

9786/12-11 Art. No. 308562



- Setup of FO network structures for PROFIBUS DP and Modbus RTU in hazardous areas
- "Ex op is" interface makes for easy installation and maintenance
- With error-signalling diagnostic function
- Simple parameterisation using a rotary switch
- Compatible with Series 9786 devices

### MY R. STAHL 9786A

The Series 9786 media converters make it possible to transmit PROFIBUS DP and Modbus RTU signals over distances of up to 2.5 km without having to limit the baud rate. When used for Profibus DP, the devices enable redundant point-to-point, line and ring structures to be set up. Standard plug connectors can be connected to the "Ex op is" inherently safe optical interfaces. The plug connectors can be pulled out and plugged in during operation. The rotary switch can be used to parameterise the media converter very quickly and easily. Variant 9786/12-11 can be used in Zone 1, while variant 9786/15-12 is suitable for Zone 2.

## Technical Data

### Explosion Protection

Application range (zones)	1, 2, 21, 22
Ex interface zone	0, 1, 2, 20, 21, 22
IECEX gas certificate	IECEX EPS 22.0084X
IECEX gas explosion protection	Ex eb mb ib [op is Ga] IIC T4 Gb
IECEX dust certificate	IECEX EPS 22.0084X
IECEX dust explosion protection	[Ex ib Db] [Ex op is Da] IIIC
ATEX gas certificate	EPS 22 ATEX 1 353 X
ATEX gas explosion protection	⊕ II 2 (1) G Ex eb mb ib [op is Ga] IIC T4 Gb
ATEX dust certificate	EPS 22 ATEX 1 353 X
ATEX dust explosion protection	⊕ II (2) (1) D [Ex ib Db] [Ex op is Da] IIIC
Certificates	ATEX (EPS), Canada (FM), China (NEPSI), IECEX (EPS), USA (FM)
Declaration of conformity	ATEX (EUK)
Installation	Zone 1

### Safety Data

Max. voltage $U_o$ (RS485-IS)	4.2 V
Max. current $I_o$ (RS485-IS)	131 mA
Max. power $P_o$ (RS485-IS)	124 mW
Max. voltage $U_i$ connection (RS485-IS)	4,2 V
Int. capacitance $C_i$ (RS485-IS)	35.7 $\mu$ F
Int. inductance $L_i$ (RS485-IS)	negligible
Max. voltage $U_i$ error signal output	10 V
Int. capacit. $C_i$ er. sig. out.	0.03 $\mu$ F
Int. induct. $L_i$ err. sig. out.	negligible
Safety-related max. voltage	40 V

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### Electrical Data

Number of channels	2
Signal types	Ex op is & RS-485 Ex i fibre optics
Protocols	PROFIBUS DP Modbus RTU ServiceBus R.STAHL (IS1+)
Data rate	9.6 kbps ... 1.5 Mbps
Parameterisation via rotary switch	See operating instructions (protocol, topology, Modbus RTU parity, data rate)
Electric interface version	RS 485-IS
Electric interface connection	Sub-D socket, 9-pole
Network structure	Line Point-to-point Ring
Optical interface connection	ST®, BFOC/2.5 socket
Optical interface transmission distance	1500 ... 2500 m
Data transmission display	yellow Tx and Rx
Display error	Red "ERR" LED
Error control	Fault/malfunction inside the device (self-diagnostics) No operating voltage/operating voltage too low RS485/RS485 IS: Communication error No idle level/FO section interrupted FO communication error
Error signal output	NAMUR error output
FO wavelength	820 nm
Compatibility	Compatible with series 9786

### Auxiliary Power

Auxiliary power	24 V DC
Nominal voltage	24 V DC
Auxiliary power voltage range	18 ... 32 V
Nominal current	100 mA
Power consumption	2.4 W
Max. power dissipation	3.2 W
Polarity reversal protection	Yes
Operation indication	Green "PWR" LED

### Ambient Conditions

Ambient temperature	-40 °C ... +70 °C
Ambient temperature	-40°F ... +158°F
Storage temperature	-40°C ... +70°C
Storage temperature	-40°F ... +158°F
Maximum relative humidity	93%
Use at the height of	< 2000 m
Electromagnetic compatibility	Tested to the following standards and regulations: EN 61326-1 For use in industrial areas; NAMUR NE 21

### Mechanical Data

Degree of protection (IP)	IP20
Enclosure material	Anodised aluminium

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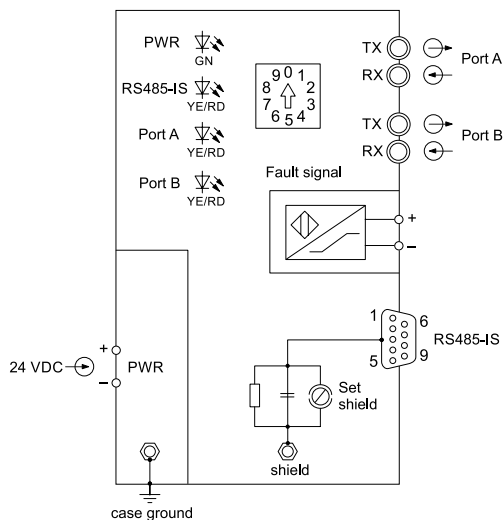
### Mechanical Data

Connection cross-section	0.2 ... 0.34 mm <sup>2</sup> dua-wire flex 0.2 ... 0.75 mm <sup>2</sup> dua-wi. rigid 0.2 ... 1.5 mm <sup>2</sup> sin.-wire flex 0.2 ... 2.5 mm <sup>2</sup> sin.-wire rig.
Conn. cr-sect. er. sig. out.	0.2 ... 2.5 mm <sup>2</sup> sin.-wire rig. 0.25 ... 2.5 mm <sup>2</sup> si.-wire flex 0.5 ... 1.5 mm <sup>2</sup> dual-wire flex
Connection cross-section AWG	24 ... 14
Grid dimension	65 mm
Width	65 mm
Width, inches	2.559 in
Height	73.5 mm
Height in inches	2.894 in
Length	105 mm
Length in inches	4.13 in
Weight	825 g
Weight	1.82 lb

### Mounting / Installation

Mounting type	DIN rail NS35/15, NS35/7.5
Mounting orientation	Vertical
Connection type	Screw terminal

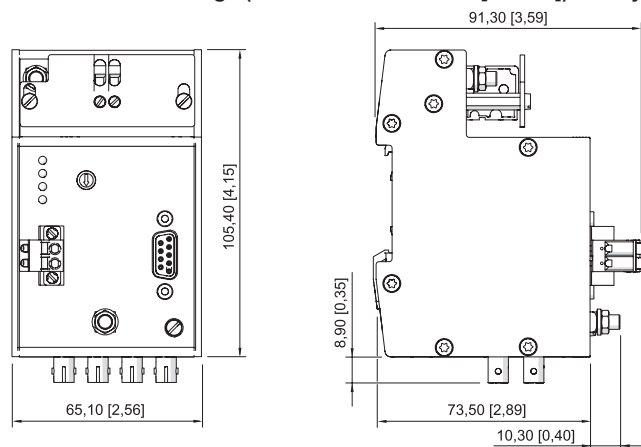
### Technical Drawings – Subject to Alterations





Type 9786/12-11

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**Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations**



**Accessories**

		<b>Art. No.</b>
	<p>9-pin for connecting fieldbus or ServiceBus to CPU &amp; power module Series 9440/22, 9185 fieldbus isolating repeater and 9786/12-11 media converter. The end-of-line resistor is installed and switchable. For RS 485 IS (according to Profibus standard). Ambient temperature: -40 °C to +70 °C</p>	162693
	<p>9-pin for connecting 9185 fieldbus isolating repeater and 9786/12-11 media converter. The end-of-line resistor is installed. For RS-485 IS (according to Profibus standard). Ambient temperature: -25 °C to +70 °C</p>	201805

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.