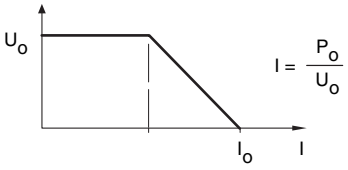
Fieldbus repeater for IEC 61158-2

- Power supply of fieldbus segments according to IEC 61158-2
- Signal repeater for fieldbus topologies in accordance to FISCO
- 100 mA supply of the field side
- Improves the fieldbus signal
- Extension of the transmission distance by means of opening a new fieldbus segment
- Integrated bus terminations
- Removable terminals and Power Rail connection for simple installation
- Supply via Power Rail

Function

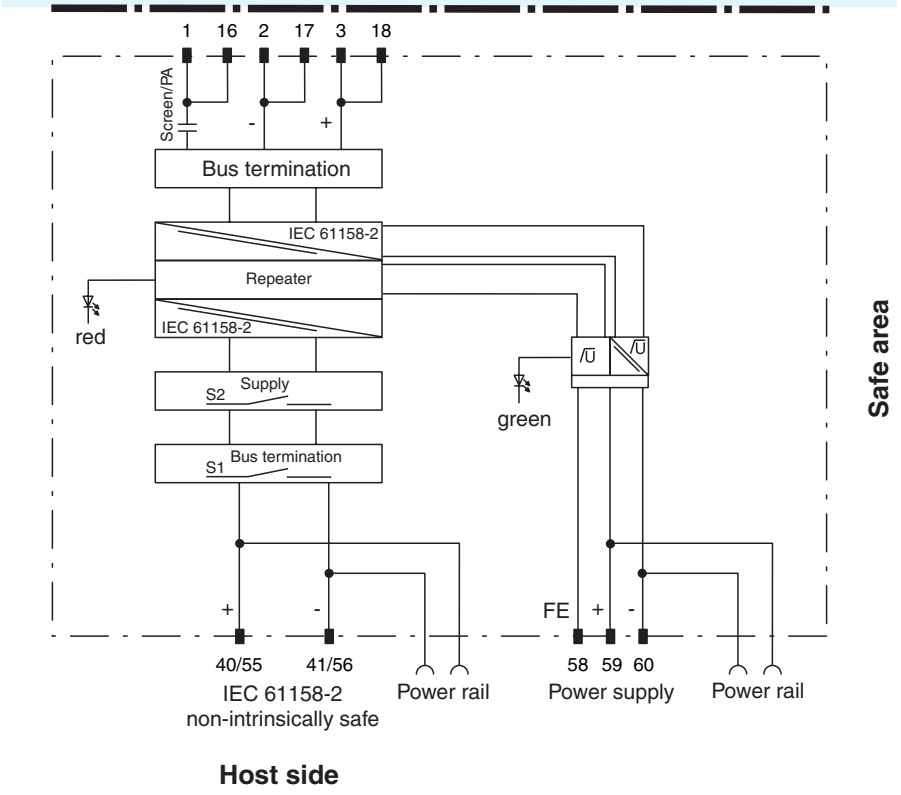
The KLD2-PR-Ex1.IEC1 improves digital communication signals within a fieldbus system. This fieldbus repeater separates an intrinsically safe field bus segment based on the FISCO model and a non-intrinsically safe field bus segment from each other galvanically; IEC61158-2 / ISA-S50.02 (i. e. FOUNDATION Fieldbus, PROFIBUS-PA). It delivers a constant voltage for supplying connected intrinsically field devices that are intrinsically safe and comply with the FISCO model regardless of the load. The repeater refreshes the signal course and the level of incoming digital communication signals. Up to 31 repeaters can be operated on the host. At the maximum output current, the repeater is able to extend the bus segment by at least 860 m with the use of an FF cable of Type A, AWG 18 (0.8 mm2). The repeater has a permanently integrated bus terminator on the field side. The bus terminator can be switched into the circuit on the host side. The power rail connections eliminate the need to loop through power supply and fieldbus lines.

Output characteristic



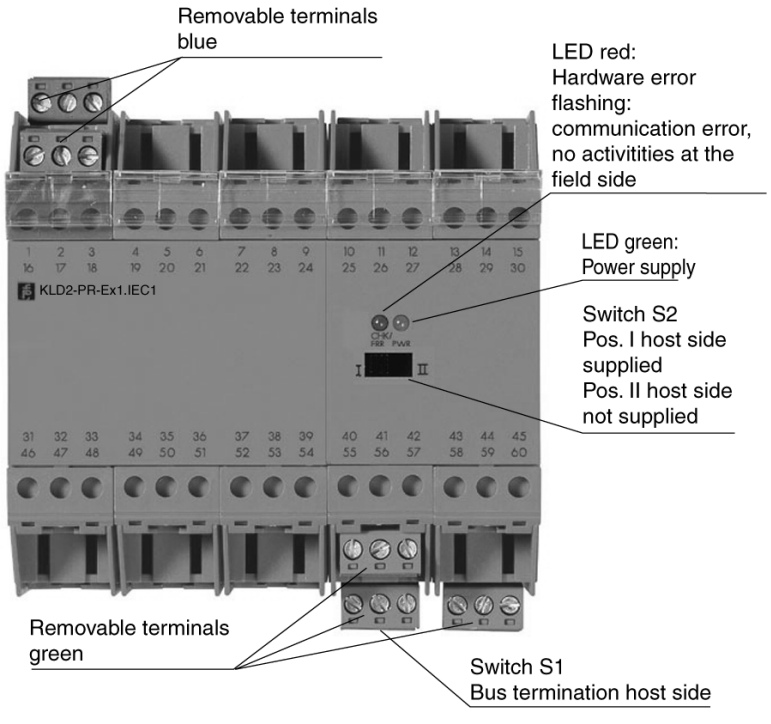
***) FISCO:**
Fieldbus **I**ntrinsically **S**afe **C**oncept

Connection



Composition

Front View



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Supply	
Connection	Power Rail or terminals 59+, 60-
Rated voltage	20 ... 35 V DC
Ripple	≤ 10 %
Rated current	410 mA ... 170 mA
Fieldbus interface	
Field-side	
Connection	terminals 3, 18+; 2, 17-
Rated voltage	12.8 ... 13.4 V DC
Rated current	≤ 100 mA
Terminating impedance	100 Ω , integrated
Host-side	
Connection	Power Rail or terminals 40, 55+, 41, 56-
Rated voltage	9 ... 32 V DC (supplied switch S2 in pos. I) 0 V DC (not supplied switch S2 in pos. II)
Terminating impedance	100 Ω switchable off and on via rotary switch S1: 1 -> on; 0 -> off
Electrical isolation	
Feld-side/Host-side	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
Host-side/Supply	functional insulation acc. to DIN EN 50178, rated insulation voltage 50 V_{eff}
Field-side/Supply	safe electrical isolation acc. to EN 50020, voltage peak value 375 V
All circuits/FE	functional insulation acc. to DIN EN 50178, rated insulation voltage 253 V_{eff}
Directive conformity	
Electromagnetic compatibility	
Directive 89/336/EC	EN 61326, EN 50081-2
Standard conformity	
Electrical isolation	EN 50178, EN 50020
Electromagnetic compatibility	NAMUR NE 21
Protection degree	IEC/EN 60529
Fieldbus standard	IEC 61158-2, ISA S 50.02 part 2
Climatic conditions	DIN IEC 721
Ambient conditions	
Classification	3K3
Ambient temperature	-20 ... 60 °C (253 ... 333 K)
Storage temperature	-20 ... 85 °C (253 ... 358 K)
Relative humidity	< 75 %
Degree of soiling	max. 2, according to IEC 60664
Mechanical specifications	
Connection type	terminals
Core cross-section	up to 2.5 mm^2
Housing	100 mm x 115 mm x 107 mm
Protection degree	IP20
Mass	approx. 600 g
Mounting	DIN rail mounting
Data for application in conjunction with hazardous areas	
EC-Type Examination Certificate	PTB 99 ATEX 2142
Group, category, type of protection, temperature classification	⟨Ex⟩ II (1)GD [EEx ia] IIC
Supply	
Safety maximum voltage U_m	253 V AC / 125 V DC (Attention! U_m is no rated voltage.)
Field-side	
Voltage U_o	15 V
Current I_o	207.2 mA
Power P_o	1.93 W
Safety maximum voltage U_m	60 V (Attention! The rated voltage can be lower.)
Statement of conformity	TÜV 00 ATEX 1531 X
Group, category, type of protection, temperature classification	⟨Ex⟩ II 3G EEx nA IIC T4
Directive conformity	
Directive 94/9 EC	EN 50014:1997 EN 50020:1994
International approvals	
FM approval	CoC 3008872
Control drawing	No. 116-0190
Approved for	Class I, Division 2, Groups A, B, C, D / Class I, Zone 2, Group IIC T4

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CSA approval	CoC 1192739
Control drawing	No. 116-0196
Approved for	Class I, Division 2, Groups A, B, C, D / Class I, Zone 2, Group IIC T4
IEC-Ex approval	IECEx TUN 04.0005
Approved for	[Ex ia] IIC

Supplementary information

EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed. For information see www.pepperl-fuchs.com.

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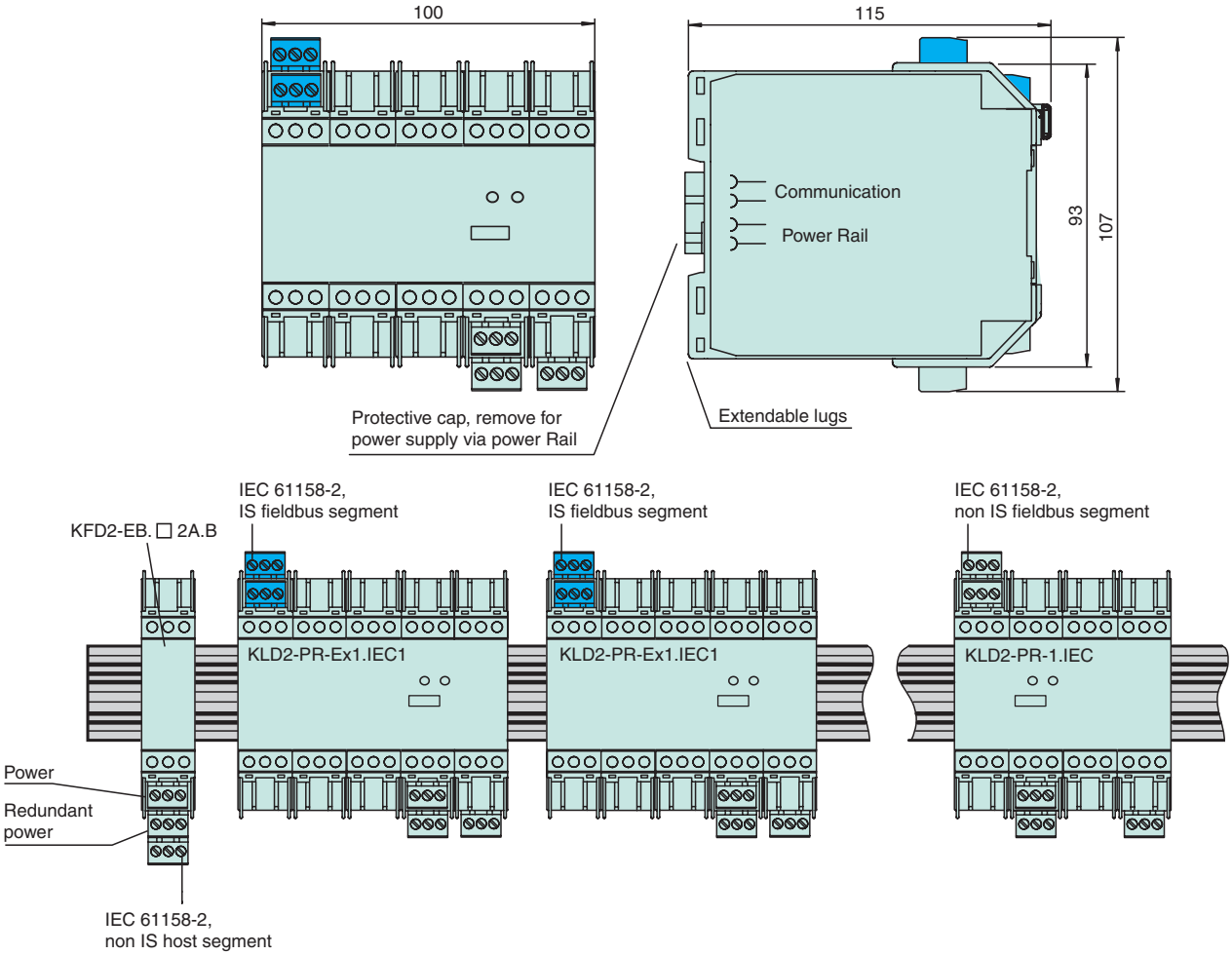
Accessories

Power Rail	PR 03	insert component for DIN rail in accordance with DIN EN 50022, standard length 500 mm
Power Rail	UPR03	insert component with no snap lock for the DIN rail in accordance with DIN EN 50022, Standard length 2 meters
The power supply component	KFD2-EB.D2A.B	provides power to the power rail redundantly with 24 V DC at a maximum current of 2 A, with pick-up
The component	KFD2-EB.R2A.B	provides power to the power rail with 24 V DC at a maximum current of 2 A, with pick-up A second device can be used to set up a redundant device.
The component	KFD2-EB2.B	provides power to the power rail with 24 V DC at a maximum current of 4 A, with pick-up and error message signal on the power rail.
Fieldbus	KMD0-FT-Ex	termination of the IEC line. The KMD0-FT-Ex must be connected to the last IEC bus station terminating resistor.
Fieldbus repeater Entity	KLD2-PR-Ex1.IEC	isolator module and intrinsically safe power supply with repeater function for devices in accordance with the FISCO or Entity model.
Fieldbus repeater,	KLD2-PR-1.IEC	Non-intrinsically-safe power supply with repeater function non-intrinsically safe
Fieldbus repeater,	KLD2-PR-NI1.IEC	Isolating power supply with repeater function for 'non incendive' Design of 'non incendive field circuits
Fieldbus power pack,	KLD2-STR-1.24.400.IEC	Isolating power supply non-intrinsically safe
Fieldbus power pack	KLD2-STR-NI1.13.225.IEC	Isolating power supply for 'non incendive' design of field circuits. 'non incendive'

Dimensions



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