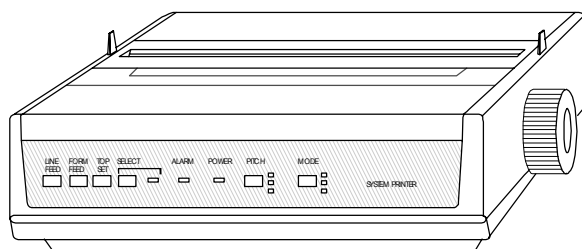## Product description

PT Series Printers are freestanding, 9-pin, dot matrix printers that accept standard cut sheets and form feed paper. They can be connected to fire alarm control panels, security and access control panels, or computers to record system events such as status changes, active events, or reports. See Table 1 for a list of model numbers.

The printers are compatible with the following control panels: EST2, EST3, QuickStart, FCC, IRC3, and Fireworks. Windows printer drivers required for Fireworks are included on the enclosed CD. Each printer is shipped with a power cord and serial connector for building a serial cable. USB and parallel printer interface cables can be purchased locally.

Specifications

Size
   Height: 3-1/4 in (80 mm)
   Width: 14-3/4 in (372 mm)
   Depth: 11 in (275 mm)
   Weight: 10 lb (4.5 kg)
Print speed: 250 cps (utility mode)
Message buffer size: 128 KB
MTBF rating: 20,000 @ 25% duty cycle
Printhead life: 200 million characters at 10 cpi, typical
Ribbon Life: 3 million characters, typical
Noise: less than 54 dBA
UL, ULC approval: 120 V units only
Power: 50 or 60 Hz, 120 V or 230 V
Wire size: 18 AWG (0.75 sq mm)
Operating environment
   Humidity: 0 to 93% RH, noncondensing at 32° C (90° F)
   Temperature: 0 to 49º C (32 to 120° F)

Table 1: Models

Number	Description
MIR-PRT/S, PT-1S, PT-1S-LG	120 V serial
PT-1P, PT-1P-LG	120 V parallel
PT-2	120 V serial/parallel/USB
PT-1S-220	220 V serial
PT-1P-220	220 V parallel
PT-2-230	230 V serial/parallel/USB

Assembly and setup

The illustrated setup guide (included with the printer) contains detailed instructions for assembling the printer, installing the print drivers, and performing other basic tasks. Please refer to this guide when unpacking, assembling, and setting up the printer.

In addition, a user's guide is provided on the CD included with the printer.

Adobe Acrobat Reader is required for viewing the user's guide, and this also is provided on the CD.

Configuration

Many printer default settings are controlled through the front panel. Refer to the user's guide for information about using the front panel to set printer defaults.

For serial computers, additional defaults are set through the DIP switches located on the serial card. Settings for specific applications are provided with the wiring diagrams in the "Application wiring and configuration" section.

To configure serial card DIP switch settings:

1. On the printer back, open the DIP switch cover (shown below) by removing the screw holding it in place.

2. Set the DIP switches, referring to the switch setting tables in the section on application wiring and configuration.

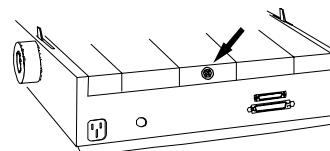3. Replace the DIP switch cover and secure it with the screw.

Figure 1: Screw holding the DIP switch cover in place

Installation instructions

Cautions

*   Do not connect the printer to power until all packing materials have been removed and the printer has been assembled

*   Be sure the voltage rating of the electrical outlet matches that of the printer

*   To avoid print-head damage and paper jams, set the head gap as instructed in the user's guide

Notes

*   Interface cables are not supplied. DB-25 connectors are provided for constructing a serial printer interface cable

*   For serial printers, do not install the paper separator, shown below, until you have finished setting up and configuring the printer (See Figure 2)
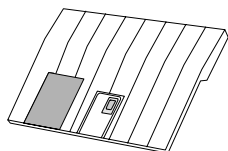
Figure 2: Paper separator

Uninterruptible power supply

If the printer is required to operate during brownout conditions and AC power failures, you must install an uninterruptible power supply (UPS).

The UPS should be UL listed for fire protection (UTRZ). It should provide 120 Vac at 50/60 Hz, for at least 24 hours.
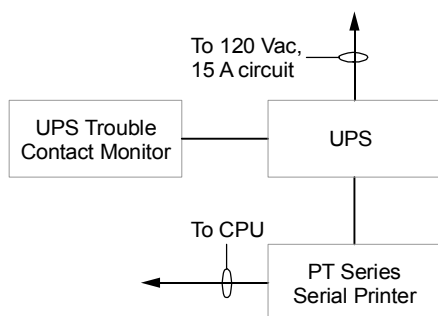

Figure 3: Supervised UPS connected to a PT series printer

Maximum distance from FACP to printer

In proprietary fire alarm systems, serial printers must be located within 50 feet (15.2 m) of the fire alarm command center (FACP). For optimum performance, however, locate serial printers within 20 feet (6.1 m) of the FACP for both proprietary and local systems.

Locate parallel printers in the same room and within 6 feet (1.8 m) of the computer to which they are connected.

Extended distances for ancillary serial printers

For serial printers serving an ancillary function, you can incorporate a Short Haul Modem (SHM-M or SHM-F) to extend the distance between command center and printer. The printer is not supervised in this configuration, however, and will require the approval of the authority having jurisdiction (AHJ).

At 2400 baud, the printer can receive and transmit data up to 5 miles (8 km) from the FACP.
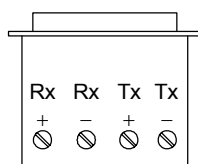

Figure 4: Short Haul Modem (SHM-M or SHM-F)

For more information on the Short Haul Modem, see *SHM-M / SHM-F Short Haul Modem Installation Sheet* (P/N 387560).

Printer supervision

As mentioned above, serial printers connected to Short Haul Modems are not supervised. Printers connected to the computer by a USB cable are not supervised for out-of-paper or manual offline conditions.

Connecting the printer to a control panel

Connecting directly to the RS-232 serial port on the control panel requires a serial interface cable. This can be purchased locally or constructed using the DB-25 connector provided.

Serial cable requirements

- Shielded RS-232C cable, UL and CSA approved
- Maximum length 20 feet (6 m)
- DB-25 serial connector (included with serial printers)

To build a serial cable:

1. Select 3 pairs of twisted cable, 18 AWG (0.75 sq. mm).
2. Cut the cable to a maximum of 20 feet (6 m).
3. Connect one end of the cable to the DB-25 connector at the contacts shown in the wiring diagram for your application.
4. Create solder bridges if specified in the wiring diagram for your panel.

Notes

- Connecting a serial printer to the RS-232 terminals in EST2, IRC3, FCC, and QuickStart systems may cause a ground fault that clears when the printer is disconnected. To correct this problem, install an RS-232 Isolator module (IOP3A).
- Installing a Short Haul Modem (SHM-M or SHM-F) to extend the maximum distance between a serial printer and its control panel does not meet UL requirements

To connect a serial printer:

1. Disconnect power from the control panel and turn the printer off.
2. Plug the DB-25 connector into the serial port on the back of the printer (See Figure 5, below). Tighten the screws.
3. Connect the other end of the cable to the RS-232 module at the control panel, according to the diagram shown in the section on application wiring and configuration.
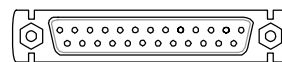4. Turn the printer on and return power to the control panel.

Figure 5: Sample serial port

Connecting the printer to a computer

Note: Do not use both serial and USB cables simultaneously on the same printer.

Connecting to a USB port

USB cables are used for connecting the printer to a computer with a USB port. USB cables can be purchased locally. The cable must have connectors like those shown in Figure 6, and must beUSB version 1.1 or higher.
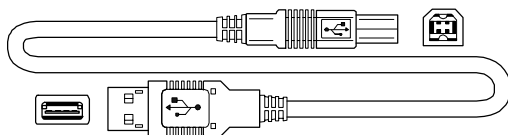
Figure 6: Sample USB cable with A and B series connectors

Enabling the parallel port

Connecting to the computer's parallel port requires the removal of the serial card from the printer. The parallel port remains disabled until the serial card is removed.

Caution: Use static sensitive handling practices when removing the serial card.

Notes

- Locate parallel printers in the same room as the computer

- Use a bidirectional parallel interface cable and a 36-pin Centronics type connector

- Cable length may not exceed 6 feet (1.8 m)

To remove the serial card from the printer:

1. Turn off and unplug the printer.

2. Remove the access cover (See Figure 7).

3. Referring to Figure 7, remove the top cover, as follows:

    - Unplug the power cord and the printer interface cable

    - Remove the platen knob

    - Remove the two screws holding the top cover in place

4. Lift off the top cover. The serial card can be seen behind the platen, on the left (See Figure 7).

5. Remove the two screws holding the card in place.

6. Gently unplug the serial card from the motherboard and store it in a safe place.

7. Reinstall the top cover and secure it with the two screws.

8. Reinstall the platen knob.

9. Reinstall the access cover.

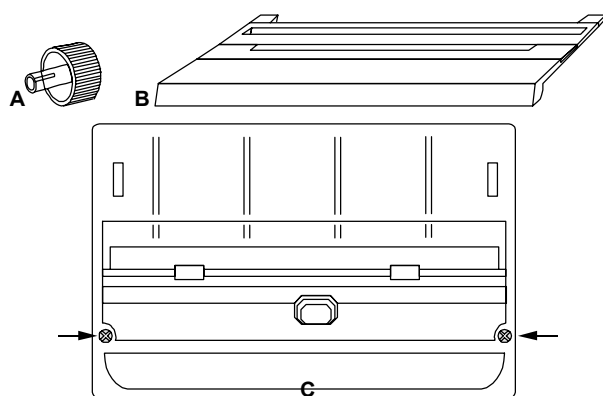10. Plug in the parallel interface cable and the power cord.

Figure 7: A) Platen knob B) Access cover C) Overhead view of printer, showing the screws that hold the top cover in place
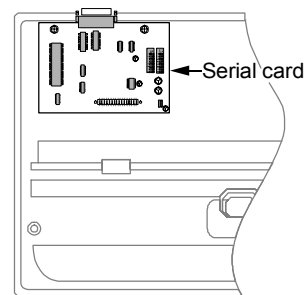

Figure 8: Overhead view of printer with top cover removed

Connecting to a parallel port

If you have purchased a parallel printer, use the following procedure to connect it to the computer.

To connect a parallel printer:

1. Turn off the computer.

2. Turn off and unplug the printer.

3. Remove the plastic guard from the parallel connector at the back of the printer (See Figure 9). Plug a parallel cable (LPT, IEEE-1284) cable into the parallel connector. The cable should be no longer than 6 feet (1.8 m). Secure the plug with the wire loops.

5. Plug the other end of the cable into the computer's parallel port.

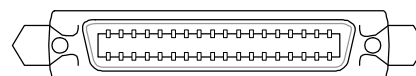6. Plug the printer in and turn it and the computer back on.

Figure 9: Sample parallel port

Application wiring and configuration

Wiring diagrams, front panel settings, and DIP switch settings for compatible control panels are given in the sections that follow.
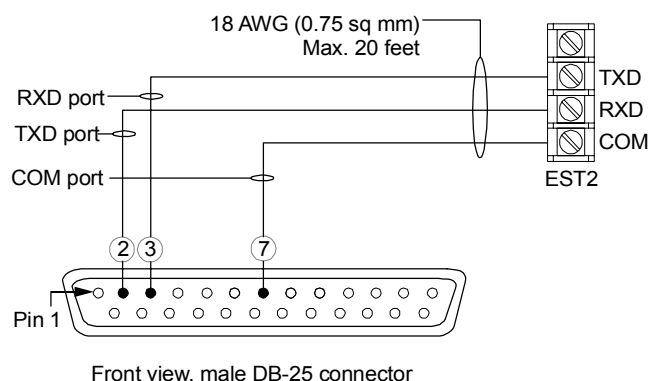
EST2 serial printers

Figure 10: Serial printer connected to an EST2 system control panel

Table 2: Front panel settings for EST2 serial printers

Baud	Bits	Parity
2400	8	Even

Table 3: DIP switch settings for EST2 serial printers

	1	2	3	4	5	6	7	8
SW1	Off	Off	On	Off	On	On	On	On
SW2	Off	Off	On	Off	On	On	On	On

EST3 serial printers

Table 4: Front panel settings for EST3 printers

Baud	Bits	Parity	Stop bit	Flow
2400, 4800, 9600	8	None	1	None

EST3 supervised serial printers

Figure 11: Supervised EST3 serial printer

Table 5: DIP switch settings for EST3 supervised printers

	1	2	3	4	5	6	7	8
SW1	On	On	On	On	On	On	On	On
SW2	Off	On	On	On	On	On	On	On

EST3 unsupervised serial printers

Figure 12: Unsupervised EST3 serial printer

Table 6: DIP switch settings for unsupervised EST3 printers

	1	2	3	4	5	6	7	8
SW1	On	On	On	Off	On	On	On	On
SW 2	Off	On	On	Off	Off	On	On	On

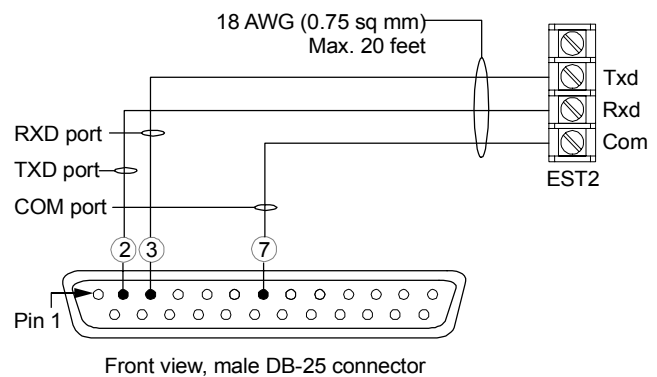**EST3 unsupervised printers with CDR-3 Bell Coders**

Figure 13: Unsupervised EST3 serial printer with a CDR-3 Bell Coder installed

Table 7: DIP switch settings for unsupervised EST3 serial printers with a CDR-3 bell coders

	1	2	3	4	5	6	7	8
SW1	Off	Off	On	Off	On	On	On	On
SW2	Off	Off	On	Off	Off	On	On	On

IRC-3 serial printers

Table 8: Front panel settings for IRC-3 printers

Baud	Bits	Parity
2400	8	Even

Table 9: DIP switch settings for IRC-3 serial printers

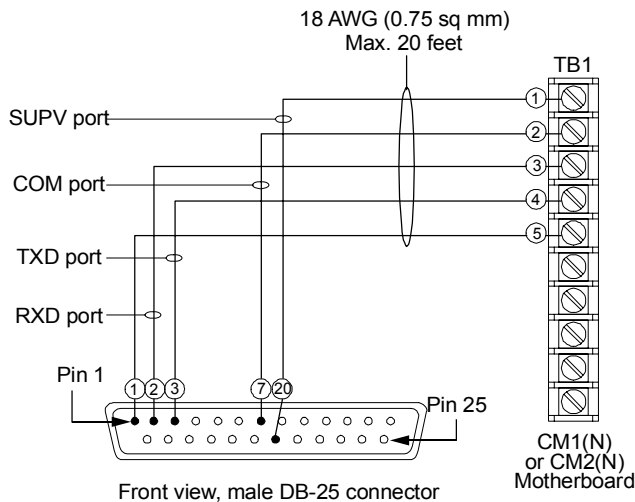|	1	2	3	4	5	6	7	8
SW1	Off	Off	On	Off	On	On	On	On
SW2	Off	Off	On	Off	On	On	On	On

Figure 14: Serial printer connection to IRC3 control panel

QuickStart serial printers

Table 10: Front panel settings for QuickStart printers

Baud	Bits	Parity
9600	8	None

Table 11: DIP switch settings for QuickStart serial printer

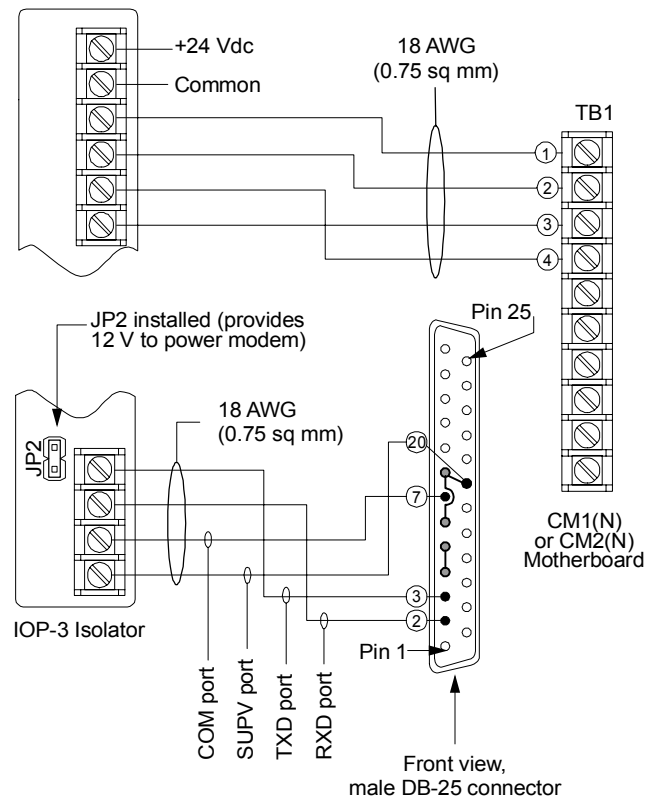|	1	2	3	4	5	6	7	8
SW1	On	On	On	Off	On	On	On	On
SW2	Off	On	On	Off	Off	On	On	On

IRC-3 serial printers with IOP-3 isolators

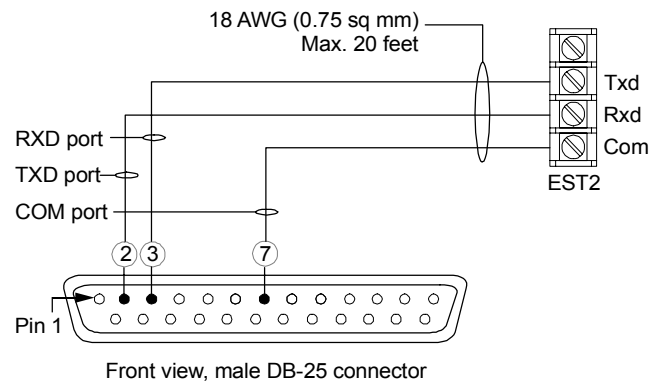Figure 15: IRC3 control panel with serial printer and IOP-3

Figure 16: Serial printer connected to a QuickStart panel