

VBT10

BUS TERMINATOR



- ✓ Bus terminator for *Profibus PA* and *FOUNDATION™ fieldbus* networks
- ✓ Increases your *Profibus PA* and *FOUNDATION™ fieldbus* network availability
- ✓ Provides impedance matching
- ✓ Avoids signal reflections
- ✓ No configuration required
- ✓ Makes maintenance easy during operation
- ✓ According to IEC 61158-2
- ✓ Reduced and robust design
- ✓ Simple and easy installation
- ✓ Mounting on panels, junction or protection boxes and field devices terminal blocks



DESCRIPTION

VBT10 is a bus terminator for PROFIBUS PA and Foundation fieldbus digital networks. Developed according to the IEC 61158-2 standard, it consists of a series RC circuit, where components of high precision and low temperature variations are used to guarantee the perfect impedance matching and minimize signal reflections. Reflections will overlap the original signal, causing serious distortions and bit errors.

The bus terminator eliminates communication errors due to signal distortions. The greater the length of the network, the greater the distortion of the signals. It is also worth remembering that by not using the network terminator, the cabling will act as an antenna, facilitating the distortion of signals and increasing the susceptibility to noise.

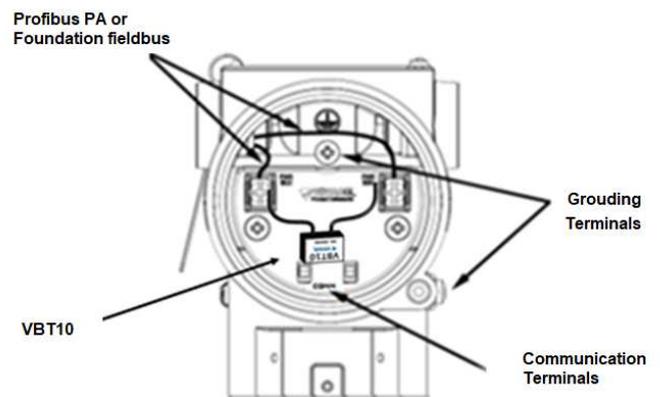
The characteristic impedance is the value of the load, which placed at the end of this line, does not reflect any energy. In other words, it is the charge value that provides a zero-reflection coefficient, or even a standing wave ratio equal to one.

According to IEC 61158-2, a fieldbus line must have a characteristic Z_0 impedance of $100\Omega \pm 20\%$ @ 31.25 KHz and terminators must have an impedance of $100\Omega \pm 2\%$, considering the frequency range of 7, 8 KHz to 39 KHz (0.25×31.25 KHz to 1.25×31.25 KHz).

Some details of your application:

- 02 bus terminators must be connected per Profibus PA or Foundation fieldbus network segment, one at the output of DP/PA coupler or power supply impedance (FF) and the other at the last device, depending on the adopted topology.
- If there is a junction box at the end of the main trunk with several spurs, the bus terminator can be connected at this point, which will facilitate maintenance when it is necessary to remove the field device. But, if the spurs have different lengths, the terminator must be placed at the end of the longest spur to avoid reflections.
- A missing terminator or its connection at the wrong point degrades the signal due to the antenna effect.
- A missing of a terminator can increase the signal by more than 70% and an additional terminator can attenuate the signal by up to 30%. Under these conditions, the communication signal may have intermittent failures.

VBT10 has a reduced and robust design, providing easy installation inside junction and protection boxes, as well as in the terminals of field device.



TECHNICAL AND PHYSICAL SPECIFICATIONS

Physical Layer	According to IEC 61158-2
Communication Protocol	Profibus PA / FOUNDATION™ fieldbus
Maximum Operating Voltage	35 Vdc
Input Impedance	$100\Omega \pm 2\%$ @ 7.8 KHz - 39 KHz
Hazardous Certification	Intrinsically Safe Certification (pending)
Ambient Temperature / Relative Humidity	-40 °C to 75 °C @RH 10% to 95%, non-condensing
Storage	-55 °C to 85 °C @RH 5% to 95%, without condensation.
Mounting	Panel or Junction Box, Protections or terminal block field device
Dimensions (WxDxH) (mm) / Weight	15x5x10 / 10g

ORDERING CODE

VBT10 Bus Terminator

Certification Type	0	NO CERTIFICATION
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Certification Body	0	NO CERTIFICATION
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Ordering Code Example:

VBT10	-	0	0
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