

UIxxx – room unit (new PCB design), UIxxxBL - room unit with backlit display

- 50 words can be read or written at one request (i.e. 100 bytes)
- whole range can be addressed bitwise
- the whole memory is mirrored as read-only from address 0x101 (e.g. 257 dec)
- not all units support all functions (eg. humidity) – refer to the respective data sheets

This table only applies for the new PCB and firmware version (number 200 and higher).

name	register	type	description / defaults	notes
module ID	1 LSB 1 MSB	R	module type identification UI0xx: UI 010 -> 0200hex UI 011 -> 0201hex UI 012 -> 0202hex UI 020 -> 0220hex UI 051 -> 0251hex UI 052 -> 0252hex UI 055 -> 0255hex UI 071 -> 0271hex UI 072 -> 0272hex UI 075 -> 0275hex UI90x: UI 900 -> 0296hex UI 901 -> 0297hex UI 903 -> 0298hex UI 905 -> 0299hex	UI0xx: UI 010BL -> 0900hex UI 011BL -> 0901hex UI 012BL -> 0902hex UI 020BL -> 0920hex UI 051BL -> 0951hex UI 052BL -> 0952hex UI 055BL -> 0955hex UI 901BL -> 0997hex UI 903BL -> 0998hex UI 905BL -> 0999hex
firmware	2 LSB 2 MSB	R	firmware version	hexadecimal
status LSB	3 LSB	R, W RAM	module status lower byte bit 0 – write to EEPROM enabled bit 1 – SW reset enabled bit 4 – init EEPROM bit 5 – central write block (all RW registers)	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) SW reset is set by writing to register SW reset (address 1002)
status MSB	3 MSB	R	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	bit 3 – indication of central write block which is set by setting of bit 5 in reg. 3 (status LSB) bit 4 – indication of editing mode: 1 while user operates the knob, all write attempts over the

			<p>be written to RAM only</p> <p>bit 2 – 1 – EEPROM initialized bit 3 – central write block indication bit 4 – edit state indication bit 5 - 1 bit 6 - 0 bit 7 – 1</p>	<p>bus are ignored (the same function as <i>central write block</i>) (register 23 bit 4)</p>
address	4 LSB	R,W EEPROM	<p>Modbus module address</p> <p>(default = 1)</p>	<p>!!! the change will be effective after restart only (however the register will be set immediately)</p>
baud rate	4 MSB	R,W EEPROM	<p>10dec ... 1 200 bps 11dec ... 2 400 bps 12dec ... 4 800 bps 13dec ... 9 600 bps (default) 14dec ... 19 200 bps 15dec ... 38 400 bps 16dec ... 57 600 bps 17dec ... 115 200 bps</p>	<p>!!! the change will be effective after restart only (however the register will be set immediately)</p>
serial port settings	5 LSB	R,W EEPROM	<p>serial port communication parameters</p> <p>(default = no parity, one stop bit: 0x00)</p>	<p>bit 0-1 ... parity (00 – no parity, 01 – even, 10 – odd) bit 2 ... stop bits (0 – one, 1 - two)</p> <p>!!! the change will be effective after restart only (however the register will be set immediately)</p>
	5 MSB		reserved	
hysteresis	6 LSB	R,W EEPROM	<p>Only types UI90x: hysteresis for the CO₂-, thermo- and hygrostat function. See register 6 MSB for controller function. The setpoints are in the set temp, set rh, or set CO₂ registers</p> <p>(200ppm, 20%, 2,0K, 0x14)</p>	<p>value for: CO₂-stat in 10ppm, thermostat in 0,1K, hygrostat in 1%</p>
DO1 settings	6 MSB	R,W EEPROM	<p>DO function: the output is active if the selected actual value is higher than setpoint</p> <p>(Modbus, 0x00)</p>	<p>bits 0-1 ... output controlled by (00 - Modbus, 01 - CO₂-stat, 10 - thermostat, 11 - hygrostat)</p>
relay	7 LSB	R, W RAM	<p>relay outputs on/off (DO1-DO2)</p>	<p>bit 0 ... DO 1 bit 1 ... DO 2</p>

latch enable	7 MSB	R, W RAM	latch enable function for individual inputs: by writing 1 into the register the particular bit in the latched value register goes to 0 and is kept until the required value is caught. After reset, the whole register is set to 0.	Resetting of the individual caught bits in the latched value register : change the particular bit from log. 0 to log.1 (disable and enable the latch function for individual bits)
time programme output	8 LSB 8 MSB	R	time scheduler output (the output value depends on the time schedule type, see the settings register	1) multistate scheduler: 0x01, 0x02, 0x04 (presence / day/night mode) 2) analogue scheduler: directly the value saved in the time schedule registers
EEPROM writes	9 LSB 9 MSB	R, EEPROM	number of EEPROM writing cycles; this register is not reset with INIT procedure, and does not overflow.	
inputs	10 LSB	R	readout of digital inputs (DI1, DI2, PUSH)	bit 0 ... DI 1 bit 1 ... DI 2 bit 2 ... PUSH button
latched values	10 MSB	R	caught values 0 – since latch enable there was no change on the bit 1 - since latch enable the bit value has changed its state	bit 0 ... DI 1 bit 1 ... DI 2 bit 2 ... PUSH button; to reset the bits, disable and enable latch - see latch enable
set temp	11 LSB 11 MSB	R,W EEPROM	temperature set by user (UI09x temperature setpoint value for thermostat function) e.g. 21.5°C reads 2150 (default = 23 °C; 0x08FC)	recalculate: set temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
set day /comfort temp	12 LSB 12 MSB	R,W EEPROM	day mode temperature setpoint set by user (when editing, the symbols <i>thermometer</i> and <i>sun</i> are active) (default = 23 °C; 0x08FC)	recalculate: set temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
set night / precomfort temp	13 LSB 13 MSB	R,W EEPROM	night mode temperature setpoint set by user (when editing, the symbols <i>thermometer</i> and <i>moon</i> are active) (default = 18 °C, 0x0708)	recalculate: set temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex

set outside /depression temp	14 LSB 14 MSB	R,W EEPROM	set outside temperature (at which heating may be enabled), step and resolution is fixed to 1 °C (when editing, the symbols <i>thermometer</i> and <i>house</i> are active) (default = 15 °C, 0x05DC)	recalculate: set temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
set DHW temp	15 LSB 15 MSB	R,W EEPROM	DHW setpoint temperature, step and resolution is fixed to 1 °C (when editing, the symbols <i>thermometer</i> and <i>water tap</i> are active) (default = 50 °C, 0x1388)	recalculate: set temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
set heating curve	16 LSB	R,W EEPROM	heating curve type set by user (when editing, the symbols <i>heating</i> and <i>boiler</i> are active) (default = 1)	set value = 1 .. 4
	16 MSB		reserved	
actual temp	17 LSB 17 MSB	R	actual temperature measured by the internal sensor incl. correction (see corr temp)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
set rh	18 LSB 18 MSB	R,W EEPROM	relative humidity set by user (humidity setpoint value for hygrostat function) (default = 40 %, 0x0FA0)	recalculate: humidity = read value / 100 0 ... 0 100.00 ... 10000
actual rh	19 LSB 19 MSB	R	actual relative humidity measured by the internal sensor, incl. correction (see corr rh sensor)	recalculate: humidity = read value / 100 0 ... 0 100.00 ... 10000

set presence mode	20 LSB	R,W EEPROM	<p>presence mode set by user (for hotels)</p> <p>The register is to be set by 16 bit writing command.</p> <p>The time program has 3 states: Comfort, Standby, Off. Its output is in the time programme output register. When the Presence time program type is defined, required states should be enabled in the register presence mode edit mask (67 LSB).</p> <p>(default = 0x00)</p>	<p>bit 0 ... comfort (occupied house)</p> <p>bit 1 ... standby (empty house)</p> <p>bit 2 ... off (Off)</p> <p>bit 3 ... party (occupied house + drink)</p> <p>bit 4 ... auto (clock), time schedule (if enabled)</p> <p>bit 5 ... holiday (clock + empty house)</p> <p>bit 6 ... reserved</p> <p>bit 7 ... disable writing (0 – value will be written to EEPROM, 1 – writing disabled.)</p>
set day/night mode	20 MSB	R,W EEPROM	<p>day/night mode set by user (for residential applications)</p> <p>The register is to be set by 16 bit writing command.</p> <p>The time program has 3 states: Day auto, Night auto, Off. Its output is in the time programme output register. When the Day/Night time program type is defined, required states should be enabled in the register Day/Night mode edit mask (67 LSB).</p> <p>(default = 0x00)</p>	<p>bit 0 ... day auto (clock, sun)</p> <p>bit 1 ... night auto (clock, moon)</p> <p>bit 2 ... day manual (sun)</p> <p>bit 3 ... night manual (moon)</p> <p>bit 4 ... off (Off)</p> <p>bit 5 ... auto (clock), time schedule (if enabled)</p> <p>bit 6 ... holiday (clock + house)</p> <p>bit 7 ... disable writing (0 – value will be written to EEPROM, 1 – writing disabled.)</p>
set fan mode	21 LSB	R,W EEPROM	<p>fan mode set by user (for fancoils, convectors, AHUs)</p> <p>The register is to be set by 16 bit writing command.</p> <p>(default = 0x00)</p>	<p>bit 0 ... Auto (fan + A)</p> <p>bit 1 ... Man Off (fan + M)</p> <p>bit 2 ... Man 1 (fan + M + Stage 1)</p> <p>bit 3 ... Man 2 (fan + M + Stage 1,2)</p> <p>bit 4 ... Man 3 (fan + M + Stage 1,2,3)</p> <p>bit 5 to 6 ... reserved</p> <p>bit 7 ... disable writing (0 – value will be written to EEPROM, 1 – writing disabled.)</p>

set heat/cool mode	21 MSB	R,W EEPROM	<p>heat/cool mode set by user (for split units, heat pumps etc.)</p> <p>The disable writing bit may be used to write selectively (only when the presence mode value changes) as EEPROM is not suitable for permanent writing. This bit is not written to the register.</p> <p>The register is to be set by 16 bit writing command.</p>	<p>bit 0 ... off (Off)</p> <p>bit 1 ... heat only (Heat)</p> <p>bit 2 ... cool only (Cool)</p> <p>bit 3 ... fan only (Fan)</p> <p>bit 4 ... auto (Heat + Cool)</p> <p>bit 5 to 6 ... reserved</p> <p>bit 7 ... disable writing (0 – value will be written to EEPROM, 1 – writing disabled.)</p>
set user pattern mode	22 LSB	R,W EEPROM	<p>state of user defined mode (for each mode, the complete symbol set may be redefined) – see user pattern x symbols x, writing must follow by a 16-bit command</p>	<p>bit 0 ... user_1_pattern</p> <p>bit 1 ... user_2_pattern</p> <p>bit 2 ... user_3_pattern</p> <p>bit 3 ... user_4_pattern</p> <p>bit 4 ... user_5_pattern</p> <p>bit 5...6 reserved</p> <p>bit 7 ... disable writing (0 – value will be written to EEPROM, 1 – writing disabled.)</p>
write protect delay	22 MSB	R, W, EEPROM	<p>write protect time in seconds after user knob operation (default = 10 s, 0x0A)</p> <p>(This protection time prevents the PLC from overriding the values set manually by the knob.)</p>	<p>0 = off</p>
settings	23 LSB 23 MSB	R,W EEPROM	<p>Modbus frame part receiving: end of frame is given either by the timeout since last character (see mb timeout), i.e. only part of the frame may be received, or the complete received frame (checked during receiving).</p> <p>knob steps: number of steps to invoke value change by the defined step</p> <p>(default: °C, part receiving off, password protection off, CO2 in %, presence time programme, autocalibration on, 2 steps, 1 step, 0x1250)</p>	<p>bit 0 ... (0 – temperature display in °C, 1 – in °F; applies to LCD display only, communication is always in °C)</p> <p>bit 1... Modbus frame part receiving (change applies after restart) : 0- off, 1- on</p> <p>bit 2-3 ... time schedule type (0 - off, 1 - presence, 2 - day-night, 3 - analogue)</p> <p>bit 4 ... write protection (0 - off, 1 - on)</p> <p>bit 5 ... CO2 unit display: 0 - %, 1 - ppm</p> <p>bit 6 – autocalibration for CO2 sensors</p> <p>bit 7 ... reserved</p> <p>bit 8-11 ... knob steps in short edit mode</p> <p>bit 12-15 ... knob steps in long edit mode</p>

latch state	24 LSB	R,W EEPROM	state to be latched 0 – log. 0 (default) 1 – log. 1	bit 0 ... DI 1 bit 1 ... DI 2 bit 2 ... PUSH button (fixed to 1 – push of the button)
relay comm	24 MSB	R,W EEPROM	0 – no state change on communication failure (default) 1 – on communication failure (see comm timeout) the output value will be set to relay commfail state (default = 0)	bit 0 ... DO 1 bit 1 ... DO 2
relay commfail state	25 LSB	R,W EEPROM	on commfail timeout and relay comm set to 1 the outputs are set to relay commfail state (default = 0)	bit 0 ... DO 1 bit 1 ... DO 2
comm timeout	25 MSB	R,W EEPROM	time [secs] of non-communication which is recognized as communication failure (default = 0). On commfail, outputs go to predefined states (see relay comm) and alarm bell symbol is activated on the display.	if the value is set to 0, no comm fail function is implemented
output power up enable	26 LSB	R,W EEPROM	startup function enable 0 – no setting of outputs after power up until first communication 1 – the outputs go to the output start values after power up until the first outputs command is received (default = 0)	bit 0 ... DO 1 bit 1 ... DO 2 May be used for commissioning.
output start	26 MSB	R,W EEPROM	output status at power up, only active if output power up enable (default = 0)	bit 0 ... DO 1 bit 1 ... DO 2
min temp	27 LSB 27 MSB	R,W EEPROM	minimum temperature which user can set as setpoint for temp, day and night -199.99 to 199.99 (default = 18°C, 0x0708)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
max temp	28 MSB 28 MSB	R,W EEPROM	maximum temperature which user can set as setpoint for temp, day and night -199.99 to 199.99 (default = 26°C, 0x0A28)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex

min outside temp	29 LSB 29 MSB	R,W EEPROM	minimum outside temperature which user can set as setpoint for heating enable -199.99 to 199.99 (default = -20°C, 0xF830)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
max outside temp	30 MSB 30 MSB	R,W EEPROM	maximum outside temperature which user can set as setpoint for heating enable -199.99 to 199.99 (default = 30°C, 0x0BB8)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
min DHW temp	31 LSB 31 MSB	R,W EEPROM	minimum temperature which user can set as setpoint for DHW -199.99 to 199.99 (default = 10°C, 0x03E8)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
max DHW temp	32 MSB 32 MSB	R,W EEPROM	maximum temperature which user can set as setpoint for DHW -199.99 to 199.99 (default = 90°C, 0x2328)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
corr temp	33 MSB 33 MSB	R,W EEPROM	correction: adds to the actual temperature measured by the internal sensor; compensates the internal thermal dissipation -20.00 to 20.00 (default = about -1.5°C, depending on module type)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
min rh	34 LSB 34 MSB	R,W EEPROM	minimum humidity which user can set as setpoint 0.00% to 100.00% (default = 10%, 0x03E8)	recalculate: humidity = read value / 100 0 ... 0 100.00 ... 10000
max rh	35 LSB 35 MSB	R,W EEPROM	maximum humidity which user can set as setpoint 0.00% to 100.00% (default = 90%, 0x2328)	recalculate: humidity = read value / 100 0 ... 0 100.00 ... 10000

corr rh	36 LSB 36 MSB	R,W EEPROM	correction: adds to the actual humidity measured by the internal sensor (applicable for types with humidity sensor only) -10.00 to 10.00 % (default = 0)	recalculate: humidity = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
min remote 0	37 LSB 37 MSB	R,W EEPROM	minimum value which user can set as remote 0 -199.99 to 199.99 (default = -199.99)	recalculate: remote value = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
max remote 0	38 LSB 38 MSB	R,W EEPROM	maximum value which user can set as remote 0 -199.99 to 199.99 (default = 199.99)	recalculate: remote value = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
min remote 1	39 LSB 39 MSB	R,W EEPROM	minimum value which user can set as remote 1 -199.99 to 199.99 (default = -199.99)	recalculate: remote value = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
max remote 1	40 LSB 40 MSB	R,W EEPROM	maximum value which user can set as remote 1 -199.99 to 199.99 (default = 199.99)	recalculate: remote value = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
min remote 2	41 LSB 41 MSB	R,W EEPROM	minimum value which user can set as remote 2 -199.99 to 199.99 (default = -199.99)	recalculate: remote value = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex

max remote 2	42 LSB 42 MSB	R,W EEPROM	maximum value which user can set as remote 2 -199.99 to 199.99 (default = 199.99)	recalculate: remote value = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
min remote 3	43 LSB 43 MSB	R,W EEPROM	minimum value which user can set as remote 3 -199.99 to 199.99 (default = -199.99)	recalculate: remote value = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
max remote 3	44 LSB 44 MSB	R,W EEPROM	maximum value which user can set as remote 3 -199.99 to 199.99 (default = 199.99)	recalculate: remote value = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
min remote 4	45 LSB 45 MSB	R,W EEPROM	minimum value which user can set as remote 4 -199.99 to 199.99 (default = -199.99)	recalculate: remote value = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
max remote 4	46 LSB 46 MSB	R,W EEPROM	maximum value which user can set as remote 4 -199.99 to 199.99 (default = 199.99)	recalculate: remote value = read value / 100 0 ... 0 199.99 ... 19999
min analogue time programme value	47 LSB 47 MSB	R,W EEPROM	minimum value which user can set as analogue time schedule value 0 to 199.99 (default = 5.0, 0x01F4)	recalculate: remote value = read value / 100 0 ... 0 199.99 ... 19999
max analogue time programme value	48 LSB 48 MSB	R,W EEPROM	maximum value which user can set as analogue time schedule value 0 to 199.99 (default = 36.0, 0x0E10)	recalculate: remote value = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex

dec places 1	49 LSB 49 MSB	R,W EEPROM	LSB number of decimals for temperature display (default = 1) MSB number of decimals for temperature setting (default = 1)	0 ... no (##) 1 ... one (##.#) 2 ... two (##.##)
dec places 2	50 LSB 50 MSB	R,W EEPROM	LSB number of decimals for humidity display (default = 0) MSB number of decimals for humidity setting (default = 0)	0 ... no (##) 1 ... one (##.#) 2 ... two (##.##)
dec places 3	51 LSB 51 MSB	R,W EEPROM	LSB number of decimals for remote 0 display (default = 2) MSB number of decimals for remote 0 setting (default = 2)	0 ... no (##) 1 ... one (##.#) 2 ... two (##.##)
dec places 4	52 LSB 52 MSB	R,W EEPROM	LSB number of decimals for remote 1 display (default = 2) MSB number of decimals for remote 1 setting (default = 2)	0 ... no (##) 1 ... one (##.#) 2 ... two (##.##)
dec places 5	53 LSB 53 MSB	R,W EEPROM	LSB number of decimals for remote 2 display (default = 2) MSB number of decimals for remote 2 setting (default = 2)	0 ... no (##) 1 ... one (##.#) 2 ... two (##.##)
dec places 6	54 LSB 54 MSB	R,W EEPROM	LSB number of decimals for remote 3 display (default = 2) MSB number of decimals for remote 3 setting (default = 2)	0 ... no (##) 1 ... one (##.#) 2 ... two (##.##)
dec places 7	55 LSB 55 MSB	R,W EEPROM	LSB number of decimals for remote 4 display (default = 2) MSB number of decimals for remote 4 setting (default = 2)	0 ... no (##) 1 ... one (##.#) 2 ... two (##.##)
dec places analogue time programme	56 LSB	R,W EEPROM	LSB number of decimals for analogue time schedule display (default = 1)	0 ... no (##) 1 ... one (##.#) 2 ... two (##.##)
step minutes	56 MSB	R,W EEPROM	step in minutes for setting time with a knob in time schedules (default = 5 min, 0x05)	
step 1	57 LSB 57 MSB	R,W EEPROM	LSB step for temperature settings (default = 0.5 °C) MSB step for humidity settings (default = 1 %)	step = value / 100 1 ... 0.01 2 ... 0.02 10 ... 0.1 etc.
step 2	58 LSB 58 MSB	R,W EEPROM	LSB step for remote 0 settings (default = 1) MSB step for remote 1 settings (default = 1)	step = value / 100 1 ... 0.01 2 ... 0.02 10 ... 0.1 etc.
step 3	59 LSB 59 MSB	R,W EEPROM	LSB step for remote 2 settings (default = 1) MSB step for remote 3 settings (default = 1)	step = value / 100 1 ... 0.01 2 ... 0.02 10 ... 0.1 etc.

step 4	60 LSB	R,W EEPROM	LSB step for remote 4 settings (default = 1)	step = value / 100 1 ... 0.01 2 ... 0.02 10 ... 0.1 etc.
step time programme	60 MSB	R,W EEPROM	MSB step for analogue time schedule settings (default = 0.5, 0x32)	step = value / 100 1 ... 0.01 2 ... 0.02 10 ... 0.1 etc.
mb timeout	61 LSB	R,W EEPROM	time from the last character in the Modbus frame (in 5 ms) after which comes a timeout (range 5...180 ms, default 50 ms = 0x0A)	see register settings , frame part receiving Example: 10 = 50 ms
mb answer delay	61 MSB	R,W EEPROM	time to delay the answer to Modbus master, in 5 ms (default = 0 ms)	Example: 10 = 50 ms
show mode	62 LSB 62 MSB	R,W EEPROM	data that roll on the LCD display (default = temperature, 1) If only one of the bits is active there is only one value displayed. Otherwise they change periodically after show time .	bit 0 ... temperature °C/°F bit 1 ... humidity bit 2 ... current time bit 3 ... day temp bit 4 ... night temp bit 5 ... outside temp bit 6 ... DHW temp bit 7 ... heating curve bit 8 ... remote 0 bit 9 ... remote 1 bit 10 ... remote 2 bit 11 ... remote 3 bit 12 ... remote 4 bit 13 ... time programme output bit 14: ... CO2 bit 15: ... set temperature
show time	63 LSB	R,W EEPROM	time (in 100 ms) to display each value in show mode (default = 2 s, 0x14)	if 0, periodic change disabled
edit return time	63 MSB	R,W EEPROM	time (in 100 ms) of user inactivity to return from edit mode to show mode (default = 10 s, 0x64)	
quick edit value	64 LSB	R,W EEPROM	value which is set by turning the knob. The value must be enabled for editing at allowed operation modes . (default = temperature, 0x00)	0 ... temperature 1 ... humidity 2 ... day temp 3 ... night temp 4 ... outside temp 5 ... DHW temp 6 ... heating curve 7 ... remote 0 8 ... remote 1 9 ... remote 2 10 ... remote 3 11 ... remote 4

quick edit mode number	64 MSB	R,W EEPROM	number of mode which is editable through quick edit menu (short push of the knob). „Change show mode“ changes between displayed values (see show mode); pushing the knob displays the first value from the show mode register. (default = 0)	0 ... no PUSH function 1 ... presence mode 2 ... day/night mode 3 ... fan 4 ... heat/cool mode 5 ... change show mode 6 ... user pattern mode (see allowed operation modes)
long push time	65 LSB	R,W EEPROM	time (in 100 ms) evaluated as <i>long push</i> (go to settings menu / leave settings menu). <i>Super long push</i> (time schedule edit) follows 2 secs after <i>long push</i> . If there is no value editable in the <i>long push</i> , then time schedule is edited right away after <i>long push</i> . (default = 1.5 s, 0x0F)	
allowed operation modes 2	65 MSB	R,W EEPROM	operation modes that user is able to set in the settings menu 0 ... disabled 1 ... enabled (default = 0, none of them)	bit 0 ... time schedule bit 1 ... time bit 2 ... user pattern mode bits 3 ... 7 - reserved
allowed operation modes	66 LSB 66 MSB	R,W EEPROM	operation modes that user is able to set in the settings menu 0 ... disabled 1 ... enabled (default = 1, temperature)	bit 0 ... temperature bit 1 ... humidity bit 2 ... day temp bit 3 ... night temp bit 4 ... outside temp bit 5 ... DHW temperature bit 6 ... fan bit 7 ... heating curve bit 8 ... presence mode bit 9 ... day/night mode bit 10 ... heat/cool mode bit 11 ... remote 0 bit 12 ... remote 1 bit 13 ... remote 2 bit 14 ... remote 3 bit 15 ... remote 4
presence mode edit mask	67 LSB	R,W EEPROM	states in presence mode that user is able to switch between (default = 0, no states)	bit 0 ... comfort (occupied house) bit 1 ... standby (empty house) bit 2 ... off (Off) bit 3 ... party (occupied house + drink) bit 4 ... auto (clock) bit 5 ... holiday (clock + empty house)

day/night mode edit mask	67 MSB	R,W EEPROM	states in day / night mode that user is able to switch between (default = 0, no states)	bit 0 ... day auto (clock + sun) bit 1 ... night auto (clock + moon) bit 2 ... day manual (sun) bit 3 ... night manual (moon) bit 4 ... off (Off) bit 5 ... auto (clock) bit 6 ... holiday (clock + empty house)
fan mode edit mask	68 LSB	R,W EEPROM	states in fan mode that user is able to switch between (default = 0, no states)	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)
heat/cool mode edit mask	68 MSB	R,W EEPROM	states in heat / cool mode that user is able to switch between (default = 0, no states)	bit 0 ... off (Off) bit 1 ... heat only (heat) bit 2 ... cool only (cool) bit 3 ... fan only (fan) bit 4 ... auto (heat + cool)
user pattern mode edit mask	69 LSB	R,W EEPROM	states in user pattern mode that user is able to switch between (default = 0, no states)	bit 0 ... user_1_pattern bit 1 ... user_2_pattern bit 2 ... user_3_pattern bit 3 ... user_4_pattern bit 4 ... user_5_pattern
	69 MSB		reserved	
set CO2	70 LSB 70 MSB	R, W, EEPROM	Only types UI90x: CO2 setpoint for the function of CO2-stat (see reg. 6, DO1 settings) (default = 1200 ppm, 0x04B0)	in ppm
down button long pushes	70 MSB	R	number of long pushes for the „down“ button, after reaching the max value the register resets, only UX...	

remote/local symbols 0	71 LSB 71 MSB	R,W RAM	<p>0 ... symbol controlled locally (symbols cannot be written remotely from Modbus, data are ignored)</p> <p>1 ... symbol controlled remotely – symbols are not controlled by user (by internal UI... functions); this applies for basic values, i.e. all except remote_x (register 81 and below)</p> <p>Use remote control to set individual symbols from your PLC.</p>	<p>bit 0 ... clock</p> <p>bit 1 ... temp. sensor</p> <p>bit 2 ... house</p> <p>bit 3 ... person</p> <p>bit 4 ... moon</p> <p>bit 5 ... sun</p> <p>bit 6 ... off</p> <p>bit 7 ... drink</p> <p>bit 8 ... heat</p> <p>bit 9 ... cool</p> <p>bit 10 ... water tap (DHW)</p> <p>bit 11 ... spanner (service)</p> <p>bit 12 ... boiler</p> <p>bit 13 ... alarm bell</p> <p>bit 14 ... fan lower</p> <p>bit 15 ... fan upper</p>
remote/local symbols 1	72 LSB 72 MSB	R,W RAM	<p>0 ... symbol controlled locally (symbols cannot be written remotely from Modbus, data are ignored)</p> <p>1 ... symbol controlled remotely – symbols are not controlled by user (by internal UI... functions); this applies for basic values, i.e. all except remote_x (register 81 and below)</p> <p>Use remote control to set individual symbols from your PLC.</p>	<p>bit 0 ... °C</p> <p>bit 1 ... °F</p> <p>bit 2 ... %</p> <p>bit 3 ... rH</p> <p>bit 4 ... 1 (weekday)</p> <p>bit 5 ... 2 (weekday)</p> <p>bit 6 ... 3 (weekday)</p> <p>bit 7 ... 4 (weekday)</p> <p>bit 8 ... 5 (weekday)</p> <p>bit 9 ... 6 (weekday)</p> <p>bit 10 ... 7 (weekday)</p> <p>bit 11 ... fan auto</p> <p>bit 12 ... fan manual</p> <p>bit 13 ... fan speed 1</p> <p>bit 14 ... fan speed 2</p> <p>bit 15 ... fan speed 3</p>
remote/local symbols 2	73 LSB 73 MSB	R,W RAM	<p>0 ... symbol controlled locally (symbols cannot be written remotely from Modbus, data are ignored)</p> <p>1 ... symbol controlled remotely – symbols are not controlled by user (by internal UI... functions); this applies for basic values, i.e. all except remote_x (register 81 and below)</p> <p>Use remote control to set individual symbols from your PLC.</p>	<p>bit 0 ... SETTING</p> <p>bit 1 ... ERROR</p> <p>bit 2 ... No.</p> <p>bit 3 ... small 7-segment (upper right corner)</p>

display symbols 0	74 LSB 74 MSB	R,W RAM	displayed symbols for basic values including remote_x	bit 0 ... clock bit 1 ... temp. sensor bit 2 ... house bit 3 ... person bit 4 ... moon bit 5 ... sun bit 6 ... off bit 7 ... drink bit 8 ... heat bit 9 ... cool bit 10 ... water tap (DHW) bit 11 ... spanner (service) bit 12 ... boiler bit 13 ... alarm bell bit 14 ... fan lower bit 15 ... fan upper
display symbols 1	75 LSB 75 MSB	R,W RAM	displayed symbols for basic values including remote_x	bit 0 ... °C bit 1 ... °F bit 2 ... % bit 3 ... rH bit 4 ... 1 (weekday) bit 5 ... 2 (weekday) bit 6 ... 3 (weekday) bit 7 ... 4 (weekday) bit 8 ... 5 (weekday) bit 9 ... 6 (weekday) bit 10 ... 7 (weekday) bit 11 ... fan auto bit 12 ... fan manual bit 13 ... fan speed 1 bit 14 ... fan speed 2 bit 15 ... fan speed 3
display symbols 2	76 LSB 76 MSB	R,W RAM	displayed symbols for basic values including remote_x	bit 0 ... SETTING bit 1 ... ERROR bit 2 ... No. bit 3 ... small 7-segment (upper right corner) bit 4-7 ... reserved bit 8-15 ... small 7-segment value, if larger than 9, „h“ is displayed
RTC	77 LSB 77 MSB 78 LSB 78 MSB 79 LSB 79 MSB 80 LSB 80 MSB	R,W EEPROM	Real time clock (only implemented in selected types) in BCD coding	see table below. To write to those registers, EEPROM write must be enabled in the status LSB register.

remote 0	81 LSB 81 MSB	R,W EEPROM	remote 0 value	recalculate: remote value = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
remote 0 symbols 0	82 LSB 82 MSB	R,W EEPROM	symbols displayed for remote 0	see register display symbols 0
remote 0 symbols 1	83 LSB 83 MSB	R,W EEPROM	symbols displayed for remote 0	see register display symbols 1
remote 0 symbols 2	84 LSB 84 MSB	R,W EEPROM	symbols displayed for remote 0	see register display symbols 2
remote 1	85 LSB 85 MSB	R,W EEPROM	remote 1 value	see remote 0
remote 1 symbols 0	86 LSB 86 MSB	R,W EEPROM	symbols displayed for remote 1	see remote 0, symbols 0
remote 1 symbols 1	87 LSB 87 MSB	R,W EEPROM	symbols displayed for remote 1	see remote 0, symbols 1
remote 1 symbols 2	88 LSB 88 MSB	R,W EEPROM	symbols displayed for remote 1	see remote 0, symbols 2
remote 2	89 LSB 89 MSB	R,W EEPROM	remote 2 value	see remote 0
remote 2 symbols 0	90 LSB 90 MSB	R,W EEPROM	symbols displayed for remote 2	see remote 0, symbols 0
remote 2 symbols 1	91 LSB 91 MSB	R,W EEPROM	symbols displayed for remote 2	see remote 0, symbols 1
remote 2 symbols 2	92 LSB 92 MSB	R,W EEPROM	symbols displayed for remote 2	see remote 0, symbols 2
remote 3	93 LSB 93 MSB	R,W EEPROM	remote 3 value	see remote 0
remote 3 symbols 0	94 LSB 94 MSB	R,W EEPROM	symbols displayed for remote 3	see remote 0, symbols 0
remote 3 symbols 1	95 LSB 95 MSB	R,W EEPROM	symbols displayed for remote 3	see remote 0, symbols 1
remote 3 symbols 2	96 LSB 96 MSB	R,W EEPROM	symbols displayed for remote 3	see remote 0, symbols 2
remote 4	97 LSB 97 MSB	R,W EEPROM	remote 4 value	see remote 0
remote 4 symbols 0	98 LSB 98 MSB	R,W EEPROM	symbols displayed for remote 4	see remote 0, symbols 0
remote 4 symbols 1	99 LSB 99 MSB	R,W EEPROM	symbols displayed for remote 4	see remote 0, symbols 1

remote 4 symbols 2	100 LSB 100 MSB	R,W EEPROM	symbols displayed for remote 4	see remote 0, symbols 2
program Monday 1, time	101 LSB 101 MSB	R, W, EEPROM	time schedule, Monday, event 1 time in minutes since 0:00 default = 06:00, 0x0168	121 ... 02 h 01 min
program Monday 1, value	102 LSB 102 MSB	R, W, EEPROM	time schedule, Monday, event 1 (valid for all schedule types: if bit 15 set to 1, event is not active) default = day, 0x0000	state scheduler: 0 ... day / comfort 1 ... night / standby 2 ... off analogue scheduler: value 0 to 19999dec, i. e. 0.0 to 199.99 °C bit 15 ... event disabled
program Monday 2, time	103 LSB 103 MSB	R, W, EEPROM	time schedule, Monday, event 2 time in minutes since 0:00 default = 08:00, 0x01E0	see program Monday 1, time
program Monday 2, value	104 LSB 104 MSB	R, W, EEPROM	time schedule, Monday, event 2 (valid for all schedule types: if bit 15 set to 1, event is not active) default = night, 0x0001	see program Monday 1, value
program Monday 3, time	105 LSB 105 MSB	R, W, EEPROM	time schedule, Monday, event 3 time in minutes since 0:00 (default = 14:00, 0x0348	see program Monday 1, time
program Monday 3, value	106 LSB 106 MSB	R, W, EEPROM	time schedule, Monday, event 3 (valid for all schedule types: if bit 15 set to 1, event is not active) default = day, 0x0000	see program Monday 1, value
program Monday 4, time	107 LSB 107 MSB	R, W, EEPROM	time schedule, Monday, event 4 time in minutes since 0:00 default 22:00, 0x0528	see program Monday 1, time
program Monday 4, value	108 LSB 108 MSB	R, W, EEPROM	time schedule, Monday, event 4 (valid for all schedule types: if bit 15 set to 1, event is not active) default = night, 0x0001	see program Monday 1, value
program Monday 5, time	109 LSB 109 MSB	R, W, EEPROM	time schedule, Monday, event 5 time in minutes since 0:00 default = 06:00, 0x0168	see program Monday 1, time
program Monday 5, value	110 LSB 110 MSB	R, W, EEPROM	time schedule, Monday, event 5 (valid for all schedule types: if bit 15 set to 1, event is not active) default = disabled, 0x8000	see program Monday 1, value

program Monday 6, time	111 LSB 111 MSB	R, W, EEPROM	time schedule, Monday, event 6 time in minutes since 0:00 default = 06:00, 0x0168	see program Monday 1, time
program Monday 6, value	112 LSB 112 MSB	R, W, EEPROM	time schedule, Monday, event 6 (valid for all schedule types: if bit 15 set to 1, event is not active) default = disabled, 0x8000	see program Monday 1, value
program Tuesday 1, time	113 LSB 113 MSB	R, W, EEPROM	time schedule, Tuesday, event 1 time in minutes since 0:00 default = 06:00, 0x0168	see program Monday 1, time
...
program Sunday 6, value	184 LSB 184 MSB	R, W, EEPROM	time schedule, Sunday, event 6 (valid for all schedule types: if bit 15 set to 1, event is not active) default = disabled, 0x8000	see program Monday 1, value
user 1 pattern symbols 0	185 LSB 185 MSB	R, W, EEPROM	symbols for user 1 pattern default = 0x0000	bit 0 ... clock bit 1 ... temp. sensor bit 2 ... house bit 3 ... person bit 4 ... moon bit 5 ... sun bit 6 ... off bit 7 ... drink bit 8 ... heat bit 9 ... cool bit 10 ... water tap (DHW) bit 11 ... spanner (service) bit 12 ... boiler bit 13 ... alarm bell bit 14 ... fan lower bit 15 ... fan upper
user 1 pattern symbols 1	186 LSB 186 MSB	R, W, EEPROM	symbols for user 1 pattern default = 0x0000	bit 0 ... °C bit 1 ... °F bit 2 ... % bit 3 ... rH bit 4 ... 1 (weekday) bit 5 ... 2 (weekday) bit 6 ... 3 (weekday) bit 7 ... 4 (weekday) bit 8 ... 5 (weekday) bit 9 ... 6 (weekday) bit 10 ... 7 (weekday) bit 11 ... fan auto bit 12 ... fan manual bit 13 ... fan speed 1 bit 14 ... fan speed 2 bit 15 ... fan speed 3

user 1 pattern symbols 2	187 LSB 187 MSB	R, W, EEPROM	symbols for user 1 pattern default = 0x0000	bit 0 ... SETTING bit 1 ... ERROR bit 2 ... No. bit 3 ... small 7-segment (upper right corner) bit 4-7 ... reserved bit 8-15 ... small 7-segment value, if larger than 9, „h“ is displayed
user 2 pattern symbols 0	188 LSB 188 MSB	R, W, EEPROM	symbols for user 2 pattern default = 0x0000	see user 1 pattern symbols 0
...
user 5 pattern symbols 2	199 LSB 199 MSB	R, W, EEPROM	symbols for user 5 pattern default = 0x0000	see user 1 pattern symbols 2
Registers 200 to 204 for types UI90x				
actual CO2 ppm	200 LSB, 200 MSB	R, RAM	actual CO2 value incl. correction (CO2 sensor corr)	in ppm
actual CO2 %	201 LSB,	R, RAM	actual CO2 value in %, see 100% CO2 ppm value, 0% CO2 ppm value . The 100% CO2 ppm value may be lower than the 0% CO2 ppm value .	in %
	201 MSB		reserved	
100% CO2 ppm value	202 LSB, 202 MSB	R,W EEPROM	CO2 value in ppm which corresponds 100 % (2500 ppm, 0x09C4)	
0% CO2 ppm value	203 LSB, 203 MSB	R,W EEPROM	CO2 value in ppm which corresponds 0 % (350 ppm, 0x015E)	
CO2 sensor corr	204 LSB, 204 MSB	R,W EEPROM	CO2 sensor correction to compensate altitude, ageing etc. If autocalibration is enabled this value is set each 8 days (under continuous power supply) (0 ppm, 0x0000)	The sensor records the lowest reading and expects that at least once per 8 days the CO2 level reaches the outside air concentration (400 ppm). The lowest measured value is then assigned the 400 ppm level. If this is not the case, the autocalibration will be wrong and must be switched off (register 23 settings, bit 6).

DI1 counter	205 LSB	R, RAM	counter input DI1 (change from 0 to 1)	if reached maximal value (255) the register is reset
DI2 counter	205 MSB	R, RAM	counter input DI2 (change from 0 to 1)	if reached maximal value (255) the register is reset
push button pushes	206 LSB	R, RAM	number of button pushes	if reached maximal value (255) the register is reset
	206 MSB		reserved	
	207 LSB 207 MSB		reserved	
	208 LSB 208 MSB		reserved	
Registers 209 to 212 for types UIxxxBL with backlight display				

backlight config	209 LSB	R,W EEPROM (0x0009)	<p>Configuration LCD and knob backlight function.</p> <p>If the bit0 is centrally disabled by 0, all backlight functions is turned off.</p> <p>If the bit3 is enabled (afterglow function) the first user action (press/turn button) switch on backlight and the second user action (press/turn button) is according defined user function.</p>	<p>bit 0 ... Central enable of backlight functions (0 – off) - the highest priority</p> <p>bit 1 ... manual LCD backlight (1 – permanently switch on backlight on level LCD backlight intensity high, this function has higher priority than afterglow function, 0 – switch on backlight on level LCD backlight intensity low, afterglow function could change this level)</p> <p>bit 2 ... manual knob backlight (1 – permanently switch on backlight on level knob backlight intensity high, this function has higher priority than afterglow function, 0 – switch on backlight on level knob backlight intensity low, afterglow function could change this level)</p> <p>bit 3 ... enable afterglow (1 – first user activity, press or turn button, set 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) set backlight back to low level; 0 – no response on user activity)</p>
LCD backlight intensity high	210 LSB	R,W EEPROM (100 %)	intensity LCD backlight –higher level	[0 ... 100%]
LCD backlight intensity low	210 MSB	R,W EEPROM (0 %)	intensity LCD backlight – lower level	[0 ... 100%]
knob backlight intensity high	211 LSB	R,W EEPROM (100 %)	intensity knob backlight –higher level	[0 ... 100%]

knob backlight intensity low	211 MSB	R,W EEPROM (0 %)	intensity knob backlight – lower level	[0 ... 100%]
LCD backlight afterglow	212 LSB	R,W EEPROM (3 s)	Time of LCD backlight high intensity level after last user activity (turn/push knob).	[1 s]
knob backlight afterglow	212 MSB	R,W EEPROM (3 s)	Time of knob backlight high intensity level after last user activity (turn/push knob).	[1 s]
uptime	1000 LSB 1000 MSB 1001 LSB 1001 MSB	R	uptime (s)	
SW reset	1002 LSB 1002 MSB	R, W RAM	Writing non-zero values made SW restart if it has been enabled. See Status LSB bit 1.	
Serial number	1003 LSB 1003 MSB 1004 LSB 1004 MSB	R	Device serial number.	

Real time table

Addr.	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0	Function	Range	
77 LSB			10xsecs						seconds	secs	00-59
77 MSB	0		10xmins						minutes	mins	00-59
78 LSB	0		10xhours	10xhours					hours	hours	00-23
78 MSB	0	0	0	0	0				day	day	01-07
79 LSB	0	0	10xdate						date	date	01-31
79 MSB	0	0	0	10xmonth					month	month	01-12
80 LSB			10xyear						year	year	00-99
80 MSB	0	0	0	0	0	0	0	0	not used		00