

# FL ISOLATOR 100-RJ/RJ - Network isolator



2313931

<https://www.phoenixcontact.com/us/products/2313931>

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Passive network isolator for electrical isolation in Ethernet networks. This protects Ethernet devices from potential differences of up to 4 kV. Can be used for transmission speeds of up to 100 Mbps. Possible to connect two RJ45 plugs.

## Product description

The **FL ISOLATOR** is used for electrical isolation in copper-based Ethernet networks. In industrial environments, potential differences pose a constant problem with regard to interference-free data transmission. The high-quality isolation for up to 4 kV provides reliable protection for Ethernet devices and interfaces. This results in considerably higher immunity to interference in industrial applications.

## Your advantages

- No power supply required
- Dielectric strength of up to 4 kV
- Protection against aggressive environmental influences, particularly harsh industrial environments, thanks to coated PCB
- Electrical isolation of data cables and cable shielding
- Extended temperature range of -25 °C ... +85 °C
- Mounting on EN DIN rails
- Continuous insulation voltage of 250 VRMS
- Shipbuilding approval in accordance with DNV GL



## Commercial data

|                        |         |
|------------------------|---------|
| Item number            | 2313931 |
| Packing unit           | 1 pc    |
| Minimum order quantity | 1 pc    |
| Sales key              | DN07    |

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|                                      |               |
|--------------------------------------|---------------|
| Product key                          | DNC332        |
| GTIN                                 | 4046356575089 |
| Weight per piece (including packing) | 116.8 g       |
| Weight per piece (excluding packing) | 116.8 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 |
|---------------------|-------------------------|

### Product properties

|              |   |
|--------------|---|
| Product type | Network isolator  |
| MTBF         | 7993 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))     |
|              | 4201 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day)) |

### Electrical properties

|  |                         |
|--|-------------------------|
| Electrical isolation                       | Ethernet // Ethernet    |
| Insulation voltage input/output            | 250 V <sub>rms</sub>    |
| Test voltage data interface/data interface | 4 kV AC (50 Hz, 1 min.) |

### Connection data

#### Supply

|                   |                     |
|-------------------|---------------------|
| Tightening torque | 0.56 Nm ... 0.79 Nm |
|-------------------|---------------------|

### 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         | RJ45 jack  |
| No. of channels           | 1  |
| Transmission length       | ≤ 100 m (Total length across both ports (dependent on data rate and cable used)) |

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

|                           |             |
|---------------------------|-------------|
| Serial transmission speed | 10/100 Mbps |
| Connection method         | RJ45 jack   |
| No. of channels           | 1           |

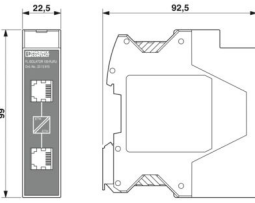
### Dimensions

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|                     |  |
|---------------------|--|
| Dimensional drawing |  |
| Width               | 22.5 mm  |
| Height              | 99 mm  |
| Depth               | 92 mm  |

## Material specifications

|                    |                  |
|--------------------|------------------|
| Color (Housing)    | green (RAL 6021) |
| Material (Housing) | PA 6.6-FR        |

## Mechanical tests

|  |  |
|--|--|
| Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6 | : 5g, 10...150 Hz, 2.5 h, in XYZ direction |
| Shock in accordance with EN 60068-2-27/IEC 60068-2-27              | : 25g, 11 ms period, half-sine shock pulse |

## Environmental and real-life conditions

### Ambient conditions

|  |  |
|--|--|
| Degree of protection                     | IP20   |
| Ambient temperature (operation)          | -25 °C ... 75 °C   |
| Ambient temperature (storage/transport)  | -25 °C ... 85 °C   |
| Altitude                                 | ≤ 5000 m (For restrictions, see the manufacturer's declaration for altitude operation) |
| Permissible humidity (operation)         | 10 % ... 95 % (non-condensing)   |
| Permissible humidity (storage/transport) | 5 % ... 95 % (non-condensing)  |

## Approvals

### CE

|             |              |
|-------------|--------------|
| Certificate | CE-compliant |
|-------------|--------------|

### UL, USA/Canada

|                |            |
|----------------|------------|
| Identification | 508 Listed |
|----------------|------------|

### Corrosive gas test

|                |                                  |
|----------------|----------------------------------|
| Identification | ISA-S71.04-1985 G3 Harsh Group A |
|----------------|----------------------------------|

### Shipbuilding

|                |        |
|----------------|--------|
| Identification | DNV GL |
|----------------|--------|

### Shipbuilding data

|             |   |
|-------------|---|
| Temperature | B |
| Humidity    | A |

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|           |   |
|-----------|---|
| Vibration | A   |
| EMC       | B   |
| Enclosure | Required protection according to the Rules shall be provided upon installation on board |

## EMC data

|                               |   |
|-------------------------------|---|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |
|-------------------------------|---|

### Electrostatic discharge

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-2 |
|-----------------------|--------------|

### Electromagnetic HF field

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-3 |
|-----------------------|--------------|

### Electromagnetic HF field

|                 |                                 |
|-----------------|---------------------------------|
| Frequency range | 26 MHz ... 3 GHz (Test Level 3) |
| Field intensity | 20 V/m                          |
| Comments        | Criterion A                     |

### Fast transients (burst)

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-4 |
|-----------------------|--------------|

### Conducted interference

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-6 |
|-----------------------|--------------|

### Conducted interference

|                 |                     |
|-----------------|---------------------|
| Frequency range | 0.15 MHz ... 80 MHz |
| Comments        | Criterion A         |
| Voltage         | 10 V                |

### 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) |
|-----------------------|--|

## Mounting

|               |                   |
|---------------|-------------------|
| Mounting type | DIN rail mounting |
|---------------|-------------------|

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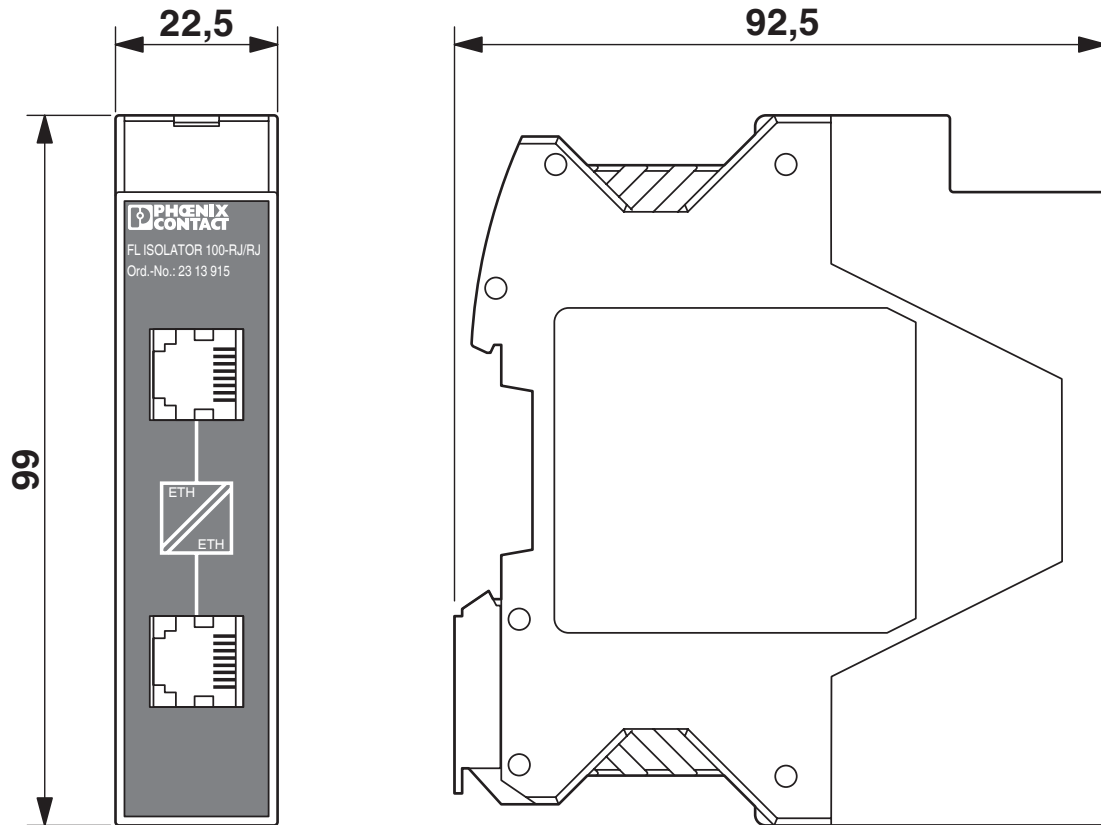


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## Drawings

Dimensional drawing

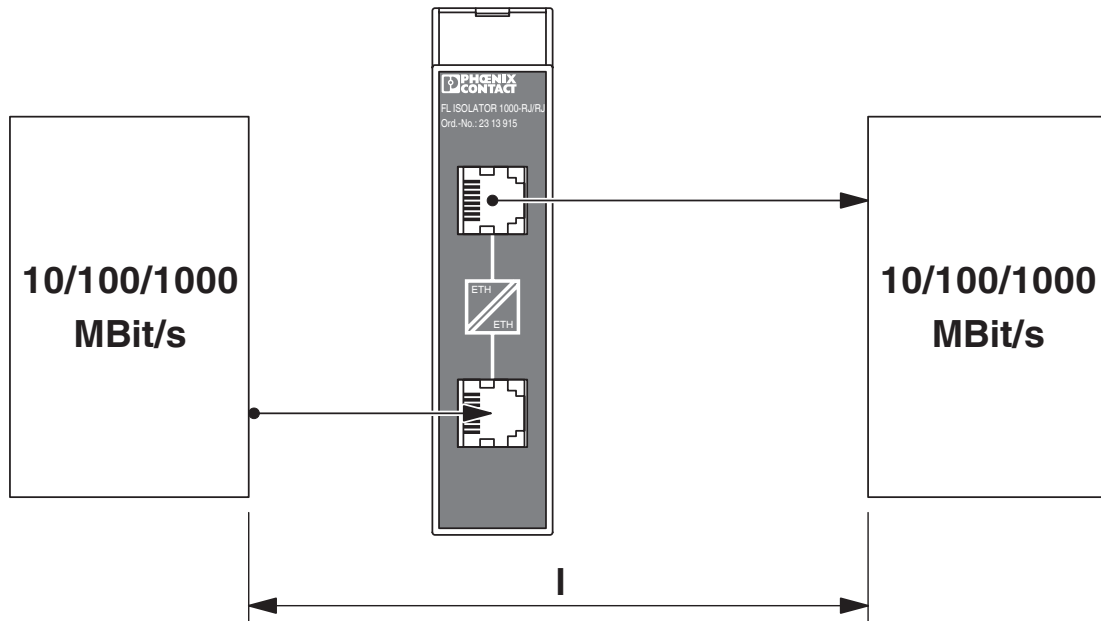


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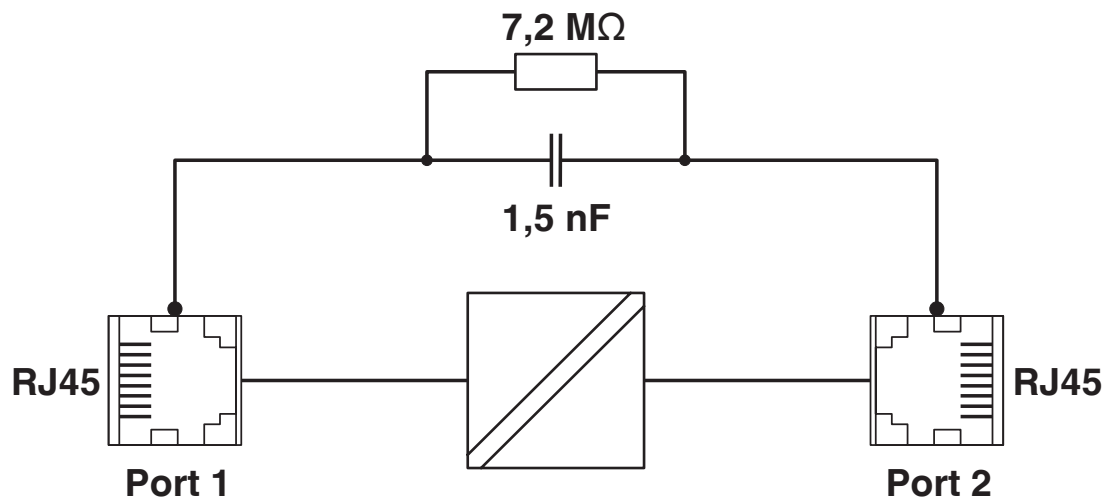
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Schematic diagram



Block diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2313931>



**cULus Listed**

Approval ID: E238705



**DNV GL**

Approval ID: TAA00001KR

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27240692 |
| ECLASS-15.0 | 27240692 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC002584 |
|-----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121400 |
|-------------|----------|

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## Environmental product compliance

### EU RoHS

|   |        |
|---|--------|
| Fulfills EU RoHS substance requirements | Yes    |
| Exemption                               | 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.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

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