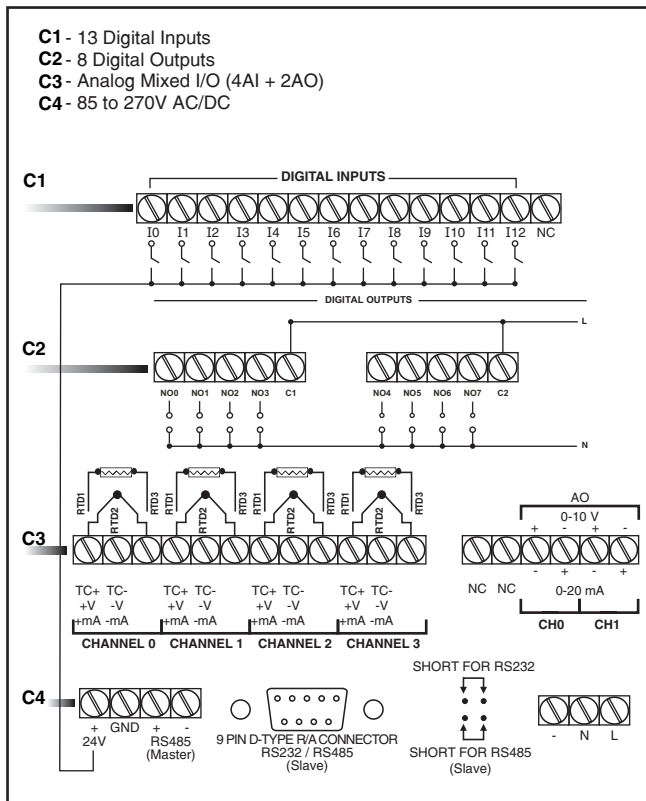




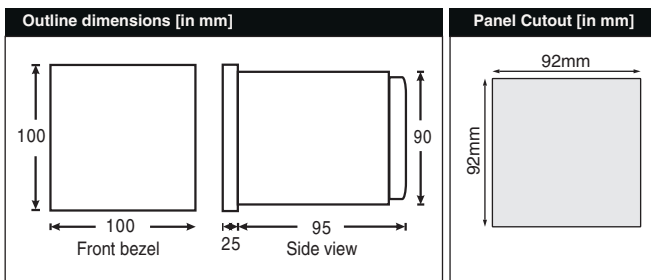
96mm x 96mm

MM3010

TERMINAL CONNECTIONS



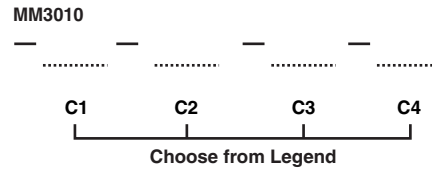
Dimensions [in mm]



FEATURES

- > Compact PLC with built-in HMI.
- > 4 x 16 line character LCD display.
- > User friendly Windows based software for ladder programming and HMI configuration
- > Online parameter setting.
- > Battery back up and RTC available
- > RS 485 based communication with MODBUS protocol.

ORDERING INFORMATION



Slots	Cards	Order Code
C1 Digital Input Cards	8 Digital Input	DI08
	13 Digital Input	DI13
	19 Digital Input + 1 Quad	DIQ19
C2 Digital output Cards	8 Digital Output (Relay type)	DR08
	14 Transistor Output, PNP, 100mA	DT14
C3 Digital / Analog Mixed I/ Other Cards	Digital Mixed I/O : 8DI + 4DO	MD-I08, R04
	6 channel Analog I/P (TC / RTD type)	AI-06, TC/RTD
	6 channel Analog I/P (Voltage / Current type)	AI-06, V/I
	2 Channel Analog I/P (Universal type)	AI-02
C4 Power Supply	Analog Mixed I/O : 4AI + 2AO 4AI (Universal I/P) - Set internal Jumpers (Default TC/RTD) 2AO (Factory set-to be specified while ordering (0-10V/0-20mA)	MA-I04, O02
	85 to 270V AC/DC	270 V
	24V DC	24V DC

ACCESSORIES [to be ordered separately]

Communication cable:
Part no. - ACH - 001.

Windows-based software for ladder programming:
Part no. - ACD-003

Four Relay module
Part no. - AR - 04 - 5A - NONC

Power Supply module
Part No. Part no – AP-24V-500mA-NS131

RS485 to RS232 converter
Part no. - AC - RS485 - RS232 - 01 [Non Isolated]
Part no. - AC - RS485 - RS232 - ISO [Isolated]

ORDERING INFORMATION FOR IO610

- IO610-8DI [8 Digital inputs]
- IO610-4RO [4 Relay Outputs]
- IO610-4TO [4 Transistor Outputs]
- IO610-2AI-VI [2 Analog inputs (Voltage / Current)]
- IO610-2AI-TCR [2 Analog inputs (TC/RTD)]
- IO610-2AO [2 Analog Outputs]

TECHNICAL SPECIFICATIONS

Display	LCD [backlight] 4 line x 16 character Font Size 5 x 7
No. of Keys	18 [10 numeric keys]
No. of Configurable Keys	14

INPUT SECTION

No. of Digital Inputs	Dependent on card selection
Input Type	PNP
Input Voltage Range	11-28V DC [abs. max.: 30V DC]
Response Time [Inputs other than fast counter]	Programmable upto 1 to 255ms from Front End [Default 10ms][Also depends on ladder execution time]
Isolation	2 kV
FAST COUNTER INPUT	
Input Type	NPN (Applicable for 19 DIQ Card only)
Operating Modes / Frequency	Bidirectional, Unidirectional : 7.5khz, Quadrature : 2.5 khz
Maximum Count	10 digits

ANALOG SECTION

No of Inputs / Type	Dependent on card selection
Sensors	J, K, T, R, S, C, V, D, N, L, U, W, PLTNL, RTD, MVOLT, VOLT [0-10 V], CURR [0-20 mA]
Resolution	14 bits

OUTPUT SECTION

Digital Output

No. of Relay / Transistor Output	Dependent on card selection
RELAY (NO TYPE)	
Contact Rating	4ch / 8ch: 5 A resistive @ 240V AC 11ch: 3 A resistive @ 240V AC
Min. Switching Time	1 ms [or as per Ladder Scan Time]
Isolation	2 kV

TRANSISTOR

Transistorised Output Rating	For 4 / 8 / 11 Channels: NPN Type: 24V, 50 mA For 14 Channels: PNP Type: 24 V, 100 mA
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Analog Output

No of Analog Output	Dependent on card selection
Output Type	0-20 mA / 0-10 V [factory set]
Resolution	12 bit
Conversion Time	100 msec
Linearity Error	0.1%

FUNCTIONAL SPECIFICATIONS

Programming Method	Windows based software for ladder programming and HMI Configuration.
Memory	Data memory: 16K Code memory: 351K Upload memory: 96K
No. of Objects	Maximum 5000 [as per memory]
Minimum Scan Time	200 µsec [Typically 1ms]

FUNCTIONAL BLOCKS

Timer Operational Modes	On Delay, Off Delay, Pulse, Special [Up/Down] Timer [1ms]
Timer Resolution	1 ms
Timer Display Format	Sec, Min, Hr, Day, Min.Sec, Hr.Min, Day.Hr, Hr.Min.Sec, Day.Hr.Min.Sec
Counter	Up, Down, Up/Down, Fast Counter [up to 10 digits] Uni/Bi/Quad
Other Blocks	PID Control with autotune, Analog input, Analog output, Time switch, Communication, RTC
Communication Ports	Master- RS485 Slave- RS232/RS485 [Selectable]
Communication Protocol	MODBUS RTU
Supported Expansion	IO610 on RS485 master port
Memory Retention	10 years
RTC	Yes
Supply Voltage	85-270V AC, 24V DC

TEMPERATURE

Operating	0 to 50° C
Storage	-20 to 50° C
Humidity	95% [non-condensing]
Weight	564 gms