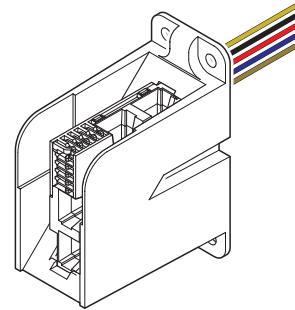


# IBS RL UNI-FLANSCH

**Flange With Fiber Optic Interface for Implementing Modules of Different Manufacturers in an INTERBUS Rugged Line System**



## AUTOMATION

Data sheet  
6212\_en\_02

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### 1 Description

The IBS RL UNI-FLANSCH flange has a fiber optic interface, which is mechanically compliant with the Rugged Line product range. This enables modules of different manufacturers to be implemented in an INTERBUS system by means of OPC.

This flange is designed for use on modules in systems engineering. With IP67 protection, it is suitable for use without a control cabinet in harsh industrial conditions.

#### Features

- IP67 protection
- Fiber optics
- Installation with four M4 screws



#### NOTE:

Ensure that the flange is completely installed before it can be operated.



#### NOTE:

Only connect and remove the flange when power has been disconnected (connection according to DIN EN 60204-1:1993-06).



#### NOTE:

To ensure IP67 protection assign the connections when the flange is installed. Unused connections must be isolated with a dummy plug. You must not pierce the grommet of unused connectors. You may have unused connections if, e.g., the module is the last device in the bus system.



Make sure you always use the latest documentation.  
It can be downloaded at [www.phoenixcontact.net/download](http://www.phoenixcontact.net/download).



For information on the Rugged Line product range, please refer to the IB RL SYS PRO UM E "Configuring and Installing the Rugged Line Product Range" User Manual.



## IBS RL UNI-FLANSCH

## 2 Ordering data

### Products

Description	Type	Order No.	Pcs./Pkt
Flange with fiber optic interface for implementing modules of different manufacturers in an INTERBUS Rugged Line system	IBS RL UNI-FLANSCH	2746993	1

### Accessories

Description	Type	Order No.
Optical fiber data cable: Polymer fiber cable, duplex, 980/1000 µm, sold by the meter, not pre-assembled	PSM-LWL-RUGGED-980/1000	2744322
Optical fiber data cable (flexible): Polymer fiber cable, duplex, 980 µm/1000 µm, dark red, welding splash-resistant in standard applications, tested for flexible cable tracks, sold by the meter, not pre-assembled	PSM-LWL-RUGGED-FLEX-980/1000	2744335
Optical fiber data cable: Polymer fiber cable, duplex, 980/1000 µm, sold by the meter, not pre-assembled	PSM-LWL-KDHEAVY-980/1000	2744319
Assembled cable jumper for the short connection of the Rugged Line devices with two optical fiber bus connectors (remote bus and supply voltage)	IBS RL CONNECTION-LK	2733029
Supply cable, 5 x 1.5 mm <sup>2</sup> (16 AWG), gray, very flexible, welding splash-resistant in standard applications	IBS PWR5 HD/F	2731775
Supply cable, 5 x 1.5 mm <sup>2</sup> (16 AWG)	IBS PWR/5	2820000

### Documentation

Description	Type	Order No.
"Configuring and Installing the Rugged Line Product Range" User Manual	IBS RL SYS PRO UM E	2743789
"IBS SUPI 3 OPC INTERBUS Protocol Chip" User Manual	IBS SUPI 3 OPC UM E At <a href="http://www.interbusclub.com">www.interbusclub.com</a> under the heading "Technology/Interface Implementation"	

## 3 Technical data

General data	
Ambient temperature	Operation: -20 °C to +70°C (-4°F to +158°F)
Internal temperature	The maximum temperature of 80°C (176°F) must not be exceeded at any position inside the flange.
Storage/transport temperature	-25 °C to +70°C (-13°F to 158°F)
Humidity	Operation: 100%, no condensation Storage/transport: 95%, no condensation
Air pressure	Operation: 860 hPa to 1080 hPa (up to 1500 m [4921 ft.] above sea level) Storage/transport: 660 hPa to 1080 hPa (up to 3500 m [11483 ft.] above sea level)
Degree of protection	IP67 (when installed) Seal unused connections to ensure IP67 protection.
Electrical isolation	Interface, FE, U <sub>S1</sub> and U <sub>S2</sub>

### INTERBUS Interface

Incoming/outgoing remote bus	Optical fiber (polymer fiber 980 µm/1000 µm)
Connection method	Rugged Line connector (see "Configuring and Installing the Rugged Line Product Range" User Manual)

### Drill Holes for the Bus Signals

Assignment	See table "Assignment of the drill holes for the bus signals" on page 4
Supply voltage	5 V ± 5%

### Connection of the 24 V Supply Voltages

Connection of the 24 V supply voltages for bus, sensors and actuators	See table "Assignment of the 24 V Supply Voltage for Bus, Sensors and Actuators" on page 5
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## 4 Connection Assignment

### 4.1 Assignment of the Bus Connection and the Supply Voltage

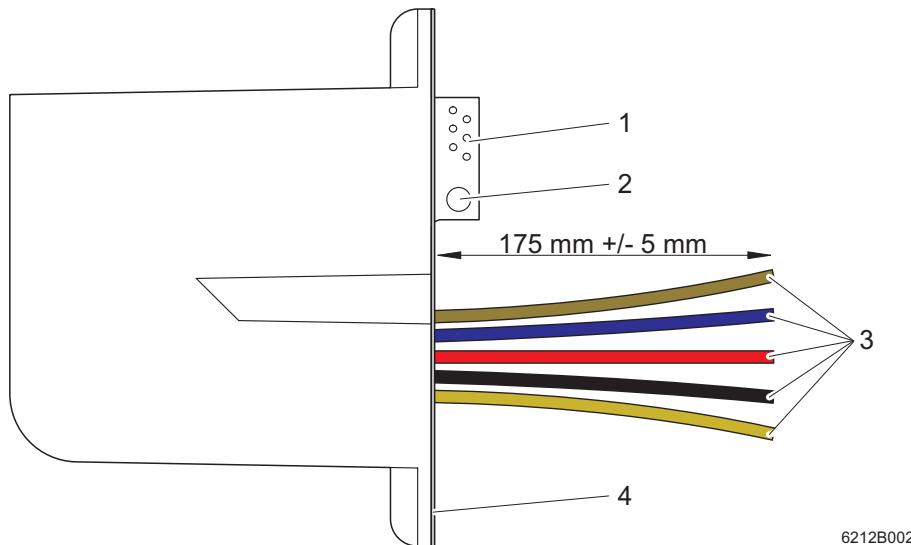


Figure 1 Assignment of the connections

Assignment	
Drill holes for bus connection	1
Drill hole for shield connection	2
24 V supply voltage	3
Grommet	4

#### 4.2 Pin Assignment of the Female Connector with Bus Signals

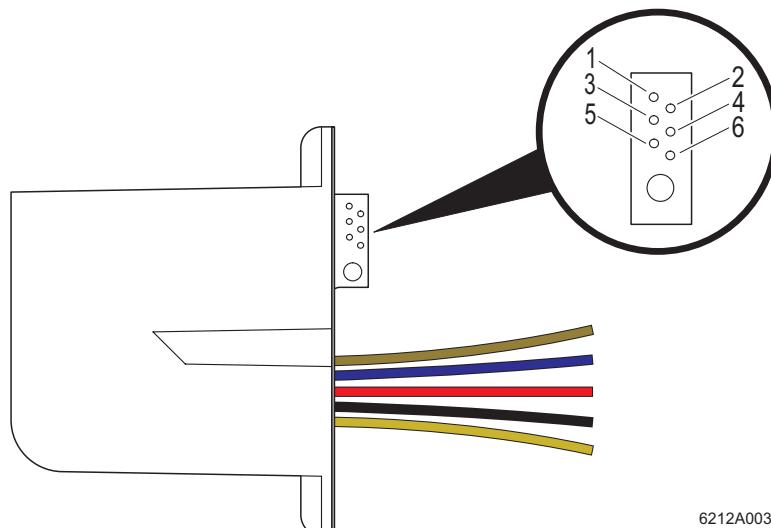


Figure 2 Assignment of the drill holes for the bus signals

Assignment	Drill Hole
5 V supply	1
Send data (analog OPC output)	2
GND	3
Receive data (digital OPC input)	4
GND	5
GND	6

The bus signals are transmitted to the OPC connection via a shielded cable.



The connection supply voltage is 5 V  $\pm 5\%$ . Connect the shield of the data cable on both sides to GND. Use drill hole 2 for the connection of the shield (see Figure 1 on page 3).

#### 4.3 Assignment of the 24 V Supply Voltage for Bus, Sensors and Actuators

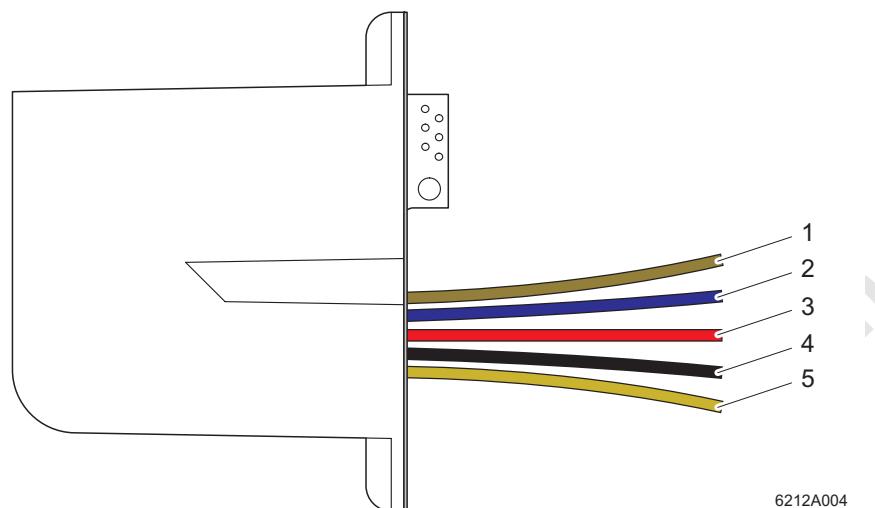


Figure 3 Assignment of the supply voltage

For connecting power signals the following five wires are available:

Signal	Wire	Wire Color
+24 V $U_{S1}$ (bus/sensor supply)	1	Brown
GND $U_{S1}$	2	Blue
+24 V $U_{S2}$ (actuator supply)	3	Red
GND $U_{S2}$	4	Black
Functional earth ground	5	Yellow/green

The supply voltages  $U_{S1}$  and  $U_{S2}$  are connected using a 5-wire cable with a maximum current carrying capacity of 16 A for each contact.



**NOTE:**

The electrical isolation between FE,  $U_{S1}$  and  $U_{S2}$  must not be damaged.



**NOTE:**

Ensure that the voltages  $U_{S1}$  and  $U_{S2}$  are looped back from the incoming remote bus interface to the outgoing remote bus interface of the connected module.

The supply voltage  $U_{S1}$  can be used as bus and initiator supply.

The supply voltage  $U_{S2}$  may only be used as actuator supply.

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### 5 Connecting the IBS RL UNI-FLANSCH Flange

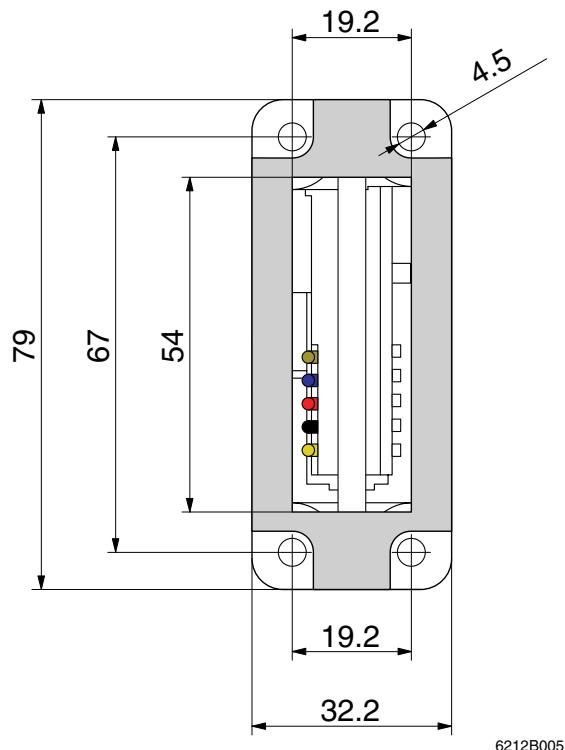


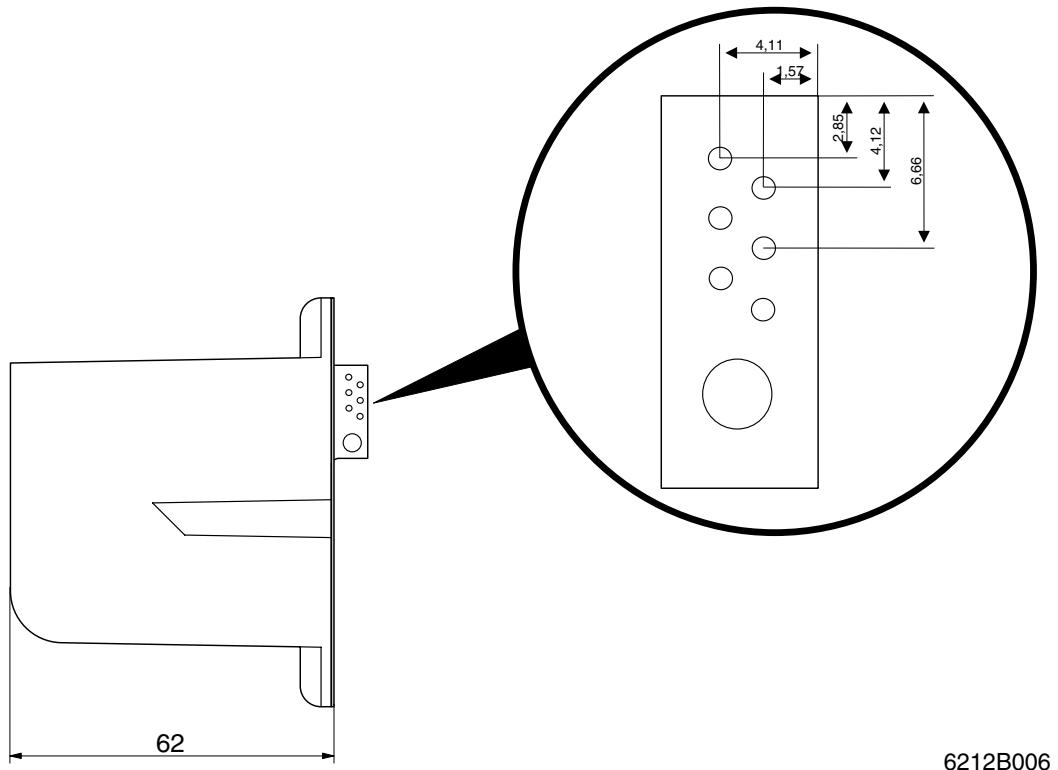
Figure 4 Drill hole distances / mm

Install the flange on the module to be connected using four M4 screws.



You need one flange for the incoming and one flange for the outgoing INTERBUS system.

## 6 Drill Hole Dimensions for Bus Signal Connection



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Figure 5 Drill Hole Dimensions / mm

The six drill holes for the bus signal connection have a diameter of 0.8 mm.

## 7 OPC Connection

Use a shielded cable for bus signal transmission. Connect the cable shield to drill hole 2 on the flange (see Figure 1 on page 3). Drill hole 2 is connected to GND. Connect the shield to GND of the OPC on the side the module is to be connected.



The cable must not be longer than 20 mm

## 8 Measuring the Optical Power



When the flange and the module are installed the optical power must be measured from both directions of the Rugged Line connector.

Measure the optical power after power up (voltage connection) to allow the send power level defined by OPC to be set.

During measuring bus communication must be disabled (long firmware reset, no master connection, waiting 7 seconds after power up).

Use a 1 m reference cable for measuring.

The measured optical power at the end of the reference cable must be between  $-3.5 \text{ dBm} \geq P_{\text{opt}} \geq -8.8 \text{ dBm}$ .

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List the measured values together with the serial number of the module. Labeling these values on the module is not required.

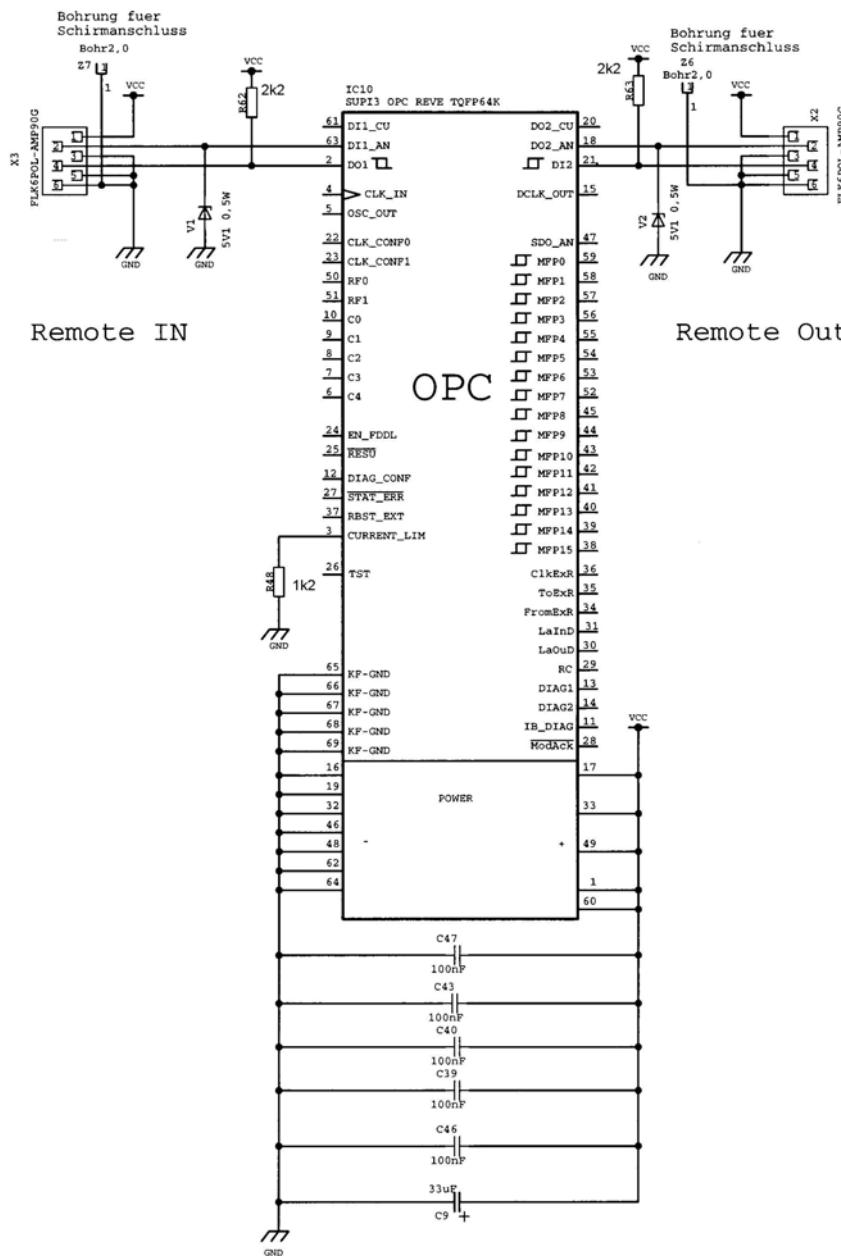


Figure 6 OPC connection of the fiber optic interfaces with the IBS RL UNI-FLANSCH flange



Please observe the specifications in the IBS SUP13 OPC UM E user manual during implementation.