# IDenticard®
SYSTEMS

The MUX Boards are multiplexers that expand a single communications port on a controller into multiple data channels for connection to I/O boards in the system. A common use of multiplexer boards is for star-topology wiring arrangements.

The Four-Channel MUX Board can be wired between the host PC and an IP Controller if desired. In this way, the MUX board makes it possible to connect one host port to up to four controllers; in addition, the board serves as an RS-232-to-RS-485 converter.

Two-wire RS-485 communications between the MUX boards and other components are the standard 4,000 feet (1219 m) maximum cable length. However, each channel on the MUX is counted separately in this total. An example: One 500-foot (152-meter) cable is wired between a controller and a Four-Channel MUX Board. Up to **four** 3,500-foot (1,066-meter) cables – one cable on each channel port on the MUX board – are then available for wiring to system I/O boards.

Communications with the host PC, when the MUX board is wired between the host PC and a controller, are RS-232. Only the Four-Channel MUX Board is recommended for use between the host and controllers. **Communications to other system I/O boards,** when the MUX board is connected "downstream" from a controller, are two-wire RS-485. Since connected MUX boards only pass data, they are not counted as part of the maximum of 64 I/O boards connectable to an IP Controller or of the maximum of 32 I/O boards connectable to a Two-Reader Controller.
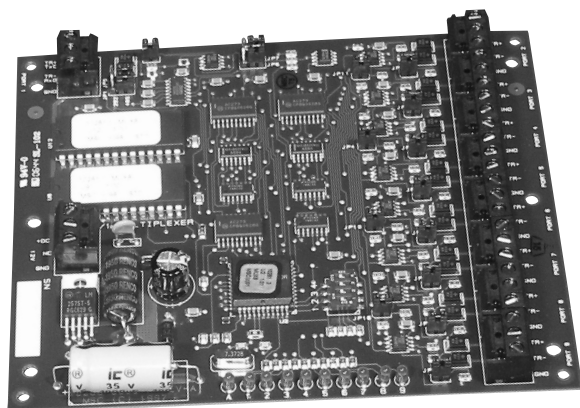
Features

- **MUX Boards connect to the PremiSys system components listed below.**
  - ~ Host PC (Four-Channel MUX Board recommended only), using RS-232 communications (maximum wiring distance: 50 feet (15 m)
  - ~ IP and Two-Reader Controllers, using two-wire RS-485 communications. Note that the Two-Reader Controller cannot communicate to the host via RS-485.
  - ~ Input, Output, One-Reader or Two-Reader Boards, using two-wire RS-485 communications
- **MUX Boards can be housed in a sturdy and optionally lockable enclosure** with other components.
- **MUX Boards themselves include the following components and features:**
  - ~ LEDs to indicate port communication status
  - ~ DIP switches for setting communication speed and turnaround delay (ranging from 300 bps with 35 millisecond delay to 38,400 bps with 365 microsecond delay)

PremiSys™ Eight-Channel MUX Board

PREM-BRD8MUX

PremiSys™ Four-Channel MUX Board

PREM-BRD4MUX
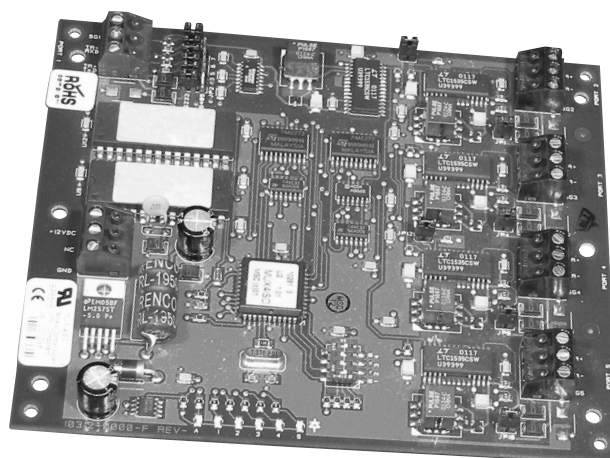
PremiSys™ Eight-Channel and Four-Channel MUX Boards

Specifications

Board Certifications

UL: recognized to UL 294: Access Control System Units - component
CE: EN55022, EN50082-1, IEC801-2, IEC801-3 and IEC801-4

Dimensions and Weight

Board Width	6.0 inches (152 mm)
Board Height	5.0 inches (127 mm)
Board Depth	1.0 inch (25 mm)
Board Weight	5.1 ounces (145 g) (nominal) (Four-Channel MUX Board), 5.6 ounces (159 g) (nominal) (Eight-Channel MUX Board)

Environmental Specifications

Temperature	32°F to 158°F (0°C to 70°C) operating -67°F to 185°F (-55°C to 85°C) storage
Relative Humidity	0 to 95% RH noncondensing

Power Specifications

CAUTION! This component is intended for use only in a Class 2, low-voltage circuit!

Board Input Voltage	12 VDC ± 15%, 300 mA (Four-Channel MUX Board), 12 VDC ± 15%, 250 mA (Eight-Channel MUX Board)

Communications Specifications

Port 1	RS-232 (to host), two-wire RS-485 (to controller)
Ports 2-5 (Four-Channel MUX Board) Ports 2-9 (Eight-Channel MUX Board)	Two-wire RS-485

Wiring Specifications

Power to Board	Twisted pair, 18 AWG (0.823 mm^2)
Port 1 – RS-232 to host (Four-Channel MUX Board recommended only) Port 1 – RS-485 to controller	RS-232, Twisted pairs, 22 AWG (0.325 mm^2), with overall shield. Maximum cable length: 50 feet (15 meters) RS-485, Twisted pairs, 22 AWG (0.325 mm^2), with overall shield. Maximum cable length: 4000 feet (1219 meters) of wire, total copper, including drops
Ports 2-5 (Four-Channel MUX Board) Ports 2-9 (Eight-Channel MUX Board)	Twisted pairs, 22 AWG (0.325 mm^2), with shield. Maximum cable length: 4000 feet (1219 meters) of wire, total copper, including drops

Indicators

Visible	Six red, single-color LEDs (Four-Channel MUX Board) Ten red, single-color LEDs (Eight-Channel MUX Board)

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