

# Fieldbus Isolating Repeater

## Series 9185/11



- > For operation of the intrinsically safe Profibus DP (RS-485 IS to PNO standard)
- > Intrinsically safe fieldbus RS-422, RS-485 [Ex ib] IIC
- > Galvanic isolation between RS-422 / RS-485, RS-232, RS-422, RS-485 and power supply
- > Transmission speed adjustable between 1.2 kBit/s and 1.5 MBit/s
- > Automatic setting of transmission speed for Profibus DP
- > Bitrefresh

A3



09812E00

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Basic function: Isolating repeater for communication signals  
 The fieldbus isolating repeater is used to separate intrinsically safe or non intrinsically safe RS-422 / RS-485 fieldbus from non intrinsically safe RS-232, RS-422, RS-485 interface.  
 Suitable for intrinsically safe operation of Profibus DP (RS-485 IS).

	ATEX / IECEx						NEC 505						NEC 506						NEC 500					
	Zone		Class I		Class II		Class I		Class II		Class III		Division		Class I		Class II		Class III					
Zone	0	1	2	20	21	22	Zone	0	1	2	20	21	22	Division	1	2	1	2	1	2				
Ex i interface	x	x			x	x	Ex i interface		x	x				Ex i interface	x	x	x	x	x	x				
Installation in			x			x	Installation in			x			x	Installation in		x		x		x				

WebCode 9185A

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### Selection Table

Version	Interfaces field area	Interfaces safe area	Connection type	Order number
Fieldbus isolating repeater Type 9185	RS-485 IS (PNO)	RS-232, RS-422, RS-485	Screw terminals	<b>9185/11-35-10s</b>

### Explosion Protection

#### Global (IECEX)

Gas and dust	IECEX BVS 06.0004X Ex nA [ib Gb] IIC T4 Gc [Ex ib Db] IIIC
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#### Europe (ATEX)

Gas and dust	DMT 02 ATEX E 246 X ⊕ II 3 (2) G Ex nA [ib Gb] IIC T4 Gc ⊕ II (2) D [Ex ib Db] IIIC
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### Certifications and certificates

Certificates	IECEX, ATEX, Brazil (INMETRO), India (PESO), Canada (cFM), Kazakhstan (TR), Korea (KCs), Russia (TR), USA (FM), Belarus (TR)
Ship approval	BV, ClassNK, CCS, DNV GL, LR, RINA, RS

### Further parameters

Installation	in Zone 2, Div. 2 and in the safe area
Further information	see respective certificate and operating instructions

### Safety data

Max. voltage $U_o$	3.73 V
Max. current $I_o$	149 mA
Max. power $P_o$	139 mW
Connection of intrinsically safe fieldbus circuit	RS-485 IS
Max. permissible voltage $U_i$	$\pm 4.2$ V
Internal capacity $C_i$ and inductivity $L_i$	negligible

### Technical Data

#### Electrical data

Auxiliary power	
Nominal voltage $U_N$	24 V UC
DC voltage range	18 ... 31.2 V
AC voltage range	24 V $\pm$ 15 %
Residual ripple within DC voltage range	$\leq 3.6V_{SS}$
Nominal current (24 V)	66 mA
Power input	1.6 W
Operation indication	LED green "PWR"
Undervoltage monitoring	yes (all LEDs off, all transmitters off)
Galvanic separation	
Test voltages	
acc. to standard	EN 60079-11
Ex i interface to Non-Ex i interface	1.5 kV
Ex i interface to power supply	1.5 kV
acc. to standard	EN 50178
Power supply to non I.S. interface	500 V

### Technical Data

#### Electrical data

##### Field side interface (X3)

Version	RS-485 IS intrinsically safe, RS-422/RS-485
Level	setting: RS-485 IS (PNO specification) and RS-485 IS (R. STAHL specification)
Connections	Sub-D socket X3, 9-pole
Transmission rate	1.2 kBit/s ... 1.5 MBit/s
Settings	fixes transmission speed or automatic detection > 9.6 kBit/s (only with Profibus DP)
Conductor length	depends on transmission rate and cable
Terminating resistor	to be set in external plug
Data transmission indication	LED green "RxD3"

##### Safe area interface (X1)

Version	RS-232 C
Connection	Sub-D plug X1, 9-pole
Level	EIA RS-232 C
Transmission rate	1.2 ... 93.75 kBit/s
Settings	fixed transmission speed or automatic detection > 9.6 kBit/s (only with Profibus DP)
Conductor length	≤ 20 m
Data reception indication	LED green "RxD1"

Version	RS-485/RS-422
Connection	Sub-D plug X2, 9-pole
Level	EIA RS-485, EIA RS-422
Transmission rate	1.2 kBit/s ... 1.5 MBit/s
Settings	Keying RS-422 transmitter on/off
Conductor length	depends on transmission rate and cable
Terminating resistor	to be connected in external plug
Data reception indication	LED green "RxD2"

##### Fault control

Short-circuit data lines	$T \geq 13 \times \text{bit time}$
Indication	LED red "ERR" on
Baud rate search	with automatic detection: LED red "ERR" flashes

##### Electromagnetic compatibility

Tested under the following standards and regulations:  
EN 61326-1 Use in industrial environment;  
NAMUR NE 21

##### Connection diagram

for types  
9185/11-35-10.

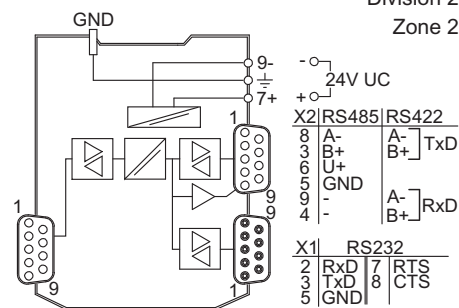
Hazardous area

Division 1  
Zone 1

X3	RS485 IS
8	A-
3	B+
6	ISP (+)
5	ISGND

Safe area

Division 2  
Zone 2



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### Technical Data




#### Ambient conditions

Ambient temperature	
Single device	-20 ... +70 °C
Group assembly	-20 ... +60 °C
	The installation conditions affect the ambient temperature. "Installationsanleitung Schaltschrank" beachten
Storage temperature	-40 ... +80 °C
Relative humidity (no condensation)	≤ 95 %

#### Mechanical data

Connection		Screw-type terminals	Spring-type terminals
	Single-wire connection		
	- rigid	0.2 ... 2.5 mm <sup>2</sup>	0.2 ... 2.5 mm <sup>2</sup>
	- flexible	0.2 ... 2.5 mm <sup>2</sup>	0.2 ... 2.5 mm <sup>2</sup>
	- flexible with core end sleeves (without / with plastic sleeve)	0.25 ... 2.5 mm <sup>2</sup>	0.25 ... 2.5 mm <sup>2</sup>
	Two-wire connection		
	- rigid	0.2 ... 1 mm <sup>2</sup>	--
	- flexible	0.2 ... 1.5 mm <sup>2</sup>	--
	- flexible with core end sleeves	0.25 ... 1 mm <sup>2</sup>	0.5 ... 1 mm <sup>2</sup>
Weight	approx. 205 g		
Mounting type	on DIN rail (NS35/15, NS35/7.5)		
Mounting orientation	horizontal or vertical		
Enclosure	IP30		
Terminals	IP20		
Enclosure material	PA 6.6		
Fire resistance (UL-94)	V0		

### Accessories and Spare Parts

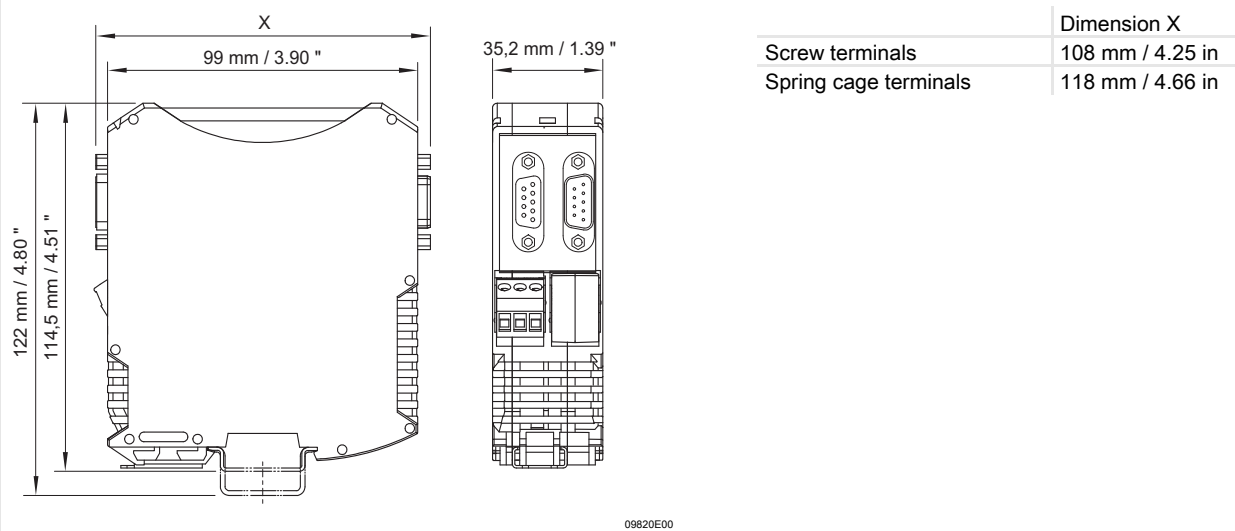
Designation	Figure	Description	Art. no.	Weight kg
Sub-D plug	 09868E00	9-pin for connection of the fieldbus or ServiceBus to the CPU & power module Series 9440/22 and fieldbus-isolating repeater 9185. Integrated terminator can be switched on or off. For RS-485 IS to PNOstandard.	<b>162693</b>	0.100
		9-pin for connection of the fieldbus or ServiceBus to the CPU & power module Series 9440/15 and fieldbus-isolating repeater 9185. Integrated terminator can be switched on or off. For non-intrinsically safe RS-485.	<b>105715</b>	0.001
Sub-D plug, angled	 12489E00	9-pin, for connection of fieldbus or ServiceBus to CPU & Power Module Type 9440/12 and fieldbus isolating r epeater Type 9185. The termination resistance is built-in. Suitable for RS-485 IS (PNO standard).	<b>201805</b>	0.050
Fieldbus isolating repeater Series 9185/12	 09867E00	<ul style="list-style-type: none"> <li>• Equipment for installation in safe areas or Zone 2 / Div. 2</li> <li>• For fieldbuses with RS-485 interface</li> <li>• Suitable for Profibus DP, Modbus, R. STAHL ServiceBus</li> <li>• Interface to automation system RS-232, RS-422, RS-485</li> <li>• Automatic setting of transfer rate for Profibus DP</li> <li>• Adjustable transfer rate (1.2 kbit/s to 1.5 Mbit/s)</li> <li>• Power supply 24 V AC/DC</li> <li>• Further information see data sheet Series 9185/12</li> </ul>	<b>160594</b>	0.273

# Fieldbus Isolating Repeater

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### Dimensional Drawing (All Dimensions in mm / inches) - Subject to Alterations



We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.

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