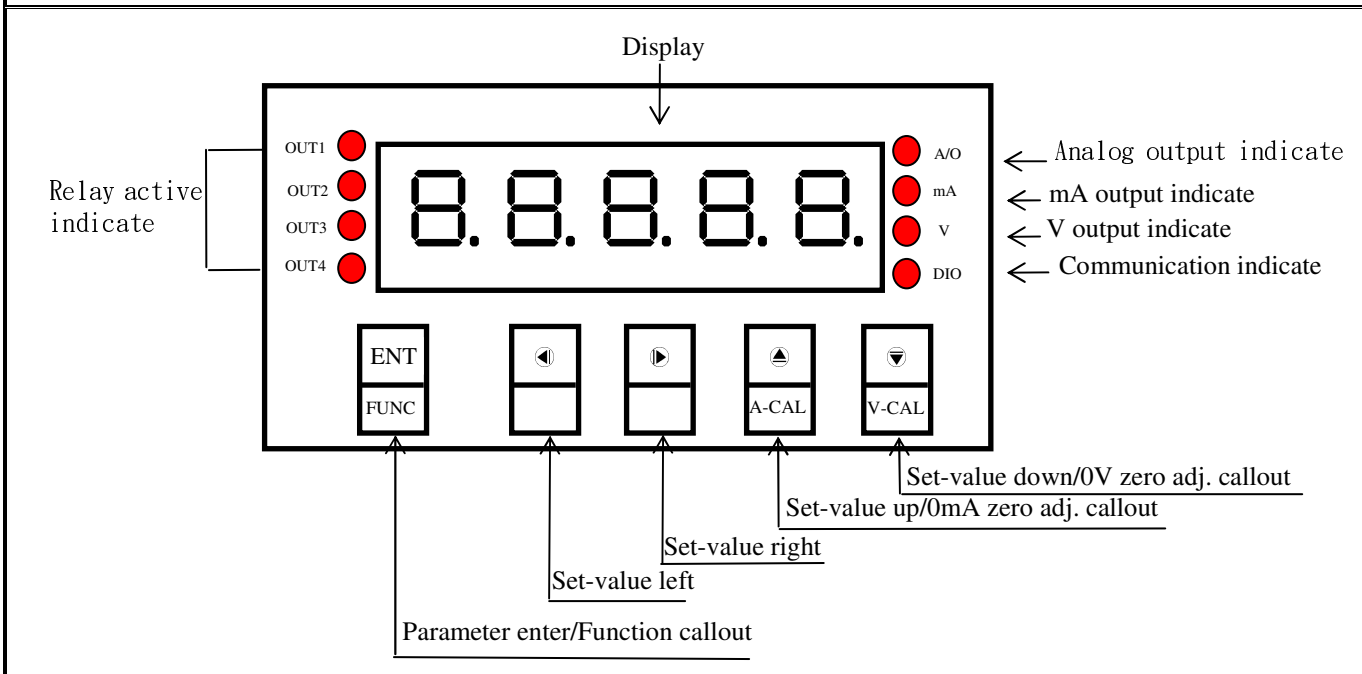


# MULTI-FUNCTION RS-485 CONTROLLER METER (48x96mm) MMX-RSM series

## ■ Features

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| <ul style="list-style-type: none"> <li>⊙ Readout &amp; calibrator analog output for DC 4~20.000mA /0~20.000mA/0~10.000V</li> <li>⊙ Analog output accuracy ±0.05% F.S.</li> <li>⊙ Readout Range from -19999~99999</li> <li>⊙ MODBUS RTU MODE for RS485 Protocol</li> <li>⊙ BAUD RATE : 19200/9600/4800/2400</li> </ul> | <ul style="list-style-type: none"> <li>⊙ Four relay output function</li> <li>⊙ 16 bits DAC analog output function</li> <li>⊙ Modified inside parameter must have pass code</li> <li>⊙ EEPROM Saving ,data safekeeping over 10 years</li> <li>⊙ Wide input range for auxiliary power</li> <li>⊙ Dimension small and high stability</li> </ul> |
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## ■ Name of Parts



Key Introduce	Operation Manual		
Ⓜ Key Function	1. In normal display, The key function is call out setting group 2. In parameter setting page, The key function is data Enter , and go to next page		
◀ Key Function	1. Into parameter setting page, the parameter mark & data is alternate display, If need modify data can press shift key into setting procedure, The display is lock parameter data, this time must let off key about 0.2 sec, press again, the cursor(twinkle express)is cycle moving left. (Key Response about 0.2 sec)		
▶ Key Function	1. Into parameter setting page, the parameter mark & data is alternate display, If need modify data can press shift key into setting procedure, The display is lock parameter data, this time must let off key about 0.2 sec, press again, the cursor(twinkle express)is cycle moving right. (Key Response about 0.2 sec)		
▲ Key Function	1. In normal display, the key function is call out 0mA zero adjustment page(press 5S) 2. Into parameter setting page, the parameter mark & data is alternate display, If need modify data can press up key into setting procedure, The display is lock parameter data, this time must let off key about 0.2 sec, press again, the parameter data will increment. (Key Response about 0.2 sec)		
▼ Key Function	1. In normal display, the key function is call out 0V zero adjustment page(press 5S) 2. Into parameter setting page, the parameter mark & data is alternate display, If need modify data can press down key into setting procedure, The display is lock parameter data, this time must let off key about 0.2 sec, press again the parameter data will decrement. (Key Response about 0.2 sec)		
▲&▼ Key Function	In setting group or setting page press ▲&▼ key return normal display, but if in setting page the modify data will be lost		
No Key in anything	In setting group or setting page no key in anything about 2 minutes, return normal display		
Step	Parameter mark description	Parameter mark	Operation manual
1	Normal display	1 2 3 4 5	Press Ⓜ/FUNC key into P.COD setting page
1-2	P.COD(Pass code input page) Default=0	P.C o d	1. Key in 5 digit pass code with ◀&▶&▲&▼ key 2. Press Ⓜ key, the pass code is right into setting group , otherwise return normal display
		□ □ □ □ □	

1-3	DS.SEL(Display select) Default=RS.485	DSSEL	1. Decide display RS.485 or AN.OUT with ▲&▼ key 2. Press Ⓜ key enter data and into DP setting page NOTE: while DS.SEL=RS.485, AN.OUT=Minimum value AN.OUT=0.000(0-10V or 0-20mA), AN.OUT=4.000(4-20mA)
		RS485	
1-4	DP(Decimal Point) Default=0	DP	1. Decide decimal point position with ▲&▼ key (0 to 4) 2. Press Ⓜ key enter data and into ADDR setting page NOTE: Using for DS.SEL=RS.485
		0	
1-5	ADDR(Communication Address ) Default=0	ADDR	1. Decide address with ◀&▶&▲&▼ key(0~255) 2. Press Ⓜ key enter data and into BAUD setting page
		0000	
1-6	BAUD(Communication Baud Rate) Default=19200	BAUD	1. Decide baud rate with ▲&▼ key(19200,9600,4800,2400) 2. Press Ⓜ key enter data and into PARI setting page
		19200	
1-7	PARI(Communication Parity Check)Default=n82	PARI	1. Decide parity check with ▲&▼ key(n82,n81,even,odd) 2. Press Ⓜ key enter data and into CRC response setting page
		n.8.2	
1-8	CRC(Cyclic Redundancy Check Code Response) Default=NO	CRC	1. Decide CRC check response with ▲&▼ key (yes, no) 2. Press Ⓜ key enter data and into AN.SEL setting page
		no	
1-9	AN.SEL(Analog output select) Default=4-20mA	ANSEL	1. Decide Analog output with ▲&▼ key (4-20mA/0-20mA/0-10V) 2. Press Ⓜ key enter data and into AI.SLP setting page
		4-20	
1-10	AI.SLP(Current(mA) output slope) Default=128mA/S	AI.SLP	1. Decide Current(mA) output slope with ▲&▼ key (0.125mA/S~1024mA/S) 2. Press Ⓜ key enter data and into AV.SLP setting page
		128	
1-11	AV.SLP(Voltage(V) output slope) Default=128V/S	AV.SLP	1. Decide Voltage(V) output slope with ▲&▼ key (0.0625V/S~512V/S) 2. Press Ⓜ key enter data and into R-O-M setting page
		128	
1-12	R-O-M(Relay Output Mode) Default=0.0.0.0.	r-o-m	1. Decide Relay output mode with ▲&▼ key (OUTx:4.3.2.1=0.0.0.0~1.1.1.1.) 2. Press Ⓜ key enter data and into 1.ON-T setting page Note: R-O-M=0, ON activation; R-O-M=1, ON-TIME activation
		0.0.0.0	
1-13	1.ON-T(Relay1 on-time) Default=1.0S	1.on-t	1. Decide Relay1 on-time with ◀&▶&▲&▼ key(0.1~999.9S) 2. Press Ⓜ key enter data and into 2.ON-T setting page
		1.0	
1-14	2.ON-T(Relay2 on-time) Default=1.0S	2.on-t	1. Decide Relay2 on-time with ◀&▶&▲&▼ key(0.1~999.9S) 2. Press Ⓜ key enter data and into 3.ON-T setting page
		1.0	
1-15	3.ON-T(Relay3 on-time) Default=1.0S	3.on-t	1. Decide Relay3 on-time with ◀&▶&▲&▼ key(0.1~999.9S) 2. Press Ⓜ key enter data and into 4.ON-T setting page
		1.0	
1-16	4.ON-T(Relay4 on-time) Default=1.0S	4.on-t	1. Decide Relay4 on-time with ◀&▶&▲&▼ key(0.1~999.9S) 2. Press Ⓜ key enter data and into CODE setting page
		1.0	
1-17	CODE(Code) Default=0	CODE	1. Decide CODE with ◀&▶&▲&▼ key(0~19999) 2. Press Ⓜ return normal display
		00000	
Step	Parameter mark description	Parameter mark	Operation manual
2	Normal display	12345	Press ▲/A-CAL about 5 sec, into AZERO setting page
2-1	AZERO (0mA zero adjustment) Default=0	APERO	1. Adjustment 0mA zero output with ◀&▶&▲&▼ key (-6000~6000) 2. Press Ⓜ key enter data and into ASPAN setting page NOTE: Into AZERO setting page, Following parameter will be changed 1. DS.SEL=AN.OUT, 2.AN.SEL=0-20mA, 3.AN.OUT=0.000
		00000	

2-2	ASAPN (20mA span adjustment) Default=0	<div style="display: flex; justify-content: space-around;"> <span>ASAPN</span> <span>□□□□</span> </div>	1. Adjustment 20mA span output with ◀&▶&▲&▼ key (-6000~6000) 2. Press Ⓜ key return normal display NOTE: Into ASAPN setting page, Following parameter will be changed 1. DS.SEL=AN.OUT, 2.AN.SEL=0-20mA, 3.AN.OUT=20.000
Step	Parameter mark description	Parameter mark	Operation manual
3	Normal display	12345	Press ▼/V-CAL about 5 sec, into VZERO setting page
3-1	VZERO (0V zero adjustment) Default=0	<div style="display: flex; justify-content: space-around;"> <span>VZER</span> <span>□□□□</span> </div>	1.Adjustment 0V zero output with ◀&▶&▲&▼ key (-6000~6000) 2.Press Ⓜ key enter data and into VSPAN setting page NOTE: Into VZERO setting page, Following parameter will be changed 1. DS.SEL=AN.OUT, 2.AN.SEL=0-10V, 3.AN.OUT=0.000
3-2	VSPAN (10V span adjustment) Default=0	<div style="display: flex; justify-content: space-around;"> <span>VSPAN</span> <span>□□□□</span> </div>	1. Adjustment 10V span output with ◀&▶&▲&▼ key (-6000~6000) 2. Press Ⓜ key return normal display NOTE: Into VSAPN setting page, Following parameter will be changed 1. DS.SEL=AN.OUT, 2.AN.SEL=0-10V, 3.AN.OUT=10.000
Appendix	Error Mark Description	Error Mark	Analyze & Description
1	EEPROM error detect	<div style="display: flex; justify-content: space-around;"> <span>E-00</span> <span>□□</span> </div>	1. External interference when EEPROM read/write 2.EEPROM write over 100K times(guarantee 10 years) Please power reset, if still display E-00, doing following step: 1.E-00 & No alternate display for inquire reset EEPROM 2.Decide Yes with ▲&▼ key, press Ⓜ key return normal display 3.EEPROM was reset, Please fellow 1-3 step to set again.

MMX-RSM Modbus RTU Mode Protocol Address Map

Data format 16Bit/32Bit, sign bit 8000~7FFF( -32768~32767 )/80000000~7FFFFFFF(-2147483648~2147483647)

Address	Name	Description	Accept
0000	ID	Judge type code MMX-RSM is 00	R
0001	OUT1	Relay1 output mode, range 0000~0001(0~1)(0:OFF,1:ON) <sup>(4)</sup>	R/W
0002	OUT2	Relay2 output mode, range 0000~0001(0~1)(0:OFF,1:ON) <sup>(4)</sup>	R/W
0003	OUT3	Relay3 output mode, range 0000~0001(0~1)(0:OFF,1:ON) <sup>(4)</sup>	R/W
0004	OUT4	Relay4 output mode, range0000~0001(0~1)(0:OFF,1:ON) <sup>(4)</sup>	R/W
0005	DS.SEL	Display select, range 0000~0001(0~1)(0:RS.485,1:AN.OUT)	R/W
0006	DP	Decimal Point(for RS.485 display), range 0000~0004 (0~4), 0:10 <sup>0</sup> ,1:10 <sup>1</sup> ,2:10 <sup>2</sup> ,3:10 <sup>3</sup> ,4:10 <sup>4</sup>	R/W
0007	BAUD	BAUD rate, range 0000~0003 (0~3) 0:19200,1:9600,2:4800,3:2400	R/W
0008	PARI	PARI check, range 0000~0003 (0~3) 0:N82,1:N81,2:EVEN,3:ODD	R/W
0009	CRC	CRC check response, range 0000~0001 (0~1) 0:disable,1:enable	R/W
000A	AN.SEL	Analog output select, range 0000~002(0~2) (0:4-20mA, 1:0-20mA, 2:0-10V)	R/W
000B	AI.SLP	Current(mA) output slope, range 0000~000D(0~13) <sup>(1)</sup>	R/W
000C	AV.SLP	Voltage(V) output slope, range 0000~000D(0~13) <sup>(1)</sup>	R/W
000D	R-O-M	Relay output mode, range 0000~000F(0~15) (0:ON activation, 1:ON-TIME activation) (Bit0:OUT1, Bit1:OUT2, Bit2:OUT3, Bit3:OUT4)	R/W
000E	ADDR	Communication ADDR, range 0000~00FF(0~255)	R/W
000F	1.ON-T	Relay1 ON-TIME, range 0001~270F(1~9999)	R/W
0010	2.ON-T	Relay2 ON-TIME, range 0001~270F(1~9999)	R/W
0011	3.ON-T	Relay3 ON-TIME, range 0001~270F(1~9999)	R/W
0012	4.ON-T	Relay4 ON-TIME, range 0001~270F(1~9999)	R/W
0013	AZERO	(0mA) zero adjustment, range E890~ 1770 (-6000~6000)	R/W
0014	ASPAN	(20mA) span adjustment, range E890~ 1770 (-6000~6000)	R/W
0015	VZERO	(0V) zero adjustment, range E890~ 1770 (-6000~6000)	R/W
0016	VSPAN	(10V) span adjustment, range E890~ 1770 (-6000~6000)	R/W
0017	CODE	Pass code, range0000~4E1F(0~19999)	R/W
0018	AN.OUT	AN.OUT value setting, range 0000~4E20(0~20000) <sup>(2) (3) (4)</sup>	R/W
0019	DISP	RS.485 display setting, range FFFB1E1~0001869F (-19999~99999) high byte <sup>(3) (4)</sup>	R/W
001A	(RS.485)	RS.485 display setting, range FFFB1E1~0001869F (-19999~99999) low byte <sup>(3) (4)</sup>	

NOTE 1			NOTE 2	NOTE 3.	NOTE 4.
	mA/Second	V/Second	1. while AN.SEL=4~20mA, Input range 4000 ~20000 mapping output 4.000~20.000(mA) 2. while AN.SEL=0~20mA, input range 0 ~20000 mapping output 0~20.000(mA), 3. while AN.SEL=0-10V, input range 0~10000 mapping output 0~10.000(V)	1. while DS.SEL=RS.485, DISP(RS.485) value is display, AN.OUT=Min. A/O 2. while DS.SEL=AN.OUT, AN.OUT value is display and mapping A/O	It's will not saving value to EEPROM while Writing to 1. OUTx 2. AN.OUT 3. DISP(RS.485)
0000	0.125	0.0625			
0001	0.25	0.125			
0002	0.5	0.25			
0003	1.0	0.5			
0004	2.0	1.0			
0005	4.0	2.0			
0006	8.0	4.0			
0007	16.0	8.0			
0008	32.0	16.0			
0009	64.0	32.0			
000A	128.0	64.0			
000B	256.0	128.0			
000C	512.0	256.0			
000D	1024.0	512.0			