

VBP10

ADVANCED BUS PROTECTOR

PROFIBUS-PA / FOUNDATION™ fieldbus



- ✓ Individual spur protection
- ✓ Efficient short-circuit protection on Profibus-PA and FOUNDATION™ fieldbus networks
- ✓ Increases Profibus-PA and FOUNDATION™ fieldbus scalability
- ✓ Limits inrush current
- ✓ Very-low failure current, not affecting trunk: Foldback technique
- ✓ No configuration needed
- ✓ Easy maintenance during operation
- ✓ According to IEC 61158-2
- ✓ Models for 4 or 8 spur
- ✓ Integrated bus terminator (BT)
- ✓ Indicative LEDs
- ✓ Input surge protector
- ✓ DIN-rail panel mounting or Aluminum housing for field installation

DESCRIPTION

VBP10 is a bus protector for Profibus-PA and FOUNDATION™ fieldbus networks according to IEC 61158-2, which ensures that a short circuit generated in their spurs not propagate to other spurs and to the main trunk. In short circuit condition (between + and - signs + or shield) the spur opens, preventing the short circuit. For each spur there is a LED which is activated in the short circuit condition. From time to time, VBP10 checks for current flowing in the spur, and if there is current, it is activated again. After leaving the short-circuit condition, the spur back to work and the protection circuit is disabled, erasing the LED.

Some segment protectors act as short circuit limiters, limiting the current in the range of 40 to 60mA per spur and in a short circuit situation, this current, depending on how the segment is sized, can shut it down (even more if more than one spur is in short circuit) due to excessive consumption and, consequently, to voltage drop.

The VBP10 uses the "FoldBack" technique, where in any situation that the spur consumes more than 48mA, it automatically shuts off the spur until the situation returns to normal. For this, it consumes less than 2mA per spur, which is an advantage over market segment protectors that maintain a permanent fault current, overloading the segment in case of multiple spurs short.

In addition, the VBP10 acts quickly, limiting the inrush current: when the Profibus-PA or Foundation fieldbus device is powered, a large current flows and exceeds the current steady-state value. This current is called the inrush current. With the use segment protectors with low quality terminal blocks and in vibrating environments, some devices (due to poor contact on these terminal blocks or junction boxes) will turn off and on (contact peaks) and depending on the quality of the protection of this segment, the inrush current may be higher than the current supplied to the segment and "shut down" the bus or dramatically affect communication.

VBP10 has a LED to indicate that the module is powered and also an integrated bus terminator (BT). The Trunk Input has surge protector, ensuring greater safety to VBP10 and spurs.

In normal operation, i.e. without short-circuit, each spur consumes less than 1 mA. Each spur has a maximum current of 40 mA.

Increase the availability and operational safety of your Profibus-PA or FOUNDATION™ fieldbus network.

CONNECTION

Indication LEDs for trunk power:

Green LED

On – Energized Module

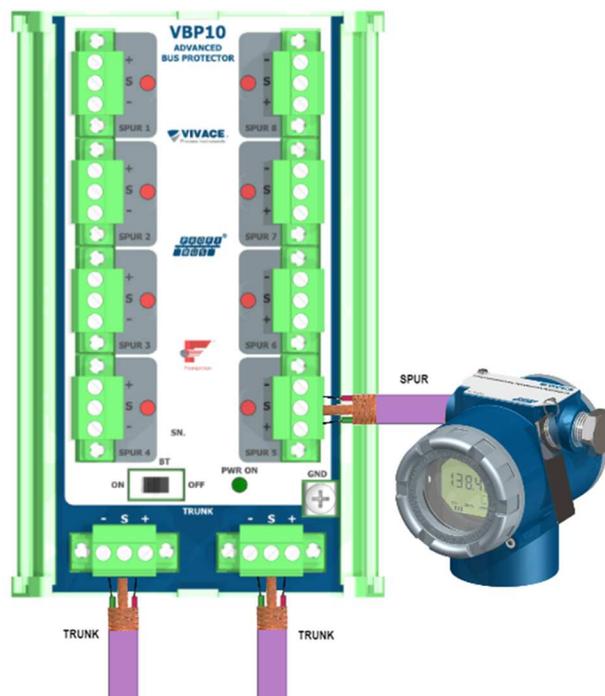
Off – De-energized Module

Indication LED for short-circuit occurrence on each of its spurs:

Red LED

On – Spur short-circuit

Off – Spur on normal operation or disconnected.



PROTECTION HOUSING

VBP10 can be acquired with a stainless steel protection housing for field mounting (2" tube using type 'U' clip).

This option is available for 4 and 8 channel models, with IP66 protection level and differential cable connection colors for spurs and trunk.



PHYSICAL AND TECHNICAL SPECIFICATIONS

Physical Layer	According to IEC 61158-2
Protocol	Profibus-PA / FOUNDATION™ fieldbus
Number of Spurs	4 or 8
Power Supply	9 to 32 Vdc
Quiescent Current / Max. per Spur	< 10 mA / 50 mA (@24Vdc)
Max. Trunk Current	2.5 A
Max. Spur Voltage Drop	< 0.5 V @ 20 mA
Spur Current (Short-Circuit)	< 5 mA
Stabilization Time after Short-Circuit Removal	~7 s
Input Surge Protector	1500 W, 62 V cutoff
Spur Connection	Removable bornes with 3 x 2.5 mm ² screws
Classified Areas	Intrinsically Safe (pendent)
Environment Temperature Limits	-40°C to 85°C
Relative Humidity	0-95% not condensed
Mounting	DIN-rail or Aluminum Protection Housing
Dimension (mm) / Weight	Without Protection Housing: VBP10-4: 90 x 90 x 56 (C x L x A) / 200 g VBP10-8: 142 x 90 x 56 (C x L x A) / 400 g With Protection Housing: VBP10-4: 245 x 180 x 168 (C x L x A) / 2.6 kg VBP10-8: 245 x 280 x 168 (C x L x A) / 4.0 kg

ORDERING CODE

VBP10 *Bus Protector*

Number of Spurs	4	FOUR
	8	EIGHT

Certification Type	0	NO CERTIFICATION
	1	INTRINSICALLY SAFE
	2	EXPLOSION PROOF

Certification Body	0	NO CERTIFICATION
	1	CEPEL
	2	FM
	3	EXAM

Protection Housing	0	NO PROTECTION HOUSING
	A	ALUMINUM

Mounting Bracket	0	NO BRACKET
	1	SS 304 BRACKET

Ordering Code Example:

VBP10	4	0	0	0	0
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