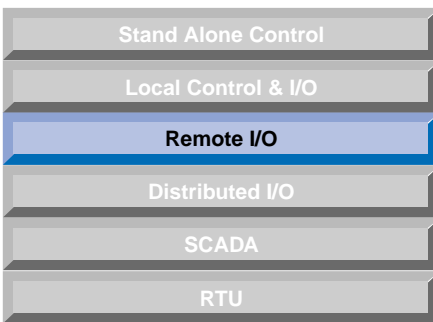# NETWORK INTERFACES
ProMux® (Optomux)

FEATURES
- Each Board Controls Up to 24 Standard, Mini, G5 or OpenLine® Digital Modules
- Up to 256 Addressable ProMux® Boards Separated by 4,000 Feet
- 100% Optomux Compatible, Plus Extra Commands
- Communications at Speeds From 300 Baud to 38.4 KBaud.
- Transient Protection on Communications Lines
- Direct Plug-In or Ribbon Cable Interconnection
- BASIC and C Drivers for the PC

APPLICATIONS

| Stand Alone Control |
| Local Control & I/O |
| **Remote I/O** |
| Distributed I/O |
| SCADA |
| RTU |

DIGITAL INPUTS/OUTPUTS
The ProMux® network interface mates with any of our 8, 16, or 24 digital module racks. Plug Grayhill OpenLine®, standard, miniature, or G5 digital I/O modules into the racks. They can be mixed in any combination. Connect the ProMux® boards serially to a host computer and then issue commands to monitor the inputs or control the outputs. Commands are included which permit you to:
- Read the ON/OFF status of inputs
- Determine the width of input pulses
- Count pulses at frequencies up to 400Hz
- Detect rising or falling edges
- Latch momentary input events
- Turn outputs ON or OFF individually or in groups
- Pulse-width modulate outputs
- Provide delayed-on or delayed-off outputs
- Generate pulses or squarewaves

COMMUNICATIONS
The host computer and ProMux® boards communicate serially over two pair of twisted wires per RS-422/485 in either a multi-drop or repeat configuration. They use an industry standard ASCII string format to code the command and response messages. Application programs running on the host computer issue commands and then await responses from the ProMux® boards. The communications speed is selectable between 300 baud and 38.4 KBaud. Each controller on the network is assigned a unique base address from 0 to 255. You can separate boards from one another by as much as 4,000 feet.

SOFTWARE
Software drivers are available which simplify the task of interfacing programs written in Visual Basic or C to the ProMux® network. Sample programs and the set-up and debug utilities are included on the disk with the drivers. Interface drivers for most third party software packages are available through their distributors.

OTHER FEATURES
All ProMux® boards are thoroughly tested and shipped in static proof boxes.

Because space inside your enclosure can be limited, we offer numerous rack plug-in configuration options. For applications requiring even more mounting flexibility, the ProMux® boards can be connected to racks with a ribbon cable up to six feet long.
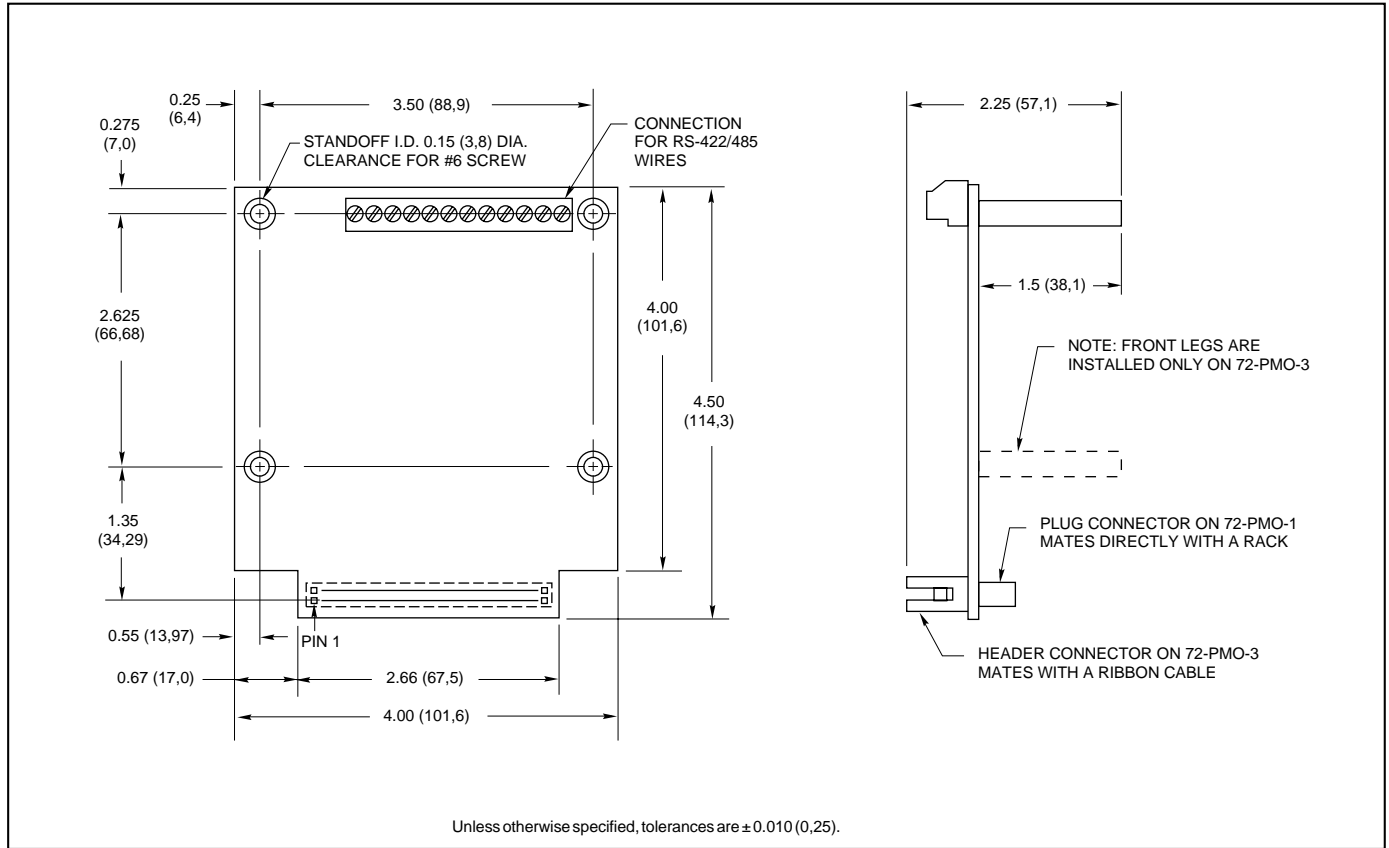
If you do not have an RS-422 or RS-485 serial port on your PC, we offer a variety of RS-232 to RS-422/485 converters (see page L-103) "Communications Converters" for technical and ordering information.

DIMENSIONS In inches (and millimeters)

0.25 (6,4)
0.275 (7,0)
3.50 (88,9)
STANDOFF I.D. 0.15 (3,8) DIA. CLEARANCE FOR #6 SCREW
CONNECTION FOR RS-422/485 WIRES
2.625 (66,68)
4.00 (101,6)
4.50 (114,3)
1.35 (34,29)
0.55 (13,97)
PIN 1
0.67 (17,0)
2.66 (67,5)
4.00 (101,6)

2.25 (57,1)
1.5 (38,1)
NOTE: FRONT LEGS ARE INSTALLED ONLY ON 72-PMO-3
PLUG CONNECTOR ON 72-PMO-1 MATES DIRECTLY WITH A RACK
HEADER CONNECTOR ON 72-PMO-3 MATES WITH A RIBBON CABLE

Unless otherwise specified, tolerances are ± 0.010 (0,25).

SPECIFICATIONS

Supply Voltage: 4.5 to 5.5 Vdc
Supply Current (less modules): 300 mA max.
Operating Temperature: 0° to 70°C
Humidity: 95% non-condensing
Microprocessor: 68HC11 @ 7.4 MHz
Connections:
RS-422/485: 12 position terminal block
Rack: 50-pin female plug connector or 50-pin male header connector
Serial Data:
 Format: 10-Bit ASCII, 1 Start, 1 Stop, 8 Data
 Integrity: Message Checksum or 4 Pass + CS
Range of Network: Compliant with EIA/TIA RS485-A (1 standard load per controller). Operates in multi-drop or repeat mode. 256 DIP switch selectable addresses. May require RS485 repeaters for lengths over 4,000 feet or more than 32 controllers in multi-drop mode. Consult factory for special configurations.

ORDERING INFORMATION

Part Number	Description
Network Interfaces	
72-PMO-1 **72-PMO-3**	Plug connector for direct rack connection Header connector for ribbon cable to rack connection
User's Manuals and Software	
72-UMO **72-UMO-C** **72-UMM-DDE** **72-UMM-DLL** **72-UMM-DLL32**	Manual with no software, for evaluating boards for purchase Manual with Basic and C software drivers and utilities Optomux DDE server for Windows 3.1 Optomux DLL for Windows 3.1 Optomux DLL for Windows 95/98/NT

Available from your local authorized Grayhill Distributor.

For prices and discounts, contact your local sales office, an authorized Distributor, or Grayhill.

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