

USER MANUAL

The aim of this manual is to provide instructions to enable the customer to make the best possible use of the product. Any suggestion regarding errors in its contents or possible improvements will be greatly appreciated The products are continuously checked and improved. For this reason Custom Engineering S.r.l. reserves the right to modify the information contained in this manual without prior notice

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Printing mode	Text	
35 Columns	6 x 10 Matrix	
42 Columns	6 x 10 Matrix	
17 Columns	Double width	
21 Columns	Double width	
Printing mode	Graphic	
Characters line	210 Dots	
Printing mode	Normal and Reverse	
Character set	14 selectables font	
Interfaces	RS232 Serial	
	Centronics parallel	
Supply	+12/14 VCC	
Environmental conditions		
Temperature	0 - 50 °C	
Relative humidity	10 % - 85 %	

Technical specification



J4 Supply Connector J4 N° pin Signal 1 VCC 2 GND

J1 Cutter Connector

N° pin	Signal
1	Cutter position sensor
2	Cutter position sensor
3	GND
4	Cutter 1 motor sensor
5	Cutter 2 motor sensor

J5 RS232 serial connector

N° pin	Signal	Function		
1				
2	TX	RS232 data output		
3	RX	RS232 data input		
4				
5	GND	GND		
6	DSR	Indicate Printer ON		
7				
8	RTS	Request to send		
9				

J10 Step-by-step motor connector				
PIN	Signal	PIN	Signal	
1	+ 12 Vaa	2	$\pm 12 V_{\odot}$	

	_		_
1	+ 12 Vcc	2	+ 12 Vcc
3	Phase 1	4	Phase 2
5	Phase 3	6	Phase 4
7	+ 5 Vcc	8	GND
9	Paper signal	10	Led supply
11	N.C.	12	N.C.
13	+ 5 Vcc	14	GND
15	Notch signal	16	LED supply

J3 Centronics parallel connector

Pin	Signal	Pin	Signal
1	Strobe	2	D0
3	D1	4	D2
5	D3	6	D4
7	D5	8	D6
9	D7	10	Ack
11	Busy	12	Pe
13	Select	14	N.u.
15	Error	16	Init
17	GND	18	GND
19	GND	20	GND
21	GND	22	GND
23	GND	24	GND
25	GND		

J7 Paper sensor connector

1 aper sensor connector		
Pin	Signal	
1	LED supply	
2	Notch signal	
3	GND	
4	GND	

J2 Printer connector

Pin	Signal
1	Trigger magnet -
2	Trigger magnet +
3	Reser detector
4	GND
5	GND
6	Solenoid A
7	Solenoid B
8	Solenoid C
9	+12 Vcc
10	+12 Vcc
11	+12 Vcc
12	Solenoid D
13	Solenoid E
14	Solenoid F
15	Solenoid G
16	Motore +12 Vcc
17	Timing detect
18	Timing detect
19	Motore
20	N.C.

J6 keyl	J6 keyboard connector	
PIN	Signal	
1	Vcc presence LED	
2	Form feed key	
3	Line feed key	
4	On-line LED	
5	On-line Key	
6	GND	

J9 rewinder connector

Pin	Signal
0	Motor supply +12 Vcc
1	GND

J8 Paper sensor connector

Pin	Signal
1	LED supply
2	Paper signal
3	GND
4	GND

Installation instructions :

Before supplied the controller card, verify :

- the supply is connected in a correct mode, that the supply correspond as is specified in the technical spefications.
- the connectors is connected in a correct mode.
- the printer is in your desired configuration.

• the environment conditions correspond as is specified in the technical spefications.

General instruction

Custom Engineering. S.r.l. declines all responsibility for accidents or damage to persons or property occurring as a result of tampering, structural or functional modifications, unsuitable or incorrect installation, environments not in keeping with the equipment's protection degree or with the required temperature and humidity conditions, failure to carry out maintenance and periodical inspections and poor repair work.

The printer is in conformity with the essential Electromagnetic Compatibility and safety requirements laid down in Directives :

 89/336/EEC dated 3 May 1989 and subsequent revisions (Directive 92/31/EEC of 28 April 1992 and Directive 93/68/EEC of 22 July 1993)

in as much as it was designed and constructed in conformity with the provisions laid down in the following Harmonised Standard :

 EN55022 (Limits and methods of measurements of radio interference characteristic of Information Technology Equipment)

CE

Table's Parameters Setting

Printing direction	Normal
	Reverse
Printing mode	Normal
	Double Width
	Double Height
	Expanded
Serial port	Rate 9600
	4800
	2400
	1200
	600
	300
Protocol parameter setting	N,8,1
	N,8,2
	N,7,2
	E,8,1
	O,8,1
	E,7,1
	0,7,1
	E,7,2
	0,7,2
Protocol	XON/XOFF
	RTS
Autofeed	OFF
	ON

 	EX 2 2 2	10.00

ASCII	HEX	Description
CR	\$0D	Carriage return
LF	\$0A	Line feed
ESC 'd' n	\$1B \$64 n	Forward feed (n) lines
ESC '!' n	\$1B \$21 n	Select print mode
ESC 'R' n	\$1B \$52 n	Sets font in use
ESC @	\$1B \$40	Resets the printer
ESC '*'	\$1B \$2A m n1 n2 + data	Sets bit image mode
ESC 'K'	\$1B \$4B n1 n2 n3 n4 n5 + data	Prints a graphic image
ESC 'r' n	\$1B \$72 n	Sets print color
ESC 'i'	\$1B \$69	Cuts paper completely
ESC 'm'	\$1B \$6D	Cuts paper partially
ESC '&'	\$1B \$26 n1 n2n11	Defines a new character
ESC 'W' n	\$1B \$57 n	Sets the number of colum
ESC 't' n	\$1B \$74 n	Select the default font
ESC 'C' n	\$1B \$43 n	Select print direction
ESC 'I' n	\$1B \$6C n	Setting cutter status
ESC 'f' n	\$1B \$66 n	Status request
ESC 'A' n1 n2	\$1B \$41 n1 n2	Moves the step motor
ESC 'z' n	\$B\$7A n	Sets the number of line for Form Feed

-	Name Format Description	CR Carriage Return \$0D When the Autofeed option ON, it has the same effect as character LF, when it is OFF, it is ignored LF	Name Format Description	ESC i Paper complete cut \$1B \$69 This command enables cutter operation, if the printer receives two paper cut command, it executes only on cut. If there is no cutter, a disabling flat is set and any cut command are ignored
- - - -	Name Format Description	Line Feed \$0A When arrived this command all data in the line buffer is printed out. If the buffer is empty, the paper is fed one line	Name Format Description	ESC m Paper partial cut \$1B \$6D This command enables cutter operation and the paper partial cut, if the printer receives two paper cut command, it executes only on cut If there is no
- -	Name Format Description	ESC d Forward feeds (n) lines \$1B \$64 n If the line buffer contains any character, these are printed and paper forward feeds by (n) lines ESC @	Name Format	ext command, it executes only on ext if need is no cutter, a disabling flat is set and any cut command are ignored ESC ! Select print mode 1Bh + 21h + n
- -	Name Format Description	Reset the printer \$1B \$40 When this command is received, the printer resets, restoring the default programming and erasing the RAM	Description	This command selects the print mode. Depending on the status of the <n> bits, it activates or deactivates the double height, double width or underline options, where n1 : bit 0 = 1 = double width bit 1 = 1 = double height bit 2 bit 3</n>

ES Name Se Format III Description Se dis Name ES Format III Description Pr Pr cor for ma prin Par fut the Exa To lon	bit 4 bit 5 bit 6 bit 7 = 1 = underline ESC R Select font to be used Bh + 52h + n Selects one of the available fonts. This number is lisplayed during the start-up test. ESC * Bh + 2Ah + m + n1 + n2 + data Prints in image mode Prints a line in image mode. After this primmand has been received, the machine waits or the reception of $(n2*256)+n1$ bytes.The aximum number of dots per line is 210.A line rinted in image mode is 8 dots high. arameter <m> is a byte included for eventual ture expansion which is not used and can ture expansion which is not used and ture expansion which is not used and ture expansion which is not used and ture</m>	Name Format Description Name Format Description	ESC r Sets print color (only in the two-color model) 1Bh + 72h + n When this command is received, the ribbon color changes. The color is determined by n: n = 0 Black n = 1 Red ESC K Prints a graphic image 1Bh + 4Bh + n1 + n2 + n3 + n4 + n5 + data This command allows for the printing in image mode of a graphic ($(n4*256)+ n3$) wide, n5 lines high and with a border offset of ($(n2*256)+n1$) dots. The number of dots per line is 210 and anything over this amount is read but not displayed. Therefore, it is important to make sure that the margin offset plus line length does not exceed the maximum allowed. Example: To print a square 80*80 dots, 100 dots from the border <1Bh> <4Bh> <00h><64h> <00h><50h><0Ah> (800 * <ffh>) dots offset 80 dots 80/8 data byteslength height $(len * ht)/8$</ffh>	Name Format Description Name Format Description	ESC & Defines a new character 1Bh + 26h + nl + n2 + n11 This command is useful for personalizing fonts. The modification is only temporary, and changes made to the character are cancelled when the printer is reset or the font is changed using the ESC+ t o ESC R commands. n1 = value of the byte to be modified (32÷255) n2÷n11 = 10 bytes that make up the 10 rows of the character ESC W Sets the number of columns 1Bh + 57h + n This command selects the number of print columns. It must be changed at the beginning of a line since it is not possible to print a line in two different modes, and it also causes the line buffer to be cancelled. The number of columns is determined by <n>: n = 0 35 columns n = 1 42 columns</n>	Name Format Description Name Format Description Name Format Description	ESC t Selects the default font 1Bh + 74h + n Selects the new font to be used which automatically becomes the default font. This means that following the next initialization, the font used will be the one that has just been selected. The font number must be chosen from among the available ones, and any request for n1 greater than the fonts available will be ignored. The font number is displayed during set-up. ESC C Selects print direction 1Bh + 43h + n This command selects print direction, i.e., in which direction the line is printed. n1 == 0 normal printing n1 < 0 reverse printing ESC z Sets the number of lines for Form Feed 1Bh + 7Ah + n This command sets the maximum number of lines for the Form Feed.
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Name Format Description	ESC 1 Setting cutter status 1Bh + 6C + n This command selects cutter status, activating or disactivating it depending on the status of $\langle n \rangle$. If disactivated, $\langle Esc i \rangle$ and $\langle ESC m \rangle$ are ignored. If the cutter is activated but for some reason is inactive (breakdown, connector unplugged, etc.) the flag is reset. Cutter presence is tested during power-up and if it is not present, it is disactivated automatically. n1 == 0 cutter disactivated n1 <> 0 cutter activated	Name Format Description	ESC f Status request 1Bh + 66h + n This command requests a stamper status report. The response byte is sent via the serial port without any control bit 0 = PAPER bit 1 = NOTCH bit 2 = F-FEED bit 3 = L-FEED bit 4 = ERROR bit 5 = CUTTER PRESENT bit 6 = bit 7 = MOTOR STATUS	Cust
Name Format Description	ESC A Moves the step motor 1Bh + 41h + n1 + n2 This command moves the step motor in direction n1, n2 lines n1 = 0 forward n1 <> 0 backward n2 = number of steps			desk syste: access Cust "Cust produ graph Cust initia can p impro qualii certif



Custom Engineering designs and manufactured a range of ntegrated products and solutions for the industrial sector : panel, lesk and rack printers, receipt dispenser, printing and coding ystems, control cards, linear and switching power supplies and accessories

Custom Engineering designs and manufactures for specific "Custom made" application in a wide variety of sector.

Custom Engineering is a national distributor of EPSON® OEM products, in particular of printing mechanism, printers, FDD, LCD graphic and modular screens, oscillators, RTCK, PC Cards **Custom Engineering** directs and manages each project from its initial planning stages to the accomplishment of the final product; it can provide the technical back up, kits and accessories required to improve and facilitate the application of the products. We place our qualified personal, know-how, equipment, test laboratory and CE certification at the complete disposal of our clientele. **Custom Engineering** is your ideal partner.



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