Ethernet extender with serial support
DDW-226

⊞ Save time and money reusing old cable and equipment
- Up to 15.3 Mbit/s Ethernet over twisted pair cables
- Legacy connection via RS-232 port
- Easy and quick to configure with WeOS

⊞ Designed for use in harsh industrial applications
- Dual 16 – 60 VDC power input
- Extensive line diagnostics and fault I/O contact
- TBU – transient blocking unit

⊞ Robust for long service life
- 700,000 hours MTBF to MIL-HDBK-217K
- –40 to +70°C (–40 to +158°F) with no moving parts
- Industrial EMC, shock and vibration testing

⊞ Secure and resilient networking
- Advanced WeOS layer 3 functionality
- Network IP security and remote access
- Layer 2 and 3 ring structures

CE   FC Part 15   Ex   Industrial IT enabled

EN 61000-6-2 Industrial Immunity   **EN 61000-6-4** Industrial Emission   **50121-4** Railway Trackside

The Wolverine DDW-226 allows effective Ethernet networks to be created over long distances (up to 15 km) at data rates up to 15.3 Mbit/s. The SHDSL technology makes it possible to reuse many types of pre-existing copper cables which can lead to considerable financial savings. Dependent on cable characteristics, distances up to 15 km (9.3 mi) can be achieved. The combination of WeOS and the integrated RS-232 port allows legacy equipment to become part of an IP backbone network.

With its robust aluminium housing, the DDW-226 is designed for use in heavy duty industrial applications. The wide power range and I/O fault contact make it ideal for easy installation and monitoring in industrial applications. The Transient Blocking Unit (TBU) is acknowledged as the most effective form of protection against damaging noise spikes caused by lightning or high voltage equipment.

Only industrial grade components are used which gives the DDW-226 an MTBF of 700,000 hours and ensures a long service life. A wide operating temperature range of –40 to +70°C (–40 to +158°F) can be achieved without the need for moving parts or cooling holes in the case. The DDW-226 has been tested both by Westermo and external test houses to meet many EMC, isolation, vibration and shock standards, all to the highest levels suitable for heavy industrial environments.

WeOS has been developed by Westermo to allow us to offer cross platform and future proof solutions. WeOS can deliver unique IP security functionality for this class of product e.g. a multiport DMZ can be constructed by utilizing the internal port based firewall function. Remote secure access to a network can be provided using encrypted VPNs.
For resilience, a ring of DDW-226s can be created using the FRNT protocol, or by using OSPF, the DDW-226 can form part of an enterprise network. For more details on WeOS functionality, please see the WeOS datasheet.

Ordering Information

Art.no	Description
3642-0240	DDW-226
1211-2027	CLI Cable (Console) (Accessories)
1211-2210	RJ-45 to DB9 cable (Accessories)
3125-0001	PS-30, Power supply, DIN mounted (Accessories)

Specifications DDW-226

Dimensional drawing
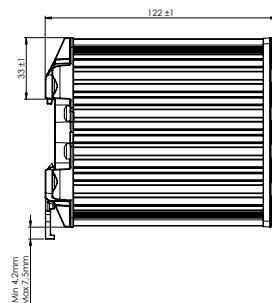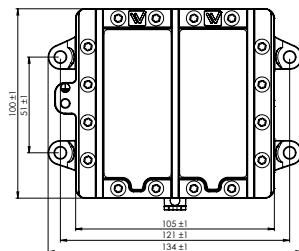
Dimension W x H x D	134 x 100 x 122 mm (5.25 x 3.93 x 4.80 in)
Weight	1.5 kg
Degree of protection	IP 40

Speed and Distance

Speed bit/s	DDW-226 @ 0.5 mm² Distance metre / miles	DDW-226 @ 0.4 mm² Distance metre / miles
192000	10000 / 6.21	6450 / 4.00
1024000	7650 / 4.75	4850 / 3.01
1280000	7050 / 4.38	4700 / 2.92
2304000	5950 / 3.69	4150 / 2.58
3328000	4900 / 3.04	3700 / 2.30
4544000	4250 / 2.64	3150 / 1.95
5696000	3650 / 2.26	2800 / 1.73
6200000	3000 / 1.86	2250 / 1.39
6712000	2500 / 1.55	1875 / 1.1
8760000	2000 / 1.24	1500 / 0.93
10296000	1500 / 0.93	1125 / 0.69
12344000	1000 / 0.62	750 / 0.46
15304000	700 / 0.43	525 / 0.32

Distance is tested without noise.

Power

Operating voltage	16 to 60 VDC
Rated current	330 mA @ 20 VDC 150 mA @ 48 VDC

Interfaces

Console	1 x 2.5 mm jack, use Westermo cable 1211-2027
USB	1 x USB 2.0 host interface
Digital I/O	1 x 4-position detachable screw terminal
Ethernet TX	4 x RJ-45, 10 Mbit/s or 100 Mbit/s
DSL	2 x 2-position detachable screw terminal, 192 kbit/s to 15.3 Mbit/s
RS-232	1 x RJ-45, 300 bit/s to 115.2 kbit/s

Temperature

Operating	–40 to +70°C (–40 to +158°F)
Storage & Transport	–40 to +85°C (–40 to +185°F)
Maximum surface temperature	135°C (275°F) (temperature class T4)

Agency approvals and standards compliance

EMC	EN 55024, EN 55024 A1, EN 55024 A2, Electromagnetic compatibility – Immunity IT equipment.
	EN 55022, EN 55022 A1, IT equipment. Radio disturbance characteristics. Limits and methods of measurement.
	EN 61000-6-2, Immunity industrial environments.
	EN 61000-6-4, Emission industrial environments.
	FCC part 15 Class A
	EN 50121-4, Railway signalling and telecommunications apparatus.
Safety	EN 60950-1, IT equipment.
SHDSL	ITU-T G.991.2.
ATEX	EN 60079-0 and EN 60079-15. (Ex nA IIC T4 Gc)