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MODEL CIO-777-PR

PROFIBUS COMMUNICATIONS MODULE

PROGRAMMING GUIDE

DANGER!

HAZARDOUS VOLTAGES MAY BE PRESENT DURING INSTALLATION.
Electrical shock can cause death or serious injury.
Installation should be done by qualified personnel following all national, state and local electrical codes.

BE SURE POWER IS DISCONNECTED PRIOR TO INSTALLATION!
FOLLOW NATIONAL, STATE AND LOCAL CODES.
READ THESE INSTRUCTIONS ENTIRELY BEFORE INSTALLATION.

The CIO-777-PR Module is a convenient and cost-effective Profibus interface capable of providing discrete control and monitoring of motor starters, drives, and other devices over a Profibus network. The design of the CIO-777-PR provides the following benefits in both new and existing installations:

- reduced field wiring
- greater operator efficiency
- ease in system startup and commissioning

The CIO-777-PR Profibus module can be DIN rail mounted, or mounted directly to a back panel. The CIO-777-PR's compact size, ease of wiring and Profibus communications capability makes the use of traditional discrete devices on Profibus cost-effective and simple.
The CIO-777-PR Module is compatible with SymCom's Model 777-P Series overload relays. It simply connects to the side of the 777-P Series and permits remote monitoring and control of the 777-P Series unit over a Profibus network.

CONNECTIONS

1. Mount the CIO-777-PR in a convenient location in a properly rated enclosure. The CIO-777-PR can be mounted to a back panel using screws or can be snapped onto DIN rail.
2. Connect the five Profibus wires to the 5-pin connector on the front of the CIO-777-PR Module. 24VDC should be connected to V+ and V-. Connect the other three wires to A, B and Shield.
3. The PBus LED indicates that communication is established between the CIO-777-PR and the Profibus master, and OLC LED indicates communication is established with the 777-P Series overload.
4. Connect the Profibus SUB-D connector to the Profibus network.

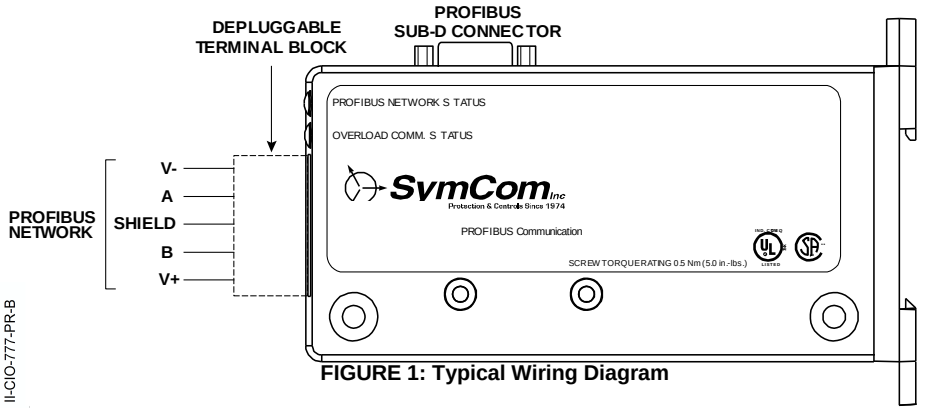


FIGURE 1: Typical Wiring Diagram

DIAGNOSTIC INDICATOR LIGHTS

The unit is energized when power is applied between V+ and V- on the connector. The PBus and OLC LEDs will flash until communication is established. The PBus communication status indicator light will come on steady when a Profibus master is communicating with the unit. The OLC communications status indicator light will come on steady when it is communicating to a 777-P Series overload relay.

OPERATION

The CIO-777-PR Module is a DP-V0 device. Cyclical I/O is supported for the transfer of input and output information.

PROFIBUS NETWORK CONFIGURATION

Cable Routing

Follow these general cable-routing guidelines:

- Avoid areas of high temperature, moisture, vibration, or other mechanical stress.
- Secure the cable where necessary to prevent damage.
- Use cable ducts, raceways, or other structures to protect the cable.
- Never route cables over, under or around sharp edges.
- Avoid sources of electrical interference that can induce noise into the cable. Use the maximum practical separation from such sources.
- Maintain a minimum separation of 3.3 ft. (1m) from the following equipment:
  - air conditioners and large blowers
  - elevators and escalators
  - radios and televisions
  - intercom and security systems
  - fluorescent, incandescent, and neon lighting fixtures

- Maintain a minimum separation of 10 ft. (3m) from the following equipment:
  - Line and motor power wiring
  - Transformers
  - Generators
  - Alternators

Terminating Resistors

Profibus segments must be bus terminated as shown.

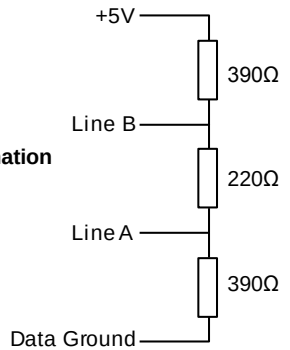


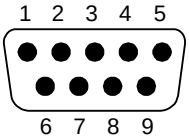
FIGURE 3: Bus Termination

Profibus Cable

The Profibus Cable must be connected as follows:

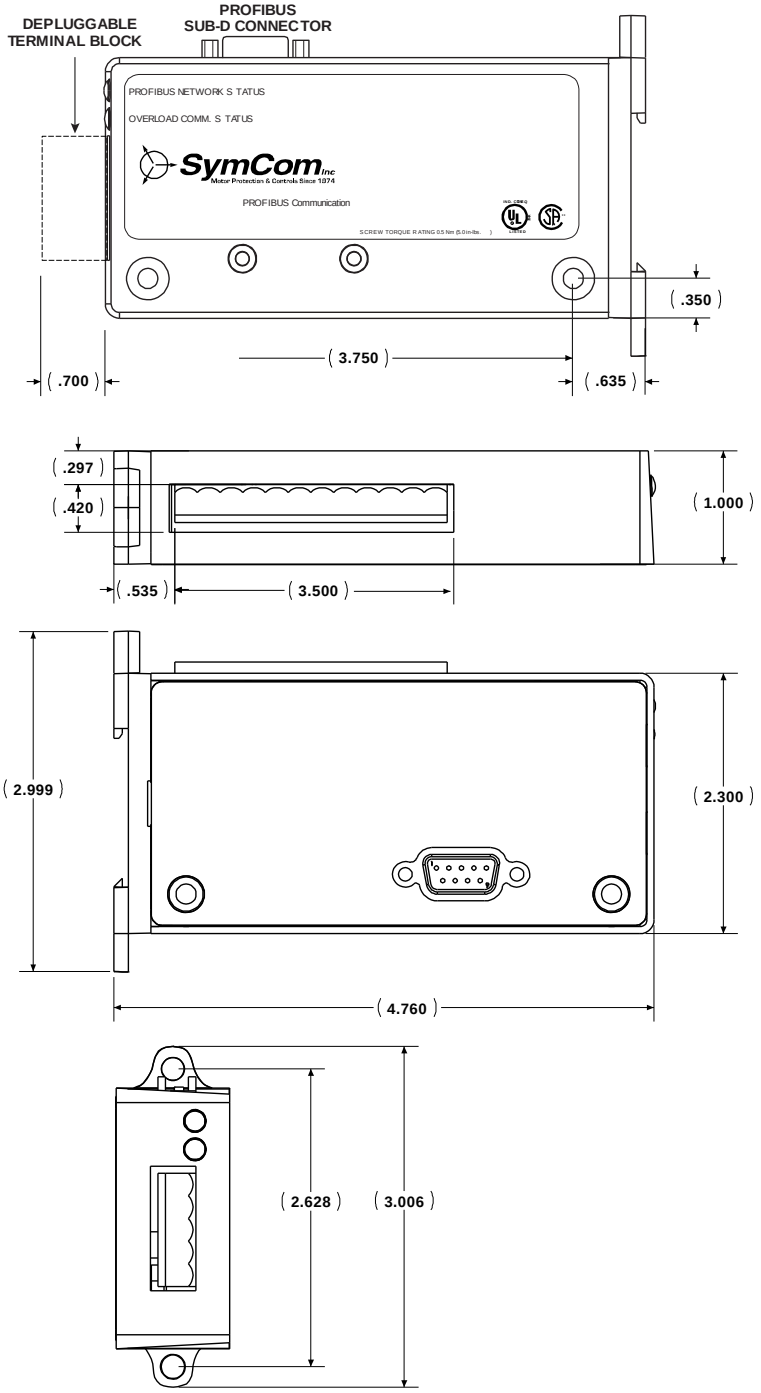
Pin	Signal	Description
1	——	——
2	——	——
3	RxD/TxD-P	Receive/Transmit data; line B (red)
4	CNTR-P	Control of repeater direction
5	DGND	Data ground (reference voltage to VP)
6	VP^-	Power supply +5V (e.g. bus termination)
7	——	——
8	RxD/TxD-N	Receive/Transmit data; line A (green)
9	-----	------

FIGURE 3: 9-Pin Sub-D Connector Pin Assignment



CIO-777-PR SPECIFICATIONS	
Power Requirements	
Voltage	12–24VDC
Current	150mA (max.)
Power	3.6 Watts (max.)
Weight	3 oz.
Enclosure	Polycarbonate
Terminal (depluggable terminal block)	
Torque	4.5 in.-lbs. (max.)
Wire AWG	12–20 AWG
Safety Marks	
UL	UL508 (File #E68520)
CSA	C 22.2
Standards Passed	
Electrostatic Discharge (ESD)	IEC 1000-4-2, Level 3, 6kV contact, 8kV air
Radio Frequency Immunity, Radiated	159 MHz, 10V/m
Fast Transient Burst	IEC 1000-4-4, Level 3, 4 kV input power
Hi-Potential Test	Meets UL508 (2 x rated V +1000V for 1 minute)
Environmental	
Temperature Range	Ambient Operating: -20° to 70°C (-4° to 158°F) Ambient Storage: -40° to 80°C (-40° to 176°F)
Class of Protection	IP20, NEMA 1 (Finger Safe)
Relative Humidity	10-95%, non-condensing per IEC 68-2-3

DIMENSIONS


DEPLUGGABLE TERMINAL BLOCK
PROFIBUS SUB-D CONNECTOR
PROFIBUS NETWORK STATUS
OVERLOAD COMM. STATUS
SymCom Inc
Motor Protection & Controls Since 1974
PROFIBUS Communication
SCREW TORQUE RATING 0.5 Nm (5.0 in-lbs.)
(.350)
(.700)
(3.750)
(.635)
(.297)
(.420)
(1.000)
(.535)
(3.500)
(2.999)
(2.300)
(4.760)
(2.628)
(3.006)