

## Bridge for SafetyBUS p® PSS SB BRIDGE



PSS SB BRIDGE

Suitable for data transfer between two independent SafetyBUS p® networks

### Features

- Reduction of bus load
- Data exchange between two independent SafetyBUS p® networks with different transmission rates
- Automatic synchronisation to the existing transmission rate in SafetyBUS p® networks A and B
- 32 digital (virtual) inputs in each of the two SafetyBUS p® networks
- 32 digital (virtual) outputs in each of the two SafetyBUS p® networks
- Suitable for connection of fibre optic modules for CAN applications

### Approvals

	PSS SB BRIDGE
	●
	●
	●

Technical details	PSS SB BRIDGE
Function	Interface device for SafetyBUS p®
Application range	Failsafe applications conforming to EN 954-1 up to category 4 and EN IEC 61508 up to SIL3
<b>Electrical data</b>	
Supply voltage	24 VDC, 90 mA plus load currents required for fibre optic coupler (40 mA per fibre optic coupler)
Tolerance range	20 ... 30 VDC including residual ripple
Power consumption	2.2 W
Galvanical isolation	Yes (optocoupler), between two SafetyBUS p® networks
<b>SafetyBUS p®</b>	
Transmission rate	max. 500 kbit/s (automatic synchronisation in each SafetyBUS p® network)
Cable runs	max. 3,500 m (per SafetyBUS p® network)
Transmission type	Differential two wire cable
Connection	Two 9-pin D-Sub female connectors
Status display	LEDs for power, bus status and diagnostics
Subscribers	max. 64 including PSS SB BRIDGE (per SafetyBUS p® network)
Data width	32 bits as virtual inputs/outputs (per SafetyBUS p® network)
<b>Mechanical data</b>	
Dimensions (H x W x D)	140 x 170 x 52 mm
Weight	450 g
<b>Environmental data</b>	
Protection type (EN 60529)	IP20
Mounting position	any
Ambient temperature (EN 60068-2-14)	0 ... +60 °C
Storage temperature (EN 60068-2-1/-2)	-25 ... +70 °C
Climatic suitability (EN 60068-2-30)	max. 93 % r. h.
Condensation	not permitted
Vibration (EN 60068-2-6, 04/95)	
Frequency range	10 ... 100 Hz
Amplitude	0.1 mm, max. 5g
Shock (EN 60068-2-27)	30g, 11 ms
Bump (EN 60068-2-29)	10g, 16 ms
EMC	EN 50082-2 EN 55011 A

The standards current on 2009-09 apply.

## Bridge for SafetyBUS p® PSS SB BRIDGE

### Description

The PSS SB BRIDGE is a bridge which is used in SafetyBUS p® systems. For BG approval you are required to use the standard function blocks supplied with the device. Using the bridge, data (signal states) can be exchanged between two independent SafetyBUS p® networks. Each of the two SafetyBUS p® networks has 32 digital inputs and 32 digital outputs (data width) for data exchange purposes. These are virtual inputs and outputs. They can be allocated to a maximum of two logical groups in the corresponding SafetyBUS p® network. The allocations in each SafetyBUS p® network must match. Two of the virtual inputs/outputs are reserved as status flags for each configured I/O group on the bridge:

The status flags of the I/O groups are read-only.

The bridge is designed as a bus subscriber in each of the two SafetyBUS p® networks, and as such occupies a device address in both networks. The device address occupied in network A does not have to match the one in network B.

Different transmission rates can be used in each of the two SafetyBUS p® networks. The bridge is automatically synchronized to the existing transmission rate of the corresponding SafetyBUS p® network.

Since the bridge is used to connect between two independent SafetyBUS p® networks, the rules governing the maximum number of bus subscribers, maximum overall cable runs and transmission rate can be applied to each network separately.

### Order references

Order references	PSS SB BRIDGE
System	SafetyBUS p
Description	PSS SB BRIDGE
Order number	301 131

Appropriate planning enables the division into independent networks to achieve the following improvements:

- Increase in maximum number of bus subscribers (max. 64 subscribers per network)
- Increase in maximum total capacity dependent on transmission rate (e.g. 500 kbit/s at max. 100 m per network)
- Higher availability based on independent error response in each network
- Reduced response times in both SafetyBUS p® networks

Division into independent networks is practical in the following situations (examples):

- Low volume of common telegram traffic between the networks
- Independent tasks in the two networks
- Demand for autonomous network operations

You can select between different bus connectors, if required. For information on the different D-SUB bus connectors please refer to the "System Features" data sheet.