

Printer series

MCP7820

This data sheet was
provided by
admatec GmbH





Ultra fast printing

Features

- Easy-Load paper feature
- Choice of RS232, IrDA, HPIR, USB and Bluetooth interface
- External 24Vdc power supply
- Ultra fast, high resolution printing capability
- Quiet, non-impact system
- Maintenance-free
- Compact and light weight
- High reliability line head mechanism
- Versatile for use with text or graphics
- 24, 32 or 48 characters per line
- Barcode capability
- Range of configurable options
- Windows driver for XP, 7, 2000 and CE
- Suitable for paper and label media
- Low Profile paper lid and range of mounting options available

MCP7820 Series

MCP7821X	RS232
MCP7823X	IrDA, HPIR and RS232
MCP7827X	USB and RS232
MCP7828X	Bluetooth and RS232

Introduction

The MCP7820 Series are ultra-compact, lightweight portable printers with an “easy-load” paper feature. Housed in a new innovative enclosure this range of printers have a choice of RS232 serial interface via a 6-way RJ12 socket, Infrared interface (IrDA and HPIR), USB v2.0 interface via a front mounted mini-B connector and Class 1 Bluetooth interface (SPP) .

Designed for maximum versatility, the MCP7820 Series are compatible with existing systems whilst allowing many upgrades in terms of printing speed and functionality.

Power is supplied from an external 24Vdc Universal Power Supply with a choice of detachable mains leads.

Many different modes of operation are possible, including numerous character sets, all selectable by software commands.

The MCP7820 Series is from of a family of thermal printers designed and manufactured in the UK by Martel. All units are built into robust ABS housings, with a choice of colours. We would be pleased to discuss the possibility of customising any aspect of the printer to specific requirements.

1.1 Overall Specification

Printing system	Direct thermal line head
Max Characters per line	48, 32, 24(default)
Character matrix	24x8, 24x12 or 24x16
Character size	3mm x 2mm, 3mm x 1.5mm or 3mm x 1mm (Approx. 13, 17 or 25cpi)
Horizontal dot pitch	0.125mm (Approx. 200dpi)
Vertical dot pitch	0.125mm
Text line composition	24x384 dots
Printing width	48mm
Average printing speed	30 lines per second
Dimensions	85.5mm x 150mm x 55mm (45mm low profile printer)
Weight	400g approx (inc paper)
Power supply	
MCP7820 Series	external 2.5A, 24Vdc
Paper	
Paper width	58mm
Paper capacity	45mm dia. 25m (standard printer) 32mm dia, 10m (low profile printer)
Recommended paper	AF50KS-E
Character set	
Character set	ASCII
Country codes	USA, France, Germany, UK, Denmark I/II, Sweden, Italy, Spain & Japan
Interface Data format	
RS232C	8 Data, 1 Stop, No Parity Connector 6-way RJ12 socket Baud rates 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600 & 115200 Handshaking Hardware (CTS line) or Software (XON/XOFF)
IrDA	v1.0 physical layer
HPIR	8 Data, 1 start, 4 error detection
USB	v2.0
Bluetooth	v1.1, Class 1, RFCOMM
Buffer size	5 Kbytes
Environmental Conditions	
Operating range 0°C to +50°C	Storage range -20°C to +60°C Charging range +10°C to +45°C
MTBF	Approx. 10 Million lines (20°C, print ratio = 25%)

1.2 Serial Interface

The RS232C standard is used, and the baud rate is selectable via Configuration Option. See section 2, pgs 4, 5, 6 & 7.

The printer is fitted with a 6-way RJ12 socket (Fig 1 illustrates the pin numbers for the connector), the pin assignments and interface signals are defined below.

PIN	Signal	I/O	Definition
1	GND	N/A	Signal ground
2	TxD	0	Transmitted data to host
3	RxD	1	Received data from host
4	CTS	0	Clear to Send
5	n/c	N/A	No connection
6	n/c	N/A	No connection

Fig 1: Pin Numbers for Serial Interface Connector

1 — 6



1.3 Infra-red Interface

The transmit/receive requirements for interfacing with the MCP7823X are compatible with existing systems, however higher transmission speeds and printing speeds are possible due to the incorporation of a large 5Kbyte buffer and a high speed thermal fixed head printer mechanism.

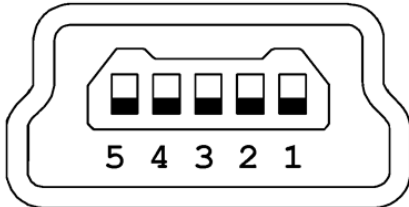
Higher print speed can be achieved by minimising the inter-frame delays in the transmission software, previously required when using a slower printer mechanism. Maximum distance for reliable infra-red communication between printer and host equipment is 45cm (18in). The infra-red port at the front of the printer should be pointed directly at, and horizontal to, the port on the host equipment and the beam should not be obstructed.

1.4 USB Interface

The USB v2.0 standard is used.

The printer is fitted with a USB mini-B socket, the pin assignments and interface signals are defined below.

PIN	Signal
1	VCC
2	D -
3	D +
4	ID
5	GND



1.5 Bluetooth Interface

In order for the Master (Client) device to connect to the printer it must know the printer's unique 12-digit Bluetooth Address. This can be automatically found by a Master using the Service Discovery Protocol, or can be viewed on the Printer's self-test report and manually entered into the Master.

Once the printer's Bluetooth Address is known, the Master can connect to the RFCOMM layer of the printer and then send data to be printed. At the end of each print session, the Master should drop the connection in order to conserve printer power.

1.6 Drivers

Windows : www.martelinstruments.com/downloads/mtl2kxp.exe

USB : www.martelinstruments.com/downloads/martelcdc.zip

Linux : www.martelinstruments.com/downloads/martel_linux_driver_0.1.0.tar.gz

Windows CE 5 & 6

2. PRINTER CONFIGURATION

2.1 Configuration Options MCP7821X & MCP7827X

The printer incorporates a number of configurable *options*, each of which has a number of *settings*. The default settings of the standard printer are detailed in the table below in bold. To change the setting of any option, follow the procedure below:

1. Ensure the printer is OFF.
2. Press and hold the Mode button. Switch the power on. After some seconds, the Status light will flash five times to show that the printer is in *configuration mode*. Release the Mode button.
3. Press the Mode button the same number of times as the *option* that you wish to change (for example to change baud rate, press the Mode button twice).
4. After a short delay, the Status light will flash the same number of times as the option that you have chosen. If you have made a mistake at this stage, simply wait: after a delay, the printer will power-on without changing any options.
5. To proceed with configuration, press the Mode button the same number of times as the *setting* that you wish to make
6. (for example, to set the baud rate to 115200, press the Mode button once).
7. After a short delay, the Status light will flash the same number of times as the setting that you have made.
8. After a further delay, the printer will power-on with the new setting.

Option Number	Option Description	Setting Number (default in bold)	Setting (default in bold)
1	RS232 Protocol	1	8, No parity
		2	8, Odd parity
		3	8, Even parity
		4	7, Odd, parity
		5	7, Even Parity
2	RS232 Baud Rate	1	115200 baud
		2	57600 baud
		3	38400 baud
		4	19200 baud
		5	9600 baud
		6	4800 baud
		7	2400 baud
		8	1200 baud
		9	600 baud
		10	300 baud
3	RS232 Flow Control	1	None
		2	Software
		3	Hardware
4	Font	1	Arial 16, 24 CPL
		2	Arial 12, 32 CPL
		3	Arial 8, 48 CPL
5	Character Format	1	Normal
		2	Double Width
		3	Double Height
		4	Double Width and Height
6	Print Density	1	Lowest
		2	
		3	
		4	Highest
7	Printer Current	1	Highest
		2	
		3	
		4	Lowest
8	Print Format	1	Standard paper, normal printing
		2	Standard paper, upside down printing
		3	Labels, normal printing
		4	Labels, upside down printing
9	Sleep Mode	1	None
		2	Sleep after 1 minute
		3	Sleep after 2 minutes
		4	Sleep after 5 minutes
		5	Sleep after 10 minutes
		6	Off after 1 minute
		7	Off after 2 minutes
		8	Off after 5 minutes
		9	Off after 10 minutes

2.2 Configuration Options MCP7823X

The printer incorporates a number of configurable *options*, each of which has a number of *settings*. The default settings of the standard printer are detailed in the table below in bold. To change the setting of any option, follow the procedure below:

1. Ensure the printer is OFF.
2. Press and hold the Mode button. Switch the power on. After some seconds, the Status light will flash five times to show that the printer is in *configuration mode*. Release the Mode button.
3. Press the Mode button the same number of times as the *option* that you wish to change (for example to change IrDA-baud rate, press the Mode button twice).
4. After a short delay, the Status light will flash the same number of times as the option that you have chosen. If you have made a mistake at this stage, simply wait: after a delay, the printer will power-on without changing any options.
5. To proceed with configuration, press the Mode button the same number of times as the *setting* that you wish to make (for example, to set the baud rate to 19200, press the Mode button once).
6. After a short delay, the Status light will flash the same number of times as the setting that you have made.
7. After a further delay, the printer will power-on with the new setting.

Option Number	Option Description	Setting Number (default in bold)	Setting (default in bold)
1	IrDA Protocol	1	8, No parity
		2	8, Odd parity
		3	8, Even parity
		4	7, Odd, parity
		5	7, Even Parity
		6	HPIR Mode
		7	IrMP Mode
2	IrDA Baud Rate	1	19200 baud
		2	9600 baud
		3	4800 baud
		4	2400 baud
		5	1200 baud
		6	600 baud
		7	300 baud
3	RS232 Protocol	1	8, No parity
		2	8, Odd parity
		3	8, Even parity
		4	7, Odd, parity
		5	7, Even Parity
		6	HPIR Mode
		7	IrMP Mode
4	RS232 Baud Rate	1	115200 baud
		2	57600 baud
		3	38400 baud
		4	19200 baud
		5	9600 baud
		6	4800 baud
		7	2400 baud
		8	1200 baud
		9	600 baud
		10	300 baud
5	RS232 Flow Control	1	None
		2	Software
		3	Hardware
6	Font	1	Arial 16, 24 CPL
		2	Arial 12,32 CPL
		3	Arial 8, 48 CPL
		4	Roman 8, 24 CPL
		5	Ecma 94, 24 CPL
7	Character Format	1	Normal
		2	Double Width
		3	Double Height
		4	Double Width and Height
8	Print Density	1	Lowest
		2	
		3	
		4	Highest
9	Printing Current	1	Highest
		2	
		3	
		4	Lowest
10	Print Format	1	Standard paper, normal printing
		2	Standard paper, upside down printing
		3	Labels, normal printing
		4	Labels, upside down printing
11	Sleep Mode	1	None
		2	Sleep after 1 minute
		3	Sleep after 2 minutes
		4	Sleep after 5 minutes
		5	Sleep after 10 minutes
		6	Off after 1 minute
		7	Off after 2 minutes
		8	Off after 5 minutes
		9	Off after 10 minutes

2.4 Configuration Options MCP7828X

The printer incorporates a number of configurable *options*, each of which has a number of *settings*. The default settings of the standard printer are detailed in the table below in bold. To change the setting of any option, follow the procedure below:

1. Ensure the printer is OFF.
2. Press and hold the Mode button. Switch the power on. After about five seconds, the Status light will flash five times to show that the printer is in *configuration mode*. Release the Mode button.
3. Press the Mode button the same number of times as the *option* that you wish to change (for example to change baud rate, press the Mode button twice).
4. After a short delay, the Status light will flash the same number of times as the option that you have chosen. If you have made a mistake at this stage, simply wait: after a delay, the printer will power-on without changing any options.
5. To proceed with configuration, press the Mode button the same number of times as the *setting* that you wish to make (for example, to set the baud rate to 115200, press the Mode button once).
6. After a short delay, the Status light will flash the same number of times as the setting that you have made.
7. After a further delay, the printer will power-on with the new setting.

Option Number	Option Description	Setting Number (default in bold)	Setting (default in bold)
1	RS232 Protocol	1	8, No parity
		2	8, Odd parity
		3	8, Even parity
		4	7, Odd, parity
		5	7, Even Parity
2	RS232 Baud Rate	1	115200 baud
		2	57600 baud
		3	38400 baud
		4	19200 baud
		5	9600 baud
		6	4800 baud
		7	2400 baud
		8	1200 baud
		9	600 baud
		10	300 baud
3	RS232 Flow Control	1	None
		2	Software
		3	Hardware
4	Font	1	Arial 16, 24 CPL
		2	Arial 12, 32 CPL
		3	Arial 8, 48 CPL
5	Character Format	1	Normal
		2	Double Width
		3	Double Height
		4	Double Width and Height
6	Print Density	1	Lowest
		2	
		3	
		4	Highest
7	Printer Current	1	Highest
		2	
		3	
		4	Lowest
8	Print Format	1	Standard paper, normal printing
		2	Standard paper, upside down printing
		3	Labels, normal printing
		4	Labels, upside down printing
9	Bluetooth Pairing	1	No password
		2	Password is 1234
10	Sleep Mode	1	None
		2	Sleep after 1 minute
		3	Sleep after 2 minutes
		4	Sleep after 5 minutes
		5	Sleep after 10 minutes
		6	Off after 1 minute
		7	Off after 2 minutes
		8	Off after 5 minutes
		9	Off after 10 minutes

2.5 Software Selectable Functions

Underline	Horizontal tab, plus setting	Inverse printing
Double height	Form feed, plus setting	Reset
Double width	11 selectable international character sets	Barcodes
Graphics	Reverse printing	

2.6 Control Codes and Escape Sequences (All Modes except HPIR)

Function	Code	Decimal	Hex
Horizontal tab	HT	9	09
Line feed	LF	10	0A
Form feed	FF	12	0C
Carriage return	CR	13	0D
Double width on	SO	14	0E
Double width off	SI	15	0F
Cancel	CAN	24	18
Set print mode	ESC ! <i>n</i>	27 33 <i>n</i>	1B 21 <i>n</i>
Set barcode start position	ESC \$ <i>n1 n2</i>	27 36 <i>n1 n2</i>	1B 24 <i>n1 n2</i>
Set bit image (8 pin single density)	ESC * 0 <i>n1 n2 [d]</i>	27 42 0 <i>n1 n2 [d]</i>	1B 2A 00 <i>n1 n2 [d]</i>
Set bit image (8 pin double density)	ESC * 1 <i>n1 n2 [d]</i>	27 42 1 <i>n1 n2 [d]</i>	1B 2A 01 <i>n1 n2 [d]</i>
Set bit image (24 pin single density)	ESC * 32 <i>n1 n2 [d]</i>	27 42 32 <i>n1 n2 [d]</i>	1B 2A 20 <i>n1 n2 [d]</i>
Set bit image (24 pin double density)	ESC * 33 <i>n1 n2 [d]</i>	27 42 33 <i>n1 n2 [d]</i>	1B 2A 21 <i>n1 n2 [d]</i>
Underline on	ESC – 1	27 45 1	1B 2D 01
Underline off	ESC – 0	27 45 0	1B 2D 00
Reset	ESC @	27 64	1B 40
Set page length	ESC C <i>n</i>	27 67 <i>n</i>	1B 43 <i>n</i>
Set horizontal tabs	ESC D <i>n</i>	27 68 <i>n</i>	1B 44 <i>n</i>
Bold on	ESC G	27 71	1B 47
Bold off	ESC H	27 72	1B 48
Move <i>n</i> dot lines forwards ($1 \leq n \leq 23$)	ESC J <i>n</i>	27 74 <i>n</i>	1B 4A <i>n</i>
Set bit image	ESC K <i>n1 n2 [d]</i>	27 75 <i>n1 n2 [d]</i>	1B 4B <i>n1 n2 [d]</i>
Country select	ESC R <i>n</i>	27 82 <i>n</i>	1B 52 <i>n</i>
Double width on	ESC W 1	27 87 1	1B 57 01
Double width off	ESC W 0	27 87 0	1B 57 00
Compressed bit image graphics	ESC Z <i>n1 [d1] ... n24 [d24]</i>	27 90 <i>n1 [d1] ... n24 [d24]</i>	1B 5A <i>n1 [d1] ... n24 [d24]</i>
Print & feed paper	ESC d <i>n</i>	27 100 <i>n</i>	1B 64 <i>n</i>
Label advance	ESC f	27 102	1B 66
Reversed on	ESC i 1	27 105 1	1B 69 01
Reversed off	ESC i 0	27 105 0	1B 69 00
Move <i>n</i> dot lines backwards ($1 \leq n \leq 23$)	ESC j <i>n</i>	27 106 <i>n</i>	1B 6A <i>n</i>
Double height on	ESC w 1	27 119 1	1B 77 01
Double height off	ESC w 0	27 119 0	1B 77 00
Inverse on	ESC { 1	27 123 1	1B 7B 01
Inverse off	ESC { 0	27 123 0	1B 7B 00
Set barcode height ($1 \leq n \leq 255$)	GS h <i>n</i>	29 104 <i>n</i>	1D 68 <i>n</i>
Print UPC-A barcode	GS k 0 [<i>d</i>] NULL	29 107 0 [<i>d</i>] 0	1D 6B 00 [<i>d</i>] 00
Print UCP-E barcode	GS k 1 [<i>d</i>] NULL	29 107 1 [<i>d</i>] 0	1D 6B 01 [<i>d</i>] 00
Print EAN13 barcode	GS k 2 [<i>d</i>] NULL	29 107 2 [<i>d</i>] 0	1D 6B 02 [<i>d</i>] 00
Print EAN8 barcode	GS k 3 [<i>d</i>] NULL	29 107 3 [<i>d</i>] 0	1D 6B 02 [<i>d</i>] 00
Print Code 39 barcode	GS k 4 [<i>d</i>] NULL	29 107 4 [<i>d</i>] 0	1D 6B 04 [<i>d</i>] 00
Print 2 of 5 barcode	GS k 5 [<i>d</i>] NULL	29 107 5 [<i>d</i>] 0	1D 6B 05 [<i>d</i>] 00
Print Codabar barcode	GS k 6 [<i>d</i>] NULL	29 107 6 [<i>d</i>] 0	1D 6B 06 [<i>d</i>] 00
Print CODE128 barcode	GS k 7 <i>n</i> [<i>d</i>]	29 107 7 <i>n</i> [<i>d</i>]	1D 6B 07 <i>n</i> [<i>d</i>]
Set barcode magnification ($2 \leq n \leq 4$)	GS w <i>n</i>	29 119 <i>n</i>	1D 77 <i>n</i>

2.6 Control Codes and Escape Sequences (HPIR Mode)

Function	Code	Decimal	Hex
Horizontal tab	HT	9	09
Line feed	LF	10	0A
Form feed	FF	12	0C
Carriage return	CR	13	0D
Cancel	CAN	24	18
Double width on	SO	14	0E
Double width off	Si	15	0F
Set print mode	ESC NULL ! <i>n</i>	27 0 33 <i>n</i>	1B 00 21 <i>n</i>
Set barcode start position	ESC NULL \$ <i>n1 n2</i>	27 0 36 <i>n1 n2</i>	1B 00 24 <i>n1 n2</i>
Set bit image (8 pin single density)	ESC NULL * 0 <i>n1 n2 [d]</i>	27 0 42 0 <i>n1 n2 [d]</i>	1B 00 2A 00 <i>n1 n2 [d]</i>
Set bit image (8 pin double density)	ESC NULL * 1 <i>n1 n2 [d]</i>	27 0 42 1 <i>n1 n2 [d]</i>	1B 00 2A 01 <i>n1 n2 [d]</i>
Set bit image (24 pin single density)	ESC NULL * 32 <i>n1 n2 [d]</i>	27 0 42 32 <i>n1 n2 [d]</i>	1B 00 2A 20 <i>n1 n2 [d]</i>
Set bit image (24 pin double density)	ESC NULL * 33 <i>n1 n2 [d]</i>	27 0 42 33 <i>n1 n2 [d]</i>	1B 00 2A 21 <i>n1 n2 [d]</i>
Underline on	ESC NULL – 1	27 0 45 1	1B 00 2D 01
Underline off	ESC NULL – 0	27 0 45 0	1B 00 2D 00
Reset	ESC NULL @	27 0 64	1B 00 40
Set page length	ESC NULL C <i>n</i>	27 0 67 <i>n</i>	1B 00 43 <i>n</i>
Set horizontal tabs	ESC NULL D <i>n</i>	27 0 68 <i>n</i>	1B 00 44 <i>n</i>
Set bit image	ESC NULL K <i>n1 n2 [d]</i>	27 0 75 <i>n1 n2 [d]</i>	1B 00 4B <i>n1 n2 [d]</i>
Country select	ESC NULL R <i>n</i>	27 0 82 <i>n</i>	1B 00 52 <i>n</i>
Double width on	ESC NULL W 1	27 0 87 1	1B 00 57 01
Double width off	ESC NULL W 0	27 0 87 0	1B 00 57 00
Compressed bit image graphics	ESC NULL Z <i>n1 [d1] ... n24 [d24]</i>	27 0 90 <i>n1 [d1] ... n24 [d24]</i>	1B 00 5A <i>n1 [d1] ... n24 [d24]</i>
Print & feed paper	ESC NULL d <i>n</i>	27 0 100 <i>n</i>	1B 00 64 <i>n</i>
Label advance	ESC NULL f	27 0 102	1B 00 66
Reversed on	ESC NULL i 1	27 0 105 1	1B 00 69 01
Reversed off	ESC NULL i 0	27 0 105 0	1B 00 69 00
Double height on	ESC NULL w 1	27 0 119 1	1B 00 77 01
Double height off	ESC NULL w 0	27 0 119 0	1B 00 77 00
Inverse on	ESC NULL { 1	27 0 123 1	1B 00 7B 01
Inverse off	ESC NULL { 0	27 0 123 0	1B 00 7B 00
Graphics	ESC <i>n [d]</i>	27 <i>n [d]</i>	1B <i>n [d]</i>
Roman 8 character set	ESC <248>	27 248	1B F8
ECMA 94 character set	ESC <249>	27 249	1B F9
Underline off	ESC <250>	27 250	1B FA
Underline on	ESC <251>	27 251	1B FB
Normal width on	ESC <252>	27 252	1B FC
Double width on	ESC <253>	27 253	1B FD
Self test	ESC <254>	27 254	1B FE
Reset	ESC <255>	27 255	1B FF
Set barcode height ($1 \leq n \leq 255$)	GS h <i>n</i>	29 104 <i>n</i>	1D 68 <i>n</i>
Print UPC-A barcode	GS k 0 [<i>d</i>] NULL	29 107 0 [<i>d</i>] 0	1D 6B 00 [<i>d</i>] 00
Print UCP-E barcode	GS k 1 [<i>d</i>] NULL	29 107 1 [<i>d</i>] 0	1D 6B 01 [<i>d</i>] 00
Print EAN13 barcode	GS k 2 [<i>d</i>] NULL	29 107 2 [<i>d</i>] 0	1D 6B 02 [<i>d</i>] 00
Print EAN8 barcode	GS k 3 [<i>d</i>] NULL	29 107 3 [<i>d</i>] 0	1D 6B 02 [<i>d</i>] 00
Print Code 39 barcode	GS k 4 [<i>d</i>] NULL	29 107 4 [<i>d</i>] 0	1D 6B 04 [<i>d</i>] 00
Print 2 of 5 barcode	GS k 5 [<i>d</i>] NULL	29 107 5 [<i>d</i>] 0	1D 6B 05 [<i>d</i>] 00
Print Codabar barcode	GS k 6 [<i>d</i>] NULL	29 107 6 [<i>d</i>] 0	1D 6B 06 [<i>d</i>] 00
Print CODE128 barcode	GS k 7 <i>n [d]</i>	29 107 7 <i>n [d]</i>	1D 6B 07 <i>n [d]</i>
Set barcode magnification ($2 \leq n \leq 4$)	GS w <i>n</i>	29 119 <i>n</i>	1D 77 <i>n</i>

2.7 International Character Sets

All Modes except HPIR

Country	Code	Decimal	Hex
USA	ESC R 0	27 82 0	1B 52 00
France	ESC R 1	27 82 1	1B 52 01
Germany	ESC R 2	27 82 2	1B 52 02
UK	ESC R 3	27 82 3	1B 52 03
Denmark I	ESC R 4	27 82 4	1B 52 04
Sweden	ESC R 5	27 82 5	1B 52 05
Italy	ESC R 6	27 82 6	1B 52 06
Spain	ESC R 7	27 82 7	1B 52 07
Japan	ESC R 8	27 82 8	1B 52 08
Norway	ESC R 9	27 82 9	1B 52 09
Denmark II	ESC R 10	27 82 10	1B 52 0A

HPIR Mode

Country	Code	Decimal	Hex
USA	ESC NULL R 0	27 82 0	1B 52 00
France	ESC NULL R 1	27 82 1	1B 52 01
Germany	ESC NULL R 2	27 82 2	1B 52 02
UK	ESC NULL R 3	27 82 3	1B 52 03
Denmark I	ESC NULL R 4	27 82 4	1B 52 04
Sweden	ESC NULL R 5	27 82 5	1B 52 05
Italy	ESC NULL R 6	27 82 6	1B 52 06
Spain	ESC NULL R 7	27 82 7	1B 52 07
Japan	ESC NULL R 8	27 82 8	1B 52 08
Norway	ESC NULL R 9	27 82 9	1B 52 09
Denmark II	NULL ESC R 10	27 82 10	1B 52 0A

2.8 Print Mode (ESC!)

Bit	Function	Value	
		0	1
0	Character font		
1	} (see below)		
2			
3	} (see below)		
4			
4	Double height	Cancelled	Set
5	Double width	Cancelled	Set
6	Undefined		
7	Underline	Cancelled	Set

2.9 Character Font

	Bit 1	Bit 0
24 characters per line	0	0
48 characters per line	0	1
32 characters per line	1	0
Undefined	1	1

2.10 Print Density

	Bit 3	Bit 2
Light 1 (Default)	0	0
2	0	1
3 (Label Default)	1	0
Dark 4	1	1

3. Housing Colour

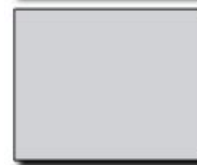
Printer housings are available in four standard colours as shown, all printers will be supplied in Black Grey colour unless specified to the contrary.

Other colours from the RAL colour chart can be supplied subject to a MOQ.

Custom colours can be moulded subject to discussion with Martel.



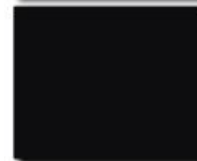
Cream—RAL9001



Grey White—RAL9002



Black Grey—RAL7021



Graphite Black—RAL9011

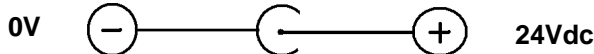
4. PRINTER OPERATION

4.1 Power On Procedure

Power is supplied to the printer from a 24Vdc external supply via a 2.1/5.5mm connector (-ve OUTER).

The Martel MPS170 Universal Power Supply should be used and the use of an alternative source may void the printer's warranty.

Insert the connector into the socket provided in the base of the printer.



4.2 Paper Tear Procedure

When removing the printout from the printer, pull the printout toward the front of the printer and tear from one side to the other across the serrated edge.

5. PRINTER MAINTENANCE

5.1 Power On Self Test

The self test procedure will check most of the printer functions, except for the serial Interface, i.e: Printer mechanism, Control circuitry, Firmware version, Print quality. When the printer is off, press and hold the Mode button depressed for approximately 2 seconds. Switch the power on and release the button, the printer will print a self-test report.

5.2 Status LED

LED Indication	Condition	Solution
On	Printer On	-
Off	Printer Off	-
* * *	Paper out	Fit new paper
* * * * *	Thermal head too hot	Allow head to cool
* * * * *	Supply Voltage low	Check supply voltage
* * * * *	Supply Voltage low	Check supply voltage

5.3 Paper Out

The printer will automatically detect when the printer paper has run out, and report this using the Status LED. Replace the paper roll as described below.

5.4 Head Thermal Limit

After extensive printing the print head temperature may rise to an unusable level. The Status LED will report when this occurs, and printing will be suspended until the head temperature returns to normal levels.

5.5 How to open Paper Reservoir Lid

Pull the lever upwards and forward until the lid is released from its locked position. To avoid damage do not use excessive force.

5.6 Replacing Paper Roll

If the paper roll needs replacing, open the paper reservoir lid and remove the remaining paper. Reel off a few centimetres from a new roll of paper, hold approximately 5cm of paper outside the printer as the roll is placed into the reservoir. Close the lid by applying equal amounts of pressure on each side until the lid is in the locked position. Now tear the surplus paper away.

5.7 Disposal

At the end of its working life the printer should be disposed of in accordance with The Waste Electrical and Electronic Regulations ("the WEEE Regulations), if in use within the EU, and in accordance with national requirements in other countries.

6. ACCESSORIES & CONSUMABLES

MCP7820

6.1 Power Adaptors

Description	Use with	Part Number
Universal Power Supply	MCP7820X Series	MPS170

6.2 Mains Leads

Description	Use with	Part Number
Mains Lead with US style plug	MPS170	MGK50
Mains Lead with UK style plug	MPS170	MGK51
Mains Lead with Euro style plug	MPS170	MGK52

6.3 Paper / Labels

Description	Part Number
Thermal Paper Roll, 25m	MM58
Thermal Paper Roll, 10m	MM58/10
Continuous Thermal Label Roll, 6m	ML58/C48

6.4 Data Cables

Description	Part Number
RS232 Serial Cable, RJ12/D9	MGK20
USB Cable	MGK60

6.5 Mounting Options—separate Product Summary is available

Description	Part Number
Protective Boot with magnetic inserts	MPB500
Carry Case with shoulder strap and belt loop	MPH501
Detachable Magnetic Plate	MFP92
Detachable Mounting Plate	MFP93
Detachable Belt Loop	MFP94
Detachable Belt Loop with studs	MFP95
Detachable Belt Clip	MFP96
Wall Mounting Kit including fixings	MFP97

Low profile paper lid (10m paper roll capacity) available on request.

Martel Instruments Limited

Stanelaw Way, Tanfield Lea Industrial Estate, Stanley, Durham DH9 9XG, UK
Tel: +44 (0)1207 290266 Fax: +44 (0)1207 290239 Email: sales@martelinstruments.com

Website: www.martelinstruments.com



MCP7820/AD/D

© MARTEL
INSTRUMENTS

All instruments designed and
manufactured in Great Britain.
The manufacturer reserve the
right to alter specifications
without prior notice