IBS ST 24 BK-T

Data Sheet

INTERBUS-S

Bus Terminal Module

Data Sheet Revision A 08/1994

Product Description

The IBS ST 24 BK-T bus terminal module is the head station for an INTERBUS ST compact station in an INTERBUS-S network.

Features

- INTERBUS-S protocol
- D-SUB 9 remote bus connectors
- Electrical isolation of the remote bus segments
- Electrical isolation of the logic and I/O voltage
- Diagnostic LEDs
- Alarm output
- Reconfiguration input
- Replaceable electronics
- Rail mountable (EN 50022)

Applications

Connection of an INTERBUS ST compact station to the INTERBUS-S remote bus.

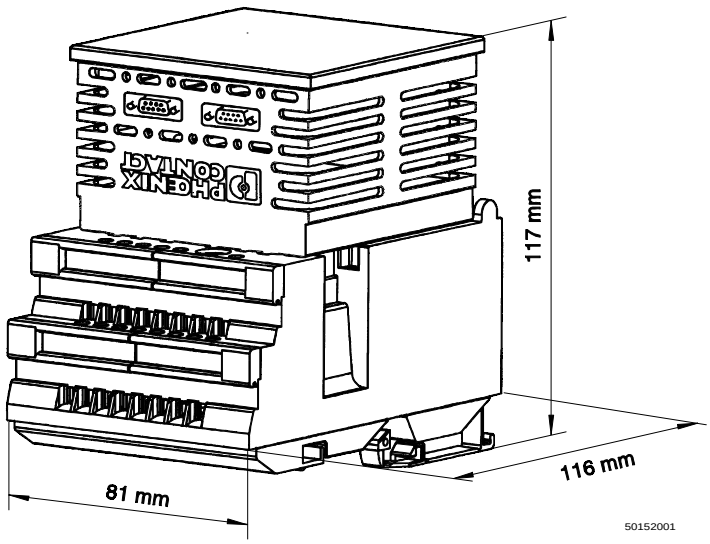


Fig. 1: IBS ST 24 BK-T

Example of an Electrical Installation

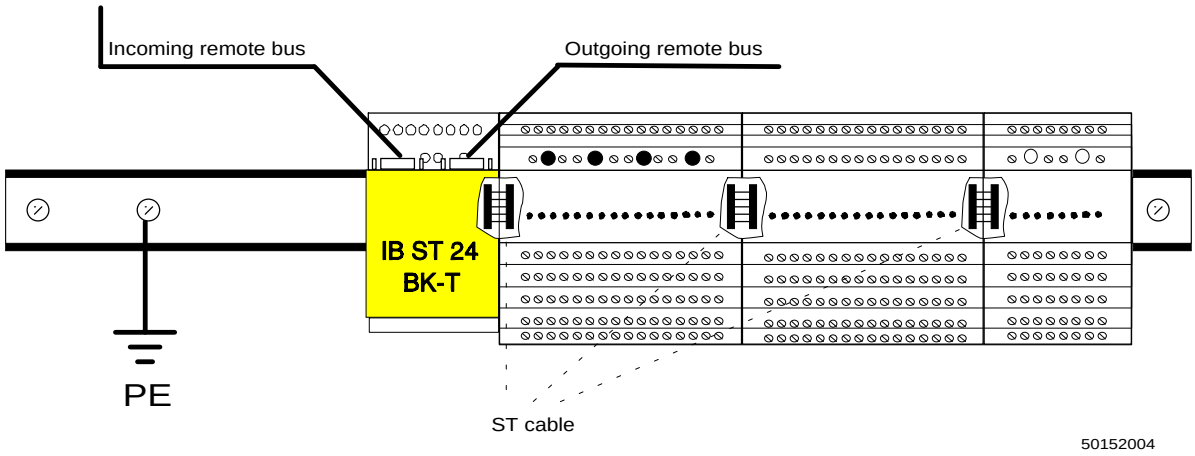


Fig. 2: Exemplary connection of an IB ST compact station through the IBS ST 24 BK-T bus terminal module to the INTERBUS-S remote bus. An IB ST compact station may consist of up to 8 I/O modules.

Connect the mounting rail via ground terminals with protective earth (PE), as the modules are grounded when they are snapped onto the rail.

Table 1: Ordering data

Description	**Type**	**Order No.**
Bus terminal module	IBS ST 24 BK-T	27 54 34 1
Module electronics, separately	IBS STME 24 BK-T	27 54 36 7
Terminal block, separately	IBS STTB 24 BK-T	27 53 18 0
Fuse, 1 A, slow-blow	IBS TR5 1AT	28 06 60 0
Insertion bridge, 80-pos., divisible, IN = 26A, insulated back (5 pieces)	EB 80-DIK BU (blue) EB 80-DIK RD (red)	27 15 94 0 27 15 95 3
Zack (“quick“) strip for terminal labeling	ZB 6 ... see Phoenix Contact Catalog, Part 3 MARKING, MOUNTING, Page 18	
Mounting rail EN 50022, 2 meters	NS 35/7,5 perforated NS 35/7,5 unperforated	08 01 68 1 08 01 73 3

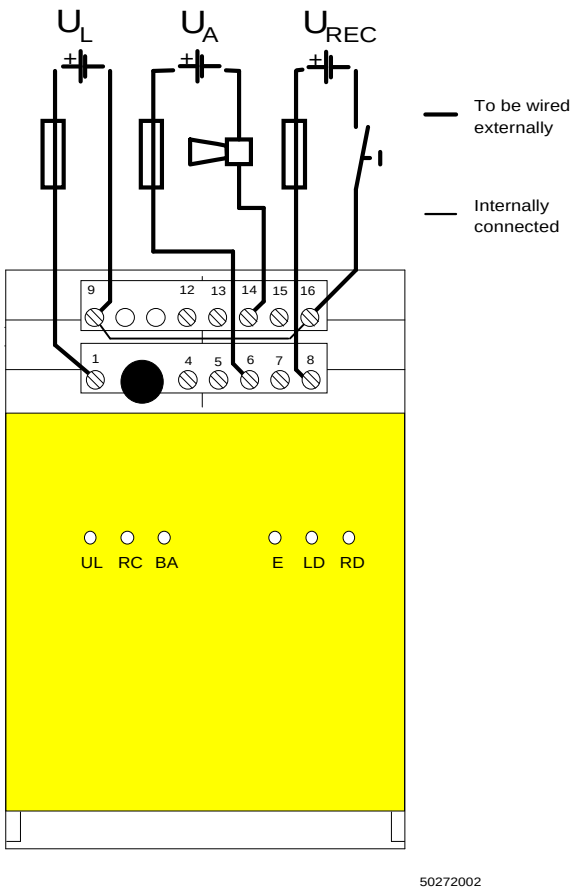


Fig. 3: Connection of the supply voltage

U_L: Supply voltage for the bus logic

U_A: Supply voltage for the alarm contact (optional)

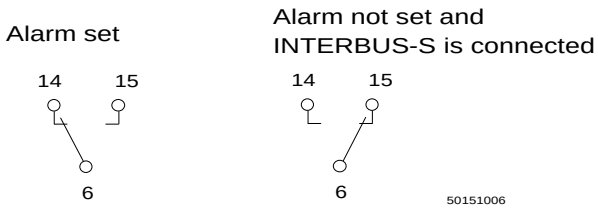
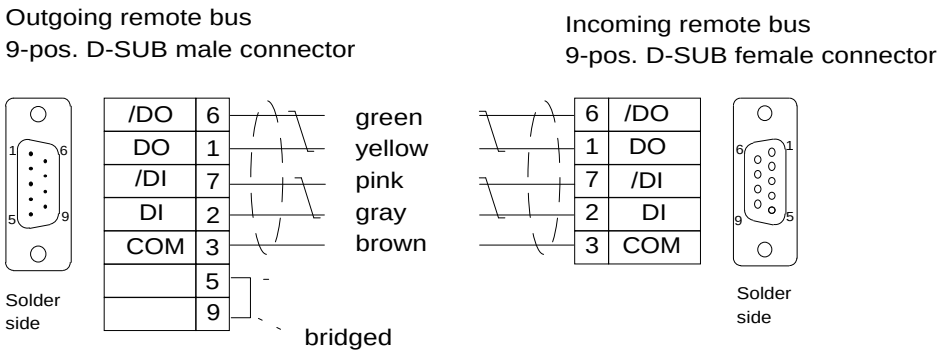


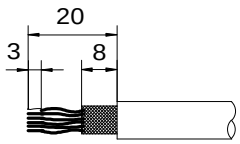
Fig. 4: Method of functioning of the alarm contact

U_{REC}: Supply voltage for the reconfiguration input (optional). This input can only be used in connection with a group definition. The reconfiguration input has the same potential as the supply voltage. That means that the terminals 9 and 16 have to be connected.

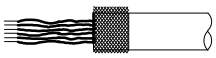
Pin Assignment of the Male and Female Remote Bus Connector



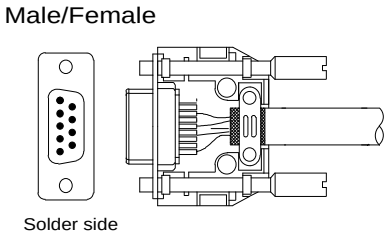
Notes on how to assemble the cable



Strip the cable sheath 20 mm and bare the core ends 3 mm.
Shorten the braided screen by 12 mm.



Place the braided screen evenly around the cable sheath



Clamp the shield under the cable grip
(conductive connection with the housing).

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Fig. 5: Connector pin assignment for the incoming and outgoing remote bus with information on how to assemble the cable.

In order to reduce the installation time of an INTERBUS-S systems as much as possible, Phoenix Contact offers pre-assembled bus cable in different lengths (see Phoenix Contact Catalog, Part 11: INTERBUS).

Table 2: The most important data for the programmer

Identification code	8 (decimal) 8 (hexadecimal)
Length code	0 (hexadecimal)
Input address area	0 bytes
Output address area	0 bytes
PCP address area	0 bytes
Register length	0 bytes
Programmable functions	
Disconnection of the IB ST compact station	Yes
Reset of the IB ST compact station	Yes
Disconnection of the outgoing remote bus	Yes
Reset of the outgoing remote bus	Yes
Monitoring of the remote bus cable	Yes

Technical Data

General

Type	IBS ST 24 BK-T
Identification code	08 (hex) 8 (dec)
Length code	0
Register length	0
Degree of protection	IP 20
Air and creepage distances	VDE 0110 part1, 01/89
Permissible operating temperature	From 0 °C to 55 °C
Permissible storage temperature	From -20 °C to 70 °C
Housing dimensions (w * d * h)	81 mm * 117 mm * 116 mm

Interfaces

INTERBUS-S	
- Incoming remote bus	D-SUB male connector, 9-pos.
- Outgoing remote bus	D-SUB female connector, 9-pos.
- IB ST interface	ST cable (is included in the scope of delivery of the I/O modules)
Number of the connectible ST modules	8
Maximum distance to the next remote bus module	400 m
Electrical isolation between	
- incoming and outgoing remote bus	Test voltage 500 V AC (50 Hz)
- incoming remote bus and IB ST interface	Test voltage 500 V AC (50 Hz)
Alarm contact	
- Terminal points	6, 14, 15 (see Figure 3)
- Maximum voltage U_A	30 V AC/DC
- Maximum current	0.5 A
Reconfiguration input	
- Terminal points	8 (+), 18 (-) (see Figure 4)
- Nominal voltage U_{REC}	24 V DC
- Permissible range	-30 V to +30 V (DC) set: 13 V to 30 V (DC) not set: -30 V to +1 V
- Current consumption (set)	2 mA typical

Supply

Terminal points	1 (+), 9 (-) (see Figure 3)
Nominal voltage U_S	24 V (DC)
Permissible ripple	3.3 V_{pp} within the permissible voltage range
Permissible voltage range	20 V to 30 V (DC)
Current consumption, primary:	
- without IB ST local bus modules	150 mA typical (at 24 V)
- maximum	650 mA typical (at 24 V)
Current output, secondary (ST cable):	
- maximum	800 mA (9 V)
Internal fuse	IBS TR 5 , 1 A (slow-blow), Order No.: 28 06 60 0

Local Diagnostic Indicators

UL	green LED	supply voltage for the module electronics
	on:	supply voltage available
	off:	- supply voltage U_L not available - fuse of the BK defective - internal power supply unit of the BK defective
BA	green LED	remote bus active
	on:	data transmission on INTERBUS active
	off:	no data transmission
RC	green LED	remote bus cable check
	on:	incoming remote bus connection established
	off:	incoming remote bus connection interrupted
E	red LED	error
	on:	controller board located an error in this compact station
LD	red LED	compact station disabled
	on:	I/O modules of this compact station disabled
RD	red LED	remote bus disabled
	on:	outgoing remote bus disabled

Notes:

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