selec

MIBRX-6M-X-1-1-X-X-24VDC/MIBRX-6M-1-X-X-230V

Operating Instructions



Patents applied worldwide

FEATURES

- Flexible Card Selection
- Compact PLC with User Selectable HMI
- Windows based User Friendly Selpro Software for Ladder Programming
- RTC with Time Switch function (optional)
- RS485 based Master & Slave Communication
- Ethernet Slave Communication (optional)
- CAN Communication (optional)
- Data logging

SPECIFICATIONS

	MIBRX-6M-1-X-X-230V	MIBRX-6M-X-1-1-X-X-24VDC
SUPPLY VOLTAGE	90-270V AC/DC 50/60Hz	18-30VDC
Sensor Supply (SS)	24V@ 50mA	NA
I/O Card Slots	6	
RTC	Yes (Optional)	
FIXED INPUTS (Max. Counting Frequency: 50Hz)		
Input Type	PNP	
Input Voltage Range (V+)	5-30V DC	
No. of Inputs	11 Digital Inputs Incl. 1 Fast Input Channel	12 Digital Inputs incl. 2 Fast Input Channel
	1 Configurable Analog Input (0-10VDC)	NA
Response Time	10 ms max.	
Isolation	No	Yes (optional)

FAST COUNTER INPUT (On Fixed card)						
Input Type		PNP				
No. of Digital Inputs		2(Uni)/1(Bi/Quad)/ 11Standard Digital Inputs		4(Uni)/2(Bi/Quad)/ 12Standard Digital Inputs		
Operating Modes / Frequency		Unidirectional / Bidirectional / Quadrature / Dual Uni (5kHz for All)				
CH		**DI**		**MODE**		
				UNI	**BI**	**QUAD**	**DUAL UNI**
CH0	CH1**	DI0	DI2**	RT	RT	1st IP*	RT
		DI1	DI3**	STD IP	Direction	2nd IP*	T

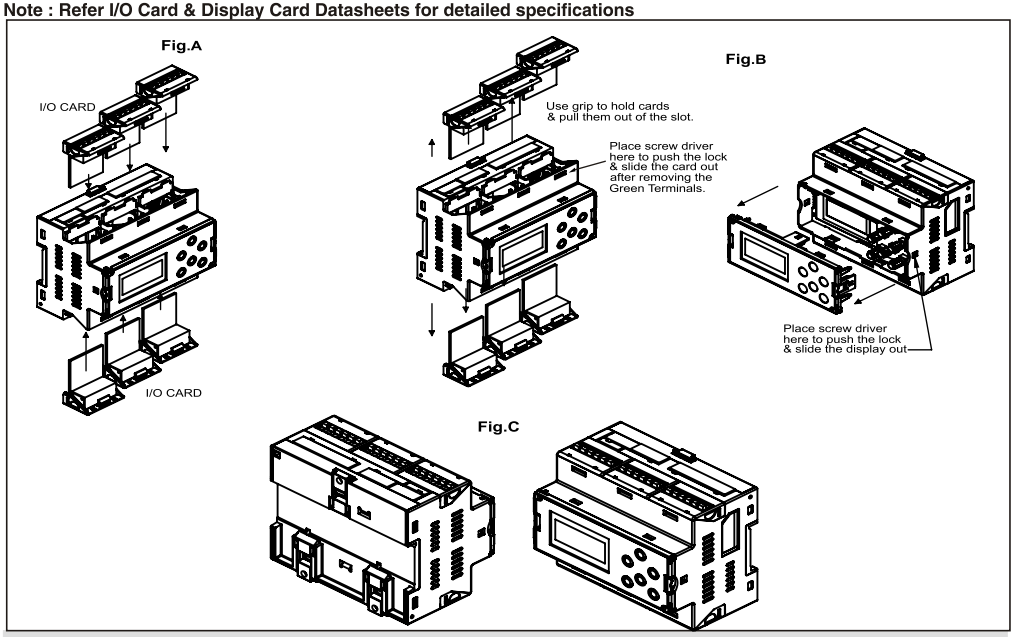
*** 90° Phase shift signals ;RT - Rate Totalizer ; T - Totalizer ; STD IP - Standard Input ** Applicable on 24VDC Variants**

DIGITAL OUTPUT - RELAY (On Board) (Only for 230V variants)	
Number of Relay Outputs	4
Contact Rating	NO Type : (5A resistive @ 230V AC / 30V DC)
Isolation	2.5 kV
Initial Max. Contact Resistance	100mΩ (@1A, 6V DC)
Switching Time	20ms max.
COMMUNICATION	
Communication Port	1. PORT 1 - RS485 Slave (MODBUS RTU) 2. PORT 2 - RS485 Master (MODBUS RTU) For Expansion 3. ETHERNET SLAVE (MODBUS RTU/MODBUS TCP) 4. CAN 5. USB (24VDC variant)
ENVIRONMENTAL CONDITIONS	
Temperature	Operating : 0 to 55°C ; Storage : -20 to 70°C
Humidity (non-condensing)	10% to 95% RH
Enclosure	Din Rail Mounting
Weight	270 grams (Without I/O cards) / 250 grams (Without I/O cards)

CONFIGURABLE I/O CARD SPECIFICATIONS

DATA LOGGING (Optional)			
Memory Storage	1MB (FIXED), 2MB (I/O CARD)		
Minimum Logging Interval Time	10 Sec		
Data Retention	10 Years		
DIGITAL OUTPUT - RELAY			
Contact Rating	NO Type (5A Resistive @ 230V AC / 30V DC)		
Isolation	2.5 kV		
Initial Max. Contact Resistance	100mΩ (@1A 6V DC)		
Max. Switching Time	20ms Max.		
DIGITAL OUTPUT - TRANSISTOR			
Transistor Rating	PNP Type : 24V, 100mA		
Switching Time	10ms Max.		
ANALOG INPUT			
Sensors	J, K, T, R, S, C, E, B, N, L, U, W, PLTNL II, RTD MVOLT (0-60mV), VOLT (0-10V), CURR (0-20mA)		
Resolution	12 Bits	0 - 10V	2.5mV (1 Count)
		0 - 20mA	5µA
		TC / RTD	0.1° C (Note : 1°C for R & S Type)
Conversion Time	100 msec.		
Accuracy @ 25°C	0.25% of Full Scale		
ANALOG OUTPUT			
Output Type	**Current:** 0-20mA ; **Voltage:** 0-10V		
Resolution	14 Bits		
Conversion Time	10 msec.		
Linearity Error	0.1%		

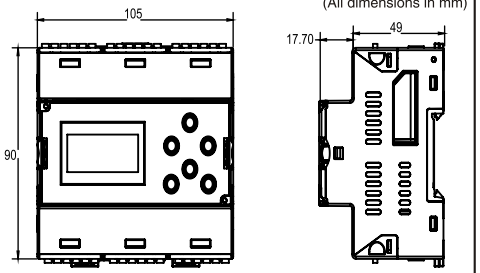
Note : Refer I/O Card & Display Card Datasheets for detailed specifications



1. Insert the I/O card as shown in Fig. A.
2. Fig. C shows a fully assembled MiBRX-6M unit with LCD display module.
3. To remove the card from the slot, use a screw driver to push the lock & slide the card out as shown in Fig. B. Remove the Green Terminal before sliding the card out for easy operation.
4. To remove the display module, use a screw driver to push the lock and pull it out, refer Fig. B.

MECHANICAL INSTALLATION

(All dimensions in mm)



CAUTION

The equipment in its installed state must not come in close proximity to any heating sources, caustic vapors, oils, steam, or other unwanted process by-products.

EMC GUIDELINES

1. Use twisted input power cables with shortest possible connections.
2. Layout of connecting cables shall be away from any internal EMI source.

MAINTENANCE

1. To avoid blockage of ventilation holes, clean the equipment regularly using a soft cloth.
2. Do not use Isopropyl Alcohol or any other organic solvent for cleaning.

INSTALLATION INSTRUCTIONS

CAUTION

1. This equipment, being built-in-type, normally becomes a part of the main control panel and the terminals do not remain accessible to the user after installation.
2. Conductors must not come in contact with the internal circuitry of the equipment else it may lead to a safety hazard that may endanger life or cause electrical shock to the operator.
3. Circuit breaker or mains switch must be installed between the power source and supply terminals to facilitate power 'ON' & 'OFF' function.
4. The equipment shall not be installed in environmental conditions other than those specified in this manual.
5. Since this equipment forms a part of the main control panel, its output terminals get connected to the host equipment. Such equipment shall also comply to EMI / EMC and safety requirements like CE standard procedure.
7. Thermal dissipation of the equipment is met through ventilation holes provided on the housing of the equipment. Obstruction of these ventilation holes may lead to a safety hazard.
8. The output terminals shall be loaded strictly as per the values / range specified by the manufacturer.

ELECTRICAL PRECAUTIONS DURING USE

Electrical noise generated by switching of inductive loads can create momentary disruption, erratic display, latch up, data loss or permanent damage to the instrument.

To reduce noise :

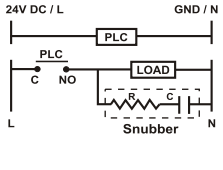
Use of MOV / Snubber circuit across load / contactors of the unit are recommended.

1. MOV Part No. : AP-MOV-03
2. Snubber Part No. : APRC-01

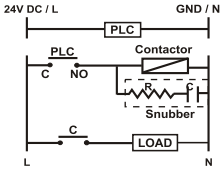
NOTE : Below mentioned diagram is applicable only for 230V relay outputs.

Typical Connections For Loads :

For load current < 0.5A



For bigger loads use interposing relay / contactor



NOTE : Use snubber as shown above to increase life of internal relay. Use separate shielded wires for inputs.

SAFETY PRECAUTIONS

This manual is meant for personnel involved in wiring istallation, operation and routine maintenance of the equipment.
All safety related conditions, symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure operator and instrument safety. Any misuse may impair the protection provided by the equipment.

Read complete instructions prior to installation and operation of the unit.

Risk of electric shock.

MOUNTING

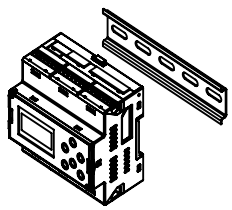


Fig.1

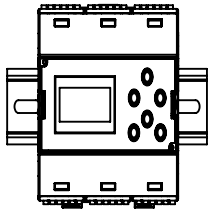


Fig.2

1. Snap the controller onto the DIN Rail as shown in Fig. 1 Above.
2. When properly mounted, the controller is squarely placed on the DIN Rail as shown in Fig. 2.

WIRING INSTRUCTIONS

CAUTION

1. To prevent risk of electric shock, power supply to the equipment must be kept OFF while wiring.
2. Terminals and electrically charged parts must not be touched when the power is ON.
3. Wiring shall be done strictly according to the terminal layout provided in the operating manual.
4. To eliminate electromagnetic interference, use short wire with adequate ratings and twists of equal size.
5. The power supply connection cable must have a cross section of 1sq.mm or greater and insulation capacity of at least 1.5kV.

FUNCTIONAL DETAILS

MiBRX is a modular PLC with User Selectable HMI. The user can configure the product, it's I/O slots and display type using SELPRO software.

SELPRO has two sections:

1. Ladder Logic Programming section
2. Selec Machine Interface, used for configuration of HMI.

This software is provided with the product. For details of the software and configuration method, please refer to its User Manual provided along with the product.

Note: Ensure Card inserted in any Slot is the same one configured.

ORDERING INFORMATION

Logic & Power Supply

ORDER CODE	DESCRIPTION
MiBRX-6M-1-1-1-230V	230V POWER SUPPLY WITH RTC & MASTER
MiBRX-6M-1-0-0-230V	230V POWER SUPPLY WITHOUT RTC & MASTER
MiBRX-6M-1-1-1-0-0-24VDC	24V POWER SUPPLY WITH MASTER & RTC
MiBRX-6M-2-1-1-1-1-24VDC	24V POWER SUPPLY WITH ISOLATION MASTER,RTC, CAN & ETHERNET
MiBRX-6M-2-1-1-1-0-24VDC	24V POWER SUPPLY WITH ISOLATION UNITS MASTER,RTC & CAN
MiBRX-6M-2-1-1-0-0-24VDC	24V POWER SUPPLY WITH ISOLATION MASTER & RTC
MiBRX-6M-2-1-1-0-1-24VDC	24V POWER SUPPLY WITH ISOLATION MASTER,RTC & ETHERNET

SUPPORTED I/O CARDS

MIBRX-SC-DI04	4 Digital Input (For Non-ISO varient)
MIBRX-SC-DI04-ISO	4 Isolated Digital input
MIBRX-SC-DI06	6 Digital Input (For Non-ISO varient)
MIBRX-SC-DI06-ISO	6 Isolated Digital input
MIBRX-SC-RO03	3 Relay Output
MIBRX-SC-RO04	4 Relay Output
MIBRX-SC-R005	5 Relay Output
MIBRX-SC-TO04	4 Transistor Output
MIBRX-SC-DI02-RO02	2 Digital Input & 2 Relay Output
MIBRX-SC-DI02-TO02	2 Digital Input & 2 Transistor Output
MIBRX-SC-AI02-V	2 Analog Input (Voltage)
MIBRX-SC-AI02-I	2 Analog Input (Current)
MIBRX-SC-AI02-RTD	2 Analog input RTD (PT100)
MIBRX-SC-AI02-PT1000	2 Analog input PT1000
MIBRX-SC-AI02-TC	2 Analog input TC
MIBRX-SC-AI02-NTC	2 Analog Inputs (NTC)
MIBRX-SC-AI02-PTC	2 Analog Inputs (PTC)
MIBRX-SC-AO01V/I	1 Analog Output(Voltage/Current)
MIBRX-SC-AI02-V-I	2 Analog Input (Voltage & Current)
MIBRX-SC-DI02-AI01-T	2 Digital Input &1Analog input TC/RTD
MIBRX-SC-LC02	2 Load cell - 24 Bits
MIBRX-SC-PD	Portable Downloader
MIBRX-SC-DL	Data logging (2MB)
MIBRX-SC-FI02	2 fast input (10 Khz)
MIBRX-SC-F001-TO01	1 fast output*1 Transistor output

*Upto 200 Khz Note: Fast output conditions

Max Freq	Condition
200 Khz	Max 1 slot**
100 Khz	Max 2 slot**
60 Khz	Max 3 slot**
10 Khz	Normal Condition

** For > 10KHZ, no fast input card should be used together

SUPPORTED DISPLAY CARDS

- MiBRX-DSP-6M-8-2-08-A
- MiBRX-DSP-IND-96-8-4-16-B
- MiBRX-DSP-IND-96-8-2-16-B
- MiBRX-DSP-IND-96-8-0-00-B
- MiBRX-DSP-IND-96-8-2-16-B
- MiBRX-DSP-AP-6M

ACCESSORIES

Accessories for Communication

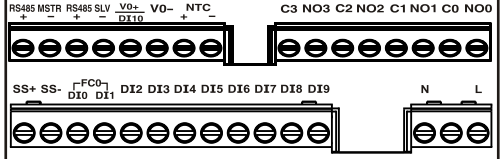
1 AC-USB-RS485-03 (USB to 6-pin RJ25 Jack)
2 AC-USB-RS485-02 (USB to 2-pin Open Wire)
3 AC-IOEXP-03 (Port Expansion Adapter)
4 ACH-004
5 RPS60-24-CE

INTERNAL MEMORY

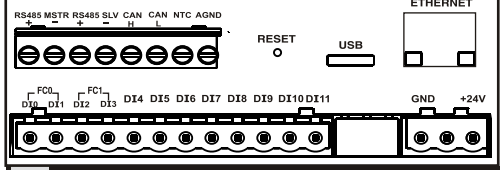
Variant	230V	24VDC
Data Memory	1 MB	1 MB
Code Memory	240 KB	480 KB
EEPROM	4 KB	1 KB

TERMINAL CONNECTION

MiBRX-6M-1-X-X-230V



MiBRX-6M-X-1-1-X-X-24VDC



SERVICE DETAILS

This device contains no user serviceable parts and requires special equipment and specialized engineers for repair.
Please contact service center for repair on the following numbers:
Tel. No. : + 91-7498077172 I Email : service@selec.com
NO WARRANTY ON UNIT DAMAGED DUE TO WRONG POWER SUPPLY

(Specifications are subject to change, since development is a continuous process)

Selec Controls Pvt. Ltd.

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