

FB-6SP and FB-12SP

Block device couplers

Data sheet
3177_en_A

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1 Description

The FB-6SP and FB-12SP block couplers provide an interface between the fieldbus trunk cable and field devices on Foundation Fieldbus™ and PROFIBUS PA bus systems. Limited width on the rail reduces the required footprint and weight of the field enclosure.

The FB...SP couplers connect to the trunk utilizing a T-connector terminal block with preinstalled terminator, ensuring termination is always available and error free.

The block couplers feature short-circuit protection to the trunk. The single-sided plug configuration makes wiring in a field enclosure easy. Diagnostic LEDs include DC OK and spur fault on the segment.

2 Features

- Small footprint for efficient enclosure space usage.
- Provide Ex nA [nL], Ex nA [ic] or FISCO ic spur connections



Make sure you always use the latest documentation.
It can be downloaded at phoenixcontact.com.



This data sheet is valid for all products listed on the following page:

3 Ordering data

Products

| Description | Type | Order No. | Pcs./Pkt. |
|---|---------|-----------|-----------|
| Device coupler, 6-spur, includes T-bus connector | FB-6SP | 2316307 | 1 |
| Device coupler, 12-spur, includes T-bus connector | FB-12SP | 2316310 | 1 |

Accessories

| Description | Type | Order No. | Pcs./Pkt. |
|--|--------------------------------|-----------|-----------|
| Field diagnostics module, legacy installations | FB-DIAG/FF/LI | 2316284 | 1 |
| Connector, reverse, for field diagnostics module | MVSTBW 2,5/ 3-STF-5,082CPBD:NZ | 1707058 | 1 |
| Power supply plug, 500 mA, 28 V DC | FB-PS-PLUG-24DC/28DC/0.5/EX | 2316132 | 1 |
| Power supply base | FB-PS-BASE/EX | 2316145 | 1 |
| Surge protective plug, for floating signal circuit | PT 2X2-FF-ST | 2800755 | 10 |
| Base element, for four signal lines with floating ground | PT 4+F-BE | 2839415 | 10 |
| Enclosure, 15 ports, aluminum | FB-15-AL | 2316187 | 1 |
| Enclosure, 15 ports, stainless steel | FB-15-SS | 2316190 | 1 |
| Enclosure, 8 ports, aluminum | FB-8-AL | 2316200 | 1 |
| Enclosure, 9 ports, stainless steel | FB-9-SS | 2316213 | 1 |

4 Technical data

General data

| | |
|-----------------------------------|-----------------|
| Number of spurs | |
| FB-6SP | 6 |
| FB-12SP | 12 |
| Number of spurs per segment | 24 |
| Ambient temperature (operating) | -50°C ... 70°C |
| Temperature (storage) | -50°C ... 85°C |
| Relative humidity, non-condensing | <95% |
| Degree of protection | IP20 |
| Flammability rating, UL94 | V0 |
| Mounting | NS35 (EN 60715) |
| Weight | |
| FB-6SP | 240 g |
| FB-12SP | 395 g |

Connections

| | |
|-------------------------|--|
| Type | Removable spur and trunk connectors, screw clamp |
| Conductor cross-section | 0.5 ... 2.5 mm ² (24 ... 12 AWG) |

Electrical data

| | |
|---|----------------------------------|
| Current draw, maximum per spur | 35 mA |
| Short circuit current, per spur | 56 mA |
| Supply voltage, minimum | |
| FB-6SP | 10.5 V DC |
| FB-12SP | 10.6 V DC |
| Maximum supply voltage | 32.0 V DC |
| Rated voltage per spur | ≤32.0 V |
| Voltage drop | |
| Trunk in to trunk out | ≤0.1 V |
| Trunk in to spur out | ≤1.25 V |
| Termination, external removable plug | 100 Ω |
| Trunk voltage protection | Active if voltage exceeds 34.5 V |
| Current consumption at no load | |
| FB-6SP with terminator | 8.8 mA |
| FB-6SP without terminator | 4.8 mA |
| FB-12SP with terminator | 10.5 mA |
| FB-12SP without terminator | 6.5 mA |
| Maximum power dissipation at maximum load and voltage | |
| FB-6SP with terminator | 0.29 W |
| FB-12SP with terminator | 0.34 W |

Hazardous location ratings

| | |
|-----------------------------|----------------|
| Temperature, T _a | -50°C ... 90°C |
| Voltage, U _o | U _i |
| Current, I _o | 56 mA |
| Capacitance, C _i | 0 μA |
| Inductance, L _i | 4 μF |
| Capacitance, C _o | 80 nF |
| Inductance, L _o | 0.26 mH |

Conformance

| | |
|----------------------|---------------------------------------|
| Shock resistance | 30g, 11 ms |
| Vibration resistance | 5g, 10-150 Hz |
| Foundation Fieldbus | FF-846 |
| IEC | 60529, 61158-2 |
| NE | NE21 |
| EN | EN 61326, EN 60068-2-27, EN 60068-2-6 |

Approvals

| | |
|-------|--|
| ATEX | Sira 13ATEX4247X; II 3(3)G Ex nA [ic] IIC T4 Gc, Entity/FISCO ic spurs Ex nA [nL] IIC T4 Gc; II 3G Ex ic IIC T4 Gc, FISCO ic |
| IECEX | IECEX SIR 13.0089X; Ex nA [ic] IIC T4 Gc, Entity/FISCO ic spurs; Ex nA [nL] IIC T4 Gc; Ex ic IIC T4 Gc, FISCO ic |
| CSA | Class I, Div. 2, Groups A, B, C, D Ex nA [nL] IIC T4; Class I, Zone 2, AEx nA [nC] IIC T4 |

5 Dimensions

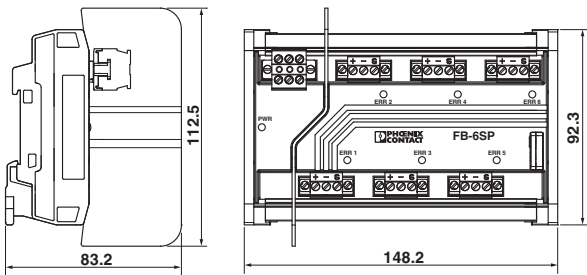


Figure 1 FB-6SP

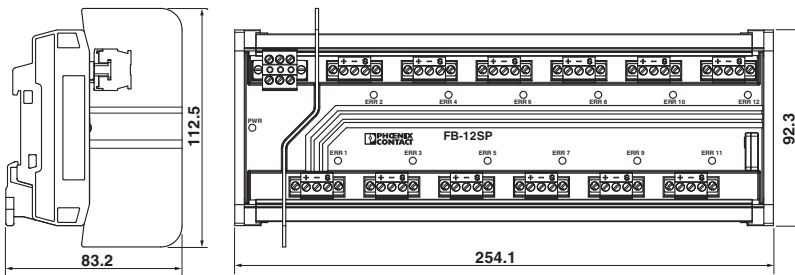


Figure 2 FB-12SP

6 Schematics

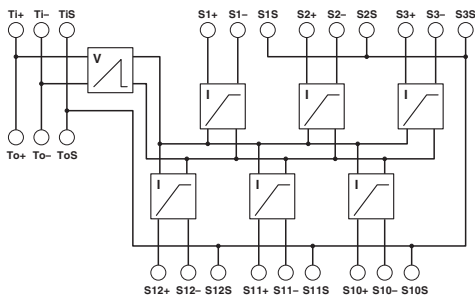


Figure 3 FB-6SP circuit diagram

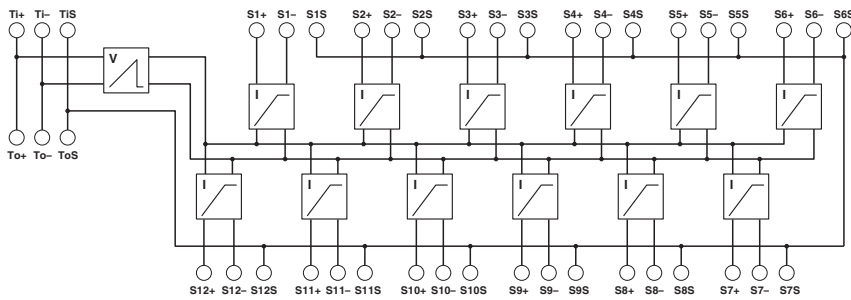


Figure 4 FB-12SP circuit diagram

7 Installation

7.1 Mounting

The block coupler installs on NS35 (EN 50022) mounting rail.

1. Secure the rail to an appropriate surface.
2. Place the block coupler onto the DIN rail from above. The upper holding keyway must be hooked onto the edge of the DIN rail.
3. Push the block coupler from the front toward the mounting surface, making sure both sides of the coupler snap onto the rail.

7.2 Connections

Foundation Fieldbus and PROFIBUS PA network configurations are bus-type networks. Each device coupler includes removable connectors.



Only one device can be connected to each spur.

Table 1 shows the trunk and spur connections.

| Connection | Label | Function |
|------------|-------|----------------------|
| Trunk | TiS | Trunk in shield |
| | Ti- | Trunk in - |
| | Ti+ | Trunk in + |
| | ToS | Trunk out shield |
| | To- | Trunk out - |
| | To+ | Trunk out + |
| Spur | SnS | Spur <i>n</i> shield |
| | Sn- | Spur <i>n</i> - |
| | Sn+ | Spur <i>n</i> + |

where *n* indicates the spur number. Couplers may have multiple spur connectors.

8 Operation

8.1 LEDs

Each spur has a dedicated LED.

| Label | Indicator | Meaning |
|-------|-------------|--------------------------------|
| PWR | Solid green | Power is present |
| | Off | No power is applied |
| ERR | Solid red | Short circuit in spur <i>n</i> |
| | Off | Normal operation |

单击下面可查看定价，库存，交付和生命周期等信息

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