

PROGRAMMABLE LOGIC CONTROLLERS

Single Box Solution

Built in:

- HMI
- I/Os
- Relays
- Analog (including temp. sensor inputs)
- 24V to drive inputs

- Upto 47 I/Os
- Upto 6 analog channels



96 x 96

MM3010



48 x 96

MM1010


- Upto 8 Digital inputs
- Upto 5 Relays / Digital outputs
- One analog input

DISPLAY	LCD (backlight) 4 line x 16 character	7 segment LED, 3 digit + (4 + 4) digit
No. of Keys	18 (10 numeric keys)	5
No. of Configurable Keys	14	4
DIGITAL SECTION		
• DIGITAL INPUT (Refer card selection table for available options)		
No. of Digital Inputs	Dependent on card selections (refer table 1.0 on Page 02)	8
Input Type	PNP	PNP
Input Voltage Range	11 - 28 VDC (abs. max.: 30 VDC)	11 - 28 VDC (abs. max.: 30 VDC)
Response Time (Inputs other than fast counter)	IX0-IX3 (4 inputs) - 1 ms Others - 10 ms	For 8DI IX0,IX1 (2 inputs) - 1 ms (without debounce) Others - 10 ms (with debounce)
Isolation	2 kV	2 kV
Fast Counter Input		
Operating Modes / Frequency	Bidirectional, Unidirectional: 7.5 kHz Quadrature: 2.5 kHz	
Maximum Count	10 digits (32 bit)	
• DIGITAL OUTPUT - Relay / Transistor (Refer card selection table for available options)		
No. of Relay / Transistor Outputs	Dependent on card selections (refer table 1.0 on Page 02)	5
Relay (NO Type) Contact rating	4ch / 8ch: 5 A resistive @ 240 VAC 11ch: 3 A resistive @ 240 VAC	NO type: 3 A resistive @ 240 VAC
Minimum Switching Time	10 msec	10 msec
Transistorised Output rating	For 4 / 8 / 11 Channels: NPN Type: 30V, 10mA For 14 Channels: PNP Type: 30V, 100mA	NPN Type 30V, 10 mA
Isolation	2 kV	2 kV
Short Circuit Protection	Yes	Yes
Max. Switching Frequency	1 kHz	1 kHz
ANALOG SECTION		
• ANALOG INPUT (Refer card selection table for available options)		
No of Inputs / Type	Dependent on card selections (refer table 1.0) TC / RTD / 4-20mA / 0-10V	1 input:- TC / RTD / 0-10 V / 0-20 mA
• ANALOG OUTPUT (Refer card selection table for available options)		
No. of Analog Outputs	2	
Output Type	4-20 mA / 0 - 10V (factory set)	
Resolution	12 bit	
Conversion Time	100 msec	
Linearity Error	0.1%	

CONTINUED ►

MM3010

MM1010

● FUNCTIONAL SPECIFICATIONS		
Programming Method	Windows based software for ladder program & HMI configuration	Windows based software for ladder program & HMI configuration
Memory	Data memory: 16K Code memory: 256K	Data memory: 16K Code memory: 128K
No of Objects	Maximum 5000 (as per memory)	Maximum 5000 (as per memory)
Minimum Scan Time	200 μ sec	200 μ sec
FUNCTION BLOCKS		
Timer	Universal Timer: On delay, Off delay, Pulse, Up timer, Down timer (10 ms)	On delay, Off delay, Pulse timer, Up timer, Down timer, Universal Timer (10 ms)
Counter	Up counter, Down counter, Up/down counter (Upto 10 digits)	Up counter, Down counter, Up down counter (8 digit)
Other Blocks	PID Control (Autotuning), Analog input, Analog output, Time switch, Communication (Master)	PID Control (Autotuning), Analog input
Communication Ports	2 RS232 / RS485 ports (master/slave) isolated	1 RS485 port (slave) Isolated
Communication Protocol	MODBUS / RTU	MODBUS / RTU
Memory Retention	10 years	10 years
RTC	Yes	No
Supply Voltage	85 - 270 VAC/DC, 24 VDC, AC@50/60 Hz	24 VDC
Temperature	Operating: 0 to 50°C Storage: -20 to 60°C	Operating: 0 to 50°C Storage: -20 to 60°C
Humidity (non-condensing)	95%	95%
Weight	564 gms	258 gms
Certifications		
Dimensions	Refer diagram A	Refer diagram B
Ordering Code	Please see next fold for ordering information	MM1010-24V

There are 4 card slots internal to the unit. These cards are factory fitted but possible to select while ordering. Each card slot has some selectable card types that can be inserted. Detailed information regarding these cards is provided in adjacent table.

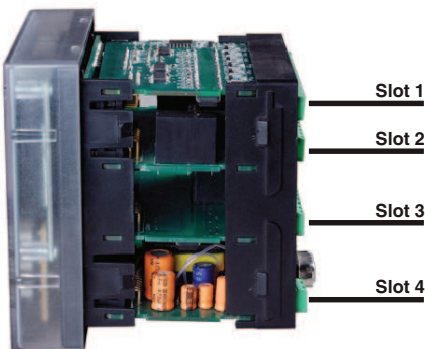
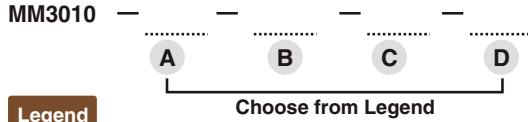


Table 1.0

I/O combinations available		Order Codes
Slot 1 Digital Input Cards	8 Digital Input	DI08
	13 Digital Input	DI13
	19 Digital Input + 1 Quad	DIQ19
Slot 2 Digital output Cards	8 Digital Output	DR08
	11 Digital Output	DR11
	14 Transistor Output, 100mA	DT14
	20 Transistor Output, 10mA	DT20
Slot 3 Digital / Analog Mixed I/O Cards	Digital Mixed I/O: 8DI + 4DO	MDI08R04
	6 Channel Analog I/P: AI 06 (Thermocouple/RTD type) <small>(factory set-to be specified while ordering)</small>	AI06-T/R
	6 Channel Analog I/P: AI 06 (Voltage/current type) <small>(factory set-to be specified while ordering)</small>	AI06-V/I
	2 Channel Analog I/P: AI 02 (universal input)	AI02
	Analog Mixed I/O: 4AI + 2AO	MAI04O02
Slot 4 Power Supply	85 to 270 VAC/DC	270 V
	24 VDC	24 VDC

ORDERING INFORMATION FOR MM3010



Legend

Digital Input Card		Digital Output Card		Digital/Analog Mixed Input Card		Power Supply	
A	Configuration	B	Configuration	C	Configuration	D	Configuration
DI08	8 Digital Inputs	DR08 Relay type DT08 Transistor type	8 Digital Outputs	MDI08R04 Only relay type O/P available	8 Digital Inputs + 4 Relay Outputs	270 V	85 to 270 VAC/DC
DI13	13 Digital Inputs	DR11 Relay type DT11 Transistor type	11 Digital Outputs	AI06- T/R	6 Analog Inputs TC / RTD type	24 VDC	24 VDC
DIQ19	19 Digital Inputs + 1 Quad	DT14	14 Transistor Outputs, (100mA each)	AI06- V/I	6 Analog Inputs Voltage / Current type		
		DT20	20 Transistor Outputs, (10mA each)	AI02	2 Analog Inputs Universal type		
				*MAI04O02	4 Analog Inputs + 2 Analog Outputs		

NOTE

* In case of MAI04O02, type of Analog Input/Output to be specified separately.

INPUTS	OUTPUTS
TC	0-10V
RTD	0-20mA
Voltage	4-20mA
Current	

ORDERING EXAMPLE

MM3010 - DI13 - DR11 - AI02 - 270V

MM3010 - Digital Inputs: 13 - Digital Outputs: 11 -
Analog Inputs : 2 - Supply Voltage : 85 to 270 VAC/DC

ACCESSORIES FOR PLC



24 VDC Power Supply



RS232-485 Converter



4 Relay Module

Supply Voltage	90-270 VAC/DC @ 50-60Hz Max. input current 50 mA	90-270 VAC/DC @ 50-60Hz Max. input current 50 mA	24 VDC, 40 mA for 4 relays, each relay ON at 24 VDC, 10 mA
Output	24 VDC, maximum current 500 mA		4 relay outputs with NONC Contact rating: 5 A resistive/ 1 A inductive minimum switching time: 10 ms
Transmission Speed		9600 to 115200 BPS	
Transmission Mode		2-wire (half duplex)	
Isolation	2 kV	2 kV	2 kV
Temperature	Operating: 0 to 50°C Storage: -20 to 75°C	Operating: 0 to 50°C Storage: -20 to 75°C	Operating: 0 to 50°C Storage: -20 to 75°C
Humidity (non-condensing)	upto 95%	upto 95%	upto 95%
Weight	110 gms	80 gms	130 gms
Dimensions	Refer diagram C	Refer diagram E	Refer diagram D

ORDERING INFORMATION

Product Name	Order Code	Product Name	Order Code
24VDC Power Supply	AP-24V-500 mA	RS232-RS485 Converter (without isolation)	AC-RS485-RS232-01
RS232-RS485 Converter (with isolation)	AC-RS485-RS232-ISO	4 Relay Module	AR-4-5A-NO/NC