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GE Power Management

MSP
Multiple Serial Port

GE Power Management

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These instructions do not purport to cover all details or variations in equipment nor provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the General Electric Company. To the extent required the products described herein meet applicable ANSI, IEEE and NEMA standards; but no such assurance is given with respect to local codes and ordinances because they vary greatly.

Introduction

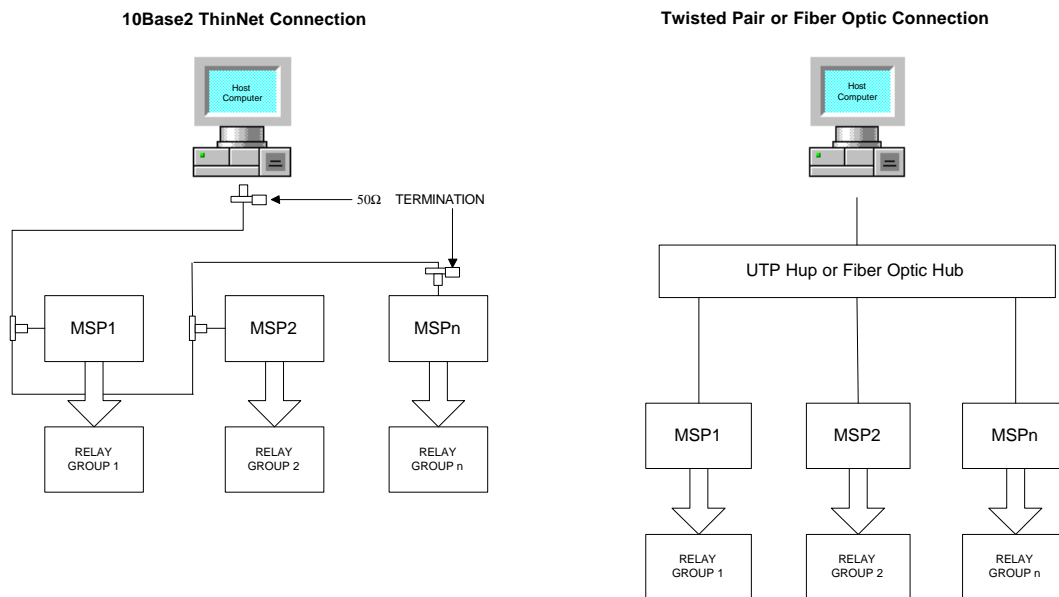
The MSP is a device that uses multiple RS232 Serial Ports to enable Ethernet network connections. The MSP provides an enhanced port server capability by mapping the individual serial ports on the MSP to COM ports in a host computer running Windows NT[®]. The MSP ports can then be utilized by software packages running on the host by addressing each port as a distinct COM-port.

Features:

- Dual redundant power supply (DC or AC)
- Power supply monitor alarm
- Wide selection of communications media types , RS232 output ports can be optionally converted to RS485 or multi-mode fiber optic with add on adapters
- Ports appear as COM ports in host computer
- Ports individually configurable
- Built in diagnostics display results on front panel LED indicators
- LED indicators display RS232 signal conditions for any selected port or Ethernet network capacity utilization

Applications

Communications between the host computer and the MSP use a standard Ethernet networking architecture. 10Base-T, 10Base2, and 10Base-FL network connections are available on the MSP. By networking multiple 8 or 16-port MSPs, a maximum of 256 concurrent ports can be supported. Figure 1 shows two different connection schemes.



NOTE: Each RELAY GROUP can consist of multiple relays; the number of relays depends on the MSP's configuration and number of ports (8 or 16).

Figure 1 Sample MSP Connection Schemes

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RS232 communications to field devices are standard on the MSP. For added flexibility, RS232 to RS485 converters are available to support devices that utilize RS485 communications. For applications that require noise immunity and electrical isolation, RS232 to fiber optic converters are available. Figure 2 illustrates some available connection options. NOTE: Each relay can be connected using either Fiber Optic OR Copper connections.

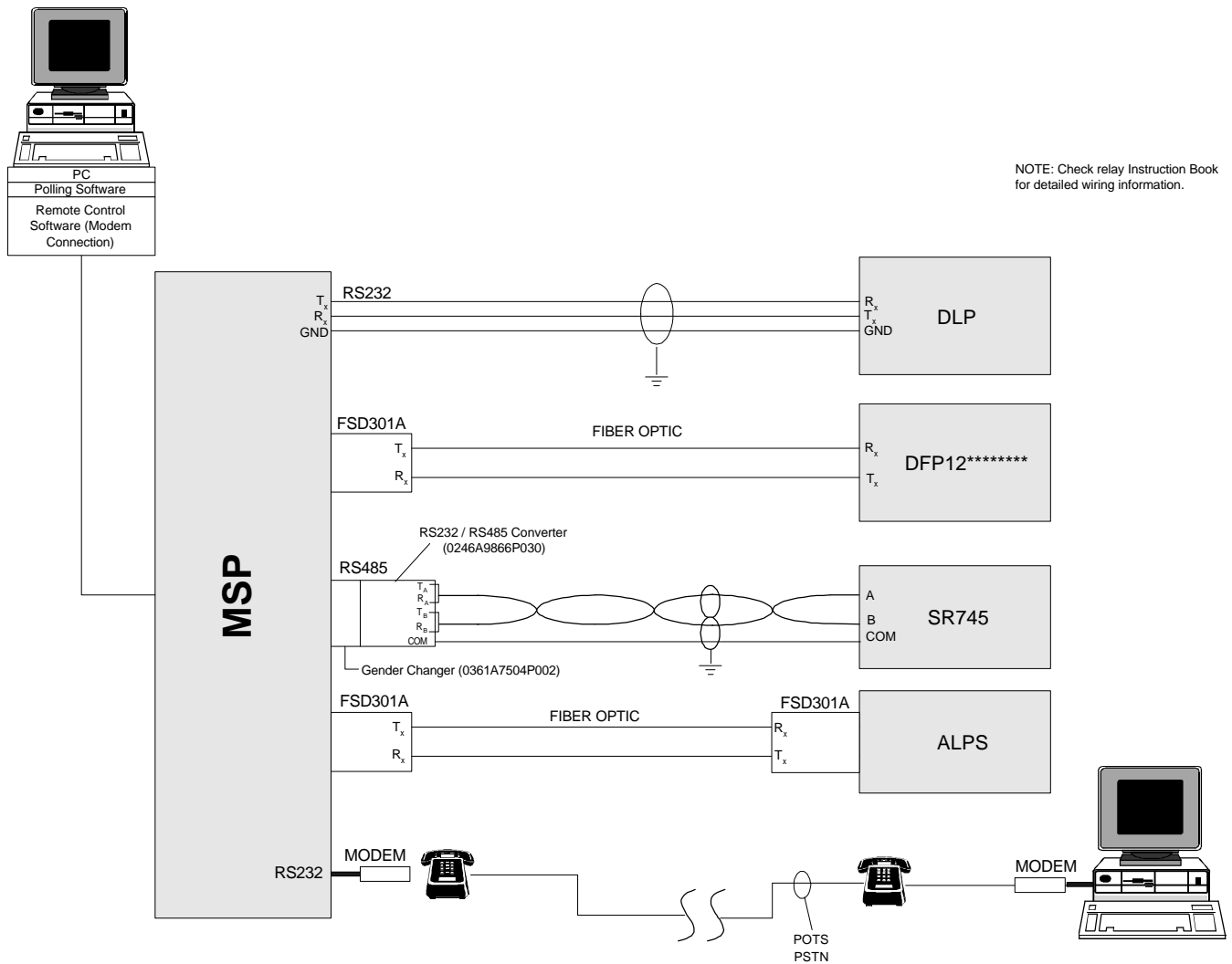


Figure 2 Connection Options Diagram

Specifications

Ratings

Rated Voltage: 110/ 250 VDC or AC
 Rated Power: 180VA
 Rated Frequency: 50 or 60 Hz

Environmental

Ambient Temperature: 16°C (60°F) to 29°C (85°F)
 Relative Humidity: 20% to 80% Non Condensing
 Altitude: 0 to 2135 meters (0 to 7,000 feet)

Connectors

Serial output ports: DB25S (DB25S is chosen instead of DB25P so that the unit will interface with the FSD301A fiber optic converters.)

Pin Out definition DB25:

2	Tx
3	Rx
4	RTS
5	CTS
6	DSR
7	SGND
8	DCD
9	+12V
20	DTR
22	RI

Notes: Pins 4 and 5 are jumpered together with a zero ohm resistor.
 Pins 6, 8, 20 are jumpered together with 2 zero ohm resistors.
 Remove the resistors if your application requires these pins.
 The +12V at Pin 9 provides power for the FSD301A fiber optic converters or the RS232 to RS485 converters.

Ethernet connection: Please refer to the *Network Communications* table below.

Input Power: Screw Terminal board.

Network Communications

Ethernet IEEE 802.3 standard interfaces are available as follows:

Media	Designation	Cabling	Connection	Example Order #
Fiber Optic	10Base-FL	62.5/125 µm duplex fiber cable	2 ST Connectors	MSP*SET2A
ThinNet	10Base2	Coax	BNC	MSP*SEC2A
Twisted-Pair	10Base-T	UTP – Unshielded Twisted Pair	RJ45	MSP*SEC2A

* Any valid ordering number for that digit.

Device Communications

The device communications interface from the MSP is RS232. Alternative interfaces can be supported as follows:

Device Interface	Communications Cabling	Converter	Converter Part Number(s)	Example Order#	See Notes
RS232	RS232	Not Required		MSP*SE*2A	
RS232	Fiber Optic	RS232 / Fiber	FSD301A	MSP*SE*2A	1
RS485	RS485	RS232 / RS485	0246A9866P030 0361A7504P002	MSP*SE*2A	2

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* Any valid ordering number for that digit.

Model Selection Guide:

MSP	*	*	*	*	*	A	
MSP							Basic unit Multiple Serial Port
	1						8 Ports
	2						16 Ports
	X						0 Ports, Controller Card Only
		C					Controller Card Only
		S					Slave
			E	C			Ethernet Controller with 10Base-T and 10Base2 Connectors
			E	T			Ethernet Controller with ST Fiber Optic Connectors
					2		Redundant 110/ to 250 VDC or AC w/ Alarm Contact Output
					X		No Power Supply, Controller Card Only
						A	Revision

NOTES:

- Each RS-232 port at the back of the MSP can be converted to a 62.5/125 (820nm) fiber optic output with SMA905 connectors. Order 2 FSD301As for each fiber optic port needed (1 for the MSP port and 1 for the relay).
- The FSD is compatible with the following relays: DLPC, DLPD, ALPS, DGP, DFP100, DFP200, DTP, MCP, DLM and DFM. Some relays (DFP12*****, MCP, etc.) have an optional built-in GLASS fiber optic output with SMA906 connectors. For those models, only 1 FSD301A is required (for the MSP).
- Each RS-232 port at the back of the MSP can be converted to an RS-485 output with screw terminals. The following adapters can be ordered for each RS-485 port needed: GE Part Numbers 0246A9866P030 and 0361A7504P002.
- All MSP systems require 1 controller card (e.g. MSPXCECXA for 10Base2 ThinNet coax connection or MSPXCETXA for fiber optic connection with ST connectors). If the system has a back-up computer, a total of 2 controller cards are needed, 1 for each computer. Each MSP system also requires at least one slave unit (e.g. MSP1SEC2A for 8 ports with ThinNet coax connector or MSP2SET2A for 16 ports with fiber optic connection).

Hardware Description

Weight:

Net: 17 lbs (7.711 kg)
 Shipping: 24 lbs (10.886 kg)

Dimensions:

Height: 7" (177.8 mm)
 Width: 19" (482.6 mm) to edge of mounting flanges
 Depth: 17" (431.8 mm) including clearance at rear of unit for fiber optic adapters

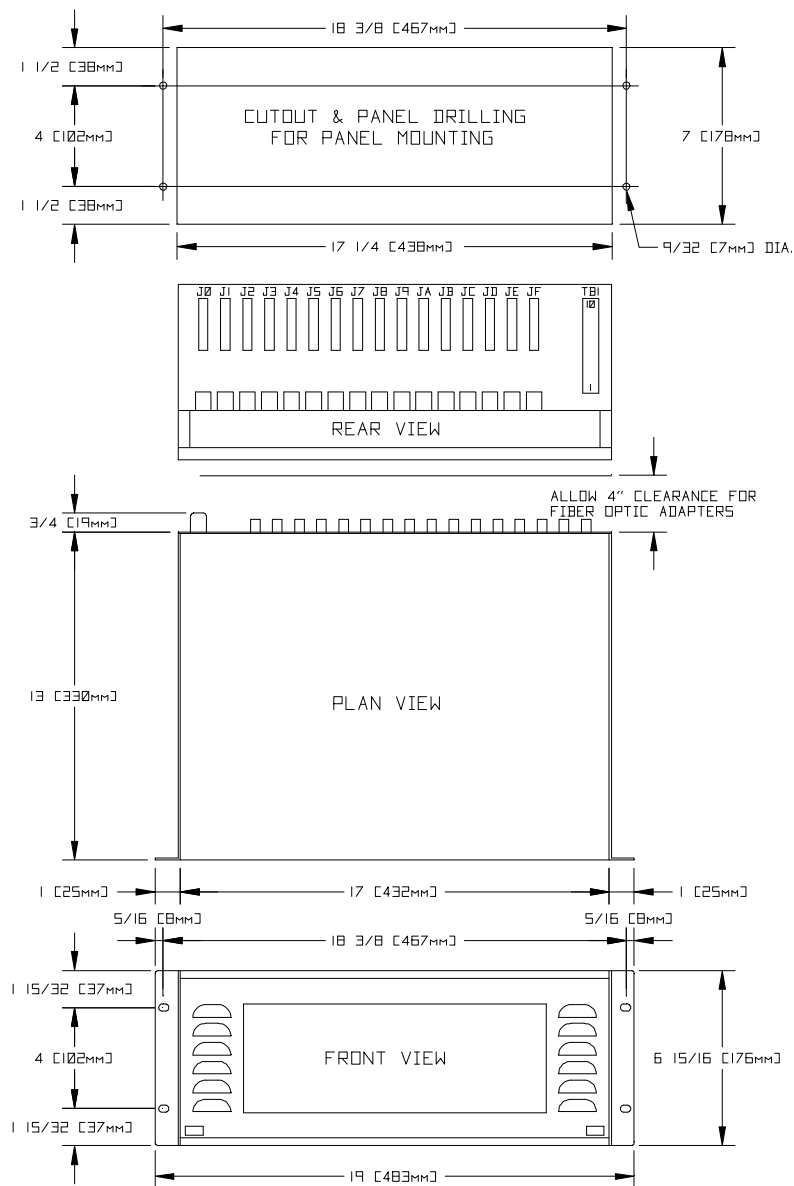


Figure 3 (0358A1447) MSP Outline Drawing

Installation

- Default IP address: 192.255.255.11
 - Default login: root
 - Default password: dbps
1. Connect a null modem cable to Port J0 of the MSP. Port J0 is located at the back of the MSP and is labeled on the back plane printed circuit board (see figure 3).
 2. Connect the other end of this null modem cable to a terminal or a PC running a terminal program.
 3. Set the terminal parameters to VT-100 emulation, 9600 baud, 8 data bits, 1 stop bit and no parity.
 4. Connect rated voltage to TB1-1 and TB1-3.
 5. Check that LED1 (on the back of the MSP), the front panel LEDs and the alphanumeric display are ON. The MSP Power-On Self Test will run automatically. If it does not detect any errors, the alphanumeric display will show “AC”, and the LED indicators will light in sequence.
 6. Log on to the MSP:
 - a) When AC is showing on the alphanumeric display, press the **Return** or **Enter** key on your terminal or PC keyboard. The **login:** prompt should be displayed.
 - b) Type “root” and press **Enter**. The **passwd:** prompt should be displayed.
 - c) Type “dbps” and press **Enter**. The password you type is not displayed on the screen. When you see a #> prompt, you have successfully logged in. Example:

```
login: root
passwd:
#>
```
 - d) You can now enter network configuration information for the MSP.
 7. Configuring the Ethernet Connection:
 - a) Set the IP address of the MSP using the following command:

```
#>set config ip=xxx.xxx.xxx.xxx
```

Each MSP must have a unique IP address. To view the IP address, press **Enter** after typing the following:
“set config ip=”
 - b) Set your network sub-net mask, using the following command:

```
#>set config submask= xxx.xxx.xxx.xxx
```

For example, to set the subnet mask to 255.255.255.0, type the following:
#>set config submask= 255.255.255.0

8. Exit the Terminal Emulation program and connect the MSP to a PC with a Network Interface card. Refer to the **Specifications** section of this document for connection and communication information. Sample connections are illustrated in Figure 2.
9. Install the Com Port driver into the PC that will communicate with the MSP:
 - a) Insert the RealPort floppy into a: drive
 - b) From the control panel of Windows NT, double click on the **Network Icon**, then click on the **Service** tab.
 - c) Click **ADD**, then click **Have Disk**.
 - d) Make sure that **a:** is displayed and click **OK**
 - e) Select **Real Port Service** and click **OK**
 - f) Enter the IP address of the MSP that you configured in Step 7 (e.g. 192.255.255.11)
 - g) Click on **NEXT**
 - h) Enter a name for the MSP (e.g. MSP1), and enter the number of ports on the MSP (8 or 16) and click on **NEXT**.
 - i) Do **not** check the box for “Yes, I would like to change port names.” Default port names (com3, com4, etc.) will be used.
 - j) Click on **FINISH**.
 - k) If you have another MSP to add, then click **ADD** and repeat the above procedure. Otherwise, click **OK** to finish the RealPort driver installation.
10. Connect the MSP to the PC using ThinNet Coax:
 - a) With a coax T connector, install a 50 Ohm termination resistor at both ends of the ThinNet.
 - b) The coax connection of the MSP is located behind the front panel on the left hand side. The front panel is held in place by 2 thumb screws.
 - c) Set the toggle switch next to the coax connector for **ThinNet connection**.
 - d) Check that the ON/OFF switch located next to the Coax connector is set to ON.
 - e) When the power is turned on, the unit will go through its Power On Self Test sequence.

Testing

Testing the Network Connection:

1. In the PC, set the IP address of the network controller card to 192.255.255.11 and the mask to 255.255.255.0. The address shown is an example only and will work with the MSP default settings.
2. From the DOS prompt of the PC, Enter the following **ping** command to test the connection:

```
C:\>ping 192.255.255.11 [ENTER]
```

3. The MSP should respond “192.255.255.11 is alive”. This indicates that the communication between the MSP and the PC is functioning properly.

Testing the Serial ports:

The MSP output ports are numbered J0 to JF for a 16 port MSP and correspond to COM3 to COM18 of your PC (assuming that your PC has 2 built-in COM ports).

1. Use a loop back connector *or* jumper pin 2 to pin 3 and test the COM ports using a terminal program (hyper term).
2. Set the communication parameters in the hyper term to the following:
9600, no parity bit, 8 data bits and 1 stop bit.

The screen display should now echo keyboard entries.