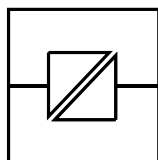


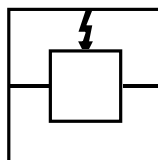
**MD-63
Profibus**

INSTALLATIONSANVISNING INSTALLATION MANUAL INSTALLATIONS ANLEITUNG

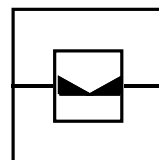
6071-2071



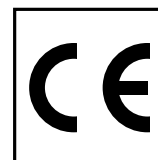
Galvanic
Isolation



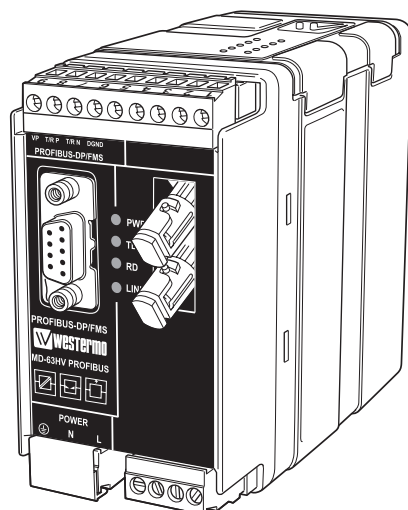
Transient
Protection



Balanced
Transmission



CE
Approved



***Omvandlare Opto – RS-485
Converter Opto – RS-485
Glasfaser Wandler – RS-485***

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Functional description MD-63 Profibus

MD-63 Profibus is developed for RS-485 point-to-point communication and conversion between RS-485 and fibre. The unit is specially developed for Profibus and uses a Profibus standard 9-position D-sub for connection with RS-485. Possibility to connect to a 5-position screw block is also available.

The fibre optic interface uses ST-connectors and both multi mode and single mode fibre versions are available. The maximum transmission distance is calculated from the available power budget of the modems and the attenuation of the cable, splice joints and connectors. Distances up to 25 km can be reached using single mode fibres. The fibre optical cable is completely immune to external interference, which makes it ideal for harsh environments.

The modem consists of one F/O channel with separate transmitter and receiver. On the front of the unit there are also three LED's indicating the data transmission on the channel.

MD-63 Profibus can be used at all standard Profibus transmission speeds up to 1.5 Mbit/s and all operating parameters are set-up via DIP switches easily assessable under the lid on the top of each unit.

MD-63 Profibus is available in low (LV) and highvoltage (HV) versions. MD-63LV supports power supplies 12–45V AC \pm 5% and 12-55V DC \pm 5%. MD-63HV supports power supplies 95–240V AC \pm 5% and 110–240V DC \pm 5%

Specifications MD-63 Profibus

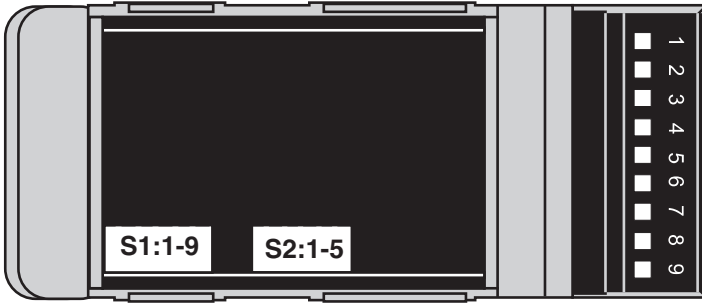
Transmission	Asynchronous, full/half duplex or simplex
Interface 1	EIA RS-485 / ITU-T V.11 Profibus standard 9-position D-sub alt. 5-position screw block
Interface 2	Fibre optical 2 ST-connections
Data rate	9.6, 19.2, 93.75, 187.5, 500, 1500kbit/s
Indicators	PWR, TD, RD, LINK
Temperature range	5–50°C ambient temperature
Humidity	0–95% RH without condensation
Dimension	55x100x128 mm (WxHxD)
Weight	0.4 kg
Mounting	On 35mm DIN-rail
Power supply alternatives	

Model description	MD-63HV PROFIBUS	MD-63LV PROFIBUS
Power supply	95–240V AC \pm 10% / 110–240V DC \pm 10%	12–45V AC \pm 10% / 12–55V DC \pm 10%
Frequency	48–62Hz / –	48–62Hz / –
Fuse, FI	1A T / 1A T Wickmann	1A T / 1A T Wickmann
Power consumption	40 mA	3W
Overvoltage protection	430V	430V
Isolation, RMS	3 750V	3 750V




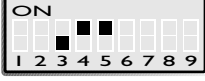



LEDs for indication on MD-63 Profibus

- PWR: Indicates that the unit has power
- TD: Indicates received data on Profibus/RS-485 side.
- RD: Indicates transmitting data on Profibus/RS-485 side.
- LINK: Indicates a fibre optic link between the modems.

Switch settings MD-63 Profibus



Selection of data rate



	Turning time
SI 	auto detect
SI 	9,6 kbit/s
SI 	19,2 kbit/s
SI 	93,75 kbit/s
SI 	187,5 kbit/s
SI 	500 kbit/s
SI 	1500 kbit/s

Selection of Link-detect

SI 	Inactivated
SI 	Aktivated

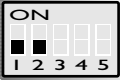

Link detect means that the fibre optic channel is continuously analysed. When an acceptable level is detected this will be indicated with the LINK-Led.

Selection of termination resistor

S2 	Termination cable type A (220Ω)
S2 	Termination cable type B (150Ω)

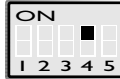

See cable types page 12

Selection of termination with fail-safe

S2 	No termination
S2 	Termination

The fail-safe function forces the received signal to inactive state when the connected transmitter is in tri-state (transmitter inactive).

Selection of transmitted power


S2 	Low
S2 	High

Factory settings

SI 	S2 
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Power budget

Min. budget



Unit			
Fibre	820 nm	1300 nm	single mode
50/125	10.7 dB	8.1 dB	
62.5/125	14.5 dB	11.6 dB	
100/140	20.6 dB		
9/125			6.3 dB

Typ. budget



Unit			
Fibre	820 nm	1300 nm	single mode
50/125	16.6 dB	14.6 dB	
62.5/125	18.6 dB	15.1 dB	
100/140	25.9 dB		
9/125			12.3 dB

“Min. budget” states the minimum guaranteed power budget. Experience shows however that the typical value is in the range of the indicated “Typ. budget”.

Attenuation in fibre cable

The values below can differ depending on quality and manufacturer of the fibre-optic cable.

Fibre	Attenuation at 820 nm	Attenuation at 1300 nm	Attenuation at single mode (1300 nm)
50/125 µm	3.0 dB/km	1.0 dB/km	
62.5/125 µm	3.5 dB/km	1.2 dB/km	
100/140 µm	4.0 dB/km		
9/125 µm			0.5 dB/km

Attenuation in connectors

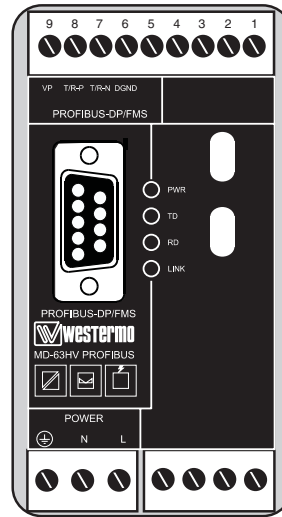
0.2–0.4 dB

Attenuation in splice

Fusion	0.1 dB
Mechanical	0.2 dB

Connections MD-63 Profibus

MD-63 Profibus is specially developed for communication to units communicating with Profibus-DP or FMS. The connection is easily made via a Profibus cable connected to the 9-position D-sub on the unit. Possibility to connect to a 9-position screw block is also available.



Line connection

Connections

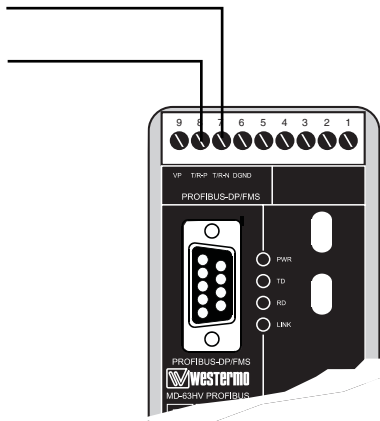
Designation	9-pos D-sub	9-pos screw block	Description
T/R-P	3	8	Line connection – P
T/R-N	8	7	Line connection – N
VP	6	9	+5V supply
DGND	5	6	Signal ground

Cable types

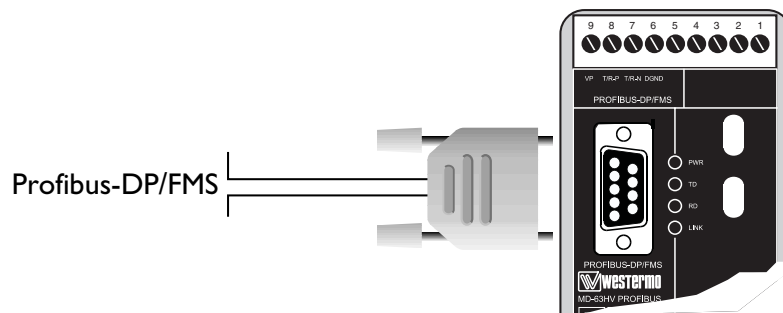
Designation	Impedance	Capacity	Resistance	Conductor area
Cable type A	135–165Ω (3–20MHz)	<30pF/m	<110Ω/km	≥0,34 mm ² (22AWG)
Cable type B	100–130Ω (>100kHz)	<60pF7m	–	≥0,22 mm ² (24AWG)

Connection example

Profibus DP/FMS



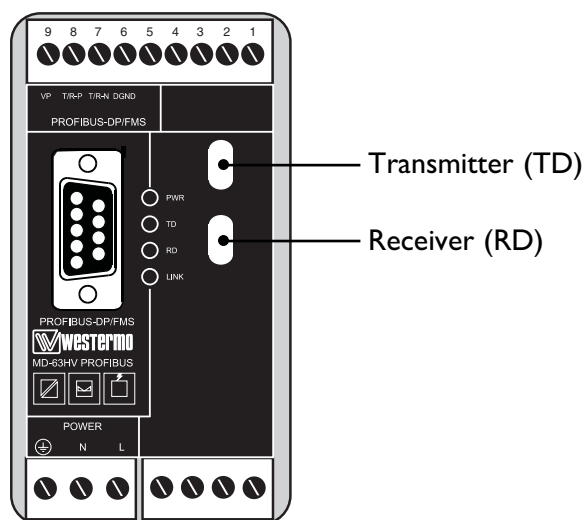
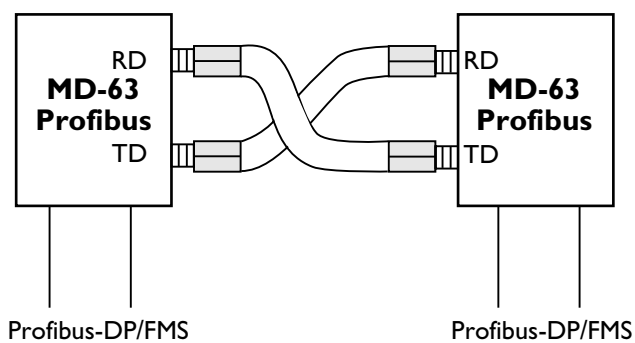
Connection to screw block



Connection to 9-pos D-sub

Fibre optical connection

Connection example



Power connections

Connection MD-63LV Profibus

2-position screw-terminal

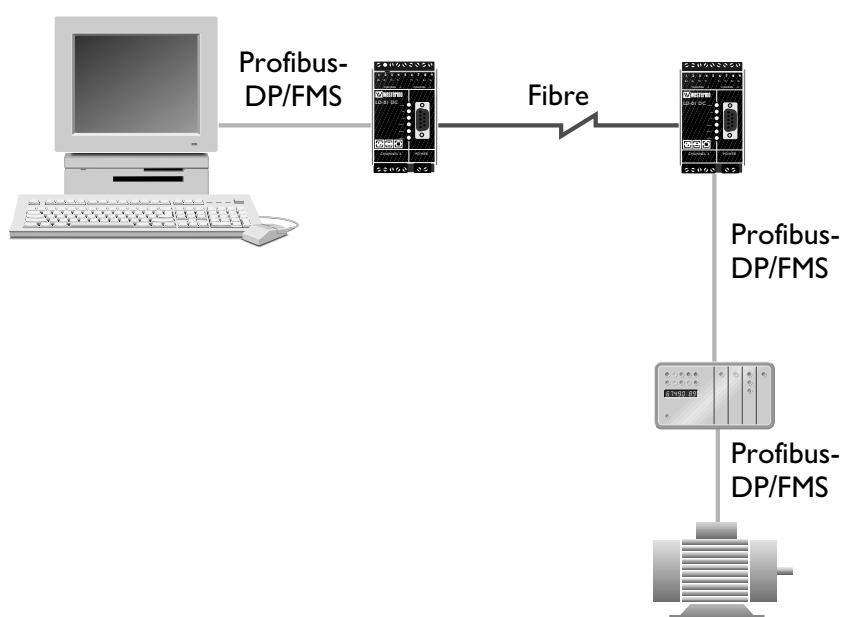
Screw no.	Power supply
1	- Low voltage
2	+ Low voltage

Connection MD-63HV Profibus

3-position screw-terminal

Connection	Power supply
L	- High voltage
N	+ High voltage
O	Protective earth

Application example



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