SC290

CUSTOM
TECNOLOGIE ELETTRONICHE APPLICATE

Control Board for printing
mechanism Epson® M290

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
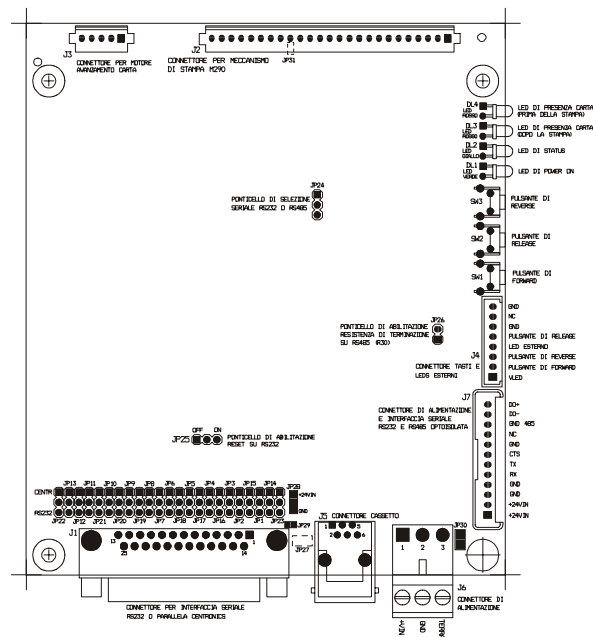
GENERAL CHARACTERISTICS

In the following table are listed the electric specification:

Supply	24V ± 10%
Average current	1.5 - 3.5A
Peak current	5A per 1 ms
Temperature	0° ÷ 50°

N.B. :In the following figure the square pads indicate pin 1 of the connectors.

Connectors diagram layout
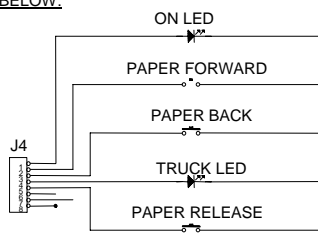

CONNECTIONS

Supply J6

Pin No.	Function	Description	IN/OUT
1	+VIN	Positive Power Supply	IN
2	GND	Negative Power Supply	IN
3	HEARTH		

Keyboard key J4

Pin No.	Function	Description	IN/OUT
1	VLED	ON LED	OUT
2	FORWARD	PAPER FORWARD	IN
3	REVERSE	PAPER BACK	IN
4	EXTERNAL LED	TRUCK LED	OUT
5	RELEASE	PAPER RELEASE	IN
6	GND	SIGNAL GROUND	POWER
7	NC		
8	GND	SIGNAL GROUND	POWER

* FOR FURTHER DETAILS PLEASE CONSULT THE CONNECTIONS DIAGRAM BELOW:

CENTRONICS Parallel (connector, 25 pin) J1

PIN	Signal	Description	IN/OUT
1	STROBE	STROBE1	IN
2	D0	DATA0	IN
3	D1	DATA1	IN
4	D2	DATA2	IN
5	D3	DATA3	IN
6	D4	DATA4	IN
7	D5	DATA5	IN
8	D6	DATA6	IN
9	D7	DATA7	IN
10	ACK	ACKNOW	OUT
11	BUSY	BUSY	OUT
12	SENSOR 1 (PAPER ENTRY)		OUT
13	SENSOR 2 (PAPER OUTFEED). Only if jumper JP3 is short-circuited.	Only if jumper JP3 is short-circuited.	
14	N.C.		
15	ERROR	"LOGIC 1"	OUT
16	RESET	IN RESET	IN
17	GND	GROUND	POWER
18	GND		
19	GND	GROUND	POWER
20	GND		POWER
21	GND		POWER
22	GND		POWER
23	GND		POWER
24	GND		POWER
25	GND		POWER

RS232 Serial (Pin Out Connector 25 pin J1)

To select serial interface set the 23 pin strip between pin 2 and pin 3 (the pin 1 of the connector is the square pad).

Pin No.	NAME	DESCRIPTION	IN/OUT
2	TX	TRASMIT DATA	OUT
3	RX	RECEIVE DATA	IN
4	CTS	CLEAR TO SEND CONNECTED TO PIN 20	OUT
7	GND	SIGNAL GROUND	POWER
20	CTS	CLEAR TO SEND CONNECTED TO PIN 4	OUT

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 board is in your desired configuration.
- the environment conditions correspond as is specified in the technical specification

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.

CE

Printing function

List all character of control of the SC290

ASCII	HEX	Description
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 '&'	$1B $26 n1 n2 ...n11	Defines a new character
ESC 'W' n	$1B $57 n	Sets the number of columns
ESC 't' n	$1B $74 n	Select the default font
ESC 'C' n	$1B $43 n	Select print direction
ESC u n	$1B $57 n	Sets/Resets underline mode
ESC w n	$1B $77 n	Select Bar code width
ESC $ n	$1B $24 n	Sets the print position of the bar code
ESC k n data NULL	$1B $6B n data NULL	Prints a Bar Code
ESC H n	$1B $48 n	Selects the HRI print position
ESC # n	$1B $23 n	Slip commands
ESC 'f' n	$1B $66 n	Status request
ESC 'A' n1 n2 n3	$1B $41 n1 n2 n3	Moves the step motor
ESC h n	$1B $68 n	Selects Bar Code height

ESC d - $1B $64 n
Name: **Forward feeds (n) lines**
Description: If the line buffer contains any character, these are printed and paper forward feeds by (n) lines

ESC @ - $1B $40
Name: **Reset the printer**
Description: When this command is received, the printer resets, restoring the default programming and erasing the RAM

ESC ! - 1Bh + 21h + n
Name: **Select print mode**
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 0 = 0 bit 1 = 0 = nomal
  bit 0 = 1 bit 1 = 1 = extended

ESC R - 1Bh + 52h + n
Name: **Select font to be used**
Description: Selects one of the available fonts. This number is displayed during the start-up test.

ESC C - 1Bh + 43h + n
Name: **Selects print direction**
Description: This command selects print direction, i.e., in which direction the line is printed.
  n1 == 0   normal printing
  n1 <> 0   reverse printing

ESC * - 1Bh + 2Ah + m + n1 + n2 + data
Name: **Prints in image mode**
Description: Prints a line in image mode. After this command has been received, the machine waits for the reception of (n2*256)+n1 bytes.The maximum number of dots per line is 210.A line printed in image mode is 8 dots high. Parameter <m> is a byte included for eventual future expansion which is not used and can therefore have any value.

ESC & - 1Bh + 26h + n1 + n2 + ... n11
Name: **Defines a new character**
Description: This command is used to change a font character and 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.

ESC t - 1Bh + 74h + n
Name: **Selects the default font**
Description: 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 W - 1Bh + 57h + n
Name: **Sets the number of columns**
Description: 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   40 columns

ESC f - 1Bh + 66h + n
Name: **Status request**
Description: 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

ESC u n - $1B $57 n
Name: **Sets/Resets underline mode**
Description: If bit0 = 1 == underline set

ESC A - 1Bh + 41h + n1 + n2
Name: **Moves the step motor**
Description: This command moves the step motor in direction n1, n2 lines
  n1 == 0   forward
  n1 <> 0   backward
  n2 = number of steps

ESC $ n - $1B $24 n
Name: **Sets the print position of the bar code**
Description: Set the printing Bar Code position (0...208)

ESC H n - $1B $48 n
Name: **Selects the HRI print position**
Description: the value of (n) determines the print position of the HRI of the Bar code
  n=0 Not printed
  n=1 Prints over the Bar code
  n=2 Prints under the bar code
  n=3 Prints both over and under the Bar code

ESC w n - $1B $77 n
Name: **Select Bar code width**
Description: The value of "n" determines bar code width. Any other value annuls the command.
The value of "n" indicates the number of dots which compose the narrowest module of the bar code.
  N1 = 0 Normal N1 = 1 Double

ESC k n - $1B $6B n
Name: **Prints a Bar code**
Description: Printing command of Bar code where the value of n (max 6) determines a type of Bar code to print. The command of printing rotation does not effect on bar code.
  n=0 UPC-A
  n=1 NOT USED
  n=2 EAN13
  n=3 EAN8
  n=4 CODE39
  n=5 ITF (Interleaved 2 of 5)
  n=6 CODEBAR

ESC h n - $1B $68 n
Name: **Selects Bar code height**
Description: The value of (n) determines Bar code height in 1/8 mm units. N1 : 20...255

ESC # n - $1B $68 n
Name: **Slip commands**
Description: It's used to open/close the slip of drag paper

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