

FL ISOLATOR 100-M12 - Network isolator



2902985

<https://www.phoenixcontact.com/sg/products/2902985>

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Passive network isolator for electrical isolation in Ethernet networks. For the protection of Ethernet devices against potential differences of up to 4 kV. Can be used for transmission speeds of up to 100 Mbps. Ethernet connection via two M12 sockets (D-coded).

Product description

The FL ISOLATOR 100-M12 has been specifically developed for use in the railway industry. Featuring M12 connection technology and optional panel mounting, this network isolator can be used flexibly.

Your advantages

- No power supply required
- Dielectric strength of up to 4 kV
- Continuous insulation voltage of 250 VRMS
- Protection against aggressive environmental influences, particularly harsh industrial environments, thanks to coated PCB
- Approval for railway applications (rolling stock) in accordance with EN 50155 and EN 50121
- Panel mounting
- Extended temperature range of -40 °C ... +75 °C

Commercial data

Item number	2902985
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	*****
Product key	DNC332
Catalog page	Page 365 (C-6-2019)
GTIN	4046356727815
Weight per piece (including packing)	144.5 g
Weight per piece (excluding packing)	94.91 g
Customs tariff number	85176990
Country of origin	DE

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Technical data

Notes

Note on application

Note on application	Only for industrial use
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Product properties

Product type	Network isolator
MTTF	18372 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	13381 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	3348 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)
MTBF	38062 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	12264 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))

Electrical properties

Electrical isolation	Port X1//port X2
Insulation voltage input/output	250 V _{rms}
Test voltage data interface/data interface	4 kV AC (50 Hz, 1 min.)

Supply

Supply voltage range	passive module, no supply voltage required
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Interfaces

Signal	Ethernet
	PROFINET

Data: Ethernet interface, 10/100Base-T(X) in accordance with IEEE 802.3

Serial transmission speed	10/100 Mbps
Connection method	M12 connector, D-coded (female)
No. of channels	1
Tightening torque	≤ 2 Nm
Transmission length	≤ 100 m (Total length across both ports (dependent on data rate and cable used))
Protocols supported	Transparent protocol for IPv4 and IPv6

Data: Ethernet interface, 10/100Base-T(X) in accordance with IEEE 802.3

Connection method	M12 connector, D-coded (female)
No. of channels	1

Dimensions

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Dimensional drawing	
Width	66 mm
Height	91 mm
Depth	34 mm

Material specifications

Color (Housing)	black (RAL 9005)
Material (Housing)	Polycarbonate
Material (Lower part)	PC-ABS

Cable/line

Shielding	no connection to protective earth ground (PE) capacitive isolation between both shield connections
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Mechanical tests

Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	Vibration (operation): 5g, 10...150 Hz, 2.5 h, in XYZ direction
Vibration resistance according to IEC 61373, EN 61373	Vibration (operation), IEC: Category 1, Class B
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	Shock (operation): 15g, 11 ms period, half-sine shock pulse Shock (storage/transport): 30g, 18 ms period, half-sine shock pulse

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP54
Ambient temperature (operation)	-40 °C ... 75 °C (85°C for 10 min.; thereafter function can no longer be guaranteed - check device)
Ambient temperature (storage/transport)	-40 °C ... 75 °C
Altitude	≤ 5000 m (For restrictions, see the manufacturer's declaration for altitude operation)
Permissible humidity (operation)	10 % ... 95 %
Permissible humidity (storage/transport)	5 % ... 95 %

Approvals

CE

Certificate	CE-compliant
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Corrosive gas test

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Identification	ISA-S71.04-1985 G3 Harsh Group A
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EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
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Fast transients (burst)

Standards/regulations	EN 61000-4-4
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Emitted interference

Standards/regulations	EN 61000-6-4
Radio interference voltage in acc. with EN 55011	Class B, area of application: Industry and residential
Emitted radio interference in acc. with EN 55011	Class B, area of application: Industry and residential

Standards and regulations

Standards/regulations	EN 50121 and EN 50155 (for railway applications)
	IEC 60571
	IEC 62368
	Suitable in accordance with SELV EN 50153

Mounting

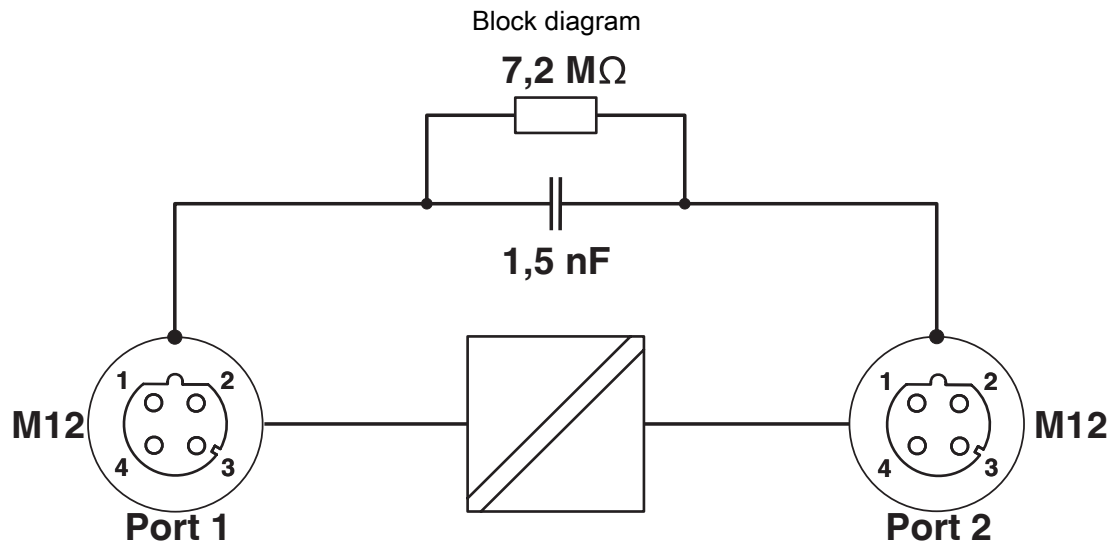
Mounting type	Panel mounting
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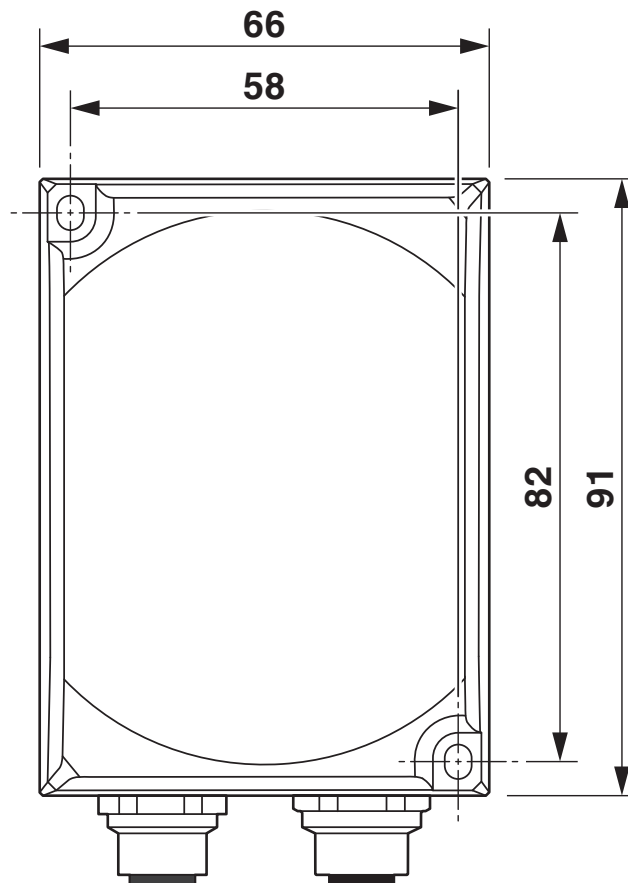
<https://www.phoenixcontact.com/sg/products/2902985>

Drawings



Basic circuit diagram

Dimensional drawing



Dimensions and drill hole spacing in mm

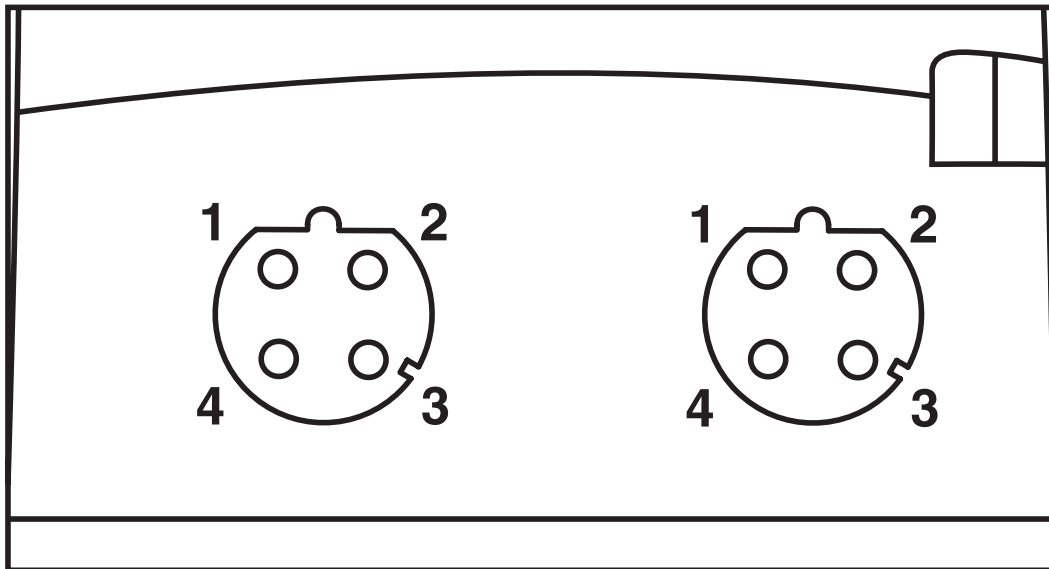
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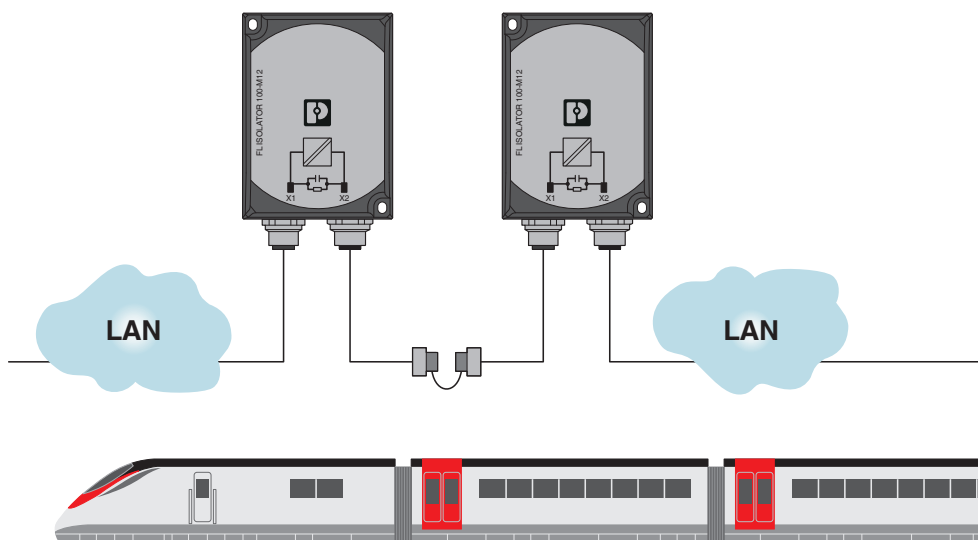
<https://www.phoenixcontact.com/sg/products/2902985>

Schematic diagram



View from below

Schematic diagram



Railway application: isolation of train sections

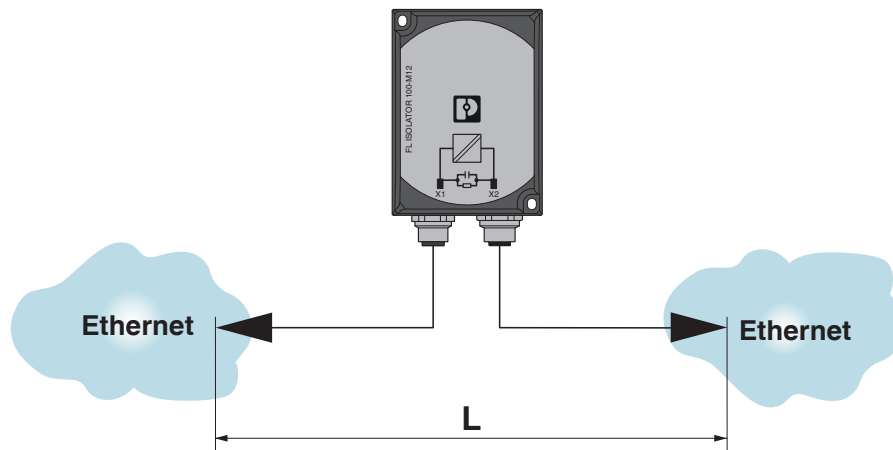
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Application drawing



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Classifications

ECLASS

ECLASS-11.0	27240692
ECLASS-13.0	27240692
ECLASS-12.0	27240692

ETIM

ETIM 9.0	EC002584
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UNSPSC

UNSPSC 21.0	39121400
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
	2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol (UV-329)(CAS: 3147-75-9)
SCIP	257db5f4-4a92-404c-98c8-d7c6247b368d