Cat. Nos: G47XM63, G47XM125

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)
16384	4000	01	11	State of Breaker	51 02	10	01 00
28672	7000	01	11	Differential Electric Protection	73 05	10	01 00
20480	5000	01	11	Three-phase Electric Measurement	71 03	30	01 00
32768	8000	01	11	Single-channel Thermal Measurement	81 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)
4 (Read Input Registers)	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

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Register Number	Register Address (Dec)	Register Address (Hex)	Dimension [bit]	Description	Note	Read Function Codes (Dec)	Data Storing
16385	**16384**	**4000**	**2**	**State of Breaker**			
16385	16384	4000	1	Open	The information reported here "self-resets" when the condition that generated it ends.	2	
16386	16385	4001	1	Closed	The information reported here "self-resets" when the condition that generated it ends.	2	
28673	**28672**	**7000**	**6**	**Differential Electric Protection**			
28673	28672	7000	1	Differential pre-alarm (>threshold ID1)	The information reported here "self-resets" when the condition that generated it ends.	2	
28674	28673	7001	1	Differential alarm (>threshold ID2)	The information reported here "self-resets" when the condition that generated it ends.	2	
28675	28674	7002	1	Overtemperature alarm (>threshold T)	The information reported here "self-resets" when the condition that generated it ends.	2	
28676	28675	7003	1	*RESERVED*			
28677	28676	7004	1	P. differential relay tripped	The information reported here is maintained even when the condition that generated it ends. The "reset" condition can ONLY be the detection of the device in Closed state. It is therefore necessary that the switch state function is present; in case of the contrary, the relay Trip information MUST NOT BE IMPLEMENTED (Example: if the switch goes back to Open => the Tripped Relay signal must be maintained up until the reset condition intervenes)	2	Y
28678	28677	7005	1	Over-temperature P. Relay tripped	The information reported here is maintained even when the condition that generated it ends. The "reset" condition can ONLY be the detection of the device in Closed state. It is therefore necessary that the switch state function is present; in case of the contrary, the relay Trip information MUST NOT BE IMPLEMENTED (Example: if the switch goes back to Open => the Tripped Relay signal must be maintained up until the reset condition intervenes)	2	Y

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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
(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)
28673	**28672**	**7000**	**9**		**Differential Electric Protection**						
28673	28672	7000	1		Differential P. Relay (total) Tripped Counter		-				4
28674	28673	7001	1		Overtemperature P. Relay (total) Tripped Counter		-				4
28675	28674	7002	1		Last Release data Buffer: "Tripped" type reading only bit reply		-				4
				0	Differential Tripped Reply		-				
				1	Over-temperature P. Relay Tripped Reply		-				
				15÷2	*RESERVED (all return "0")*		-				
28676	28675	7003	2		Last Release data Buffer: Interrupted current or temperature		-				4
28678	28677	7005	1		G1 "main setting"– differential: levels		1	mA		Expressed as "numeric coding"	4
28679	28678	7006	1		G1 – differential: times		1	msec		Expressed as "numeric coding"	4
28680	28679	7007	1		G1 – over-temperature protection: levels		1	°C		Expressed in "numeric coding"	4
28681	28680	7008	1		G1 – over-temperature protection: times		1	msec		Expressed in "numeric coding"	4
20481	**20480**	**5000**	**56**		**Three-phase Electric Measurement**						
20481	20480	5000	1		Phase 1 Current Value (R)	unsigned integer	1	A		Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4
20482	20481	5001	1		Phase 2 Current Value (S)	unsigned integer	1	A		Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4
20483	20482	5002	1		Phase 3 Current Value (T)	unsigned integer	1	A		Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4
20484	20483	5003	1		Neutral Current Value	unsigned integer	1	A		Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4
20485	20484	5004	1		*RESERVED (returns "8000h")*						
20486	20485	5005	1		Differential Current Value	unsigned integer	1	mA		Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4
20487	20486	5006	36		*RESERVED (all return "8000h")*						
20523	20522	502A	1		Three-phase Active Power	signed integer	1	kW		Expressed in "numeric coding"; with mark (more significant bit = mark)	4
20524	20523	502B	9		*RESERVED (all return "8000h")*						
20533	20532	5034	2		Positive Three-phase Active Energy	unsigned integer	1	kWh		Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4
20535	20534	5036	2		Negative Three-phase Active Energy	unsigned integer	1	kWh		Expressed on "numeric coding"; without mark (fixed more significant bit = 0)	4
32769	**32768**	**8000**	**1**		**Single-channel Thermal Measurement**						
32769	32768	8000	1		Sensor 1 Temperature Value	signed integer	1	°C		Expressed in "numeric coding"	4

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Data Storing
Y
Y
Y
Y
Y
Y
Y
Y
Y
Y

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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
					(no HOLDING REGISTERS availables)								

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