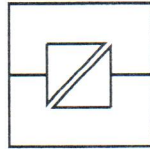


RD-48 AC
RD-48 DC

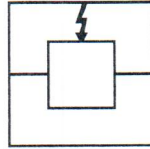
[®]
WESTERMO

INSTALLATIONSANVISNING INSTALLATION MANUAL INSTALLATIONS ANLEITUNG

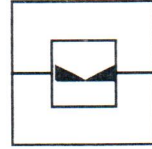
6153-2002



Galvanic
Isolation



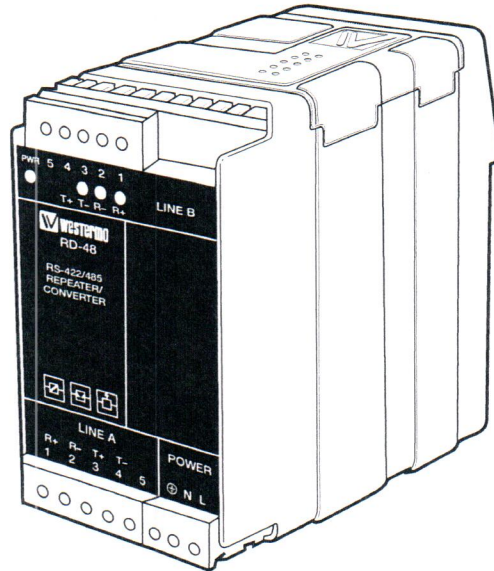
Transient
Protection



Balanced
Transmission



CE
Approved



RS-422/485
Repeater

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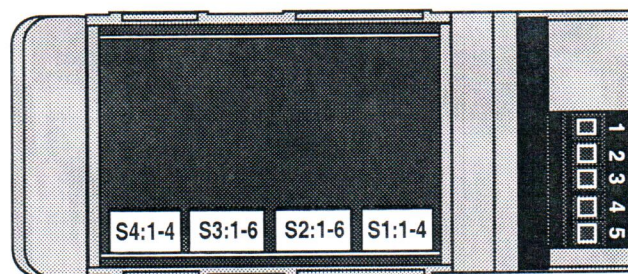
Specifications

| | |
|-------------------------------|---|
| Transmission | Asynchronous, full/half duplex or simplex |
| Interface 1 | EIA RS-422/RS-485/V.11 |
| Interface 2 | EIA RS-422/RS-485/V.11 |
| Data rate | Up to 1.5 Mbit/s |
| Indicators | Power, RD, TD |
| Insulation | Galvanic insulation using opto-coupler (data transmission) and transformer (supply) |
| Insulation voltage | 1500V |
| Overvoltage protection | Mains: Breakdown voltage 430V at 230V AC and 230V at 115V AC* Interface 1 and 2: Breakdown voltage transmitter and receiver 7V Surge capacity 0.6 kW for 1 ms |
| Power supply | 115V*/230V +15/-10% 48-62Hz |
| Fuse | 100 mA fast 5x20 mm |
| Power consumption | Max 6VA at 230V |
| Temperature range | 5-50°C, ambient temperature |
| Humidity | 0-95% RH, non-condensing |
| Dimensions | 55x100x128 mm (WxHxD) |
| Weight | AC 0.4 kg, DC 0.25 kg |
| Mounting | On 35 mm DIN-rail. |





* Only RD-48 115V



Switch settings





The RD-48 can through different switch settings be adapted to a variety of running conditions. To set the switches, open the plastic case .



- S1 Selection of functions and termination with fail-safe
- S2/S3 Time-out (turning time)
- S4 Selection of termination with fail-safe on line A

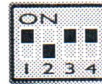
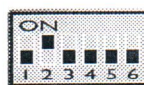


| Function | |
|----------|--|
| S1 |  Repeater (4-wire) |
| S1 |  Repeater (2-wire) |
| S1 |  Converter 2-/4-wire |
| S1 |  Direction controlled |

| B-line Termination with fail-safe I) | |
|--------------------------------------|--|
| S1 |  Not terminated |
| S1 |  Terminated |

| A-line Termination with fail-safe I) | |
|--------------------------------------|---|
| S4 |  Not terminated |
| S4 |  4-wire |
| S4 |  2-wire |
| S4 |  Direction control |

1) The fail-safe function forces the signal state of the receiver to off when the connected transmitter is in tri-state (transmitter inactive). The receiver located furthest away must be terminated.

| Time-out for line A and B | | |
|---------------------------|--------------|-----------------------|
| | Turning time | Recommended data rate |
| S2/S3 | 10 ms | <2400 bit/s |
| S2/S3 | 3 ms | 2400–4800 bit/s |
| S2/S3 | 1.5 ms | 4800–19200 bit/s |
| S2/S3 | 0.8 ms | 19.2–64 kbit/s |
| S2/S3 | 0.2 ms | 64–100 kbit/s |
| S2/S3 | 0.1 ms | 100–400 kbit/s |
| S2/S3 | 40 μs | >400 kbit/s |

| Factory settings | |
|------------------|---|
| S1 |  |
| S2 |  |
| S3 |  |
| S4 |  |

Connections

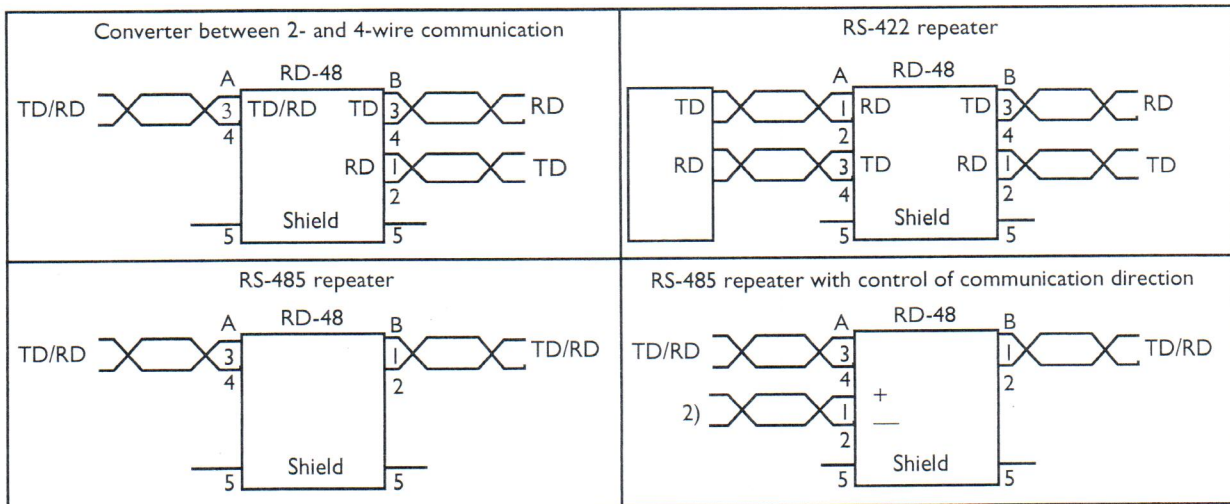
Line connection

(5-position screw-terminal)

| Direction | Pin no. | CCIT V.11 Description |
|-------------|---------|-----------------------|
| Receiver | 1 | A' (R+) |
| Receiver | 2 | B' (R-) |
| Transmitter | 3 | A (T+) |
| Transmitter | 4 | B (T-) |
| | | Shield |

The definitions R+/R-, T+/T- can be various between different manufactures.

Line connection



- 1) If shielded cable is used, connect the shield only at one end to avoid ground currents.
- 2) Voltage over 200mV allows communication from A to B. Voltage under -200mV allows communication from B to A.

Transmission range

Use twisted pair cable. Max transmission range 1200 m at data rates up to 100 kbit/s (cable specifications 0.3 mm² and capacitance 42pF/m).

The transmission range will increase if a cable with lower capacitance and larger diameter is used. Use shielded cable in heavy industrial environments.

RD-48 DC

Specifications

| | |
|--------------------------|--------------------|
| Power supply | 12-36V DC |
| Power consumption | Max 3W |
| Insulation | 1000V |
| Fuse FI | 1.6 A fast 5x20 mm |

All other specifications according to RD-48 AC

Switch settings

According to RD-48 AC

Connections

According to RD-48 AC, except power supply

| Connection no. | Power supply |
|----------------|--------------|
| 1 | + Voltage |
| 2 | - Voltage |

Hints

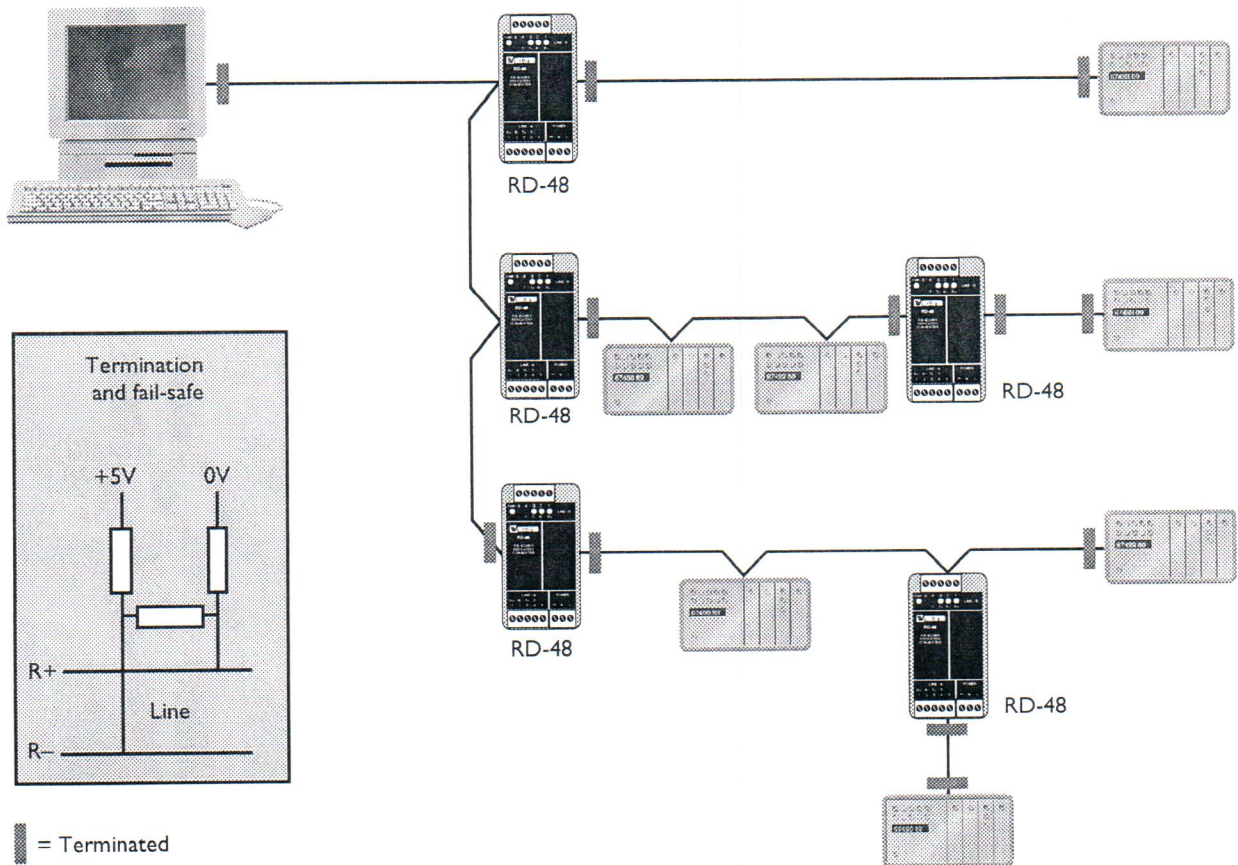
When an RS-422/485 system is installed it should always form a bus structure. Using the RD-48, it is possible to produce a star network of several buses. It is important to terminate RS-422/485 equipment correctly. The termination allows the fail safe function to work correctly with all Westermo converters. The fail safe function is provided to push the unit to a defined state when the RS-422/485 line becomes undefined. The RD-48 relies on this for operation.

In RS-422/485 multi drop applications, all transmitters are effectively connected in parallel, and hence need to be able to make themselves inactive (tri-state). For this reason on the RD-48, when no data is being received on the A line, the B transmitter will go to tri-state, and vice versa.

We recommend terminating the receiver as shown on the diagram below.

If problems do occur the LEDs will help diagnose the problems.

- PWR: The unit has power.
- R+: Data received on B-line.
- T+: Data received on A-line.



Note ! It is not possible to have more than 8 repeaters in serial connection

