

Subchapter 4.10—Printers

Description

Three categories of printers are supported directly connected to HP e3000 Series 900 systems.

- Character printers tend to be less expensive yet versatile in capabilities, including the handling of multi-part forms.
- Line printers offer much of the same versatility and provide the lowest cost of operation and a highly reliable technology for larger volumes of printing. Some impact printers are as quiet as the HP LaserJet 4Si printer is, so they are suited to operate in office environments.
- Laser printers are quieter in the office environment and offer crisp, letter-quality output in a range of print speeds. High-speed page printers are most efficient for centralized production jobs, such as billing, invoicing, or mass customer communications.

Table 4.10.1 summaries various printers supported on the HP e3000 Series systems

Table 4.10.1 Types of Printers Available for e3000 900 Series Systems

Printer Type	Print Speed	Noise Level (dBA)	Print Quality
Dot-Matrix Impact Serial	40–480 characters per second	56–63	Near letter quality
Line Impact	300–1600 lines per minute	48–64	Near letter quality
Laser	8–210 pages per month	50	Letter quality

HP LineJet Printer (formerly the LP Series Printer family)

The HP LineJet Printers (line impact printers) combine versatility at reasonable cost with good print speed. Versatility can include graphics image and bar code printing and the ability to trade speed for better print quality. Good print speed means that a line impact printer can be used as the only printer on a system with modest-to-average printing requirements.

The HP LineJet printers combine print speed, flexibility, lowest print cost for volume range and great reliability even for heavy duty cycles and burst throughputs (unattended operation). Flexibility includes resolution from sparse to NLQ, raster and industrial graphics as well as electronic forms creation ability (requires the HP QMS or PGL graphics upgrade kit), multiple-part forms (up to 6 parts), noise ranges starting from 50 dBA, barcodes, postnet, and many font sizes and languages.

There are HP LineJet printers for office and for harsh environments. LineJet printers provide a wide range of connectivity from serial, parallel, and LAN interface via the LineJet Printer Manager or HP JetDirect EX. LineJet printers are ideal for data processing centers, accounting, checks, invoices, reports, distribution, circulation or where bar codes and automated identification process is needed.

With full-featured SAP R/3 system device types now available, the HP LineJet printers integrate directly with SAP applications. Reports, forms and bar code labels can be created in SAP R/3's applications and be printed on the LineJet printers without the need for additional printing middleware.

Targeted at the enterprise computing marketing, HP's LineJet printers provide high speed, reliable printing, especially for large, business critical print environments. The HP LineJet printers are for any application where good print quality and very low printing cost is required.

4.10.2 HP LineJet Printer Family

Printer Model	Product Number	Performance (lpm)	Monthly Duty Cycle Rating	Quietized	Available Field Upgrades
500P	C3201D*	500	130,000 pages	No	QMS Graphics, PGL Graphics
500Q	C3202D*	500	130,000 pages	Yes	QMS Graphics, PGL Graphics
1000Q	C3204D*	1000	205,000 pages	Yes	QMS Graphics, PGL Graphics
1500Q	C3205D*	1500	375,000 pages	Yes	QMS Graphics, PGL Graphics
1500Q w/power stacker	C5640D*	1500	375,000 pages	Yes	QMS Graphics, PGL Graphics

* Discontinued product, listed for reference purpose only.

4.10.3 Specifications (applies to all members of the LineJet and LP Series families)

Connectivity	Parallel, Serial (RS-232 or RS-422 at 4.8 KB to 38.4 KB), Network via HP LineJet Printer manager or HP JetDirect EX)
Number of character sets included	27
Number of symbol sets included	7
Number of bar code fonts included	10
Printer emulations and languages included	HP PCL Level 2, Epson FX-1050, Printronix P-Series, Proprinter XL III
Optional printer languages	QMS (Code V-II)*, Printronix Graphics Language, PGL Graphics
Control panel languages	English, Spanish, Italian, French, German
Multi-part forms	Up to 6 parts with carbons, up to 4 parts with carbonless

* QMS graphics provides HP Label Card II Compatibility

Laser Printers

Laser printers combine excellent print quality with print speed—faster than the fastest, dot-matrix serial printers at higher cost. Laser printers are recommended for systems with average printing workload in which high print quality is important.

HP 5000 Fanfold Printers

HP 5000 printers are supported on HP e3000 900 Series systems through a dedicated SCSI (small computer system interface) interface channel. The CIO SCSI Host Adapter Card (27251A) and HP-PB SCSI Host Adapter Card (28642A) are industry-standard local I/O busses that allow computer connections to certain peripherals. They support the SCSI common command and message set, as well as asynchronous and synchronous data transfers.

Requirements:

- MPE/iX 4.0 or later
- CIO SCSI Host Adapter Card (27251A) or HP-PB SCSI Host Adapter Card (28642A)
- Fiber-optic SCSI extender (28643A) with one distance option (AFB or AFD)
- One additional SCSI cable from extender to printer

Configuration Limitations:

- Only one HP 5000 printer per SCSI channel
- Up to four HP 5000 printers per system, depending on slot availability
- The SCSI Host Adapter Card includes 2 meter cable
- The SCSI channel has to be configured at address 7 (factory standard)
- Configuring without the SCSI extender will not meet most customer's distance requirements

Fiber-optic SCSI Extender Support

The extender overcomes the SCSI distance limitation. By delivering up to 100 meters, the HP 28643A provides the flexibility to place the HP 5000 printers in locations more convenient to and efficient for users. The extender comes in two lengths, 50 meters and 100 meters, and provides industry-standard SCSI compatibility.

HP 28643A includes two extender assemblies, two 19-inch rackmounting brackets, one install/reference manual, and one loopback test connector. Option AFB provides 50 meters distance, option AFD provides 100 meters. Additional SCSI cabling must be ordered to attach from the remote extender to the printer. The products are:

- 92222A—.5 meter male-male
- 92222B—1 meter male-male
- 92222C—2 meter male-male
- 92222D—1 meter female-male

For distances greater than 100 meters, the HP Router can be used to extended LAN networking.

HP 5000 Cut Sheet Printers

HP 5000 cut sheet printers (C-Series and D-Series) are supported on HP e3000 Series 900 systems through LAN or serial connection. LAN connection is via the HP JetDirect EX external network interface. The HP JetDirect EX interface provides an intelligent connection between the integrated parallel port of an HP 5000 cut sheet printer and the LAN.

HP 5000 cut sheet printers can also be connected to HP e3000 Series 900 systems by means of a serial port on a DTC. For acceptable performance it is recommended that the DTC port have a speed of 38.4 Kbaud and that only light text with simple electronic forms be printed. Configuration should be similar to HP LaserJet 4Si printer configuration.

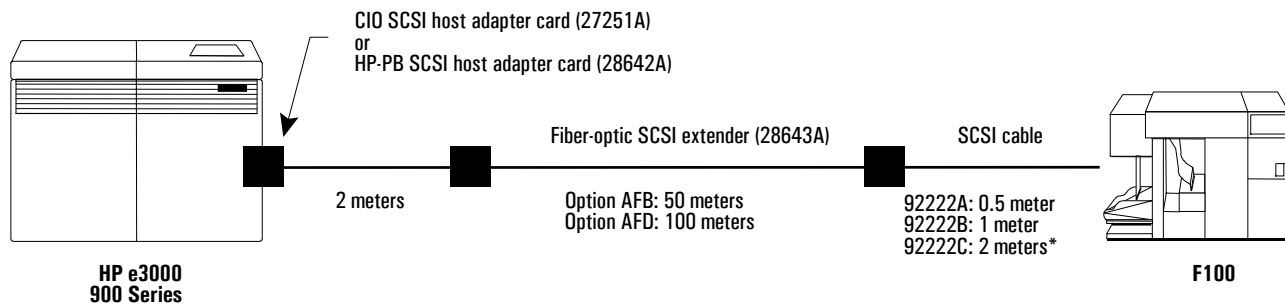
LAN Connection Requirements

- MPE/iX 5.5 or later
- HP JetDirect EX External Network Interface (J2591A or J2593A)
- Parallel Cable (C2950A or C2951A)

Serial Connection Requirements

- DTC with 38.4 Kbaud port; use Term Type 22
- Serial cable

Figure 4.10.1 HP 5000 F100 Cabling Alternatives



* Recommended for extender to printer connection

Serial Printers

900 Series systems support spooled serial printers through the Data Communications and Terminal Controller (DTC). Serial printers connect to a DTC port either via a hardwired RS-232/422 cable or via a modem.

Serial Printing Interfacing

Serial printers are considered either “local spooled” or “remote spooled” when connected to a 900 Series system. Local spooled printers are hardwired to the DTC via either RS-232C or RS-422. Remote spooled printers connect to the DTC via a modem.

Status Checking

If the serial printer supports the “ESC-?” status checking capability, the MPE Spooler or “hot” printing application has the ability to determine whether a printer is on-line before spooling the print job. This will prevent the data from being sent (and lost) to a printer that is out of paper or encountered a fault condition.

With status checking, if the printer goes off-line for any reason, the spooler will stop printing, save the print job, and automatically resume printing when the printer comes back on-line. Without status checking, printer faults or out-of-paper conditions cannot be detected. The spooler will always send the print job “blind” and purge the spoolfile assuming it printed successfully. The spoolfile will then have to be re-created in order to restart the printing process.

With the exception of some HP LaserJet models and the HP 5000 cut sheet printers, all supported serial printers provide the status-checking feature as standard. All printers with the status checking feature are configured as Term Type 26, with the exception of the HP 5000 C-Series and D-Series printers which should be configured as Term Type 22.

On the HP LaserJet IID, LaserJet III, and LaserJet IIID printers, a status checking card (26013A) is installed in the printer to support the status-checking feature. On the LaserJet IIISi, a special MIO RS-232 card (C2059H) must be installed in the printer to provide status checking. In each of these cases, the status-checking feature is ordered separately.

If the status-checking feature is not installed in an HP LaserJet IID, LaserJet III, LaserJet IIID, or LaserJet IIISi, these printers would be configured as Term Type 18.

On the HP LaserJet 4Si, 4Si MX, 4, and 4M, a third party status checking card (such as Excellink's JetCard/MIO-3000) is required for status checking capability.

All the line impact serial printers support status checking. There is no need to purchase extra hardware or software.

LAN Printers

LAN-based printers offer convenience, speed and connectivity that is difficult to achieve with serial-connected printers. LAN-connected printers can be located in workgroups through the same LAN used to connect PC workstations to the HP e3000. LAN-based printing is supported with MPE/iX version 5.5 and later.

The JetDirect series LAN interfaces provide the LAN connection for the HP LaserJet, HP 5000 cut sheet page printers, and line impact printer families. MPE/iX supports two network protocols for LAN-based printers, NetWare and TCP/IP.

The LineJet Printer Manager provides a LineJet Network print server and LineJet Printer Manager firmware. The internal interface provides the LAN connection for the HP LineJet Printers, providing status information and network control of any LineJet printer; utilizing a Java-based software application. The LineJet Printer Manager is integrated in the 1000Q and both 1500Q models. It is an option for the 500 models.

With NetWare for the HP e3000 PC based applications can print directly to NetWare print queues serviced by LAN printers using the HP JetDirect interfaces for Novell NetWare (Ethernet/802.3 or Token Ring). MPE-based applications can also print to these LAN printers with MPE/iX Release 5.5 or later, or using a third-party product such as Quest, Unison, or Holland House.

HP provides network printing solutions to address customers' needs to print from the MPE spooler to a network printer with the HP JetDirect card, or the option to use NetWare on the HP e3000 to print MPE spool files.

Consult your local HP representative regarding the availability of third party solutions and/or applications programming interfaces that could be used in conjunction with NetWare or TCP/IP on the HP e3000.

P405 Multi-purpose Impact Printer Solution

The PSYPAMER (P405 dot matrix printer localized for North and Central Americas) product was obsolete on July 1st, 2001. A 100% comparable PSYPAMER product is available through our OEM, PSI at 285 North Drive, #F, Melbourne, FL 32934. (Phone: 321-254-1946; Fax: 321-242-0258; email: psi-us@inetmail.att.net)

PSYP405P (P405 European version) still available in only two countries, UK and France. For the rest of Europe, please contact PSI Europe (see below).

All the product accessories are still available in UK and France. Outside of these two countries, you can order these products through PSI (see above for the US), and PSI Europe (Phone: +49 271 3597 361, email: p405-support@psi-si.de)

Description

The P405 is a multi-purpose, industrial-strength, dot matrix impact printer.

Features

The P405 has a 24 needle, robust print head that enables high speed, quality printing at a rate of 600 cps in draft mode and 150 cps in letter. This printer is capable of printing multi-part stationery in one pass using carbonized paper and also has the ability to print forms, graphics and bar codes using a wide variety of fonts. The P405 can handle both cutsheet and fanfold stationery and the flatbed design enables easy paper loading and reliable paper feeding. The P405 is also equipped with a feature for printhead gap adjustment. This printer comes with serial and parallel ports as standard but can also be connected to a LAN via a separately purchased HP JetDirect box. The P405 is PCL3 compliant and has built-in HP2934 and HP2235 emulation that is unique to HP.

Table 4.10.4 P405 Specifications

Feature	P405 Printer
Type	24-pin dot matrix
Throughput	500 pages per hour
Monthly workloads	20,000 pages
Paper inputs	5
Paper outputs	3
Number of copies	6
Number of fonts	13
Emulations	HP2934/2235 emulation; IBM Proprinter XL24; Epson LQ2550/1060

Power Supply

The P405 is available:

- European version: 200-240V/48-63 Hz
- US version: 100-120V/48-63 Hz

Power Consumption

160 watts (standby – 40 watts)

Support

The P405 is available with HP Response Center support. In Europe and AAA, next day on-site support is bundled with the product. For the Americas, support is purchased using Comet Options. The P405 is supported as a PCL3 device and is HP2934 and HP2235 compatible.

Requirements

Cables

To connect the P405 to and HP e3000 system, order RS-232C cable (25/25-pin, 4.5-meters)

LAN Connection

- LAN capabilities via JetDirect EX Plus Print Server (J2591A) using a standard Centronics parallel cable (i.e., C2950A 2-meter Centronics cable)