

- **bit address = 16 * (word address -1) +1**
- **supported modbus functions – F01, F03, F15, F16**

Name	Address	Type (def.)	Description	Note
module ID LSB	1 LSB	R	module identification lower byte	module ID is 8101hex
module ID MSB	1 MSB	R	module identification upper byte	
firmware LSB	2 LSB	R	firmware version lower byte	
firmware MSB	2 MSB	R	firmware version upper byte	
status LSB	3 LSB	R, W RAM	module status lower byte bit 0 – EEPROM write enable bit 1 – SW reset enable bit 2 – central write enable bit 4 – EEPROM init bit 5 – calibration offset bit 6 – calibration span bit 7 – calibration enable	EEPROM init is enabled when the INIT switch was ON at power-up, and switched OFF before bit 4 was set to 1 (indicated by bit 2 in status MSB) SW reset is executed by writing of non-zero value in reg. 1002 calibration is enabled when the INIT switch was ON at power-up, and switched OFF before bit 7 was set to 1 (indicated by bit 3 in status MSB) calibration offset change bit 7 from 1 to 0 and set bit 5 to 1 calibration span change bit 7 from 1 to 0 and set bit 6 to 1
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 all data will be saved to EEPROM - 0 at the next write attempt received data will be written to RAM only bit 2 – 1 – EPROM initialised bit 3 – 1 – calibration enabled bit 4 – central write enable indication bit 5 – SW reset enable indication	

			<p>bit 6 – during the next calibration all data will be written in EEPROM</p> <p>bit 7 - 1</p>	
address	4 LSB	R,W EEPROM (1)	module address	!!!The changes will become active only after module restart (the register is written immediately, but the new address is effective after restart)
baud rate (comm speed)	4 MSB	R,W EEPROM (13)	<p>no parity</p> <p>10_{dec} ... 1200 bps</p> <p>11_{dec} ... 2400 bps</p> <p>12_{dec} ... 4800 bps</p> <p>13_{dec} ... 9600 bps</p> <p>14_{dec} ... 19200 bps</p> <p>15_{dec} ... 38400 bps</p> <p>16_{dec} ... 57600 bps</p> <p>17_{dec} ... 115200 bps</p>	!!!The changes will become active only after module restart (the register is written immediately, the new baud rate is effective after restart)
input range for AI1, AI2	5 LSB	R,W EEPROM (2222hex)	<p>1 ... Pt1000 (-50 to 150 °C) (-5000 to 15000), divide by 100 to get the correct value</p> <p>2 ... voltage 0V ... 10 V (0 to 10000), divide by 1000 to get the correct value</p> <p>3 ... resistance 0 ... 1600 ohm (0 to 16000), divide by 10 to get the correct value</p>	<p>bit 0 – bit 3... channel 1</p> <p>bit 4 – bit 7... channel 2</p> <p>bit 0 – bit 3... channel 3</p> <p>bit 4 – bit 7... channel 4</p>
input range for AI3, AI4	5 MSB	R,W EEPROM (2222hex)	<p>4 ... current 0 ... 20 mA (0 to 20000), divide by 1000 to get the correct value</p> <p>5 ... resistance 0 – 5000 ohm (0 to 50000), divide by 10 to get the correct value.</p>	<p>bit 0 – bit 3... channel 5</p> <p>bit 4 – bit 7... channel 6</p> <p>bit 0 – bit 3... channel 7</p> <p>bit 4 – bit 7... channel 8</p>
input range for AI5, AI6	6 LSB	R,W EEPROM (2222hex)		
input range for AI7, AI8	6 MSB	R,W EEPROM (2222hex)		
latch state	7 LSB	R,W EEPROM (0)	<p>state to be caught</p> <p>0 – log. 0</p> <p>1 – log. 1</p>	
relay com	7 MSB	R,W EEPROM (0)	<p>0 – when no communication, relays stay in last state</p> <p>1 – when no communication, relays are set to relay state values</p>	<p>bit 0 is relay 1</p> <p>...</p> <p>bit 7 is relay 8</p>

relay state	8 LSB	R,W EEPROM (0)	relays go on or off (according to corresponding bits) if there was no communication with module for a given time and in relay com the corresponding relay bit is set to 1	bit 0 is relay 1 ... bit 7 is relay 8
relay time	8 MSB	R,W EEPROM (30)	time in [s] of no communication which is considered as communication failure	if set to 0, the function is disabled
relay start enable	9 LSB	R,W EEPROM (0)	startup relay behaviour 0 – relays are not commanded 1 – the corresponding relay is set to its relay start value after module startup	bit 0 is relay 1 ... bit 7 is relay 8
relay start	9 MSB	R,W EEPROM (0)	relay status between power-up and first bus command	bit 0 is relay 1 ... bit 7 is relay 8
relay	10 LSB	R, W RAM	commands to control relay outputs (DO1-DO8)	bit 0 is relay 1 ... bit 7 is relay 8
latch enable	10 MSB	R,W RAM	latch function enable for each input – if set to 1 the latched value bit goes to 0 and stays so until the latched value is detected; after RESET the register is set to 0	reset the latched value register bits to 0 by changing the value of latch enable bits from 0 to 1 (= disable and enable latching for individual bits)
analogue outputs AO1	11 LSB	R,W RAM	the AO values are ranged 0000 _{hex} – 0FFF _{hex} which is (0 _{dec} – 4095 _{dec}) 0000 _{hex} is for 0V 0FFF _{hex} is for 10V	analogue output channels
	11 MSB	R,W RAM		
	12 LSB	R,W RAM		
	12 MSB	R,W RAM		
	13 LSB	R,W RAM		
	13 MSB	R,W RAM		
	14 LSB	R,W RAM		
	14 MSB	R,W RAM		
analogue outputs AO5	15 LSB	R,W RAM		
	15 MSB	R,W RAM		
analogue outputs AO6	16 LSB	R,W RAM		
	16 MSB	R,W RAM		
inputs	17 LSB	R	readout of binary inputs (DI1-DI8)	bit 0 is input 1 ... bit 7 is input 8
latched value	17 MSB	R	atched values 0 – if since latch enable the latched state has not been detected at the input 1 - if since latch enable the latched state has been detected at the input	reset of individual bits: disable and enable the corresponding bits – see register latch enable

channel value AI1	18 LSB	R	measured values at analogue inputs; scaling: 0000 to FFFF corresponds with the range – see regs 5 and 6 above.	readouts of analogue inputs AI1..AI8
	18 MSB	R		
channel value AI2	19 LSB	R		
	19 MSB	R		
channel value AI3	20 LSB	R		
	20 MSB	R		
channel value AI4	21 LSB	R		
	21 MSB	R		
channel value AI5	22 LSB	R		
	22 MSB	R		
channel value AI6	23 LSB	R		
	23 MSB	R		
channel value AI7	24 LSB	R		
	24 MSB	R		
channel value AI8	25 LSB	R		
	25 MSB	R		
up time	26 LSB 26 MSB 27 LSB	R	Time [secs] from power-up or reset	
number EE writes	28 LSB 28 MSB	R EEPROM	Number of EEPROM writes – address, BR, range, ...	counter 0 ... FFFEh, counter stops at FFFEh
number EE cal	29 LSB 29 MSB	R EEPROM	Number of EEPROM writes – calibration	counter 0 ... FFFEh, counter stops at FFFEh
up time	1000 LSB 1000 MSB	R	Time [secs] from power-up or reset	
SW reset	1002 LSB 1002 MSB	R, W RAM	SW reset is executed by writing of non-zero value, if SW reset is enabled in reg. 3 LSB	
serial number	1003 LSB 1003 MSB 1004 LSB 1004 MSB	R, W EEPROM (OTP)	module serial number (one time programmable only, at the production)	not implemented yet
serial port settings	1005 LSB	R, W EEPROM (0)	sérial port settings bit 0, 1 – parity 0 none 1 even 2 odd bit 2 – 0 one stopbit 1 two stopbity	!!! The changes will become active only after module restart (the register is written immediately, but the changes are effective after restart)
	1005 MSB	R	reserve	

Revision:

30. 11. 2018 ver. 100

12. 09. 2019 ver. 102

14. 01. 2022 ver. 102 – stylistic adjustments, change logo

03. 02. 2023 ver. 102 - Added information about supported modbus functions.