

LSS



PROFIBUS-DP Repeater 1 to 1 and 1 to 5 (with optional level converter module)

The LSS Profibus-DP Repeaters 1 to 1 and 1 to 5 are used for coupling of up to six Profibus-DP bus segments in RS 485 technology. When passing through the repeater, the data signals are regenerated in amplitude, bandwidth, and slew rate.

It has a total of six connection areas for the bus segments, which are electrically isolated from one another. Each segment connection area has two screw terminals for connecting the bus cable including shielding, a termination switch, and a yellow LED to indicate bus activity. Different operating modes can be selected using an operating mode selector switch.

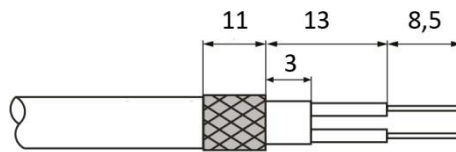
For the use of Profibus-DP signals in rail systems, the LSS Profibus-DP repeaters 1 to 1 and 1 to 5 in segments 2 to 6 can be equipped with an optional level converter module. This enables the transmission of Profibus-DP data signals in rail systems.

Technical Specifications:

CPU	ALTERA FPGA Cyclone III
PROFIBUS Connectors	6 x via PHOENIX CONTACT 2 pin screw terminals with clamping of the cable shield Additionally, 1 x via SUB D-9 connector (female) directly coupled with segment 1
Operation	- Operating mode selector - Termination switch in each segment
Indication	3 x LED to indicate operating voltage 6 x LED in each segment to indicate data/bus activity
Power supply	18 – 36 V DC via PHOENIX CONTACT connector 3 pin, 5,08mm pitch
Power consumption	3 W (while using level converter max. 20W)
Operating temperature	0 °C – 60 °C (not condensed)
Ambient temperature	0 °C – 45 °C
RoHS	Approval
Design	For mounting on standard DIN rail
Dimensions (W x H x D)	280 x 90 x 45 mm without connectors 280 x 90 x 60 mm without connectors while using LSS level converter
Weight	0,5kg
Order number	1 to 1: 5300 1 to 5: 5301 Level converter: 5311
Optional	LSS level converter maximum of 5 pieces

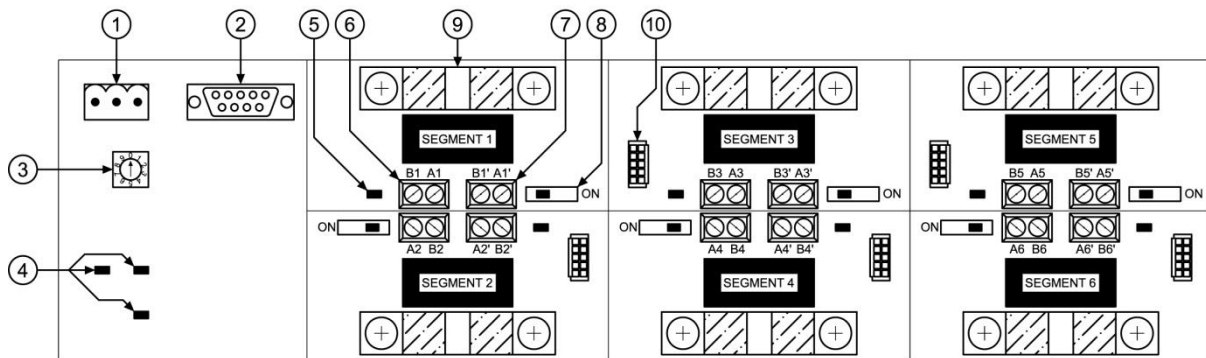
Connect the bus cable

Connect the Profibus-DP bus cable to the RS 485 Repeater as follows:



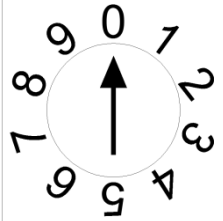
1. Cut the Profibus-DP cable to the required length.
2. Isolate the Profibus-DP cable as shown in the figure.
The shielding braid must be wrapped around the cable and fixed with copper tape. Later the shield clamp can serve as a strain relief and as a shield intercepting element, and at the same time a secure connection to the cable shield is ensured.
3. Connect the same wires (green/red for Profibus-DP bus cables) to the same connector A or B (e.g. connect connector A always with green wire and connector B with red wire).
4. Fasten the shield clamps so that the shield is blank under the shield clamp.

View from above and marking:



1	Power Supply	1	2	3
		+ 24 V DC	- 24 V DC	PE
2	SUB-D 9 connector (female) for Profibus-DP (coupled with segment 1)			
3	Rotary switch for operating modes			
4	LED for indication of the operating voltage			
5	LED for indication of the bus activity			
6	Profibus-DP connection			
7	Terminable Profibus-DP connection			
8	Termination switch			
9	Cable shield mounting			
10	Connection level converter			

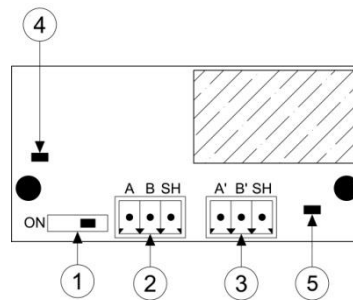
Operation mode selector:

	0	Reserved for future applications
	1	Segments 2 to 6 are separated from data traffic
	2	Reserved for future applications
	3	Reserved for future applications
	4	Reserved for future applications
	5	Baud rate set to [500 kbit/s]
	6	Baud rate set to [1,5 Mbit/s]
	7	Baud rate set to [3 Mbit/s]
	8	Baud rate set to [6 Mbit/s]
	9	Baud rate set to [12 Mbit/s]

The optional level converter module



View from above and marking:

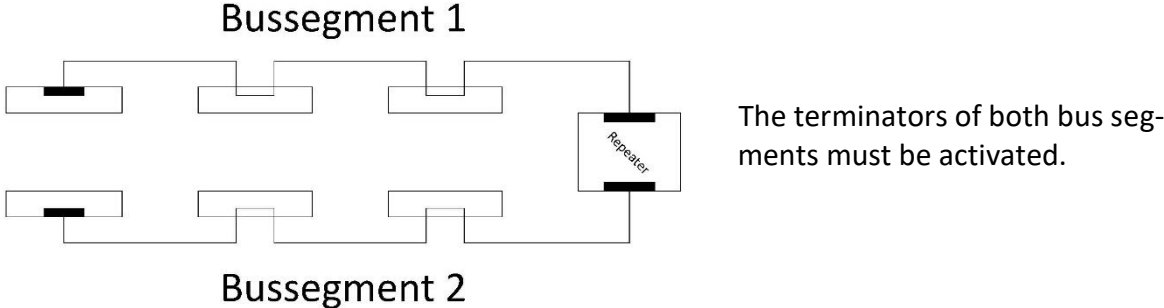


1	Termination switch
2	Profibus-DP connection
3	Terminable Profibus-DP connection
4	LED for indication of the operating voltage
5	LED for indication of the bus activity

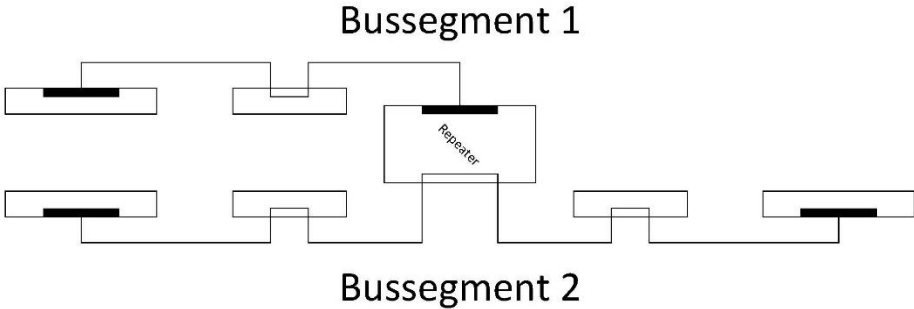
Note: When a level converter module is used, the bus connections are no longer available in the segment area where the level converter module is placed!

Possibilities to integrate the Profibus-DP repeater into a bus system

1. Both bus segments are terminated

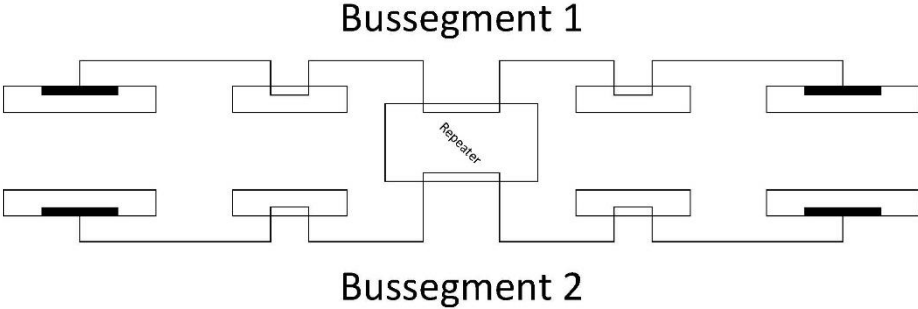


2. Bus segment 1 is terminated; bus segment 2 is looped through



The terminator of bus system 1 must be activated and deactivated in bus system 2.

3. Both bus segments are looped through



The terminators of both bus segments must be deactivated.