

EN 50155 Ethernet Broadband Bridge

DDW-002-B1

- Compact rail-approved Ethernet broadband bridge
 - Single model 24 – 110 VDC power range
 - 1 x 100 Mbit/s Ethernet port
 - 1 x 2-wire cable port
- Externally tested and verified to EN 50155
 - Surge resistance and isolation
 - Magnetic field immunity and conducted emission
 - Shock and vibration
- Designed for long life and extreme operational environments
 - IP67 anti-condensation GORE-TEX® membrane
 - Ambient temperature -40° to +70°C (-40° to +158°F)
 - Integrated M12 threading and high MTBF - 1,568,000 hours
- Design and production testing exceeding requirements for train control
- Manufactured according to IPC-A-610D class 2




EN 50121-4 Railway Trackside
 EN 50155 On Board Rail
 EN 61000-6-1 Residential Immunity
 EN 61000-6-2 Industrial Immunity
 EN 61000-6-3 Residential Emission
 EN 61000-6-4 Industrial Emission
 IEEE 16 Rail Vehicles

The Wolverine series consists of Ethernet extenders and bridges for propagating Ethernet traffic over existing cabling. The DDW-002-B1 is based on power line communication (IEEE 1901) and is capable of bridging high bandwidth Ethernet traffic over 2-wire cables, even when there are oxidized connectors.

By simply installing a DDW-002-B1 on each side of the coupler, a bridge connecting the Ethernet networks on each side is created. The power line technology allows using existing cables, which leads to significant financial savings when refurbishing trains. The fact that no configuration is needed further contributes to the ease of use.

The DDW-002-B1 has been thoroughly tested by certified labs to ensure its compliance with the standard for electronic equipment used on rolling stock, the EN 50155. For several characteristics, Westermo exceeds the requirements mandated by the standard, e.g. by providing 1.5 kVrms insulation on all ports.

Furthermore, the design is based on Westermo's long experience within the rolling stock market, which brings benefits such as vibration safe integrated connector threading, IP67 ingress protection with GORE-TEX® membrane to prevent condensation water build-up and ultimately a high MTBF and long service life under the harshest conditions.

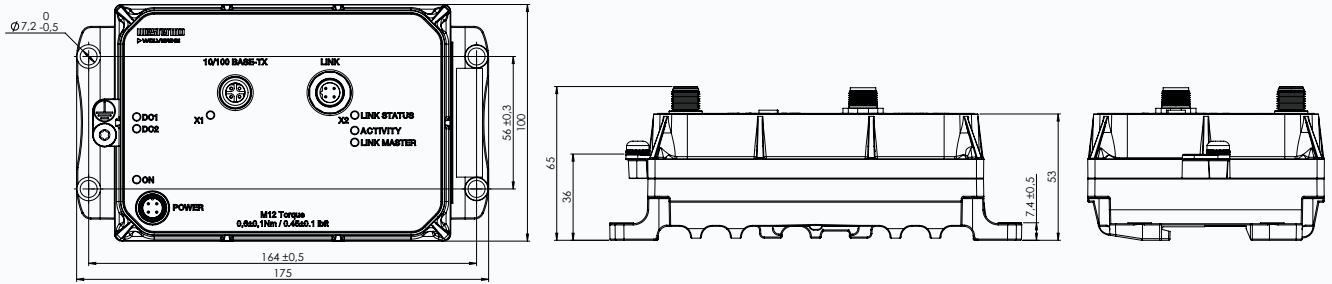
The DDW-002-B1 is built in Westermo's Swedish factory which is renowned for its extremely high standard, as confirmed by a multitude of quality audits by demanding international customers. The factory is organized according to lean manufacturing principles and it is equipped with sophisticated state-of-the-art quality assurance equipment.

Meeting the requirements for rolling stock, makes the DDW-002-B1 also very well suited for deployment in other applications with severe operating conditions and extreme environments

Ordering information	
Art. no.	Description
3641-0900	DDW-002-B1, EN 50155 Ethernet Broadband Bridge
3146-11xx	Patch and power cables, see www.westermo.com

Specifications - DDW-002-B1

Dimensional drawing



General data

Dimensions (W x H x D)	174 x 65 x 100 mm
Weight	1.4 kg
MTBF hours	1,568,000 (MIL-C217F2, GB, 25°C (+77°F))
Housing	Zinc

Input power data

Rated voltage	24 to 110 VDC
Operating voltage	16.8 to 143 VDC (14.4 VDC for 100 ms, 154 VDC for 1 second)
Rated current	70 mA at 24 VDC and 30 mA at 110 VDC

Environmental

Ingress protection	IP67
Operating temperature	-40 to +70 °C (-40 to +158°F)
Storage and transport temperature	-50 to +85 °C (-58 to +185 °F)
Humidity (operating)	5 to 95 % relative humidity
Altitude	2,000 m / 70 kPa

Approvals

EMC	<p>EN 50121-3-2/IEC 62236-3-2, Railway applications – Rolling stock – apparatus</p> <p>EN 50121-4/IEC 62236-4, Railway and telecommunications apparatus</p> <p>EN/IEC 61000-6-1, Immunity residential environments</p> <p>EN/IEC 61000-6-2, Immunity industrial environments</p> <p>EN/IEC 61000-6-3, Emission residential environments</p> <p>EN/IEC 61000-6-4, Emission industrial environments</p> <p>IEEE 16, IEEE Standard for Electrical and Electronic Apparatus on Rail Vehicles</p> <p>Tested and verified for FCC part 15, class A</p>
Trackside	<p>EN 50121-4, Railway signalling and telecommunications apparatus</p> <p>EN 50155, Railway applications - Electronic equipment used on rolling stock</p> <p>EN 61373, Railway applications - Rolling stock equipment, shock and vibration tests</p> <p>IEC 60068-2-27 – Shock</p> <p>IEC 60068-2-64 – Vibration, broadband random and guidance</p> <p>IEEE 1478 – Environmental conditions for transit rail car electronic equipment</p> <p>EN 45545-2, Fire protection on railway vehicles</p>