BENDER
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DI-1DL

RS-485 interface repeater for RS-485 bus extension

DI-1DL_D00125_01_D_XXEN/07.2017

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RS-485 interface repeater DI-1DL

Product description

The RS-485 interface repeater DI-1DL is designed for signal amplification on the RS-485 interface (BMS bus, Modbus RTU). This is required when the network distance exceeds a length of 1200 m or when more than 31* bus nodes exist.

Applications

- Extension of the maximum possible bus length by 1200 m in BMS systems (EDS, RCMS, MEDICS® systems)
- Extension of the maximum possible bus nodes by 31*
- Protection against spikes by galvanic separation between the input and output circuit and the power supply
- Implementation of resonant stubs (refer also to BSM instruction leaflet)

Device features

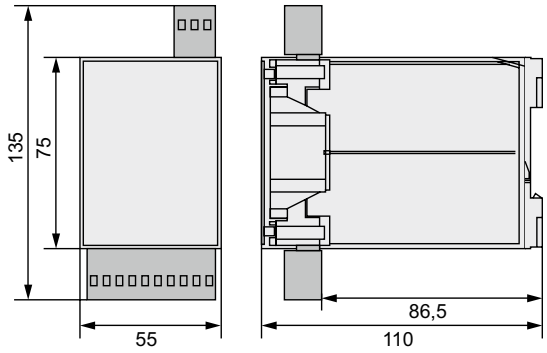
- Plastic enclosure for DIN rail mounting
- Dynamic baud rate setting
- Galvanic separation between the input and output circuit and the power supply – overvoltage protection
- Supply voltage AC 85…260 V, 50…60 Hz
- Automatic baud rate changeover – can therefore be used for the internal BMS bus without limitations

Ordering information

Supply voltage U_S	Type	Art. no.
AC		
85…260 V, 50…60 Hz	DI-1DL	B95012047

Dimension diagram

Dimensions in mm



Technical data

Supply voltage

Supply voltage U_S	AC 85…260 V, 50…60 Hz
Power consumption	0.1 A/7 W

Interfaces

BMS

Interface/protocol	2 x RS-485/BMS
Baud rate	dynamic
Cable length	≤ 1200 m
Cable (twisted pair, one end of shield connected to PE)	recommended: J-Y(St)Y min. 2x0.8
Data direction switching	automatic
Cascading option	yes
Number of bus devices*:	31 additional bus devices per repeater, cascading allows a virtually unrestricted number of connections
Terminating resistor and bus bias voltage can be activated by a switch	
Device address, BMS bus	–
Alarm LEDs	activity indication: direction and faults (green) internal operating voltage (red)

Environment

Operating temperature	0…+70 °C

Connection

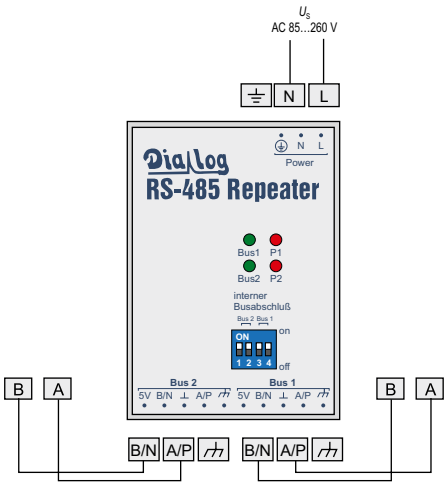
Connection type	push-wire/plug-in terminals

Other

Operating mode	continuous operation
Mounting	any position
Enclosure	for standard DIN rail 32 mm (approx.110 x 75 x 55)
Operating manual	DiaLog RS-485 repeater type CN-2-1
Documentation number	D00125
Weight	approx. 90 g

* depending on used transceivers

Connection

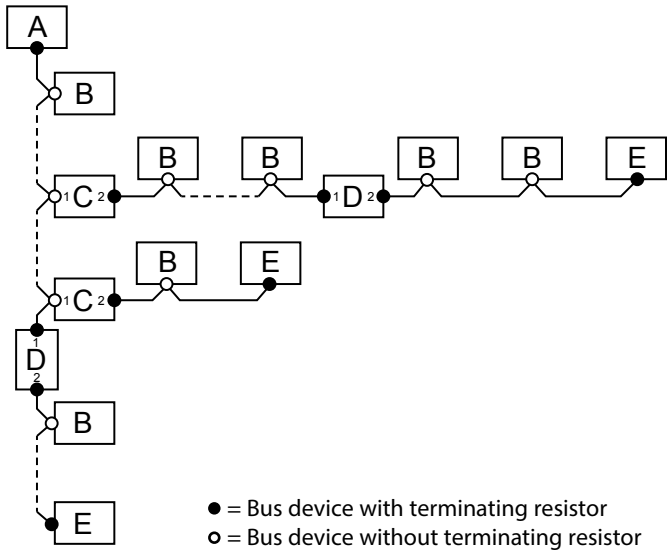


Settings

a) When used in the BMS bus, the rotary switch is to be set to position 4 for baud rate/interference suppression. The rotary switch is located at the bottom of the device.

b) Two DIP switches are available per bus segment to terminate the bus and to generate the required bias voltage. Both DIP switches must be switched on for activation.

The termination is carried out as shown in the following example of a BMS bus system:



Termination/bias voltage		
A	**Master**	Terminating resistor activated via switch on device (ON)* or external terminating resistor between terminals A and B
B	**Slave**	Terminating resistor deactivated via switch on device (OFF)*
C	**RS-485 interface repeater DI-1DL**	Bus 1: Terminating resistor and bias voltage generation deactivated via switch on device (DIP switch 3, 4: OFF)
		Bus 2: Terminating resistor and bias voltage generation activated via switch on device (DIP switch 1, 2: ON)
D	**RS-485 interface repeater DI-1DL**	Bus 1: Terminating resistor and bias voltage generation deactivated via switch on device (DIP switch 3, 4: OFF), external terminating resistor between terminals A/P and B/N
		Bus 2: Terminating resistor and bias voltage generation activated via switch on device (DIP switch 1, 2: ON)*
E	**Slave**	Terminating resistor activated via switch on device (ON) or external terminating resistor between terminals A and B

* The bias voltage generation is generally activated for the BMS bus master (via software) and deactivated for the BMS slaves.

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