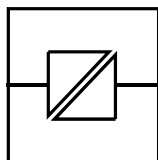


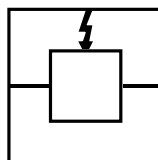
LD-63 DH+

INSTALLATIONSANVISNING INSTALLATION MANUAL INSTALLATIONS ANLEITUNG

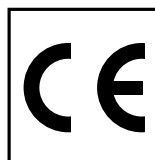
6072-2071



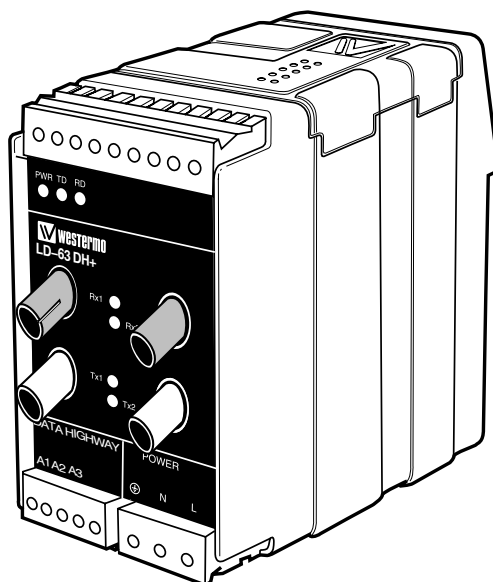
Galvanic
Isolation



Transient
Protection



CE
Approved



Linjedelare

Optisk fiber – Allen-Bradley DH+, RIO

Line sharing device

Fibre-optic – Allen-Bradley DH+, RIO

**Glasfaser Leitungsteiler
– Allen-Bradley DH+, RIO**

 **westermo**[®]
www.westermo.se

Specifications LD-63 DH+

Transmission	Asynchronous, half duplex or simplex
Interface 1	Allen-Bradley Data Highway Plus (DH+) Allen-Bradley Remote I/O (RIO), 5-position screw-block
Interface 2	Fibre 4 ST-connectors, see table of power budget
Data Rate	57.6, 115.2, 230.4 kbit/s (Manchester Coded)
Indicators	Power, TD, RD, Rx1, Rx2, Tx1, Tx2
Temperature range	5–50°C, ambient temperature
Humidity	0–95% RH without condensation
Dimension	55x100x128 mm (BxHxD)
Weight	0.4 kg
Mounting	On 35 mm DIN-rail
Power supply alternatives	

Model description	LD-63 DH+ HV	LD-63 DH+ LV
Power supply	95–240 V AC $\pm 10\%$ 110–240 V DC $\pm 10\%$	12–45 V AC $\pm 10\%$ 12–55 V DC $\pm 10\%$
Frequency	48–62 Hz / –	48–62 Hz / –
Fuse, F2	1 A T Wickmann	1 A T Wickmann
Power consumption	40 mA	4 W
Overvoltage protection Power / Line	Yes / Yes	Yes / Yes
Isolation RMS Power supply	3 750 V	3 750 V

Functional description LD-63 DH+

LD-63 DH+ designed for multidrop fibre optic communication between equipments using Allen-Bradleys Data Highway Plus (DH+) or Allen-Bradleys remote I/O (RIO) interface.

The unit is equipped with ST-connectors and is available in both multi and singlemode versions.

Transmission rate up to 230 kbit/s is possible. Transmission distance is calculated from available power budget and important parameters are attenuation in the fibre optic cable, contacts and splices. Transmission distances up to 25 km are possible with single mode cable. LD-63 DH+ consists of 2 fibre optic channels with a transmitter and receiver for each channel. Both channels are transparent which means that data received on Rx1 is retransmitted on Tx2 and data received on Rx2 on Tx1.

The possible numbers of LD-63 DH+ connected in serie is limited, see page 12.

LEDs for indication on LD-63 DH+

- PWR: Indicates that the converter has power.
- TD: Indicates that the converter is receiving data on DH+, RIO side.
- RD: Indicates that the converter is sending data on DH+, RIO side.
- Rx1: Indicates received data on fiber channel 1
- Rx2: Indicates received data on fiber channel 2.
- Tx1: Indicates that the converter is sending data on fiber channel 1 from DH+, RIO side.
- Tx2: Indicates that the converter is sending data on fiber channel 2 from DH+, RIO side.

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

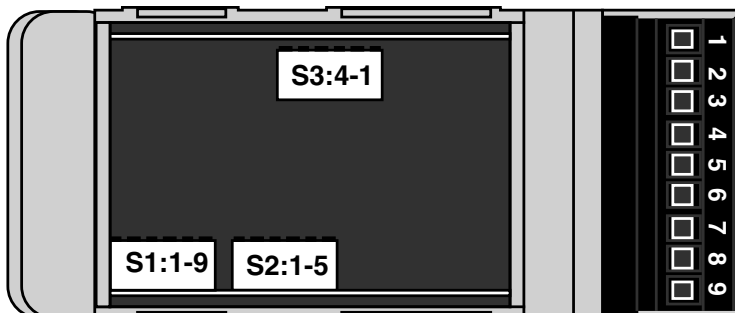
Mecanical 0.2 dB

Switch settings LD-63 DH+

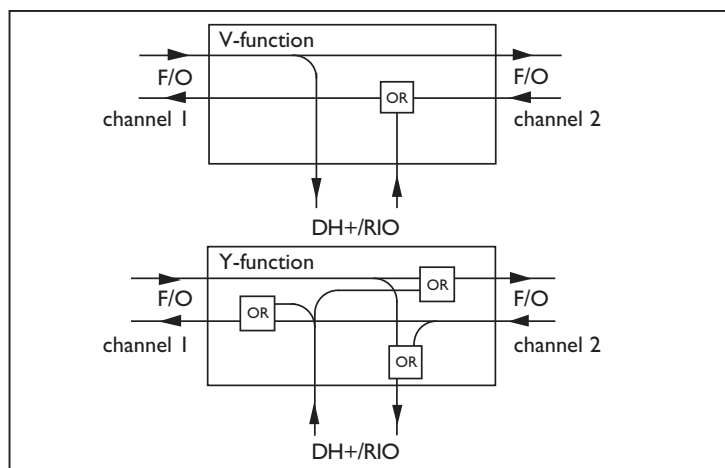
Selection of V or Y mode

SI  Y-mode

SI  V mode



Description V/Y-function



Selection of data rate			
	Turning time	Transmission speed	Max number of nodes
SI 	5µs	230.4 kbit/s	4
SI 	10µs	115.2 kbit/s	8
SI 	20µs	57.6 kbit/s	16

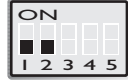
SI: 4-9 is not used

Maximum number of units is depending on fiber and copper cable length

Westermo recommends the following:

- A maximum total fiber distance of 20 km
- A maximum cable distance at each modem
 - 600 m at 57,6 kbaud
 - 300 m at 115,2 kbaud
 - 150 m at 230,4 kbaud
- No droplines from DH+/RIO bus
- A maximum number of 16 units connected to each modem
- Use standard cable, Belden type 9463

Termination DH+, RIO interface

S2  No termination

S2  Termination DH+, RIO interface

Transmitted power fibre channel 1

S2  Low

S2  High

S2: 4 is not used

Transmitted power fibre channel 2

S3  Low

S3  High

Factory settings

S1 

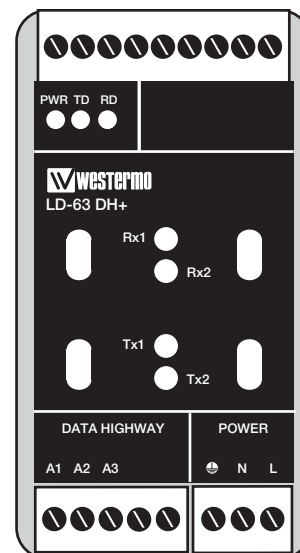
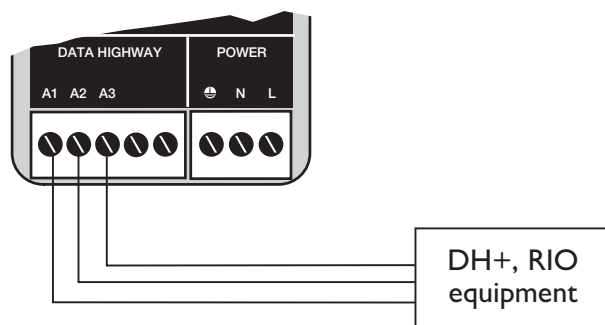
S2 

S3 

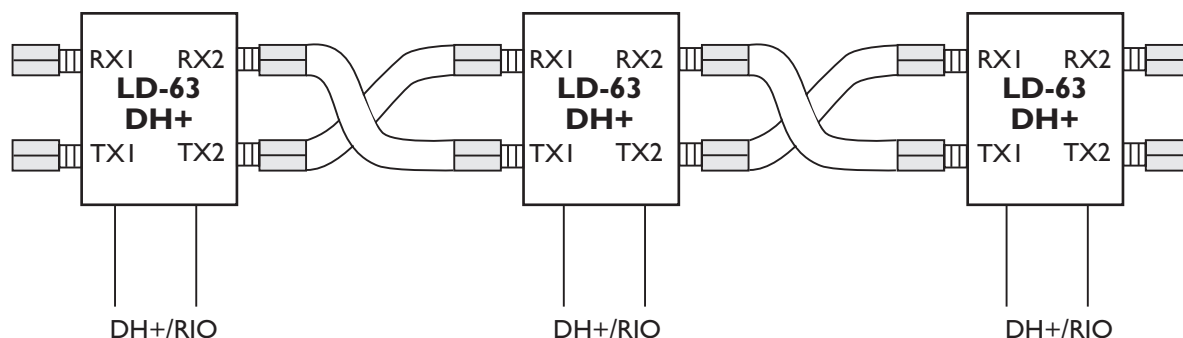
How to connect

Line connection (DH+, RIO interface) (5-position connection)

Connection no.	Description
1	A1 (Blue)
2	A2 (Shield)
3	A3 (Clear)



Fibre optic connection



NB When a multidrop connection ends with an LD-63 DH+ and the fibre pair is connected on channel 2, the switch SI:2 must be set (Y-mode)

Power connection

LD-63 DH+ LV

2-position screw-terminal

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

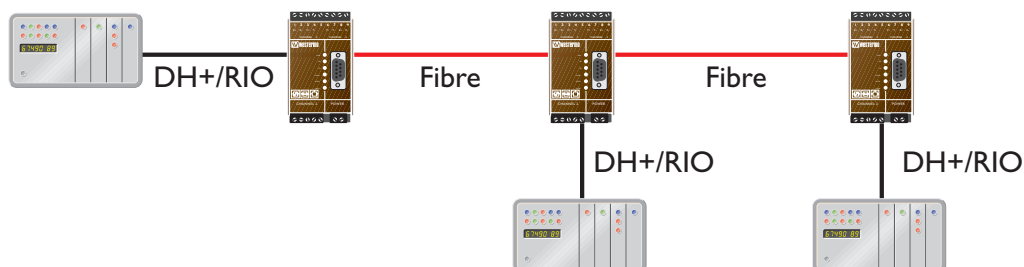
LD-63 DH+ HV

3-position screw-terminal

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

[illegible]

Application example



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