Zone 2 Ex n Field Device Coupler

Series 9410/34

14357E00

- For FOUNDATION™ fieldbus H1 and Profibus PA (IEC 61158-2)
- For the connection of up to 12 Ex nA / Ex ic / Ex nL field devices
- Low start-up current due to power management
- Short-circuit monitoring with automatic switch-off of the respective spur and indicator (LED)
- Detachable screw terminals with locking screws
- Customer-specific enclosures available in different versions

The Zone 2 Ex n Field Device Couplers are used to connect up to 12 explosion-protected (Ex nL / Ex ic / Ex nA) FOUNDATION™ fieldbus H1 or Profibus PA field devices to a non-intrinsically safe / high energy trunk.
A feedback effect from the spurs on the trunk is prevented by a short-circuit current limitation (spur protection). The Field Device Couplers features a power management to minimise the current load on the trunk during start-up and in case of short-circuits.
The Field Device Couplers are mounted on DIN rails or directly into enclosures made of glass-fibre reinforced polyester or stainless steel. The cable shields are internally looped through.

Zone	0	1	2	20	21	22
Ex interface			x			
Installation in			x			

WebCode 9410A

Selection Table

Version	Field enclosure	Number of channels (spurs)	Terminals	Order number	Art. no.
Field device coupler without enclosure	without, DIN rail mount	4	screw terminals, pluggable	**9410/34-330-30**	**207904**
		8	screw terminals, pluggable	**9410/34-330-40**	**207905**
		12	screw terminals, pluggable	**9410/34-330-60**	**207906**

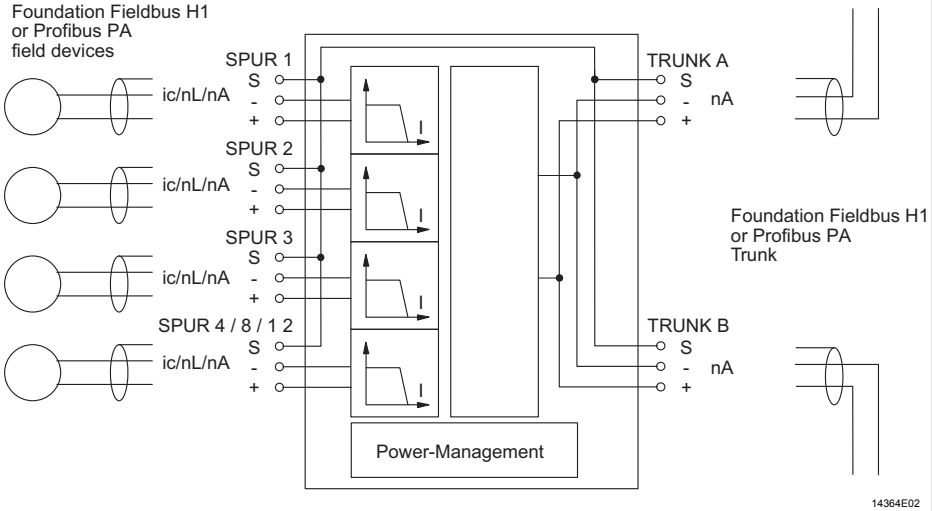
Explosion Protection

Marking	
IECEx	Ex nA [ic] IIC T4 Gc
Europe (ATEX)	⟨Ex⟩ II 3 G Ex nA [ic] IIC T4 Gc
Certificates	
IECEx	IECEx BVS 11.0015X
Europe (ATEX)	BVS 11 ATEX E 031 X
Installation	in Zone 2 and in the safe area
Safety data (CENELEC) per spur	
Max. voltage U_0	U_o from connected fieldbus power supply
Max. current I_0	54 mA (rectangular characteristic)
Max. output power	P_o = 1.35 W (decreases at U_i < 25 V acc. P = U * I)
Internal capacitance	C_i = 110 pF
Internal inductance	L_i = 0 mH
Max. external capacitance	C_o = 80 nF (for IIC)
Max. external inductance	L_o = 0,27 mH (for IIC)

Technical Data

Data transmission				
between trunk and spurs	passive, no repeater function			
Trunk, not intrinsically safe / Ex nA				
Connections	2 trunk connections (A, B), internally bridged			
Voltage range	9 ... 32 V			
Minimum input voltage	10.3 V acc. to FF-846			
	Note: this guarantees an output voltage (spurs) at full load of min. 9.3 V			
	9 ... 25 V when used with spurs "Ex ic"			
Undervoltage monitoring	U < 9 V, spurs deenergized LED "PWR" = OFF			
Surge protection	yes			
Max. current consumption		**9410/34-...-30** (4 spurs)	**9410/34-...-40** (8 spurs)	**9410/34-...-60** (12 spurs)
	0 mA each spur	25 mA	25 mA	25 mA
	20 mA each spur	105 mA	185 mA	265 mA
	41 mA each spur	189 mA	353 mA	517 mA
	3 / 7 / 11 spurs at 41 mA, 1 spur in short-circuit	198 mA	362 mA	526 mA
	Short-circuit all spurs	75 mA	75 mA	75 mA
Power management	When the trunk voltage exceeds 9 V the spurs are energized one after the other to avoid high starting current resulting from field devices. A short circuit detected on a spur will deenergize the respective spur until the short-circuit is removed. Regardless how many spurs are short-circuited the trunk is loaded with max one spur short-circuit current. Thus the trunk current and the device power dissipation are minimized under all conditions.			
Max. power dissipation	1.2 W			
Indication	LED green „PWR“ (U ≥ 9 V from trunk)			
Reverse polarity protection	yes			
Rated operational current	≤ 2 A			
Voltage drop trunk A / trunk B	≤ 10 mV at 2 A / 25 °C			
Terminating resistor	extern (e.g. R. STAHL Type 9418)			

Technical Data

Spurs, Ex ic / nA / nL	
Note	Spur ic and nL in combination with voltage limited fieldbus power supply only (e.g. R. STAHL Types 9412/01 or 9412/02)
Quantity	4, 8, 12
Number of field devices per spur	1
Max. cable length	120 m / 394 ft
Voltage drop trunk / spur	≤ 1 V
Current range	0 ... 41 mA per spur
Max. short-circuit current	50 mA
Earthing of cable shields (trunk and spurs)	
Connecting over FDC	to terminals "S", connected to trunk and spurs, optionally to earthing bar, see accessories and spare parts set earthing bar 4 K or 8 K
Fault detection	
Spur short-circuit	50 mA
Indication of short-circuit per spur	LED red "SPUR 1" ... "SPUR 12": ON
Ambient conditions	
Ambient temperature	- 40 ... + 75 °C
Storage temperature	- 40 ... + 80 °C / -40 ... +176 °F
Relative humidity (no condensation)	< 95 %
Electromagnetic compatibility	Tested to the following standards and regulations: EN 61326 (IEC/EN 61000-4-1...6 and 11; EN 55022 class B); NAMUR NE 21 (IEC/EN 61000-4-1...6, 8 and 11; EN 55022 class B)
Mechanical data	
Terminals	3-pole (+, -, screen): Screw terminals trunk / spurs rigid: 0.2 ... 2.5 mm² flexible: 0.2 ... 2.5 mm² flexible, end covering sleeves: 0.25 ... 2.5 mm²
Assembly	on DIN rail, EN 50022 (NS 35/15, NS 35/7.5) or mounting plate
Installation position	vertical or horizontal
Degree of protection	
Enclosure	IP30
Terminals	IP20
Fire protection class (UL-94)	V0
Connection diagram	
Connection diagram	

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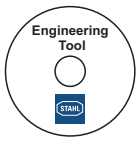
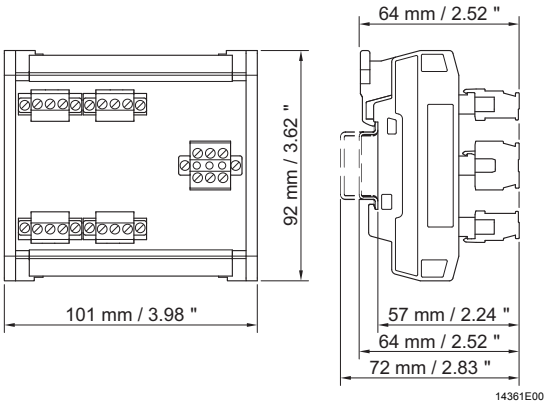
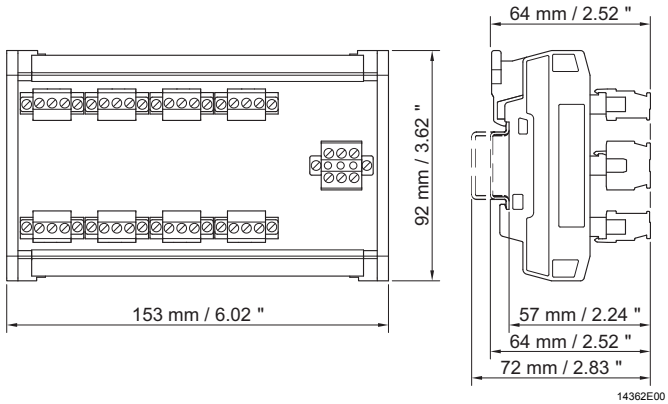
Accessories and Spare Parts

Designation	Illustration	Description	Art. no.
Terminating resistor	 06501E00	Fieldbus Terminator "Ex m"	**168062**
Feldbus Wizard Engineering Tool	 07376E00	Engineering tool for segment design of fieldbus foundation or Profibus PA fieldbus installations	**Download under www.fieldbus-solutions.info**
Fieldbus Power Supply	 12539E00	For supply of a non-intrinsically safe trunk. Basic version (Diagnosis integrated).	**200587**
		For supply of a non-intrinsically safe trunk. Advanced version (Diagnosis and Alarming integrated).	**200589**

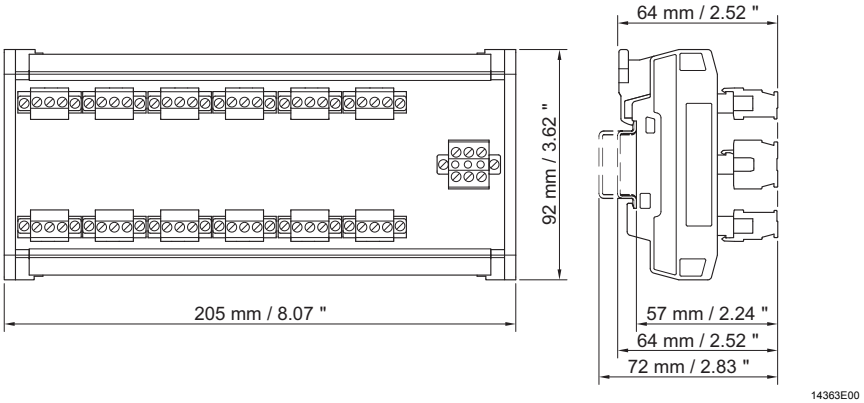
Dimensional Drawing (All Dimensions in mm / inches) - Subject to Alterations



9410/34-330-30
Field Device Coupler, 4 Spurs



9410/34-330-40
Field Device Coupler, 8 Spurs



9410/34-330-60
Field Device Coupler, 12 Spurs

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