

Stahl Fieldbus Isolating Repeater, Type 9185 Hardware Module Description

Kongsberg Maritime Part no. 702114

This document contains the Hardware Module Description of the Stahl Fieldbus Isolating Repeater, Type 9185.

It comprises information from the sub-supplier and Kongsberg Maritime.



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Document revisions

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F						

The original signatures are recorded on the company's logistic data system.

Document history

Rev. A First version.

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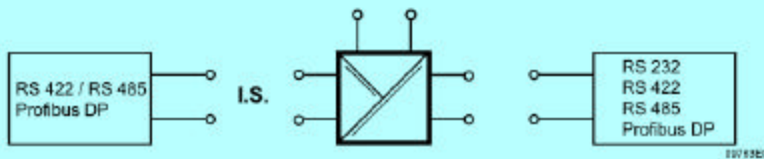


Fieldbus Isolating Repeater Type 9185

- For operation of the intrinsically safe Profibus DP (RS 485 IS to PNO standard)
- Intrinsically safe fieldbus RS 422, RS 485 [EEx ib] IIC
- Galvanic isolation between RS 422 / RS 485 (I.S.), 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
- Installation possible in Zone 2, Zone 22 (non conductive dust) and Div. 2



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).



Zones 2 & 22

Selection table

Version	Interfaces field area	Interfaces safe area	Ordering code
Fieldbus isolating repeater type 9185	RS 485 I.S.	RS 232, RS 422 (from Rev. B), RS 485	9185/11-35-10.
	RS 422, RS 485	RS 232, RS 422, RS 485	9185/12-45-10.
Add. to ordering code			
	Screw terminal		9185/...-...-...s
	Cage clamp terminal		9185/...-...-...k
	Insulation cutting terminal		9185/...-...-...q

Technical Data

Certificates	DMT 02 ATEX E 246 X		
Explosion protection	II (2) GD [EEx ib] IIC/IIB *) and II 3 G EEx nA II T4 *) only type 9185/11-35-10		
Installation	In Zone 2, Zone 22 (non conductible dust), Div. 2 and in the safe area		
Safe maximum values (CENELEC)	For type 9185/11-35-10 only:		
	Max. voltage U_o	3.73 V	
	Max. current I_o	149 mA	
	Max. power P_o	139 mW	
	I.S. fieldbus circuit RS 485 IS connected with:		
	Max. connectable voltage U_i	± 4.2 V	
	Internal capacitance C_i and inductance L_i	negligible	
	Insulation voltag U_m	250 V	
	Further information and combinations of values, see certification.		
Power supply	Nominal voltage U_N	24 V UC	
	Voltage range DC	18 V ... 31.2 V	
	Voltage range AC	24 V ± 15 %	
	Residual ripple within DC voltage range	≤ 3.6 V _{pp}	
	Nominal current (24 V)	66 mA	
	Power consumptions	1.6 W	
	Indication	LED green „PWR“	
Galvanic isolation	Undervoltage detection	yes (all LED's off, all transmitters off)	
	Test voltage under regulations EN 50020		
	I.S. interface to non I.S. interface	1.5 kV	
	I.S. interface to power supply	1.5 kV	
	Test voltage under regulations EN 50178		
	Power supply to non I.S. interface	500 V	
Interface field area		9185/11	9185/12
	Version	RS 485 IS	RS 485 / RS 422 (can be set)
	Level	setting: RS 485 IS (PNO specification) and RS 485 IS (R. STAHL specification)	EIA RS 485, EIA RS 422
	Connection	Sub-D socket X3, 9-pole	
	Transmission speed	1.2 kBit/s ... 1.5 MBit/s	
	Settings	fixed transmission speed or automatic detection > 9.6 kBit/s (only with Profibus DP)	
	Line length	depends on transmission speed and cable	
	Terminating resistor	to be set in external plug	
	Indication data receive	LED green „RxD3“	
	Interface safe area	Version	RS 232 C
Connection		Sub-D connector X1, 9-pole	Sub-D socket X2, 9-pole
Level		EIA RS 232 C	EIA RS 485, EIA RS 422
Transmission speed		1.2 kBit/s ... 93.75 kBit/s	1.2 kBit/s ... 1.5 MBit/s
Settings		fixed transmission speed or automatic detection > 9.6 kBit/s (only with Profibus DP)	
		--	scan RS 422 transmitter on/off
Line length		≤ 20 m	depends on transmission speed and cable
Terminating resistor		--	to be set in external plug
Indication data receive		LED green „RxD1“	LED green „RxD2“



Technical Data

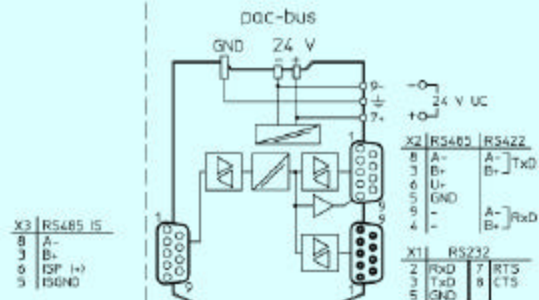
Fault monitoring	Short-circuit data lines Indication Baudrate detection	$T \geq 13 \times$ bit time LED red „ERR“ on with automatic detection: LED red "ERR" flashes
Electromagnetic compatibility	Tested under the following standards and regulations: EN 61326 (IEC/EN 61000-4-1...6 and 11; EN 55022 Class A); NAMUR NE 21 (IEC/EN 61000-4-1...6, 8 and 11; EN 55022 Class A)	
Ambient conditions	Ambient temperature Storage temperature Relative humidity (no condensation)	- 20 °C ... + 60 °C / + 70 °C (watch instructions) - 40 °C ... + 80 °C 95 %

Connection diagram

For types
9185/11-35-10.

Hazardous area

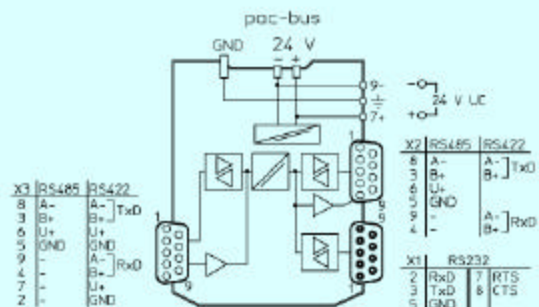
Safe area



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For types
9185/12-45-10.

Safe area / Zone 2



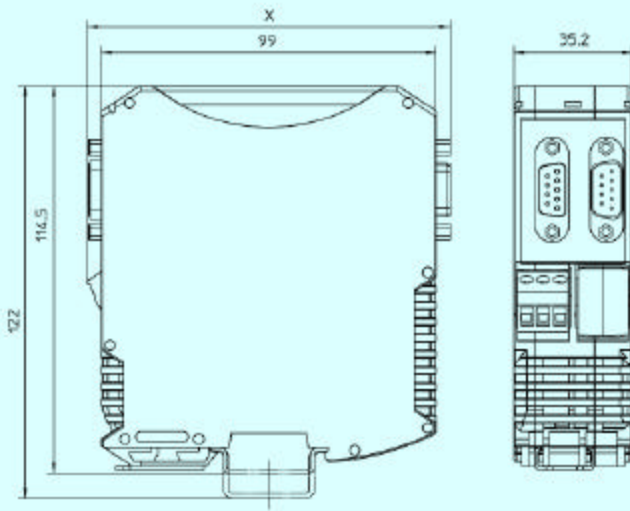
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Mechanical data

Connection possibilities: (power supply)	Screw terminals	Cage clamp terminals	Insulation cutting terminals
Dimensions in mm	35.2 x 108 x 114	35.2 x 118 x 114	35.2 x 124 x 114
Wire leads	3-pole	3-pole	3-pole
- rigid	0.2 ... 2.5 mm ²	0.2 ... 2.5 mm ²	--
- flexible	0.2 ... 2.5 mm ²	0.2 ... 2.5 mm ²	0.5 ... 1 mm ²
- flexible, end covering sleeves (without / with plastic sleeving)	0.25 ... 2.5 mm ²	0.25 ... 2.5 mm ²	--
- 2 leads			
rigid	0.2 ... 1 mm ²	--	--
flexible	0.2 ... 1.5 mm ²	--	--
flexible, end covering sleeves	0.25 ... 1 mm ²	0.5 ... 1 mm ²	--
Weight	approx. 205 g		
Mounting type	on DIN rail, EN 50022 (NS35 / 15, NS35 / 7.5)		
Mounting position	horizontal or vertical		
Casing protection class	IP 30		
Terminal protection class	IP 20		
Casing material	PA6.6		
Fire protecting class (UL-94)	V0		



Dimension drawing (all dimensions in mm) - subject to alteration



	Dimension X
Screw terminals	108 mm
Cage clamp terminals	118 mm
Insulation cutting terminals	124 mm

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

