PanelMate®
ROBOX Communication
Driver Manual

Eaton Corporation
Cutler-Hammer Business Unit
811 Green Crest Drive
Columbus, OH 43081

EATON | Cutler-Hammer

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This center, located in Zurich, Switzerland, provides high-level quality support and product repair services for your PanelMate products. You will receive real-time technical and application support.

Table of Contents

Introduction

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In this chapter, you will learn:

- *About driver installation*
- *How to download drivers to a PanelMate unit*
- *The supported memory types*

Introduction

The Operator Station can be used with the ROBOX RPM 486 industrial computer. The ROBOX RPM 486 industrial computer supports the master/slave protocol which allows only one node to be the master (Operator Station). The master is the only device that can initiate communications.

Note: Check the Cutler-Hammer web site for current information on PanelMate PC connectivity to the ROBOX driver.

Installing Drivers

PanelMate Configuration Editor software is installed using a CD-ROM. To install the drivers from the CD-ROM, select the **Install Software** option and then **Install Drivers**. From the dialog box, select the driver you wish to install.

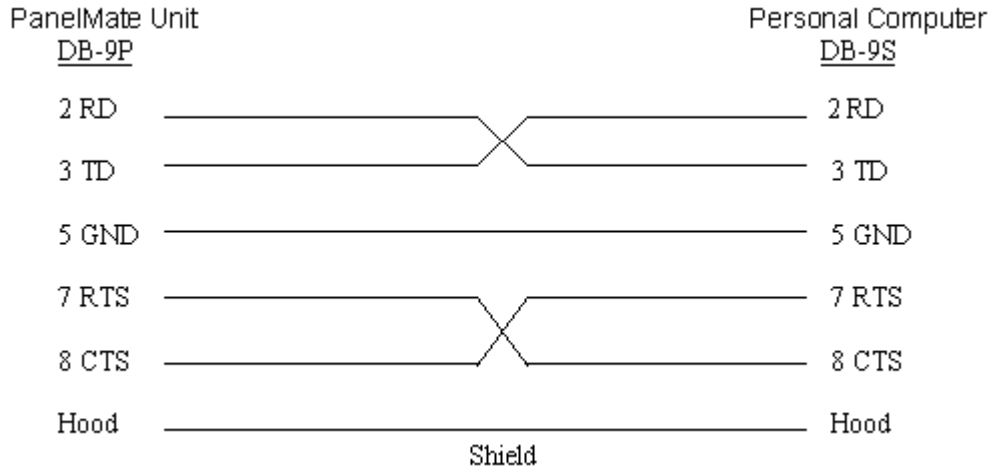
Downloading Drivers to a PanelMate Unit

- In the VCP Transfer Utility, choose the "Executive" tab and select the proper Executive Firmware to download to the PanelMate unit.
- Click the button labeled "Add to Operation List."

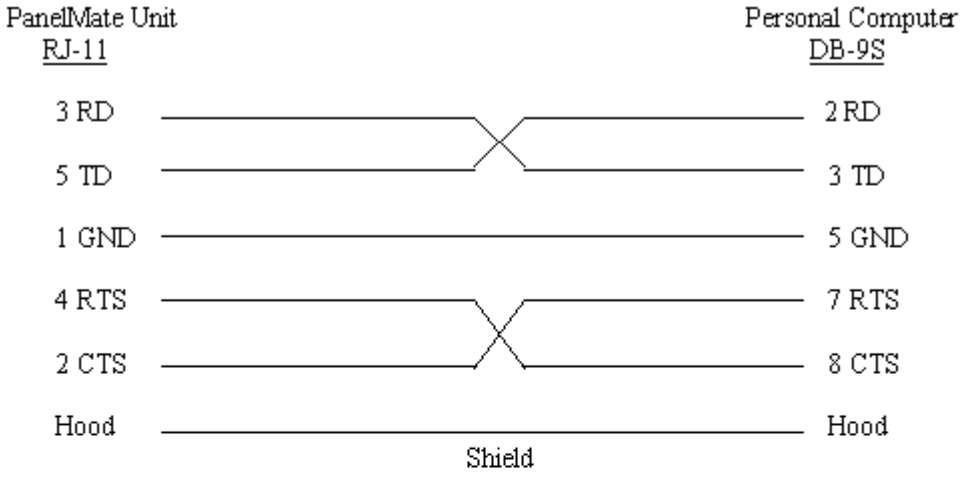
  Note: In order to download to a PanelMate for the first time or to clear the existence of another driver, the PanelMate must first be loaded with Executive Firmware.
- Choose the "Driver" tab.
- Select the appropriate driver to be downloaded to the PanelMate.
- Click the button labeled "Add to Operation List."
- Place the PanelMate unit in Serial Transfer Mode.
- Connect a serial transfer cable from the correct port on the PC to port 1 on the PanelMate. (See cabling below.)
- Click "Start" at the bottom of the VCP Transfer Utility window.
- **Note:** For a more detailed description of downloading procedures and troubleshooting see *PanelMate Power Series, PowerPro, Pro LT Transfer Utility User's Guide.*

Serial Transfer Cables

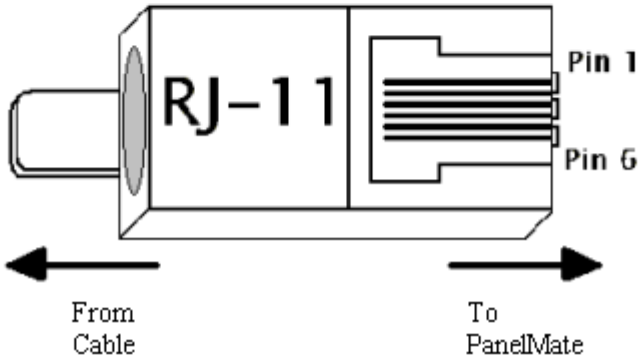
Cable P/N 0518



Cable P/N 0818
(PanelMate Power Series 1500 and PanelMate 500 only)



RJ-11 pin configuration



Memory Types

The ROBOX driver supports the following memory types:

Memory Types	Memory Address
Word	
R	Integer Registers (16 bits)
RR	Real Registers (IEEE floating point)

Memory Types	Memory Address
Bit	
INP	Digital Inputs (1 bit) (read only)
OUT	Digital Outputs (1 bit)

Memory Ranges

The following table shows the memory types and ranges supported by the ROBOX industrial computer.

Memory Types	Memory Ranges
Word	
Integer Registers	R 1 - R 3999
Real Registers	RR 1 - RR 3999

Memory Types	Memory Ranges
Bit	
Digital Inputs	INP 1 - INP 3200
Digital Outputs	OUT 1 - OUT 3200

Note: The default data type of an Integer Register references is Signed 16 which has a value ranging from -32768 to 32767. The default data type for a Real Registers is Signed IEEE double precision value ranging from -1.87e+308 to 1.87e+308.

Possible Configurations

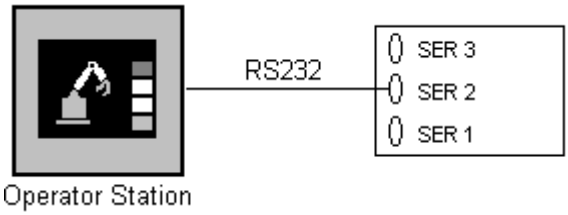
2

In this chapter, you will learn:

- *How to connect an operator station to a ROBOX industrial computer*

Direct Connection

A direct connection may be made to any of the three serial ports on the ROBOX industrial computer.



Cabling

3

In this chapter, you will learn:

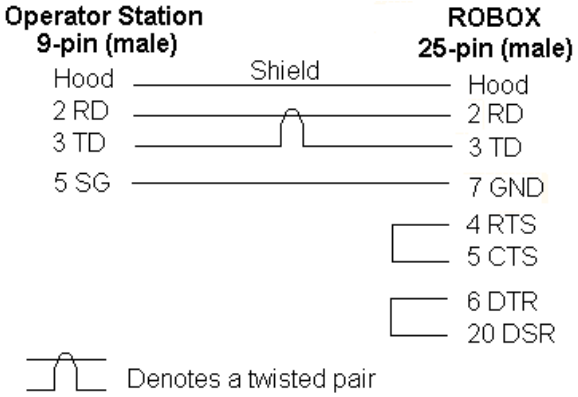
- *The cabling requirements for a ROBOX industrial computer*

Cable Configurations

Communications between the Operator Station and the ROBOX industrial computer is RS232. The ROBOX industrial computer has three serial ports. Serial Port 1 has a 25-pin connector and Serial Ports 2 and 3 have 9-pin connectors. The maximum cable length when using RS232 is 50 feet.

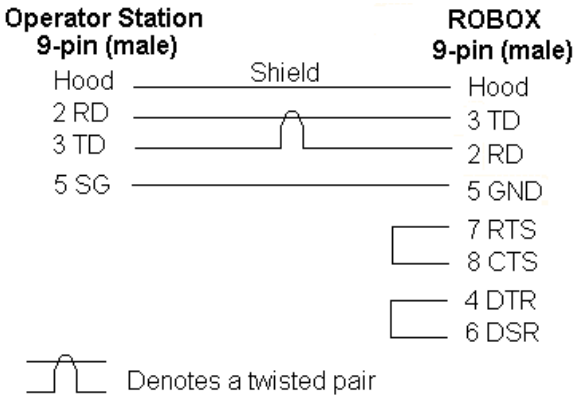
RS232 Cabling for the ROBOX 25-pin Connector

The Operator Stations that have 9-pin female connectors (DB-9S) must have cables configured with male connectors (DB-9P).



RS232 Cabling for the ROBOX 9-pin Connector

The Operator Stations that have 9-pin female connectors (DB-9S) must have cables configured with male connectors (DB-9P).



Communication Parameters

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In this chapter, you will learn:

- *The standard communication parameters*

Standard Communication Parameters

The standard communication parameters for communicating to one of the serial ports on the ROBOX industrial computer are:

RS-232

8 Data bits

1 Stop bit

Even Parity

9600 Baud

Word and Bit References

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In this chapter, you will learn:

- *How to configure word and bit references*

Word Referencing Method

The general word referencing method is:

[plcname,word#format]

The "plcname" is the name of the designated PLC as listed in the PLC Name and Port Table. The "word" is the reference number (address) of the word or register to be read or written. The "#format" is a code which specifies the format of the data being read or written. The "plcname" and "#format" are optional.

The general bit referencing method is:

[plcname,bit]

The "plcname" is the designated PLC as listed in the PLC Name and Port Table. The "bit" is the reference number (address) of the bit, coil, or input to be written or read.

See the "Word and Bit References" topic in the Configuration Software Online Help for a more detailed explanation of word and bit references, including format descriptions.

Register Reference Format

The ROBOX industrial computer uses decimal word addresses. The Operator Station default format is U16 except for the RR memory type that uses double precision IEEE.

The format used for expressions is the memory type symbol (upper or lower case) and a reference number.

The following is the format for a register reference.

[WW XXX]

Note: A space between memory type (WW) and memory address (XXX) is required.

WW	Memory type R, RR, INP, or OUT
space	Required space delimiter
XXX	Memory address (leading zeros not required)

The ROBOX industrial computer will allow a maximum Block Size of 1 word and a maximum Gap Size of 1.

Examples

The following are examples of valid PLC references that may be assigned in the Operator Station's expression fields.

Word References	
[R 962]	Integer Register 962
[RR 11]	Real Register 11
[INP 1]	Input Bit 1
[OUT 333]	Output Bit 333

Note: A space between memory type (WW) and memory address (XXX) is required.

Maintenance Access

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In this chapter, you will learn:

- *How to use the Maintenance Template*

Maintenance Access

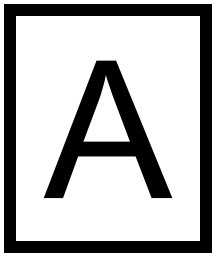
The Maintenance Template will access all memory locations supported by the driver as defined in the Memory Addressing topic. When running on-line, you can change the reference. The Maintenance Template is designed to assist you in specifying the reference by scrolling through a list of mnemonics that are used to enter the word reference. When online in the reference change mode, the following list is available.

"R" "INP" "OUT"

You must enter the correct mnemonics and numeric values and create a legal reference to change a reference. Once a new reference is entered, the Maintenance Template will remain in a paused state until the **Start Monitor** control button is depressed. If correct, the template begins updating.

Note: Maintenance Templates cannot be used to monitor unsolicited references.

ROBOX Remote Errors



In this chapter, you will learn:

- *The remote errors detected by a ROBOX industrial computer*

ROBOX Remote Errors

The ROBOX industrial computer has 3 errors that can be generated.

Error	Error Name	Description
1751	Syntax error in command frame	Unexpected reply form ROBOX
1752	Illegal parameter in command frame	Unexpected reply from ROBOX
1753	Could not parse the reply	Unexpected data in ROBOX reply

For a complete list of errors, see the Online Operation User's Guide.

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