

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)	Object Code
16384	4000	01	16	Breaker State	51 02	10	01 00	

MODBUS PROTOCOL DETAILS

Function Code (Dec)	Exception Codes (Dec)	Data Encoding
2 (Read Discrete Inputs)	1, 2, 3	"Big Endian" (most significant byte first)
1 (Read Coils)	1, 2, 3	"Big Endian" (most significant byte first)
5/15 (Write Single/Multiple Coils)	1, 2, 3	"Big Endian" (most significant byte first)
4 (Read Input Registers)	1, 2, 3	"Big Endian" (most significant byte first)
3 (Read Holding register)	1, 2, 3	"Big Endian" (most significant byte first)
6/16 (Write Single/Multiple Holding register)	1, 2, 3	"Big Endian" (most significant byte first)

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 (1200, 2400, 4800, 9600, 19200, 38400)	8	Least significant bit first	NONE	1

MASTER/SLAVE COMMUNICATION TIMING

Timer Description	Timer Value (msec)
Inter-character time-out	< 1,5 character times
Response delay (from master request)	-
Delay Time (between two master trasmissions)	-

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

NOTE: File and printed copies of this document are not subject to document change control.



Register Number	Register Address (Dec)	Register Address (Hex)	Dimension [bit]	Description	Note	Read Function Codes (Dec)	Data Storing
16385	16384	4000	3	Breaker State			
16385	16384	4000	1	Open	See Note 1	2	
16386	16385	4001	1	Closed	See Note 1	2	
16387	16386	4002	1	Tripped	See Note 1	2	

Note 1
The information reported here "self-resets" when the condition that generated it ends.



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



COMMUNICATION PROTOCOL

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



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 (Dec)	Data Storing
(no HOLDING REGISTERS availables)													



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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)	Object Code
16640	4100	01	16	Contactor State	52 01	10	01 00	
16640	4100	01	16	Contactor State Configuration	52 01	10	01 00	

MODBUS PROTOCOL DETAILS

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6/16 (Write Single/Multiple Holding register)	1, 2, 3	"Big Endian" (most significant byte first)

MODBUS OVER SERIAL DETAILS

Physical Layer	Transmission Modes	Device Addressing	Baud Rates (bit/s)	Data Bits	Data bits transmission sequence	Parity	Stop Bits
standard EIA/TIA 485 (RS-485) two-wire configuration	RTU	1÷247	programmable (1200, 2400, 4800, 9600, 19200, 38400)	8	Least significant bit first	NONE	1

MASTER/SLAVE COMMUNICATION TIMING

Timer Description	Timer Value (msec)
Inter-character time-out	< 1,5 character times
Response delay (from master request)	-
Delay Time (between two master transmissions)	-

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Register Number	Register Address (Dec)	Register Address (Hex)	Dimension [bit]	Description	Note	Read Function Codes (Dec)	Data Storing
16641	16640	4100	4	Contactor State			
16641	16640	4100	1	State of Contact 1	<i>See Note 1</i>	2	
16642	16641	4101	1	State of Contact 2	<i>See Note 1</i>	2	
16643	16642	4102	1	State of Contact 3	<i>See Note 1</i>	2	
16644	16643	4103	1	State of Contact 4	<i>See Note 1</i>	2	

Note 1
The information reported here "self-resets" when the condition that generated it ends.



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



COMMUNICATION PROTOCOL

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



Register Number	Register Address (Dec)	Register Address (Hex)	Dimension [word]	Bit Position	Description	Type	Scale	Unit	Range	Note	Read Function Code (Dec)	Write Function Code (Dec)	Data Storing
16641	16640	4100	5		Contactor State Configuration								
16641	16640	4100	1		Number of associated contacts		-	-	1 ÷ 4	See Note 3	3	6,16	
16642	16641	4101	1		Configuration of Contact 1		-	-		See Note 7	3	6,16	
16643	16642	4102	1		Configuration of Contact 2		-	-		See Note 7	3	6,16	
16644	16643	4103	1		Configuration of Contact 3		-	-		See Note 7	3	6,16	
16645	16644	4104	1		Configuration of Contact 4		-	-		See Note 7	3	6,16	

<p>Note 3</p> <p>Represent the number of contact of the associated Contactor or Latching relay. Default value = 4</p>
<p>Note 7</p> <p>bit0: "0": Normally Open (NO) [Default] "1": Normally Close (NC)</p> <p>bit1 15: not used</p>



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4096	1000	01	16	Generic Input	10 00	10	01 00	
17920	4600	01	16	Led	61 02	10	01 00	
4096	1000	01	16	Generic Input configuration	10 00	10	01 00	
4096	1000	01	16	Alarm Input	10 00	10	01 00	
4096	1000	01	16	Event Counter	10 00	10	01 00	

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Physical Layer	Transmission Modes	Device Addressing	Baud Rates (bit/s)	Data Bits	Data bits trasmission sequence	Parity	Stop Bits
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Delay Time (between two master trasmissions)	-

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Register Number	Register Address (Dec)	Register Address (Hex)	Dimension [bit]	Description	Note	Read Function Codes (Dec)	Data Storing
4097	4096	1000	3	Generic Input			
4097	4096	1000	1	Input 1	See Note 1	2	
4098	4097	1001	1	Input 2	See Note 1	2	
4099	4098	1002	1	Input 3	See Note 1	2	

Note 1
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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
17921	17920	4600	3	Led				
17921	17920	4600	1	State of LED 1	See Note 1	1	5,15	
17922	17921	4601	1	State of LED 2	See Note 1	1	5,15	
17923	17922	4602	1	State of LED 3	See Note 1	1	5,15	
4097	4096	1000	3	Alarm Input				
4097	4096	1000	1	Alarm Input 1	See Note 2	1	5,15	
4098	4097	1001	1	Alarm Input 2	See Note 2	1	5,15	
4099	4098	1002	1	Alarm Input 3	See Note 2	1	5,15	

Note 1
"00" = Led OFF
"01" = Led ON
Note 2
"00" = Alarm not active on input
"01" = Alarm active on input



Register Number	Register Address (Dec)	Register Address (Hex)	Dimension [word]	Bit Position	Description	Type	Scale	Unit	Range	Note	Read Function Codes (Dec)	Data Storing
4097	4096	1000	3		Event Counter							
4097	4096	1000	1		Event Counter Input 1	unsigned integer	-	-			4	
4098	4097	1001	1		Event Counter Input 2	unsigned integer	-	-			4	
4099	4098	1002	1		Event Counter Input 3	unsigned integer	-	-			4	



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 (Dec)	Data Storing
4097	4096	1000	9		Generic Input configuration								
4097	4096	1000	1		Map position (reply) of Input 1		-	-			3	6,16	
4098	4097	1001	1		Configuration of Input 1		-	-		See Note 2	3	6,16	
4099	4098	1002	1		Time of Alarm Activation Input 1		0,1	sec			3	6,16	
4100	4099	1003	1		Map position (reply) of Input 2		-	-			3	6,16	
4101	4100	1004	1		Configuration of Input 2		-	-		See Note 2	3	6,16	
4102	4101	1005	1		Time of Alarm Activation input 2		0,1	sec			3	6,16	
4103	4102	1006	1		Map position (reply) of Input 3		-	-			3	6,16	
4104	4103	1007	1		Configuration of Input 3		-	-		See Note 2	3	6,16	
4105	4104	1008	1		Time of Alarm Activation of Input 3		0,1	sec			3	6,16	

Note 2
bit 0: "0" = Active Input ON "1" = Active Input OFF
bit 1: "0" = Alarm not Active on Input "1" = Alarm Active on Input
bit 2: "0" = Alarm ON if input ON "1" = Alarm ON if Input OFF (only if bit 1 = "1")
bit 3: "1" = Reset events counter (Note: automatically changes to 0 after RESET)
bit 4: "0" = Input Active "1" = Input not Active
bits 5÷15: not used

