

FC026 – cooling controller, 4xAI, 3xAO, 4xDO, 4xDI, 2xRS485, fire alarm function

- 30 words can be read at the same time (i.e. 60 bytes)
- the whole range can be addressed bitwise
- supported Modbus functions are F01, F03, F15, F16

name	register	type	description	notes / defaults
module ID	1 LSB 1 MSB	R	module type identification	0508hex
firmware	2 LSB 2 MSB	R	firmware version	e.g. 0005hex
status LSB	3 LSB	R, W RAM	module status lower byte bit 0 – write to EEPROM enable bit 1 – SW reset enable bit 4 – init EEPROM bit 5 – calibration offset bit 6 –calibration span bit 7 –calibration enable	Init EEPROM follows if the INIT switch was ON at power up, and if INIT switch was OFF at setting bit 4 to 1 (indicated by bit 2 in Status MSB) calibration is enabled if the INIT switch was ON at power up, and if INIT switch was OFF at setting bit 7 to 1 (indicated by bit 3 in Status MSB) calibration offset is performed by setting bit 7 to 0 (must have been in 1 before) and setting bit 5 to 1 calibration span is performed by setting bit 7 to 0 (must have been in 1 before) and setting bit 6 to 1 SW reset is performed by writing into reg. 1002
status MSB	3 MSB	R, RAM	module status upper byte bit 0 0 normal mode 1 init mode bit 1 1 at the next EEPROM write attempt will all data be written to EEPROM 0 at the next EEPROM write attempt will received data be written to RAM only bit 2 – 1 – EEPROM initialized bit 3 – 0 calibration disabled 1 calibration enabled bit 4 – 0 bit 5 – SW reset enabled bit 6 – 0 bit 7 – 1	

address	4 LSB	R,W EEPROM	Modbus module address (default = 1)	!!! the change will be effective after restart only (however the register will be set immediately)
baud rate	4 MSB	R,W EEPROM	communication speed 10 _{dec} ... 1 200 bps 11 _{dec} ... 2 400 bps 12 _{dec} ... 4 800 bps 13 _{dec} ... 9 600 bps (default) 14 _{dec} ... 19 200 bps 15 _{dec} ... 38 400 bps 16 _{dec} ... 57 600 bps 17 _{dec} ... 115 200 bps	!!! the change will be effective after restart only (however the register will be set immediately)
serial port settings	5 LSB	R,W EEPROM	serial line parameter settings (default = no parity, 1 stop bit)	bits 0-1 ... parity (00 – no parity, 01 – even, 10 – odd) bit 2 ... stop bits (0 – one, 1 - two) !!! the change will be effective after restart only (however the register will be set immediately)
	5 MSB		reserved	
EEPROM writes	6 LSB 6 MSB	R, EEPROM	number of EEPROM writing cycles (EEPROM init does not reset this register, counting stops at 65535)	
relay	7 LSB	R, RAM	output relay status (DO1-DO5), outputs DO4 and DO5 are not controlled by any internal algorithm in this firmware version	bit 0 ... reserved bit 1 ... reserved bit 2 ... reserved bit 3 ... DO1, bit 4 ... DO2, bit 5 ... DO4, Alarm bit 6 ... DO5, OpStatus
inputs	7 MSB	R, RAM	digital input status; DIx are physical values and are not influenced by the inputs settings register settings	bit 0 ... DI1, control operation bit 1 ... DI2, fire alarm /window contact bit 2 ... DI3, filter / presence bit 3 ... DI4, fan operation bit 4 ... operation status (DI1 respecting the input sense) bit 5 ... cooling demand (PID output COOL > 5%) bit 6 ... critical shutdown active bit 7 ... filter DPS active
	8 LSB	R, RAM	reserved	
PID output COOL	8 MSB	R, RAM	cooling controller output (also at change-over active)	in %, range 0 .. 100%
PID fan speed	9 LSB	R, RAM	fan demand from the PID controller	0 ... off 1 ... Stage 1 2 ... Stage 2 3 ... Stage 3

UC communication state	9 MSB	R, RAM	communication status of UC010: if communication is not OK, after 60 secs the outputs go to 0 (except those controlled manually, see manual control)	0 ... communication OK 1 ... timeout 2 ... MB (motherboard) exception 3 ... MB error
manual control	10 LSB	R, W RAM	bits 0..2: manual output control; if a bit is set to 1, the output goes to state defined below (see manual fan speed, manual cool output, manual temp output); if set to 0, controller output values apply bits 3..4: directly controlled outputs (0 = DOx low, 1 = DOx high) bits 5..6: if in 1, the output follows manual values (see manual DO), reg. 69 is not taken into account	bit 0 ... cool output (AO1) bit 1 ... room temp (AO2) bit 2 ... fan speed (AO3) bit 3 ... DO1 bit 4 ... DO2 bit 5 ... DO4 (alarm) bit 6 ... DO5 (operating status)
manual cool output	10 MSB	R, W RAM	manual AO1 setting (only if the corresponding bit in the manual control register is set)	in %, range 0 .. 100% (corresponds to 0...10V or 2...10 V according to output configuration see reg. 65)
manual room temp. output	11 LSB	R, W RAM	manual AO2 setting (only if the corresponding bit in the manual control register is set)	in %, range 0 .. 100% (corresponds to 0...10V or 2...10 V according to output configuration see reg. 65)
manual fan speed	11 MSB	R, W RAM	manual AO3 setting (only if the corresponding bit in the manual control register is set) – AO3 min and max level are NOT taken into account	in %, range 0 .. 100% (corresponds to 0...10V)
set temp correction UC010	12 LSB 12 MSB	R, W RAM	setpoint correction set by user; if UC010 is connected, it is possible to write in register directly from Modbus or UC010 3.5°C reads 350 (limits see pot correction)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
	13 LSB 13 MSB	R, RAM	reserved	
actual temp set point COOL	14 LSB 14 MSB	R, RAM	actual cooling setpoint incl. setpoint correction (reg. 12)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex

manual DO	15 LSB	R,W RAM	manual outputs DO4 and DO5 (only if the corresponding bit in manual control is set)	bit 0 ... DO4 bit 1 ... DO5
	15 MSB		reserved	
AI2 setpoint measured	16 LSB 16 MSB	R, RAM	measured setpoint in °C	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
PID fan speed percent	17 LSB	R, RAM	fan demand from PID controller in %	0...100 %
	17 MSB		reserved	
set day/ comfort cooling temp	18 LSB 18 MSB	R,W EEPROM	day/comfort mode cooling temperature setpoint set by user (default = 22°C)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
set night/ pre- comfort cooling temp	19 LSB 19 MSB	R,W EEPROM	night/standby mode cooling temperature setpoint set by user (default = 24°C)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
set depression/ economy cooling temp	20 LSB 20 MSB	R,W EEPROM	off mode cooling temperature setpoint set by user (default = 35°C)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex

actual temp UC010	21 LSB 21 MSB	R, RAM	actual temperature measured by the UC010 room unit incl. correction (see temp sensor corr)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
actual FC020 temp	22 LSB 22 MSB	R, RAM	actual temperature input AI1, Pt1000 sensor, incl. correction (see temp sensor corr FC020)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
set presence mode	23 LSB 23 MSB	R,W EEPROM	presence status set by user (if inputs Presence and Window contact are enabled and active – see input settings -, they have priority over this register) (default = comfort/day, 0x0001)	bit 0 ... comfort / day bit 1 ... standby / night bit 2 ... off / depression bit 3 to 14 ... reserved bit 15 ... write enable (if set to 1 value will be written into register, if in 0 attempt will be ignored)
set fan mode	24 LSB 24 MSB	R, W, EEPROM	fan status set by user (default = auto, 0x0001)	bit 0 ... Auto (fan + A) bit 1 ... Off (fan + M) bit 2 ... Man 1 (fan + M + Stage1) bit 3 ... Man 2 (fan + M + Stage1 and 2) bit 4 ... Man 3 (fan + M + Stage1,2 and 3) bit 5 to 14 ... reserved bit 15 ... write enable (if set to 1 value will be written into register, if in 0 attempt will be ignored)
actual control mode	25 LSB	R, RAM	actual mode used for control	bit 0 ... Occupied bit 1 ... Unoccupied bit 2 ... Standby bit 3 ... Critical shutdown
	25 MSB		reserved	
controller settings	26 LSB	R,W EEPROM	controller configuration. (defaults = hotel, relative, valve protection on: 0x40)	bit 0 ... presence mode (0 – hotel, 1 – residential) bit 1 ... setpoint shift display (0: relative, 1: absolute temp.) bit 2-5: reserved bit 6 ... valve exercising (1 – enabled) bit 7 ... reserved

input settings	26 MSB	R,W EEPROM	inputs configuration bit 0 ... DI1 - control operation bit 1 ... DI2 – fire alarm / window bit 2 ... DI3 – filter / presence bit 3 ... DI4 – fan operation (default = inputs enabled, normally open, i.e. active when contact closed, 0xFF)	bits 0 ... 3: inputs DI1 (bit 0) to DI4 (bit 3) enabled for controller function bits 4 ... 7: inputs DI1 (bit 0) to DI4 (bit 3) sense (0– NC– normally closed, 1– NO– normally open)
P band	27 LSB 27 MSB	R,W EEPROM	controller P-band	in 0.1 K (2 K, 0x0014)
I const	28 LSB 28 MSB	R,W EEPROM	controller I – constant; if out of bounds, a new recalculated value is set after restart	in seconds; if set to 0, integration part is disabled (60 min, 0x0E10)
controller settings 2	29 LSB	R,W EEPROM (correction reset off, control on limitations, UC010 connected, 0X40)	controller configuration, part 2. Limitation: AI1 acts as a supply air sensor which limits the supply air temp. (see limitation temp heat reg. 56 & cool reg. 57). The control sensor is the UC010 sensor. If the AI1 sensor is not connected, limitation is not active and the UC010 sensor is the control sensor. AI1 controller and UC010 correction: Control to AI1 temperature sensor reg. 22. Set point correction is set via UC010 (reg. 12). Average: Control to average temperature (AI1 temperature + UC010 temperature)/2. Used for large rooms where UC010 is not able to provide relevant values and an additional sensor must be used.	bit 0-2 ... reserved bit 3 ... temp. correction reset on operation mode change bits 4 and 5... Limitation: bit4 =0 and bit5 = 0: Limitation– control to UC010 temperature reg. 21 with AI1 limitation sensor AI1 controller and UC010 correction: bit4=1 and bit5=0: – control to AI1 sensor (reg. 22); Average: bit4=0 and bit5=1 – control to average (AI1 reg. 22 and UC010 temperature reg. 21) bit 6 ... UC010 connected (0 – not connected; 1 – connected) bit 7: reserved
	29 MSB		reserved	
AO1	30 LSB 30 MSB	R, W, RAM	analogue output 1 (0..10 V)	direct value of the 8bit converter, 0...255
AO2	31 LSB 31 MSB	R, W, RAM	analogue output 2 (0..10 V)	direct value of the 8bit converter, 0...255
	32 LSB 32 MSB		reserved	

min rel. temp correction	33 LSB 33 MSB	R,W EEPROM	minimum relative user temperature correction, a positive value is saved and is taken as negative limit	recalculate: minimum correction = $-(\text{read value}/100)$; -10.00 ... 1000 (-3.5 °C, 0x015E)
max rel. temp correction	34 LSB 34 MSB	R,W EEPROM	maximum relative user temperature correction	recalculate: maximum correction = $(\text{read value}/100)$; 10.00 ... 1000 (3.5 °C, 0x015E)
min day, night, depression temp	35 LSB 35 MSB	R,W EEPROM	minimum temperature which user can set as setpoint for day, night, and off modes -199.99 to 199.99 (default = 10 °C, 0x03E8)	recalculate: temperature = $\text{read value} / 100$ 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
max day, night, depression temp	36 LSB 36 MSB	R,W EEPROM	maximum temperature which user can set as setpoint for day, night, and off modes -199.99 to 199.99 (default = 40 °C, 0x0FA0)	recalculate: temperature = $\text{read value} / 100$ 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
temp sensor corr UC010	37 LSB 37 MSB	R,W EEPROM	correction: adds to the actual temperature measured by the room unit sensor -20.00 to 20.00 (default = -1,5 K, 0xFF6A)	recalculate: temperature = $\text{read value} / 100$ 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
	38 LSB 38 MSB		reserved	
step temp	39 LSB	R,W EEPROM	step for user temperature setpoints setting (default = 0.5 °C, 0x32)	step = $\text{read value} / 100$ 1 ... 0.01 50 ... 0.5 100 ... 1 etc.
	39 MSB		reserved	
	40 LSB 40 MSB		reserved	
show mode	41 LSB 41 MSB	R,W EEPROM	data that roll on the LCD display (default = 1, temperature) If only one of the bits is active there is only one value displayed. Otherwise they change periodically after show time .	bit 0 ... temperature bit 1 ... outside temp. bit 2 ... reserved bit 3 ... temp. correction bit 4 ... rel. humidity (default = temperature, 0x0001)
show time	42 LSB	R,W EEPROM	time (in 100 ms) to display each value in show mode (default = 3 s)	see show mode

edit return time	42 MSB	R,W EEPROM	time (in 100 ms) of user inactivity to return from edit mode to show mode (default = 30 s)	
quick edit mode number	43 LSB	R,W EEPROM	number of mode which is editable through quick edit menu (short push of the knob) (default = fan mode, 0x02)	0 ... push function inactive 1 ... presence mode 2 ... fan mode
	43 MSB		reserved	
long push time	44 LSB	R,W EEPROM	time (in 100 ms) evaluated as long push (go to menu / leave menu) (default = 1.5 s, 0x0F)	for editing of the presence or fan mode
super long push time	44 MSB	R,W EEPROM	time (in 100 ms) evaluated as superlong push (go to settings menu) (default = 5 s, 0x32)	for basic setpoints settings
allowed operation modes	45 LSB 45 MSB	R,W EEPROM	settings that user is able to perform 0 ... disabled 1 ... enabled (default = temp corr, fan mode 0x0201)	bit 0 ... temp corr. bit 1 to 8 ... reserved bit 9 ... fan mode bit 10 ... reserved
presence mode edit mask	46 LSB 46 MSB	R,W EEPROM	states in presence mode that user is able to switch between (default = all, 0x0003)	bit 0 ... occupied bit 1 ... unoccupied
fan mode edit mask	47 LSB 47 MSB	R,W EEPROM	states in fan mode that user is able to switch between (default = all, 0x001F)	bit 0 ... Auto (fan + A) bit 1 ... Man Off (fan + M) bit 2 ... Man 1 (fan + M + Stage 1) bit 3 ... Man 2 (fan + M + Stage 1,2) bit 4 ... Man 3 (fan + M + Stage 1,2,3)
display symbols	48 LSB 48 MSB	R, W, RAM	symbols that may be user-displayed on the UC010 LCD display NB: combination of spanner and alarm bell indicates communication error between FC and UC	bit 0: spanner bit 1: boiler bit 2: alarm bell bits 3 to 14: reserved
	49 LSB 49 MSB 50 LSB 50 MSB 51 LSB 51 MSB 52 LSB 52 MSB		reserved	

Range 1	53 LSB	R,W EEPROM	AI1 and AI2 range settings 1 – temperature (Pt1000) 2 – voltage (0...10 V) 3 – resistance (0...1600 Ohm) 4 – current (4...20 mA, a 120 Ohm external resistor necessary) 5 – resistance (0...5000 Ohm)	bits 0...3: AI1 bits 4...7: AI2 temperature is real value * 100 + 50 °C shift (20000dec = 150 °C) resistance 0...1600 Ohm is real value * 10 (16000dec = 1600 Ohm) voltage 0...10 V is 0...9999 dec
Range 2	53 MSB	R,W EEPROM	AI3 and AI4 range settings 1 – temperature (Pt1000) 2 – voltage (0...10 V) 3 – resistance (0...1600 Ohm) 4 – current (4...20 mA, a 120 Ohm external resistor necessary) 5 – resistance (0...5000 Ohm)	bits 0...3: AI3 bits 4...7: AI4 temperature is real value * 100 + 50 °C shift (20000dec = 150 °C) resistance 0...1600 Ohm is real value * 10 (16000dec = 1600 Ohm) voltage 0...10 V is 0...9999 dec
temp sensor corr. FC020	54 LSB 54 MSB	R,W EEPROM	Temp. sensor correction (Pt1000 at AI1) -20...20 K	Recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
	55 LSB 55 MSB		reserved	
limitation temp. heat	56 LSB 56 MSB	R,W EEPROM	Temperature for supply air limitation, upper limit, see controller settings 2. The AI1 (limitation sensor reg. 21) measured value will not exceed the sum of actual room temperature (reg. 22) and limitation temp. heat. Default = 10 K. (0x03E8)	Recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
limitation temp. cool	57 LSB 57 MSB	R,W EEPROM	Temperature for supply air limitation, lower limit, see controller settings 2. The AI1 (limitation sensor reg. 21) measured value will not drop below actual room temperature (reg. 22) + limitation temp. cool. Default = 6 K. (0x0258)	Recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex

	58 LSB 58 MSB		reserved	
	59 LSB 59 MSB		reserved	
set fan mode FC020 / optional fan speed AI3	60 LSB	R, RAM	fan status set by user over AI3 See register 148 for the resistor values for individual stages.	bit 0 ... Auto bit 1 ... Off bit 2 ... Man 1 bit 3 ... Man 2 bit 4 ... Man 3
	60 MSB		reserved	
	61 LSB 61 MSB		reserved	
AI2 setpoint low	62 LSB 62 MSB	R,W EEPROM	lower limit of external setpoint – corresponds to min. value at AI2 default = 0 °C	Recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
AI2 setpoint high	63 LSB 63 MSB	R,W EEPROM	upper limit of external setpoint – corresponds to min. value at AI2 default = 50 °C	Recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
default AI2 setpoint	64 LSB 64 MSB	R,W EEPROM	Used in case that AI2 is disconnected (in error).	Recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
IO function config	65 LSB 65 MSB	R,W EEPROM	(defaults: 0x01B5) All changes apply after device restart only.	bit 0 ... AI2 range 2..10V (rather than 0...10V) bit 1 ... AI2 setpoint func. enabled bit 2 ... AI4 range 2..10V bit 3 ... reserved bit 4 ... AO1 range 2..10V bit 5 ... AO2 range 2..10V bit 6 ... DI2 fire alarm function (rather than window contact) bit 7 ... DI3 presence function (rather than filter DPS) bit 8 ... fixed temperature differences fan control

AO3 min level	66 LSB 66 MSB	R,W EEPROM	min. fan output level (at PID controller output 0%) (default = 0 V)	in 0.01 V
AO3 max level	67 LSB 67 MSB	R,W EEPROM	max. fan output level (at PID controller output 100%) (default = 10 V)	in 0.01 V
fan stage 1 percent	68 LSB	R,W EEPROM	predefined output in % for fan stage 1 (default = 30 %)	in 0...100 %
fan stage 2 percent	68 MSB	R,W EEPROM	predefined output in % for fan stage 2 (default = 65 %)	in 0...100 %
fan stage 3 percent	69 LSB	R,W EEPROM	predefined output in % for fan stage 3 (default = 100 %)	in 0...100 %
DO polarity config	69 MSB	R,W EEPROM	DO4 and DO5 polarity config, applies for control output only, not for manual mode (default: DO4 NC, DO5 NO, 0x01)	bit 0 ... DO4 as NC bit 1 ... DO5 as NC
DO function config	70 LSB	R,W EEPROM	specifies which events will have influence on the status and alarm outputs. The enabled events are logically ORed and sent to output.	bit 0 ... DO4 alarm fan run bit 1 ... DO4 alarm filter dirty bit 2 ... DO4 alarm cooling valve position bit 3 ... DO4 alarm high / low temperature bit 4 ... DO5 op status fan running (if AO3 > 0) bit 5 ... DO5 op status Operational
	70 MSB		reserved	
fan status delay	71 LSB 71 MSB	R,W EEPROM	alarm delay on fan status (default = 60 s)	in seconds
cooling valve alarm window	72 LSB	R,W EEPROM	tolerance for valve feedback signal: if abs (valve output – valve feedback) > tolerance longer than fan status delay, valve position alarm goes active. default = 5 %	in %
temperature alarm delay	72 MSB	R,W EEPROM	alarm delay on temperature low / high alarm (default = 30 minutes)	in minutes
temperature alarm distance	73 LSB 73 MSB	R,W EEPROM	tolerance for the temperature low/high alarm (default = 3 K)	in 0.01 K, unsigned 16bit

	74 LSB		reserved	
auxiliary status 74	74 MSB	R, RAM	diagnostic status, for debugging only	bit 0 ... window contact active bit 1 ... fan run status alarm bit 2 ... cooling valve position alarm bit 3 ... temperature too low/high alarm
DI3 unoccupation offset	75 LSB 75 MSB	R,W EEPROM	setpoint offset when Unoccupied over DI3 (default = 2 K)	in 0.01 K unsigned 16 bit
calculated temperature	78 LSB 78 MSB	R, RAM	diagnostic status, for debugging only	PID controller actual setpoint input
AI1	146 LSB 146 MSB	R, RAM	AI1 value (control temperature sensor Pt1000)	see also reg. 53
AI2	147 LSB 147 MSB	R, RAM	AI2 value (setpoint 0...10 V)	see also reg. 53
AI3	148 LSB 148 MSB	R, RAM	AI3 value (resistors to switch fan mode) 0...139 Ohm Off 140...224 Ohm Stage 1 225...329 Ohm Stage 2 330...389 Ohm Stage 3 > 390 Ohm Auto	see also reg. 53
AI4	149 LSB 149 MSB	R, RAM	AI4 value (valve actuator feedback)	see also reg. 53
AO3	150 LSB 150 MSB	R, RAM	AO3 value (0...10 V)	direct D-A converter value ranged 0...255
actual rH	151 LSB 151 MSB	R, RAM	actual measured rH incl. sensor correction	Recalculate: humidity in % = read value / 100 0 % ... 0 100 % ... 10000
	152 LSB 152 MSB	R, RAM	reserved	

rH sensor corr.	153 LSB 153 MSB	R,W EEPROM	rH sensor correction in 0.01 % UC010 (RS485 not separated) ... +2.5 % RS485 separated ... +3.0 %	Recalculate: humidity = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
backlight config	154 LSB 154 MSB	R,W EEPROM (0x0009)	Configuration of LCD and knob backlight functions. If the bit0 is in 0 - centrally disabled, all backlight functions are turned off. If the bit3 is enabled (afterglow function), the first user action (press/turn button) switches on the backlight (i.e. "is eaten") and the second user action only (press/turn button) is then according to the defined user function.	bit 0 ... Central enable of backlight functions (0 – off) - the highest priority bit 1 ... manual LCD backlight (1 – permanently switches on the backlight on LCD backlight intensity high , this function has higher priority than afterglow function, 0 – switches on the backlight on LCD backlight intensity low , afterglow function can change this level) bit 2 ... manual knob backlight (1 – permanently switches on the backlight on knob backlight intensity high , this function has higher priority than afterglow function, 0 – switches on the backlight on knob backlight intensity low , afterglow function can change this level) bit 3 ... enable afterglow (1 – the first user activity, push or turn, sets backlight to high intensity (see registers LCD and knob backlight int. h.), after defined time from the last user activity (LCD and knob b. afterglow) backlight goes back to low level; 0 – no response on user activity)
LCD backlight intensity high	155 LSB	R,W EEPROM (100 %)	intensity LCD backlight –higher level	[0 ... 100%]

LCD backlight intensity low	155 MSB	R,W EEPROM (0 %)	intensity LCD backlight – lower level	[0 ... 100%]
knob backlight intensity high	156 LSB	R,W EEPROM (100 %)	intensity knob backlight –higher level	[0 ... 100%]
knob backlight intensity low	156 MSB	R,W EEPROM (0 %)	intensity knob backlight – lower level	[0 ... 100%]
LCD backlight afterglow	157 LSB	R,W EEPROM (3 s)	Time of LCD backlight high intensity level after last user activity (turn/push knob).	[in s]
knob backlight afterglow	157 MSB	R,W EEPROM (3 s)	Time of knob backlight high intensity level after last user activity (turn/push knob).	[in s]
uptime	1000 LSB 1000 MSB 1001 LSB 1001 MSB	R	uptime (s)	
SW reset	1002 LSB 1002 MSB	R, W RAM	Writing a non-zero value causes SW restart. The reset must be enabled first, see Status LSB bit 1.	