General Information about Connecting the Remote Bus Cable

Creation of a cable plan

A complete cable plan should be created for the INTERBUS network, from which the cable paths and the protective measures (EMC) on the cables are clearly visible . The plan should identify the incoming and outgoing cable (incoming remote bus, outgoing remote bus) of each module.

Connection of the remote bus cable

Modules within the INTERBUS network are connected to both of their plugs. One cable is connected to the cable for the incoming remote bus and one the other is connected to the cable for the outgoing remote bus.
Modules at the end of the network are only connected to one plug, that for the incoming remote bus.

Types of connections

The cables of the INTERBUS network can be planned in two different types:
- as copper wires
- in fiber optic technology

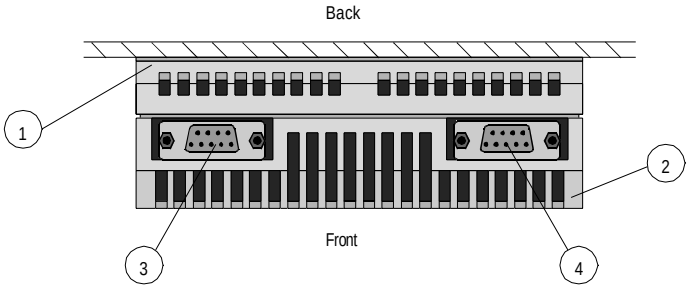
Connection of Remote Bus Cable, Copper Cable

Using Copper Cable

Prefabricated cables are available in 3 different lengths for the remote bus, see *Overview of Ordering Information, p. 50*. Each cable has two plugs for the connection of two neighboring modules.
All other cable lengths must be made by the customer themselves, see *Preparation of the Remote Bus Cable, using Copper Wiring, p. 39*.

Location of the connector plug for the remote bus cable (170 INT 110 03)

Location of the interfaces on the bus adapter 170 INT 110 03:



1 I/O module

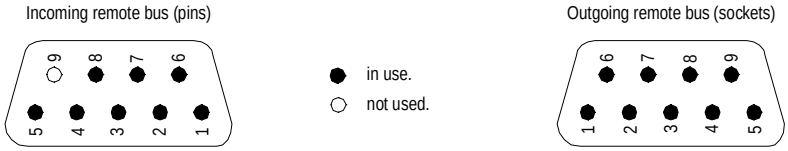
2 INTERBUS adapter

3 Plug for incoming bus (pin)

4 Plug for outgoing bus (socket)

Pin configuration of adapter plug (170 INT 110 03)

Diagram of the pin configuration on the bus adapter 170 INT 110 03:



Pin configuration of the incoming remote bus

Pin configuration of the incoming remote bus (pins)

Pin	Abbreviation	Term
1	DO	Data out
2	DI	Data IN
3	Common	Reference conductor
4	GND *	Reference conductor fiber optic adapter
5	Vcc *	Supply fiber optic adapter
6	DO_N	Data Out negated
7	DI_N	Data IN negated
8	Vcc *	Additional supply fiber optic adapter
9		not connected
*) galvanic potentially isolated		

Pin configuration of the outgoing remote bus

Pin configuration of the outgoing remote bus (sockets)

Pin	Abbreviation	Term
1	DO	Data out
2	DI	Data IN
3	Common	Reference conductor
4	GND	Reference conductor fiber optic adapter
5	Vcc	Supply fiber optic adapter
6	DO_N	Data Out negated
7	DI_N	Data IN negated
8	Vcc	Additional supply fiber optic adapter
9		Plug detection

Preparation of the Remote Bus Cable, using Copper Wiring

Preparation of the remote bus cable

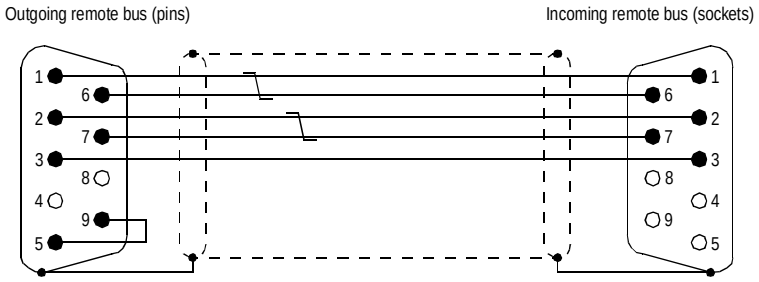
Plug sets are offered to make your own cables in customized lengths. The set contains one plug with pins (male) and one with sockets (female), see *Overview of Ordering Information, p. 50*.

Before making the cable, please observe the following general guidelines:

- A 5 wire cable, shielded twisted pair, is required for the remote bus and can be ordered by the meter (KAB-3225-LI).
- The maximum length of the remote bus is 12.8 km. The distance between two remote bus nodes must be no more than 400m.
- The plugs for the outgoing remote bus always have pins, while those for the incoming remote bus always have sockets.
- In the plug for the outgoing remote bus the connections 5 and 9 must always be bridged, see Wiring diagram.
- The cable shield must be connected to the plug housing with a large surface area.

Wiring diagram

Wire the remote bus cable plug as follows:



Pin configuration cable side outgoing remote bus

Pin configuration cable side outgoing remote bus (pins)

Pin	Wire color (KAB-3225-LI)	Abbreviation	Term
1	yellow	DO	Data out
2	gray	DI	Data IN
3	brown	Common	Reference conductor
5, 9	bridged (plug detection)		
6	green	DO_N	Data Out negated
7	pink	DI_N	Data IN negated

Pin configuration cable side incoming remote bus

Pin configuration cable side incoming remote bus (pins)

Pin	Wire color (KAB-3225-LI)	Abbreviation	Term
1	yellow	DO	Data out
2	gray	DI	Data IN
3	brown	Common	Reference conductor
6	green	DO_N	Data Out negated
7	pink	DI_N	Data IN negated