



# FIBER OPTIC CONVERTER

## RS-232/422/485 at FO

### TR-55.1(2)



### Functionality

The **TR-55** series fiber converters allow to connect devices equipped with an interface that is **rs-232/C**, **RS-422** and **RS-485** using a singlemode or multimode fiber line.

Depending on the version of the converter, it is possible to make connections in **the point-to-point** topology or fiber optic **bus**, including connections with **protection**.

The devices also work one fiber using **WDM** technology, which reduces the cost of assembling or using the second fiber to protect the connection. The use of optical fibers as a transmission medium ensures complete isolation between the devices and resistance to interference occurring on the transmission road. Compared to the direct electrical connection, it also allows a significant increase in transmission range.

The **TR-55** converters are equipped with a single electrical port, customizable by the user according to needs and - depending on the version - one or two fiber optic ports. In addition, conversion of interfaces can be obtained. Additionally, it has optical signaling of the link from the fiber optic side, which greatly improves the start-up process. This gives complete freedom in the design of the network topology and allows to optimize its costs. The option to work with protection ensures the certainty and security of the transmitted data. The power source can be any DC power supply with adequate power and voltage from **6 to 60 V DC**. The converter housing has a latch for quick attachment of the device to a typical carrier rail **DIN EN 50 022**.

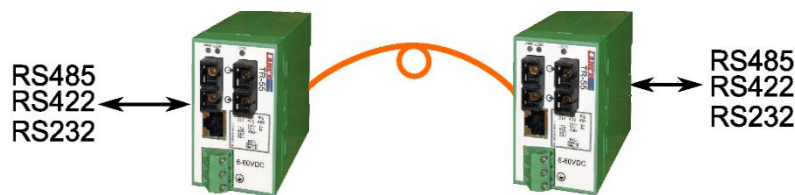


Fig.1 Sample connection application. Working in industrial environments allows to install equipment in facilities exposed to difficult operating conditions

### TECHNICAL PARAMETERS:

#### Electrical interface:

1x RS-232 or RS-422 or RS-485  
configurable- DIPswitch  
screw connector or RJ-45

#### Optical interface (protection):

1310 nm/1550 nm, MM, SM, WDM,  
SC/PC optical connector

#### Transmission range:

up to 10 km for multimode version,  
up to 30 km for single mode version,  
up to 40 km for the single mode version,  
up to 60 km for the single mode version,  
up to 15 km for WDM version (one fiber each)  
up to 30 km for WDM version M,  
up to 40 km for WDM L version,

#### Supported standards

ITU-T V.24  
EIA-422-B  
EIA-485

#### Environmental requirements:

Temperature: -10th°(-40th)°C ÷ - 55th° (+75th)°C (T)  
Humidity: 95% at +20°C

#### Power:

6 – 60 V DC, 500 – 50 mA

#### Dimensions:

45 x 75 x 110 mm

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## Designation

### TR-55. W-X-Y(Z)(T)

#### Electrical interface version:

- 1 - version with RJ-45 connector
- 2 - version with screw connector

#### Option:

- 1 – end converter (1 optical port)
- 2 – through converter (2 optical ports)

#### Optical interface:

- 2 – 1310 nm SM/MM
- 5 – WDM 1310/1550 nm SM(end only)
- 6 – WDM 1550/1310 nm SM(end only)
- 7 – WDM 1310/1550 nm SM 1550/1310 nm

#### Range:

- Unmarked** – used so far
- M** – medium (Medium – for 1310nm, up to 40 km, SM or WDM up to 30 km, SM)
- L** – long (Long – for 1310nm, up to 60 km, SM or WDM do 40 km, SM)

#### Temperature range:

- None** – Basic work range
- T** – extended operating range : -40°C to +75°C

## Additional accessories:

**LT-19-TS-35-01** - DIN 19" rail for rack mounting.  
Dimensions: 19" x 1U x 110mm (depth). Weight: 0.6kg.

List of proposed power supplies for devices

Power supply designation	Output voltage range	nominal output power	Operating temperature C-standard T-industrial
	DC	W	
ZAS-48-25-W-C	48 V	25	0°C - 50°C
ZAS-48V56-40-R-T	48 - 56 V	40	-20°C - 70°C

Legenda markings: W – plug-in; S – standalone; R – for DIN rail

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The manufacturer reserves the right to change the parameters of the devices which do not deteriorate in terms of their usable qualities

## Examples of designations:

**TR-55. 1-1-5T** – fiber optic final converter with 1x RJ45 RS-232/422/485 on FO WDM 1310/1550 nm SM, operating temperature from -40 to +75°C; Power 6-60VDC.

## Transmission range:

The estimated maximum range for the UTP cable cat. 5; 0.4 mm vein diameter

Transmission speed [bit/sec]		Estimated maximum range [metre]
RS-232	115,2 K	15 m
RS-422 / RS-485	115,2 K	1000 m
	250 K	400 m
	0,5 M	250 m
	1 M	150 m

Applying a data transfer speed of less than 115.2 Kbps does not increase the range of the interface.

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