

UI415 Modbus table

solar integrator

Release 11.1.2012 ver. 10200



Name	Address	Type	Description	Note
module ID LSB	1 LSB	R	module identification lower byte	module ID is 0415hex
module ID MSB	1 MSB	R	module identification upper byte	
firmware LSB	2 LSB	R	firmware version lower byte	66hex
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 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) 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, RAM	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 - EEPROM initialised bit 3 - 1 - calibration enabled - 2 - calibration disabled bit 4 - 0 bit 5 - 1 bit 6 - 0 bit 7 - 1	
address	4 LSB	R,W EEPROM	module address (0x01)	The changes will become active only after module restart (the register is written immediately, but

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domat
control system

				the new address is effective after restart)
baud rate (communication speed)	4 MSB	R,W EEPROM	no parity 10 _{dec} ... 1200 bps 11 _{dec} ... 2400 bps 12 _{dec} ... 4800 bps 13 _{dec} ... 9600 bps 14 _{dec} ... 19200 bps 15 _{dec} ... 38 400 bps 16 _{dec} ... 57 600 bps 17 _{dec} ... 115 200 bps	The changes will become active only after module restart (the register is written immediately, the new baud rate is effective after restart)
serial port settings	5 LSB	R,W EEPROM	serial line parameter settings (default = no parity, 1 stop bit)	bit 0-1 ... parity (00 – no parity, 01 – even, 10 – odd) bit 2 ... stop bits (0 – one, 1 – two)
	5 MSB		reserved	
EEPROM writes	6 LSB 6 MSB	R, EEPROM	number of EEPROM writing cycles (EEPROM initialization does not reset register; no overflow)	EEPROM writes
maximum irradiation	7 LSB 7 MSB	R,W EEPROM	maximum irradiation constant (for full range; AI=10 V; default 1300 W/m ² , 0x0514)	[W/m ²]
limit	8 LSB 8 MSB	R,W EEPROM	limit for integration to register irradiation above limit ; default 300 W/m ² , 0x012C	[W/m ²]
activation	9 LSB	R,W RAM	inverters operation signal = 0 ... inverters are off >0 ... inverters are on	signal for integration into the irradiation when active register
	9 MSB		reserved	
	10 LSB 10 MSB		reserved	
actual irradiation	11 LSB 11 MSB	R, RAM	actual irradiation value (LCD display in kW/m ²)	[W/m ²]
day irradiation accumulated	12 LSB 12 MSB	R, NVRAM	accumulated irradiation value for current day	[Wh/m ²]
last day irradiation accumulated	13 LSB 13 MSB	R, NVRAM	accumulated irradiation value for the day before (from midnight to midnight)	[Wh/m ²]
total irradiation	14 LSB 14 MSB 15 LSB 15 MSB	R, NVRAM	total accumulated irradiation value (for device lifetime), lower word is on lower address	[Wh/m ²]
irradiation above limit	16 LSB 16 MSB 17 LSB 17 MSB	R, NVRAM	accumulated irradiation value above minimum irradiation (register limit), lower word is on lower address	[Wh/m ²]
irradiation when active	18 LSB 18 MSB 19 LSB 19 MSB	R, NVRAM	total accumulated irradiation value (see register activation) lower word is on lower address	[Wh/m ²]

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	20 LSB 20 MSB		reserved	
AI input	21 LSB 21 MSB	R, RAM	input voltage 0...10 V	[in 0.001 V]
RTC	22 LSB 22 MSB 23 LSB 23 MSB 24 LSB 24 MSB 25 LSB 25 MSB	R, W EEPROM (not initialised)	Real time clock (BCD code)	see table below. To write to these register, writing to EEPROM must be enabled in register status LSB .
	26 LSB 26 MSB		reserved	
actual temp	27 LSB 27 MSB	R, RAM	actual measured value from module incl. sensor correction (see temp sensor corr)	recalculate: set temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
temp sensor corr	28 LSB 28 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 = -3.15°C, 0xFEC5)	recalculate: temperature = read value / 100 0 ... 0 199.99 ... 19999 -0.01 ... 0FFFFhex -199.99 ... 0B1E1hex
uptime	1000 LSB 1000 MSB 1001 LSB 1001 MSB	R, RAM	uptime (s); lower word is on lower address	

Real time table

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