

15.3 IF050

15.3.1 General Information

PLC interface modules enable data transfer with other devices (other PLCs). This is especially important for complex applications, if e.g. the CPU's interfaces are not sufficient.

Due to the low cable requirements and sufficient worldwide standardization, serial interfaces are better suited for communication than parallel interfaces.

The following interfaces are available with the IF050 interface module. Operating the interfaces takes place using software, which is available on request from B&R.

Interface	Description
RS232	Communication is made using at least three lines (send, receive and protective ground). For synchronizing the transmitter and receiver (handshake), additional lines can be used. The coverage of the RS232 interface is limited to short distances. Characteristics : - Level: +3 V to +15 V / -3 V to -15 V - Short circuit protection - 19200 Baud with 15 m cable length
TTY	Communication takes place using a set current (20 mA). The TTY interface is therefore also called a current loop interface. Using applied current, a greater noise immunity over the same distance is achieved (in industrial environments up to 200 m). The maximum transfer rate is 2400 baud. The TTY interface requires four lines.
RS422	With this interface, send and receive lines and also handshake lines are doubled (differential signal). The distance that can be achieved with an RS422 interface is significantly greater than the RS232 interface and is a maximum of 1200 m depending on the baud rate.
RS485	This type of interface can be used in a network and is therefore best suited for industrial applications. The interface can handle 32 transmitters and receivers and two terminating resistors on one bus segment.

Table 316: IF050 interface description

15.3.2 Order Data

Model Number	Short Description	Image
	Interface module	
3IF050.6	2005 interface module, 1 RS232 interface, 1 RS485/RS422, network capable, 1 RS232/TTY interface, all interfaces are electrically isolated	
	Accessories	
0G0001.00-090	Cable PC <-> PLC/PW, RS232, online cable	
0G1000.00-090	Bus Connector, RS485, for PROFIBUS networks, remote I/O	
0AC916.9	Bus termination, RS485, active, for PROFIBUS networks, remote I/O, standard mounting rail installation, supply voltage: 120 / 230 VAC	
Additional accessories see sections "Accessories" and "Manuals".		

Table 317: IF050 order data

15.3.3 Technical Data

Product ID	IF050		
C-UL-US Listed	Yes		
B&R ID Code	\$60		
Processor	RISC		
Dual Ported RAM (DPR)	576 bytes		
Number of Interfaces	3		
Type	RS232	RS485/RS422 ¹⁾	RS232/TTY ¹⁾
Input Filter / Protective Circuit	Yes	Yes	Yes
Electrical Isolation			
Interface - PLC	Yes	Yes	Yes
Interface - Interface	Yes	Yes	Yes
Design	9-pin DSUB plug	9-pin DSUB socket	9-pin DSUB plug

Table 318: IF050 technical data

Product ID	IF050		
Maximum Distance	15 m / 19200 Baud	1200 m (without repeater)	RS232: 15 m / 19200 Baud TTY: 300 m
Handshake Lines	DCD, DTR, DSR, RTS, CTS, RI	---	RS232: RTS, CTS TTY: ---
Baud Rates ¹⁾	Max. 64 kBaud	Max. 347 kBaud	RS232: Max. 64 kBaud TTY: Max. 2.4 kBaud
Network Capable	No	Yes (with a max. of 32 transmitters, 32 receivers and two terminating resistors can be loaded per bus segment)	No
Data Formats ¹⁾	5 to 8 data bits, parity yes / no / even / odd , 1 / 1.5 / 2 stop bits		
Power Consumption 5 V 24 V Total	Max. 7 W --- Max. 7 W		
Dimensions	B&R 2005 single-width		

Table 318: IF050 technical data (cont.)

1) Can be configured using software.

15.3.4 Status LEDs

Image	LED	Description
	Tx y	Data is sent using interface Y.
	Rx y	Data is received using interface Y.

Table 319: IF050 status LEDs

15.3.5 Operational and Connection Elements

Three interfaces are located behind the module door of the IF050 module. These interfaces can be configured using software.

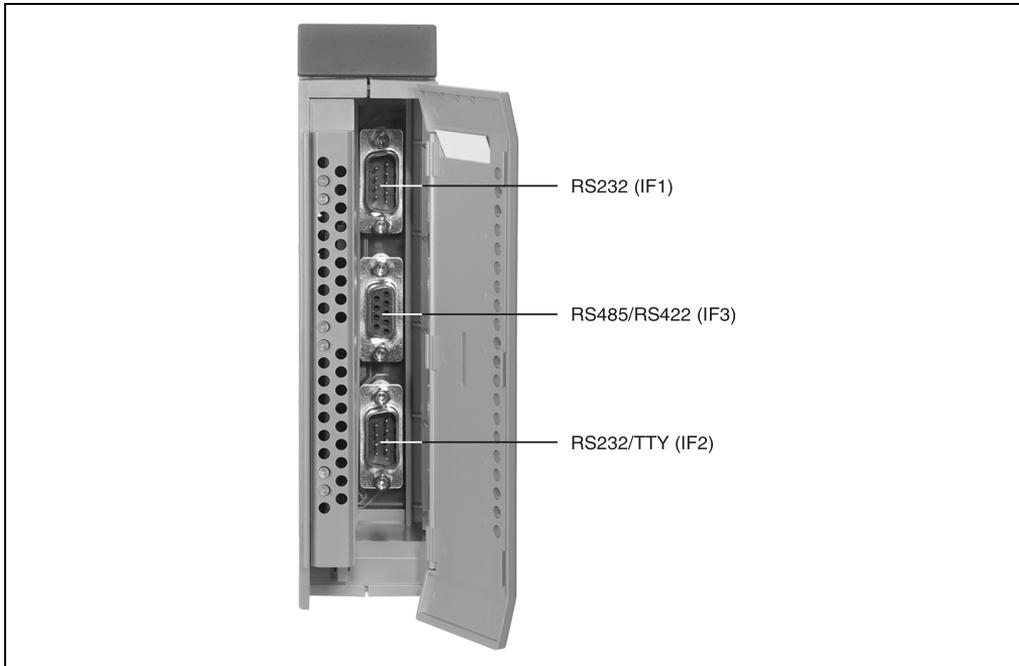


Figure 183: IF050 operational and connection elements

15.3.6 RS232 Interface (IF1)

The electrically isolated IF1 application interface can be used for connecting a fiber optic cable. The fiber optic cable is supplied with a short circuit proof 4.8 V voltage supply on pin 4 of the DSUB plug.

The status LEDs Rx and Tx are lit during data transfer via the RS485 interface.

Cable Length: Max. 15 m

Baud Rate: Max. 64 kBaud

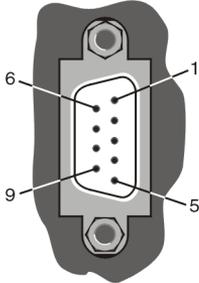
Interface	Pin Assignments		
<p style="text-align: center;">RS232</p>  <p style="text-align: center;">9-pin DSUB plug</p>	Pin	RS232	
	1	DCD	Data Carrier Detect
	2	RXmD	Receive Signal
	3	TXD	Transmit Signal+
	4	DTR	Data Terminal Ready (+4.8 V / 150 mA)
	5	GND	Ground
	6	DSR	Data Set Ready
	7	RTS	Request To Send
	8	CTS	Clear To Send
9	RI	Ring Indicator	

Table 320: IF050 RS232 Interface (IF1)

15.3.7 RS232/TTY Interface (IF2)

The application interface is electrically isolated. The configuration is made using software in the application program.

RS232 Interface

Cable Length: Max. 15 m / 19200 Baud

Baud Rate: Max. 64 kBaud

TTY interface

Cable Length: Max. 300 m

Baud Rate: Max. 2.4 kBaud

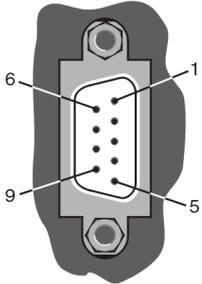
Interface	Pin Assignments		
<p style="text-align: center;">RS232/TTY</p>  <p style="text-align: center;">9-pin DSUB plug</p>	Pin	RS232	TTY
	1		TXD
	2	RXD	Current 1
	3	TXD	
	4		RXD
	5	GND	GND
	6		TXD Ret
	7	RTS	Current 2
	8	CTS	
9		RXD Ret	

Table 321: IF050 RS232/TTY interface (IF2)

15.3.8 RS485/RS422 interface (IF3)

The 5 V supply is electrically isolated and is used for connecting terminating resistors (for networking several RS485 interfaces).

The electrically isolated RS485/RS422 interface can be used for connecting a fiber optic cable. The fiber optic cable is supplied with an electrically isolated 5 V voltage supply on pin 6 of the DSUB socket.

Cable Length: Max. 1,200 m

Baud Rate: Max. 347 kBaud

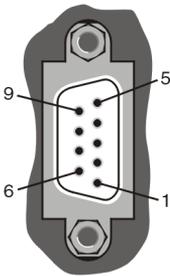
Interface	Pin Assignments		
	Pin	RS485	RS422
<p>RS485/RS422</p>  <p>9-pin DSUB socket</p>	1		
	2		TXD
	3	DATA	RXD
	4		
	5	GND	GND
	6	+5 V / 200 mA	+5 V / 200 mA
	7		TXD\
	8	DATA\	RXD\
	9		

Table 322: IF050 RS485/RS422 interface (IF3)