°C	2	0
30091	Current cc temp. signal	%	1	0
30093	Position of FGR primary air flap	%	1	0
30094	Rotary agitator current	A	1000	2
30095	Screw 1 current	A	1000	2
30096	Screw 2 current	A	1000	2
30097	Service hours of rotary agitator	h	1	0
30098	Suction turbine service hours	h	1	0
30099	Service hours of screw on LB	h	1	0
30100	Service hours of screw on LB	h	1	0
30101	Output requirement		1	0
30102	Number of cleaning processes		1	0
30103	Time until next cleaning	min	1	0
30104	E-filter service hours	h	1	0
30105	ID fan control	%	1	0
30106	E-filter - Power level HV module 1		1	0
30107	E-filter - Power level HV module 2		1	0
30108	E-filter - Power level HV module 3		1	0
30109	E-filter - Power level HV module 4		1	0
30110	E-filter - Filter return signal		1	0
30111	E-filter - Water detected		1	0
30112	E-filter - Filter state		1	0
30113	Opening / closing movement of the grate		1	0
30114	Input external power demand	%	1	0
30115	Current external power demand	%	1	0
30116	SoDC pump control	%	1	0
30117	Filtered grate differential pressure	Pa	1	0

ID	DESCRIPTION	UN	SCAL	DEC
30118	Pressure difference grate	Pa	1	0
30119	Differential pressure setpoint grate	Pa	1	0
30120	Underpressure above the grate	Pa	1	0
30121	Underpressure under the grate	Pa	1	0
30122	Tipping drive 1 load cycle		1	0
30123	Position of FGR secondary air flap	%	1	0
30124	Absolute infeed	%	10	1
30125	Actual pressure in FGR duct	Pa	1	0
30126	Pressure setpoint in FGR duct	Pa	1	0
30127	Position of FGR flap	%	1	0
30128	Automatic maximum fuel feed-in	%	10	1
30129	Temperature under the grate	°C	1	0
30130	Screw 1 current	A	1000	2
30131	WOS-Zustand		1	0
30132	Slide-on duct temperature	°C	2	0
30133	T4 - Tipping drive 2 load cycle		1	0
30134	Number of flashovers		1	0
30135	Output HV module 1	W	100	2
30136	Output HV module 2	W	100	2
30139	Energy input	kWh	100	2
30140	Lambda probe status		1	0
30141	Voltage return signal HV module 1	kV	100	2
30142	Current return signal HV module 1	mA	1000	3
30143	System "Loop" - Loop pump	%	1	0
30144	Voltage return signal HV module 2	kV	100	2
30145	Current return signal HV module 2	mA	1000	3
30146	Absperrschieber - Aktuelle Position		1	0
30147	Brennwert-WT - Number of rinsing processes		1	0
30148	Time elapsed since last heat exchanger cleaning	min	1	0
30149	Status Absperrschieber		1	0
30150	1-2-3 suction module motor 1		1	0
30151	1-2-3 suction module motor 2		1	0
30152	1-2-3 suction module motor 3		1	0
30153	T4/T4e - Feed	%	10	1
30154	Zyklon m. 2 ZRS - MAX sensor		1	0
30155	Zyklon m. 2 ZRS - MIN sensor		1	0
30156	1-2-3 Saugmodul - Active probe		1	0
30157	1-2-3 Saugmodul - Active suction system		1	0
30501	Temperature of backup boiler	°C	2	0
30502	Burner relay status		1	0
30503	Hours of boiler 2 (burner relays)	h	1	0
30504	Secondary boiler switching valve	%	1	0
30601	Circ. pump - Flow switch on the domestic hot water line		2	0

ID	DESCRIPTION	UN	SCAL	DEC
30701	Network pump speed	%	1	0
30702	Network return temperature	°C	2	0
30703	Speed, distributor 1 pump	%	1	0
30704	Return temperature feeder 1	°C	2	0
30705	Speed, distributor 2 pump	%	1	0
30706	Return temperature feeder 2	°C	2	0
30707	Speed, distributor 3 pump	%	1	0
30708	Return temperature feeder 3	°C	2	0
30709	Speed, distributor 4 pump	%	1	0
30710	Return temperature feeder 4	°C	2	0
30711	Speed of the circulation pump	%	1	0
30712	Return temperature in secondary circulation line	°C	2	0
30801	Diff. control - Heat source sensor	°C	2	0
30802	Diff. control - Heat sink sensor	°C	2	0
30803	Diff. control - Pump speed	%	1	0
30901	Cascade Slave boiler 1 - Slave boiler boiler temperature	°C	2	0
30902	Cascade Slave boiler 2 - Slave boiler boiler temperature	°C	2	0
30903	Cascade Slave boiler 3 - Slave boiler boiler temperature	°C	2	0
30904	Cascade Slave boiler 1 - Slave boiler OK		1	0
30905	Cascade Slave boiler 2 - Slave boiler OK		1	0
30906	Cascade Slave boiler 3 - Slave boiler OK		1	0
30907	Cascade Slave boiler 1 - Slave boiler is heating		1	0
30908	Cascade Slave boiler 2 - Slave boiler is heating		1	0
30909	Cascade Slave boiler 3 - Slave boiler is heating		1	0
30910	Cascade Slave boiler 1 - Slave boiler control variable	%	1	0
30911	Cascade Slave boiler 2 - Slave boiler control variable	%	1	0
30912	Cascade Slave boiler 3 - Slave boiler control variable	%	1	0
30913	Cascade Slave boiler 1 - Boiler charging pump speed	%	1	0
30914	Cascade Slave boiler 2 - Boiler charging pump speed	%	1	0
30915	Cascade Slave boiler 3 - Boiler charging pump speed	%	1	0
30916	Cascade Slave boiler 1 - Backup boiler flue gas temperature	°C	1	0
30917	Cascade Slave boiler 2 - Backup boiler flue gas temperature	°C	1	0
30918	Cascade Slave boiler 3 - Backup boiler flue gas temperature	°C	1	0
30919	Cascade Slave boiler 1 - Backup boiler packet age	s	1	0
30920	Cascade Slave boiler 2 - Backup boiler packet age	s	1	0
30921	Cascade Slave boiler 3 - Backup boiler packet age	s	1	0
30922	Cascade Slave boiler 1 - Backup boiler return sensor	°C	2	0
30923	Cascade Slave boiler 2 - Backup boiler return sensor	°C	2	0
30924	Cascade Slave boiler 3 - Backup boiler return sensor	°C	2	0
30925	Kaskade o. Puffer - Cascade actual temperature	°C	2	0
30926	Slave - Boiler loading pump	%	1	0
31001	Outside air temperature	°C	2	0
31031	HK1 - Actual flow temperature	°C	2	0

ID	DESCRIPTION	UN	SCAL	DEC
31032	HK1 - Flow temperature setpoint	°C	2	0
31033	HK1 - Room temperature	°C	2	0
31061	HK2 - Actual flow temperature	°C	2	0
31062	HK2 - Flow temperature setpoint	°C	2	0
31063	HK2 - Room temperature	°C	2	0
31091	HK3 - Actual flow temperature	°C	2	0
31092	HK3 - Flow temperature setpoint	°C	2	0
31093	HK3 - Room temperature	°C	2	0
31121	HK4 - Actual flow temperature	°C	2	0
31122	HK4 - Flow temperature setpoint	°C	2	0
31123	HK4 - Room temperature	°C	2	0
31151	HK5 - Actual flow temperature	°C	2	0
31152	HK5 - Flow temperature setpoint	°C	2	0
31153	HK5 - Room temperature	°C	2	0
31181	HK6 - Actual flow temperature	°C	2	0
31182	HK6 - Flow temperature setpoint	°C	2	0
31183	HK6 - Room temperature	°C	2	0
31211	HK7 - Actual flow temperature	°C	2	0
31212	HK7 - Flow temperature setpoint	°C	2	0
31213	HK7 - Room temperature	°C	2	0
31241	HK8 - Actual flow temperature	°C	2	0
31242	HK8 - Flow temperature setpoint	°C	2	0
31243	HK8 - Room temperature	°C	2	0
31271	HK9 - Actual flow temperature	°C	2	0
31272	HK9 - Flow temperature setpoint	°C	2	0
31273	HK9 - Room temperature	°C	2	0
31301	HK10 - Actual flow temperature	°C	2	0
31302	HK10 - Flow temperature setpoint	°C	2	0
31303	HK10 - Room temperature	°C	2	0
31331	HK11 - Actual flow temperature	°C	2	0
31332	HK11 - Flow temperature setpoint	°C	2	0
31333	HK11 - Room temperature	°C	2	0
31361	HK12 - Actual flow temperature	°C	2	0
31362	HK12 - Flow temperature setpoint	°C	2	0
31363	HK12 - Room temperature	°C	2	0
31391	HK13 - Actual flow temperature	°C	2	0
31392	HK13 - Flow temperature setpoint	°C	2	0
31393	HK13 - Room temperature	°C	2	0
31421	HK14 - Actual flow temperature	°C	2	0
31422	HK14 - Flow temperature setpoint	°C	2	0
31423	HK14 - Room temperature	°C	2	0
31451	HK15 - Actual flow temperature	°C	2	0
31452	HK15 - Flow temperature setpoint	°C	2	0

ID	DESCRIPTION	UN	SCAL	DEC
31453	HK15 - Room temperature	°C	2	0
31481	HK16 - Actual flow temperature	°C	2	0
31482	HK16 - Flow temperature setpoint	°C	2	0
31483	HK16 - Room temperature	°C	2	0
31511	HK17 - Actual flow temperature	°C	2	0
31512	HK17 - Flow temperature setpoint	°C	2	0
31513	HK17 - Room temperature	°C	2	0
31541	HK18 - Actual flow temperature	°C	2	0
31542	HK18 - Flow temperature setpoint	°C	2	0
31543	HK18 - Room temperature	°C	2	0
31631	DHW tank 1 - DHW tank top temperature	°C	2	0
31632	DHW tank 1 - DHW tank bottom temperature	°C	2	0
31633	DHW tank 1 - DHW tank pump control	%	1	0
31661	DHW tank 2 - DHW tank top temperature	°C	2	0
31662	DHW tank 2 - DHW tank bottom temperature	°C	2	0
31663	DHW tank 2 - DHW tank pump control	%	1	0
31691	DHW tank 3 - DHW tank top temperature	°C	2	0
31692	DHW tank 3 - DHW tank bottom temperature	°C	2	0
31693	DHW tank 3 - DHW tank pump control	%	1	0
31721	DHW tank 4 - DHW tank top temperature	°C	2	0
31722	DHW tank 4 - DHW tank bottom temperature	°C	2	0
31723	DHW tank 4 - DHW tank pump control	%	1	0
31751	DHW tank 5 - DHW tank top temperature	°C	2	0
31752	DHW tank 5 - DHW tank bottom temperature	°C	2	0
31753	DHW tank 5 - DHW tank pump control	%	1	0
31781	DHW tank 6 - DHW tank top temperature	°C	2	0
31782	DHW tank 6 - DHW tank bottom temperature	°C	2	0
31783	DHW tank 6 - DHW tank pump control	%	1	0
31811	DHW tank 7 - DHW tank top temperature	°C	2	0
31812	DHW tank 7 - DHW tank bottom temperature	°C	2	0
31813	DHW tank 7 - DHW tank pump control	%	1	0
31841	DHW tank 8 - DHW tank top temperature	°C	2	0
31842	DHW tank 8 - DHW tank bottom temperature	°C	2	0
31843	DHW tank 8 - DHW tank pump control	%	1	0
32001	Buffer tank 1 - Buffer tank top temperature	°C	2	0
32002	Buffer tank 1 - Buffer tank middle temperature	°C	2	0
32003	Buffer tank 1 - Buffer tank bottom temperature	°C	2	0
32004	Buffer tank 1 - Buffer tank pump control	%	1	0
32005	Buffer tank 1 - Buffer tank temperature, sensor 2	°C	2	0
32006	Buffer tank 1 - Buffer tank temperature, sensor 3	°C	2	0
32007	Buffer tank 1 - Buffer tank charge	%	1	0
32008	Top storage tank solar sensor	°C	2	0
32041	Buffer tank 2 - Buffer tank top temperature	°C	2	0

ID	DESCRIPTION	UN	SCAL	DEC
32042	Buffer tank 2 - Buffer tank middle temperature	°C	2	0
32043	Buffer tank 2 - Buffer tank bottom temperature	°C	2	0
32044	Buffer tank 2 - Buffer tank pump control	%	1	0
32081	Buffer tank 3 - Buffer tank top temperature	°C	2	0
32082	Buffer tank 3 - Buffer tank middle temperature	°C	2	0
32083	Buffer tank 3 - Buffer tank bottom temperature	°C	2	0
32084	Buffer tank 3 - Buffer tank pump control	%	1	0
32121	Buffer tank 4 - Buffer tank top temperature	°C	2	0
32122	Buffer tank 4 - Buffer tank middle temperature	°C	2	0
32123	Buffer tank 4 - Buffer tank bottom temperature	°C	2	0
32124	Buffer tank 4 - Buffer tank pump control	%	1	0
32301	Current status runtime		1	0
32302	Maximum status runtime		1	0
32601	Collector pump control	%	1	0
32602	Collector temperature	°C	2	0
32603	Collector pump runtime	h	1	0
32604	Collector return temperature	°C	2	0
32605	Solar - Heat exchanger sec. return temperature (line to buffer tank)	°C	2	0
32606	Solar - Pump between heat exchanger and buffer tank	%	1	0
32607	Solar - Pump between heat exchanger and DHW tank	%	1	0
32608	Solar - Diverter valve for top/bottom coils	%	1	0
32609	DHW tank bottom temperature	°C	2	0
32610	Solar - Flow through [l/h]	l/h	1	0
32611	Actual power from solar heat meter [kW]	kW	100	2
32612	Solar - Collector return temperature	°C	2	0
32613	Solar - Collector flow temperature	°C	2	0
32614	Solar - Daily yield 1 day ago	kWh	1	0
32615	Solar - Daily yield 2 days ago	kWh	1	0
32616	Solar - Daily yield 3 days ago	kWh	1	0
32617	Solar - Daily yield 4 days ago	kWh	1	0
32618	Solar - Daily yield 5 days ago	kWh	1	0
32619	Solar - Daily yield 6 days ago	kWh	1	0
32620	Todays yield [kWh]	kWh	1	0
32621	Total yield [MWh]	MWh	1	0
32622	Total yield [kWh]	kWh	1	0
32623	Current control of collectors - DHW tank pump	%	1	0
32624	Runtime of collectors - DHW tank pump	h	1	0
32625	Solarsystem 3 - Number of switch cycles of switch valve		1	0

3.4 Parameters

The following table shows all of the available parameters:

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
40001	Boiler temperature setpoint	°C	2	0	70	90	R/W
40002	Shutdown if current boiler temperature is higher than boiler setpoint +	°C	2	0	2	20	R
40003	Maximum heating up time, during which HEATING status must be reached	min	60	0	1	60	R
40005	Minimum flue gas temperature	°C	1	0	85	300	R
40006	Maximum flue gas temperature	°C	1	0	85	300	R
40007	Minimum difference between flue gas- and boiler temperature in HEATING	°C	1	0	0	50	R
40008	Minimum boiler temperature to release all pumps	°C	2	0	60	80	R
40009	Always switch off at maximum boiler setpoint +	°C	2	0	0	20	R
40010	Primary air opening at 0% signal	%	1	0	0	100	R
40011	Primary air opening at 0% signal	%	1	0	0	100	R
40012	Opening of air flap at 0% control	%	1	0	0	100	R
40013	Primary air opening at 100% signal	%	1	0	0	100	R
40014	Opening of air flap at 100% control	%	1	0	0	100	R
40015	Secondary air opening at 0% signal	%	1	0	0	100	R
40016	Secondary air opening at 0% signal	%	1	0	0	100	R
40017	Secondary air opening at 100% signal	%	1	0	0	100	R
40018	Primary air opening at 100% signal	%	1	0	0	100	R
40019	Safety time for checking for air leaks	min	60	0	0	500	R
40020	Primary air during slumber	%	1	0	0	100	R
40021	Start increase of flue gas temperature	°C	1	0	0	100	R
40022	ID fan min in firewood operation	%	1	0	0	95	R
40023	ID fan min	%	1	0	0	95	R
40024	ID fan max	%	1	0	0	95	R
40025	Minimum primary air	%	1	0	0	100	R
40026	Secondary air maximum without lambda probe	%	1	0	0	150	R
40027	residual oxygen content setpoint	%	10	1	5	21	R
40028	Residual oxygen content, above which it switches to SHUTDOWN	%	10	1	10	21	R
40029	Residual oxygen content, above which fire is out	%	10	1	10	21	R
40030	Maximum loading rate	%	1	0	0	100	R
40031	Minimum loading rate	%	1	0	0	100	R
40032	Slide-in control	%	1	0	0	250	R
40033	Slide-in control	%	1	0	0	250	R
40034	Influencing factor for O2 controller		100	2	0	10	R
40035	No feed when residual O2 below	%	10	1	0	21	R
40036	Boiler output at flue gas temperature of 20°C	%	1	0	0	100	R
40037	100% boiler output from a flue gas temperature of	°C	1	0	0	300	R
40038	Pellet fan min	%	1	0	0	100	R
40039	Pellet fan max	%	1	0	0	100	R
40040	Minimum ID fan speed in firewood operation	%	1	0	0	100	R
40041	Minimum ID fan speed	%	1	0	0	100	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
40042	Feed time before ignition	s	1	0	0	1000	R
40043	Duration of pre-heating	s	1	0	0	3600	R
40044	Flue gas - Flue gas difference for start process	°C	1	0	0	100	R
40045	Maximum ignition duration	min	60	0	0	500	R
40046	Shutdown wait 1	min	60	0	0	500	R
40047	Minimum duration of blower fan run-on I (for residual O2)	min	60	0	0	500	R
40048	Minimum duration shutdown	min	60	0	0	500	R
40049	Shutdown wait 2	min	60	0	0	500	R
40050	Minimum duration of blower fan run-on II (for flue gas temperature)	min	60	0	0	500	R
40051	Safety time	min	60	0	0	500	R
40052	ID fan during heating up	%	1	0	0	100	R
40053	FD Fan during heating up	%	1	0	0	100	R
40054	ID fan during pre-heating	%	1	0	0	100	R
40055	FD Fan during pre-heating	%	1	0	0	100	R
40056	Slide-in during ignition	%	1	0	0	100	R
40057	ID fan during shutdown	%	1	0	0	100	R
40058	FD Fan during shutdown	%	1	0	0	100	R
40059	ID fan during Ignition	%	1	0	0	100	R
40060	FD fan during Ignition	%	1	0	0	100	R
40061	WOS runtime	s	1	0	0	900	R
40062	Start of 1st pellet filling		1	0	0	2400	R
40063	Preliminary suction time	s	1	0	0	900	R
40064	Screw cycle	s	1	0	20	400	R
40065	Suction run-on	s	1	0	0	900	R
40066	Refill of cyclone from	%	207	0	0	100	R
40067	Minimum return temperature	°C	2	0	55	90	R
40068	Minimum speed of shunt pump	%	1	0	0	100	R
40069	Slide-in during heating-cleaning	%	1	0	0	100	R
40070	Mixer runtime	s	1	0	0	1000	R
40071	Heating circuit overheat in variable mode	°C	2	0	0	100	R
40072	Variable mode activated		1	0	0	1	R
40073	Flue gas temperature, below which boiler switches to SHUTDOWN status	°C	1	0	60	120	R
40074	In heating minimum secondary air from	%	1	0	0	100	R
40075	Primary air during heating-cleaning (absolute)	%	1	0	0	100	R
40076	Minimum speed - boiler pump	%	1	0	0	100	R
40077	Cycle of ash screw		1	0	1	5000	R
40078	Ash screw runtime	s	1	0	0	120	R
40079	First start of cleaning		1	0	0	2400	R
40080	Second start of cleaning		1	0	0	2400	R
40081	Modem installed		1	0	0	1	R/W
40082	Minimum boiler temperature to release all pumps	°C	2	0	35	70	R
40083	Maximum time until switching of probe	min	60	0	3	120	R
40084	Sensor input of deflector bottom sensor		1	0	1	118	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
40085	Clean after how many shutdowns		1	0	0	50	R
40086	Tilt the grate how often during cleaning		1	0	0	50	R
40087	Minimum flue gas temperature	°C	1	0	65	300	R
40088	Minimum flue gas temperature in pellets mode	°C	1	0	65	300	R
40089	Setpoint of O2 content in pellet operation	%	10	1	5	14	R
40090	residual oxygen content setpoint	%	10	1	5	14	R
40091	Temperature in the hi-limit stat housing at which all pumps run	°C	2	0	50	104	R
40092	Maximum current for delivery screw	A	100	2	0,01	6	R
40093	Pause before cleaning	min	60	0	0	500	R
40094	During heating-cleaning reduce output for	min	60	0	0	500	R
40095	Start of 2nd pellet filling		1	0	0	2400	R
40096	Max. runtime of suction fan	min	60	0	1	120	R
40097	Delivery screw runtime	s	1	0	1	900	R
40098	Delivery screw pause time	s	1	0	1	240	R
40099	Minimum combustion chamber temperature	°C	1	0	200	1100	R
40100	Maximum combustion chamber temperature	°C	1	0	200	1250	R
40101	During heating - cleaning the grate should stay open for	s	1	0	1	999	R
40102	NO feed if temp over	°C	1	0	500	1300	R
40103	Minimum lambda control fan speed	%	1	0	1	100	R
40104	Minimum fan speed of combustion chamber controller	%	1	0	1	100	R
40105	Maximum feed correction by O2 controller		10	1	0	1	R
40106	Primary air delay	s	1	0	0	999	R
40107	primary air boost during heating up	%	1	0	0	100	R
40108	Duration of primary air boost	min	60	0	0	60	R
40109	Maximal devitation of residual O2 from setpoint	%	10	1	0	10	R
40110	O2 setpoint increase for partial load	%	10	1	0	10	R
40111	Control range of O2 control	%	10	1	0	10	R
40112	Tilt the grate how often during cleaning		1	0	1	10	R
40113	Permitted start processes with blocked ash screw		1	0	1	10	R
40114	Boiler underpressure setpoint	Pa	1	0	0	255	R
40115	Under-pressure in the boiler at maximum output	Pa	1	0	0	255	R
40116	ID fan startup time	s	1	0	0	1000	R
40117	The duration of the preparation is	s	1	0	0	1000	R
40118	Under-pressure MIN control variable	%	1	0	0	100	R
40119	Stoker pre-run	s	10	1	0	30	R
40120	The minimum feed time of the feed screw is	s	10	1	0	30	R
40121	Feed time of feed screw is	s	10	1	0	30	R
40122	Delivery time feed screw	s	10	1	0	30	R
40123	Feed time of rotary valve is	s	10	1	0	30	R
40124	Tilt the grate how often during heating-cleaning?		1	0	0	999	R
40125	How long should I vibrate	s	1	0	0	999	R
40127	After what charge time	s	1	0	0	1000	R
40128	Cycle time of crank-drive grate	s	1	0	0	1000	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
40129	WOS start time		1	0	0	2400	R
40130	WOS stop time		1	0	0	2400	R
40131	WOS runs every	s	1	0	0	9900	R
40132	Feed time until there is a fuel quantity suitable for ignition	s	1	0	0	300	R
40133	The time until the stoker is empty is	s	1	0	0	400	R
40134	Minimum opening of air flap at full load	%	1	0	0	100	R
40135	primary air boost during shutdown	%	1	0	0	100	R
40136	Automatic ignition		1	0	0	1	R/W
40137	Rotary valve run-on	s	10	1	0	60	R
40139	Counter limit for troubleshooting of rotary valve overcurrent is		1	0	0	10	R
40140	During troubleshooting of stoker, it turns forwards for	s	10	1	0	3	R
40141	During troubleshooting of stoker, it turns backwards for	s	10	1	0	3	R
40142	During troubleshooting of feed screw, it turns forwards for	s	10	1	0	3	R
40143	During troubleshooting of rotary valve, it turns forwards for	s	10	1	0	3	R
40144	During troubleshooting of feed screw, it turns backwards for	s	10	1	0	3	R
40145	During troubleshooting of rotary valve, it turns backwards for	s	10	1	0	3	R
40146	During troubleshooting of rotary valve, it turns forwards for	s	10	1	0	3	R
40147	During troubleshooting of rotary valve, it turns backwards for	s	10	1	0	3	R
40148	A rotary valve motor protection switch error is delayed for	s	1	0	0	10	R
40149	The back-burn flap opens after a maximum of	s	1	0	0	200	R
40150	The back-burn flap closes after a maximum of	s	1	0	0	200	R
40151	Nominal current for stoker screw	A	100	2	0,01	6	R
40152	Nominal current for feed screw	A	100	2	0,01	6	R
40153	Nominal current for rotary valve	A	100	2	0,01	6	R
40154	Heating up time for lambda probe	s	1	0	0	300	R
40155	Vacuum filling system permitted from		1	0	0	2400	R
40156	Vacuum filling system permitted until		1	0	0	2400	R
40157	Ignition switches off above	°C	1	0	90	250	R
40158	Switch-on delay feed screw light barrier	s	10	0	0	999	R
40159	Error of light barrier(s) is delayed for	s	10	0	0	999	R
40160	slide valve installed on pellet cyclone		1	0	0	1	R
40161	minimum output	%	1	0	0	100	R
40162	Maximum boost of output to	%	1	0	0	100	R
40163	ID fan at 0% secondary air (lower point of ID fan controller)	%	1	0	0	100	R
40164	Activate ID fan controller		1	0	0	1	R
40165	Cleaning after standby		1	0	0	1	R
40166	The time until the stoker is full is	s	1	0	0	150	R
40167	Minimum loading rate	%	1	0	1	100	R
40168	ID fan offset	%	1	0	0	50	R
40169	Pump output of boiler loading pump		1	0	0	114	R
40170	Maximum fan speed in fire wood mode	%	1	0	0	100	R
40171	In blower fan run-on the shaker should run for	s	1	0	0	100	R
40172	In blower fan run-on the shaker should switch on every	s	1	0	0	100	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
40175	Maximum ID fan speed	%	1	0	0	150	R
40176	P4 Pellet 32/38 with small cyclone installed		1	0	0	1	R
40177	Maximum loading rate	%	1	0	1	100	R
40178	Under-pressure at minimum output	Pa	1	0	0	999	R
40179	The time until the stoker is full is	s	1	0	0	9999	R
40180	Feed time until there is a fuel quantity suitable for ignition	s	1	0	0	9999	R
40181	The time until the stoker is empty is	s	1	0	0	9999	R
40182	Switch-off delay feed screw light barrier	s	10	0	0	999	R
40183	Switch-off delay of delivery screw(s) light barrier(s)	s	10	0	0	999	R
40184	Switch-on delay of delivery screw(s) light barrier(s)	s	10	0	0	999	R
40185	Minimum path for slide valve	%	10	0	0	100	R
40186	During heating-cleaning release output after	min	60	0	0	60	R
40187	Air quantity, which should be reached during preparation with P4 Pellet 8/15	m/s	100	2	0	5	R
40188	Minimum fan speed in firewood mode	%	1	0	0	100	R
40189	Minimum fan speed in firewood mode for ID fan speed	%	1	0	0	95	R
40190	Reset troubleshooting time once		1	0	0	1	R
40191	Interrupt cleaning mode		1	0	0	1	R
40192	Air quantity, which should be reached during preparation with P4 Pellet 32-100	m/s	100	2	0	5	R
40193	Which sensor input is used for the flow switch		1	0	1	118	R
40194	Air quantity, which should be reached during preparation with P4 Pellet 20/25	m/s	100	2	0	5	R
40195	Air quantity, which should be reached during preparation with SP Dual	m/s	100	2	0	5	R
40196	Air quantity, which should be reached during preparation with PE1	m/s	100	2	0	5	R
40197	Fuel selection		1	0	0	200	R
40199	Lambda probe correction value		14	1	7	8	R
40200	Room air independent operation		1	0	0	1	R
40201	Output warnings through fault message relays		1	0	0	1	R
40202	Clean after how many hours heating	h	10	1	1	24	R
40203	Width of the cc temp. control band	°C	1	0	10	300	R
40204	Start of combustion chamber temperature control	°C	1	0	300	1300	R
40205	Start secondary air cooling at CCT signal	%	1	0	5	100	R
40206	End secondary air cooling at CCT signal	%	1	0	5	100	R
40207	Start of slide-in reduction from cc temp signal	%	1	0	5	100	R
40208	Start emergency skimming from STL sensor temp.	°C	2	0	90	110	R
40209	Pump output for skimming		1	0	0	114	R
40210	O2 control release in heating from:	min	60	0	0	30	R
40211	Min. current monitoring with stoker		1	0	0	1	R
40212	Heating hours until ash removal warning	h	1	0	10	9999	R
40213	Desired work point of flue gas temperature	°C	1	0	150	300	R
40214	Sensor input of deflector top sensor		1	0	1	118	R
40215	Output fire off message using HCP0		1	0	0	1	R
40216	Return setpoint delay	s	1	0	0	1000	R
40217	Return setpoint boost (power influence)	%	1	0	0	100	R
40218	Return feed lift min. dif. at min. output	°C	1	0	4	30	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
40219	Return feed lift min. dif. at 100% output	°C	1	0	4	30	R
40220	Opening of air flap during pre-heating	%	1	0	0	100	R
40221	Opening of air flap during shutdown	%	1	0	0	100	R
40222	Control pressure during preparation (seal control)	Pa	1	0	0	255	R
40223	Control pressure tolerance during preparation (seal control)	Pa	1	0	0	255	R
40224	Under-pressure during pre-heating	Pa	1	0	0	255	R
40225	Under-pressure during shutdown	Pa	1	0	0	255	R
40226	Time feed screw is on until stoker screw	%	1	0	1	100	R
40227	Lambda probe type		1	0	1	4	R
40228	Lambda probe calibration (probe must be at 21% O2)		1	0	0	1	R
40230	Minimum collector temperature	°C	2	0	0	80	R
40231	Boiler flue gas difference for fire out	°C	2	0	2	30	R
40232	Minimum loading rate	%	10	1	0,1	100	R
40233	WOS runs every	min	60	0	1	500	R
40234	Ash screw interval	min	60	0	1	500	R
40235	Condenser cleaning interval (Heating hours)	h	1	0	5	120	R
40236	Condenser cleaning duration	s	1	0	10	240	R
40237	Condenser cleaning possible from		1	0	0	2400	R
40238	Condenser cleaning possible till		1	0	0	2400	R
40239	Combustion chamber temperature for Heating	°C	1	0	0	1000	R
40240	Electrical room air flap present		1	0	0	1	R
40241	ID fan max in firewood mode	%	1	0	35	95	R
40242	Duration of preheat	s	1	0	60	3600	R
40243	Refill cyclone after buffer charging?		1	0	0	1	R
40244	Opening of air flap during ignition	%	1	0	0	100	R
40245	Start value of the O2 regulator.	%	1	0	0	100	R
40246	Position 1 of change-over unit is used?		1	0	0	1	R
40247	Position 2 of change-over unit is used?		1	0	0	1	R
40248	Position 3 of change-over unit is used?		1	0	0	1	R
40249	Clean after how many hours heating	h	10	1	0	24	R
40250	Vacuum + screw filling run-on, applies after reaching the MAX fill level	s	1	0	0	300	R
40251	Suction run-on	s	1	0	0	300	R
40252	After firewood operation, delay buffer tank loading with pellets about	h	10	1	0	24	R
40253	Min. current monitoring with feed screw		1	0	0	1	R
40254	Min. current monitoring with rotary valve		1	0	0	1	R
40255	On-time of spray valve. Overall cyclus 20 sec	%	1	0	10	100	R
40258	Start delay of light barrier at sliding floor	s	10	1	0,1	999,9	R
40259	Release delay of light barrier at sliding floor	s	10	1	0,1	999,9	R
40260	Cycles of sliding floor after	s	10	0	0	999	R
40261	Duration of cyclus of sliding floor after	s	10	0	0	999	R
40262	maximum numbers of cycle for sliding floor		1	0	0	20	R
40263	Control of boiler loading pump		1	0	0	8	R
40264	Boiler - Control of bypass pump		1	0	0	8	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
40265	Deaktivate automatical pellet outfeeder		1	0	0	1	R
40266	Priority of suction position 1		1	0	1	2	R
40267	Priority of suction position 2		1	0	1	2	R
40268	Priority of suction position 3		1	0	1	2	R
40269	Start of locking window for suction positions with priority 1 (Mon-Fri)		1	0	0	2400	R
40270	End of locking window for suction positions with priority 1 (Mon-Fri)		1	0	0	2400	R
40271	Black underpressure sensor cartridge installed (Type: 401.93000)		1	0	0	1	R
40272	Refill at grate cleaning over heating hours		1	0	0	1	R
40273	Minimal air quantity during operation	m/s	100	2	0	5	R
40276	CCT signal for secondary FGR start	%	1	0	0	100	R
40277	CCT signal for secondary FGR stop	%	1	0	0	100	R
40278	Start of output reduction at CCT signal	%	1	0	0	100	R
40281	max. increase of residual O2 by flue gas temperature	%	10	1	0	10	R
40282	Start of O2 increase at flue gas temperature	°C	1	0	0	250	R
40283	Stop of O2 increase at flue gas temperature	°C	1	0	0	250	R
40284	Minimum underpressure	Pa	1	0	0	100	R
40285	max. power reduction through under pressure control	%	1	0	0	100	R
40286	Start of FGR fan at flue gas temperature	%	1	0	0	100	R
40287	max. reducion of secondary air through FGR	%	1	0	0	100	R
40288	Start tertiary air at secondary air control	%	1	0	0	100	R
40289	Tertiary air boost via CCT signal	%	1	0	0	100	R
40290	Control band for flue gas temperature	°C	1	0	1	40	R
40291	Ignition power at flue gas temp.	°C	1	0	0	180	R
40292	Opening of tertiary air at 0% signal	%	1	0	0	100	R
40293	Opening of tertiary air at 100% signal	%	1	0	0	100	R
40297	Secondary air at door open during status Heating	%	1	0	0	100	R
40298	Maximum speed - boiler pump	%	1	0	0	100	R
40299	Increase of temperature at sensor 1 during 5 min in status Heating up	°C	2	0	0	50	R
40300	Increase of flue gas temperature for note to close the door appears	°C	1	0	0	80	R
40301	Residual O2 content under which the note to close the door appears	%	10	1	0	21	R
40302	O2 control limit when it is not released	%	1	0	0	100	R
40303	Nominal current for screw 1	A	10	1	0	3	R
40304	Nominal current for screw 2	A	10	1	0	3	R
40305	During troubleshooting of feed screw, it turns backwards for	s	10	1	0	25	R
40306	During troubleshooting of feed screw, it turns forwards for	s	10	1	0	25	R
40307	Switch-on delay feed screw light barrier	s	10	1	0	500	R
40308	Switch-off delay feed screw light barrier	s	10	1	0	500	R
40309	FGR - Temp 1	°C	1	0	0	400	R
40310	FGR - Temp 2	°C	1	0	0	400	R
40311	FGR characteristics		1	0	0	4	R
40312	Ash screw positioning active		1	0	0	1	R
40313	Screw 1 - Screw active		1	0	0	1	R
40314	Screw 2 - Screw active		1	0	0	1	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
40315	Screw 1 - Maximum idle time of screw	min	1	0	0	320	R
40316	Screw 2 - Switch-on delay feed screw light barrier	s	10	1	0	500	R
40317	Screw 2 - Switch-off delay feed screw light barrier	s	10	1	0	500	R
40318	Note to close the door shall be shown on the display		1	0	0	1	R
40319	Delivered amount of pellets at 100% feed	g	1	0	0	10000	R
40320	Remaining pellet amount in store room	t	10	1	0	100	R
40321	Start of locking window for suction positions with priority 1 (Sat-Sun)		1	0	0	2400	R
40322	End of locking window for suction positions with priority 1 (Sat-Sun)		1	0	0	2400	R
40323	Minimum underpressure in combustion chamber during heating	Pa	1	0	0	500	R
40324	Maximum underpressure in combustion chamber during heating	Pa	1	0	0	500	R
40325	Minimum underpressure in combustion chamber during preparation	Pa	1	0	0	500	R
40326	Maximum underpressure in combustion chamber during preparation	Pa	1	0	0	500	R
40327	ID fan min in pellet operation	%	1	0	0	95	R
40328	Minimum ID fan speed in pellet operation	%	1	0	0	100	R
40329	Type of changeover unit		1	0			R
40330	Position 4 of change-over unit is used?		1	0	0	1	R
40331	Position 5 of change-over unit is used?		1	0	0	1	R
40332	Position 6 of change-over unit is used?		1	0	0	1	R
40333	Position 7 of change-over unit is used?		1	0	0	1	R
40334	Position 8 of change-over unit is used?		1	0	0	1	R
40335	Probe suction reversal for	s	1	0	0	180	R
40336	Minimum pellet level fuel storeroom	t	10	1	0	100	R
40337	Forced infeed maximum runtime	s	10	0	0	10	R
40338	Forced infeed attempts		1	0	0	5	R
40339	Nominal current for screw 3	A	10	1	0	3	R
40340	Nominal current for screw 4	A	10	1	0	3	R
40341	Schnecke 1 - Screw at address		1	0	1	18	R
40342	Schnecke 2 - Screw at address		1	0	1	18	R
40343	Schnecke 3 auf LS - Screw at address		1	0	1	34	R
40344	Schnecke 4 auf LS - Screw at address		1	0	1	34	R
40345	Schnecke 1 - Source node		1	0	1	20	R
40346	Schnecke 2 - Source node		1	0	1	20	R
40347	Schnecke 3 auf LS - Source node		1	0	1	20	R
40348	Schnecke 4 auf LS - Source node		1	0	1	20	R
40349	Schnecke 1 - Target node		1	0	1	20	R
40350	Schnecke 2 - Target node		1	0	1	20	R
40351	Schnecke 3 auf LS - Target node		1	0	1	20	R
40352	Schnecke 4 auf LS - Target node		1	0	1	20	R
40354	Screw active		1	0	0	1	R
40355	Configuration		1	0	0	10	R
40356	Cyclone fed with		1	0			R
40357	Position 1 of change-over unit is used?		1	0	0	1	R
40358	Position 2 of change-over unit is used?		1	0	0	1	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
40359	Position 3 of change-over unit is used?		1	0	0	1	R
40360	Position 4 of change-over unit is used?		1	0	0	1	R
40361	Position 5 of change-over unit is used?		1	0	0	1	R
40362	Position 6 of change-over unit is used?		1	0	0	1	R
40363	Position 7 of change-over unit is used?		1	0	0	1	R
40364	Position 8 of change-over unit is used?		1	0	0	1	R
40365	Condensation heat exchanger present		1	0	0	1	R
40366	Max. reduction of primary air in FGR mode	%	1	0	0	100	R
40367	Max. air flap for casing cooling	%	1	0	0	100	R
40368	Primary air when boiler off	%	1	0	0	100	R
40369	Release FGR flue gas temperature	°C	1	0	60	300	R
40370	Release FGR combustion chamber temperature	%	1	0	0	100	R
40371	FGR cleaning duration	s	1	0	0	600	R
40372	FGR cleaning at CCT	°C	1	0	0	1000	R
40373	Maximum control of FGR prim. fan	V	10	1	0	10	R
40374	Minimum control of FGR prim. fan	V	10	1	0	10	R
40375	FGR primary air opening at 100% control	%	1	0	0	100	R
40376	FGR primary air opening at 0% control	%	1	0	0	100	R
40377	Influence of FGR primary air on blower fan control	%	1	0	0	200	R
40378	Prim. FGR increase curve		1	0	10	10	R
40379	Prim. FGR decrease curve		1	0	10	10	R
40380	CCT signal for primary FGR start	%	1	0	0	100	R
40381	CCT signal for primary FGR stop	%	1	0	0	100	R
40382	Influence of FGR secondary air on blower fan control	%	1	0	0	200	R
40383	If ash screw blocked shut down after x hours of heating	h	1	0	0	100	R
40384	Ash screw 2 run-on	s	1	0	0	255	R
40385	Forced infeed after	s	10	0	0	900	R
40386	DHW tank temp. setpoint for legionella heating (same for all DHW tanks)	°C	2	0	65	90	R
40387	E-filter - Time until bypass flap is open	s	1	0	0	300	R
40388	CCT rise for heating	°C	1	0	0	500	R
40389	E-filter function active		1	0	0	1	R
40390	E-filter - Duration of cleaning cycle	s	1	0	0	300	R
40391	E-filter - Dry time	s	1	0	0	3600	R
40392	E-filter - Duration of quick cleaning	s	1	0	1	10	R
40393	E-filter - On-time of spray valve. Overall cyclus 10 sec	%	1	0	10	100	R
40394	E-filter - Quick/compulsory cleaning active?		1	0	0	1	R
40395	E-filter - Cleaning possible from		1	0	0	2400	R
40396	E-filter - Cleaning possible till		1	0	0	2400	R
40397	E-filter - cleaning interval	h	1	0	1	24	R
40398	E-filter - Is there a siphon fitted?		1	0	0	1	R
40399	E-filter - Minimum time between quick/compulsory cleaning	min	60	0	10	500	R
40400	Primary air boost for startup	%	1	0	0	100	R
40401	Influence of primary air on comb. air fan control	%	1	0	0	200	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
40402	FGR power influence	%	1	0	100	100	R
40403	Worm-drive grate control during heating	%	1	0	0	100	R
40404	Worm-drive grate control reduced	%	1	0	0	100	R
40405	Max temperature under the grate	°C	1	0	100	400	R
40406	Rotary agitator at address		1	0	1	18	R
40407	Weighting of screw runtime when bunker is EMPTY	%	1	0	0	200	R
40408	Weighting of screw runtime when bunker is FULL	%	1	0	0	200	R
40409	Rotary agitator - Mode		1	0			R
40410	Nominal current for rotary agitator	A	10	1	0	3	R
40411	Bunker FULL at % of nominal current	%	1	0	0	200	R
40412	Rotary agitator - Minimum current monitoring active		1	0	0	1	R
40413	Rotary agitator - Cycle time:	s	1	0	0	600	R
40414	Minimum current monitoring active		1	0	0	1	R
40415	Minimum current monitoring active		1	0	0	1	R
40416	Influence of secondary air on comb. air fan control	%	1	0	0	200	R
40417	Close bypass flap when filter switched off	s	1	0	0	1	R
40418	Maximum ID fan control	V	10	1	0	10	R
40419	Minimum ID fan control	V	10	1	0	10	R
40420	Time until error for MIN underpressure in combustion chamber	s	1	0	0	1000	R
40421	Maximum control of CAF	V	10	1	0	10	R
40422	Minimum control of CAF	V	10	1	0	10	R
40423	Cyclone 1 - Cyclone active		1	0	0	1	R
40424	Cyclone 2 - Cyclone active		1	0	0	1	R
40425	Cyclone 1 - Vibration motor installed		1	0	0	1	R
40426	Cyclone 1 - Vibration timing	%	1	0	0	100	R
40427	Cyclone 1 - Preliminary suction time	s	1	0	0	300	R
40428	Cyclone 1 - Suction run-on	s	1	0	0	300	R
40429	Cyclone 1 - Minimum current monitoring active		1	0	0	1	R
40430	Cyclone 1 - Screw cycle	s	1	0	0	300	R
40431	Cyclone 1 - Vacuum + screw filling run-on, applies after reaching the MAX fill level	s	1	0	0	300	R
40432	Cyclone 2 - Max. runtime of suction fan	min	60	0	3	120	R
40433	Cyclone 2 - Vibration motor installed		1	0	0	1	R
40434	Cyclone 2 - Vibration timing	%	1	0	0	100	R
40435	Cyclone 2 - Preliminary suction time	s	1	0	0	300	R
40436	Cyclone 2 - Suction run-on	s	1	0	0	300	R
40437	Cyclone 2 - Minimum current monitoring active		1	0	0	1	R
40438	Cyclone 2 - Screw cycle	s	1	0	0	300	R
40439	Cyclone 2 - Probe suction reversal for	s	1	0	0	180	R
40440	Cyclone 2 - Vacuum + screw filling run-on, applies after reaching the MAX fill level	s	1	0	0	300	R
40441	Fuel selection		1	0	0	999	R
40442	E-Filter - Filter type		1	0	0	2	R
40443	Suction fan run-on	s	1	0	1	60	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
40444	WOS with own drive installed		1	0	0	1	R
40445	T4e - Tip grate 1 after how many times cleaning		1	0	0	100	R
40446	FGR flap opening at 0% control	%	1	0	0	100	R
40447	FGR flap opening at 100% control	%	1	0	0	100	R
40448	FGR secondary air opening at 0% control	%	1	0	0	100	R
40449	FGR secondary air opening at 100% control	%	1	0	0	100	R
40450	Pressure setpoint in FGR duct at 0% FGR control	Pa	1	0	0	255	R
40451	Pressure setpoint in FGR duct at 100% FGR control	Pa	1	0	0	255	R
40452	FGR flap control delay time	s	1	0	0	900	R
40453	Maximum permitted pressure deviation	Pa	1	0	0	100	R
40454	Delay till warning	s	1	0	0	1000	R
40455	Reduce pump release temp. in heat-up phase by	°C	2	0	0	20	R
40456	Delta +/- for start value tracking	%	10	1	0,1	30	R
40457	Monitoring time for start value tracking	min	60	0	1	60	R
40458	Difference between return setpoint and boiler temp. in heat-up phase	°C	2	0	3	10	R
40459	Start value for slide-in control	%	10	1	0	100	R
40460	Differential pressure setpoint at minimum power	Pa	1	0	0	255	R
40461	Differential pressure setpoint at 100% power	Pa	1	0	0	255	R
40462	WOS - Which sensor is used for the function monitor?		1	0	1	2	R
40463	Tip grate 1 after how many hours heating	h	1	0	0	1000	R
40464	Maximum speed SoDC pump	%	1	0	0	100	R
40465	Minimum value for automatic max. fuel feed-in	%	1	0	0	100	R
40466	Minimum speed SoDC pump	%	1	0	0	100	R
40467	Slide-on duct cooling run-on	min	60	0	1	240	R
40468	Residual oxygen, above which the Lambda probe can switch off	%	10	1	0	21	R
40469	Opening of primary air during shutdown	%	1	0	0	100	R
40470	Gain for SoDC controller Kp		256	2	0	10	R
40471	Reset time for SoDC controller Tn	s	1	0	0	100	R
40472	Ratio screw 1 to feed screw	%	1	0	10	200	R
40473	Screw active		1	0	0	1	R
40474	Nominal current for screw 1	A	10	1	0	3	R
40475	Minimum current monitoring active		1	0	0	1	R
40476	Use quick throttle function at RL temperature increase		1	0	0	1	R
40477	Secondary air opening at 0% signal	%	1	0	0	100	R
40478	Secondary air opening at 100% signal	%	1	0	0	100	R
40479	Duration of LW Heat/Shut down	min	60	0	2	15	R
40480	Source for external power demand		1	0	0	2	R
40481	Invert ext. power demand via analogue input		1	0	0	1	R
40482	Maximum permitted temperature in the slide-on duct/burn through elbow	°C	2	0	80	120	R
40483	Activate slide-on duct cooling if temperature above	°C	2	0	60	90	R
40484	Warning if temperature in slide-on duct/burn through elbow above	°C	2	0	70	100	R
40485	Temperature rise in return feed for start of quick regulation	°C	2	0	0	15	R
40486	Monitoring time of temperature rise in return	s	1	0	30	600	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
40487	Tip the grate 1 how often during cleaning		1	0	0	50	R
40488	Suction system 1 filled by		1	0			R
40489	Suction system 2 filled by		1	0			R
40490	Position 1 of change-over unit is used?		1	0	0	1	R
40491	Position 2 of change-over unit is used?		1	0	0	1	R
40492	Position 3 of change-over unit is used?		1	0	0	1	R
40493	Position 4 of change-over unit is used?		1	0	0	1	R
40494	Position 5 of change-over unit is used?		1	0	0	1	R
40495	Position 6 of change-over unit is used?		1	0	0	1	R
40496	Position 7 of change-over unit is used?		1	0	0	1	R
40497	Position 8 of change-over unit is used?		1	0	0	1	R
40498	Suction system 3 filled by		1	0			R
40499	FGR flap position at nominal load	%	1	0	0	100	R
40500	FGR flap position at partial load	%	1	0	0	100	R
40501	Which backup boiler is installed?		1	0	0	4	R
40502	Backup boiler start delay	min	60	0	0	500	R
40503	Main boiler startup delay	min	60	0	0	500	R
40504	Backup boiler start, if buffer tank top temperature is below	°C	2	0	0	100	R
40505	Backup boiler minimum runtime	min	60	0	0	500	R
40506	Close delay for isolating valve	min	60	0	0	500	R
40507	Minimum temperature of backup boiler	°C	2	0	20	95	R
40508	Temperature difference between backup boiler and buffer tank	°C	2	0	0	50	R
40509	Solar system		1	0	1	3	R
40510	Sensor input of backup boiler sensor		1	0	1	118	R
40511	Which output is used for unloading backup boiler		1	0	0	114	R
40512	Oil valve shut delay	s	1	0	0	3600	R
40513	Invert backup boiler isolating valve		1	0	0	1	R
40514	Backup boiler delivery temperature	°C	2	0	60	110	R
40515	Control of boiler 2 pump		1	0	0	81	R
40516	Maximum backup boiler pump speed	%	1	0	0	100	R
40518	Control backup boiler variably to the target value		1	0	0	1	R
40519	Start standby boiler only according to storage tank top		1	0	0	1	R
40520	Zweitkessel - Disable startup delay in case of fault?						R
40521	Zweitkessel - Deactivate startup delay when boiler is switched off						R
40601	Switch off the pump at what return temperature in the circulation line	°C	2	0	20	120	R
40602	Circulation pump run-on	s	1	0	1	3600	R
40603	Circ. pump - Return sensor present		1	0	0	1	R
40604	Sensor input of circulation return sensor		1	0	1	118	R
40605	Pump output of circulation pump		1	0	0	114	R
40606	Maximum circulation pump speed	%	1	0	0	100	R
40607	Control of circulation pump		1	0	0	8	R
40701	Sensor input of network return temperature sensor		1	0	1	118	R
40702	Network return setpoint	°C	2	0	20	120	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
40703	Minimum speed for network pump	%	1	0	0	100	R
40704	Pump output of network pump		1	0	0	114	R
40705	Sensor input of feeder 1 return sensor		1	0	1	118	R
40706	Sensor input of feeder 2 return sensor		1	0	1	118	R
40707	Sensor input of feeder 3 return sensor		1	0	1	118	R
40708	Sensor input of feeder 4 return sensor		1	0	1	118	R
40709	Pump output of feeder 1 pump		1	0	0	114	R
40710	Pump output of feeder 2 pump		1	0	0	114	R
40711	Pump output of feeder 3 pump		1	0	0	114	R
40712	Pump output of feeder 4 pump		1	0	0	114	R
40713	Return temperature setpoint feeder 1	°C	2	0	20	120	R
40714	Return temperature setpoint feeder 2	°C	2	0	20	120	R
40715	Return temperature setpoint feeder 3	°C	2	0	20	120	R
40716	Return temperature setpoint feeder 4	°C	2	0	20	120	R
40717	Minimum speed for distributor 1 pump	%	1	0	0	100	R
40718	Minimum speed for distributor 2 pump	%	1	0	0	100	R
40719	Minimum speed for distributor 3 pump	%	1	0	0	100	R
40720	Minimum speed for distributor 4 pump	%	1	0	0	100	R
40721	Only switch on the network pump when required by the buffer tank (variant 3 / 4)		1	0	0	1	R
40722	Control of network pump		1	0	0	8	R
40723	Maximum speed for network pump	%	1	0	0	100	R
40724	Control of distributor 1 pump		1	0	0	8	R
40725	Control of distributor 2 pump		1	0	0	8	R
40726	Control of distributor 3 pump		1	0	0	8	R
40727	Control of distributor 4 pump		1	0	0	8	R
40728	Maximum speed for distributor 1 pump	%	1	0	0	100	R
40729	Maximum speed for distributor 2 pump	%	1	0	0	100	R
40730	Maximum speed for distributor 3 pump	%	1	0	0	100	R
40731	Maximum speed for distributor 4 pump	%	1	0	0	100	R
40801	Diff- Regler - Sensor input of heat source sensor		1	0	1	118	R
40802	Diff- Regler - Sensor input of heat sink sensor		1	0	1	118	R
40803	Diff. control - Minimum pump speed	%	1	0	0	100	R
40804	Diff. control - Startup difference	°C	2	0	20	100	R
40805	Diff. control - Shutdown difference	°C	2	0	20	100	R
40806	Diff- Regler - Pump output of diff. control pump		1	0	0	114	R
40807	Diff. control - Minimum temperature for heat source	°C	2	0	1	90	R
40808	Diff. control - Maximum temperature for heat sink	°C	2	0	10	130	R
40809	Diff. control - Control of diff. control pump		1	0	0	81	R
40810	Diff. control - Maximum pump speed	%	1	0	0	100	R
40811	Diff. control - Sensor monitoring		1	0	0	1	R
40901	Cascade - Start point 1 at buffer tank charge	%	1	0	0	100	R
40902	Cascade - Start point 2 at buffer tank charge	%	1	0	0	100	R
40903	Cascade - Start point 3 at buffer tank charge	%	1	0	0	100	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
40904	Cascade - Start priority of the master boiler		1	0	1	4	R
40905	Cascade - Start priority of slave boiler 1		1	0	1	4	R
40906	Cascade - Start priority of slave boiler 2		1	0	1	4	R
40907	Cascade - Start priority of slave boiler 3		1	0	1	4	R
40908	Cascade - Quick start if buffer tank discharge is greater than (% / 10min)	%/ 10m	1	0	1	40	R
40909	Cascade - Reduce the overall output of the cascade before the buffer tank is fully loaded	%	1	0	0	70	R
40910	Operation hours for cascade mode	h	1	0	0	32767	R
40911	Kaskade - Delay for the shutdown of the boiler under a flue gas-min	s	1	0	0	6000	R
40912	Kaskade - Delay for the request of the boiler from a flue gas-min	s	1	0	0	6000	R
40913	Kaskade - Hysteresis for regulating range	°C	2	1	0	20	R
40914	Kaskade - Hysteresis for quick power reduction	°C	2	1	0	20	R
41001	Correction value for external sensor	°C	2	0	10	10	R
41002	Heating circuit modul to which the external sensor is connected (0 = Core modul)		1	0	0	8	R
41003	Use room sensor input for room thermostat		1	0	0	1	R
41032	HK1 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41033	HK1 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41034	HK1 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41035	HK1 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41036	HK1 - Desired room temperature during heating mode	°C	2	0	10	30	R
41037	HK1 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41038	HK1 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41039	HK1 - Frost protection temperature	°C	2	0	10	20	R
41040	HK1 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41041	HK1 - Desired room temperature during setback mode	°C	2	0	10	30	R
41042	HK1 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41043	HK1 - Mixer runtime	s	1	0	30	600	R
41044	HK1 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41045	HK1 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41046	HK1 - High temperature reqirement because of DHW tank 1 loading		1	0	0	1	R
41047	HK1 - Maximum DHW tank flow temp.	°C	2	0	20	110	R
41048	HK1 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41062	HK2 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41063	HK2 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41064	HK2 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41065	HK2 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41066	HK2 - Desired room temperature during heating mode	°C	2	0	10	30	R
41067	HK2 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41068	HK2 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
41069	HK2 - Frost protection temperature	°C	2	0	10	20	R
41070	HK2 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41071	HK2 - Desired room temperature during setback mode	°C	2	0	10	30	R
41072	HK2 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41073	HK2 - Mixer runtime	s	1	0	30	600	R
41074	HK2 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41075	HK2 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41076	HK2 - High temperature reqirement because of DHW tank loading		1	0	0	1	R
41077	HK2 - For high temperature requirement DHW tank 01 don´t look at DHW tank 01		1	0	0	1	R
41078	HK2 - Maximum DHW tank flow temp.	°C	2	0	20	110	R
41079	HK2 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41092	HK3 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41093	HK3 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41094	HK3 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41095	HK3 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41096	HK3 - Desired room temperature during heating mode	°C	2	0	10	30	R
41097	HK3 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41098	HK3 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41099	HK3 - Frost protection temperature	°C	2	0	10	20	R
41100	HK3 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41101	HK3 - Desired room temperature during setback mode	°C	2	0	10	30	R
41102	HK3 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41103	HK3 - Mixer runtime	s	1	0	30	255	R
41104	HK3 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41105	HK3 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41106	HK3 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41122	HK4 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41123	HK4 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41124	HK4 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41125	HK4 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41126	HK4 - Desired room temperature during heating mode	°C	2	0	10	30	R
41127	HK4 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41128	HK4 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41129	HK4 - Frost protection temperature	°C	2	0	10	20	R
41130	HK4 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41131	HK4 - Desired room temperature during setback mode	°C	2	0	10	30	R
41132	HK4 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41133	HK4 - Mixer runtime	s	1	0	30	255	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
41134	HK4 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41135	HK4 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41136	HK4 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41152	HK5 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41153	HK5 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41154	HK5 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41155	HK5 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41156	HK5 - Desired room temperature during heating mode	°C	2	0	10	30	R
41157	HK5 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41158	HK5 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41159	HK5 - Frost protection temperature	°C	2	0	10	20	R
41160	HK5 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41161	HK5 - Desired room temperature during setback mode	°C	2	0	10	30	R
41162	HK5 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41163	HK5 - Mixer runtime	s	1	0	30	255	R
41164	HK5 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41165	HK5 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41166	HK5 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41182	HK6 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41183	HK6 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41184	HK6 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41185	HK6 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41186	HK6 - Desired room temperature during heating mode	°C	2	0	10	30	R
41187	HK6 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41188	HK6 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41189	HK6 - Frost protection temperature	°C	2	0	10	20	R
41190	HK6 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41191	HK6 - Desired room temperature during setback mode	°C	2	0	10	30	R
41192	HK6 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41193	HK6 - Mixer runtime	s	1	0	30	255	R
41194	HK6 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41195	HK6 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41196	HK6 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41212	HK7 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41213	HK7 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41214	HK7 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41215	HK7 - Maximum heating circuit flow temp.	°C	2	0	20	110	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
41216	HK7 - Desired room temperature during heating mode	°C	2	0	10	30	R
41217	HK7 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41218	HK7 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41219	HK7 - Frost protection temperature	°C	2	0	10	20	R
41220	HK7 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41221	HK7 - Desired room temperature during setback mode	°C	2	0	10	30	R
41222	HK7 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41223	HK7 - Mixer runtime	s	1	0	30	255	R
41224	HK7 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41225	HK7 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41226	HK7 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41242	HK8 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41243	HK8 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41244	HK8 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41245	HK8 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41246	HK8 - Desired room temperature during heating mode	°C	2	0	10	30	R
41247	HK8 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41248	HK8 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41249	HK8 - Frost protection temperature	°C	2	0	10	20	R
41250	HK8 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41251	HK8 - Desired room temperature during setback mode	°C	2	0	10	30	R
41252	HK8 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41253	HK8 - Mixer runtime	s	1	0	30	255	R
41254	HK8 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41255	HK8 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41256	HK8 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41272	HK9 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41273	HK9 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41274	HK9 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41275	HK9 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41276	HK9 - Desired room temperature during heating mode	°C	2	0	10	30	R
41277	HK9 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41278	HK9 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41279	HK9 - Frost protection temperature	°C	2	0	10	20	R
41280	HK9 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41281	HK9 - Desired room temperature during setback mode	°C	2	0	10	30	R
41282	HK9 - Controller gain room temperature Kp-Rm		10	1	0	20	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
41283	HK9 - Mixer runtime	s	1	0	30	255	R
41284	HK9 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41285	HK9 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41286	HK9 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41302	HK10 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41303	HK10 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41304	HK10 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41305	HK10 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41306	HK10 - Desired room temperature during heating mode	°C	2	0	10	30	R
41307	HK10 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41308	HK10 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41309	HK10 - Frost protection temperature	°C	2	0	10	20	R
41310	HK10 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41311	HK10 - Desired room temperature during setback mode	°C	2	0	10	30	R
41312	HK10 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41313	HK10 - Mixer runtime	s	1	0	30	255	R
41314	HK10 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41315	HK10 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41316	HK10 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41332	HK11 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41333	HK11 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41334	HK11 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41335	HK11 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41336	HK11 - Desired room temperature during heating mode	°C	2	0	10	30	R
41337	HK11 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41338	HK11 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41339	HK11 - Frost protection temperature	°C	2	0	10	20	R
41340	HK11 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41341	HK11 - Desired room temperature during setback mode	°C	2	0	10	30	R
41342	HK11 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41343	HK11 - Mixer runtime	s	1	0	30	255	R
41344	HK11 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41345	HK11 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41346	HK11 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41362	HK12 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41363	HK12 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41364	HK12 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
41365	HK12 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41366	HK12 - Desired room temperature during heating mode	°C	2	0	10	30	R
41367	HK12 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41368	HK12 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41369	HK12 - Frost protection temperature	°C	2	0	10	20	R
41370	HK12 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41371	HK12 - Desired room temperature during setback mode	°C	2	0	10	30	R
41372	HK12 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41373	HK12 - Mixer runtime	s	1	0	30	255	R
41374	HK12 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41375	HK12 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41376	HK12 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41392	HK13 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41393	HK13 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41394	HK13 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41395	HK13 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41396	HK13 - Desired room temperature during heating mode	°C	2	0	10	30	R
41397	HK13 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41398	HK13 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41399	HK13 - Frost protection temperature	°C	2	0	10	20	R
41400	HK13 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41401	HK13 - Desired room temperature during setback mode	°C	2	0	10	30	R
41402	HK13 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41403	HK13 - Mixer runtime	s	1	0	30	255	R
41404	HK13 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41405	HK13 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41406	HK13 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41422	HK14 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41423	HK14 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41424	HK14 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41425	HK14 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41426	HK14 - Desired room temperature during heating mode	°C	2	0	10	30	R
41427	HK14 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41428	HK14 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41429	HK14 - Frost protection temperature	°C	2	0	10	20	R
41430	HK14 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41431	HK14 - Desired room temperature during setback mode	°C	2	0	10	30	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
41432	HK14 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41433	HK14 - Mixer runtime	s	1	0	30	255	R
41434	HK14 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41435	HK14 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41436	HK14 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41452	HK15 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41453	HK15 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41454	HK15 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41455	HK15 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41456	HK15 - Desired room temperature during heating mode	°C	2	0	10	30	R
41457	HK15 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41458	HK15 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41459	HK15 - Frost protection temperature	°C	2	0	10	20	R
41460	HK15 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41461	HK15 - Desired room temperature during setback mode	°C	2	0	10	30	R
41462	HK15 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41463	HK15 - Mixer runtime	s	1	0	30	255	R
41464	HK15 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41465	HK15 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41466	HK15 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41482	HK16 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41483	HK16 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41484	HK16 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41485	HK16 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41486	HK16 - Desired room temperature during heating mode	°C	2	0	10	30	R
41487	HK16 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41488	HK16 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41489	HK16 - Frost protection temperature	°C	2	0	10	20	R
41490	HK16 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41491	HK16 - Desired room temperature during setback mode	°C	2	0	10	30	R
41492	HK16 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41493	HK16 - Mixer runtime	s	1	0	30	255	R
41494	HK16 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41495	HK16 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41496	HK16 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41512	HK17 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41513	HK17 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
41514	HK17 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41515	HK17 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41516	HK17 - Desired room temperature during heating mode	°C	2	0	10	30	R
41517	HK17 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41518	HK17 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41519	HK17 - Frost protection temperature	°C	2	0	10	20	R
41520	HK17 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41521	HK17 - Desired room temperature during setback mode	°C	2	0	10	30	R
41522	HK17 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41523	HK17 - Mixer runtime	s	1	0	30	255	R
41524	HK17 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41525	HK17 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41526	HK17 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41542	HK18 - Flow temperature SP at external temperature of +10°C	°C	2	0	10	110	R
41543	HK18 - Flow temperature SP at external temperature of -10°C	°C	2	0	10	110	R
41544	HK18 - Reduction of flow temperature in setback mode	°C	2	0	0	70	R
41545	HK18 - Maximum heating circuit flow temp.	°C	2	0	20	110	R
41546	HK18 - Desired room temperature during heating mode	°C	2	0	10	30	R
41547	HK18 - External temperature, at which heating circuit pump switches off in heating mode	°C	2	0	20	50	R
41548	HK18 - External temperature, at which heating circuit pump switches off in setback mode	°C	2	0	20	50	R
41549	HK18 - Frost protection temperature	°C	2	0	10	20	R
41550	HK18 - Switch off heating circuit pump when outfeed setpoint is lower than	°C	2	0	10	30	R
41551	HK18 - Desired room temperature during setback mode	°C	2	0	10	30	R
41552	HK18 - Controller gain room temperature Kp-Rm		10	1	0	20	R
41553	HK18 - Mixer runtime	s	1	0	30	255	R
41554	HK18 - Should this heating circuit heat when there is DHW boiler priority ?		1	0	0	1	R
41555	HK18 - From which buffer tank or distributor is the heating circuit supplied (0 = boiler)		1	0	0	4	R
41556	HK18 - From which temperature at storage tank top should the overheating protection be activated	°C	1	0	60	120	R
41600	DHW tanks run-on (this setting applies for all DHW tanks)	min	60	0	0	100	R
41631	DHW tank 1 - Which buffer tank or heat distributor supplies the heat (0 = boiler)		1	0	0	4	R
41632	DHW tank 1 - Set DHW temperature	°C	2	0	10	100	R
41633	DHW tank 1 - Reload if DHW tank temperature is below	°C	2	0	1	90	R
41634	DHW tank 1 - Load if temperature difference between buffer tank and DHW tank is	°C	2	0	3	50	R
41635	DHW tank 1 - Residual heat use		1	0	0	1	R
41636	DHW tank 1 - Only load DHW tank once a day		1	0	0	1	R
41637	DHW tank 1 - Legionella heating activated		1	0	0	1	R
41638	DHW tank 1 - When should the legionella heating be carried out?		1	0	1	8	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
41639	DHW tank 1 - Load if temperature difference between boiler and DHW tank is	°C	2	0	3	50	R
41640	DHW tank 1 - Setpoint for temperature difference between boiler - DHW tank	°C	2	0	3	50	R
41641	DHW tank 1 - Minimum DHW tank speed	%	1	0	0	100	R
41642	Sensor input of DHW tank 01 solar reference sensor		1	0	1	118	R
41644	Pump output of DHW tank 01 pump		1	0	1	114	R
41645	DHW tank 1 - Control of DHW tank pump		1	0	0	81	R
41646	DHW tank 1 - Maximum DHW tank pump speed	%	1	0	0	100	R
41647	DHW tank 1 pump will be controlled from HCP0		1	0	0	1	R
41648	Sensor input of DHW tank 01 top sensor		1	0	1	118	R
41661	DHW tank 2 - Which buffer tank or heat distributor supplies the heat (0 = boiler)		1	0	0	4	R
41662	DHW tank 2 - Set DHW temperature	°C	2	0	10	100	R
41663	DHW tank 2 - Reload if DHW tank temperature is below	°C	2	0	1	90	R
41664	DHW tank 2 - Load if temperature difference between buffer tank and DHW tank is	°C	2	0	3	50	R
41665	DHW tank 2 - Residual heat use		1	0	0	1	R
41666	DHW tank 2 - Only load DHW tank once a day		1	0	0	1	R
41667	DHW tank 2 - Legionella heating activated		1	0	0	1	R
41668	DHW tank 2 - When should the legionella heating be carried out?		1	0	1	8	R
41669	DHW tank 2 - Load if temperature difference between boiler and DHW tank is	°C	2	0	3	50	R
41670	DHW tank 2 - Setpoint for temperature difference between boiler - DHW tank	°C	2	0	3	50	R
41671	DHW tank 2 - Minimum DHW tank speed	%	1	0	0	100	R
41672	Sensor input of DHW tank 02 top sensor		1	0	1	118	R
41673	Sensor input of DHW tank 02 solar reference sensor		1	0	1	118	R
41674	Pump output of DHW tank 02 pump		1	0	1	114	R
41675	DHW tank 2 - Control of DHW tank pump		1	0	0	81	R
41676	DHW tank 2 - Maximum DHW tank pump speed	%	1	0	0	100	R
41691	DHW tank 3 - Which buffer tank or heat distributor supplies the heat (0 = boiler)		1	0	0	4	R
41692	DHW tank 3 - Set DHW temperature	°C	2	0	10	100	R
41693	DHW tank 3 - Reload if DHW tank temperature is below	°C	2	0	1	90	R
41694	DHW tank 3 - Load if temperature difference between buffer tank and DHW tank is	°C	2	0	3	50	R
41695	DHW tank 3 - Residual heat use		1	0	0	1	R
41696	DHW tank 3 - Only load DHW tank once a day		1	0	0	1	R
41697	DHW tank 3 - Legionella heating activated		1	0	0	1	R
41698	DHW tank 3 - When should the legionella heating be carried out?		1	0	1	8	R
41699	DHW tank 3 - Load if temperature difference between boiler and DHW tank is	°C	2	0	3	50	R
41700	DHW tank 3 - Setpoint for temperature difference between boiler - DHW tank	°C	2	0	3	50	R
41701	DHW tank 3 - Minimum DHW tank speed	%	1	0	0	100	R
41702	Sensor input of DHW tank 03 top sensor		1	0	1	118	R
41703	Sensor input of DHW tank 03 solar reference sensor		1	0	1	118	R
41704	Pump output of DHW tank 03 pump		1	0	1	114	R
41705	DHW tank 3 - Control of DHW tank pump		1	0	0	81	R
41706	DHW tank 3 - Maximum DHW tank pump speed	%	1	0	0	100	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
41721	DHW tank 4 - Which buffer tank or heat distributor supplies the heat (0 = boiler)		1	0	0	4	R
41722	DHW tank 4 - Set DHW temperature	°C	2	0	10	100	R
41723	DHW tank 4 - Reload if DHW tank temperature is below	°C	2	0	1	90	R
41724	DHW tank 4 - Load if temperature difference between buffer tank and DHW tank is	°C	2	0	3	50	R
41725	DHW tank 4 - Residual heat use		1	0	0	1	R
41726	DHW tank 4 - Only load DHW tank once a day		1	0	0	1	R
41727	DHW tank 4 - Legionella heating activated		1	0	0	1	R
41728	DHW tank 4 - When should the legionella heating be carried out?		1	0	1	8	R
41729	DHW tank 4 - Load if temperature difference between boiler and DHW tank is	°C	2	0	3	50	R
41730	DHW tank 4 - Setpoint for temperature difference between boiler - DHW tank	°C	2	0	3	50	R
41731	DHW tank 4 - Minimum DHW tank speed	%	1	0	0	100	R
41732	Sensor input of DHW tank 04 top sensor		1	0	1	118	R
41733	Sensor input of DHW tank 04 solar reference sensor		1	0	1	118	R
41734	Pump output of DHW tank 04 pump		1	0	1	114	R
41735	DHW tank 4 - Control of DHW tank pump		1	0	0	81	R
41736	DHW tank 4 - Maximum DHW tank pump speed	%	1	0	0	100	R
41751	DHW tank 5 - Which buffer tank or heat distributor supplies the heat (0 = boiler)		1	0	0	4	R
41752	DHW tank 5 - Set DHW temperature	°C	2	0	10	100	R
41753	DHW tank 5 - Reload if DHW tank temperature is below	°C	2	0	1	90	R
41754	DHW tank 5 - Load if temperature difference between buffer tank and DHW tank is	°C	2	0	3	50	R
41755	DHW tank 5 - Residual heat use		1	0	0	1	R
41756	DHW tank 5 - Only load DHW tank once a day		1	0	0	1	R
41757	DHW tank 5 - Legionella heating activated		1	0	0	1	R
41758	DHW tank 5 - When should the legionella heating be carried out?		1	0	1	8	R
41759	DHW tank 5 - Load if temperature difference between boiler and DHW tank is	°C	2	0	3	50	R
41760	DHW tank 5 - Setpoint for temperature difference between boiler - DHW tank	°C	2	0	3	50	R
41761	DHW tank 5 - Minimum DHW tank speed	%	1	0	0	100	R
41762	Sensor input of DHW tank 05 top sensor		1	0	1	118	R
41763	Sensor input of DHW tank 05 solar reference sensor		1	0	1	118	R
41764	Pump output of DHW tank 05 pump		1	0	1	114	R
41765	DHW tank 5 - Control of DHW tank pump		1	0	0	81	R
41766	DHW tank 5 - Maximum DHW tank pump speed	%	1	0	0	100	R
41781	DHW tank 6 - Which buffer tank or heat distributor supplies the heat (0 = boiler)		1	0	0	4	R
41782	DHW tank 6 - Set DHW temperature	°C	2	0	10	100	R
41783	DHW tank 6 - Reload if DHW tank temperature is below	°C	2	0	1	90	R
41784	DHW tank 6 - Load if temperature difference between buffer tank and DHW tank is	°C	2	0	3	50	R
41785	DHW tank 6 - Residual heat use		1	0	0	1	R
41786	DHW tank 6 - Only load DHW tank once a day		1	0	0	1	R
41787	DHW tank 6 - Legionella heating activated		1	0	0	1	R
41788	DHW tank 6 - When should the legionella heating be carried out?		1	0	1	8	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
41789	DHW tank 6 - Load if temperature difference between boiler and DHW tank is	°C	2	0	3	50	R
41790	DHW tank 6 - Setpoint for temperature difference between boiler - DHW tank	°C	2	0	3	50	R
41791	DHW tank 6 - Minimum DHW tank speed	%	1	0	0	100	R
41792	Sensor input of DHW tank 06 top sensor		1	0	1	118	R
41793	Sensor input of DHW tank 06 solar reference sensor		1	0	1	118	R
41794	Pump output of DHW tank 06 pump		1	0	1	114	R
41795	DHW tank 6 - Control of DHW tank pump		1	0	0	81	R
41796	DHW tank 6 - Maximum DHW tank pump speed	%	1	0	0	100	R
41811	DHW tank 7 - Which buffer tank or heat distributor supplies the heat (0 = boiler)		1	0	0	4	R
41812	DHW tank 7 - Set DHW temperature	°C	2	0	10	100	R
41813	DHW tank 7 - Reload if DHW tank temperature is below	°C	2	0	1	90	R
41814	DHW tank 7 - Load if temperature difference between buffer tank and DHW tank is	°C	2	0	3	50	R
41815	DHW tank 7 - Residual heat use		1	0	0	1	R
41816	DHW tank 7 - Only load DHW tank once a day		1	0	0	1	R
41817	DHW tank 7 - Legionella heating activated		1	0	0	1	R
41818	DHW tank 7 - When should the legionella heating be carried out?		1	0	1	8	R
41819	DHW tank 7 - Load if temperature difference between boiler and DHW tank is	°C	2	0	3	50	R
41820	DHW tank 7 - Setpoint for temperature difference between boiler - DHW tank	°C	2	0	3	50	R
41821	DHW tank 7 - Minimum DHW tank speed	%	1	0	0	100	R
41822	Sensor input of DHW tank 07 top sensor		1	0	1	118	R
41823	Sensor input of DHW tank 07 solar reference sensor		1	0	1	118	R
41824	Pump output of DHW tank 07 pump		1	0	1	114	R
41825	DHW tank 7 - Control of DHW tank pump		1	0	0	81	R
41826	DHW tank 7 - Maximum DHW tank pump speed	%	1	0	0	100	R
41841	DHW tank 8 - Which buffer tank or heat distributor supplies the heat (0 = boiler)		1	0	0	4	R
41842	DHW tank 8 - Set DHW temperature	°C	2	0	10	100	R
41843	DHW tank 8 - Reload if DHW tank temperature is below	°C	2	0	1	90	R
41844	DHW tank 8 - Load if temperature difference between buffer tank and DHW tank is	°C	2	0	3	50	R
41845	DHW tank 8 - Residual heat use		1	0	0	1	R
41846	DHW tank 8 - Only load DHW tank once a day		1	0	0	1	R
41847	DHW tank 8 - Legionella heating activated		1	0	0	1	R
41848	DHW tank 8 - When should the legionella heating be carried out?		1	0	1	8	R
41849	DHW tank 8 - Load if temperature difference between boiler and DHW tank is	°C	2	0	3	50	R
41850	DHW tank 8 - Setpoint for temperature difference between boiler - DHW tank	°C	2	0	3	50	R
41851	DHW tank 8 - Minimum DHW tank speed	%	1	0	0	100	R
41852	Sensor input of DHW tank 08 top sensor		1	0	1	118	R
41853	Sensor input of DHW tank 08 solar reference sensor		1	0	1	118	R
41854	Pump output of DHW tank 08 pump		1	0	1	114	R
41855	DHW tank 8 - Control of DHW tank pump		1	0	0	81	R
41856	DHW tank 8 - Maximum DHW tank pump speed	%	1	0	0	100	R
42001	Buffer tank 1 - Heating circuit release from following buffer tank temperature	°C	2	0	20	100	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
42002	Buffer tank 1 - Residual heat use		1	0	0	1	R
42003	Buffer tank 1 - Temperature difference between boiler and border layer	°C	2	0	2	80	R
42004	Buffer tank 1 - Minimum buffer tank pump speed	%	1	0	0	100	R
42005	Buffer tank 1 - Boiler start if there is a difference between the boiler temperature setpoint and the top storage tank temperature	°C	2	0	5	70	R
42006	Buffer tank 1 - Buffer tank fully loaded if temperature difference between boiler and bottom buffer tank	°C	2	0	3	50	R
42007	Puffer 1 - Sensor input of storage tank top sensor		1	0	1	118	R
42008	Puffer 1 - Sensor input of storage tank middle sensor		1	0	1	118	R
42009	Puffer 1 - Sensor input of storage tank bottom sensor		1	0	1	118	R
42010	Puffer 1 - Pump output of storage tank pump		1	0	0	114	R
42011	Buffer tank 1 - Control of storage tank pump		1	0	0	8	R
42012	Buffer tank 1 - Maximum buffer tank pump speed	%	1	0	0	100	R
42013	Puffer 1 - Sensor input of storage tank sensor 3		1	0	1	118	R
42014	Buffer tank 1 - Mid buffer tank controller active? If No the sensor is only a display		1	0	0	1	R
42015	Buffer tank 1 - SP-Dual - In pellet mode stop buffer tank loading bec. of middle buffer tank sensor		1	0	0	1	R
42016	Buffer tank 1 - Enable heating circuit pump 0 according to top buffer temp.		1	0	0	1	R
42017	Buffer tank 1 - If the boiler is active then charge all buffer tanks		1	0	0	1	R
42018	Buffer tank 1 - Buffer - Buffer difference	°C	2	0	10	20	R
42019	Puffer 1 - Sensor input of storage tank sensor 2		1	0	1	118	R
42020	Buffer charge is 100 % at boiler setpoint - parameter	°C	2	0	10	60	R
42021	Buffer charge is 0 % at the following temperature	°C	2	0	5	80	R
42022	Start of buffer tank charging from charge	%	1	0	0	100	R
42023	Puffer 1 - Pump outlet for buffer tank relief valve		1	0	0	130	R
42024	Buffer tank 1 - Top buffer temp. when the start-up relief valve switches to bottom buffer	°C	2	0	10	100	R
42025	Control buffer tank requests according to system environment		1	0	0	1	R
42026	According to system environment, buffer tank request shutdown delay of	min	60	0	0	120	R
42027	100 % boiler output from a buffer charge of	%	1	0	0	100	R
42028	0 % boiler output if buffer charge is over	%	1	0	0	100	R
42029	Buffer tank 1 - Volume of the usedbuffer tank	l	1	0	500	8000	R
42030	Buffer tank 1 - Is a hygienic layered tank used?		1	0	0	1	R
42031	Refill calculation active (Sensors has to be assigned correctly)		1	0	0	1	R
42032	Puffer 1 - Pump outlet for buffer tank zone valve		1	0	0	130	R
42033	Buffer tank 1 - Invert pump outlet for buffer relief valve		1	0	0	1	R
42034	Buffer tank 1 - Invert pump outlet for buffer zone valve		1	0	0	1	R
42041	Buffer tank 2 - Heating circuit release from following buffer tank temperature	°C	2	0	20	100	R
42042	Buffer tank 2 - Residual heat use		1	0	0	1	R
42043	Buffer tank 2 - Temperature difference between boiler and border layer	°C	2	0	2	80	R
42044	Buffer tank 2 - Minimum buffer tank pump speed	%	1	0	0	100	R
42045	Buffer tank 2 - Boiler start if there is a difference between the boiler temperature setpoint and the top storage tank temperature	°C	2	0	5	70	R
42046	Buffer tank 2 - Buffer tank fully loaded if temperature difference between boiler and bottom buffer tank	°C	2	0	3	50	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
42047	Puffer 2 - Sensor input of storage tank top sensor		1	0	1	118	R
42048	Puffer 2 - Sensor input of storage tank middle sensor		1	0	1	118	R
42049	Puffer 2 - Sensor input of storage tank bottom sensor		1	0	1	118	R
42050	Puffer 2 - Pump output of storage tank pump		1	0	0	114	R
42051	Buffer tank 2 - Control of storage tank pump		1	0	0	8	R
42052	Buffer tank 2 - Maximum buffer tank pump speed	%	1	0	0	100	R
42081	Buffer tank 3 - Heating circuit release from following buffer tank temperature	°C	2	0	20	100	R
42082	Buffer tank 3 - Residual heat use		1	0	0	1	R
42083	Buffer tank 3 - Temperature difference between boiler and border layer	°C	2	0	2	80	R
42084	Buffer tank 3 - Minimum buffer tank pump speed	%	1	0	0	100	R
42085	Buffer tank 3 - Boiler start if there is a difference between the boiler temperature setpoint and the top storage tank temperature	°C	2	0	5	70	R
42086	Buffer tank 3 - Buffer tank fully loaded if temperature difference between boiler and bottom buffer tank	°C	2	0	3	50	R
42087	Puffer 3 - Sensor input of storage tank top sensor		1	0	1	118	R
42088	Puffer 3 - Sensor input of storage tank middle sensor		1	0	1	118	R
42089	Puffer 3 - Sensor input of storage tank bottom sensor		1	0	1	118	R
42090	Puffer 3 - Pump output of storage tank pump		1	0	1	114	R
42091	Buffer tank 3 - Control of storage tank pump		1	0	0	8	R
42092	Buffer tank 3 - Maximum buffer tank pump speed	%	1	0	0	100	R
42121	Buffer tank 4 - Heating circuit release from following buffer tank temperature	°C	2	0	20	100	R
42122	Buffer tank 4 - Residual heat use		1	0	0	1	R
42123	Buffer tank 4 - Temperature difference between boiler and border layer	°C	2	0	2	80	R
42124	Buffer tank 4 - Minimum buffer tank pump speed	%	1	0	0	100	R
42125	Buffer tank 4 - Boiler start if there is a difference between the boiler temperature setpoint and the top storage tank temperature	°C	2	0	5	70	R
42126	Buffer tank 4 - Buffer tank fully loaded if temperature difference between boiler and bottom buffer tank	°C	2	0	3	50	R
42127	Puffer 4 - Sensor input of storage tank top sensor		1	0	1	118	R
42128	Puffer 4 - Sensor input of storage tank middle sensor		1	0	1	118	R
42129	Puffer 4 - Sensor input of storage tank bottom sensor		1	0	1	118	R
42130	Puffer 4 - Pump output of storage tank pump		1	0	1	114	R
42131	Buffer tank 4 - Control of storage tank pump		1	0	0	8	R
42132	Buffer tank 4 - Maximum buffer tank pump speed	%	1	0	0	100	R
42301	HK1 - Deviation of room temperature sensor	°C	2	1	20	20	R
42302	HK2 - Deviation of room temperature sensor	°C	2	1	20	20	R
42303	HK3 - Deviation of room temperature sensor	°C	2	1	20	20	R
42304	HK4 - Deviation of room temperature sensor	°C	2	1	20	20	R
42305	HK5 - Deviation of room temperature sensor	°C	2	1	20	20	R
42306	HK6 - Deviation of room temperature sensor	°C	2	1	20	20	R
42307	HK7 - Deviation of room temperature sensor	°C	2	1	20	20	R
42308	Password for boiler display		1	0	0	9999	R/W
42309	Password for Touch display with address 1		1	0	0	9999	R/W
42310	Password for Touch display with address 2		1	0	0	9999	R/W
42311	Password for Touch display with address 3		1	0	0	9999	R/W

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
42312	Password for Touch display with address 4		1	0	0	9999	R/W
42313	Password for Touch display with address 5		1	0	0	9999	R/W
42314	Password for Touch display with address 6		1	0	0	9999	R/W
42315	Password for Touch display with address 7		1	0	0	9999	R/W
42316	HK8 - Deviation of room temperature sensor	°C	2	1	20	20	R
42317	HK9 - Deviation of room temperature sensor	°C	2	1	20	20	R
42318	HK10 - Deviation of room temperature sensor	°C	2	1	20	20	R
42319	HK11 - Deviation of room temperature sensor	°C	2	1	20	20	R
42320	HK12 - Deviation of room temperature sensor	°C	2	1	20	20	R
42321	HK13 - Deviation of room temperature sensor	°C	2	1	20	20	R
42322	HK14 - Deviation of room temperature sensor	°C	2	1	20	20	R
42323	Which temperature scale should be used?		1	0	0	1	R/W
42324	Always log data in °C		1	0	0	1	R
42325	HK15 - Deviation of room temperature sensor	°C	2	1	20	20	R
42326	HK16 - Deviation of room temperature sensor	°C	2	1	20	20	R
42327	HK17 - Deviation of room temperature sensor	°C	2	1	20	20	R
42328	HK18 - Deviation of room temperature sensor	°C	2	1	20	20	R
42401	Heating up program active		1	0	0	1	R
42402	Current day of the heating up program		1	0	1	30	R
42403	Which heating up program is used		1	0	1	8	R
42404	Outfeed setpoint for all days in program 7	°C	2	0	0	100	R
42405	Heating up program - Use heating circuit 01		1	0	0	1	R
42406	Heating up program - Use heating circuit 02		1	0	0	1	R
42407	Heating up program - Use heating circuit 03		1	0	0	1	R
42408	Heating up program - Use heating circuit 04		1	0	0	1	R
42409	Heating up program - Use heating circuit 05		1	0	0	1	R
42410	Heating up program - Use heating circuit 06		1	0	0	1	R
42411	Heating up program - Use heating circuit 07		1	0	0	1	R
42412	Heating up program - Use heating circuit 08		1	0	0	1	R
42413	Heating up program - Use heating circuit 09		1	0	0	1	R
42414	Heating up program - Use heating circuit 10		1	0	0	1	R
42415	Heating up program - Use heating circuit 11		1	0	0	1	R
42416	Heating up program - Use heating circuit 12		1	0	0	1	R
42417	Heating up program - Use heating circuit 13		1	0	0	1	R
42418	Heating up program - Use heating circuit 14		1	0	0	1	R
42419	Heating up program - Use heating circuit 15		1	0	0	1	R
42420	Heating up program - Use heating circuit 16		1	0	0	1	R
42421	Heating up program - Use heating circuit 17		1	0	0	1	R
42422	Heating up program - Use heating circuit 18		1	0	0	1	R
42423	Outfeed temperature setpoint on day 1	°C	2	0	0	90	R
42424	Outfeed temperature setpoint on day 2	°C	2	0	0	90	R
42425	Outfeed temperature setpoint on day 3	°C	2	0	0	90	R
42426	Outfeed temperature setpoint on day 4	°C	2	0	0	90	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
42427	Outfeed temperature setpoint on day 5	°C	2	0	0	90	R
42428	Outfeed temperature setpoint on day 6	°C	2	0	0	90	R
42429	Outfeed temperature setpoint on day 7	°C	2	0	0	90	R
42430	Outfeed temperature setpoint on day 8	°C	2	0	0	90	R
42431	Outfeed temperature setpoint on day 9	°C	2	0	0	90	R
42432	Outfeed temperature setpoint on day 10	°C	2	0	0	90	R
42433	Outfeed temperature setpoint on day 11	°C	2	0	0	90	R
42434	Outfeed temperature setpoint on day 12	°C	2	0	0	90	R
42435	Outfeed temperature setpoint on day 13	°C	2	0	0	90	R
42436	Outfeed temperature setpoint on day 14	°C	2	0	0	90	R
42437	Outfeed temperature setpoint on day 15	°C	2	0	0	90	R
42438	Outfeed temperature setpoint on day 16	°C	2	0	0	90	R
42439	Outfeed temperature setpoint on day 17	°C	2	0	0	90	R
42440	Outfeed temperature setpoint on day 18	°C	2	0	0	90	R
42441	Outfeed temperature setpoint on day 19	°C	2	0	0	90	R
42442	Outfeed temperature setpoint on day 20	°C	2	0	0	90	R
42443	Outfeed temperature setpoint on day 21	°C	2	0	0	90	R
42444	Outfeed temperature setpoint on day 22	°C	2	0	0	90	R
42445	Outfeed temperature setpoint on day 23	°C	2	0	0	90	R
42446	Outfeed temperature setpoint on day 24	°C	2	0	0	90	R
42447	Outfeed temperature setpoint on day 25	°C	2	0	0	90	R
42448	Outfeed temperature setpoint on day 26	°C	2	0	0	90	R
42449	Outfeed temperature setpoint on day 27	°C	2	0	0	90	R
42450	Outfeed temperature setpoint on day 28	°C	2	0	0	90	R
42451	Outfeed temperature setpoint on day 29	°C	2	0	0	90	R
42452	Outfeed temperature setpoint on day 30	°C	2	0	0	90	R
42601	Temp differential to start collector pump	°C	2	0	0	50	R
42602	Temp difference to stop collector pump	°C	2	0	0	50	R
42603	Maximum buffer tank bottom temperature during solar charging	°C	2	0	0	90	R
42604	Boiler target temperature during solar charging	°C	2	0	0	95	R
42605	Minimum collector pump speed	%	1	0	0	100	R
42606	Sensor input of solar collector sensor		1	0	1	118	R
42607	Sensor input of solar reference storage tank bottom sensor		1	0	1	118	R
42608	Pump output of collector pump		1	0	0	114	R
42609	Pump output of collector - storage tank pump		1	0	0	114	R
42610	Pump output of solar isolating valve		1	0	0	114	R
42611	Pump output of collector - DHW tank pump		1	0	0	114	R
42612	Is a PT1000 sensor used as a solar sensor?		1	0	0	1	R
42613	Solar - Invert isolating valve		1	0	0	1	R
42614	Solar - Sensor input of secondary HE Sensor flow		1	0	1	118	R
42616	Solar - Sensor input of collector return sensor		1	0	1	118	R
42617	Solar - Heat exchanger - buffer tank pump start delay	s	1	0	1	7200	R
42618	Solar - Heat exchanger - buffer tank pump stop delay	s	1	0	1	7200	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
42619	Maximum collector pump speed	%	1	0	0	100	R
42620	Buffer tank top solar setpoint (fast loading until this temperature)	°C	2	0	20	120	R
42621	Collector - buffer tank top differential	°C	2	0	2	60	R
42622	Top buffer tank - secondary HE flow difference	°C	2	0	5	20	R
42624	Collector pump control Kp value		256	2	0,01	99,99	R
42625	Collector pump control Tn value	s	1	0	1	3600	R
42626	Solar - Pump output of storage tank - heat exchanger pump		1	0	1	114	R
42627	Solar - Pump outlet of DHW tank - heat exchanger pump		1	0	1	114	R
42628	Solar - Nominal flow of collector pump for heat meter [L/h]	l/h	1	0	0	10000	R
42629	Solar - Collector monitoring		1	0	0	1	R
42630	DHW priority for solar charging		1	0	0	1	R
42631	Solar - Solar charging to which buffer tank		1	0	1	4	R
42632	Solar - Solar charging to which DHW tank		1	0	1	8	R
42633	Solar - Litres per pulse of flow through meter	EINH_l_im	100	2	0,05	10	R
42634	Solar - Is a flowmeter being used?		1	0	0	1	R
42635	Solar - Sensor input of heat meter flow temperature sensor		1	0	1	118	R
42636	Solar - Control of collector pump		1	0	0	8	R
42637	Solar - Control of storage tank - heat exchanger pump		1	0	0	8	R
42638	Solar - Control of DHW tank - heat exchanger pump		1	0	0	8	R
42639	Solar - Collector monitoring every	min	60	0	10	30	R
42640	System 12/13 - WT Sekundär Pumpen Regler Kp Wert		256	2	0	10	R
42641	System 12/13 - Secondary HE pumps control Tn value	s	1	0	0	1000	R
42642	System 12/13 - Minimum pump speed secondary HE	%	1	0	0	100	R
42643	Solar - Control of collector DHW tank - pump		1	0	0	8	R
42644	System 12/13 - Sensor input of solar reference storage tank top sensor		1	0	1	118	R
42645	Solar - Collector/pump protection from a collector temp.	°C	2	0	115	180	R
42646	The solar panel system pump is allowed to start from		1	0	0	2400	R
42647	The solar panel system pump is allowed to run until		1	0	0	2400	R
43001	Start infeed reduction from a pressure deviation of	Pa	1	0	0	50	R
43002	Startup criteria for HV modules - Flue gas temperature	°C	1	0	50	150	R
43003	Cleaning during heating active		1	0	0	1	R
43004	Maximum target control HV module 1	%	1	0	30	100	R
43005	Start ramp HV controller	min	1	0	5	30	R
43006	Start value HV controller	%	1	0	30	100	R
43007	Interval voltage reduction HV controller	s	1	0	1	300	R
43008	Interval voltage increase HV controller	s	1	0	1	3600	R
43009	Max. output HV modules	W	1	0	0	120	R
43010	Minimum target control for HV module(s)	%	1	0	0	100	R
43011	Switch off ignition when oxygen is reduced by	%	10	1	2	10	R
43012	Opening of primary air when boiler is off	%	1	0	0	30	R
43013	Number of cleaning cycles per heating hour		1	0	1	10	R
43014	Maximum deviation of residual O2 from calculated setpoint	%	10	1	0,1	10	R
43015	Maximum air damper correction due to residual O2	%	1	0	0	100	R

ID	DESCRIPTION	UN	SCAL	DEC	MIN	MAX	R/W
43016	Reduce underpressure at 100% FGR by	Pa	1	0	5	40	R
43017	The system is filled with frost protection		1	0	0	1	R
43019	Number of HV modules		1	0	1	2	R
43020	Automatic lambda probe calibration active		1	0	0	1	R
43021	Autom. Kalibrierung - Minimum time at standstill	h	1	0	2	100	R
43022	Startup criteria for FGR - Flue gas temperature	°C	1	0	80	150	R
43023	Control boiler loading pump using pump 1		1	0	0	1	R
43024	Control of boiler loading pump in operation	%	1	0	0	100	R
43025	Maximum target control HV module 2	%	1	0	30	100	R
43026	TI Leistungsvorgabe - Mode		1	0			R
43027	Target temperature difference, flow/return temp.	°C	2	0	5	35	R
43028	Enable return mixer only with active storage tank pump		1	0	0	1	R
43030	Activation delay for slide-in	s	1	0	0	999	R
43031	Suction turbine startup delay						R
43032	Factor for feed pulse						R
43033	1-2-3 Saugmodul - Loading the 1-2-3 suction module						R
43034	Zyklon m. 2 ZRS - Cyclone fed with						R
43035	1-2-3 Saugmodul - How many filling operations are required to completely empty the cyclone?						R
43036	1-2-3 Saugmodul - Maximum number of suction processes before changing the probe						R
43037	1-2-3 Saugmodul - Switch-on delay MIN sensor						R
43038	T4e - Slide-in control start-up phase						R
43039	T4e - Ratio of heating/ignition loading						R
43040	TX - Primary air at the start of heating-cleaning (absolute)						R

3.5 ModBus boiler remote control

The addresses for the ModBus boiler remote control are in the following list. The elements can be written with the command 06 and can be read using the command 03. The flow temperature setpoints can be found with the current values.

ID range	DESCRIPTION	SCAL	MIN	MAX
48001 - 48018	Flow temperature setpoint for heating circuits 1-18	2	0	75
48019 - 48026	DHW tank temperature setpoint for DHW tanks 1-8	2	0	65
48029 - 48046	Enable heating circuits 1-18	1	0	1
48047 - 48064	Mode, heating circuits 1-18	1	0	5

The following options are available for the mode of the heating circuit:

0 … Off
1 … Automatic
2 … Extra heating
3 … Setback
4 … Continuous setback
5 … Party mode

3.6 Error buffer

All of the current errors can be found in the following list.

ID	DESCRIPTION
33001	Error 1 / No error = 0xffff (65535)
33002	Error 2
33003	Error 3
33004	Error 4
33005	Error 5
33006	Error 6
33007	Error 7
33008	Error 8
33009	Error 9
33010	Error 10
33011	Error 11
33012	Error 12
33013	Error 13
33014	Error 14
33015	Error 15
33016	Error 16
33017	Error 17
33018	Error 18
33019	Error 19
33020	Error 20

3.6.1 Texts for error history

The following list is used to match the transferred error ID to the corresponding errors.

ID	DESCRIPTION
0	Overheat Thermostat (STL) or EMERGENCY OFF activated
1	Boiler temperature sensor faulty
2	Primary air flap blocked
3	Secondary air flap blocked
4	Boiler has air leak
5	Test combustion chamber overpressure monitor
6	Back-fire slide valve does not close
7	Back-fire slide valve does not open
8	Grate drive defective
9	Grate fault
10	Grate cleaning fault
11	Igntion not successful
12	Safety time expired, oxygen content too high for too long
13	Safety time expired, flue gas temperature too low for too long
14	Boiler door open too long
15	Jam sensor covered for longer than 5 minutes
16	Check fuel outfeeder
17	Check fuel store
18	Return feed temperature faulty
19	Return feed temperature too low for more than 30 minutes
20	Remote control heating circuit 1 faulty
21	Flow temperature sensor heating circuit 1 faulty
22	Remote control heating circuit 2 faulty
23	Flow temperature sensor heating circuit 2 faulty
24	External temperature sensor faulty
25	EMERGENCY OFF switch was activated
26	Remote control heating circuit 3 faulty
27	Remote control heating circuit 4 faulty
28	Remote control heating circuit 5 faulty
29	Remote control heating circuit 6 faulty
30	Remote control heating circuit 7 faulty
31	Remote control heating circuit 8 faulty
32	Remote control heating circuit 9 faulty
33	Remote control heating circuit 10 faulty
34	Remote control heating circuit 11 faulty
35	Remote control heating circuit 12 faulty
36	Remote control heating circuit 13 faulty
37	Remote control heating circuit 14 faulty
38	Remote control heating circuit 15 faulty
39	Remote control heating circuit 16 faulty

ID	DESCRIPTION
40	Remote control heating circuit 17 faulty
41	Remote control heating circuit 18 faulty
42	Flow temperature sensor in heating circuit 3 faulty
43	Flow temperature sensor in heating circuit 4 faulty
44	Flow temperature sensor in heating circuit 5 faulty
45	Flow temperature sensor in heating circuit 6 faulty
46	Flow temperature sensor in heating circuit 7 faulty
47	Flow temperature sensor in heating circuit 8 faulty
48	Flow temperature sensor in heating circuit 9 faulty
49	Flow temperature sensor in heating circuit 10 faulty
50	Flow temperature sensor in heating circuit 11 faulty
51	Flow temperature sensor in heating circuit 12 faulty
52	Flow temperature sensor in heating circuit 13 faulty
53	Flow temperature sensor in heating circuit 14 faulty
54	Flow temperature sensor in heating circuit 15 faulty
55	Flow temperature sensor in heating circuit 16 faulty
56	Flow temperature sensor in heating circuit 17 faulty
57	Flow temperature sensor in heating circuit 18 faulty
58	Bus module faulty before power switched off
59	ID fan does not rotate, in spite of full activation
60	Sensor in DHW tank 1 faulty
61	Communication with pellet module faulty
62	
63	001 EEPROM Read error
64	002 EEPROM Zero checksum
65	003 EEPROM Read error
66	004 EEPROM Incorrect software version
67	005 EEPROM Incorrect parameter length
68	006 EEPROM Read error
69	007 EEPROM Incorrect checksum
70	008 EEPROM Write error
71	009 EEPROM Write error
72	010 Config. List faulty
73	Sensor in DHW tank 2 faulty
74	Sensor in DHW tank 3 faulty
75	Sensor in DHW tank 4 faulty
76	Sensor in DHW tank 5 faulty
77	Sensor in DHW tank 6 faulty
78	Sensor in DHW tank 7 faulty
79	Sensor in DHW tank 8 faulty
80	Bottom sensor in DHW tank 1 faulty
81	Bottom sensor in DHW tank 2 faulty
82	Bottom sensor in DHW tank 3 faulty

ID	DESCRIPTION
83	Bottom sensor in DHW tank 4 faulty
84	Bottom sensor in DHW tank 5 faulty
85	Bottom sensor in DHW tank 6 faulty
86	Bottom sensor in DHW tank 7 faulty
87	Bottom sensor in DHW tank 8 faulty
88	Top sensor in buffer tank 1 faulty
89	Top sensor in buffer tank 2 faulty
90	Top sensor in buffer tank 3 faulty
91	Top sensor in buffer tank 4 faulty
92	Middle sensor in buffer tank 1 faulty
93	Middle sensor in buffer tank 2 faulty
94	Middle sensor in buffer tank 3 faulty
95	Middle sensor in buffer tank 4 faulty
96	Bottom sensor in buffer tank 1 faulty
97	Bottom sensor in buffer tank 2 faulty
98	Bottom sensor in buffer tank 3 faulty
99	Bottom sensor in buffer tank 4 faulty
100	Sensor in backup boiler faulty
101	Sensor in collector faulty
102	Sensor in additional boiler faulty
103	Fill level cannot be interpreted correctly
104	Bypass flap could not be opened
105	Bypass flap could not be closed
106	Runtime for filling was exceeded
107	Delivery screw is blocked at the suction point
108	Bypass flap could neither be closed nor opened
109	Ignition attempt failed, light by hand !
110	ID fan motor protection switch failed
111	Stoker motor protection switch failed
112	Feed screw motor protection switch failed
113	Back-burn flap opens too quickly
114	Back-burn flap closes too quickly
115	No/both end positions of back-burn flap activated
116	Rotary valve motor protection switch tripped
117	Lambda probe defective
118	Flue gas temperature sensor defective
119	Combustion chamber temperature sensor defective
120	Light barrier in gravity shaft defective
121	Drop box cover open
122	Boiler door open too long or underpressure transmitter defective
123	Grate does not open
124	Safety time expired because of fill level sensor in suction cyclone.
125	Motor protection delivery screw

ID	DESCRIPTION
126	Stoker error
127	Delivery screws error
128	DANGEROUS status possible
129	Wood chip module failed -> immediate shutdown
130	Suction module failed \n-> immediate shutdown
131	Load fuel as per instructions
132	Return sensor for network pump defective
133	Light barrier in gravity shaft of delivery screw defective(full)
134	Drop box cover of delivery screw open
135	Delivery screw motor protection switch tripped
136	Light barrier in gravity shaft of intermediate screw 1 defective(full)
137	Drop box cover of intermediate screw 1 open
138	Intermediate screw 1 motor protection switch tripped
139	Clean /check burner
140	Grate will not close
141	Back-burn flap will not close
142	Back-burn flap won't open
143	Rotary valve frequent overcurrent
144	Stoker screw frequent overcurrent
145	Feed screw frequent overcurrent
146	Control restart
147	Return feed sensor for feeder 1 faulty
148	Return feed sensor for feeder 2 faulty
149	Return feed sensor for feeder 3 faulty
150	Return feed sensor for feeder 4 faulty
151	Maximum feed after alteration re-calculated and limited
152	Light barrier in gravity shaft of intermediate screw 1 defective (empty)
153	Light barrier in gravity shaft of delivery screw defective (empty)
154	Slide valve blocked
155	Error in boiler and fuel selection
156	Self test error during preparation
157	Boiler air leak detected by feed
158	Boiler air leak detected by O2 monitoring
159	Sensor for circulation pump faulty
160	Sensor for solar heat exchanger secondary flow faulty
161	Sensor for solar collector return faulty
162	Lambda probe defective
163	Troubleshooting interrupted
164	Heat source sensor of difference controller defective
165	Heat sink sensor of difference controller defective
166	Variant 3, a buffer tank and a manifold with the same number activated
167	Probe switching due to lack of pellets or jam sensor
168	Supply bin empty, please top up pellets

ID	DESCRIPTION
169	Ash box full, please empty
170	Grate drive has overcurrent, please wait 5 minutes
171	Sensor 1 faulty
172	Storage tank solar reference sensor faulty
173	Ash box full, please empty
174	Stoker motor not plugged in or not functioning
175	Broadband probe not plugged in or heating of probe defective
176	Sensor element of the broadband probe faulty or short-circuit
177	Stoker motor not plugged in or not functioning
178	Feed screw not plugged in or not functioning
179	Ash box too long open or removed
180	Under pressure in status Preparation too low
181	Air flap blocked
182	Return flow and DHW tank loading through HCP0 is not possible (same sensor input)
183	Frequency convertor faulty
184	Temperature monitoring of fan activated (Klixon)
185	left part of grate will not close
186	right part of grate will not close
187	left part of grate will not open
188	right part of grate will not open
189	Motor protection of combustion air blower fan activated
190	Motor protection of boiler charging pump activated
191	Too often overcurrent discharge screw
192	Too often overcurrent intermediate screw
193	Automatical room air flap will not open
194	Combustion air supply faulty or blocked
195	Safety time because of minimum sensor in cyclone expired
196	ID fan switch not in position AUTO
197	Motor protection sliding floor tripped
198	Oil level in power pack too low
199	High oil temperature in power pack
200	Key switch for hydraulic room not in position AUTO
201	Sliding floor averfill
202	Water temperature in pellet burner (Sensor 1) too high
203	WOS motor is blocked or not connected
204	Air flow through is too low or air supply is faluty
205	Self test error during preparation
206	Overfilling safety device of rotary valve is active
207	Rotary valve is not connected or not functioning
208	Set numbers of cycles at sliding floor is exceeded
209	Boiler standard values aren´t adopted (Menu Set --> General settings)
210	Undergrate thermostat triggered
211	Under pressure in status Preparation too high

ID	DESCRIPTION
212	Grate drive reports that both end positions are acitve
213	Check feed system
214	Module update failed, please replace pellet module
215	Ready-to-measure state could not be achieved
216	Ready-to-measure state could not be maintained
217	Minimum level setting in fuelstore room not reached
218	Invalid parameter settings for feed system
219	Light barrier permanently covered or faulty
220	Temperature exceeded at heat exchanger
221	Motor protection switch fallen off rotary agitator
222	FC operating signal dropped from FGR blower fan
223	E-filter safety switch open
224	E-filter water sensor error
225	Excessive temperature HV box
226	E-filter communication error
227	HV error E-filter
228	Operating signal from FC ID fan faulty
229	Fault in SoDC pump
230	Motor protection switch Screw 1 fallen onto LB
231	Motor protection switch Screw 2 fallen onto LB
232	Display module at address 0 has failed (DA 24)
233	Display module at address 1 has failed (DA 25)
234	Display module at address 2 has failed (DA 26)
235	Display module at address 3 has failed (DA 27)
236	Display module at address 4 has failed (DA 28)
237	Display module at address 5 has failed (DA 29)
238	Display module at address 6 has failed (DA 30)
239	Display module at address 7 has failed (DA 31)
240	Display module at address 0 has failed (DA 243)
241	Heating circuit module at address 0 has failed (DA 32)
242	Heating circuit module at address 1 has failed (DA 33)
243	Heating circuit module at address 2 has failed (DA 34)
244	Heating circuit module at address 3 has failed (DA 35)
245	Heating circuit module at address 4 has failed (DA 36)
246	Heating circuit module at address 5 has failed (DA 37)
247	Heating circuit module at address 6 has failed (DA 38)
248	Heating circuit module at address 7 has failed (DA 39)
249	Hydraulic module at address 0 has failed (DA 40)
250	Hydraulic module at address 1 has failed (DA 41)
251	Hydraulic module at address 2 has failed (DA 42)
252	Hydraulic module at address 3 has failed (DA 43)
253	Hydraulic module at address 4 has failed (DA 44)
254	Hydraulic module at address 5 has failed (DA 45)

ID	DESCRIPTION
255	Hydraulic module at address 6 has failed (DA 46)
256	Hydraulic module at address 7 has failed (DA 47)
257	Digital module at address 0 has failed (DA 48)
258	Digital module at address 1 has failed (DA 49)
259	Digital module at address 2 has failed (DA 50)
260	Digital module at address 3 has failed (DA 51)
261	Digital module at address 4 has failed (DA 52)
262	Digital module at address 5 has failed (DA 53)
263	Digital module at address 6 has failed (DA 54)
264	Digital module at address 7 has failed (DA 55)
265	Cascade module at address 0 has failed (DA 56)
266	Cascade module at address 1 has failed (DA 57)
267	Cascade module at address 2 has failed (DA 58)
268	Cascade module at address 3 has failed (DA 59)
269	Cascade module at address 4 has failed (DA 60)
270	Cascade module at address 5 has failed (DA 61)
271	Cascade module at address 6 has failed (DA 62)
272	Cascade module at address 7 has failed (DA 63)
273	Analogue module at address 0 has failed (DA 64)
274	Analogue module at address 1 has failed (DA 65)
275	Analogue module at address 2 has failed (DA 66)
276	Analogue module at address 3 has failed (DA 67)
277	Analogue module at address 4 has failed (DA 68)
278	Analogue module at address 5 has failed (DA 69)
279	Analogue module at address 6 has failed (DA 70)
280	Analogue module at address 7 has failed (DA 71)
281	Touch display at address 0 has failed (DA 72)
282	Touch display at address 1 has failed (DA 73)
283	Touch display at address 2 has failed (DA 74)
284	Touch display at address 3 has failed (DA 75)
285	Touch display at address 4 has failed (DA 76)
286	Touch display at address 5 has failed (DA 77)
287	Touch display at address 6 has failed (DA 78)
288	Touch display at address 7 has failed (DA 79)
289	Feed system module at address 0 has failed (DA 80)
290	Feed system module at address 1 has failed (DA 81)
291	Feed system module at address 2 has failed (DA 82)
292	Feed system module at address 3 has failed (DA 83)
293	Feed system module at address 4 has failed (DA 84)
294	Feed system module at address 5 has failed (DA 85)
295	Feed system module at address 6 has failed (DA 86)
296	Feed system module at address 7 has failed (DA 87)
297	Pellet module at address 0 has failed (DA 240)

ID	DESCRIPTION
298	Wood chip module at address 0 has failed (DA 241)
299	Suction module at address 0 has failed (DA 242)
300	Broadband probes module 0 has failed (DA 244)
301	Return flow mixer module faulty (DA 245)
302	Sensor for top storage tank solar reference faulty
303	Sensor for bottom storage tank solar reference faulty
304	Underpressure in combustion chamber below MIN setpoint
305	Motor protection switch of suction screw fallen from cyclone 1
306	Motor protection switch of suction screw fallen from cyclone 2
307	Overcurrent of suction screw to cyclone 1 too frequent
308	Overcurrent of suction screw to cyclone 2 too frequent
309	Screw 1 on LB not plugged in or not working
310	Screw 2 on LB not plugged in or not working
311	Suction screw of cyclone 1 not plugged in or not working
312	Suction screw of cyclone 2 not plugged in or not working
313	Rotary agitator not plugged in or not working
314	Overcurrent of screw 1 on LB too frequent
315	Overcurrent of screw 2 on LB too frequent
316	Wrong or incorrect boiler selection
317	Wrong or incorrect fuel selection
318	Temperature exceeded at stoker pipe
319	Combi drive blocked
320	FGR activation flap will not close
321	HK1 - flow temperature too high for too long
322	HK2 - flow temperature too high for too long
323	HK3 - flow temperature too high for too long
324	HK4 - flow temperature too high for too long
325	HK5 - flow temperature too high for too long
326	HK6 - flow temperature too high for too long
327	HK7 - flow temperature too high for too long
328	HK8 - flow temperature too high for too long
329	HK9 - flow temperature too high for too long
330	HK10 - flow temperature too high for too long
331	HK11 - flow temperature too high for too long
332	HK12 - flow temperature too high for too long
333	HK13 - flow temperature too high for too long
334	HK14 - flow temperature too high for too long
335	HK15 - flow temperature too high for too long
336	HK16 - flow temperature too high for too long
337	HK17 - flow temperature too high for too long
338	HK18 - flow temperature too high for too long
339	DHW tank solar reference sensor faulty
340	FGR pressure regulation flap blocked

ID	DESCRIPTION
341	Pressure in FGR pressure duct outside the permitted range for too long
342	Grate differential pressure too low for too long
343	Slide-on duct cooling over temperature
344	Control of suction unit defective, replace pellet module
345	Tipping grate 1 will not close
346	Tipping grate 1 will not open
347	Grate drive 1 reports that both end positions are active
348	Tipping grate 2 will not close
349	Tipping grate 2 will not open
350	Grate drive 2 reports that both end positions are active
351	Temperature increase at sensor 1 is too low
352	FGR primary air flap blocked
353	FGR secondary air flap blocked
354	Room temperature sensor of heating circuit 1 faulty
355	Room temperature sensor of heating circuit 2 faulty
356	Room temperature sensor of heating circuit 3 faulty
357	Room temperature sensor of heating circuit 4 faulty
358	Room temperature sensor of heating circuit 5 faulty
359	Room temperature sensor of heating circuit 6 faulty
360	Room temperature sensor of heating circuit 7 faulty
361	Room temperature sensor of heating circuit 8 faulty
362	Room temperature sensor of heating circuit 9 faulty
363	Room temperature sensor of heating circuit 10 faulty
364	Room temperature sensor of heating circuit 11 faulty
365	Room temperature sensor of heating circuit 12 faulty
366	Room temperature sensor of heating circuit 13 faulty
367	Room temperature sensor of heating circuit 14 faulty
368	Room temperature sensor of heating circuit 15 faulty
369	Room temperature sensor of heating circuit 16 faulty
370	Room temperature sensor of heating circuit 17 faulty
371	Room temperature sensor of heating circuit 18 faulty
372	011 EEPROM checksum 2 incorrect
373	STL, min. pressure, max. pressure or water shortage safety device has triggered.
374	FGR flap blocked
375	Return temperature too high
376	Boiler door open or underpressure transmitter defective
377	ID fan turns without control
378	Please heat up the boiler now to prepare for chimney sweep measurement!
379	Boiler ret. circ. temp. above boiler temperature too long
380	Check inlet
381	Check condensate discharge
382	Underpressure too low
383	Check gate valve direction.

ID	DESCRIPTION
384	Ash container full or WOS blocked
385	Stoker drive draws current without control
386	Self test error during preparation

3.7 System and boiler status

The following addresses are used for the values:

ID	DESCRIPTION
34001	System status
34002	Boiler status

3.7.1 Texts for system status

The following list is used to identify the transferred system status.

ID	DESCRIPTION
0	Continuous load
1	Domestic hot water
2	Automatic
3	Firewood operation
4	Cleaning
5	Boiler off
6	Extra heating
7	Chimney sweep
8	Cleaning

3.7.2 Texts for boiler status

The following list is used to identify the transferred boiler status.

ID	DESCRIPTION
0	FAULT
1	Boiler off
2	Heating up
3	Heating
4	Slumber
5	Off
6	Door open
7	Preparation
8	Pre-heating
9	Ignition
10	Shutdown wait
11	Shutdown wait 1
12	Shutdown feed 1
13	Shutdown wait 2
14	Shutdown feed 2
15	Cleaning
16	Wait 2h
17	Suction / Heating
18	Ignition fault
19	Standby

ID	DESCRIPTION
20	Close grate
21	Empty stoker
22	Pre-Heating
23	Suction
24	Close BBF
25	Open BBF
26	Tilt grate
27	Warming-Up / Ignition
28	Empty feed
29	Stoker fill
30	Warming-Up Lambda Probe
31	FD fan run-on I
32	FD fan run-on II
33	Stopped
34	Additional Ignition
35	Ignition wait
36	TS: Close BBF
37	TS: Ventilate boiler
38	TS: Ignition
39	TS: min. feed
40	Close BBF
41	FAULT: HL/ES
42	FAULT: Tilting grate
43	FAULT: C.C.Overpressure
44	FAULT: Door Switch
45	FAULT: ID Fan
46	FAULT: Heating system
47	ERROR: STL/EO
48	ERROR: Tilting grate
49	ERROR: C.C. Overpressure
50	ERROR: Door Switch
51	ERROR: ID Fan
52	ERROR: Heating system
53	ERROR: Stoker
54	FAULT: Stoker
55	TS: Empty stoker
56	Purge
57	FAULT: wood chip
58	ERROR: Wood chip
59	Emerg. Oper.: Door open
60	Emerg. Oper.: Heating up
61	Emerg. Oper.: Heating
62	ERROR: STL/EO

ID	DESCRIPTION
63	ERROR: General
64	Emerg. Oper.: Shutdown
65	Self test active
66	Troubleshooting 20min
67	ERROR: Drop box
68	FAULT: Drop box
69	Cleaning possible
70	Heating - Cleaning
71	LW Heating up
72	LW Heating
73	LW Heat/Shut down
74	FAULT save
75	FGR run-on
76	Clean FGR
77	Igniton OFF
78	Cleaning filter
79	Heating wizard
80	Ignite firewood boiler
81	SH fault
82	Sensor check