

A comprehensive range of standard peripheral equipment is available for use within the system, and where it is required non-standard and customer built devices may be connected either separately or in conjunction with standard equipment.

The standard peripheral devices currently available includes:

Input/Output Typewriters

P841-101 Normal ASR typewriter including paper tape reader/punch, current loop interface.

P841-105 The same as P841-001 but with V24 interface.

P842-001 PER3100 Matrix printer with keyboard, V24 interface.

P842-002 PER3100 Matrix printer with keyboard, current loop interface.

Punched Tape Equipment

P801-001 Punched Tape Reader, 333 char per sec.

P802-001 Punched Tape Reader, 600 char per sec.

P803-001 Tape Punch, 75 char per sec.

Card Reader

P806-102 Punched card reader, 300 cards per minute.

Line Printers

P809-002 Matrix line printer, 200 lines per minute, 132 col.

P811-001 Line printer, 245 lines per minute, 132 col.

P812-001 Line printer, 670 lines per minute, 132 col.

P842-003 PER3100 Matrix printer without keyboard, V24 interface.

P842-004 PER3100 Matrix printer without keyboard, current loop interface.

Cassette Tape Equipment

P833-001 Cassette tape drive unit, 7.5 ips, 800 bpi.

Magnetic Tape Equipment

P831-002 Magnetic tape drive, 25 ips, 800 bpi, 9-track.

P831-004 Magnetic tape drive, 45 ips, 800 bpi, 9-track.

P831-006 Magnetic tape drive, 37.5 ips, 1600 bpi, 9-track.

Magnetic disc equipment

P824-002 Moving head disc drive, 2.7M bytes

P825-007 Moving head disc drive, 40M bytes

Display Equipment

P818-001 Display, current loop interface.
P818-002 Display, V24 interface.

POWER SUPPLIES

The necessary power supplies for all the standard peripheral devices are produced by either self-contained power supply units or by a separate unit mounted together with the device in either the basic cabinet or an equipment shelf. Power supplies for the associated control unit are derived from the power supplies within the mounting boxes and equipment shelves or from the peripheral's separate power supply.

CONNECTION TO THE SYSTEM

The connection of standard peripheral devices to the system is carried out using a control unit and transfers will take place via the programmed or an input/output processor channel. Using either the programmed or an input/output processor channel, transfer rates up to the maximum operating speed of the device are possible and in normal circumstances these rates will always be maintained, the rate only being reduced when the servicing of the programmed or input/output processor channel concerned is slow.

CONTROL UNITS

Certain control units which are connected directly to the general purpose bus are of a multiple type (MCU), that is more than one control unit is mounted on a single printed circuit board. The configuration of MCU's and the availability of control units for connection to the system are:

Multiple Control Units (MCU's)

Multiple control units for use with PTR, PTP, V24 serial CU, LP and CR are available in the following configurations:

1. PTR/PTP/V24 serial CU.
2. PTR/PTP.
3. LP/CR.

CU's for all the devices mentioned above except the PTP and CR are also available as single control units.

Connection details for standard control units

Type Number	CU	Channel Connection		Int/Breaks	Remarks
		Prog. Chan.	I/O Proc.		
P801-040	PTR	x	o	1	separate CU
P840-001	PTR	x	o	2	multiple CU
	PTP	x	o		
P840-002	PTR	x	o	3	multiple CU
	PTP	x	o		
	V24	x	o		
P840-003	CR	o	x	2	multiple CU
	LP	o	x		
P810-040	LP	o	x	1	separate CU
	V24	x	o	1	separate CU
P845-040	V24	x	-	1	integrated on CPU
	V24	x	-	1	integrated on CPU
P831-040	MT	o	x	1	CU for 4 drives
P824-040	Disc	-	x	1	CU for 2 drives
P825-040	Disc 40 Mb	-	x	1	CU for 2 drives
P833-152	Cass Tape	x	x	1	CU for 3 drives
P837-001	DIOD 2 words	o	o	1	
P837-002	DIOD 4 words	o	o	2	
P847-060	SLCU2S	x	x	2	
	SLCU4	x	x	4	
P846-060	ALCU2	x	x	2	
P846-070	ALCU4	x	x	4	
P845-060	AMA8A	x	x	2	
P845-070	AMA8C	x	x	2	
P844-060	AMA16	x	-	1	
P844-110	V28CM	x	-	1	

Note: o means that connection to the channel is possible but not supported by standard software.

- x connection supported by standard software.
- connection not possible to the channel.

The connection of non-standard devices to the system must also be made via a control unit and standard boards are available on which the customer may assemble his own control units. Boards are available without any logic circuits (printed circuit boarding) or with standard address and function decode logic and interrupt encoding already mounted and connected (General Purpose Cards).

INPUT/OUTPUT TYPEWRITERS

P841-101 Typewriter

Figure 17.1 shows the P841 typewriter.

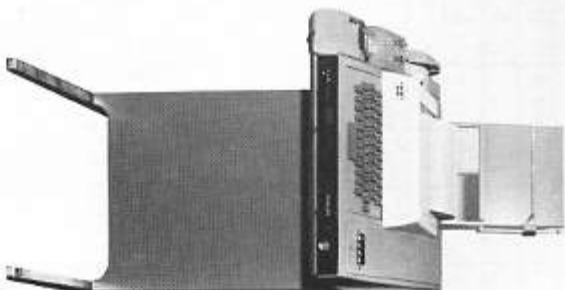


Figure 17.1

The P841-101 is a normal duty typewriter (ASR33) with attached paper tape reader/punch equipment. All the facilities operate at a maximum transfer speed of 10 characters per second, and may be operated on or off line to the system, switching being carried out at the typewriter.

Connection to the System

Connection to the system is with current loop interface.

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Main Controls

Mode Switch - A three position switch mounted on the front of the typewriter, used to control the mode of operation of the typewriter.

OFF Typewriter switched OFF.
LOCAL Typewriter and paper tape equipment are operative but are not connected to the system.
LINE Typewriter and paper tape equipment are operative and connected to the system.

Paper Tape Reader Switch - A three position switch mounted on the top of the paper tape reader.

START Paper tape reader is started manually if the Mode Switch is in either the **LINE** or **LOCAL** position.

NEUTRAL Paper tape reader is operative and may be started or stopped by the system if the Mode Switch is in the **LINE** position.

STOP Paper tape reader is stopped manually by pressing the switch towards the free position.

FREE The paper feed is freed and the tape may be repositioned in the reader without completely releasing it from the mechanism.

Paper Tape Punch Controls - Four individual push button controls mounted on the top of the punch.

ON The punch is started manually if the Mode switch is in either the **LINE** or **LOCAL** position.

OFF The punch is stopped manually.

Note. The punch may be started and stopped by the system if the mode switch is in the **LINE** position.

REL The tape is released and may be threaded through the punch as required.

BS The tape is back spaced one character each time the button is depressed. This facility should only be used when the punch is operating **LOCAL** and is stopped.

Basic Specifications

Operating Speed	- 10 characters per second.
Size	- Width 560 mm, Height 1140 mm, Depth 470 mm.
Weight	- 25 Kilograms.
Paper Width	- 216 mm.
Power	- 300 V.A.

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Operating Temperature - 0 - 43°C.
Relative Humidity - 20 - 80%

P841-105 Typewriter

This typewriter is the same as the P841-101 but with V24 interface. It may be connected to the integrated V24 control unit or the multiple control unit, or asynchronous Data Communication control units.

P842-001 PER3100 Matrix Printer

Figure 17.2 shows the P842-001 matrix printer and keyboard with V24 interface.

The P842-001 matrix printer and keyboard offers the same basis facilities as the typewriter without attached paper tape equipment. It is capable of near silent operation at up to 50 characters per second and may use peg or friction fed paper of various widths, multiple copies being available when peg fed paper is used.



Figure 17.2

Line spacing of 1, 1½, or 2 normal lines and LOCAL/ON LINE/OFF operation are selectable at the printer. Various keyboard layouts and character sets are available, including the possibility of up to 7 special characters on option.

Connection to the System

Connection to the system may be via the programmed or input/output processor channel and is made via the V24 serial control unit.

In all cases the maximum printer speed is 50 characters per second although the actual speed of transfer will depend on the control unit, interfacing, and program being used. The available interface boards enable: transfer speeds of 100-9600 baud to be selected in specific steps. Where transfer rates of above 50 characters per second occur or in the case of certain special characters the controlling program must insert sufficient null characters to avoid the loss of data.

Main Controls

Power On/Off Switch - An external two position switch, used by the operator to switch the mains power to the printer On or Off.

Operational Switch - An external two position switch, used by the operator in certain cases to make the printer operable.

Continuous Line Feed Switch - An external spring loaded switch, which whilst depressed causes line feeding of the paper to occur continuously.

Apart from the mentioned switches internal links exist on the standard interface boards within the printer, for the selection of line speed and to enable an echo print facility if this is required.

Basic Specifications

Operating Speed

- Up to 50 characters per second.

Size

- Width 510 mm, height 170 mm, Depth 310 mm, without keyboard, 465 with keyboard.

Weight

- 20 Kilograms.

Paper Width

- 231.8 mm, 203.2 mm and 314.3 mm (perforation distance).

Peg Fed

- 148 mm to 306.3 mm.

Friction Fed

- 100 VA Average.

Power

- 100 VA Average.

Operating Temperature

- 10° - 40°C operating.

Relative Humidity

- 20 - 80% operating.

P842-002

This is the same printer as the P842-001 but with current loop interface and the following additional switches:

Line Spacing Switch - A three position switch mounted on the KSR interface board and used to select the required line spacing when the KSR interface board is fitted.

Mode Switch - A three position switch mounted on the KSR interface board within the printer and easily accessible by the operator. The switch is used to control the mode of operation of the printer when the KSR interface board is used:

OFF Printer does not accept either line or keyboard inputs. The main power supply to the printer is not effected by this switch and may be ON.

LOCAL Printer interface is operable from the keyboard only, no line signals are sent or accepted by the printer.

ON LINE Printer interface is operable and may accept both line and keyboard inputs. Keyboard inputs are also retransmitted as line outputs.

P842-003 As P842-001, but without keyboard.

P842-004 As P842-002, but without keyboard.

PUNCHED TAPE EQUIPMENT

P801-001 Punched Tape Reader

Figure 17.3 shows the P801-001 Punched tape reader.

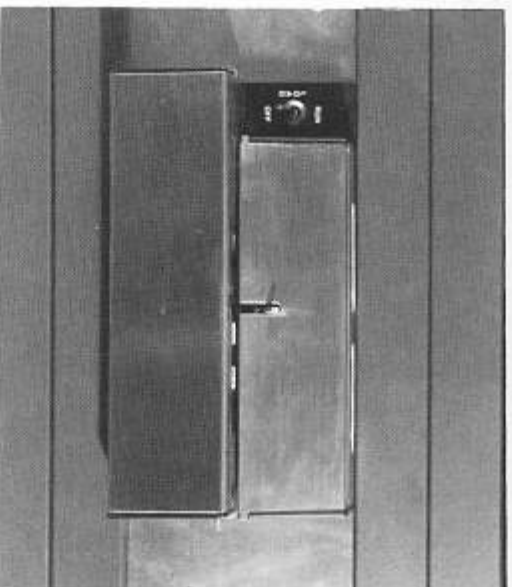


Figure 17.3

The P801-001 punched tape reader provides the system with the ability to read a wide range of punched paper tapes at a speed of up to 333 characters per second.

The reading assembly is of the photo-electric type and raises data and timing signals at TTL levels, 8 data channels and 1 timing channel being available. The Tape drive unit controls the movement of the tape across the readhead via a drive motor and associated pinch roller and brake assemblies. No adjustment to the pinch roller is necessary when tapes between 0.064 to 0.124 mm (0.0025" to 0.005") thick are used and adjustment for 17.5 mm, 21.4 mm, or 25.4 mm (11/16", 7/8", or 1") wide tape is carried out by an externally mounted control.

Connection to the System
Connection to the system may be via the programmed or an input/output processor channel.

Mounting

The complete reader, including power supply, is assembled for mounting in a standard 19" rack and may be fitted into either the basic or an extension cabinet.

Main Controls

Power Switch - A three position switch mounted on the front panel of the reader, used for switching the power on the reader.

OFF No power is switched on to the reader.

LOAD Power is supplied to the drive unit motor and reading unit, the pinch roller and brake assemblies are clear of the tape track to allow loading.

RUN Power is supplied to all the reader circuits and the reader operates under the control of the system.

Tape Width Selector - An adjustable control mounted on the side of the reader. The control is lockable and is used to adjust the tape guide mechanism as required.

Tape Load Lever - An external control on the front of the reader, used to disengage the front tape guide and allow insertion of the tape.

Basic Specifications

Operating Speed

- 333 characters per second.
- Width 483 mm, Height 133 mm,
- Depth 203 mm.

Weight

Tape Size

- 15 Kilograms.
- Width 17.5 mm, 21.4 mm, 25.4 mm (11/16", 7/8", 1") selectable.

Power

- Depth 0.064 to 0.124 mm (0.0025" to 0.005") 14.12

Operating Temperature - 0 - 45°C.

Relative Humidity - 20 - 80%.

P802-001 Punched Tape Reader

In all respects apart from maximum operating speed the P802-001 is the same as the P801-001 Punched tape reader.

Operating Speed - 600 characters per second.

P803-001 Paper Tape Punch

Figure 17.4 shows the P803-001 Paper Tape Punch.



Figure 17.4

The P803-001 paper tape punch provides the system with the ability to produce a punched paper tape output at a rate of up to 75 characters per second on various width tapes. No adjustment is necessary for tapes of 0.08 to 0.11 mm (0.0031" to 0.0047") thickness and the punch may be set to accept tape of between 17.5 mm (11/16") and 25.4 mm (1") in width. Both supply and take up bobbins are fitted and can be used with reels of tape up to 20 cm in diameter. The punch includes its own power supply.

Connection to the System

Connection to the system may be via the programmed or an input/output processor channel.

Mounting

The punch is available assembled for mounting in a standard 19" rack or as a free standing unit.

CARD READER

P806-102 Card Reader

Figure 17.5 shows the P806-102 card reader.

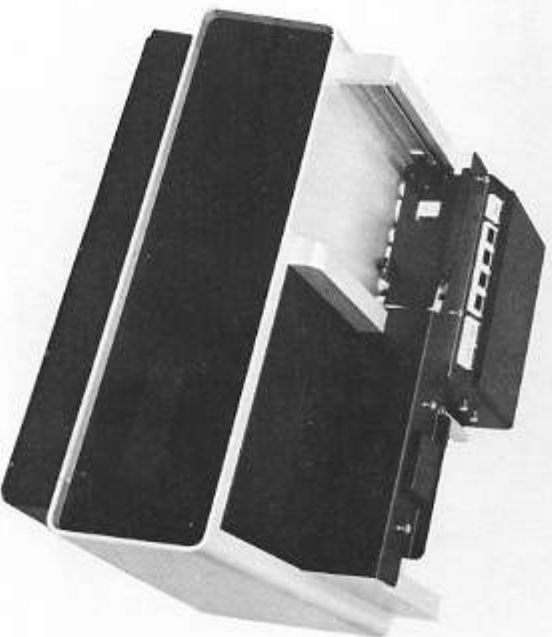


Figure 17.5

The P806-102 card reader provides the system with the ability to read data from 80 column cards at a transfer rate of up to 300 cards per minute. Card handling facilities in the form of an input hopper and output stacker enable the reader to handle up to 1000 cards without operator intervention for loading. The reader is of the photo electric type and employs a straight through card track with a vacuum picking mechanism, providing almost jam free operation and extremely long card life.

The reader is free standing and includes its own power supply.

Main Controls and Indicators

Power On Switch - A two position switch mounted externally, used to switch the mains power to the punch On or Off.

DC On Switch - A two position switch mounted to one side of the Power On switch, used to switch the internal d.c. supply to the punch.

Tape Feed Switch - A two position switch mounted externally and spring loaded to the off position. When the switch is depressed tape is fed from the supply reel to the take up bobbin without punching.

Feed Holes/Code Switch - A three position switch mounted externally and spring loaded to the central, off, position. When the switch is depressed tape is fed from the supply reel to the take up bobbin and either feed holes only or feed holes and code holes in all tracks are punched, with respect to the depressed position of the switch.

Apart from the main controls, indicator lights are mounted externally to indicate: d.c. power on, supply tape low, and certain errors. Internal switches are also fitted to control the take up bobbin.

Basic Specifications

Operating Speed	- 75 characters per second
Size	- Width 330 mm, height 190 mm, Depth 432 mm.
Weight	- 13 Kilograms.
Tape Size	- Width 17.5 to 25.4 mm (11/16 to 1") Thickness 0.08 to 0.1 mm (0.0031" to 0.0043").
Power	- 180 VA max.
Operating Temperature	- 0 - 45°C operating.
Relative Humidity	- 20 - 80% operating.

Connection to the System
Connection to the system may be via the programmed or an input/output channel.

Main Controls

Power On/Off Switch - A two position switch mounted externally on the back of the reader, used to switch the mains power to the reader On or Off.

Mode Switch - A three position switch mounted externally on the back of the reader, used to select the mode of operation of the reader:

OFF The reader is inoperative.

LOCAL The reader is operative under the control of the operator.

REMOTE The reader is operative under the control of the system.

Reset Switch - A push button switch mounted externally on the front of the reader, used to start or restart the reader in certain modes.

Stop Switch - A push button switch mounted externally on the front of the reader, used by the operator to stop the reader as required.

Apart from the main controls, lamps are provided to indicate the state of the reader and other switches are provided for the testing of the lamp and the setting of the reader for automatic or manual shutdown when necessary.

Basic Specifications

- Operating Speed
 - 300 cards per minute.
 - Width 58.6 cm, height 41.2 cm,
 - Depth 45.7 cm.
- Weight
 - 34.4 Kilograms.
 - Standard 80 column card.
- Card Specifications
 - 1650 VA starting, 600 VA running.
- Power
 - 15 - 25°C Limits imposed by cards.
- Operating Temperature
 - 50 - 70%.
- Relative Humidity

LINE PRINTERS

P809-002 Matrix Line Printer

Figure 17.6 shows the P809-002 matrix line printer.

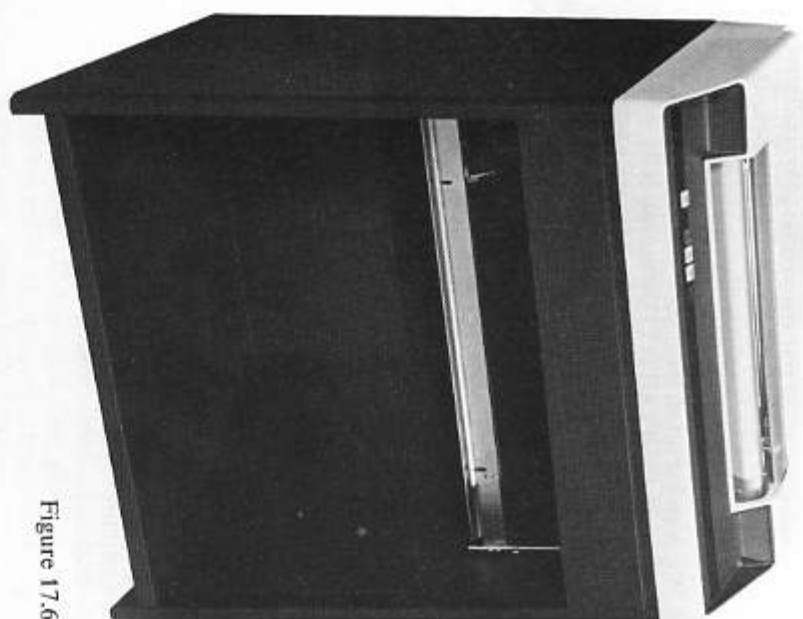


Figure 17.6

The P809-002 matrix line printer provides the system with the ability to produce a printed output at a rate of up to 200, 132 column lines per minute on standard fan folded paper, with a character set of 72 characters. Where necessary an output can be to a preset format and adjustment is possible to accommodate a paper width between 100 and 440 mm. The carriage is a shuttling bar mounted on a support which moves in the horizontal plane between two side plates. The printer is a free standing unit and includes its own power supply.

Connection to the system
Connection to the system may be via the programmed channel or input/output processor channel.

Main Controls

POWER ON - A pushbutton indicator holding switch mounted externally used to switch the main power to the printer on and when pressed again, off.

START/STOP - A pushbutton momentary indicator switch mounted externally. When pressed the indicator is lit and the printer is operational. When pressed again the indicator light is extinguished and the operator can use the **TOP OF FORM** and **SINGLE LINE** pushbuttons.

TOP OF FORM - A pushbutton momentary switch mounted externally whose action is inhibited when the **START/STOP** button is lit. When pressed in **STOP** mode the paper is advanced to the next top of form position.

SINGLE LINE - A pushbutton momentary switch mounted externally whose action is inhibited when the **START/STOP** button is lit. This pushbutton allows to advance the paper one line.

ERROR - An indicator which is lit when an error condition occurs.

Basic Specifications

- Operating Speed - 200 lines per minute.
- Line Length - 132 characters.
- Size - Width 700 mm, height 800 mm, Depth 460 mm.
- Weight - approx. 80 Kilogram.
- Paper Specification - Single Copy 15 lb bond min. Multiple Copy up to 5 parts 11 lb bond with interleaved carbon. Paper width 100 - 440 mm.
- Power Consumption - 300 VA.
- Operating Temperature - 10 - 40°C.
- Relative Humidity - 20 - 80%.

P811-001 Line Printer

Figure 17.7 shows the P811-001 line printer.



Figure 17.7

The P811-001 line printer provides the system with the ability to produce a printed output at a rate of up to 245, 132 character, lines per minute on standard fan folded paper. Where necessary an output can be to a preset format and adjustment is possible to accommodate various widths of paper, either single or multiple copies being available.

The printer is of the drum type with a character set of 64 characters, is free standing, and includes its own power supply.

Connection to the System

Connection to the system may be via the programmed or an input/output processor channel.

Main Controls

Power On/Off Switch - A two position switch mounted externally on the top of the printer, used to switch the main power to the printer On or Off.

