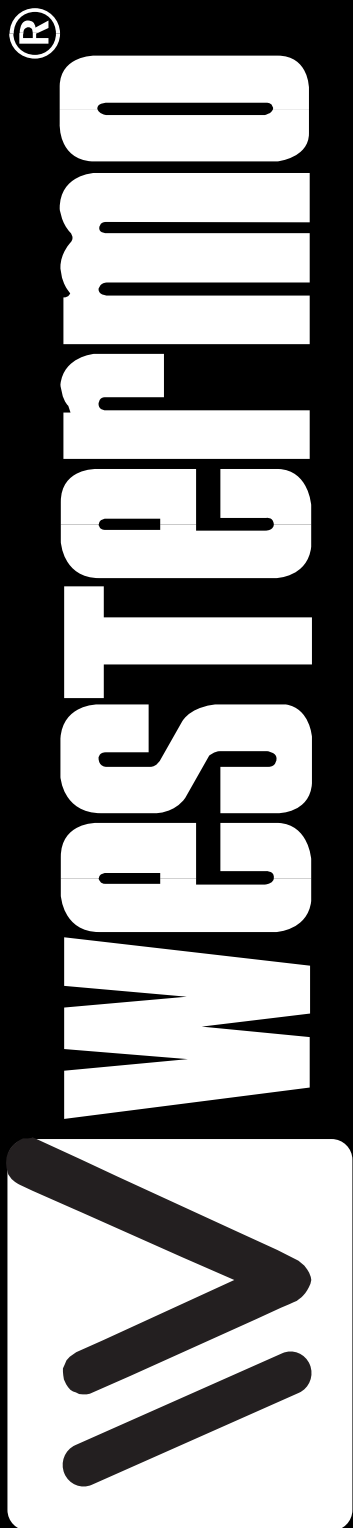
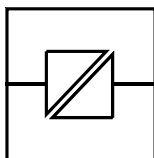


**MD-42 AC  
MD-42 DC**

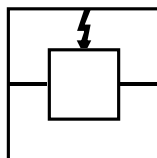


# INSTALLATIONSANVISNING INSTALLATION MANUAL INSTALLATIONS ANLEITUNG

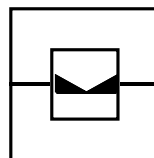
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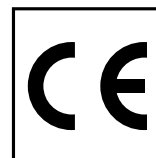
Galvanic  
Isolation



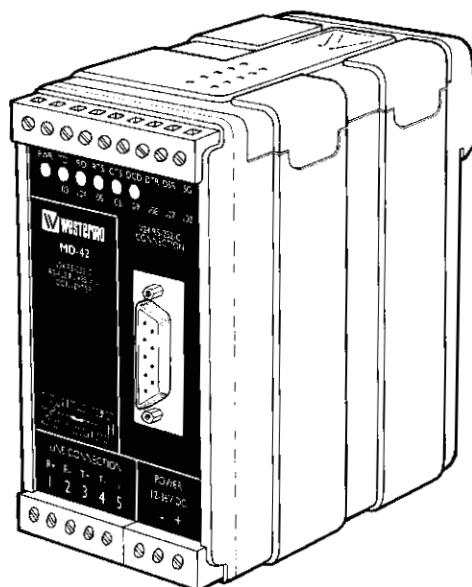
Transient  
Protection



Balanced  
Transmission



CE  
Approved



**Omvandlare RS-232--RS-422/485  
Converter RS-232--RS-422/485  
RS-232—RS-422/485 Wandler**

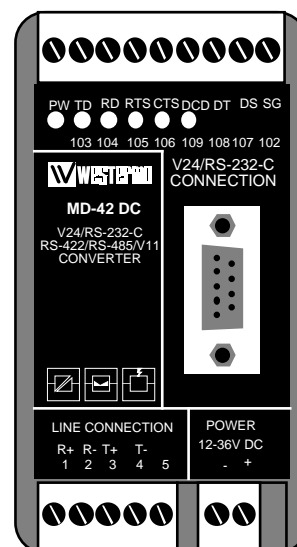
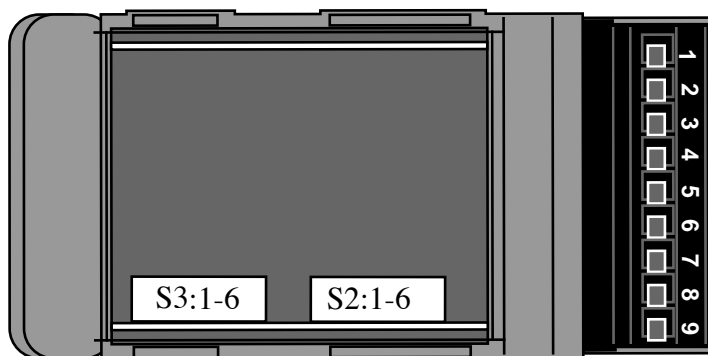
 **westermo**<sup>®</sup>  
[www.westermo.se](http://www.westermo.se)

## Specifications

<b>Transmission</b>	Asynchronous, full/half duplex or simplex
<b>Interface 1</b>	EIA RS-232-C/CCITT V.24 9-position D-sub female / Screw-terminal
<b>Interface 2</b>	EIA RS-422/RS-485/CCITT V.11
<b>Data rate</b>	Up to 115.2 kbit/s
<b>Indicators</b>	Power, TD, RD, RTS, CTS, DCD
<b>Insulation</b>	Galvanic insulation with opto-coupler (data transmission) and transformer (supply)
<b>Insulation voltage</b>	1500V
<b>Overvoltage protection</b>	<b>Mains:</b> Breakdown voltage 430V at 230V AC and 230V at 115V AC* Interface 2: Breakdown voltage transmitter and receiver 7V Surge capacity 0.6 kW for 1ms
<b>Power supply</b>	115V*/230VAC +15/-10% 48-62Hz
<b>Fuse</b>	100 mA fast 5x20 mm
<b>Power consumption</b>	Max 4VA at 115V*/230V AC
<b>Temperature range</b>	5-50°C, ambient temperature
<b>Humidity</b>	0-95% RH, non-condensing
<b>Dimensions</b>	55x100x128 mm (bxhxd)
<b>Weight</b>	0.4 kg
<b>Mounting</b>	At DIN-rail 35 mm

\* MD-42 115V AC only

**Warning!**  
**Do not open connected unit**



Transmitter				
		Transmitter Activated by	CTC controlled by	DCD controlled by
S2		RTS	RTS	RTS
S2		RTS	RTS	Always high
S2		DTR	DTR	DTR
S2		DTR	DTR	Always high
S2		Always active	Always high	Always low
S2		Always active	Always high	Always high

CTS-delay	
S2	0ms
S2	20ms

Selection of 2- or 4-wire	
S3	4-wire
S3	2-wire

Factory settings	
S2	
S3	

Termination with fail-safe <sup>1)</sup>	
S3	Termination (4-wire)
S3	Termination (2-wire)
S3	No termination

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 shall be terminated.

## Switch settings

The MD-42 can through different switch settings be adapted to a vareity of running conditions. To set switches, open the plastic case by removing the top cover.


- S2 Selection of signal activating the transmitter
- Selection of signal controlling DCD
- Selection of CTS delay
- S3 Selection of termination with fail-safe 1)
- Selection of 2- or 4-wire communication

# Connections MD-42

Line connection  
(5-Position screw-terminal)

Direction	No.	Description
Receiver	1	A' (R+)
Receiver	2	B' (R-)
Transmitter	3	A (T+)
Transmitter	4	B (T-)
	5	Shield

Power connection (AC)  
(3-position screw-terminal)

Screw no.	Power Supply
N	115V*/230V
L	AC power
	PE/Protective Earth

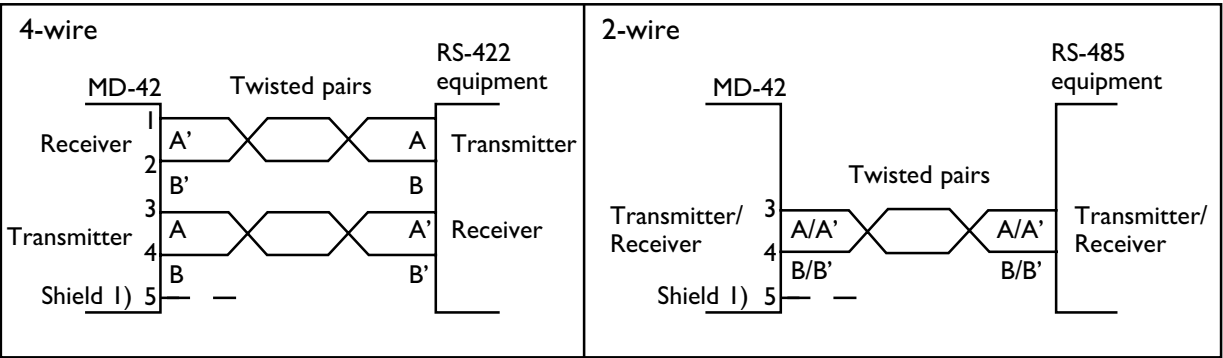
\* MD-42 115V only

Terminal connection (DCE)  
(RS-232-C/V.24, 9-position D-sub, female/screw-terminal)

Drection I)	Pin no.	Screw-terminal	CCITT V.24 Circuit no.	Description
I	3	8	103	TD/Transmitted Data
O	2	7	104	RD/Received Data
I	7	6	105	RTS/Request To Send
O	8	5	106	CTS/Clear To Send
O	6	2	107	DSR/Data Set Ready
-	5	9 & 1	102	SG/Signal Ground
O	1	4	109	DCD/Data Carrier Detect
I	4	3	108/2	DTR/Data Terminal Ready

I) I = Input O = Output on MD-42

## Line connection



I) If shielded cable is used, connect the shield only at one end to avoid ground currents.

## Transmission range (interface 2)

Use twisted pair cable. Max transmission range 1200m.  
(cable specifications 0.3mm 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.

## MD-42 DC

### Specifications

<b>Power supply</b>	12-36V DC
<b>Power consumption</b>	Max 2.3W
<b>Insulation</b>	500V
<b>Fuse FI</b>	1.6A fast 5x20 mm

*All other specifications according to MD-42 AC*

### Switch settings

According to MD-42 AC

### Connections

According to MD-42 AC, except power supply

Connection no.	Power Supply
1	– Voltage
2	+ Voltage

## Hints

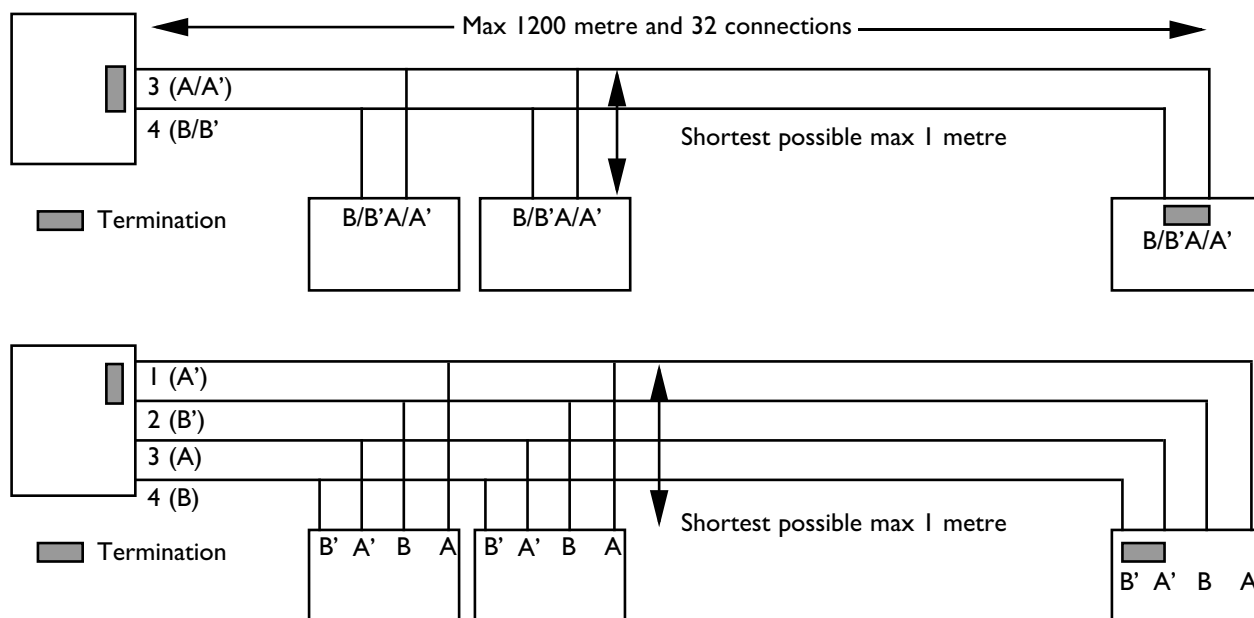
The MD-42 like other Westermo products MA-42, MA-44, MD-44, MM-42, MA-47, MA-49, RA-48, RD-48, MA-63, MD-63, LD-63 and LD-64 uses the RS-422/485 interface.

RS-422/485 was designed for multidrop applications. When a system is installed it should form a bus structure (see diagrams). Star shaped networks should never be created, there are other Westermo products designed to work in star net applications. To correctly install, an RS-422/485 network should be terminated at the correct points. The recommendation is to terminate the receiver on the master unit and the final bus slave unit. See diagrams for details of how this is done with RS-485 (2-wire) and RS-422 (4-wire).

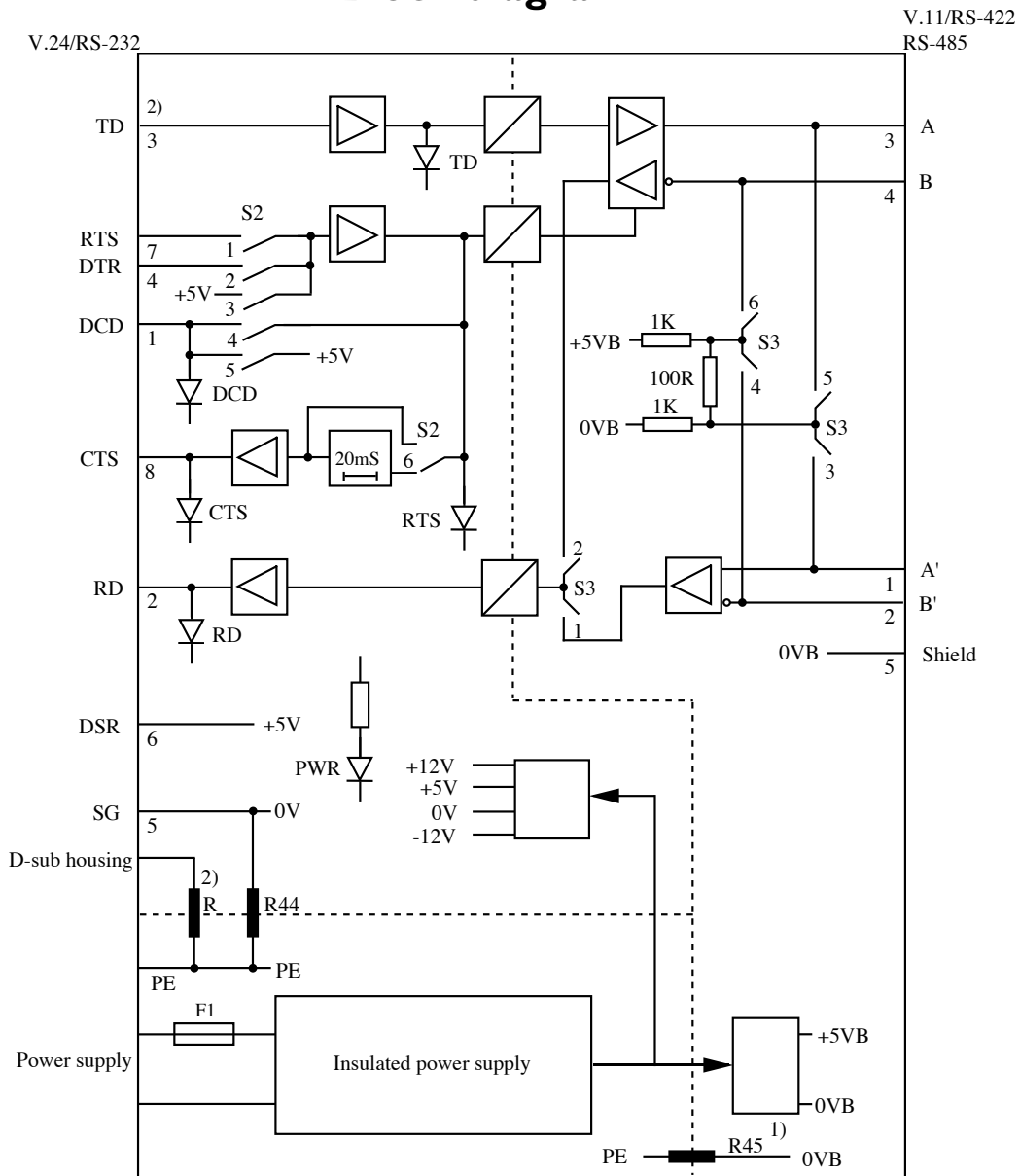
On 4-wire systems when the MD-42 is on a slave system, it's transmitter is linked to the same bus as all the other slave transmitters. A status signal RTS or DTR is used to control the MD-42's transmitter, to ensure only one slave is active on the bus at one time. The status signal is also used to control direction for RS-485 (2 wire) transmission.

If any problems do occur on set up of the MD-42, the LED's will be helpful.

- PWR: The unit has power.
- RD: Data received on the RS-422/485 interface.
- DCD: Simulated carrier due to the setting of S2.
- CTS: Follows RTS.
- RTS: Indicates that the RS-422/485 transmitter is activated.
- TD: Data received on the RS-232 interface.



# Block diagram



Westermo Teleindustri AB have distributors in several countries,  
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