

# Ethernet Repeater

4 ports 2xGbE+2xGbE



The **Ethernet Repeater** is an **EN 50155 compliant** device specifically designed for network applications in Rolling-Stock environments, able to **regenerate the Ethernet frame data** and the electrical parameters to overcome the **100m maximum Ethernet segment limit** imposed by the standard.

The Ethernet Repeater, in the Gigabit Ethernet version, has **two (2) + two (2) 1000BASE-T** ports, both pairs of ports can be optionally equipped with bypass function.

It provides **two (2) independents Ethernet lines** protected with **hardware bypasses** to guarantee the physical link in case of power failure. It is completely transparent to all Ethernet protocols and offers full speed connectivity on both lines. Moreover, the device is equipped with a fault relay, triggerable by loss of power or Ethernet physical errors detection.

Designed to operate in harsh environmental conditions typical of Rolling-Stock applications, the Backbone Repeater is fully EN 50155 and IEC 61375 compliant and provides the highest level of reliability and robustness required by the railway industry.



## VDS Rail

The onboard networking company

### Highlights

- **Ethernet Repeater**
- **Overcoming the 100m maximum Ethernet segment limit imposed by the standard**
- **4 Ethernet ports - 2xGbE +2xGbE ports**
- **2 independent Ethernet lines repeated**
- **Rolling-Stock Applications**
- **EN 50155 compliant**
- **Designed for harsh environmental conditions**
- **Wide operational temperature up to -40°C ÷ +70°C**
- **Wide operating voltage range 24 ÷ 110 VDC**
- **IP65 rated**
- **Hardware bypass on each Ethernet line for maximum reliability**

### Technical specifications

- Two (2) + two (2) 10/100/1000BASE-T(X) Ethernet ports
- M12 circular connectors for Ethernet ports
- M12 circular connector for power supply / fault ports
- Two (2) Gigabit Ethernet lines repeated
- Two (2) hardware bypasses, one (1) on each line for maximum reliability (option)
- 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



## Technical Specifications

### PHYSICAL DATA

System status indicators	<b>1 green LED (Power OK)</b>
Gigabit Ethernet connectors	<b>M12, female, 8-ways, X-coding</b>
Fault connector	<b>M12, female, 4-ways, A-coding</b>
Power supply connector	<b>M12, male, 4-ways, A-coding</b>
Power supply voltage (insulated)	<b>Nominal voltage 24 ± 110 Vdc</b>
	<b>Range according to EN 50155</b>
Interruption voltage supply class	<b>S2, according to EN 50155</b>
Total power consumption	<b>7 W max</b>
Overall dimensions (W x H x D)	<b>165 x 133 x 47 mm (without connectors)</b>
Weight (max.)	<b>1.0 Kg</b>
Operating temperature	
Standard	<b>-25 °C ÷ +70 °C (+85 °C for 10 min. according to EN 50155 class OT3 with extended operating temperature ST1)</b>
Optional	<b>-40 °C ÷ +70 °C (+85 °C for 10 min. according to EN 50155 class OT4 with extended operating temperature ST1)</b>
Relative humidity (non-condensing)	<b>0 % ÷ 95 %</b>
Storage temperature	<b>-40 °C ÷ +85 °C</b>
Color codes	<b>Grey Pantone 430 / RAL 7045 (frame)</b> <b>Black (front panel)</b>
Degree of protection	<b>IP65</b>
Mechanical enclosure	<b>Passivated aluminium</b>

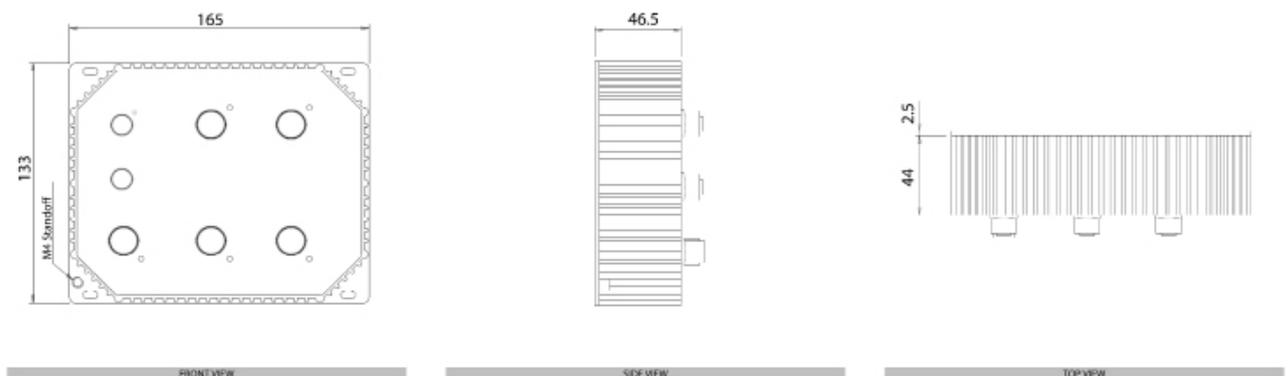
### APPROVALS / COMPLIANCE

EN 50155	<b>Railway Applications (Electronic equipment used on rolling stock)</b>
IEC 61375	<b>Electronic railway equipment - Train communication network (TCN)</b>
EN 50121-3-2	<b>Electromagnetic compatibility rolling stock apparatus</b>
IEC 60068-2-1	<b>Environmental testing: Tests - Test Ad: Cold</b>
IEC 60068-2-2	<b>Environmental testing: Tests - Test Bd: Dry heat</b>
EN 60068-2-30	<b>Environmental testing: Tests - Test Db Variant 2 - Damp heat</b>
EN 61373	<b>Shock &amp; Vibration - Category 1 class B</b>
EN 50124-1	<b>Insulation coordination</b>
EN 45545-2	<b>Fire &amp; Smoke</b>

### INTERNET WORKING STANDARDS

IEEE 802.3	<b>Gigabit Ethernet (10/100/1000BASE-T(X))</b>
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## Wall Mounting



## Ordering codes

Part Number **NBR01RPxxx**

Description **RP 4GB xxxV xB IPxx-Tx-xx**



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