

# Manual

## Interface RS232 <> RS422, RS485



Release  
Typ

1.0  
86001

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## 1. Function

The W&T Interface Model 86001 permits bi-directional connection of RS232 devices with components which are equipped with an RS422, RS423 or RS485 port.

The Interface converts one data line and one handshaking line in each direction and provides electrical isolation between the RS232 side and the RS422/RS423/RS485 side.

## 2. Isolation

The two ports of the W&T interface 86001 are isolated both from each other with a dielectric strength of 500 volts. The signals are isolated by means of high-speed opto-couplers; energy is supplied to the RS422/485 driver and receiver elements by means of an isolated DC/DC converter.

## 3. Connectors

The two ports of the W&T interface 86001 use DB25 connectors. The connector pin assignments are shown in the table below. The connector configuration can also be found on a label on the interface housing.

RS232 interface (DB25 male connector)		RS422, 423, 485 interface (DB25 female connector)	
Pin	Function	Pin	Function
2	Data In	10	Data Out A (-)
3	Data Out	11	Data In A (-)
5	Handshake Out	14	Signal GND
7	Signal GND	15	Handshake Out A (-)
20	Handshake In	16	Handshake Out B (+)
		17	Handshake In A (-)
		18	Handshake In B (+)
		22	Data Out B (+)
		23	Data In B (+)

## 4. Operating modes

The W&T interface 86001 can be set for three different operating modes, which are briefly described here:

### 4.1. RS422, RS423, 4-wire RS485 Bus master

One data channel and one handshake channel in each direction are available. The RS422/RS423 receivers and transmitters are always active in this operating mode.

### 4.2. 2-wire RS485 handshake control with echo, 4-wire RS485 handshake control

One data channel in each direction is available. The RS485 driver is switched on with a positive RS232 handshake signal, while a negative signal forces the driver high. The RS485 receiver is always active in this operating mode.

### 4.3. 2-wire RS485 automatic control with echo, 4-wire RS485 automatic control

One data channel in each direction is available. The RS485 driver is activated automatically with each transmission of data, and goes high again after the end of transmission. The RS485 receiver is always active in this operating mode.

Please see the following table for an explanation of the operating mode DIP switches SW1 to SW6:

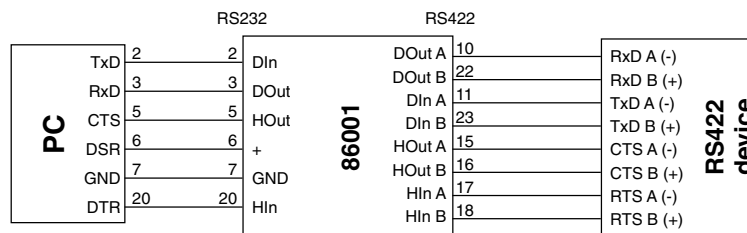
Function	SW1	SW2	SW3	SW4	SW5	SW6
RS422, RS423	off	off	off	off	off	off
RS485, handshake control	off	off	off	off	on	off
RS485, automatic control	off	on	off	off	on	off

### 5. Termination

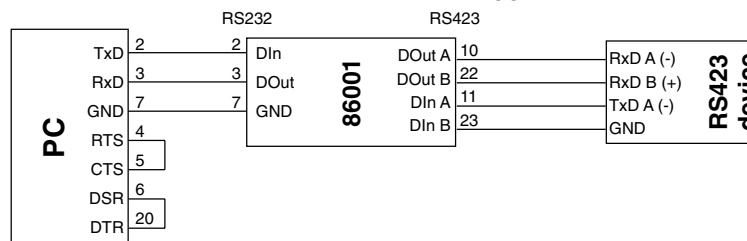
For all RS485 operating modes it is essential that the bus system is terminated with a termination network which assures a defined idle state in the high-impedance phases of bus operation. The bus system can be connected to a termination network of the interface by closing DIP switches SW7 and SW8.

### 6. Applications

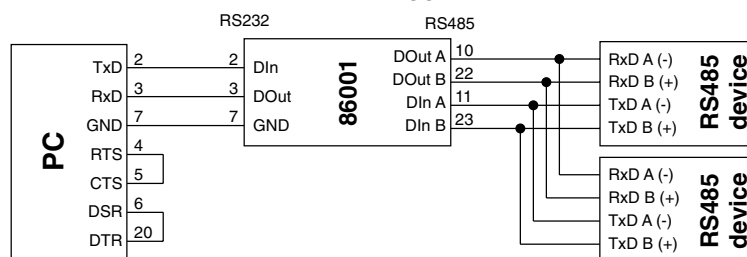
#### RS422 hardware handshake application



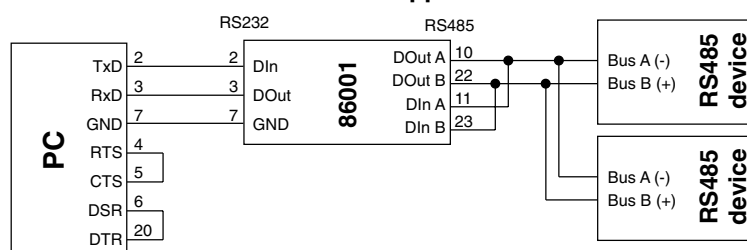
#### RS423 software handshake application



#### RS485 4-wire application



#### RS485 2-wire application



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## 7. Technical data

Baudrate:	0..115200 Baud
Data format:	any data format
Isolation:	500 volts
Termination:	switchable termination network for RS485 modes (330Ω/120Ω/330Ω)
Power supply:	plug in adaptor Input voltage: 230V / 50 Hz Output voltage: 5 V= / 260 mA
Supply current:	approx. 150 mA
RS232 interface:	DB25 male connector incl. 2m cable, DCE pin assignment
RS422,423,485 interface:	DB25 female connector, pin assignment see page 10
Housing / Dimensions:	Small plastic housing, 124 x 74 x 21 mm
Weight:	475 g incl. AC/DC adaptor
Packing list:	1 x Interface, type 86001 1 x Mini gender changer 25F-25F, type 11770 1 x AC/DC adaptor, type 11050