Intermec

Installation Instructions

Double Serial Interface Kit

(for EasyCoder PF2i, PF4i, PF4ci, PM4i, PX4i and PX6i)

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1 Introduction

This chapter describes the Double Serial Interface Kit for EasyCoder PF2/4i-, PM4i-, and PX4/6i-series printers.

Description

This Installation Instructions booklet describes how to install a Double Serial interface board in an EasyCoder PF2i, PF4i, PF4i Compact Industrial, PM4i, PX4i, or PX6i printer.

The installation instructions describes how to physically install the interface board in a printer and how to configure the two serial communication ports.

This interface kit must only be physically installed by an authorized service technician. Intermec assumes no responsibility for personal injury or damage to the equipment if the installation in performed by an unauthorized person.

Printer Firmware

The printer must be fitted with Intermec Fingerprint v8.00 (or later). For some combinations of two interface boards in EasyCoder PM4i and PX4/6i printers, Fingerprint v8.30 (or later) is required. This kit does not work with IPL. In Intermec Fingerprint, the serial ports are addressed as "uart2:", "uart3:", "uart4:", and "uart5:" (communication channel #2, #3, #7, and #8 respectively).

Installation Kit

The Double Serial Interface Kit contains:

- One Double Serial interface board fitted with circuits and straps for RS-232 non-isolated.
- One hexagonal spacer (only used for two interface boards fitted in a PM4i or PX4/6i printer)
- Two flat cables
- This Installation Instruction booklet

The only tools required for the installation are #T10 and #T20 Torx screwdrivers plus a small wrench.

2 Physical Installation

This chapter describes how to physically install the Double Serial Interface Kit in an EasyCoder PF2/4i-, PM4i-, or PX4/6i-series printer.

Take precautions against electrostatic discharges, for example by wearing grounded bracelets.

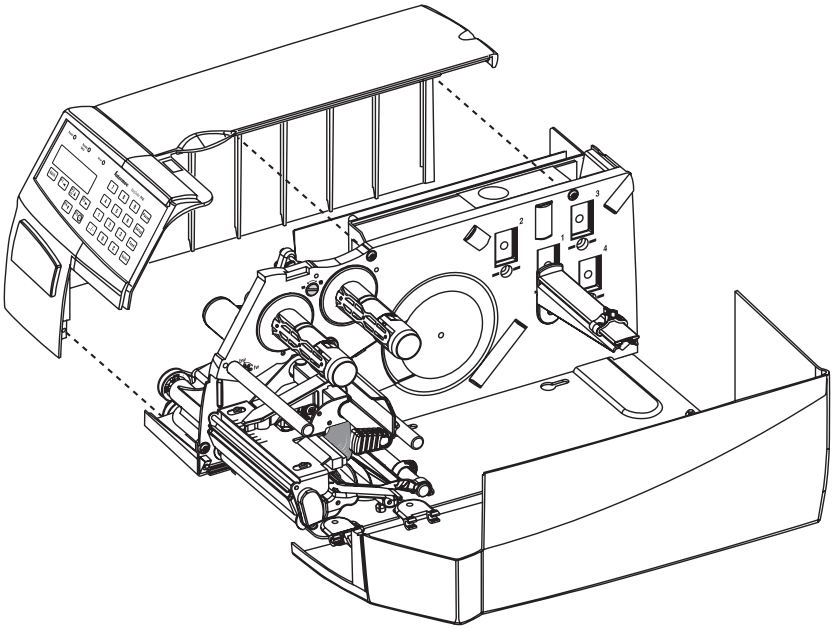
EasyCoder PF2/4i Printers

- Switch off the printer and disconnect the power cord.
- Disconnect all communication cables.
- Remove the front/left-hand cover as follows.

Warning

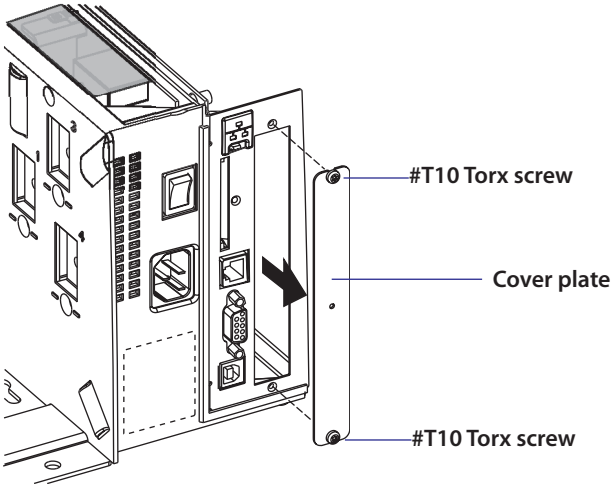
The electronic compartment contains wires and components with dangerous voltage (up to 380V). Make sure that the printer is switched off and the power cord is disconnected before the left-hand cover is removed.

- Open the right-hand door.
- Using a #T20 Torx screwdriver, remove the three screws and lift the cover up so it disengages the bottom plate.



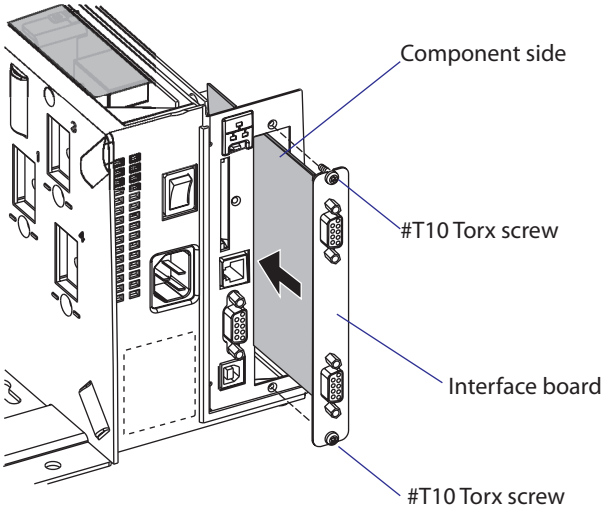
- Swing out the rear part of the cover so you can disconnect the console cable from the CPU board.
- Put the cover aside on a soft cloth or similar to avoid scratches.

- Remove the two #T10 Torx screws that hold the interface cover plate. Remove the cover plate.

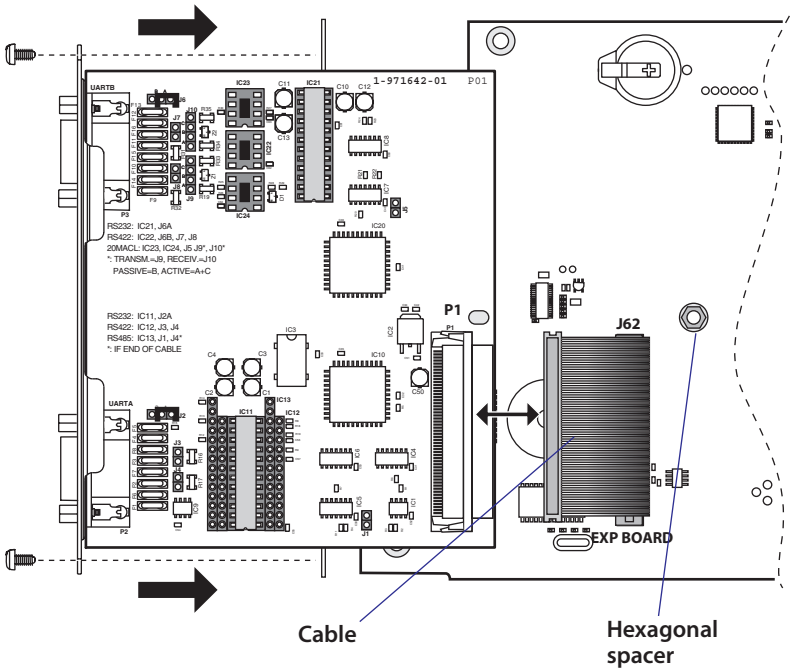


- Save the cover plate for possible later use. Keep the screws.
- Remove the #T20 Torx screw fitted on the hexagonal spacer at the CPU board. Keep the screw.
- If reconfiguration of the interface board is required, fit or remove circuits and straps according to the descriptions in Chapters 3 and 4.
- Attach the flat cable included in the kit to connector J62 (marked "EXP BOARD") on the CPU board (see page 7).

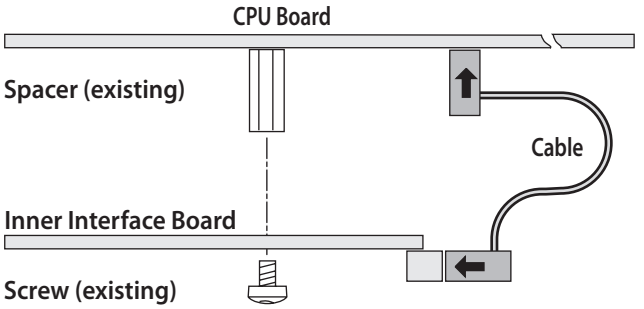
- Insert the interface board with the component side facing right, as seen from behind.



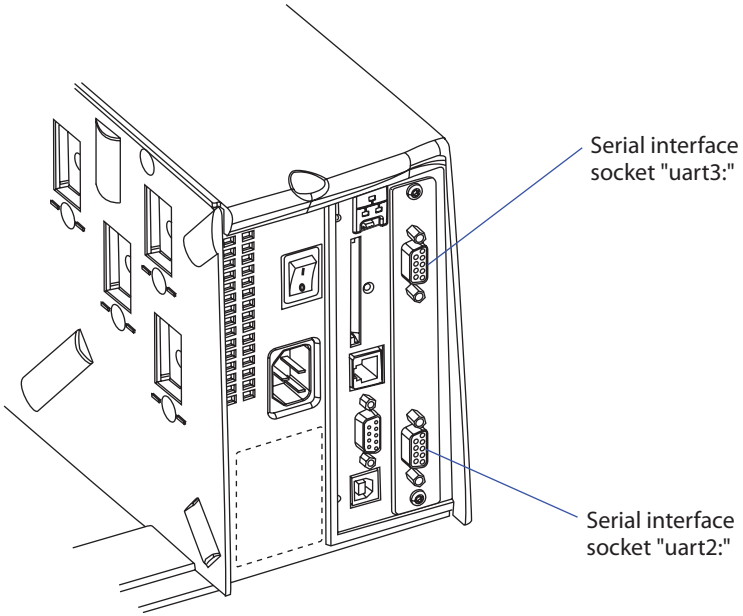
- Attach the interface board to the printer's rear plate using the two screws left over when you removed the original cover plate.
- Using the #T20 Torx screw you previously removed, attach the interface board to the hexagonal spacer on the CPU board.
- The kit contains two flat cables. Connect the flat cable with two connectors to P1 on the interface board, see the next page.



- The flat cable should run as illustrated below.



- Connect the console cable to J50 on the CPU board and put back the cover over the electronics compartment. Take care so the console cable runs above the ribbon motor (if any) and does not become entangled in the headlift mechanism.
- Connect the communication cables to the connectors on the printer's rear plate.
- Connect the power cord and switch on the power.
- Enter the Setup Mode to set the proper communication parameters for the serial communication channels "uart2:" and "uart3:".

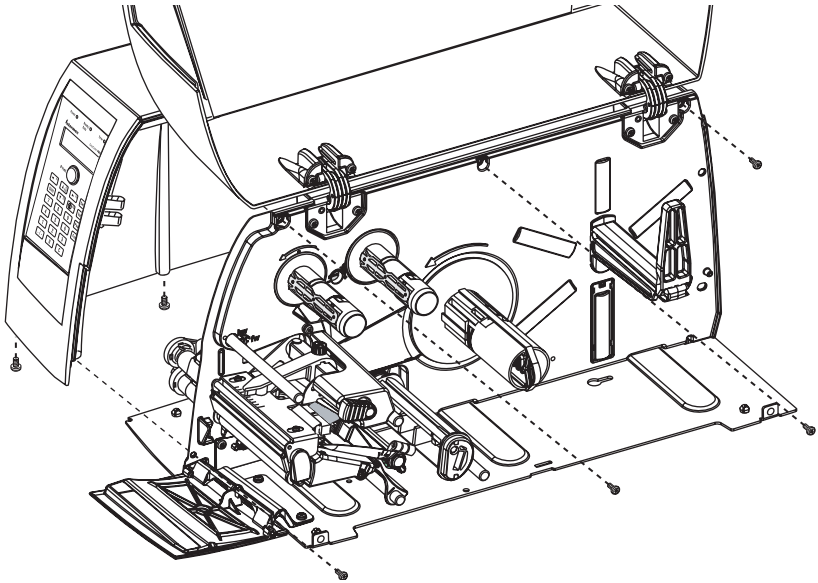


EasyCoder PM4i Printers

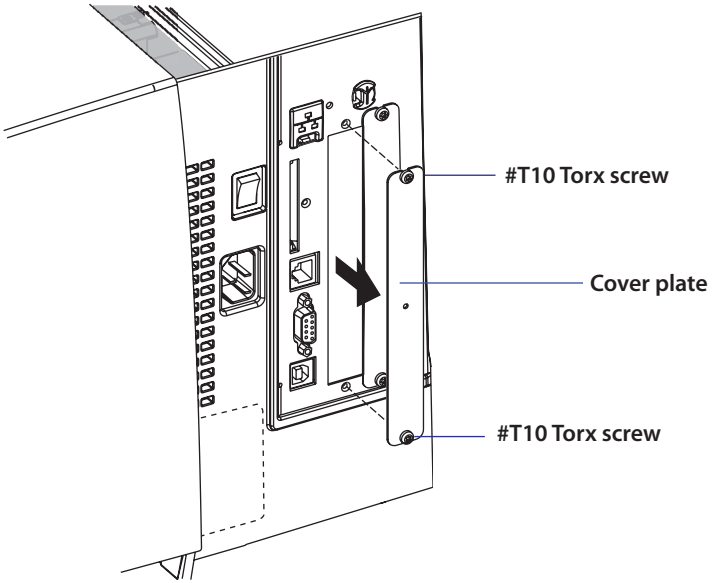
- Switch off the printer and disconnect the power cord.
- Disconnect all communication cables.
- Turn the printer over so it rests on its left-hand cover. Use a soft cloth or similar to avoid scratches.
- Open the right-hand door.
- Using a #T20 Torx screwdriver, remove the four screws that hold the cover along the lower left edge of the bottom plate and the four screws that hold the cover to the center section.
- Put the printer back on its feet and remove the cover while disconnecting the console cable from the CPU board.

The electronic compartment contains wires and components with dangerous voltage (up to 380V). Make sure that the printer is switched off and the power cord is disconnected before the cover is removed.

- Put the cover aside taking care to avoid scratches.

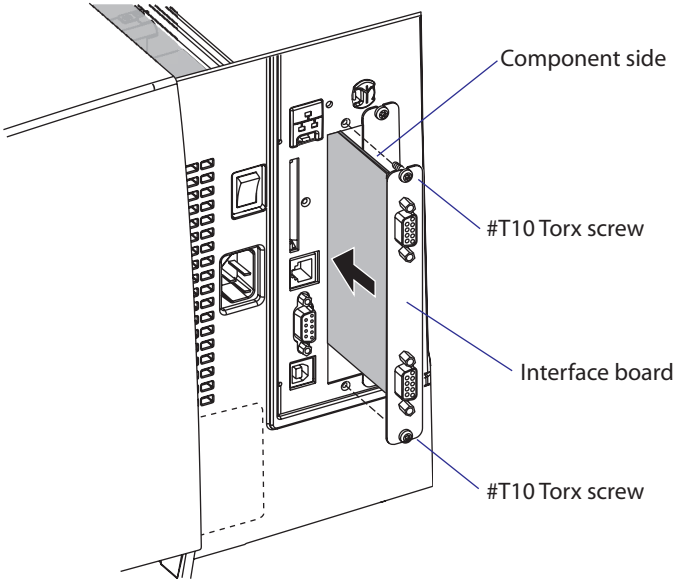


- Remove the two #T10 Torx screws that hold the cover plate. Always start with the inner one. Remove the cover plate.

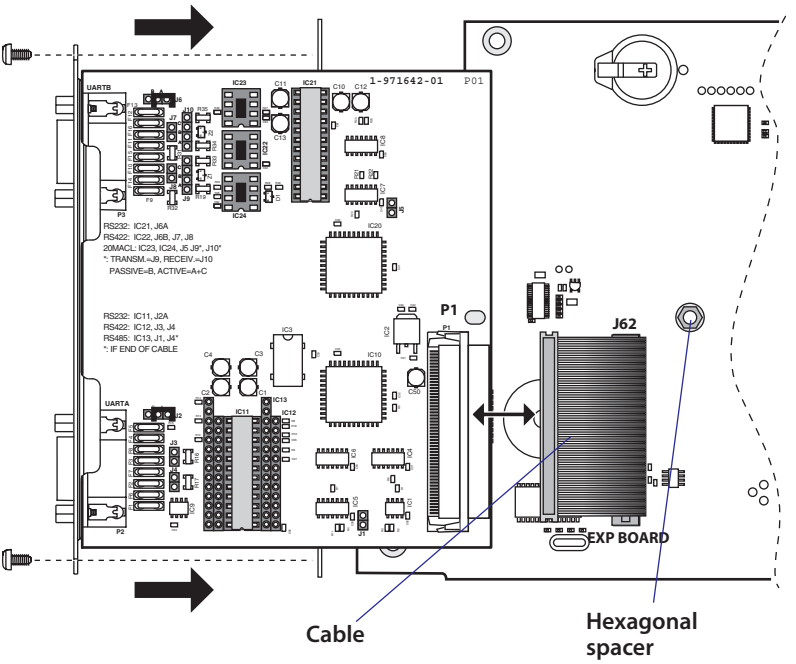


- Save the cover plate for possible later use. Keep the screws.
- Remove the #T20 Torx screw fitted on the hexagonal spacer at the center of the CPU board. Keep the screw.
- If reconfiguration of the interface board is required, fit or remove circuits and straps according to the descriptions in Chapters 3 and 4.
- Attach the flat cable included in the kit to connector J62 (marked "EXP BOARD") on the CPU board (see illustration on page 12).

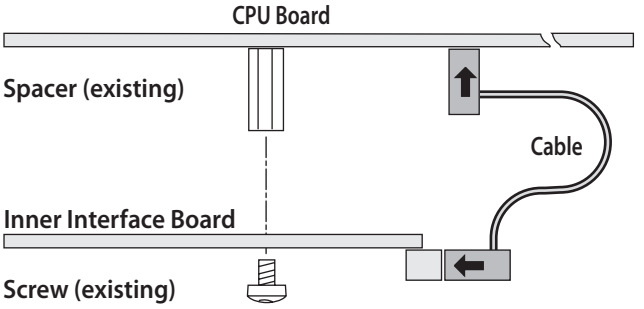
- Insert the interface board with the component side facing right, as seen from behind.



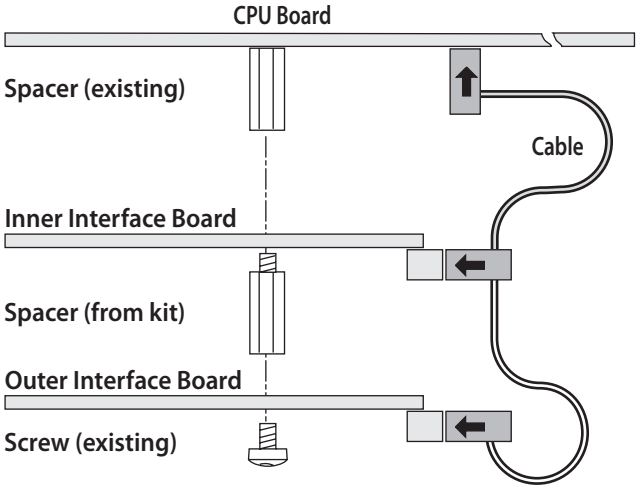
- Attach the interface board to the printer's rear plate using the two screws left over when you removed the original cover plate.
- Using the #T20 Torx screw you previously removed, attach the interface board to the hexagonal spacer on the CPU board (see next page). If you are installing an interface board in the outer slot, you need to remove the screw that holds the inner board and replace it with the spacer included in the kit. The secure the outer board to the spacer with the screw (see illustration on the next two pages).
- The kit contains two flat cables, one with two connectors for use with a single interface board and one with three connectors for use with double interface boards. Connect the appropriate flat cable to connector P1 on the interface board, also see the next two pages.



- In case of a single interface board, the flat cable should run as illustrated below.



- In case of two interface boards, the flat cable should run as illustrated below.



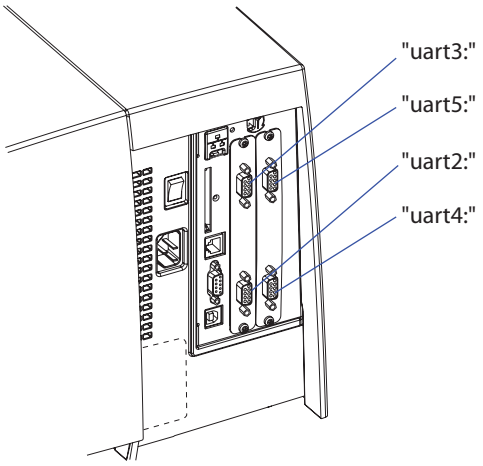
- Put back the cover over the electronics compartment.
- Connect the console cable to J50 on the CPU board and put back the cover over the electronics compartment. Take care so the console cable runs above the ribbon motor and does not become entangled in the headlift mechanism.
- Connect the power cord and switch on the power.
- Enter the Setup Mode to set the proper communication parameters for new the serial communication ports.

Allowed interface combinations (Fingerprint v8.30 or later)

Left-hand slot	Ports	Right-hand slot	Ports
Double Serial	uart2: + uart3:	–	–
Double Serial	uart2: + uart3:	**Double Serial**	uart4: + uart5:
Double Serial	uart2: + uart3:	Serial/Industrial	uart4:
Double Serial	uart2: + uart3:	IEEE 1284	centronics:
Serial/Industrial	uart2:	–	–
Serial/Industrial	uart2:	Serial/Industrial	uart3:
Serial/Industrial	uart2:	**Double Serial**	uart3: + uart4:
Serial/Industrial	uart2:	IEEE 1284	centronics:
IEEE 1284	centronics:	–	–
IEEE 1284	centronics:	**Double Serial**	uart2: + uart3:
IEEE 1284	centronics:	Serial/Industrial	uart2:

Remarks:

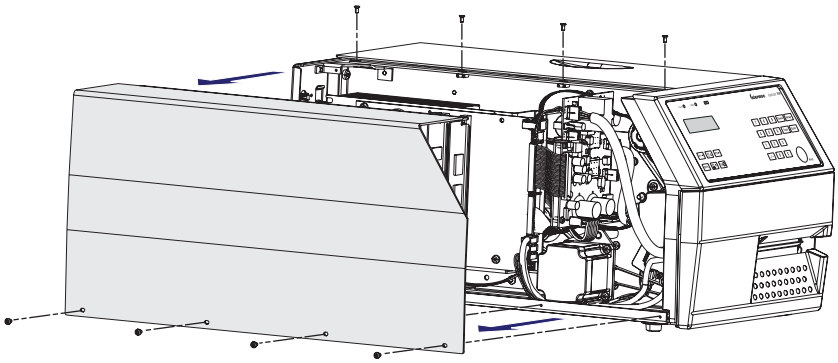
- The left-hand slot is the slot closest to the center section.
- Always start by fitting an interface board in the left-hand slot.
- RS-485 is only supported by "uart2:"



Example of EasyCoder PM4i with two double serial interface boards.

EasyCoder PX4i and PX6i Printers

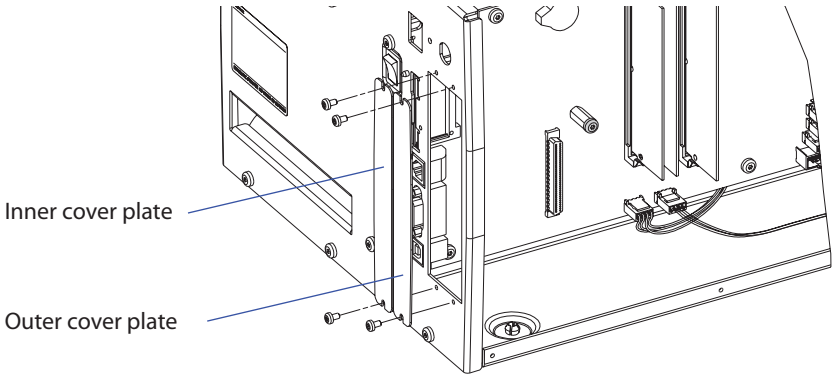
- Switch off the power and disconnect the power cord.
- Disconnect all communication cables.
- Open the right-hand door.
- Remove the eight #T10 Torx screws that hold the left-hand cover.



- Put the cover aside on a soft cloth or similar to avoid scratches.

The electronics compartment contains high voltage components and wires. Do not open the electronics compartment before the printer is safely disconnected from any AC supply.

- Remove the one or two cover plates depending on how many interface boards you are going to install. Each plate is held by two #T10 Torx screws. Always start installation at the innermost position.



- Save the cover plate(s) for possible later use. Keep the screws.
- Remove the #T20 Torx screw fitted on the hexagonal spacer at the center of the CPU board. Keep the screw.
- If necessary, reconfigure the interface board by fitting or removing circuits and straps according to the descriptions of each board later in this chapter.
- Attach the flat cable included in the kit to connector J62 (marked "EXP BOARD") on the CPU board (see illustration on the next page).
- Insert the interface board with the component side facing right, as seen from behind.

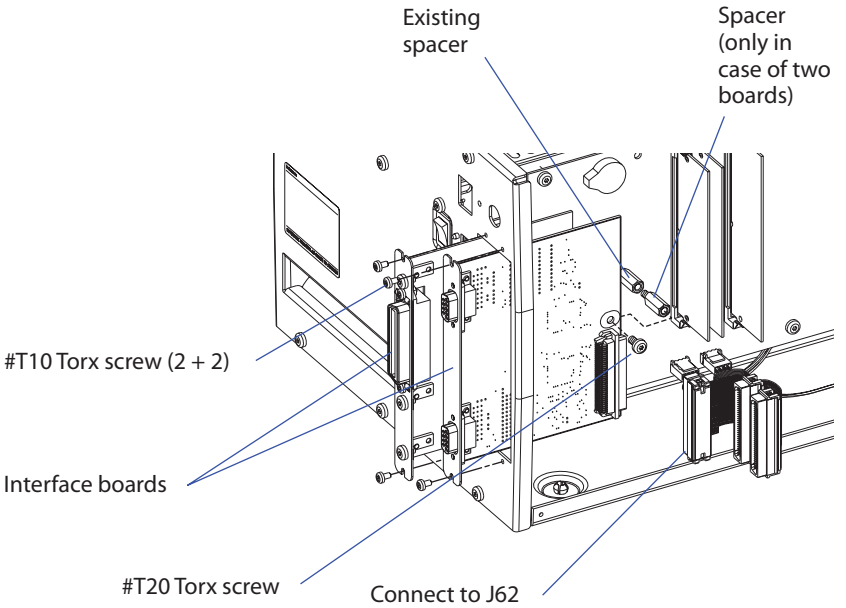
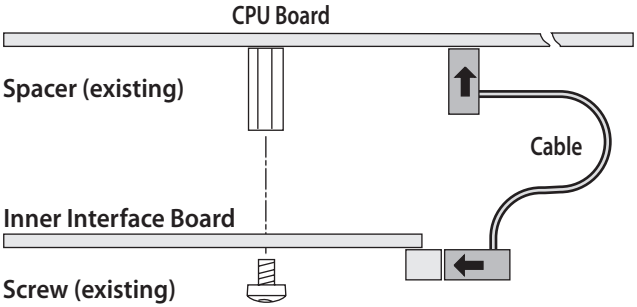
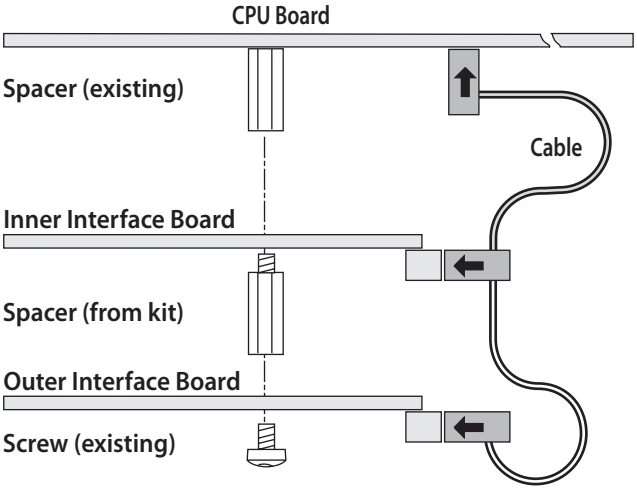


Illustration shows installation of one IEEE 1284 and one Double Serial interface board.

- Installation of one board: Attach the interface board in the innermost slot in the printer's rear plate using the two screws left over when you removed the original cover plate. Using the #T20 Torx screw you previously removed, attach the interface board to the hexagonal spacer at the center of the CPU board.

- Installations of two boards: First install the inner board, then the outer one. Put the hexagonal spacer included in the kit between the inner and the outer interface board, and finally secure the outer board with the screw.
- The kit contains two flat cables, one with two connectors for use with a single interface board and one with three connectors for use with double interface boards. Connect the appropriate flat cable to connector P1 on the interface board, as illustrated below.
- The flat cable should run as illustrated below.





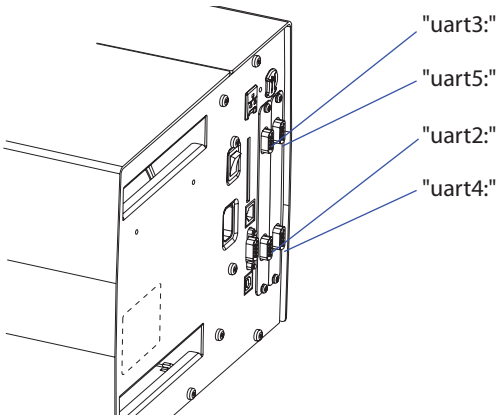
- Put back the cover over the electronics compartment.
- Connect the communication cables to the connectors on the printer's rear plate.

- Connect the power cord and switch on the power.
- In case the interface board provides additional serial communication ports, enter the Setup Mode to set the proper communication parameters for these ports.

Allowed interface combinations (Fingerprint v8.30 or later)

Left-hand slot	Ports	Right-hand slot	Ports
Double Serial	uart2: + uart3:	–	–
Double Serial	uart2: + uart3:	**Double Serial**	uart4: + uart5:
Double Serial	uart2: + uart3:	Serial/Industrial	uart4:
Double Serial	uart2: + uart3:	IEEE 1284	centronics:
Serial/Industrial	uart2:	–	–
Serial/Industrial	uart2:	Serial/Industrial	uart3:
Serial/Industrial	uart2:	**Double Serial**	uart3: + uart4:
Serial/Industrial	uart2:	IEEE 1284	centronics:
IEEE 1284	centronics:	–	–
IEEE 1284	centronics:	**Double Serial**	uart2: + uart3:
IEEE 1284	centronics:	Serial/Industrial	uart2:

Remarks:
- The left-hand slot is the slot closest to the center section.
- Always start by fitting an interface board in the left-hand slot.
- RS-485 is only supported by "uart2:"

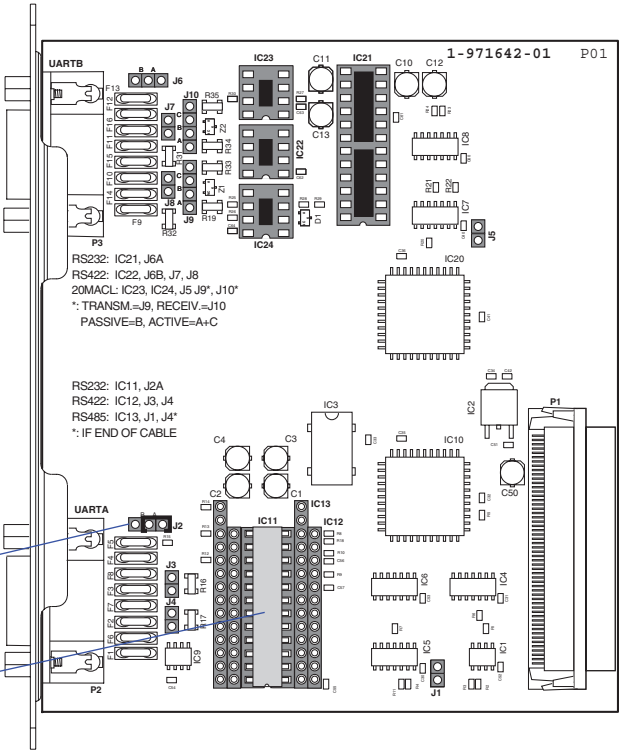


3 Serial Interface "uart2:", "uart3:", and "uart4:"

This chapter describes how to modify the interface board for RS-232 non-isolated (standard), RS-422 isolated/full duplex, or RS-485 isolated/half duplex on the "uart2:", "uart3:", or "uart4:" port and explains the configuration of the interface connector. The connector is marked “UART A” on the interface board.

When fitting driver circuit and straps before installing the interface board, make sure that the circuit is not fitted upside down (see front end markings in the illustrations). Also make sure that the “legs” of the circuit fit into the slots in the socket and are not bent. Take ample precautions to protect the board and circuits from electrostatic discharges.

RS-232 Non-isolated
(standard)

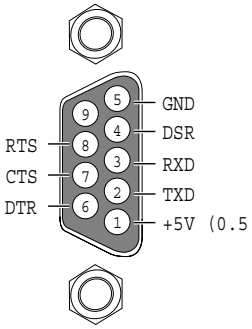


Strap fitted on J2 A

RS-232 circuit fitted on IC11

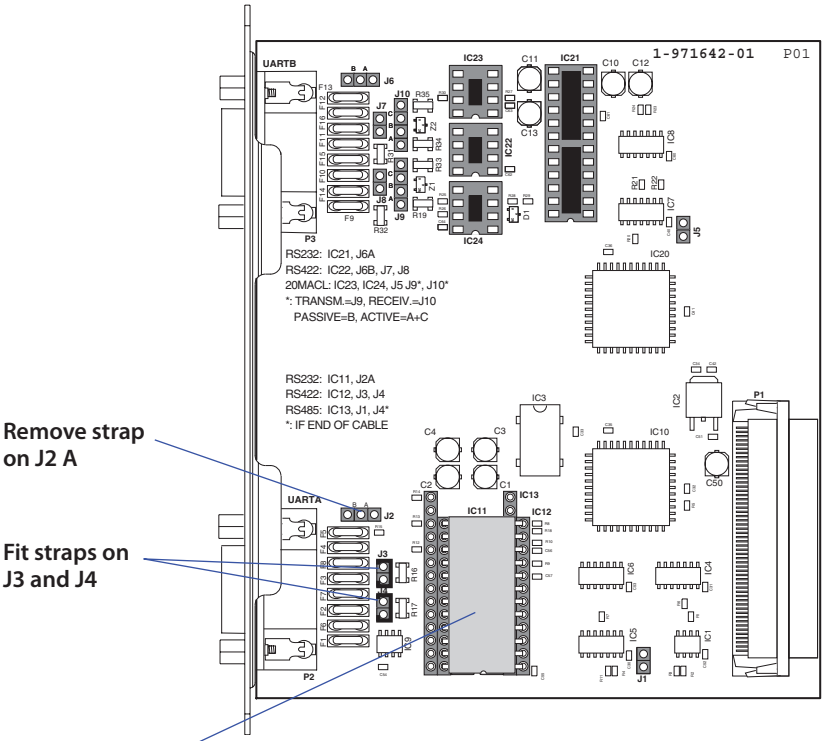
Connector Configuration (RS-232 on "uart2:", "uart3:", or "uart4:")

DB-9 socket	Signal	Meaning
1		External +5VDC max 500 mA (automatic switch-off at overload, short-circuit protected)
2	TXD	Transmit data
3	RXD	Receive data
4	DSR	Data set ready
5	GND	Ground
6	DTR	Data terminal ready
7	CTS	Clear to send
8	RTS	Request to send
9	–	Not used



RS-232 socket as seen from the outside.

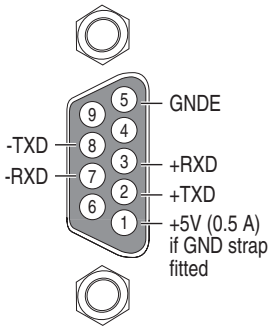
RS-422 Isolated, Full Duplex
(reconfiguration required)



The RS-422 circuit is available as a spare part, see the Spare Parts Catalog.

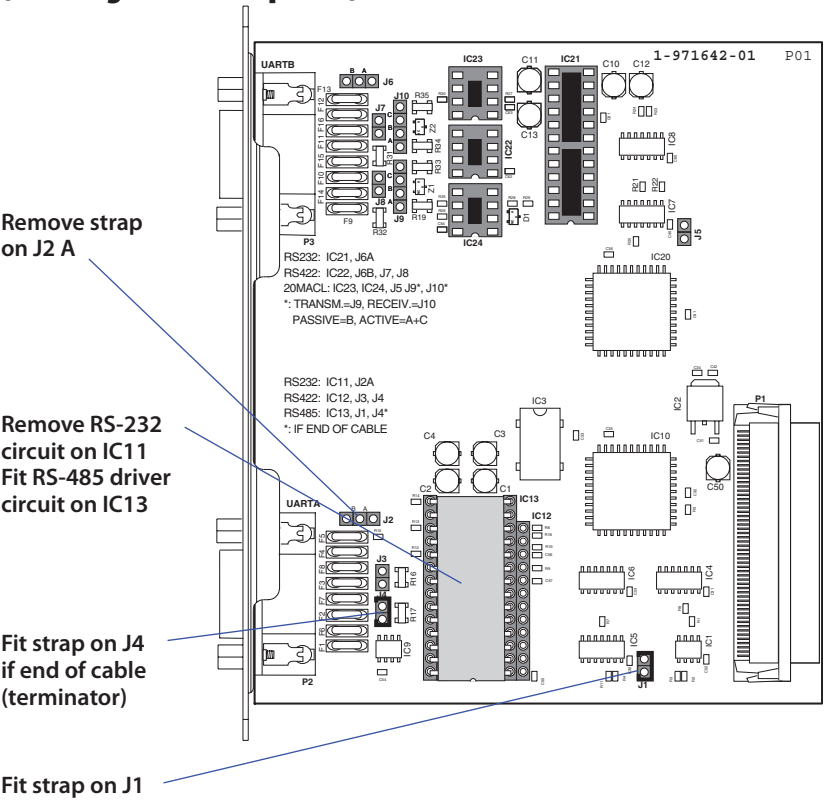
Connector Configuration (RS-422 Isolated on "uart2:", "uart3:", or "uart4:")

DB-9 socket	Signal	Meaning
1		External +5VDC max 500 mA (automatic switch-off at overload, short-circuit protected) provided strap is fitted on J2:A which spoils the galvanical isolation
2	+TXD	+Transmit data
3	+RXD	+Receive data
4	–	
5	GNDE	Ground
6	-	
7	-RXD	-Receive data
8	-TXD	-Transmit data
9	–	



RS-422 socket as seen from the outside.

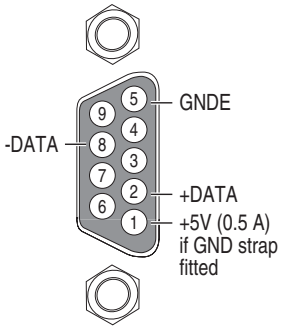
RS-485 Isolated, Half Duplex
(reconfiguration required)



The RS-485 circuit is available as a spare part, see the Spare Parts Catalog.

Connector Configuration (RS-485 Isolated on "uart2:" only)

DB-9 socket	Signal	Meaning
1		External +5VDC max 500 mA (automatic switch-off at overload, short-circuit protected) provided strap is fitted on J2:A which spoils the galvanical isolation
2	+DATA	
3	–	
4	–	
5	GNDE	Ground
6	–	
7	–	
8	-DATA	
9	–	



RS-422 socket as seen from the outside.

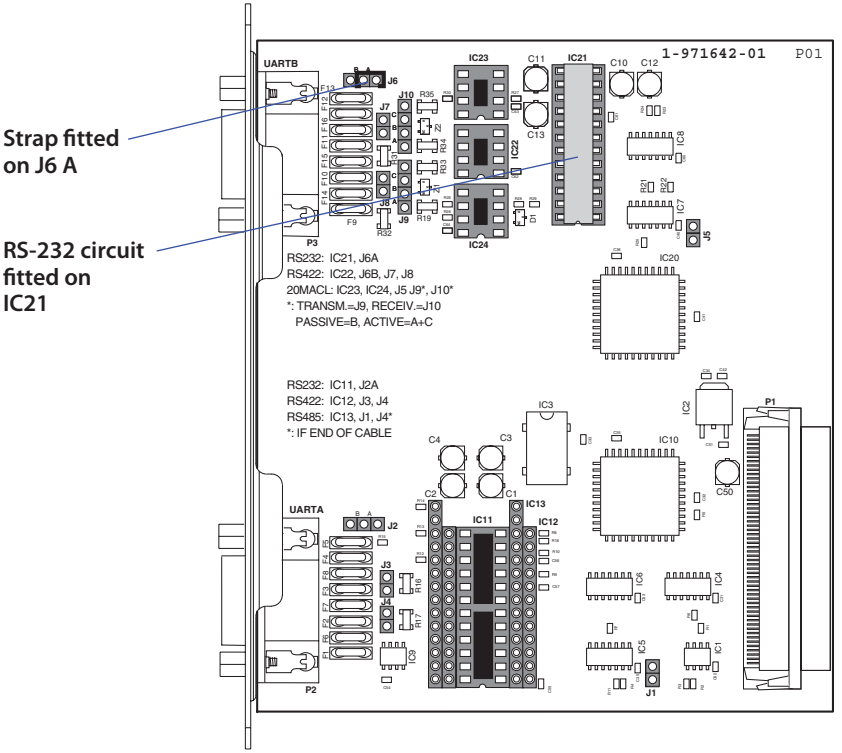
Note: The increased use of LAN networks has made the RS-485 interface somewhat obsolete, because RS-485 requires a special communication protocol and a dedicated wiring system limited to 1,200 m (4,000 ft). We only recommend RS-485 for existing applications and advice the customer to consider a LAN network solution for new applications.

4 Serial Interface "uart3:", "uart4:", and "uart5:"

This chapter describes how to modify the interface board for RS-232 non-isolated (standard), RS-422 non-isolated/full duplex, or 20 mA current loop on the "uart3:", "uart4:", and "uart5:" port and explains the configuration of the interface connector. The connector is marked “UART B” on the interface board.

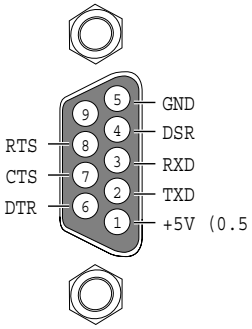
When fitting driver circuit and straps before installing the interface board, make sure that the circuit is not fitted upside down (see front end markings in the illustrations). Also make sure that the “legs” of the circuit fit into the slots in the socket and are not bent. Take ample precautions to protect the board and circuits from electrostatic discharges.

RS-232 Non-isolated
(standard)



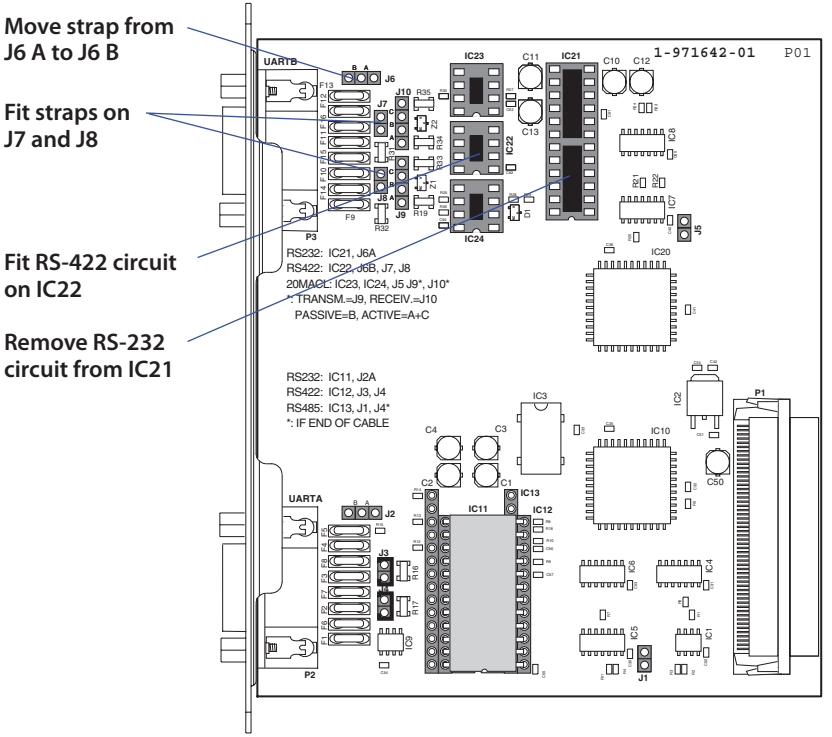
Connector Configuration (RS-232 on "uart3:", "uart4:", or "uart5:")

DB-9 socket	Signal	Meaning
1		External +5VDC max 500 mA (automatic switch-off at overload, short-circuit protected)
2	TXD	Transmit data
3	RXD	Receive data
4	DSR	Data set ready
5	GND	Ground
6	DTR	Data terminal ready
7	CTS	Clear to send
8	RTS	Request to send
9	–	Not used



RS-232 socket as seen from the outside.

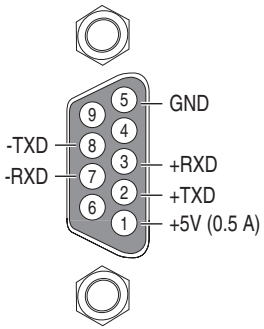
RS-422 Non-isolated, Full Duplex
(reconfiguration required)



The RS-422 circuit is available as a spare part, see the Spare Parts Catalog.

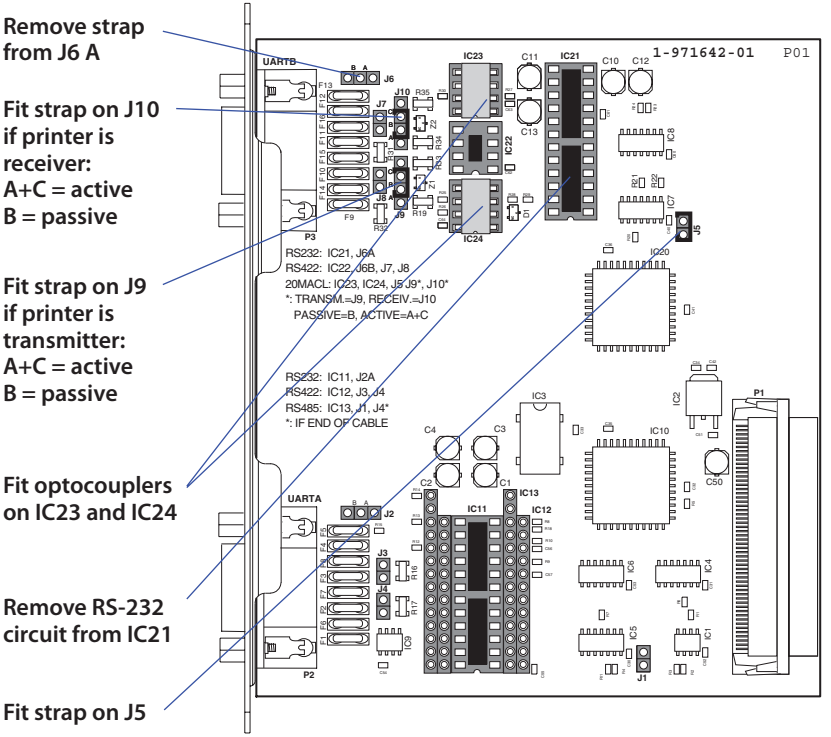
Connector Configuration (RS-422 Non-isolated on "uart3:", "uart4:", or "uart5:")

DB-9 socket	Signal	Meaning
1		External +5VDC max 500 mA (automatic switch-off at overload, short-circuit protected) provided strap is moved from J6 B to J6 A
2	+TXD	+Transmit data
3	+RXD	+Receive data
4	–	
5	GNDE	Ground
6	-	
7	-RXD	-Receive data
8	-TXD	-Transmit data
9	–	



RS-422 socket as seen from the outside.

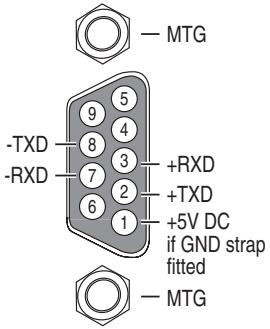
20 mA Current Loop
(reconfiguration required)



The optocouplers are available as spare parts, see the Spare Parts Catalog.

Connector Configuration (20 mA Current Loop on "uart3:", "uart4:", or "uart5:")

DB-9 socket	Signal	Meaning
1		External +5VDC max 500 mA (automatic switch-off at overload, short-circuit protected) provided a strap is fitted on J6 A which spoils the galvanic isolation
2	+TXD	+Transmit data
3	+RXD	+Receive data
4	–	
5	GNDE	Ground
6	-	
7	-RXD	-Receive data
8	-TXD	-Transmit data
9	–	



20 mA Current Loop socket as seen from the outside.

Note: Maximum recommended baud rate is 9600 bps.

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Double Serial Interface Kit Installation Instructions

1-960592-01