



Features:

- Compact PLC with built-in HMI.
- 4 line x 16 characters LCD display.
- Windows based user friendly software for ladder programming and HMI configuration.
- RTC with Time Switch function.
- RS 485 based communication with MODBUS Protocol.
- Inbuilt 45 IOs and expandable upto 150 IOs.

Size: 96mm x 96mm

Technical Specifications

Display

Display	LCD (backlight) 4 line x 16 characters. Font size 5x7mm
No. of Keys	18 keys (10 numeric, 14 user configurable)

Input Specifications

Digital Input	
No. of digital input	Dependent on card selection
Input Type	PNP
Input Voltage Range	11 - 28V DC (abs. max.: 30V DC)
Response Time	Programmable upto 1 to 255ms from Front End (Default 10ms; Also depends on ladder execution time)
Isolation	2.5kV
Timer Accuracy	0.1% or 2ms (Whichever greater)
Fast Counter Input (Applicable for 19 DIQ Card only)	
Input Type	NPN
Operating Modes / Frequency	Unidirectional, Bidirectional : 7.5 kHz, Quadrature : 2.5 kHz
Maximum Count	32 bits
Analog Input	
No of Inputs / Type	Dependent on card selection
Sensors	J, K, T, R, S, C, E, B, N, L, U, W, PLTNL, RTD, mV (0-60mV), VOLTAGE (0-10V), CURRENT (0-20mA)
Resolution	16 bits 0-10V : 1mV, 0-20mA : 1µA, TC / RTD : 0.1 °C (R & S type)
Accuracy	For TC inputs: 0.25% of full scale ±1° For R & S inputs: 0.5% of full scale ±2° (20 min of warm up time for TC inputs) For RTD inputs: 0.1% of full scale ±1° For V/I Inputs: ± 0.5% of full scale / ± 5 counts whichever greater
Conversion Time	100 msec
Accuracy	±0.5% of Full scale ±1 digit

Output Specifications

Digital Output - Relay	
No. of Outputs	Dependent on card selection
Contact Rating	NO Type : 4ch / 8ch : 5A resistive @ 230V AC 11ch : 3A resistive @ 230V AC
Isolation	2.5kV
Digital Output - Transistor	
No. of Outputs	Dependent on card selection
Transistor Rating	For 14 Channels : PNP Type : 24V, 100mA
Min. Switching Time	1 ms (or as per Ladder Scan Time)
Analog Output	
No. of Analog Output	Dependent on card selection
Output Type	Current - 0-20mA Voltage - 0-10V
Resolution	14.5 bit
Conversion Time	20 msec.
Linearity Error	0.1%

Functional Specifications

Programming Method	Windows based software for ladder programming and HMI configuration. [Product selection in Selpro software MM3010]
Memory	Data memory: 16 kbytes Code memory: 351 kbytes Upload memory: 96 kbytes
Max. no. of Objects	5000 (As per memory)
Minimum Scan Time	200 µsec [Typically 1ms]

Communication

Communication Ports	Master- RS485 Slave- RS232/RS485 [selectable via Jumper]
Communication Protocol	MODBUS RTU
Supported Expansion	I0610 on RS485 master port

Functional Features

Timer Operational Modes	On Delay, Off Delay, Pulse, Special [Up/Down] Timer [1ms]
Timer Resolution	1 ms (Accurate only for 1 msec Timer block)
Timer Display Format	Sec, Min, Hr, Day, Min.Sec, Hr.Min, Day.Hr, Hr.Min.Sec, Day.Hr.Min.Sec
Counter	Up Counter, Down Counter, Up/Down Counter, Special Up Down Counter, Fast Counter [up to 10 digits] Uni/Bi/Quad
Other Blocks	PID Control with autotune, Analog input, Analog output, Hysteresis, Scaling, Time switch, Communication, RTC
Memory Retention	10 years (4k memory)
RTC	Yes (with 2 years battery life from the date of manufacture)

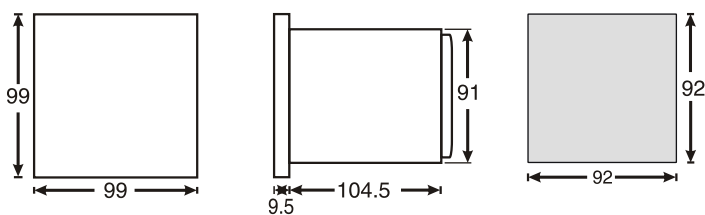
Supply Voltage

Supply Voltage	180-270V AC, 50Hz 18-30V DC
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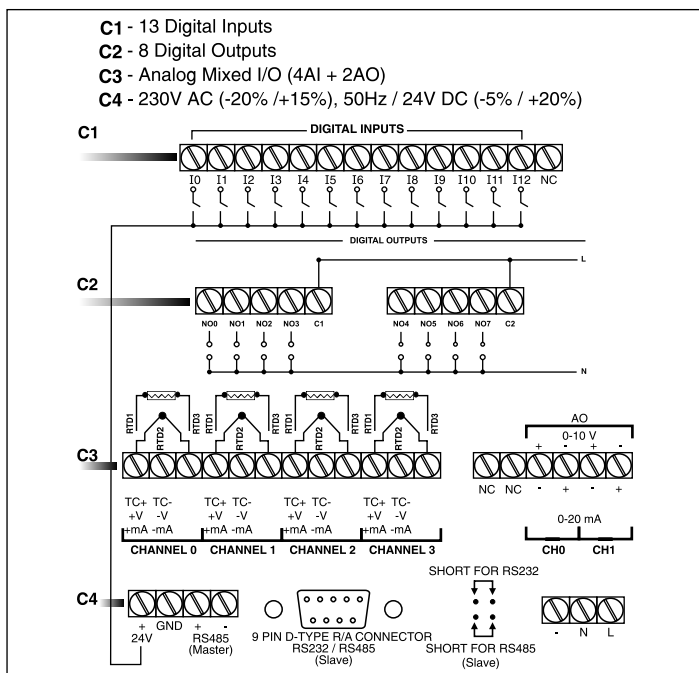
Environmental Specifications

Temperature	Operating : 0 to 50 °C Storage : -20 to 60 °C
Humidity (non-condensing)	95% RH
Weight	564gms

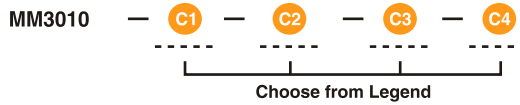
Dimensions (in mm)



Sample Terminal Connections



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
	11 Digital Output (Relay type)	DR11
	14 Digital Output, PNP, 100mA (Transistor type)	DT14
C3 Digital / Analog Mixed I/O Cards	Digital Mixed I/O : 8DI + 4DO (Relay Type)	MDI08R04
	6 channel Analog I/P (TC / RTD type)	AI06-T/R
	6 channel Analog I/P (Voltage / Current type)	AI06-V/I
	2 Channel Analog I/P (Universal type)(TC/RTD/V/I)	AI02
	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)]	MAI04002
C4 Power Supply	180-270V AC, 50Hz	270V
	18-30V DC	24V DC

Accessories (To be ordered separately)

Communication cable	ACH-001 (D-Type 9 Pin Cable)
Windows-based software for ladder programming	ACD-003
4 Relay module	AR-04-5A-NONC (SPDT)
	AR-04-5A-NO (SPST)
Power Supply Module	PS-CF-24V-1.1A
Converters	
RS485 to RS232	AC-RS485-RS232-01 (Non Isolated)
	AC-RS485-RS232-ISO (Isolated)
USB to RS232	AC-USB-RS232-01
USB to RS485 (with wire)	AC-USB-RS485-02

Ordering information for IO610 EXPANSION MODULES ON MASTER RS485 BUS.

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]