

Backbone Ethernet Repeater

KONUENDO NETWORKING



VDS Rail
The onboard networking company



The Ethernet Train Backbone's (ETB) physical architecture defined in the IEC 61375 standard requires that - when the distance between the two ETBNs is higher than 100 m - one or more Repeaters have to be placed between two adjacent Ethernet Train Backbone Nodes (ETBNs). In this case, the use of a Backbone Ethernet Repeater, a device regenerating the Ethernet frame data and the electrical parameters to overcome the 100m maximum Ethernet segment limit imposed by the standard, is highly recommended.

VDS Rail's Backbone Ethernet Repeater is tailored for this specific purpose. It provides two completely separated and independent Ethernet Repeaters into a single enclosure.

The device is transparent to all Ethernet protocols and offers full speed connectivity on both lines. Each Repeater is equipped with a fault relay, triggered by a diagnostic microcontroller or in case of power loss.

To simplify the cabling requirements, both relays are available on a single four-pin connector.

VDS Rail's Backbone Ethernet Repeater is designed to work in harsh environmental conditions. The device is fully compliant with EN 50155 and IEC 91375 standards and attains the highest level of reliability.

Technical specifications

- Two (2) Fast Ethernet lines
- Four (4) M12 circular connectors (4-ways for Fast Ethernet)
- Fault indication: Normally open and Normally closed contacts of a mechanical relay protected by a 0.5A non-resettable/ non-replaceable internal fuse
- Insulated power supply

Backbone Ethernet Repeater



VDS Rail
The onboard networking company

Technical specifications

PHYSICAL DATA

System status indicators:	1 green LED (Power OK)
Fast Ethernet connectors:	M12, female, 4-ways, D-coding
Power supply / Fault connector:	M12, male, 4-ways, A-coding
Power supply voltage range (insulated):	
24 Vdc nominal	14,4 Vdc ÷ 34 Vdc, according to EN 50155
37,5 Vdc nominal	23 Vdc ÷ 42,5 Vdc, according to IEEE Std 1476-2000
96/110 Vdc nominal	66 Vdc ÷ 154 Vdc, according to EN 50155
Power supply class:	S2, according to EN 50155
Power consumption:	7 W max
Overall dimensions:	133 x 165 x 46.5 mm
Weight:	1 Kg
Operating temperature:	
Standard	25 ÷ +70 °C (+85 °C for 10 min.) according to EN-50155 class OT3 with extended operating temperature ST1
Optional	-40 ÷ +70 °C (+85 °C for 10 min.) according to EN 50155 class OT4 with extended operating temperature ST1
Relative humidity (non-condensing):	0 ÷ 95 %
Storage temperature:	-40°C ÷ +85 °C
Colour codes:	
	Grey Pantone 430 / RAL 7045 (frame)
	Black (front panel)
Degree of protection:	IP65

APPROVALS / COMPLIANCE

EN 50155	Railway Applications (Electronic equipment used on rolling stock)
EN 50121-3-2	Electromagnetic compatibility rolling stock apparatus
IEC 60068-2-1	Environmental testing: Tests - Test Ad: Cold
IEC 60068-2-2	Environmental testing: Tests - Test Bd: Dry heat
EN 60068-2-30	Environmental testing - Test Db variant 2 - Damp heat
EN 61373	Shock & Vibration - Category 1 class B

APPROVALS / COMPLIANCE

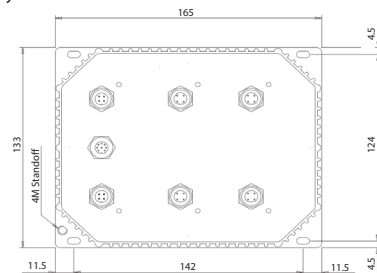
EN 50124-1	Insulation coordination
EN 45545-2	Fire & Safety standard

INTERNETWORKING STANDARDS

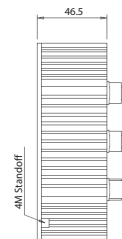
IEEE 802.3u	Fast Ethernet
-------------	---------------

Wall Mounting

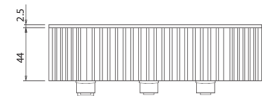
Dimensions only for reference



FRONT VIEW



SIDE VIEW



TOP VIEW

H*: see overall dimensions specification