R800 Modbus – 8 analog inputs (resistance, voltage, current), 8 analog outputs

- **bit address = 16 * (word address -1) +1**

name	address	type (def)	description	note
module ID	1	R	Module identification	Module ID: $033A_{hex}$
firmware version	2	R	Firmware version	FW version (in Dec) **always** corresponds to a version of this document
status LSB	3 LSB	R, W RAM	module status lower byte **bit 0** – enables writing to the eeprom **bit 1** – enable SW reset **bit 2** – central write prohibition (all RW registers) **bit 4** – eeprom initialization **bit 5** – calibration offset **bit 6** – calibration span **bit 7** – calibration enable	**eeprom initialization** is performed if switch init was turned ON at start, and when writing 1 on bit 4, the switch must be turned OFF (indicated by bit 2 in status MSB) **SW reset** is performed by writing a non-zero value to the SW reset register (address 1002) **calibration** is enabled if the init switch was turned ON at startup, and when 1 is written on bit 7, the switch must be turned OFF (indicated by bit 3 in the MSB status) **offset calibration** is performed by writing 0 (it must be 1 before that) on bit 7 and writing 1 on bit 5 **span calibration** is performed by writing 0 (it must be 1 before that) on bit 7 and writing 1 on bit 6

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** EEPROM initialised **bit 3** calibration enabled **bit 4** - central write disable **bit 5** - SW reset enable **bit 6** - failed to read data from eeprom, at next calibration all data will be written to eeprom **bit 7** - 1	
adress	4 LSB	R, W eeprom (1)	module adress	!!!The changes will become active only after module restart (the register is written immediately, but the new address is effective after restart)
baud rate	4 MSB	R, W eeprom (13)	10_{dec} … 1 200bps 11_{dec} … 2 400bps 12_{dec} … 4 800bps 13_{dec} … 9 600bps 14_{dec} … 19 200bps 15_{dec} … 38 400bps 16_{dec} … 57 600bps 17_{dec} … 115 200bps	
input ranges for AI 1, 2, 3, 4	5	R, W eeprom (2222_{hex})	**1 …Pt1000** (-50 to 150 °C) (-5000 to 15000), **divide by 100** to get the correct value **2 … voltage 0V … 10 V** (0 to 10000), **divide by 1000** to get the correct value **3 … resistance 0 … 1600 ohm** (0 to 16000), **divide by 10** to get the correct value **4 … current 0 … 20 mA** (0 to 20000), **divide by 1000** to get the correct value **5 … resistance 0 … 5000 ohm** (0 to 50000), **divide by 10** to get the correct value.	bit 0 – bit 3… channel 1 … bit 12 – bit 15… channel 4 current 0 – 20mA – the corresponding DIP switch must be turned on
input ranges for AI 5, 6, 7, 8	6	R, W eeprom (2222_{hex})		bit 0 – bit 3… channel 5 … bit 12 – bit 15… channel 8

				current 0 – 20mA – the corresponding DIP switch must be turned on
value of channel AI1	7	R	values of individual analog input channels	measured values on individual input channels
value of channel AI2	8	R		
value of channel AI3	9	R		
value of channel AI4	10	R		
value of channel AI5	11	R		
value of channel AI6	12	R		
value of channel AI7	13	R		
value of channel AI8	14	R		
value of channel AO1	15	R, W RAM	value of analog output channel 1	rozsah 0000hex – 0FFFhex (0dec – 4095dec) 0000_{hex} = 0V $0FFF_{hex}$ = 10V
value of channel AO2	16	R, W RAM	value of analog output channel 2	See reg. 15
value of channel AO3	17	R, W RAM	value of analog output channel 3	See reg. 15
value of channel AO4	18	R, W RAM	value of analog output channel 4	See reg. 15
value of channel AO5	19	R, W RAM	value of analog output channel 5	See reg. 15
value of channel AO6	20	R, W RAM	value of analog output channel 6	See reg. 15
value of channel AO7	21	R, W RAM	value of analog output channel 7	See reg. 15
value of channel AO8	22	R, W RAM	value of analog output channel 8	See reg. 15
uptime	23 24	R	time in seconds since module power-up or reset	

number EE writes	25	R eeprom	number of EEPROM writing cycles (address, baud rate, range...), just for information	counter 0...FFFEhex; no overflow. if FFFEhex is reached, the counter stops.
number EE cal	26	R eeprom	number of EEPROM writing cycles - calibration	counter 0...FFFEhex; no overflow. if FFFEhex is reached, the counter stops.
uptime	1000 1001	R	time in seconds since module power-up or reset	
sw reset	1002	R, W RAM	SW reset is executed by writing a non-zero value, if it was enabled before, see Status LSB bit 1.	
serial number	1003 1004	R, W eeprom	Serial number of the module. Write available only if it is zero (assigned in production)	not implemented
serial port settings	1005 LSB	R, W eeprom (0)	serial port settings bits 0, 1 - parity 0 none 1 even 2 odd bit 2 - 0 one stopbit 1 two stopbits	!!!The changes will become active only after module restart (the register is written immediately, but the new address is effective after restart)
reserved	1005 MSB	R		

Revision:

10. 04. 2024 ver. 101