

M312, M313 Modbus table

8 SSR (solid state relay) outputs

PWM function

Release 19.10.2017 ver. 00300



M 312 Modbus – 8 SSR outputs, output power 3 A/24 V AC

M 313 Modbus – 8 SSR outputs, output power 1 A/230 V AC

- **max 17 words may be read out as a whole (i.e. 34 bytes)**
- **first 272 bits can be addressed bitwise (i.e. the whole map)**

Name	Address	Type	Description	Note
module ID LSB	1 LSB	R	module identification lower byte	module ID is 0033hex
module ID MSB	1 MSB	R	module identification upper byte	
firmware LSB	2 LSB	R	firmware version lower byte	3hex
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	
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 reserved bit 3 reserved 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 the new address is effective after restart)
baud rate (comm speed)	4 MSB	R,W EEPROM	no parity 10dec ... 1200 bps 11dec ... 2400 bps 12dec ... 4800 bps 13dec ... 9600 bps 14dec ... 19200 bps 15dec ... 38400 bps 16dec ... 57600 bps 17dec ... 115200 bps	!!! The changes will become active only after module restart (the register is written immediately, the new baud rate is effective after restart)

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SSR	5 LSB	R,W RAM	SSR outputs on / off	bit 0 is SSR 1 ... bit 7 is SSR 8
reserved	5 MSB	R,W RAM		
SSR com	6 LSB	R,W EEPROM	0 – when no communication, SSRs stay in last state 1 – when no communication, SSRs are set to SSR state values	bit 0 is SSR 1 ... bit 7 is SSR 8
SSR state	6 MSB	R,W EEPROM	SSRs go on or off (according to corresponding bits) if there was no communication with module for a given time and in SSR com the corresponding SSR bit is set to 1	bit 0 is SSR 1 ... bit 7 is SSR 8
SSR time	7 LSB	R,W EEPROM	time in [s] of no communication which is considered as communication failure	if set to 0, the function is disabled
SSR start enable	7 MSB	R,W EEPROM	startup SSR behaviour 0 – SSRs are not commanded 1 – the corresponding SSR is set to its SSR start value after module startup	bit 0 is SSR 1 ... bit 7 is SSR 8
SSR start	8 LSB	R,W EEPROM	SSR status between power-up and first bus command	if set to 0, the function is disabled
SSR PWM	8 MSB	R,W EEPROM	PWM signal will be generated at the selected outputs (rather than on/off control as according to Register 5)	bit 0 is SSR 1 ... bit 7 is SSR 8
PWM time LSB	9 LSB	R,W EEPROM	PWM cycle time, in 100ms; 0 ... PWM function off	unsigned 16bit range [1 ... 65535]
PWM time MSB	9 MSB	R,W EEPROM	10 ... 1 second 65535 ... 6553.5 seconds	
SSR1 on time LSB	10 LSB	R,W EEPROM	time of PWM active output in one period, in % *10	0 ... 0% 1 ... 0,1% 10 ... 1,0% 100 ... 10% 999 ... 99.9% 1000 ... 100%
SSR1 on time MSB	10 MSB	R,W EEPROM		
SSR2 on time LSB	11 LSB	R,W EEPROM	time of PWM active output in one period, in % *10	0 ... 0% 1 ... 0,1% 10 ... 1,0% 100 ... 10% 999 ... 99.9% 1000 ... 100%
SSR2 on time MSB	11 MSB	R,W EEPROM		
SSR3 on time LSB	12 LSB	R,W EEPROM	time of PWM active output in one period, in % *10	0 ... 0% 1 ... 0,1% 10 ... 1,0%
SSR3 on time MSB	12 MSB	R,W EEPROM		100 ... 10%

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				999 ... 99.9% 1000 ... 100%
SSR4 on time LSB	13 LSB	R,W EEPROM	time of PWM active output in one period, in % *10	0 ... 0% 1 ... 0,1%
SSR4 on time MSB	13 MSB	R,W EEPROM		10 ... 1,0% 100 ... 10% 999 ... 99.9% 1000 ... 100%
SSR5 on time LSB	14 LSB	R,W EEPROM	time of PWM active output in one period, in % *10	0 ... 0% 1 ... 0,1%
SSR5 on time MSB	14 MSB	R,W EEPROM		10 ... 1,0% 100 ... 10% 999 ... 99.9% 1000 ... 100%
SSR6 on time LSB	15 LSB	R,W EEPROM	time of PWM active output in one period, in % *10	0 ... 0% 1 ... 0,1%
SSR6 on time MSB	15 MSB	R,W EEPROM		10 ... 1,0% 100 ... 10% 999 ... 99.9% 1000 ... 100%
SSR7 on time LSB	16 LSB	R,W EEPROM	time of PWM active output in one period, in % *10	0 ... 0% 1 ... 0,1%
SSR7 on time MSB	16 MSB	R,W EEPROM		10 ... 1,0% 100 ... 10% 999 ... 99.9% 1000 ... 100%
SSR8 on time LSB	17 LSB	R,W EEPROM	time of PWM active output in one period, in % *10	0 ... 0% 1 ... 0,1%
SSR8 on time MSB	17 MSB	R,W EEPROM		10 ... 1,0% 100 ... 10% 999 ... 99.9% 1000 ... 100%