

Installation Instructions

*P/N 1-960299-04
Edition 4
September 1998*

EasyCoder 201 II RS 422/485 Interface Kit

The logo for Intermec, featuring a red stylized 'I' followed by the word 'ntermec' in a bold, lowercase sans-serif font.

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EasyCoder 201 II – Installation Instructions

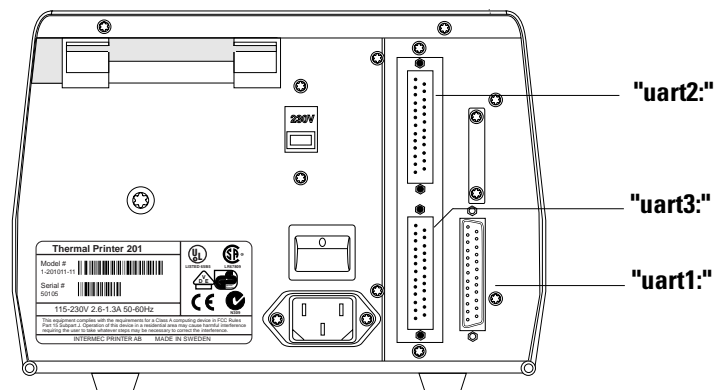
RS 422/485 INTERFACE KIT

Introduction

The RS 422/485 Interface Board adds two extra serial communication ports ("uart2:" and "uart3:") to the standard serial communication port ("uart1:").

The RS 422/485 interface on "uart2:" is galvanically insulated from the printer in order to avoid electrical interference.

The printer's firmware detects when an RS 422/485 Interface Board is installed and adds communication and buffer setup options for the two additional communication ports.



When an RS 422/485 Interface Board is fitted, the following types of interfaces become available:

"uart1:"	<i>Fitted on printer's CPU pcb.</i>
RS 232C	Standard
20 mA Current Loop	Option. Additional opto-couplers required.
"uart2:"	<i>Fitted on Serial Interface Board.</i>
RS 422/RS 485	Type selected by straps and cable configuration
"uart3:"	<i>Fitted on Serial Interface Board.</i>
RS 232C	

The RS 422/485 Interface Kit consists of:

1 Interface board assy.

2 Screws MRT 3 × 5 FZB

Installation Instructions

EasyCoder 201 II
RS 422/485 Interface Kit
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Part No. 1-960299-04

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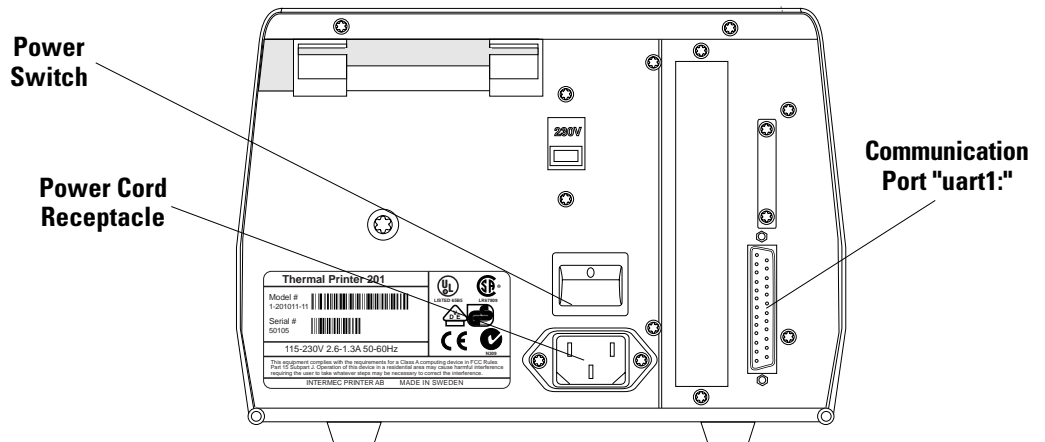
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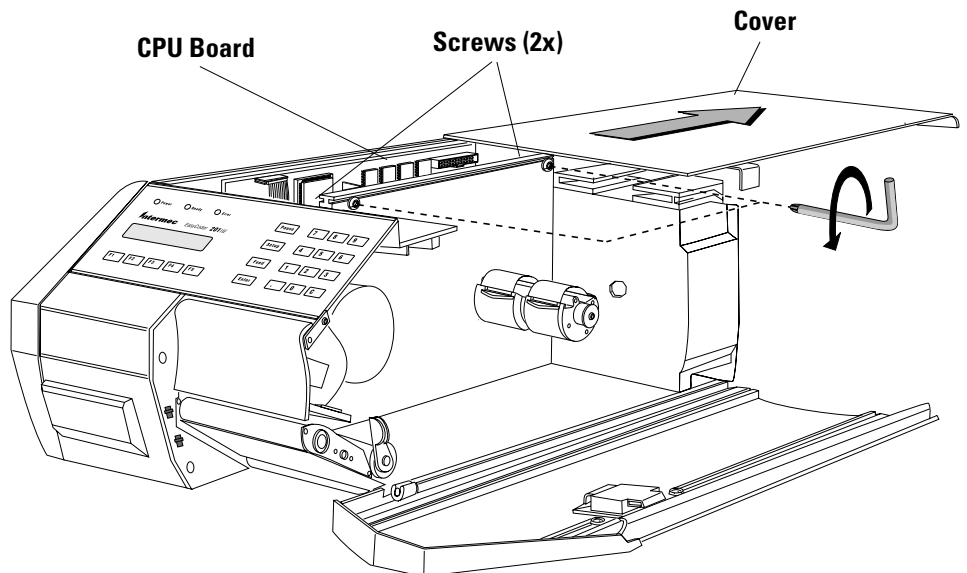
RS 422/485 INTERFACE KIT, cont'd.

Step-by-Step Installation Instructions

- Turn off the power and remove the power cord.
- Remove the communication cable from communication port "uart1:".



- Open the right hand door.
- Loosen the two screws that lock the cover.
- Pull the cover straight back and remove it completely.



- Open the left-hand door.

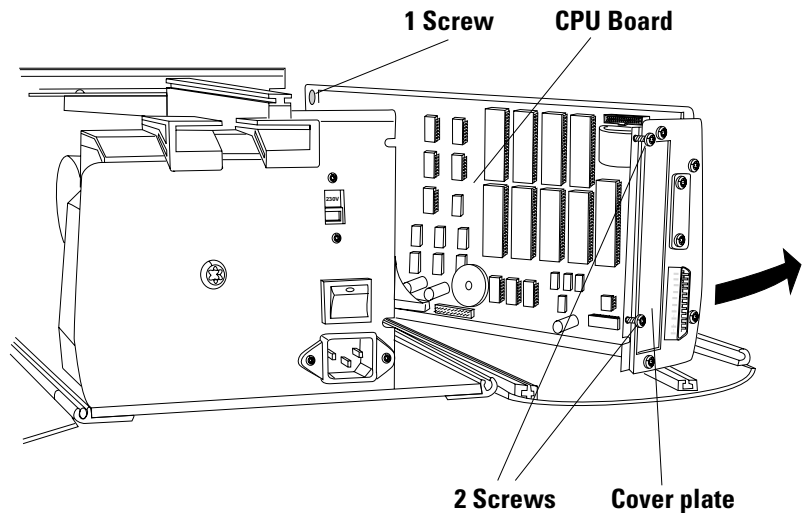
Continued!

EasyCoder 201 II – Installation Instructions

RS 422/485 INTERFACE KIT, cont'd.

Step-by-Step Installation Instructions, cont'd.

- ❑ Loosen the three screws that hold the CPU board assy. and swing the unit outwards as illustrated.



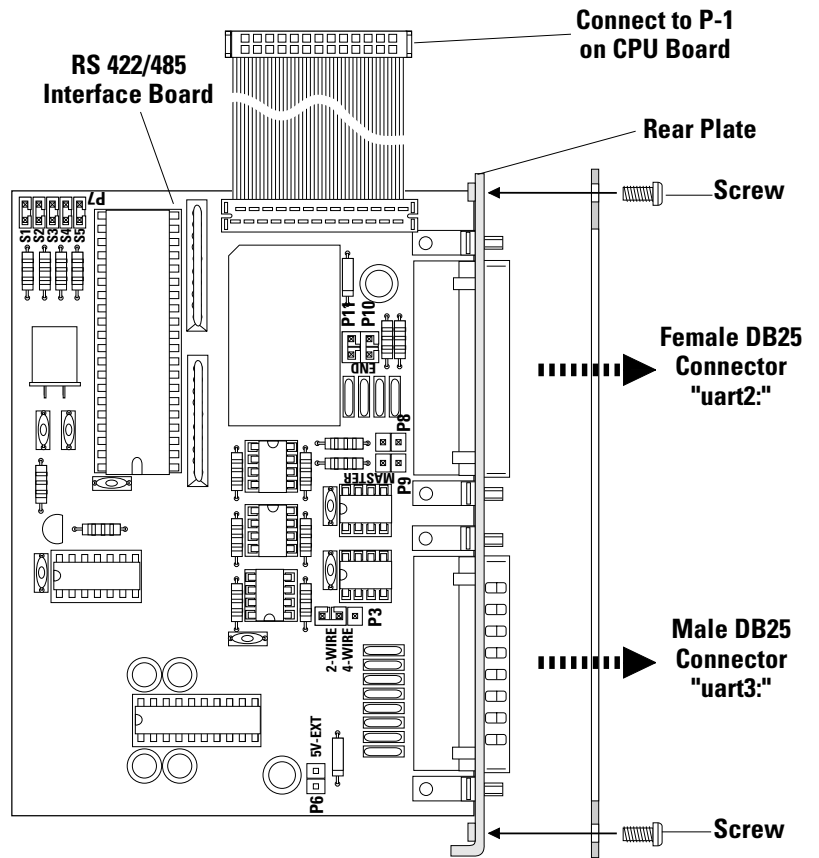
- ❑ Remove the cover plate.
- ❑ Make sure that the CPU board is strapped and equipped for the desired type of communication on port "uart1:" (see the *EasyCoder 201 II* Technical Manual). Once the interface board has been fitted, it will be difficult to access the rear part of the CPU board.
- ❑ Fit the required straps on the RS 422/485 Interface Board as described on pages 6–8.
- ❑ Connect the cable from the interface board to connector **P-1** at the top rear corner of the CPU board. Be careful so the interface board and the CPU board do not come in contact with each other, which possibly may cause damage or short-circuiting.
- ❑ Fit the interface board assembly to the printer's rear plate from the inside into the space left by the cover plate using the screws included in the kit (see illustration on next page).

Continued!

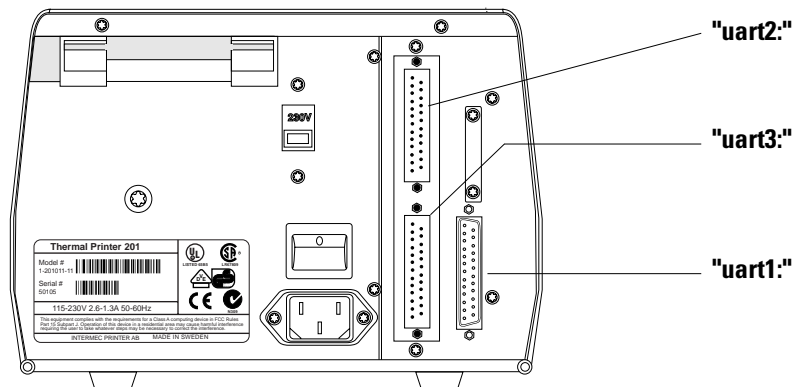
EasyCoder 201 II – Installation Instructions

RS 422/485 INTERFACE KIT, cont'd.

Step-by-Step Installation Instructions, cont'd.



- ❑ Reassemble the printer in reverse order.
- ❑ Connect the communication cables to their respective connectors. Please refer to page 8 for pinout descriptions.
- ❑ Connect the power cord and turn on the power.
- ❑ Set up the communication and buffer parameters for the two new ports "uart2:" and "uart3:" as described in the *EasyCoder 201 II* Technical Manual.



Continued!

EasyCoder 201 II – Installation Instructions

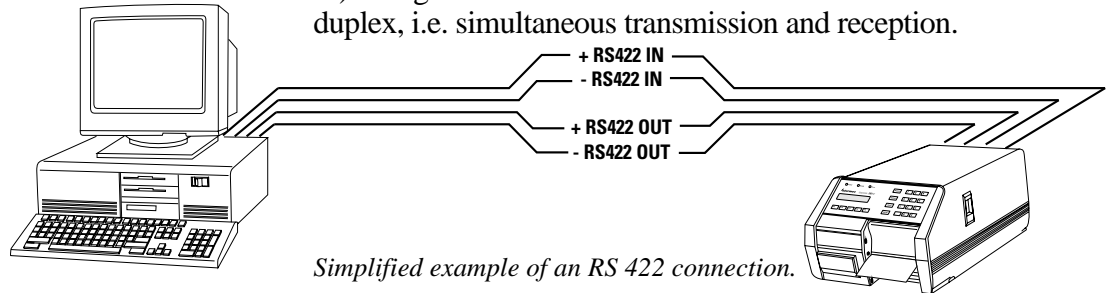
RS 422/485 INTERFACE KIT, cont'd.

Communication Principles

Communication Port "uart2:"

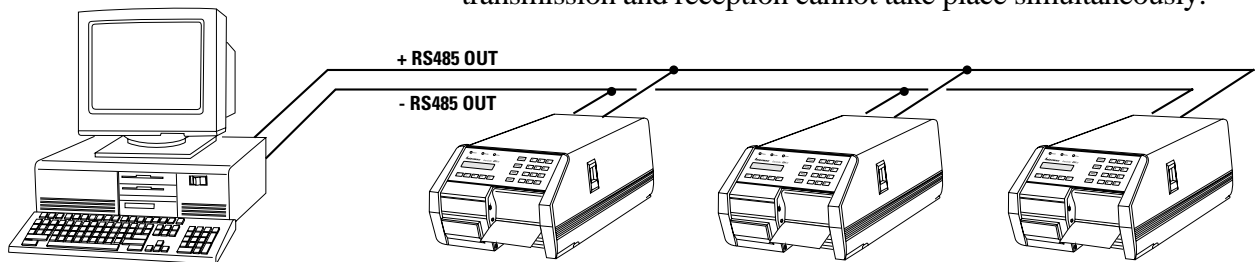
This port can be used for either RS 422 or RS 485 interface:

RS 422 is a point-to-point serial interface, which can connect one printer to a host computer at a distance of up to 1,200 metres (4,000 ft.) using a four-wire screened cable. The transmission is full duplex, i.e. simultaneous transmission and reception.



Simplified example of an RS 422 connection.

RS 485 is a serial interface that allows up to 32 units to be connected in a multi-drop loop consisting of a two-wire screened cable with a max. length of 1,200 metres (4,000 ft.) and branching connections of max. 2 metres (6.5 ft.). The transmission is half duplex, i.e. transmission and reception cannot take place simultaneously.



Simplified example of an RS 485 connection.

Note:

The RS 422/485 communication port is in most cases referred to as "uart2:", except in connection with the OPEN statement, when it must be referred to as "rs485:".

Transmission of data can be addressed to a certain unit in an RS 485 multi-drop loop, provided the "Prot. addr" setup option is enabled. Each printer must be given an address by means of straps on the interface board. See *Intermec Fingerprint 6.13 Programmer's Guide*.

In an RS 485 loop, one of the units must be appointed "master" unit. Usually, the host computer is the master. If not (check the manual for the host), one printer can be appointed master by fitting two straps on the interface pcb.

The first and last unit must be fitted with one termination strap.

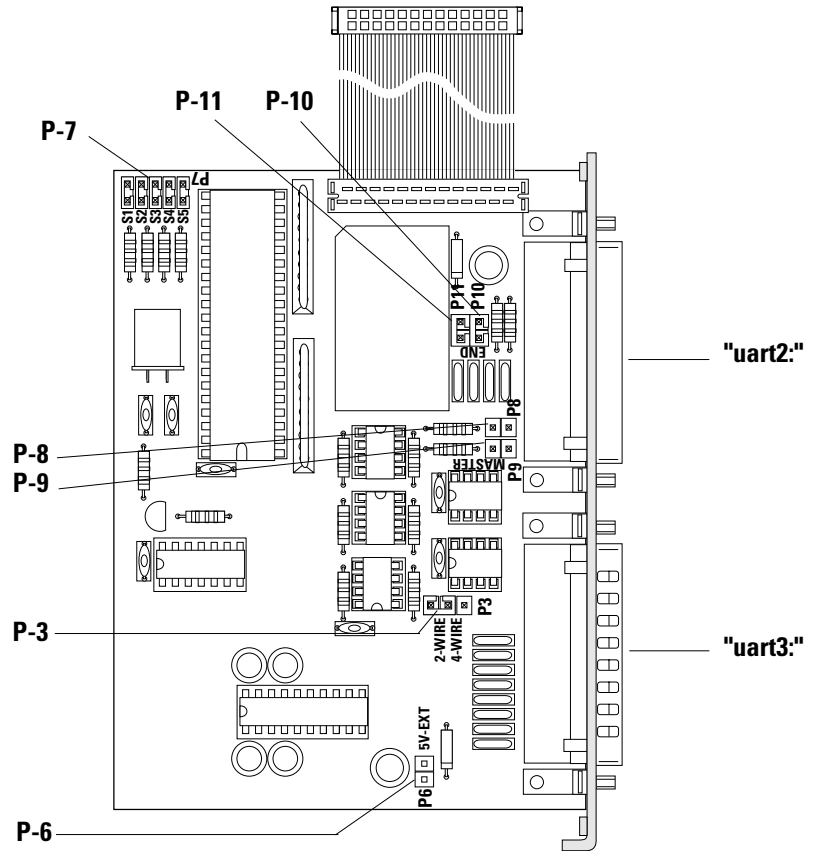
Communication Port "uart3:"

This port always contains an RS 232C serial interface. External +5V (max 200 mA) can be connected by means of a strap.

EasyCoder 201 II – Installation Instructions

RS 422/485 INTERFACE KIT, cont'd.

Straps



The following straps are used to set up the desired interface:

Communication Port "uart2:" (RS 422/485)

- P-3** Selects 2- or 4-wire communication (see text on board).
- P-7** Selects address for the printer (only used in RS 485 connection with "prot. addr. enable") according to the table on next page.
- P-8, P-9** Voltage reference straps.
RS 422: P-8 and P-9 should be strapped on both units.
RS 485: P-8 and P-9 should be strapped on "master" unit. Usually, the host computer is master.
- P-10** 100 Ω terminating resistor. Should be strapped on the first and last units, regardless of RS 422 or RS 485.
- P-11** 100 Ω terminating resistor. Should be strapped on both units in an RS 422 line.

Communication Port "uart3:" (RS 232C)

- P-6** Connects +5V to pin 16 on "uart3:". Max 200 mA.
Warning! Be careful not to enable the external +5V unintentionally, which may cause harm to the terminal, computer or other device connected to this port!

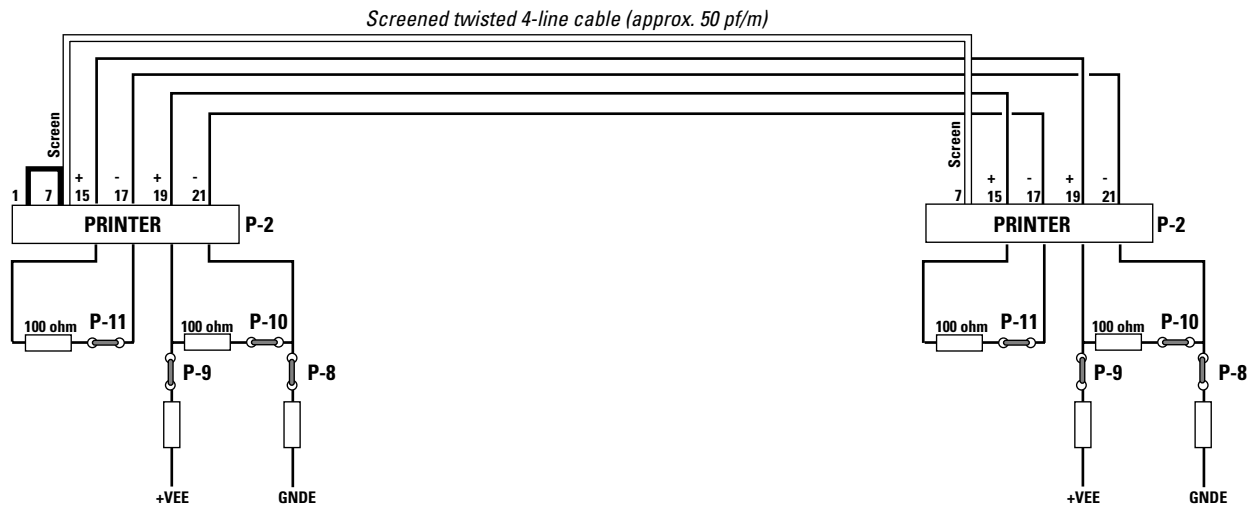
EasyCoder 201 II – Installation Instructions

RS 422/485 INTERFACE KIT, cont'd.

Straps, cont'd.

The illustrations below show how the voltage reference straps and terminating resistor straps should be fitted on the RS 422/485 interface boards. When a computer is connected to the line or loop, the same principles apply. Refer to the computer manuals for information on how to appoint the computer “master” and how to set the termination.

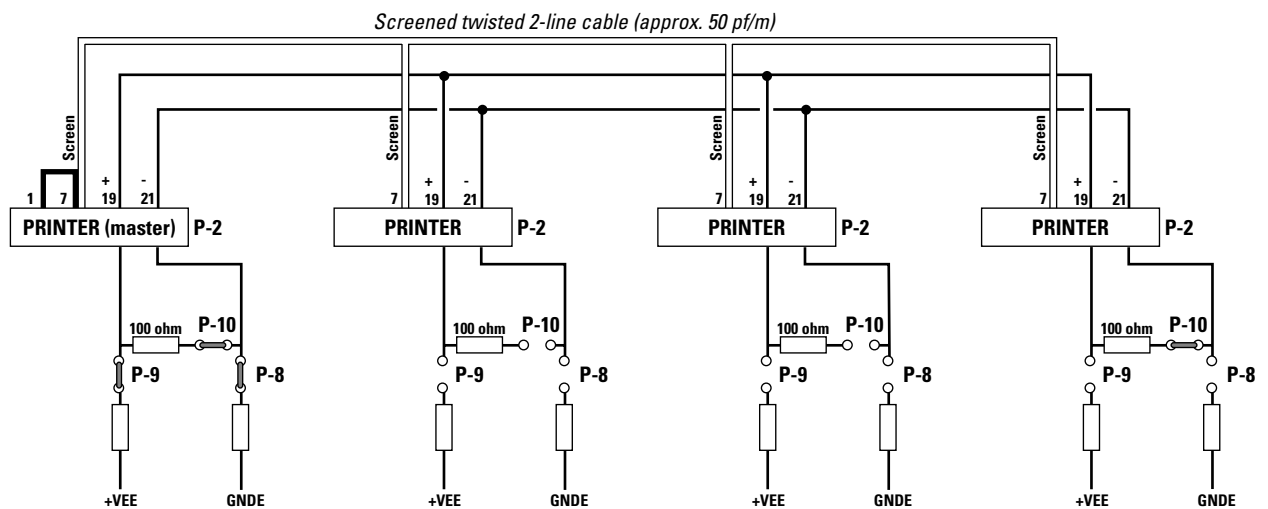
RS 422 POINT-TO-POINT (printer to printer)



P-8 and P-9 strapped on both units.
P-10 and P-11 strapped on both units.
Connection P-2 pin 7 to Chassis GND
(e.g. P-2 pin 1) on one unit only.

P-8 and P-9 strapped on both units.
P-10 and P-11 strapped on both units.

RS 485 MULTIDROP LOOP (w. printer as master unit)



P-8 and P-9 strapped on master unit.
P-10 strapped on first unit.
Connection P-2 pin 7 to Chassis GND
(e.g. P-2 pin 1) on one unit only.

No straps

No straps

P-10 strapped on last unit.

EasyCoder 201 II – Installation Instructions

RS 422/485 INTERFACE KIT, cont'd.

Straps, cont'd.

Address straps (P-7):

STRAP:	S1	S2	S3	S4	S5	STRAP:	S1	S2	S3	S4	S5
Address 0	-	-	-	-	-	Address 16	X	-	-	-	-
Address 1	-	-	-	-	X	Address 17	X	-	-	-	X
Address 2	-	-	-	X	-	Address 18	X	-	-	X	-
Address 3	-	-	-	X	X	Address 19	X	-	-	X	X
Address 4	-	-	X	-	-	Address 20	X	-	X	-	-
Address 5	-	-	X	-	X	Address 21	X	-	X	-	X
Address 6	-	-	X	X	-	Address 22	X	-	X	X	-
Address 7	-	-	X	X	X	Address 23	X	-	X	X	X
Address 8	-	X	-	-	-	Address 24	X	X	-	-	-
Address 9	-	X	-	-	X	Address 25	X	X	-	-	X
Address 10	-	X	-	X	-	Address 26	X	X	-	X	-
Address 11	-	X	-	X	X	Address 27	X	X	-	X	X
Address 12	-	X	X	-	-	Address 28	X	X	X	-	-
Address 13	-	X	X	-	X	Address 29	X	X	X	-	X
Address 14	-	X	X	X	-	Address 30	X	X	X	X	-
Address 15	-	X	X	X	X	Address 31	X	X	X	X	X

X=Strap, – = no strap. Address 0 is normally used for the host.

Connector Configuration

"uart2:" is a DB25 **female** connector.

"uart3:" is a DB25 **male** connector.

The mounting holes are connected to chassis ground.

Pin	"uart2:"	Remarks	Pin	"uart3:"	Remarks
1	GNDC	Chassis ground	1	GNDC	Chassis ground
2	–		2	TXDB	Transmitted data from printer
3	–		3	RXDB	Received data to printer
4	–		4	RTSB	RTS from printer
5	–		5	CTSB	CTS to printer
6	–		6	DSRB	DSR to printer
7	GNDE	Interface ground	7	GNDI	Signal ground
8	–		8	–	
9	–		9	–	
10	–		10	–	
11	–		11	–	
12	–		12	–	
13	–		13	–	
14	–		14	–	
15	+RS422 IN	RS 422 only	15	–	
16	–		16	+5VEXT	+ 5V 200 mA, if strap fitted on P6
17	-RS422 IN	RS 422 only	17	–	
18	–		18	–	
19	+RS422 OUT	RS 422/485	19	–	
20	–		20	DTRB	DTR permanently high
21	-RS422 OUT	RS 422/485	21	–	
22	–		22	–	
23	–		23	–	
24	–		24	–	
25	–		25	–	