SIEMENS

Installation Instructions
Model RPM

Remote Printer Module

Figure 1
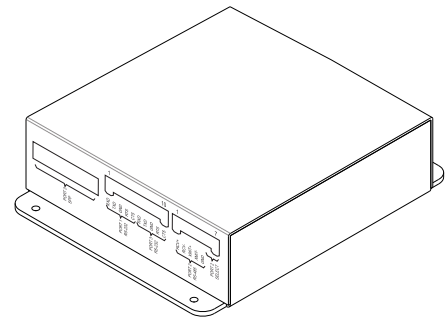*RPM Remote Printer Module*

INTRODUCTION

The Model RPM from Siemens Industry, Inc., is an HNET module that interfaces to a Centronics parallel printer. It must be located where access to the FireFinder-XLS/Desigo Fire Safety Modular/Cerberus PRO Modular HNET network and the PSC-12 24VDC power limited output are available.

The RPM is required whenever a logging printer is needed. It translates the HNET messages into a standard Centronics printer interface. When used in conjunction with the PAL-1, it provides a supervised logging printer meeting the requirements of NFPA 72 Proprietary or UL 1076 Security systems. For NFPA 72 Local, Auxiliary or Remote Station applications any UL EDP listed Centronics parallel printer may be used (See notes 2, 3, and 4 on Figure 3).

The RPM also provides an optional Foreign System Interface (FSI). The FSI allows other building systems to monitor the status of the FireFinder-XLS/Desigo Fire Safety Modular/Cerberus PRO Modular system. The FSI connects to Ports 1-3 on the RPM. This connection can be either RS-232 (Ports 1 or 3) or RS-485 (Port 2). Only one FSI connection per RPM is allowed. The FireFinder-XLS/Desigo Fire Safety Modular/Cerberus PRO Modular system supports a maximum of two simultaneous FSI connections. With two simultaneous FSI connections the following combinations are supported: Two Local FSI connections or one Global and one Local FSI connection. A total of two Global FSI connections are supported in an XNET network. Each Global FSI connection must originate from its own XLS/Desigo Fire Safety Modular/Cerberus PRO Modular node.

Features

RPM features are as follows:

- Supervision of the PAL-1 includes paper out, paper jam, printer off line, printer power off and printer disconnected.
- Can be connected to the HNET either Style 4 or Style 7.
- Includes diagnostic LEDs to indicate failure of the HNET or the CPU. It also has a power on indicator.
- Includes a reset switch in the event that the RPM requires a hardware reset.
- Can be mounted on any smooth surface within 6 feet of the PAL-1.
- Single Foreign System Interface (FSI) connection.
- FSI supports Local (single system) or Global (multiple systems) operation.

Siemens Industry, Inc.

Building Technologies Division

OPERATION

When a system event occurs, the PMI/PMI-2/PMI-3 (XLS), FCM2041-U2 (Desigo Fire Safety Modular), FCM2041-U3 (Cerberus PRO Modular) sends a print message to the RPM via HNET. The RPM is responsible for printing the message. The RPM contains a buffer to ensure that events that occur at a rate faster than the PAL-1 can print them are not lost.

If the FSI option is selected (via Zeus) the same event is sent to the FSI port. This event remains in a buffer until the Foreign System removes it.

The RPM continuously monitors the connection to the PAL-1 checking for any errors that would inhibit printing. Any errors that are detected are communicated to the PMI/PMI-2/PMI-3 (XLS), FCM2041-U2 (Desigo Fire Safety Modular), FCM2041-U3 (Cerberus PRO Modular) via HNET for annunciation. Restoration to the normal condition is also detected and communicated to the PMI/PMI-2/PMI-3 (XLS), FCM2041-U2 (Desigo Fire Safety Modular), FCM2041-U3 (Cerberus PRO Modular). Print messages that arrive at the RPM during a printer fault are stored in the buffer.
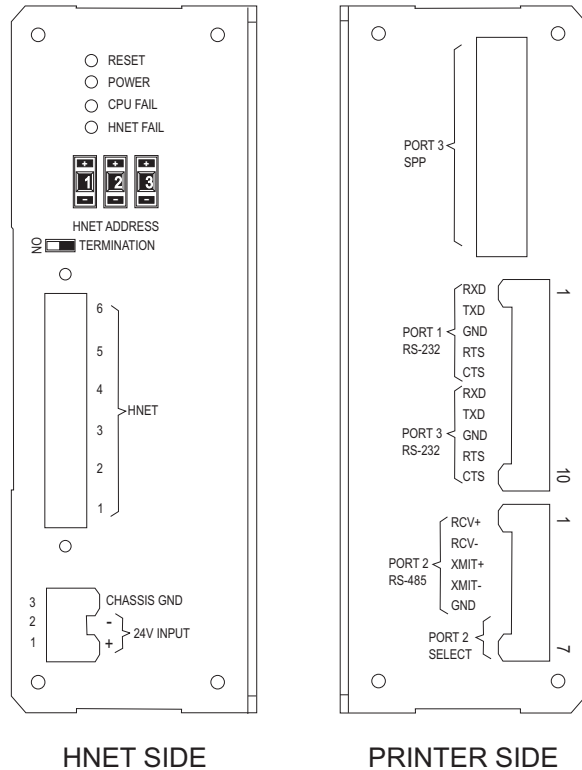

HNET SIDE   PRINTER SIDE

Figure 2
RPM Side Panel Detail

Controls and Indicators

The HNET side panel of the RPM contains one reset switch, three LEDs, one termination switch and one HNET address switch as shown in Figure 2.

A reset switch is located on the top of the panel. Pushing the reset switch re-initializes the RPM operation.

POWER   (Green)   Normally ON. When illuminated, indicates that power for the RPM is applied to the module.

CPU FAIL   (Yellow)   Normally OFF. When illuminated, indicates that the module microprocessor has failed.

HNET FAIL   (Yellow)   Normally OFF. When illuminated, indicates that the HNET communication with the RPM has terminated.

A three-position switch located directly beneath the LEDs on the HNET side of the RPM is used to set the HNET network address of the RPM.

PRE-INSTALLATION   Before connecting either the printer, power, FSI or the HNET, the network address must be set for the RPM using the three-position switch. (Refer to Figure 2 for the location of the switch.) The address for the RPM must be the same as the address selected for it in the Zeus Programming Tool. To increment each digit of the address, press the "+" button above the desired digit; to decrement each digit, press the "-" button below the desired digit. The range of allowable addresses is from 001 to 251 (leading zeros must be used).

NOTE 👉   **If the RPM is located at the end of the HNET network (Style 4 only), the termination switch must be set to ON. Otherwise it must be set to OFF.**
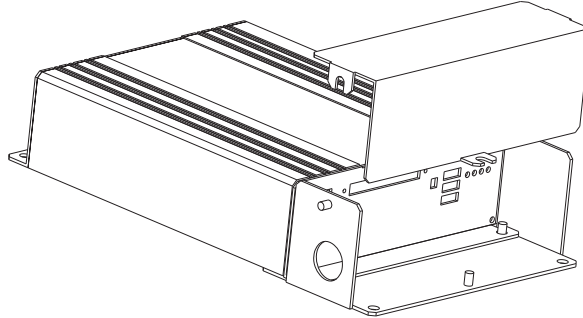

Figure 3
Installing The RPM Terminal Block Covers

Two terminal block covers are provided with the RPM. Each comes as two separate parts, a lower bracket which has a ¾ inch conduit opening and a cover. Attach the lower bracket to each end of the RPM using four of the #10 nuts provided in the RPM hardware kit. Reserve the covers and the remaining hardware until the RPM is mounted and wired.

Mount the RPM to either the wall or desk where the PAL-1 is located. Use the four mounting holes in the lower bracket.
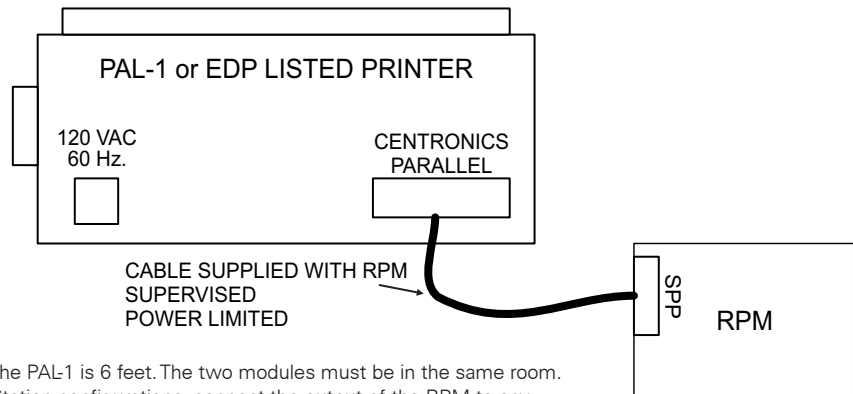
NOTES:
1. The maximum distance from the RPM to the PAL-1 is 6 feet. The two modules must be in the same room.
2. For NFPA 72 Local, Auxiliary and Remote Station configurations, connect the output of the RPM to any UL EDP listed printer.
3. The printer must support the EPSON FX command set.
4. For NFPA 72 Proprietary of UL 1076 configurations use printer SIEMENS Model PAL-1, a UL listed for fire Centronics parallel printer.
5. The printer is supervised for AC loss, off line, paper out, paper jam, and connection to the RPM.
6. After loading the paper in the PAL-1 printer, turn off the power and follow the steps below.
   • While pressing the LOAD PARK button, turn on the power to the PAL-1 printer. Keep pressing the LOAD PARK button for 5 seconds.
   • Release the LOAD PARK button.
   • The current setting will print.
   • When printing is completed, the ON LINE indicator will be lit. If the ON LINE indicator is not lit, press the ON LINE button.

Figure 4
Connecting The Printer To The RPM

WIRING

⚠️ **WARNING**

Remove all system power before installation, first battery then AC. (To power up, connect the AC first, then the battery.)

The PAL-1 is connected to the RPM with a standard PC printer cable. This cable is supplied with the RPM. Connect the PAL-1 to the RPM using this cable. The two ends of the cable are different, ensuring proper connection. See Figure 4.

The RPM requires 24VDC to operate. This power is available on the PSC-12. See Figure 5 for wiring details.

NOTES:
1. 18 AWG min., 12 AWG max.
2. Power limited to NFPA72 per NEC 760.
3. No end of line device required.
4. 50Ω max. total wire resistance.
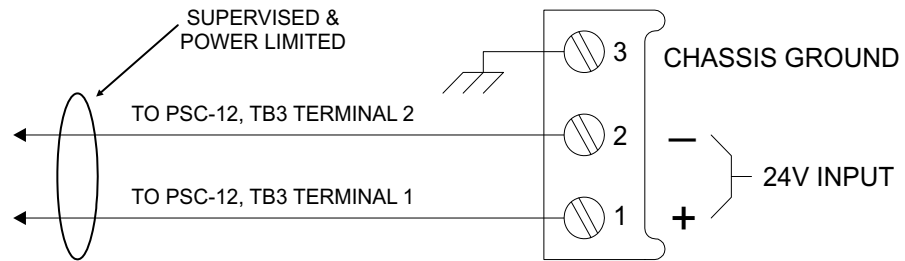5. Refer to PSC-12 Installation Instructions, P/N 315-033060 for ground fault detection impedance.

Figure 5
Connecting Power To The RPM

The RPM can be connected to the HNET either Style 4 or Style 7. Refer to the Zeus configuration for the proper Style. In either case, the RPM can be connected in the middle of an HNET. For a Style 4 network, the RPM can also be connected at the end. If the RPM is connected at the end, care must be taken to properly terminate the HNET. See Figures 6 and 7 for the wiring instructions when the RPM is in the middle and Figure 8 when the RPM is at the end of the network.
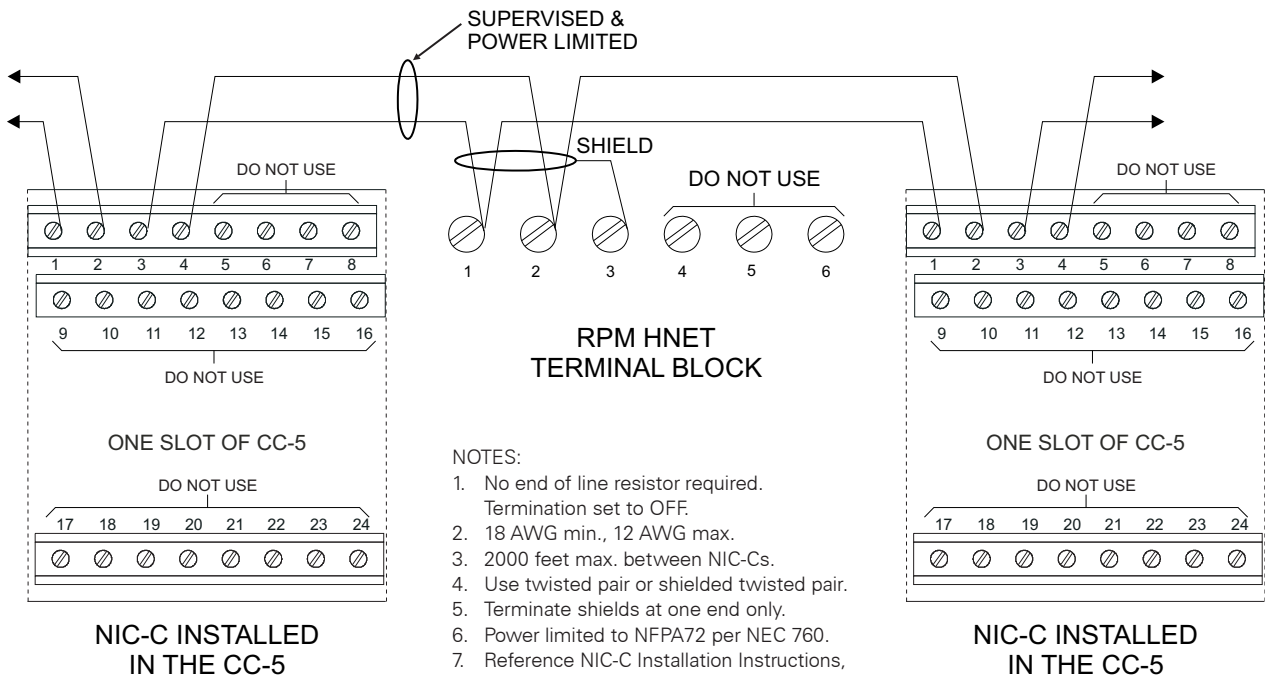
NOTES:
1. No end of line resistor required. Termination set to OFF.
2. 18 AWG min., 12 AWG max.
3. 2000 feet max. between NIC-Cs.
4. Use twisted pair or shielded twisted pair.
5. Terminate shields at one end only.
6. Power limited to NFPA72 per NEC 760.
7. Reference NIC-C Installation Instructions, P/N 315-033240 for wiring and ground fault detection impedance.

Figure 6
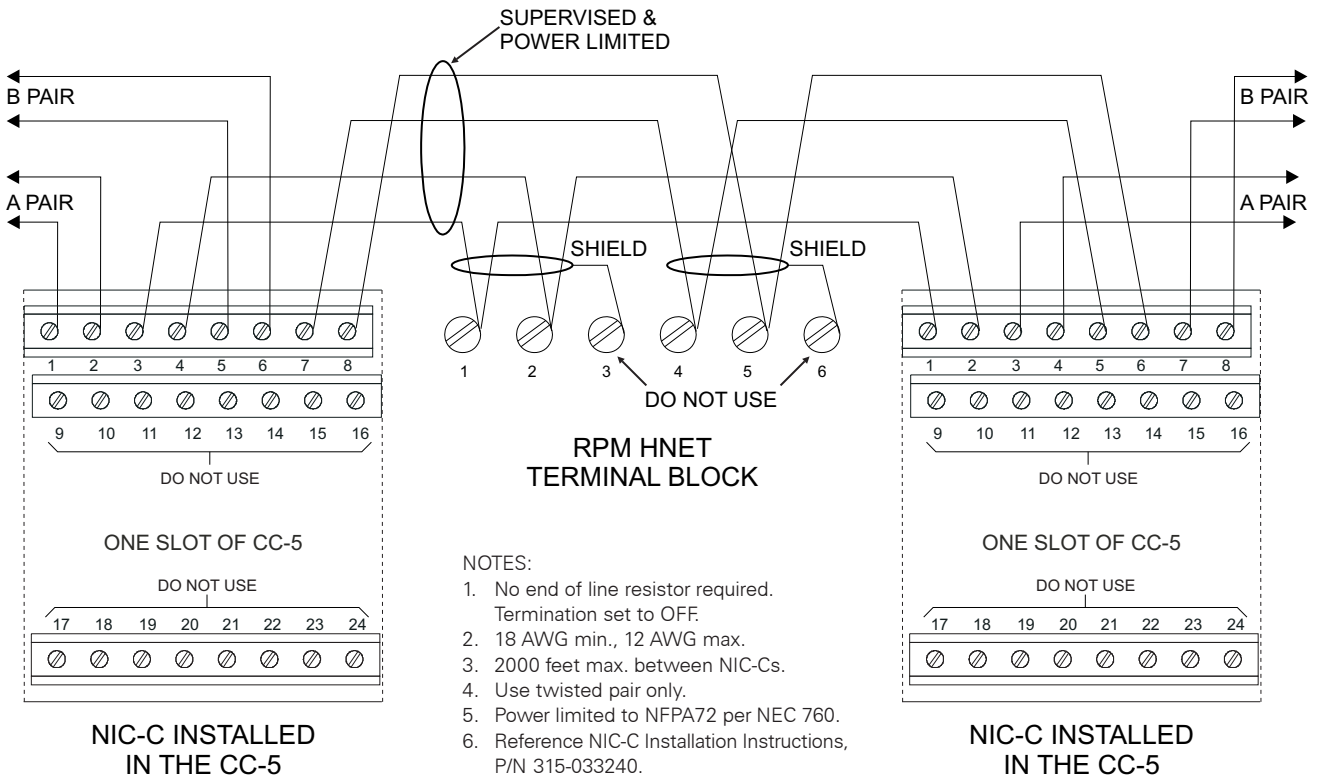*RPM In The Middle Of A Style 4 HNET*

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B PAIR

A PAIR

SHIELD   SHIELD

DO NOT USE

RPM HNET
TERMINAL BLOCK

B PAIR

A PAIR

1 2 3 4 5 6 7 8

9 10 11 12 13 14 15 16

DO NOT USE

ONE SLOT OF CC-5

DO NOT USE

17 18 19 20 21 22 23 24

NIC-C INSTALLED
IN THE CC-5

NOTES:
1. No end of line resistor required.
   Termination set to OFF.
2. 18 AWG min., 12 AWG max.
3. 2000 feet max. between NIC-Cs.
4. Use twisted pair only.
5. Power limited to NFPA72 per NEC 760.
6. Reference NIC-C Installation Instructions,
   P/N 315-033240.

1 2 3 4 5 6 7 8

9 10 11 12 13 14 15 16

DO NOT USE

ONE SLOT OF CC-5

DO NOT USE

17 18 19 20 21 22 23 24

NIC-C INSTALLED
IN THE CC-5

Figure 7
RPM In The Middle Of A Style 7 HNET

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DO NOT USE

SHIELD

DO NOT USE

NOTES:
1. No end of line resistor
   required. Termination set to
   ON.
2. 18 AWG min., 12 AWG max.
3. 2000 feet max. between
   NIC-C and RPM.
4. Use twisted pair or shielded
   twisted pair.
5. Terminate shield at one end
   only.
6. Power limited to NFPA72
   per NEC 760.
7. Reference NIC-C Installation
   Instructions, P/N 315-
   033240 for wiring and
   ground fault detection
   impedance.

1 2 3 4 5 6 7 8

9 10 11 12 13 14 15 16

DO NOT USE

ONE SLOT OF CC-5

DO NOT USE

17 18 19 20 21 22 23 24

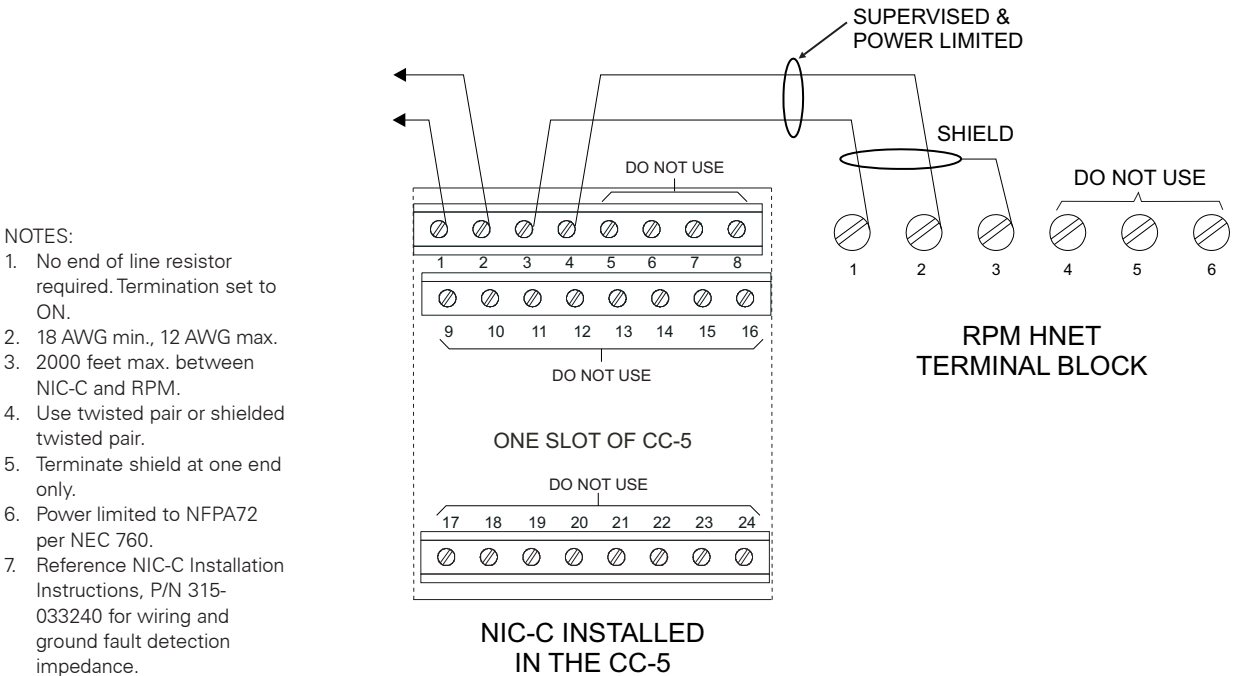NIC-C INSTALLED
IN THE CC-5

RPM HNET
TERMINAL BLOCK

Figure 8
RPM AT The End Of A Style 4 HNET

The PAL-1 requires a standby power source in the event of the loss of primary input power (AC mains). Refer to Figure 9 for the connection of a UPS to meet this requirement.

NOTES:
1. All wires 14 AWG min., 600V insulation.
2. Wiring to the printer must be 14 AWG min., 600V insulation in conduit.
3. Use the UPS ICS Lifeline Model 9300057.
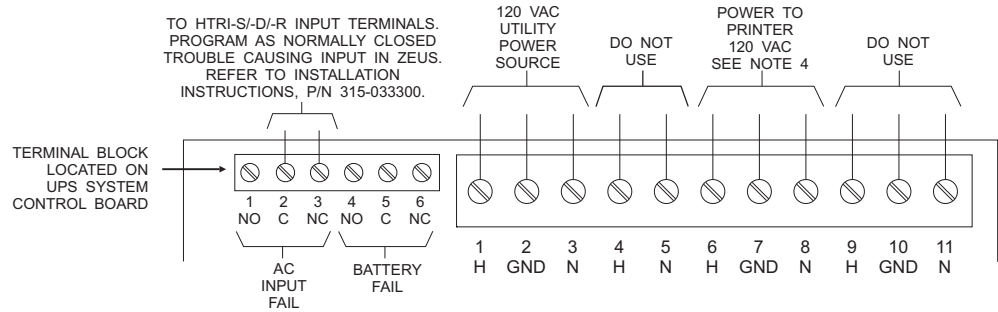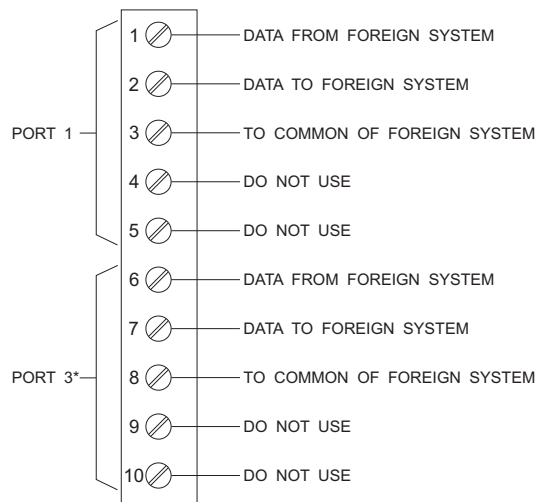4. Standby Power requirements: 120 VAC, 0.6A for 24 hours.

Figure 9
UPS Wiring Diagram

NOTES:
1. 14-18 AWG.
2. 25 feet Max.
3. Power Limited to NFPA 70 per NEC 760.
4. Maximum Voltage 20V peak to peak.
5. Maximum Current 25mA.
6. Not supervised.
7. Foreign System must be UL EDP or ETI listed.
8. Only ONE FSI (RS-232 or RS-485) connection allowed per RPM.

*PINS 6 & 7 ON THE PORT 2 CONNECTOR MUST BE STRAPPED TO ENABLE PORT 3.

Figure 10
FSI RS-232 Connection

NOTES:
1. 14-18 AWG. Twisted pair or twisted shielded pair.
2. Must be connected within the same room.
3. Power Limited to NFPA 70 per NEC 760.
4. Maximum Voltage 8V peak to peak.
5. Maximum Current 150mA.
6. Optional supervision (selected in Zeus) (2 wire only).
7. Foreign System must be UL EDP or ETI listed.
8. A 120 ohm EOLR is internally connected to Port 2 terminals 1 and 2.
9. Only ONE FSI (RS-232 or RS-485) connection allowed per RPM.
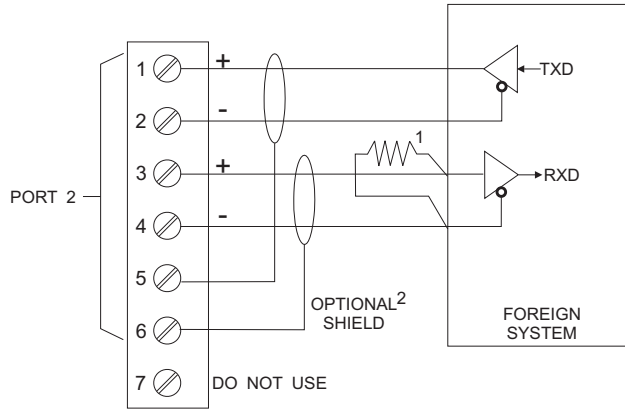
1) 120 ohm EOLR
2) Connect shield at one end only.

Figure 11
FSI RS-485 Connection

INSTALLATION

The RPM mounts with two flanges on the side of the terminal block covers. Select a smooth surface within 6 feet of the PAL-1 for the RPM.

Position the RPM and attach it to the mounting surface using the four #6 self tapping screws provided.

Install the terminal block covers using the 6 remaining #10 nuts. Refer to Figure 3.

ELECTRICAL RATINGS

24V Back Plane Current	0	
Screw Terminal 24V Current	150mA Max.	
6.2V Back Plane Current	0	
24V Standby Current	150mA Max.	
Output Power		
CAN Network Pair	8V peak to peak max.	
	75mA max. (during msg transmission)	

Cyber security disclaimer

Siemens products and solutions provide security functions to ensure the secure operation of building comfort, fire safety, security management and physical security systems. The security functions on these products and solutions are important components of a comprehensive security concept.

It is, however, necessary to implement and maintain a comprehensive, state-of-the-art security concept that is customized to individual security needs. Such a security concept may result in additional site-specific preventive action to ensure that the building comfort, fire safety, security management or physical security system for your site are operated in a secure manner. These measures may include, but are not limited to, separating networks, physically protecting system components, user awareness programs, defense in depth, etc.

For additional information on building technology security and our offerings, contact your Siemens sales or project department. We strongly recommend customers to follow our security advisories, which provide information on the latest security threats, patches and other mitigation measures.

 http://www.siemens.com/cert/en/cert-security-advisories.htm

For CE applications in Cerberus E100 systems refer to
Installation Instruction A24205-A334-B844 (English) or A24205-A334-A844 (German).