

# Manual

## Interface RS232 <> RS485



Release  
Typ

1.0  
86002

© 06/2002 by Wiesemann und Theis GmbH

Subject to error and alteration:

Since it is possible that we make mistakes, you mustn't use any of our statements without verification. Please, inform us of any error or misunderstanding you come about, so we can identify and eliminate it as soon as possible.

Carry out your work on or with W&T products only to the extent that they are described here and after you have completely read and understood the manual or guide. We are not liable for unauthorized repairs or tampering. When in doubt, check first with us or with your dealer.

### 1. Function

The W&T Interface Model 86002 permits bi-directional connection of RS232 devices with components which are equipped with an 2-wire RS485 port.

The Interface converts both RS232 data lines RxD and TxD to one bidirectional RS485 channel and provides electrical isolation between the RS232 side and the RS485 side.

The RS485 receiving channel of the interface type 86002 is disabled every time the driver is activated. This mechanism prevents from receiving a local data echo of the transmitted RS485 data.

### 2. Isolation

The two ports of the W&T interface 86002 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 RS485 driver and receiver elements by means of an isolated DC/DC converter.

### 3. Connectors

The two ports of the W&T interface 86002 use DB25 connectors. The connector pin assignments are shown in the table below:

RS232 interface (DB25 male connector)		RS485 interface (DB25 female connector)	
Pin	Function	Pin	Function
2	Data In	10	RS485 Bus A (-)
3	Data Out	22	RS485 Bus B (+)
7	Signal GND		
20	Handshake In		

### 4. Operating modes

The W&T interface 86002 can be set for two different operating modes, which are briefly described here:

#### 4.1. 2-wire RS485 handshake control

The RS485 driver is switched on with a positive RS232 handshake signal, while a negative signal forces the driver high. The receiving channel is deactivated when the driver is on, but is switched on when the driver is high.

#### 4.2. 2-wire RS485 automatic control

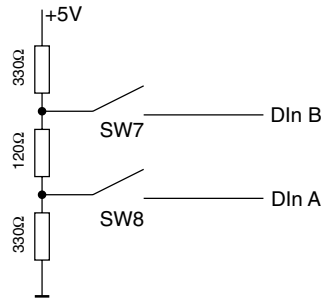
The RS485 driver is activated automatically with each transmission of data, and goes high again after the end of transmission. The receiving channel is deactivated when the driver is on, but is switched on when the driver is high.

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

Function	SW1	SW2	SW3	SW4	SW5	SW6
Handshake control	off	off	off	off	on	off
Automatic control	off	on	off	off	on	off

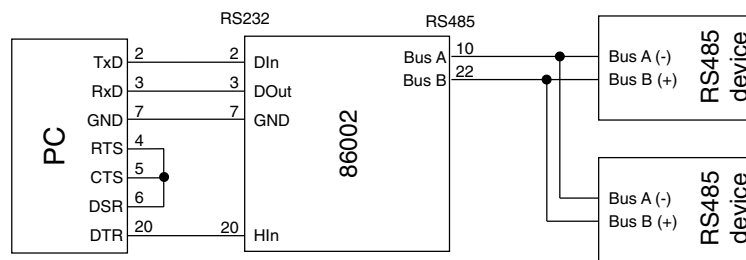
### 5. Termination

For RS485 2-wire connections 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.

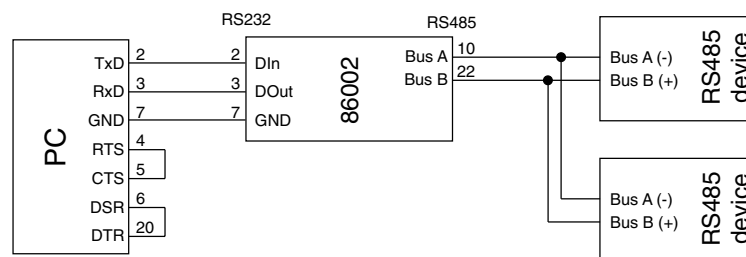


### 6. Applications

#### RS485 2-wire application, handshake control



#### RS485 2-wire application, automatic control



**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 86002 1 x Mini gender changer 25F-25F, type 11770 1 x AC/DC adaptor, type 11050