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
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	

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	Read Function Codes (Dec)	Data Storing
4097	**4096**	**1000**	**3**	**Generic Input**		
4097	4096	1000	1	Input 1	2	
4098	4097	1001	1	Input 2	2	
4099	4098	1002	1	Input 3	2	

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**	**2**	**Led**				
17921	17920	4600	1	State of LED 1		1	5,15	
17922	17921	4601	1	State of LED 2		1	5,15	
17923	17922	4602	1	State of LED 3		1	5,15	
4097	**4096**	**1000**	**3**	**Alarm Input**				
4097	4096	1000	1	Alarm Input 1		1	5,15	
4098	4097	1001	1	Alarm Input 2		1	5,15	
4099	4098	1002	1	Alarm Input 3		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
4097	**4096**	**1000**	**3**		**Event Counter**							
4097	4096	1000	1		Event Counter Input 1						4	
4098	4097	1001	1		Event Counter Input 2						4	
4099	4098	1002	1		Event Counter Input 3						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					(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					(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					(2)	3	6,16	
4105	4104	1008	1		Time of Alarm Activation of Input 3		0,1	sec			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: inpulsive = 00, mantained = 10, toggle = 01
BIT 3: 0 = indipendent, 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 ("downstream to upstream" o al contrario rispetto alla polarità indicata per la connessione)

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