MODBUS TABLE ORGANIZATION

Starting Address of the Group Registers (Dec)	Starting Address of the Group Registers (Hex)	System Version (Release)	System Version (Build)	Group Name (Text)	Group Code (Hex)	Group Complexity (Hex)	Group Version (Hex)
16385	4001			Read/Write Output Status			
24592	6010			Output configuration			

MODBUS PROTOCOL DETAILS

Function Code (Dec)	Exception Codes (Dec)	Data Encoding
3	1, 2, 3	"Big Endian" (most significant byte first)
16	1, 2, 3	

MODBUS OVER SERIAL DETAILS

Physical Layer	Trasmission Modes	Device Addressing	Baud Rates (bit/s)	Data Bits	Data bits trasmission sequence	Parity	Stop Bits
standard EIA/TIA 485 (RS-485) two-wire configuration	RTU	1÷247	programmable	8	Least significant bit first	none	1

MASTER/SLAVE COMMUNICATION TIMING

Timer Descrtiption	Timer Value (msec)
Inter-character time-out	Max. 20
Response delay (from master request)	20÷300
Delay Time (between two master trasmissions)	< 10

REFER ALSO TO: www.modbus.org   - MODBUS over serial line specification and implementation guide V1.02
                                                - MODBUS APPLICATION PROTOCOL SPECIFICATION V1.1b

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Register Number	Register Address (Dec)	Register Address (Hex)	Dimension [bit]	Description	Note	Read Function Codes (Dec)	Data Storing (2)
				(no DISCRETE INPUTS availables)			

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Register Number	Register Address (Dec)	Register Address (Hex)	Dimension [bit]	Description	Note	Read Function Codes (Dec)	Write Function Codes (Dec)	Data Storing (2)
				(no COILS availables)				

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Register Number	Register Address (Dec)	Register Address (Hex)	Dimension [word]	Bit Position	Description	Type	Scale	Unit	Range	Note	Read Function Code (Dec)	Data Storing (2)
					(no INPUT REGISTERS availables)							

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Register Number	Register Address (Dec)	Register Address (Hex)	Dimension [word]	Bit Position	Description	Type	Scale	Unit	Range	Note	Read Function Codes (Dec)	Write Function Codes (Hex)	Data Storing (2)
16386	16385	4001	1		Read/Write Output Status								
16386	16385	4001	1		State of Group 1 outputs (outputs 1 ÷ 6)	unsigned integer	-	-		*See Note 1*	3	5, 10	
24593	24592	6010	6		Output configuration								
24593	24592	6010	1		Output 1 configuration	unsigned integer	-	-		*See Note 2*	3	5, 10	
24594	24593	6011	1		Output 2 configuration	unsigned integer	-	-		*See Note 2*	3	5, 10	
24595	24594	6012	1		Output 3 configuration	unsigned integer	-	-		*See Note 2*	3	5, 10	
24596	24595	6013	1		Output 4 configuration	unsigned integer	-	-		*See Note 2*	3	5, 10	
24597	24596	6014	1		Output 5 configuration	unsigned integer	-	-		*See Note 2*	3	5, 10	
24598	24597	6015	1		Output 6 configuration	unsigned integer	-	-		*See Note 2*	3	5, 10	

Note 1 - Read/Write Output Status

To read the output status convert the answered word in bynary: b15|b14|b13|b12|b11|b10|b9|b8|b7|b6|b5|b4|b3|b2|b1|b0

b0 => Output 1
b1 => Output 1
...
b5 => Output 6
b6 ÷ b15 no meaninng

bit = 1 => Output high
bit = 0 => Output low

To write the status of a single output using the "05h" function

To switch from the "Normal" status
tx: ADDR 05 **000x** FF00
rx: ADDR 05 **000x** FF00

To return to the "Normal" status
tx: ADDR 05 **000x** 0000
rx: ADDR 05 **000x** 0000

000x => x is the number of the Output: 1 to 6

To write the status of multiple outputs using the "10h"
To write the output status convert the word in bynary: b15|b14|b13|b12|b11|b10|b9|b8|b7|b6|b5|b4|b3|b2|b1|b0

b0 => Output 1
b1 => Output 1
...
b5 => Output 6
b6 ÷ b15 no meaninng

bit = 1 => Output high
bit = 0 => Output low

tx: ADDR 10 4001 0001 02 00**xy**
rx: ADDR 10 4001 0001
xy: hexadecimal value of the binary combination of the outputs b15...b6|b5|b4|b3|b2|b1|b0 from b15...b6|0|0|0|0|0|0 to b15...b6|1|1|1|1|1|1

Note 2 - Output Configuration
To read/write the output configuration convert the word in bynary: b15|b14|b13|b12|b11|b10|b9|b8|b7|b6|b5|b4|b3|b2|b1|b0

b0 ÷ b10 => Activation/blinking time, in step of 1 second
b11 => Events counter reset
b12 => No meaning
b13 => Blilnking or Retain function of the output (bit = 1 => blinking; bit = 0 => retain/timed [timed if activation time is ≠ to 0])
b14 => Normal position of the out relay (bit = 1 => relay normally closed; bit = 0 => relay normally opened)
b15 => No meaning

Default configuration: b15 ÷ b0 set = 0

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