

Model 220

THERMAL LINE PRINTERS

CONTENTS	1	Installation	2
	2	Preparation for Operation	6
	3	Host Control - On Line Mode	8
	4	Errors and Error Handling	8
	5	Performance Specifications	12

Printrex produces high performance thermal line printers for Original Equipment Manufacturers.

These printers feature an innovative, integral paper handling system that permits the user to reload paper in seconds without any threading or alignment. The operator simply inserts the paper carrier, closes the door and is ready to print.



FEATURES

Multiple Configurations-Printrex Thermal Line Printers are available in different configurations to meet the requirements of the OEM market.

Model 220- Complete printer with power supply and covers.

Model 220P- Panel mounted unit that requires +5 Vdc and +24 Vdc.

Model 220R- Printer and power supply configured on a chassis with front panel ready for installation in a 19 inch rack.

Industry Standard Interface- The Centronics-type 8-bit ASCII parallel interface prints 224 characters.

Serial I/F Option- A serial-to-parallel converter is available.

Fast Print Speed - 8 lines/sec.

Selectable Character Pitch- Nominal character density of 12.5 or 25 characters per inch can be selected.

Printrex 212/215 Emulation- A jumper option causes the 220 to print 20 characters per line in standard mode providing software compatibility with the earlier Printrex Model 212/215 in alphanumeric mode.

Print Orientation- Normal or inverted printing.

Text Mode Controls- Compressed, double width and height, bold, normal and reverse image; 6.25 or 12.5 lines/inch selectable.

Graphics Modes- Character graphics and full bit-mapped graphics.

Dynamic Sensitivity Control- Maintains optimum print intensity over a wide range of printing conditions.

Data Input Buffer- 528 byte buffer allows the host system to dump to the printer.

No Power Sequencing Required- Simplifies the power supply design for the OEM integrating the panel mount printers.

Microprocessor Watch Dog Protection- Provides protection for high cost components in the printer.

Brown Out Protected Electronics- Provides additional protection during low line conditions.

INSTALLATION

Mounting

As shown in Figure 1, the panel-mount versions have a 0.10 inch (2.54 mm) front mounting flange and four mounting holes (two on each side) threaded for either #10-24 or M5 metric screws as specified. The printer may be mounted with its front panel rotated 30° downward through 90° upward from the true vertical.

The Model 220R consists of the printer and power supply mounted on a chassis with a 5-1/4 inch front panel (see Figure 2). This assembly is ready to install in a standard 19-inch rack.

Panel Mount Power Requirements

+5 Logic Supply:	+5 Vdc ±5% at 220 mA max. (170 mA typ.)
+24 Head Supply:	+24 Vdc ±10% (see current requirements in the following table)

The current requirement of the thermal head is approximately proportional to the percentage of dots printed. In text mode it is possible to print 25% of all the available dots (e.g., all 8's printed across the entire width), while up to 100% of the available dots can be printed in the graphics mode. The current requirements are:

Current from +24Vdc	
Average current when 25% of dots are printed:	0.7 A Typ 1.0 A Max
Average current when 100% of dots are printed:	1.8 A Typ 3.1 A Max
Peak Current:	2.6 A Typ 3.3 A Max

On board filtering is provided to ease the power supply design requirement:

+24 Vdc Supply:	440 µF Filtering
+5 Vdc Supply:	220 µF Filtering

A 4-position power connector, J2, is mounted at the rear of the printer as shown in Figure 3. The pin connections and part numbers are:

Pin 1:	+5 Vdc
Pin 2:	Logic Ground
Pin 3:	+24 Vdc Return Ground
Pin 4:	+24 Vdc

Connector on printer:	Molex (P/N 26-60-5040)
Connector mate:	Amp (P/N 643191-4)

This high force connector is specified because of the high peak currents on the +24 volt line when printing all black.

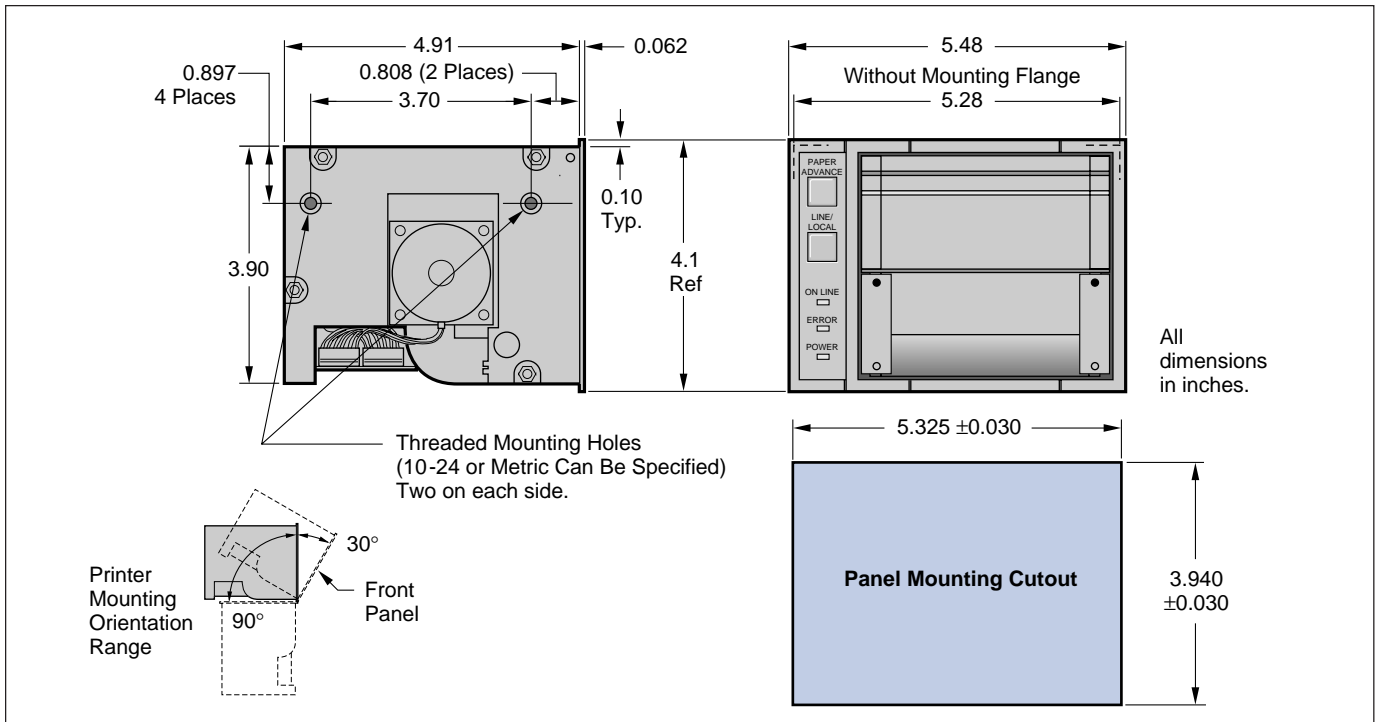


Figure 1. Panel Mounting Details

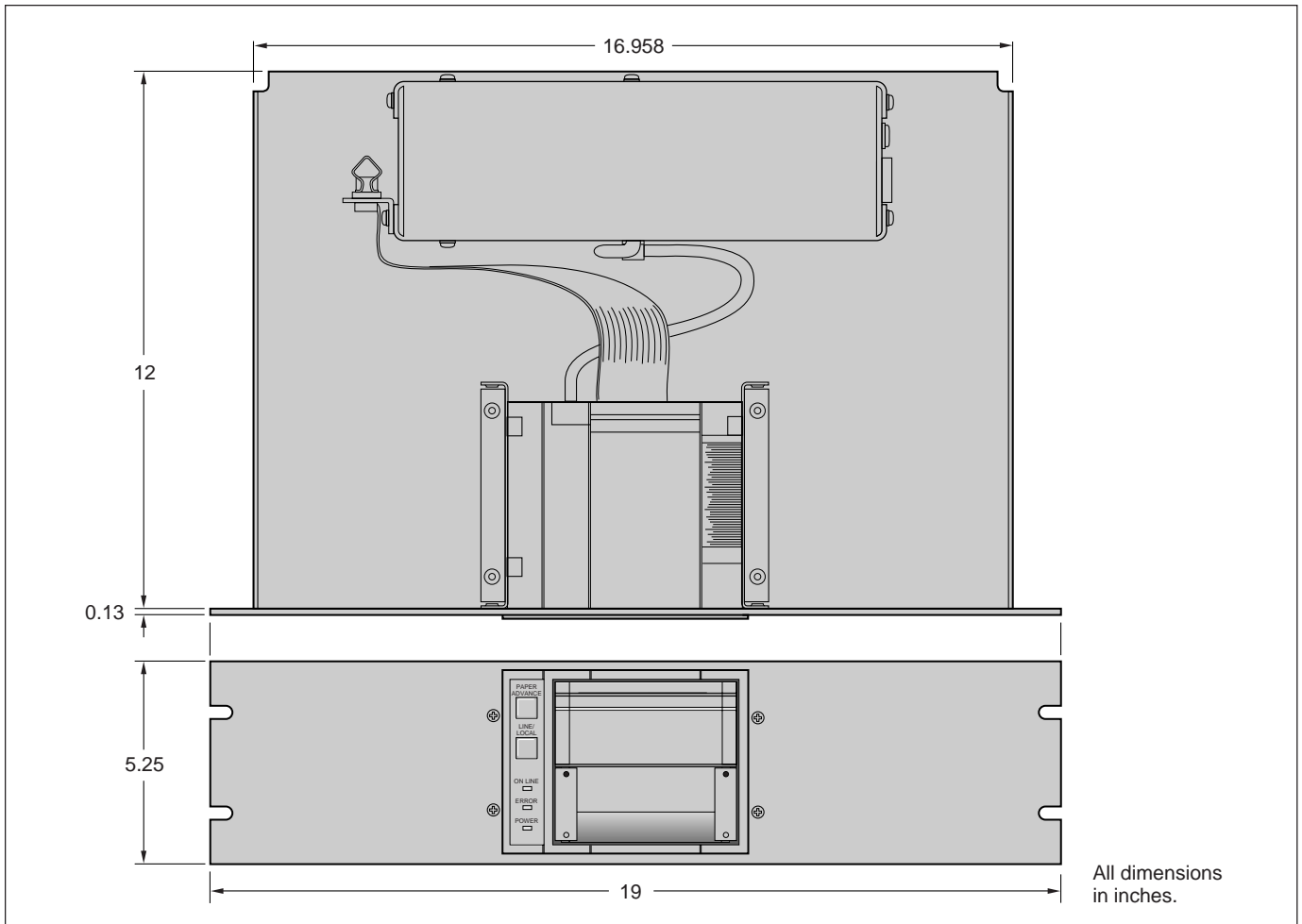


Figure 2. Rack Dimensions

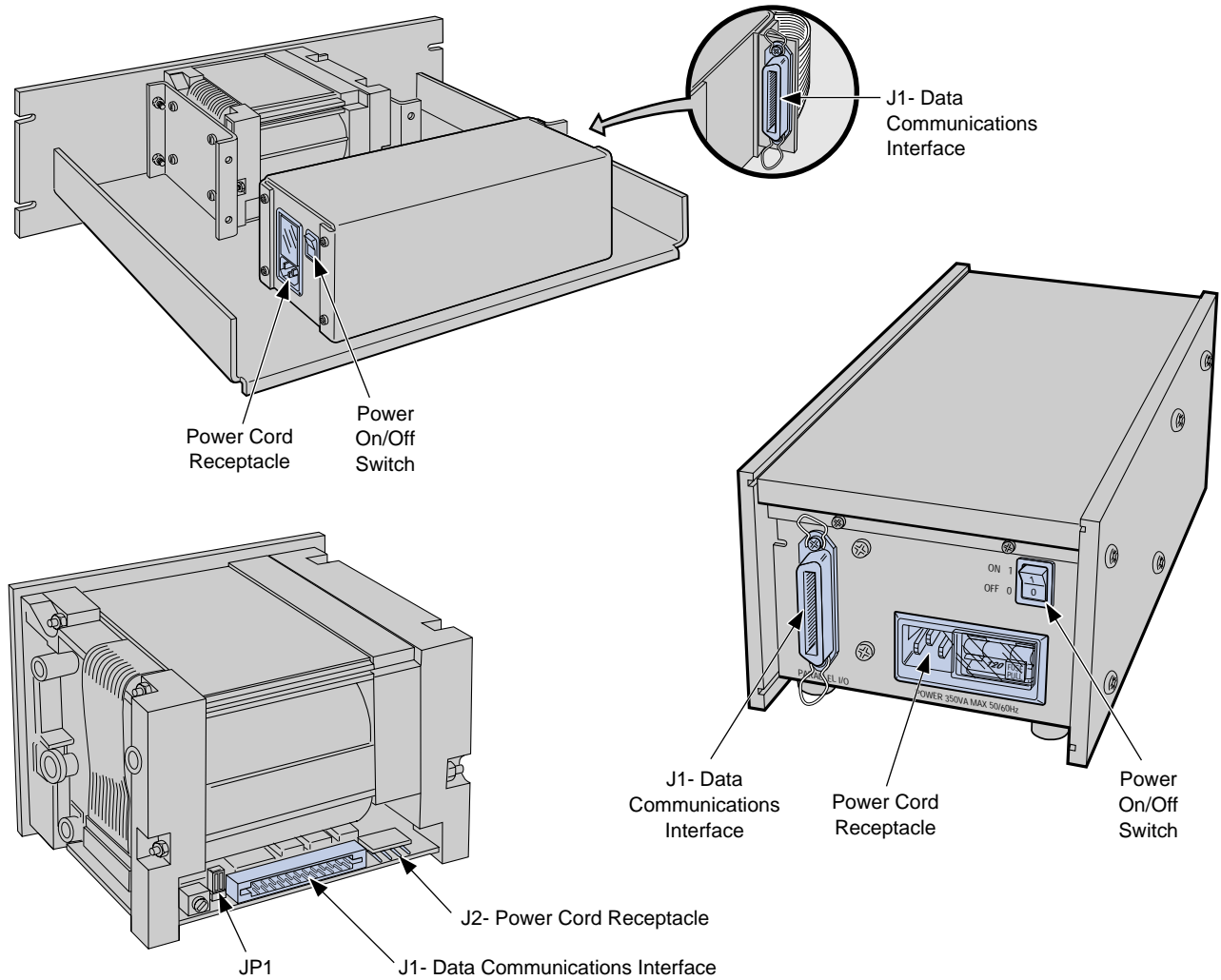


Figure 3. Power and Interface Connectors Locations

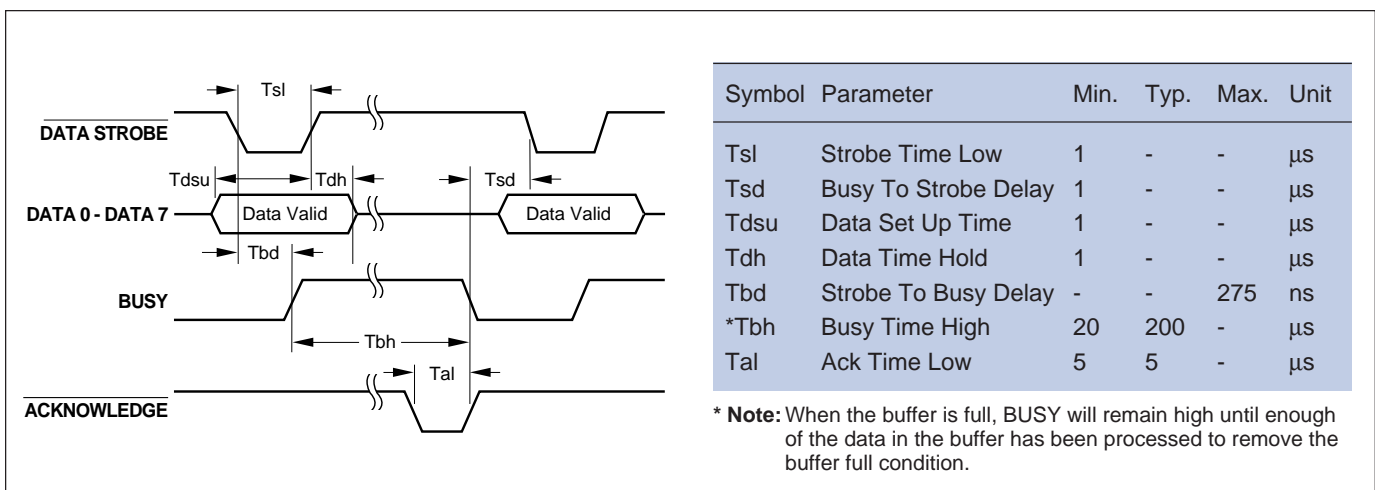


Figure 4. Parallel Interface Timing

Data Interface Requirements

The Centronics-type interface on the panel-mount version is through a 34-position connector, J1, mounted on the controller board at the rear of the printer. The data interface on the stand-alone and rack-mount versions is through a 36-position female Centronics-type connector, J1, mounted on the rear panel of the printer (see Figure 3). The pinout information is listed in Table 1.

Connector on panel-mount controller board:	Circuit Assembly Corp. (P/N CA-34 HLR-01 B)
Connector mating housing:	Circuit Assembly Corp. (P/N CA-34 IDS2-B-SPT)

Input and output signal timing characteristics for the parallel interface are shown in Figure 4. The printers have a 528 byte print buffer and continue to accept data from the host until the buffer is full. They resume data transfer when the buffer full condition is relieved.

Serial-to-Parallel Interface Converters

Optional interface converters adapt serial input signals from RS-232 or 20 mA Current Loop to the Centronics-type parallel signals used by the printer. Refer to Printrex publication #1028-0012 for information on these products.

Table 1. Data Interface Connector J1

Panel Mount Pin	Stand Alone Pin	Signal	Active	I/O*	Description	Panel Mount Pin	Stand Alone Pin	Signal	Active	I/O*	Description
1	1	Data Strobe	low	Input	Low pulse latches data	20	28	GND	-	-	Signal ground
2	19	GND	-	-	Signal ground	21	11	BUSY	high	Output	Printer unable to receive data
3	2	DB0	high	Input	Data bit 0	22	29	GND	-	-	Signal ground
4	20	GND	-	-	Signal ground	23	12	Paper Empty	high	Output	Indicates out of paper condition
5	3	DB1	high	Input	Data bit 1	24	30	GND	-	-	Signal ground
6	21	GND	-	-	Signal ground	25	13	Online	high	Output	Indicates printer selection
7	4	DB2	high	Input	Data bit 2	26	31	Init	low	Input	Initialize Printer
8	22	GND	-	-	Signal ground	27	14	N.C.	-	-	
9	5	DB3	high	Input	Data bit 3	28	32	Fault	low	Output	Indicates error condition
10	23	GND	-	-	Signal ground	29	15	N.C.	-	-	
11	6	DB4	high	Input	Data bit 4	30	33	N.C.	-	-	
12	24	GND	-	-	Signal ground	31	16	GND	-	-	Signal ground
13	7	DB5	high	Input	Data bit 5	32	34	N.C.	-	-	
14	25	GND	-	-	Signal ground	33	17	N.C.	-	-	
15	8	DB6	high	Input	Data bit 6	34	35	N.C.	-	-	
16	26	GND	-	-	Signal ground	-	18	N.C.	-	-	
17	9	DB7	high	Input	Data bit 7	-	36	N.C.	-	-	
18	27	GND	-	-	Signal ground						
19	10	ACK	low	Output	Acknowledge data received						

* Inputs are to printer; outputs are from printer.

Setting the Line Voltage

CAUTION: Connecting the printers to a line voltage different from that selected on the printers can damage their circuits.

The printer power supply will operate at 100–120 volts when the voltage selector is set at either 100 or 120 and they will operate at 220–240 volts when the voltage selector is set at either 220 or 240.

1. Unplug the power cable from the rear panel and open the fuse cover door.
2. Remove the fuse by pulling on the small lever labeled FUSE PULL.
3. Remove the small selector PC board and reorient it so the appropriate voltage label will be visible when it is reinstalled. Reinstall the PC board.
4. Install the proper fuse as shown on the chart above the power entry module on the printer, close the fuse cover door and reconnect the power cable.

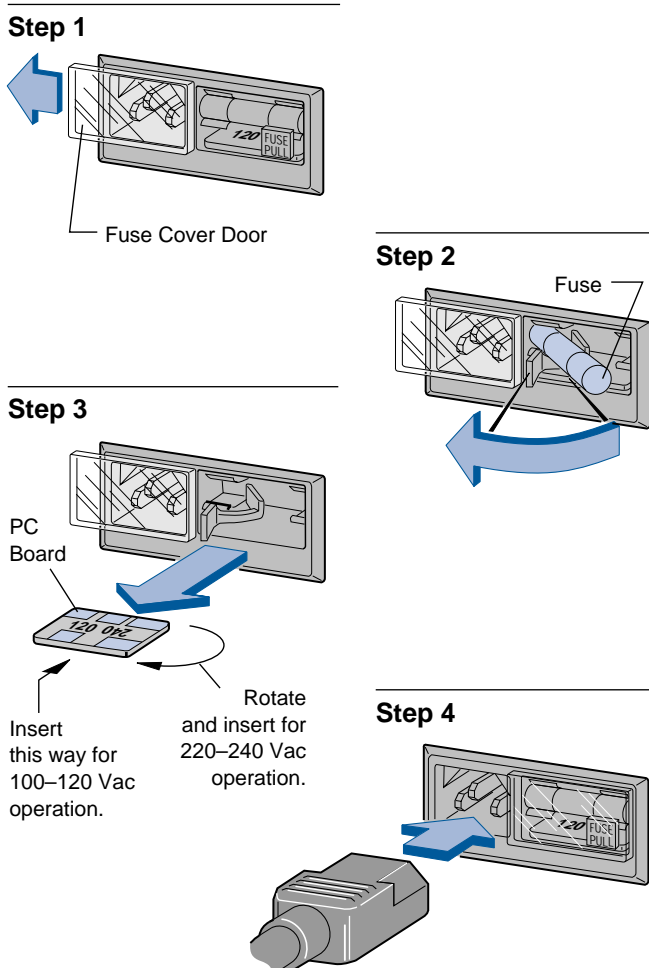


Figure 5. Selecting the Line Voltage

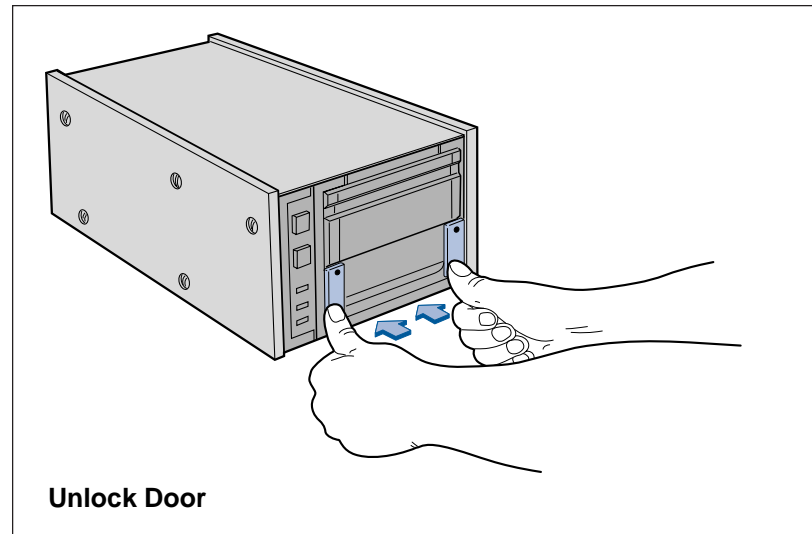


Figure 6. Loading Paper into the Printer

PREPARATION FOR OPERATION

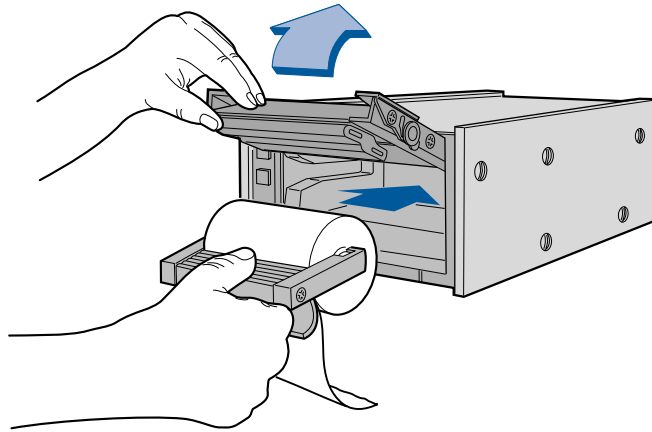
Loading paper is extremely simple because it does not have to be threaded or aligned. To load the paper (see Figure 6):

1. Unlock the door of the printer by pressing on the open circles printed on the two latches at the lower corners of the door. Pull up on the latches to open the door.
2. Remove the paper carrier from the printer and remove the paper rod from the holder. Slip the empty core off the rod.
3. Slip the paper rod through the core of the new paper roll and install the paper roll on the carrier so the paper feeds from the top of the roll toward the front of the holder as shown in Figure 6 and on the diagram on the paper carrier. Feed a few inches of paper from the roll so it will extend over the platen after insertion into the printer.
4. Insert the paper carrier in the printer and close the door. Press on the solid circles printed on the door latches to lock them.
5. Tear off the extra paper. There are two tear bars, one on the bottom of the front door for tearing up and one on the printer housing for tearing down. Pull up or down and slightly to the right or left to tear paper.

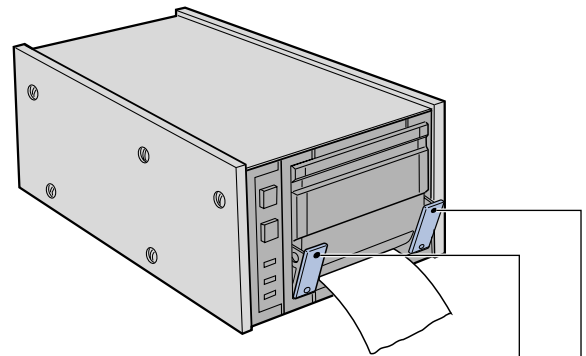
CAUTION: The door should be unlatched during storage to avoid temporary flat spots on the platen.

Cleaning the Thermal Print Head

Paper dust or other foreign material may occasionally accumulate on the thermal print head. This will be indicated by light print or no print in a narrow band down the length of the paper.



Insert Roll In Printer



Press Here To
Lock Door

Lock Door

Clean the thermal print head with a soft cloth moistened in isopropyl alcohol. A light wiping along the print head is adequate. Allow the print head to dry before resuming printing. It can be wiped dry with a soft, clean cloth.

Cleaning the Exterior Surfaces

The exterior printer surfaces can be cleaned of fingerprints or spilled foreign material by wiping them with a soft cloth moistened with a solution of mild detergent and warm water.

Control Panel Controls and Indicators

Figure 7 shows the printer control panel. It contains two pushbutton switches (LINE/LOCAL and PAPER ADVANCE) and three indicators (POWER, ON LINE and ERROR). The POWER indicator is on whenever power is applied to the printer from either the host system or from the internal power supply. The ON LINE indicator is on whenever the printer is under control of the host system. The normal power up process places the printer in the ON LINE mode. The LINE/LOCAL switch toggles the printer between ON LINE and LOCAL.

Pressing the PAPER ADVANCE button when in the LOCAL mode causes continuous paper advance in one-character line increments. The PAPER ADVANCE button is disabled in the ON LINE mode.

The ERROR indicator lights continuously when the printer is out of paper and flashes under certain error conditions such as door open. Errors and their handling are described in a later paragraph.

Self Test

To perform self test, place the printer in the local mode by pressing the LINE/LOCAL button. Then press and hold the PAPER ADVANCE button while pressing the LINE/LOCAL button to initiate the test. The buttons may be released once the test is started. In self test, the ERROR indicator lights and a printout of the character set and printer software identification is generated.

The self test printout continues until it is terminated by momentarily pressing the PAPER ADVANCE button again. After the self test the printer remains in local mode until the LINE/LOCAL button is again pressed.

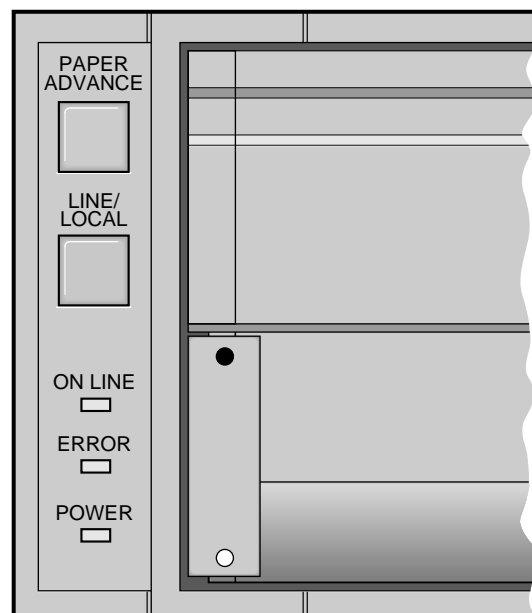


Figure 7. Front Panel Controls and Indicators

HOST CONTROL - ON LINE MODE

General Information

In the ON LINE mode the printers are exclusively under the host system's control. Since they are line printers, they do not print until the line buffer is full or they receive a control code which requires printing. The control codes which cause printing are:

Carriage Return:	Decimal Code 13
Line Feed:	Decimal Code 10
Vertical Tab:	Decimal Code 11
Form Feed:	Decimal Code 12

If the number of characters received exceeds the line length (20, 24, 40, or 48 depending on the print mode selected) without one of the above codes, the full character line is printed and the remaining characters are retained in the print buffer.

There are 224 printable characters defined by decimal codes 32 to 255. The codes from decimal 32 to 127 follow the ASCII standard for character representation. Characters 128 through 255 follow the graphic characters of the IBM ProPrinter. Special characters can be provided but they will be substituted for selected standard characters.

Six character lines are required to advance printed copy from the printhead past the paper tear bars. The six blank lines can be programmed with six CRs (Carriage Returns), a VT (Vertical Tab) or an FF (Form Feed).

Power Up Default Conditions

When power is applied, the printer comes up with the following default conditions:

Print Speed:	8 lps
Character Pitch:	12.5
Lines/inch	6.25
Double High Mode:	Off
Double Wide Mode:	Off
Emphasized Mode:	Off
Reverse Image Mode:	Off
Print orientation:	Upright
Graphics Mode:	Off (in Text Mode)
Selected Character Set:	Set 1

Printer Control Codes

The printer control codes are listed in Table 2. They are similar to the codes used by the IBM ProPrinter but since the Printrex 220 is a line printer the treatment of bit mapped graphics is different.

212/215 Emulation

The 220 prints 24 characters per line in normal mode and 48 characters per line in compressed mode. A jumper

(JP1) on the controller causes it to print 20 characters per line in the normal mode and 40 characters per line in compressed mode. This provides software compatibility with the Printrex 212/215 in alphanumeric format.

Bit mapped graphics has 384 dots per line and is not compatible with software written for the 212/215.

ERRORS AND ERROR HANDLING

The following conditions cause the front-panel ERROR indicator to light and fault signals to be sent to the host.

Paper Empty:

When the printer detects a paper empty condition it stops printing, goes off line, sets the Paper Empty line high, sets the Busy line high, sets the Fault line low and lights the ERROR indicator. Normal operation resumes when a new paper roll is installed.

Door Open:

When the door is opened (left latch unlocked) the printer stops printing, goes off line, sets the Fault Line low, sets the Busy line high, and flashes the ERROR indicator.

Overvoltage Error:

If the +24 Vdc input is too high (+27 Volts or greater) the printer stops printing, sets the Fault line low, sets the Busy line high, flashes the ERROR indicator, and waits for the voltage to drop to operating levels.

Under Voltage:

If the +24 Vdc input is too low (+21 Volts or less) for a period of 625 ms or more the printer stops printing, sets the Fault line low, sets the Busy line high, flashes the ERROR indicator, and waits for the voltage to return to +22 Volts or higher before resuming normal operation.

Over Temperature:

If the printhead temperature exceeds operating levels the printer stops printing, sets the Fault line low, sets the Busy line high, flashes the ERROR indicator, and waits for the temperature to drop to operating levels before resuming normal operation.

Brown Out:

A brown out condition is defined as the +5 Volt supply dropping below +4.5 Volts. The printer goes into reset and all data in its buffers is lost. When the +5 volt returns to the normal level the printer resumes operating with all print variables set to the power up default conditions.

Table 2. Printer Control Codes

ASCII Mnemonic	Keyboard Input	Decimal Code	Hex Code	Description
LF	Ctrl J	10	0A	Causes data to be printed. Ignored if after a CR.
VT	Ctrl K	11	0B	Advances paper six blank character lines.
FF	Ctrl L	12	0C	Advances paper to preprinted form marker or 66 lines.
CR	Ctrl M	13	0D	Prints data in the line buffer and advances the paper one character line. Ignored if after a line feed.
SO	Ctrl N	14	0E	When sent at the beginning of a line, sets the printer to double-width print mode, otherwise ignored. A CAN, CR, LF, FF, VT or DC4 cancels double-width print.
SI	Ctrl O	15	0F	When sent at the beginning of a line, sets the printer to compressed print mode (25 CPI), otherwise ignored. A DC2 cancels compressed print.
DC1	Ctrl Q	17	11	When sent at the beginning of a line, sets the printer to double-height print mode, otherwise ignored.
DC2	Ctrl R	18	12	When sent at the beginning of a line, sets the printer to standard (12.5 pitch) print mode, otherwise ignored.
DC3	Ctrl S	19	13	When sent at the beginning of a line, cancels the double-height print mode.
DC4	Ctrl T	20	14	When sent at the beginning of a line, cancels the double-width print mode.
CAN	Ctrl X	24	18	Clears the print buffer and returns the printer to power up default conditions.
ESC E	Esc E	27 69	1B 45	When sent at the beginning of a line, sets the printer to the emphasized (bold) print mode.
ESC F	Esc F	27 70	1B 46	When sent at the beginning of a line, cancels the emphasized print mode.
ESC G	Esc G	27 71	1B 47	When sent at the beginning of a line, sets the printer to the upside down print mode.
ESC H	Esc H	27 72	1B 48	When sent at the beginning of a line, cancels the upside down print mode.
ESC K	Esc K l h	27 75	1B 4B	Sets the printer to the bit image graphics mode where l and h are low and high order binary data bytes representing the number of graphic dotlines to be printed, l + (h x 256). For example, Esc K 3 1 would create 259 graphic dotlines. The sequence would then be followed by 259 x 48 = 12432 graphic data bytes. Each dotline is 384 dots or 48 bytes wide.
ESC V	Esc V n	27 86	1B 56	When sent at the beginning of a line, selects normal image if n = ASCII 0 and reverse image if n = ASCII 1.
ESC 6	Esc 6	27 54	1B 36	When sent at the beginning of a line, selects character set 2 (see Table 3).
ESC 7	Esc 7	27 55	1B 37	When sent at the beginning of a line, selects character set 1 (see Table 3).
ESC 9	Esc 9 n	27 57	1B 39	When sent at the beginning of a line, selects 12 lines/inch if n = ASCII 1 and selects 6 lines/inch if n = ASCII 0.
ESC \$	Esc \$	27 36	1B 24	Selects hex dump. Prints all data received in hexadecimal format. This mode is exited by toggling the LINE/LOCAL button.

THERMAL LINE PRINTERS

Table 3. Character Set 1 (IBM) and 2 (International)

Decimal Code	Hex Code	Character Set 1	Character Set 2	Decimal Code	Hex Code	Character Set 1	Character Set 2	Decimal Code	Hex Code	Character Set 1	Character Set 2
0	00	NUL	NUL	45	2D	-	-	90	5A	Z	Z
1	01			46	2E	.	.	91	5B	[[
2	02			47	2F	/	/	92	5C	\	\
3	03		♥	48	30	Ø	Ø	93	5D]]
4	04		♦	49	31	1	1	94	5E	^	^
5	05		‡	50	32	2	2	95	5F	-	-
6	06		♠	51	33	3	3	96	60	.	.
7	07	BEL	BEL	52	34	4	4	97	61	a	a
8	08	BS	BS	53	35	5	5	98	62	b	b
9	09	HT	HT	54	36	6	6	99	63	c	c
10	0A	LF	LF	55	37	7	7	100	64	d	d
11	0B	VT	VT	56	38	8	8	101	65	e	e
12	0C	FF	FF	57	39	9	9	102	66	f	f
13	0D	CR	CR	58	3A	:	:	103	67	g	g
14	0E	SO	SO	59	3B	;	;	104	68	h	h
15	0F	SI	SI	60	3C	<	<	105	69	i	i
16	10			61	3D	=	=	106	6A	j	j
17	11	DC1	DC1	62	3E	>	>	107	6B	k	k
18	12	DC2	DC2	63	3F	?	?	108	6C	l	l
19	13	DC3	DC3	64	40	@	@	109	6D	m	m
20	14	DC4	DC4	65	41	A	A	110	6E	n	n
21	15			66	42	B	B	111	6F	o	o
22	16			67	43	C	C	112	70	p	p
23	17			68	44	D	D	113	71	q	q
24	18	CAN	CAN	69	45	E	E	114	72	r	r
25	19			70	46	F	F	115	73	s	s
26	1A			71	47	G	G	116	74	t	t
27	1B	ESC	ESC	72	48	H	H	117	75	u	u
28	1C			73	49	I	I	118	76	v	v
29	1D			74	4A	J	J	119	77	w	w
30	1E			75	4B	K	K	120	78	x	x
31	1F			76	4C	L	L	121	79	y	y
32	20	SP	SP	77	4D	M	M	122	7A	z	z
33	21	!	!	78	4E	N	N	123	7B	{	{
34	22	"	"	79	4F	O	O	124	7C	|	|
35	23	#	#	80	50	P	P	125	7D	}	}
36	24	\$	\$	81	51	Q	Q	126	7E	~	~
37	25	%	%	82	52	R	R	127	7F		
38	26	&	&	83	53	S	S	128	80	NUL	Ç
39	27	'	'	84	54	T	T	129	81		Ü
40	28	(	(	85	55	U	U	130	82	é	é
41	29	)	)	86	56	V	V	131	83	â	â
42	2A	*	*	87	57	W	W	132	84	ä	ä
43	2B	+	+	88	58	X	X	133	85	à	à
44	2C	,	,	89	59	Y	Y	134	86	â	â

Table 3. Character Set 1 (IBM) and 2 (International) (Continued)

Decimal Code	Hex Code	Character Set 1	Character Set 2	Decimal Code	Hex Code	Character Set 1	Character Set 2	Decimal Code	Hex Code	Character Set 1	Character Set 2
135	87	Ç	Ç	180	B4	†	†	225	E1	β	β
136	88	è	è	181	B5	‡	‡	226	E2	ƒ	ƒ
137	89	ë	ë	182	B6	‡	‡	227	E3	π	π
138	8A	è	è	183	B7	‡	‡	228	E4	Σ	Σ
139	8B	ï	ï	184	B8	‡	‡	229	E5	σ	σ
140	8C	î	î	185	B9	‡	‡	230	E6	μ	μ
141	8D	ì	ì	186	BA	‡	‡	231	E7	τ	τ
142	8E	Ë	Ë	187	BB	‡	‡	232	E8	ϕ	ϕ
143	8F	À	À	188	BC	‡	‡	233	E9	Ο	Ο
144	90	È	È	189	BD	‡	‡	234	EA	Ω	Ω
145	91	æ	æ	190	BE	‡	‡	235	EB	δ	δ
146	92	ℳ	ℳ	191	BF	‡	‡	236	EC	ε	ε
147	93	ô	ô	192	C0	‡	‡	237	ED	ϕ	ϕ
148	94	ö	ö	193	C1	‡	‡	238	EE	ε	ε
149	95	ò	ò	194	C2	‡	‡	239	EF	∩	∩
150	96	û	û	195	C3	‡	‡	240	F0	≡	≡
151	97	ù	ù	196	C4	‡	‡	241	F1	‡	‡
152	98	ÿ	ÿ	197	C5	‡	‡	242	F2	‡	‡
153	99	ö	ö	198	C6	‡	‡	243	F3	‡	‡
154	9A	ü	ü	199	C7	‡	‡	244	F4	‡	‡
155	9B	ϕ	ϕ	200	C8	‡	‡	245	F5	‡	‡
156	9C	£	£	201	C9	‡	‡	246	F6	‡	‡
157	9D	¥	¥	202	CA	‡	‡	247	F7	‡	‡
158	9E	℞	℞	203	CB	‡	‡	248	F8	°	°
159	9F	f	f	204	CC	‡	‡	249	F9	•	•
160	A0	á	á	205	CD	‡	‡	250	FA	•	•
161	A1	í	í	206	CE	‡	‡	251	FB	√	√
162	A2	ó	ó	207	CF	‡	‡	252	FC	∩	∩
163	A3	ú	ú	208	D0	‡	‡	253	FD	∩	∩
164	A4	ñ	ñ	209	D1	‡	‡	254	FE	■	■
165	A5	Ñ	Ñ	210	D2	‡	‡	255	FF	SP	SP
166	A6	∅	∅	211	D3	‡	‡				
167	A7	∅	∅	212	D4	‡	‡				
168	A8	¿	¿	213	D5	‡	‡				
169	A9	Γ	Γ	214	D6	‡	‡				
170	AA	‡	‡	215	D7	‡	‡				
171	AB	½	½	216	D8	‡	‡				
172	AC	¼	¼	217	D9	‡	‡				
173	AD	i	i	218	DA	‡	‡				
174	AE	<<	<<	219	DB	■	■				
175	AF	>>	>>	220	DC	■	■				
176	B0	■	■	221	DD	■	■				
177	B1	■	■	222	DE	■	■				
178	B2	■	■	223	DF	■	■				
179	B3	|	|	224	E0	α	α				

PERFORMANCE SPECIFICATIONS

Printout

Printing Rate: 8 lines/second

Characters Per Line: 24 or 48

With 212/215 Emulation: 20 or 40

Character Pitch: 12.5 or 25 characters per inch

Print Density: 203 dots/inch (8 dots/mm)

Printout Width: 1.9 inches (48 mm)

With 212/215 Emulation: 1.6 inches (40 mm)

Characters printed: 96 ASCII characters and
128 graphics characters

Bit Mapped Graphics Format:

384 dot column by n dot row matrix

Alpha Numeric Character Format:

12 Pitch - 14 dot column by 19 dot row matrix plus 5 dot
rows for descenders within a 16 by 32 dot matrix.

25 Pitch - 7 dot column by 18 dot row plus 3 dot rows
for descenders within an 8 by 32 dot matrix.

Graphics Characters: May occupy any position in the
above matrices

Vertical Pitch: 6.25 or 12.5 character lines per inch

Dot Pitch (Horiz.): 0.0049 in/dot (0.125 mm/dot)

Dot Pitch (Vert.): 0.0049 in/dot (0.125 mm/dot)

Printing Technology:

Inkless, non-impact, fixed thermal head

Paper Dimensions: Width 2.33 ±0.04" (60 ±1 mm)

Length 131' (40 m).

Roll O.D. 2.6" (66 mm) max.

Physical Characteristics

Dimensions:

Panel-mount printers 4.1"H x 5.48"W x 4.97"D
(10.4 x 13.9 x 12.6 cm)

Stand-alone versions 4.87"H x 5.78"W x 12.0"D
(12.4 x 14.7 x 30.5 cm)

Rack-mount configurations 5.25"H x 19"W x 12"D
(13.3 x 48.3 x 30.5 cm)

Weight:

Panel-mount 2.25 lbs. (1 kg)

Stand-alone 12 lbs. (5.5 kg)

Rack-mount 14 lbs. (6.5 kg)

Environmental

Operating Temperature: +41 to +104°F (+5 to +40°C)

Storage Temperature: -40 to +140°F (-40 to +60°C)

Acceleration (Non-Operating): +3G, 0 to 50 Hz, 3 axes



276 East Gish Road
San Jose, California 95112
Telephone: (408) 573-1200
Fax: (408) 573-1600
www.printrex.com