

**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
4352	1100	01	16	Generic Output	11 00	10	01 00	
4352	1100	01	16	Generic Output Configuration	11 00	10	01 00	
16896	4200	01	16	Button State	53 01	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	Transmission 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](http://www.modbus.org)

- MODBUS over serial line specification and implementation guide V1.02  
 - MODBUS APPLICATION PROTOCOL SPECIFICATION V1.1b

NOTE:

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Register Number	Register Address (Dec)	Register Address (Hex)	Dimension [bit]	Description	Read Function Codes (Dec)	Data Storing
<b>16897</b>	<b>16896</b>	<b>4200</b>	<b>2</b>	<b>Button State</b>		
16897	16896	4200	1	State of Button 1	2	
16898	16897	4201	1	State of Button 2	2	

Register Number	Register Address (Dec)	Register Address (Hex)	Dimension [bit]	Description	Note	Read Function Codes (Dec)	Write Function Codes (Dec)	Data Storing
<b>4353</b>	<b>4352</b>	<b>1100</b>	<b>2</b>	<b>Generic Output</b>				
4353	4352	1100	1	Activate Output 1		1	5,15	
4354	4353	1101	1	Activate Output 2		1	5,15	

Register Number	Register Address (Dec)	Register Address (Hex)	Dimension [word]	Bit Position	Description	Type	Scale	Unit	Range	Note	Read Function Code (Dec)	Data Storing
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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 (Dec)	Data Storing
<b>4353</b>	<b>4352</b>	<b>1100</b>	<b>10</b>		<b>Generic Output Configuration</b>								
4353	4352	1100	1		Map Position of Output 1						3	6,16	
4354	4353	1101	1		Command Output 1 configuration					(3)	3	6,16	
4355	4354	1102	1		Activation Time of Command Output 1		0,1	sec			3	6,16	
4356	4355	1103	1		Delay activation Time of Command Output 1		0,1	sec			3	6,16	
4357	4356	1104	1		Interlock Output 1/Output x	register				(4)	3	6,16	
4358	4357	1105	1		Map Position of Output 2						3	6,16	
4359	4358	1106	1		Command Output 2 configuration					(3)	3	6,16	
4360	4359	1107	1		Activation Time of Command Output 2		0,1	sec			3	6,16	
4361	4360	1108	1		Delay activation Time of Command Output 2		0,1	sec			3	6,16	
4362	4361	1109	1		Interlock Output 2/Output x	register				(4)	3	6,16	

NOTE 1) 8000 : None (default)

0 : Wh  
 1 : kWh  
 2 : MWh  
 3 : Varh  
 4 : kVarh  
 5 : MVarh  
 6 : VAh  
 7 : kVAh  
 8 : MVAh  
 9 : m3  
 10 : km3  
 11 : Mm3  
 12 : Nm3 (normal metro3)  
 13 : kNm3  
 14 : MNm3  
 15 : J  
 16 : kJ  
 17 : MJ  
 18 : cal  
 19 : kcal

NOTE 2) BIT 0: Active Input ON = 0, Active Input OFF = 1  
 BIT 1: Alarm not Active on Input = 0, Alarm Active on Input = 1  
 BIT 2: Alarm ON if input ON = 0, Alarm ON if Input OFF = 1 (only if BIT 1 = 1)  
 BIT 3: RESET eventi = 1 (rimesso automaticamente a 0 dopo RESET)  
 BIT 4: Input Active = 1, Input not Active = 0  
 BIT 5-15: not used

NOTE 3) BIT 0: Normally Open = 0, Normally Closed = 1  
 BIT 1-2: impulsive = 00, maintained = 10, toggle = 01  
 BIT 3: 0 = independent, 1 = interlocked  
 BIT 4-15: not used

NOTE 4) x is the ID of the output interlocked (default 8000, the value of the register should be the address of the Coils of the output associated)

NOTE 5) this register contains the "Register Address (HEX)" of the event which will be activated (Eg. If the value is 4800h, the event "Open Breaker" will be associated to the actuation of the button)

NOTE 6) this register contains the "Register Address (HEX)" of the associated activation event (Eg. If the value is 4000h, the Led will be activated if the bit at position 4000h is 1 inside the group)

NOTE 7) BIT 0: Normally Open = 0, Normally Closed = 1

NOTE 8)  
 BYTE1 (MSB): "11": sistema 1V-1I unipolare; "33": sistema 3V-3I senza informazioni sul neutro; "34": sistema 3V-4I ---- BYTE0 (LSB)

: "00": se la potenza attiva fluisce nella direzione normale/indicata ("upstream to downstream" o secondo la polarità indicata per la connessione), "default"; "01": se la potenza attiva fluisce in direzione inversa

NOTE 9) Potrebbe non essere presente in alcune configurazioni

NOTE 10) espresso in codifica numerica (bit più significativo = segno)

NOTE 11) Unità di misura compatibile con la grandezza configurata al registro precedente, moltiplicata per il fattore moltiplicativo di riferimento per quella grandezza (ciò significa che va scritto un valore tenendo conto del fattore moltiplicativo k)

NOTE 12) Indirizzo del registro (valore assoluto) della grandezza desiderata

NOTE 13) BIT 0 : 1= L'evento genera un allarme, 0 = L'evento non genera l'allarme  
 BIT 1 : 1 = L'evento genera una azione push&link, 0 = L'evento non genera un azione push&link

