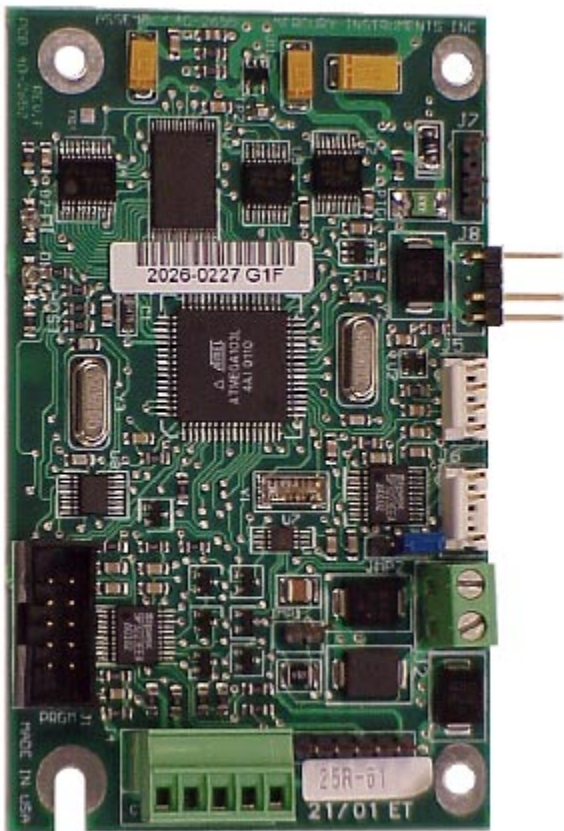


# Protocol Translator (PT) Board

## Modbus RTU or ASCII Communications with Mercury Instrument Products

*Convert Mercury Instruments Protocol to Modicon Modbus RTU or ASCII Protocol using RS-232 or RS-485 connections*



Mercury Instruments now offers the Protocol Translator (PT) Board to address customers' need for Modbus Protocol communications with Mercury electronic devices. The PT Board translates Modbus RTU or ASCII query messages to Mercury Protocol enabling communications with various SCADA systems using Modbus drivers. With its small size and very low power requirement, the PT Board is designed for installation with battery-powered systems.

The PT Board also provides the added flexibility of three host serial communication ports, (2 - RS232, 1- RS485) allowing for a variety of system configurations.

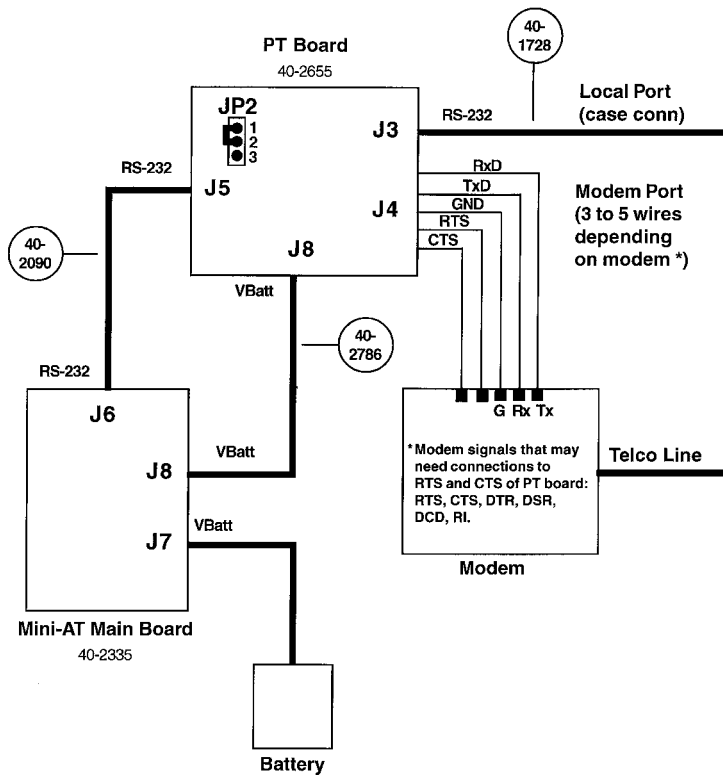
In addition, the PT Board can be configured to retrieve historical archive data (Hourly / Daily / Alarm-Events) from the Instrument for those systems requiring Enron type EFM data in Modbus ASCII format.

### **PT Board features:**

- Operation with all Mercury serial interface instruments including: ECAT, Mini-AT, Mini-Max, ER, and Sentry, etc.
- Supports Modbus ASCII and RTU serial protocols
- Two RS-232 connections for Local and Modem
- One RS-485 interface for 2-wire multi-drop connections
- 5-wire Modem connections supports RTS + CTS
- Operates with various modems including: Dial Line, Leased-Line, CDPD, GSM, and Radio
- Configurable baud rates from 600 to 57.6 K baud
- "Mapping" of 60 Mercury Items to Modbus Registers
- SRAM memory capacity (over 35 days of hourly and daily Audit Trail data as well as 200 Alarm-Events)
- Meets Enron Modbus spec. for EFM Historical data
- FLASH memory allows for field firmware updates
- Very low power for battery powered systems
- Compact size - for mounting inside case



*Mercury Instruments, Inc.*



Example of PT Board interface to a Mini-AT

### General Description:

The **Mercury Protocol Translator (PT Board)** is an adapter board that is connected between the Mercury Instrument (RTU) and a Host SCADA system.

The PT Board allows serial protocol drivers to communicate with any instruments that support Mercury Serial Protocol (ER, ECAT, Mini-AT, Mini, Mini-Max, Sentry, etc.). The PT Board is designed to translate various SCADA system protocols (e.g. Modbus RTU and ASCII) to Mercury Protocol so the Host system can communicate with the Mercury Instrument in its native protocol. The PT Board allows Mercury Protocol to pass directly through to the Instrument.

The PT Board can be configured to retrieve historical log data from the Instrument for use with Enron type EFM systems using Modbus ASCII protocol.



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## PT BOARD SPECIFICATIONS

### Power Supply Requirements

- +3.5 to +16.0 VDC via J7 or J8 connections. [typical 6V battery pack operation]

### Power Consumption

- Active Mode current: 15 - 20 mA (7.5 VDC)
- Sleep Mode current : 40 - 70 uA (7.5 VDC)

### Host Serial Protocols

- Mercury Serial Protocol
- Modicon Modbus ASCII (7/E/1, 7/O/1, 8/N/1)
- Modicon Modbus RTU (8/N/1)

### Host Interface Serial Ports (SCADA)

- **J3** port = **RS-232** for local serial connections (3-wire interface for field computer, etc.).
- **J4** port = **RS-232** for modem connections (5-wire interface for modems, RTS/CTS support.)
- **J2** port = **RS-485** (2-wire / half duplex)

### Instrument Interface Ports

- **J6** port for **RS-232** type Mercury Instruments.
- **J5** port for **CMOS** type Mercury Instruments.

### Serial Baud Rates

- 600 to 57600 bps via **J2, J3, and J4** - for Host
- 2400 to 57600 bps via **J5 and J6** - for Instrument.

### Memory

- SRAM - 64K internal for serial I/O and Log data.
- E<sup>2</sup>PROM - 4K for configuration Items.
- FLASH - 128K for firmware (Upgrades via J1 port)

### Indicator LEDs

- Two (2)

### Ambient Temperature

- -40 to 150 °F (-40 to 66.5 °C) [Industrial grade]

### Mechanical

- Open PCB with four (4) mounting holes (mount inside a protective enclosure)
- Board dimensions: 2.40 x 4.00 inches
- Field mounting kits available for all instruments.

### Certifications

- Designed for Class 1, Division 1 & 2, Group D

Specifications subject to change without notice.