1 Overview of settings

1.1 3rd level ⚒

Parameter	Function	Setting range	Factory setting	Basic setting Date: Heating circuit		Adaptions Date: Heating circuit		Unity	expert	classic/comfort
				1(green)	2 (red)	1(green)	2 (red)			X =active
3-0	Room protection temperature	3 ÷15	10					°C	X	X
	It is valid for all heating modes if changed to holyday, standby, summer. With room temperature sensor (remote control FS 5601) room temperature becomes reference temperature.									
3-1	Fix point temperature	10÷80	25					°C	X	X
	Flow temperature at 20 °C outside temperature valid for all slopes. Recommended values (basic values): Floor heating system = 25 °C; Radiator heating system = 35 °C									
3-2	Heating limit with reduced operating (automatic programs only)	-10 ÷20	5					°C	X	X
	With average outside temperature above set value = heating gets turned off. With average outside temperature below set value - 2 K = heating gets turned on. If the set value is below 2 °C frost protection mode becomes active.									
3-6	Start optimisation	0÷999	0					m	X	X
	The set time refers to -10 °C outside temperature. It results the following anticipation: • With outside temperature at -10 °C: 100 % of the set value • With outside temperature at 20 °C: 0 % of the set value Recommended settings for basic value: • Floor heating system = 210 (minutes) • Radiator heating system = 150 (minutes) • Disabled, no function = 0									
3-7	Room temperature compensation (With remote control FS 5601 only)	0÷10	0					K/K	X	X
	• Room temperature to high in the room = decrease of flow temperature • Room temperature to low in the room = increase of flow temperature 0 = no compensation 1-3 = weak compensation 4-6 = average compensation 7-10 = strong compensation Note: With floor heating systems do not exceed setting 4.									

Parameter list
DHR - classic DHR - comfort DHR - expert

| Parameter | Function | Setting range | Factory setting | Basic setting Date: Heating circuit | | Adaptions Date: Heating circuit | | Unity | expert | classic/comfort |
				1(green)	2 (red)	1(green)	2 (red)		X =active	
3-8	Heating limit depending on calculated flow temperature setpoint value	-10 ÷60	2					K	X	X
	If calculated flow temperature setpoint is no more able to contribute to the heating (room temperature set point + set value), heating system is turned off. It is again activated if difference exceeds set value + 2 K. 2 = standard value -10 = function disabled									
3-9	Legionnella protection	0÷9	0					-	X	X
	Legionnella protection function becomes enabled for 2 hours when producing DHW for the first time on the selected day. (Legionnella protection temperature see parameter 5-4) 1...7 = mon ... sun (1 = mon) 8 = everyday 9 = continuously 60 °C 0 = function disabled									

1.2   4th level - Configuration of the plant

Code	Parameter	Functions	Setting range	Factory setting	Basic setting Date:	Adaptions Date:	Unity	expert	classic/comfort
								X = active	
1	4-0	Memorise sensor configuration	on/off	off				X	X
		If all necessary sensors are wired, set this value to "on" thus to memorise sensor configuration. Then change setting level or close the front cover. Setting returns automatically to "off" after about 30 seconds. It generates an error message if a sensor value gets out of measuring range.							
1	4-1	Calculation of average outside temperature	0÷40	10			-	X	X
		The calculation of the average outside temperature permits to consider the inertial of the building. It is used as reference value for the heating limits. 0 = none (real temperature valid) 5 = light construction 10 = normal construction 20 = heavy construction							
2	4-2	Function of external setpoint value input	0÷6	0			-	X	X
		The set value defines the allocation of the external setpoint value (0...10 VDC = 0...100 °C) Note: Inputs of thermostats/Telecomand (terminals P11/1 and P11/2) are disabled. External setpoint value is assigned to: 0 = the heat management (= setting 1) 1 = the heat management 2 = the heating circuit 1 3 = the heating circuit 2 if applied tension is at maximum (10 VDC), heating circuits are turned to "standby" as follows 4 = heating circuit 1 (green) 5 = heating circuit 2 (red) 6 = both circuits1 (green) and 2 (red) Note: Standby = heating circuit and DHW production are turned to off.							
1	4-4	eBUS address of heating circuit/ DHW controller	0/2 3÷5 17÷20	2			-	X	X
		If the plant works with one single controller, the set value 2 remains unchanged. Up to 7 Slaves can be connected to a Master controller. If heating circuits/DHW production of the controller are not applied its address has to be set to 0. If heating circuits/DHW production of the Slave controllers is applied its address has to be set as follows:							

Master	= 2	Slave 2	= 4	Slave 4	= 17	Slave 6	= 19
Slave 1	= 3	Slave 3	= 5	Slave 5	= 18	Slave 7	= 20

1.3   5th level - DHW production

Code	Parameter	Function	Setting range	Factory setting	Basic setting Date:	Adaptions Date:	Unity	expert	classic/comfort
								X = active	
2	5-0	Switching difference DHW production	2÷20	5			K	X	X
		Charging is turned on (within the time program) if DHW temperature is below nominal temperature by the set value.							
2	5-1	Increase of boiler temperature for DHW production	2÷30	20			K	X	X
		Boiler set temperature for DHW production results form the nominal DHW temperature increased by the set value.							
1	5-2	DHW production parallel or prior to heating	on/off 0.2÷20.0	off			-	X	X
		According to the setting, DHW production is executed parallel, prior or parallel depending on the charge. on = absolutely parallel off = absolutely prior 20 ... 200 minutes = parallel production charge depending. Controller calculates a ramp which defines, that within the set time boiler has to reach charging temperature. Below the calculated ramp valves are gradually closing. Above that line they are acting normally.							
2	5-3	Post function mode of DHW charging	0÷30	3			m	X	X
		The set value defines for how much time charging (e.g. pump) is kept running when the nominal DHW temperature is reached.							
2	5-4	Legionnella protection tempera-ture	60÷80	60			°C	X	X
		DHW is heated to that temperature the day selected in parameter 3-4. It is higher than normal DHW temperature.							
2	5-5	Type of DHW production	0÷2	0				X	X
		Configuration of DHW production: 0 = post function of DHW charging for the time set in parameter 5-3, charging starts immediately when enabled. 1 = post function of DHW charging for the time set in parameter 5-3, charging starts if TK is above 5K and if it exceeds the DHW tank temperature by 5 K; it ends in any case with TK < TB + 3K. 2 = by DHW tank thermostat (external activation with a potential free contact)							

1.4   7th level - Heating circuits

Code	Parameter	Function	Setting range	Factory setting	Basic setting Date: Heating circuit		Adaptions Date: Heating circuit		Unity	expert	classic/comfort
					1 (green)	2 (red)	1 (green)	2 (red)		X = active	
1	7-0	Type of heating circuit (adaption to the actuator)	0÷3	0					-	X	X
		0 = 3 point output for mixing valve actuators. Operating sense is controlled with an open/close command. 1 = 2 point output for mixing valve actuators with automatic return, e.g. thermally valves. The actuators gets a command to open. If this stops, it automatically runs back. 2 = 2 point output to command a flow pump for a direct heating circuit. Pump is working continuously during heating operation. (The mixing valve symbol is hidden. Do not connect a flow sensor.) 3 = heating circuit disabled **Note:** If set to 3 the following parameters are hidden.									
2	7-1	Increase of boiler temperature for heating	0÷30	5					K	X	X
		During heating operation set value for the generator is the calculated flow setpoint temperature in-creased by the set value. Information: Not operative with parameter 7-0 = 2 (direct heating circuit) With direct heating circuit it has to be set to 0.									
2	7-2	Minimal flow temperature	0÷80	0					°C	X	X
		A minimal flow temperature can be set. That temperature setpoint remains at least valid in normal and reduced heating mode.									
2	7-3	Post function of flow pump/ close command of the valve	0÷30	15					m	X	X
		The flow pump keeps running for the time set when heating is turned off. Mixing valve actuator is closed within the same time. Set value has to be longer than the running time of the mixing valve actuator.									
2	7-4	Proportional range (P-range)	5÷30	15					K	X	X
		P-Range setting defines above what difference between setpoint and measured value the output signal is continuous "open" or "close" (no more pulses). A minor set value causes with increasing difference a major modification of mixing. Mixing valve circuit reacts rapidly. A major set value causes with increasing difference a minor modification of mixing. Mixing valve circuit reacts slowly.									
2	7-6	Frost protection limit	-10 ÷20	2					°C	X	X
		With outside temperatures below the set value frost protection function is activated. If outside temperature exceeds set value by 2 K frost protection mode becomes deactivated.									

1.5　10th level - Parameters of heat generator (2)

Code	Parameter	Function	Setting range	Factory setting	Basic setting Date:		Adaptions Date:		Unity	expert	classic/comfort
					1(green)	2 (red)	1(green)	2 (red)		X = active	
2	10-0	Maximal temperature of generator	50 ÷ 110	95					°C	X	X
		Exceeding set maximal temperature forced removal of energy by the heating circuits is initiated (Depending on setting of the parameter 11-2)									
2	10-1	Switching difference of generator	-30÷30	10					K	X	X
		Switch off difference between calculated setpoint value of the generator and its temperature TK. If temperature of the generator exceeds the calculated nominal temperature by the set value, the generator is turned off by the controller.									
1	10-4	Minimal protection temperature TKmin	0÷80	0.0					°C	X	X
		The set temperature is maintained if boiler is turned on or if it is in preparedness.									
2	10-5	Increase of TKV referring to TKmin	0÷20	5					°C	X	X
		Generator is turned on if boiler temperature TKV sinks below minimal boiler protection temperature TKmin increased by the set value.									

1.6   11th level - Parameters of heat generator

Code	Parameter	Function	Setting range	Factory setting	Basic setting Date:		Adaptions Date:		Unity	expert	classic/comfort
					1(green)	2 (red)	1(green)	2 (red)		X = active	
2	11-0	Deactivation mode of the generator	0÷1	0					-	X	X
		0 = no deactivation o the generator 1 = manual deactivation of the selected generator. Selected generator remains disabled.									
2	11-2	Forced energy function	0÷3	3					-	X	X
		The generator can initiate forced energy function by influencing the charges: 0 = no forced function 1 = forced energy function with minimal boiler temperature TKmin 2 = forced energy function with maximal boiler temperature TKmax 3 = forced energy function with minimal TKmin and maximal TKmax boiler temperature									
1	11-4	Cancel operating data	on÷off	off					-	X	X
		Operating data can be reset to "0". off = standard on = reset of operating dates to "0". Note: After having set "on", programming level has to be changed or the cover to be closed. About 30 seconds later setting returns automatically to "off".									
1	11-5	Gen. Power controller	on÷off	off					-	X	X
		on = 2 stage burner off = 1 stage burner									

1.7   12th level - Cascade management parameters (generators 1)

Code	Parameter	Function	Setting range	Factory setting	Basic setting Date:	Adaptions Date:	Unity	expert	classic/comfort
									X = active
		Gen. 1: eBUS address	11÷12	12			-	X	X
1	12-0	This parameter define if the generator is a stage-burner or a modulated interface-controlled burner 11 = extern burner controller via interface ZIF 250 12 = one- ore two-stage burner							