

4 Other connectors:

When the xCON converter is equipped with a MECCPU card it becomes an intelligent converter. By installing an application on the MECCPU card a special protocol can be inserted or the xCON converter can buffer data.

To connect the MECCPU card to the serial ports of the converter FIRST remove all jumpers JP5 ! Then connect MECCPU serial port A to P6 and port B to P7 using 2 short 10-wire flatcables.

Power 5V (P9):

P9 supplies 5V which can be used for the MECCPU card or other components installed.

Battery (P10):

By inserting a CR2032 3V battery into the BT1 socket, connector P10 will provide a connection between this battery and the MECCPU card for memory backup.

RS-232 - RS-422/485 Converter



Best.-Nr. 422-CH1

CONTENTS

CONTENTS	1
1 INTRODUCTION:	2
2 OPERATION:	3
2.1 DEVICE START-UP	3
2.2 CONNECTING THE XCON CONVERTER	3
2.2.1 RS232 serial port 1 (INPUT) pin assignment	4
2.2.2 RS422/485 serial port 1 (INPUT) pin assignment	4
2.2.3 RS422/485 serial port 2 (OUTPUT) pin assignment	5
2.2.4 RS422/485 serial port 2 (OUTPUT) pin assignment	5
2.2.5 Power input / output	6
2.3 CABLES	7
2.3.1 RS232 Communication cable between the host PC and the converter	7
2.3.2 All RS422/485 cables are 1:1 UTP, STP or FTP cables.	7
3 SWITCH SETTINGS:	8
4 OTHER CONNECTORS:	9

1 Introduction:

The xCON converter offers protocol conversion from RS232 (DTE) to RS 422/485. The converter has a small CE shielded metal case.

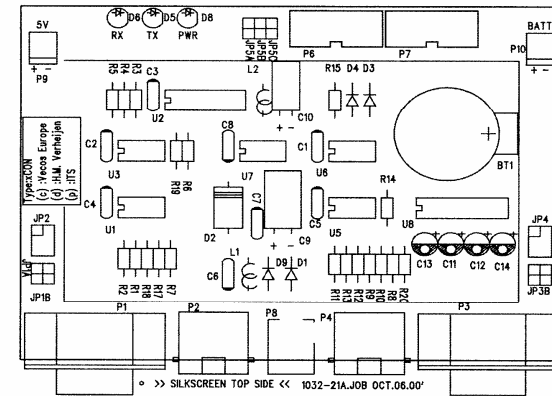
The xCON converter supports 4-wire communication for RS422 and 2-wire communication for RS485.

Selection of each mode is done by internal jumper settings on the PCB. In half duplex operation, the RTS handshake line of the RS232 interface switches between the transmit (RTS=ON) mode or receive (RTS=OFF) mode. Both the RS422/485 transmitter and receiver can be switched.

The xCON converter can also be used as a line extender. Each converter can extend the RS422/485 line by 1200 meter!

The dimensions of the converter are: 120(w) x 36(h) x 95(d).

3 Switch settings:



The xCON converter contains a few blocks of jumpers (switches) to configure the converter.

Termination:

- To enable termination of the OUTPUT line enable jumpers JP1 A & B
- To enable termination of the INPUT line enable jumpers JP3 A & B

Set the OUTPUT interface mode by JP2 and the INPUT interface mode by JP4

1-2	3-4	5-6	MODE	
X	X	X	RS422 MODE	Continue
X	X	-	RS422 MODE	Driver switched
X	-	X	RS422 MODE	Receiver switched
X	-	-	RS422 MODE	Driver & receivers switched
-	X	X	RS485 MODE	Driver switched
-	-	X	RS485 MODE	Driver & receiver switched

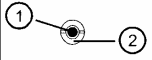
- When using RS485 mode remove IC U3 from its socket!
- RTS on => Driver on RTS off => Receiver on

JP5 A/B/C:

This jumper selects the mode of the converter to non-intelligent (all jumpers enabled) and intelligent (all jumpers removed).

For an intelligent converter a MECCPU card + BIOS is needed.

2.2.5 Power input / output



Pin	Signal	Direction	Description
1	PWR	-	Signal power (+9 to +30 VDC)
2	GND	-	Signal ground

2.3 Cables

2.3.1 RS232 Communication cable between the host PC and the converter

XCON CONVERTER (DB9-F)		HOST (DB9-F)	
N/C	1	1	NC
RxD	2	2	RxD
TxD	3	3	TxD
DTR	4	4	DTR
GND	5	5	GND
DSR	6	6	DSR
RTS	7	7	RTS
CTS	8	8	CTS
NC	9	9	NC

2.3.2 All RS422/485 cables are 1:1 UTP, STP or FTP cables.

2 Operation:

2.1 Device start-up

The XCON converter is powered by an external power adapter of 220V (default) or 110V (optionally) to DC 9V. As soon as the adapter is connected to the power input plug on the backside of the converter, the LED on the front will light up.

It is possible to supply the power for the converter through the RS422/485 (and optionally RS232) interface connector. See the RS422/485(DB9 female) connector pin assignments for details.

The external power should be between 8V and 18V DC with a minimum current supply of 150mA.

If power is supplied to the external power input pin of the RS 422/485 port, the adapter should NOT be used !!

2.2 Connecting the XCON converter

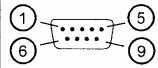
The XCON converter should be connected to a RS232 serial port, for example one of the COM ports of a PC using a shielded null-modem cable. The maximum length of this cable is 60 meters. For details see the RS232 null-modem cable specifications.

A second way is to use the RJ45 connector beside the RS232 DB9 connector as an input. The interface should then be connected to a RS422 or RS485 device. The pin description of this connector is a mirror of the OUTPUT RJ45 connector. This way it is not needed to use 0-modem cables for RS422/485.

The XCON converter doesn't need to be configured to the serial port parameters like baudrate, parity, number of bits and number of stopbits. The maximum baudrate for the converter to operate without errors is 115Kb.

2.2.1 RS232 serial port 1 (INPUT) pin assignment

RS-232 Serial Interface (DB9 male)



Pin	Signal	Direction	Description
1	NC	-	-
2	RxD	IN	Data received (by the converter)
3	TxD	OUT	Data transmitted (by the converter)
4	DTR	OUT	TRUE at power on
5	GND	IN	Signal ground
6	NC	-	-
7	RTS	OUT	Request to send (False at power on)
8	CTS	IN	Clear to send (Also used for RS422/485 switching)
9	NC	-	Optionally external power

2.2.2 RS422/485 serial port 1 (INPUT) pin assignment

RS422 Serial Interface (RJ45) (4-wire operation)

Pin	Signal	Direction	Description
1	RX-	IN	Receive signal negative
2	RX+	IN	Receive signal positive
3	GND	PWR	External power supply ground
4	Vext	PWR	External power supply +9 to 30V
5	Vext	PWR	External power supply +9 to 30V
6	GND	PWR	External power supply ground
7	TX+	OUT	Transmit signal positive
8	TX-	OUT	Transmit signal negative

RS485 Serial Interface (RJ45) (2-wire operation)

Pin	Signal	Direction	Description
1	TXRX-	IN	Transmit/Receive signal negative
2	TXRX+	IN	Transmit/Receive signal positive
3	GND	PWR	External power supply ground
4	Vext	PWR	External power supply +9 to 30V
5	Vext	PWR	External power supply +9 to 30V
6	GND	PWR	External power supply ground
7			
8			

2.2.3 RS422/485 serial port 2 (OUTPUT) pin assignment

RS-422/485 Serial Interface (DB9 female)

Pin	Signal	Direction	Description
1	RX+	-	Receive signal positive
2	RX-	IN	Receive signal negative
3	TX+	OUT	Transmit signal positive
4	TX-	OUT	Transmit signal negative
5	Term1		Connect to pin 4 to terminate the transmit line
6	Term2		Connect to pin 1 to terminate the receive line
7	GND	PWR	External power supply ground
8			
9	Vext	PWR	External power supply +9 to 30V

2.2.4 RS422/485 serial port 2 (OUTPUT) pin assignment

RS422 Serial Interface (RJ45) (4-wire operation)

Pin	Signal	Direction	Description
1	RX+	IN	Receive signal positive
2	RX-	IN	Receive signal negative
3	GND	PWR	External power supply ground
4	Vext	PWR	External power supply +9 to 30V
5	Vext	PWR	External power supply +9 to 30V
6	GND	PWR	External power supply ground
7	TX-	OUT	Transmit signal negative
8	TX+	OUT	Transmit signal positive

RS485 Serial Interface (RJ45) (2-wire operation)

Pin	Signal	Direction	Description
1	TXRX+	IN	Transmit/Receive signal positive
2	TXRX-	IN	Transmit/Receive signal negative
3	GND	PWR	External power supply ground
4	Vext	PWR	External power supply +9 to 30V
5	Vext	PWR	External power supply +9 to 30V
6	GND	PWR	External power supply ground
7			
8			