

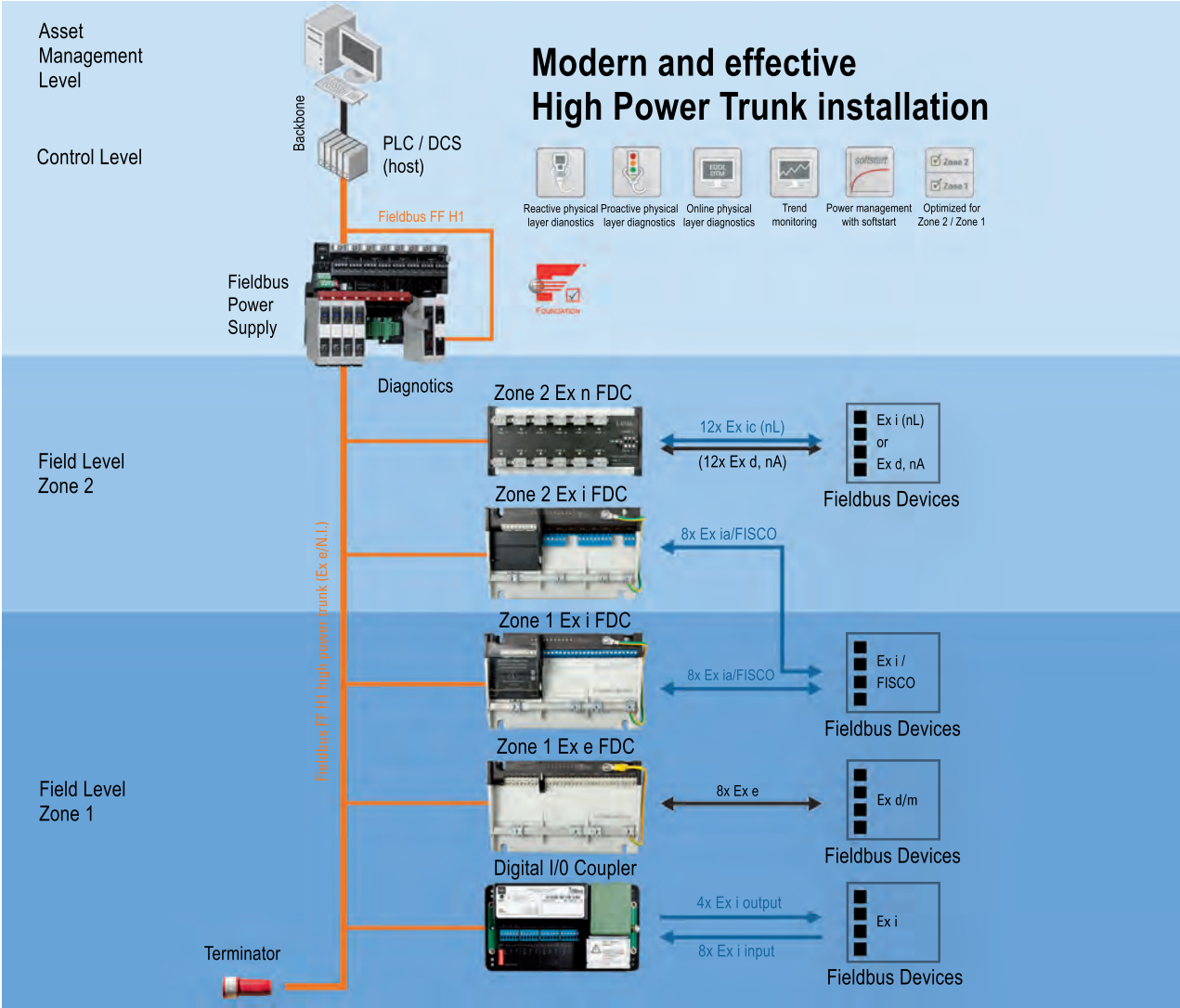
FIELD BUS TECHNOLOGY



Product	Installation in Zone						Series	Page	WebCode
	0	1	2	20	21	22			
bus-Carrier									
bus-Carrier			•				9419	144	9419A
bus-Carrier for Linking Device			•				9419	148	9419C
bus-Carrier Yokogawa ALF111 Version			•				9419	146	9419B
Diagnosis Communication Module									
Diagnosis Communication Module			•				9415	141	9415A
Fieldbus Power Supply									
Fieldbus Power Supply			•			•	9412	139	9412A
Fieldbus Terminator									
Fieldbus Terminator		•	•		•	•	9418	160	9418A
Field Device Coupler									
Ex i Field Device Coupler 4 Spurs		•	•		•	•	9411/21	150	9411C
Ex i Field Device Coupler 4 Spurs			•		•	•	9411/24	154	9411E
Ex i Field Device Coupler 8 Spurs		•	•		•	•	9411/21	152	9411D
Ex i Field Device Coupler 8 Spurs			•		•	•	9411/24	156	9411F
Ex n Field Device Coupler			•				9410	158	9410A
General									
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For additional products and information please refer to r-stahl.com

Overview of the System Components



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Overview of Functions ISbus

		Field device coupler				
		9410/34	9411/24	9411/21	9411/11	9413/21
Field device	Installation	Zone 2	Zone 2	Zone 1	Zone 1	Zone 1
FISCO/Entity (ia, ib)	Zone 0/1		x	x		
	Zone 2		x			
FISCO/Entity (ic)	Zone 2	x ¹⁾	x			
Ex ic (entity)	Zone 2	x ¹⁾	x			
Ex d/q/m	Zone 1	x			x	
	Zone 2	x				
Ex nA	Zone 2	x				
Ex i solenoid valve	Zone 0/1					x
Ex i contact	Zone 0/1					x

¹⁾ Fieldbus power supply with Ex ic parameters suitable for field device required



- Components and systems for use on Profibus PA and FOUNDATION™ fieldbus H1 systems
- Full product range for fieldbus installations based on the “High Power Trunk” concept in Zone 1 and Zone 2 / Div. 2
- Integration of simple, discrete signals onto the fieldbus via intelligent Digital I/O Couplers
- Redundant fieldbus power supply with galvanic isolation for FOUNDATION™ fieldbus H1
- Advanced physical layer diagnostics, optional integrated into fieldbus power supply or via H1 network
- Field housings of different sizes and materials, such as plastic, stainless steel and aluminium

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Fieldbus technology has become established in recent years alongside conventional field devices and field devices with HART support. The solutions from the Profibus Organisation or the FieldComm Group are now used in the majority of new installations. Solutions with fieldbus barriers have largely replaced pure FISCO installations. The R. STAHL product range includes field device couplers for installation in Zone 1, Zone 2 and Class 1 Div. 2 for connection of e.g. I.S. or FISCO and non-I.S. fieldbus devices, simple discrete I.S. signals and more. The bus is supplied with the necessary power using a simplex or redundant power supply. Physical Layer Diagnostics is integrated as standard in the fieldbus power supply and can also be transmitted via FF H1 on asset management systems.

Besides the new ISbus components for FOUNDATION™ fieldbus and Profibus PA, R. STAHL also supplies all-inclusive system solutions. These range from different types of field housings, made from plastic, stainless steel, or aluminium, and innovative solutions with Ex-plug connectors for the non-intrinsically safe fieldbus to complete system solutions for all different forms of field signals. Depending on the application and customer requirements, R. STAHL optimally combines the components and systems from the Fieldbus ISbus and Remote I/O IS1+ sectors to create the most efficient and low-cost solution.



- For single or redundant power supply to FOUNDATION Fieldbus H1 segments (High Power Trunk)
- Output > 28 V, up to 1 A, galvanically separated
- Integrated advanced physical layer diagnostics

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WebCode **9412A**



Single or redundant 9412 series fieldbus power supplies are used to supply an FF H1 High Power Trunk with up to 28 V/500 mA, and up to 1 A in Boost mode. In the background, they measure the advanced physical layer parameters, which can be reported via an Android smartphone, configurable integrated alarms or online via FF H1. 9419 series bus carriers or DIN rails can be used for installation.

	ATEX / IECEx						NEC 505						NEC 506						NEC 500					
							Class I						Class II						Class III					
Zone	0	1	2	20	21	22																		
Installation in			•			•																		

Selection Table						
Product variant	Fieldbus Power Supply					
Description	Error message	Product Type	Art. No.	PS	Weight kg	
Fieldbus power supply, diagnostics and adjustable warning level	Overload, short circuit and Physical Layer values: trunk voltage/current, signal level, noise, jitter, unbalance	9412/00-320-11s	200588 ▲	23	0.135	

Technical Data	
Explosion Protection	
IECEx gas explosion protection	Ex nA nC IIC T4 Gc
ATEX gas explosion protection	Ⓔ II 3 G Ex nA nC IIC T4 Gc
EAC gas explosion protection	Ⓔ 2 Ex nA nC IIC T4 Gc X
Certificates	ATEX (BVS), Brazil (ULB), EAC (Sertium), IECEx (BVS), India (PESO), International (FF)
Electrical Data	
Segment supply U _s	≥ 28 V DC
Segment supply U _s note	Other voltage variant for ic-FISCO and entity on request
Segment supply I _s	500 mA
Segment supply I _s note	Up to 1 A in boost mode
Fieldbus specification	IEC 61158-2, FOUNDATION™ fieldbus H1 FF-831
Auxiliary Power	
Nominal voltage	24 V DC
Max. power consumption	2.8 W
Power dissipation max.	2.75 W
Max. power dissipation note	at 500 mA output current and 24 V auxiliary power

Technical Data

Output

Error messaging device Relay contact (30 V DC/100 mA),

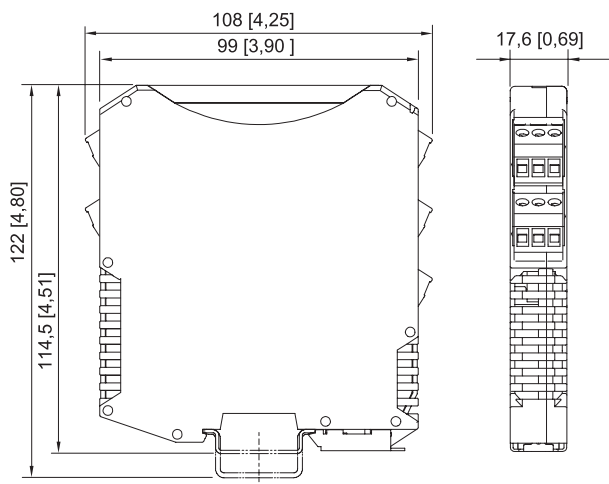
Ambient Conditions

Ambient temperature -20 °C ... +70 °C

Accessories

Figure	Description	Art. No.	PS	Weight kg
bus-Carrier				
	bus-Carrier for 4 segments, redundant	208746	23	0.600
	bus-Carrier for 8 segments, simplex	208745	23	0.600
	bus-Carrier for 8 segments, redundant	208747 ▲	23	1.200
Yokogawa bus-Carrier				
	Yokogawa bus-Carrier for 4 segments, redundant	221455	23	0.600
	Yokogawa bus-Carrier for 8 segments, simplex	221454	23	0.600
	Yokogawa bus-Carrier for 8 segments, redundant	221456 ▲	23	1.200
bus-Carrier for Linking Device				
	bus-Carrier for Linking Device for 4 segments, simplex	250240	23	0.712
	bus-Carrier for Linking Device for 4 segments, redundant	250241 ▲	23	0.980
	bus-Carrier for Linking Device for 8 segments, simplex	250242	23	1.010

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





- Physical layer diagnostics for up to eight FOUNDATION™ fieldbus H1 segments transmitted via an H1 network of your choice
- Diagnostics for voltage/current, jitter, noise, signal level, imbalance
- DTM and EDD with numerous alarm setting options, access to maintenance information, detailed reporting

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WebCode **9415A**



The 9415 series diagnostic communication module (DCM) transmits the physical layer diagnostics data that is measured continuously by the 9412 series fieldbus power supplies for up to eight FF H1 segments to hosts or asset management systems. EDD and DTM are also available for integration. The data is logged in accordance with NAMUR NE 123 and processed in accordance with NAMUR NE 107 and FF-912. 9419 series bus carriers can be used for installation.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
Ex interface			•			
Installation in			•			

	NEC 505			NEC 506		
	Class I					
Zone	0	1	2	20	21	22
Ex interface			•			
Installation in			•			

	NEC 500					
	Class I		Class II		Class III	
Division	1	2	1	2	1	2
Ex interface		•		•		•
Installation in		•				

Selection Table					
Product Description	ISbus fieldbus technology Diagnostics communication module				
Description	Product Type	Art. No.	PS	Weight kg	
Transmission of diagnostics data for up to 8 segments via FF H1	9415/00-310-42	207903	23	0.240	
Installation in bus-carriers with 8 (simplex / redundant) or 16 (redundant) slots.					

Technical Data	
Explosion Protection	
IECEX gas explosion protection	Ex nA [ic] IIC T4 Gc
ATEX gas explosion protection	Ⓔ II 3 G Ex nA [ic] IIC T4 Gc
EAC gas explosion protection	Ⓔ 2 Ex nA [ic] IIC T4 Gc X
Certificates	ATEX (BVS), Brazil (ULB), Canada (FM), EAC (Sertium), IECEX (BVS), International (FF), USA (FM)
Auxiliary Power	
Auxiliary power	Over bus carrier series 9419
Input	
Physical Layer Diagnostics	via Fieldbus Power Supplies 9412
Physical Layer values	acc. to NAMUR NE 123
Physical Layer values fieldbus	Jitter, signal level
Physical Layer values segment	Jitter, signal level, noise, unbalanced loads, voltage, current
Device Specific Data	
Cyclic data transmission	10 DI function blocks for status information / commom error per segment

Technical Data








Device Specific Data

Acyclic data transmission 9 Transducer blocks for detailed information: physical layer values, HI-alarm, HIIH-alarm, LO-alarm, LOLO-alarm, status DCM, status segment, status fieldbus devices

Ambient Conditions

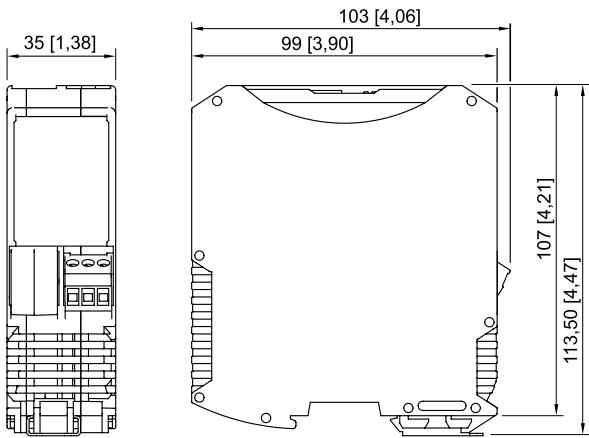
Ambient temperature -20 °C ... +70 °C

Accessories

Figure	Description	Art. No.	PS	Weight kg
Fieldbus Power Supply				
	Fieldbus power supply and diagnostics	200586	23	0.135
bus-Carrier				
	bus-Carrier for 4 segments, redundant	208746	23	0.600
	bus-Carrier for 8 segments, simplex	208745	23	0.600
	bus-Carrier for 8 segments, redundant	208747 ▲	23	1.200
Yokogawa bus-Carrier				
	Yokogawa bus-Carrier for 4 segments, redundant	221455	23	0.600
	Yokogawa bus-Carrier for 8 segments, simplex	221454	23	0.600
	Yokogawa bus-Carrier for 8 segments, redundant	221456 ▲	23	1.200
bus-Carrier for Linking Device				
	bus-Carrier for Linking Device for 4 segments, redundant	250241 ▲	23	0.980
	bus-Carrier for Linking Device for 4 segments, simplex	250240	23	0.712
	bus-Carrier for Linking Device for 8 segments, simplex	250242	23	1.010

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



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- Time- and cost-saving installation on DIN rails or mounting plates
- High availability thanks to redundant auxiliary power supply with signalling contact and separate signalling contact for segment errors
- Special slot for 9415 series DCM for online transmission of physical layer diagnostics

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WebCode **9419A**



9419 series bus carriers allow 9412 series fieldbus power supplies for FF H1 segments to be installed quickly and securely. Variants are available for eight segments with simplex supply and for four or eight segments with redundant supply. Pluggable terminals are used to connect the fieldbus segments and host assemblies.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
Installation in			•			

	NEC 505 Class I			NEC 506		
Zone	0	1	2	20	21	22
Installation in			•			

	NEC 500					
	Class I		Class II		Class III	
Division	1	2	1	2	1	2
Installation in		•		•		•

Selection Table

Product Description		ISbus fieldbus technology Bus-Carrier					
Connection	Trunk supply	Number of segments	Number of slots	Product Type	Art. No.	PS	Weight kg
To any FF H1 host	Redundant	8	16 FPS + 1 DCM	9419/08R-XX1-02C1	208747 ▲	23	1.200

The shield terminals (see accessories) must be ordered separately for the bus-carrier.

Please order fieldbus power supplies (FPS) and diagnosis communication module (DCM) separately.

Technical Data




Explosion Protection	
IECEx gas explosion protection	Ex nA nC IIC T4 Gc
ATEX gas explosion protection	Ⓔ II 3 G Ex nA nC IIC T4 Gc
EAC gas explosion protection	Ⓕ 2 Ex nA nC IIC T4 Gc X
Certificates	ATEX (BVS), Brazil (ULB), Canada (FM), EAC (Sertium), IECEx (BVS), India (PESO), USA (FM)
Electrical Data	
Error detection Power Fail (pri / red)	Contact "PF" (35 V /100 mA) closed in good conditions
Error detection Diagnostic	Contact "Dia" (35 V /100 mA) closed in good conditions
Auxiliary Power	
Nominal voltage	24 V DC
Redundant supply	yes, diode-decoupled
Ambient Conditions	
Ambient temperature	-20 °C ... +70 °C
Mechanical Data	
Connection Trunk	to the terminals of the bus-Carrier or of the fieldbus power supply
Connection Host / red. host	to the terminals of the bus-Carrier or of the Fieldbus Power Supplies
Connection DCM	via ribbon cable using plug connectors

Technical Data

Mechanical Data

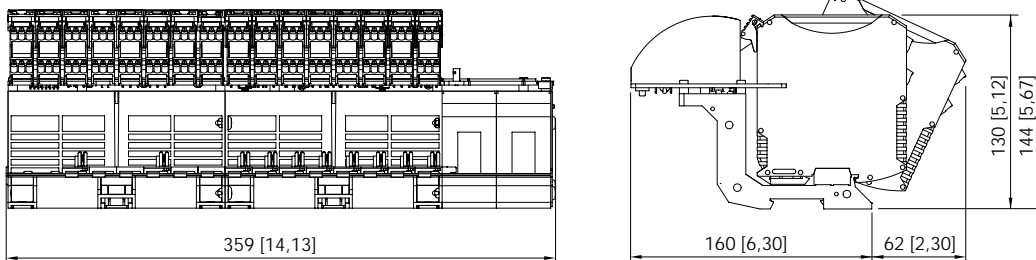
Connection shield via integrated shield bar with strain relief

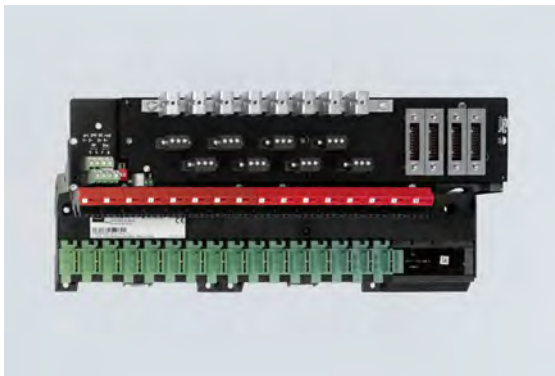
Accessories

Figure	Description	Art. No.	PS	Weight kg
Diagnosis Communication Module 9415				
	Transmission of diagnostics data for up to 8 segments via FF H1	207903	23	0.240
Fieldbus Power Supply				
	Fieldbus power supply, diagnostics and adjustable warning level	200588 ▲	23	0.135
Spring-loaded clamping bracket				
	Spring-loaded clamping bracket KLBÜ C01	113509	Z2	0.001

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





- Time- and cost-saving installation on DIN rails or mounting plates
- High availability thanks to redundant auxiliary power supply with signalling contact and separate signalling contact for segment errors
- Special slot for 9415 series DCM for online transmission of physical layer diagnostics

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WebCode **9419B**



9419 series bus carriers allow 9412 series fieldbus power supplies for FF H1 segments to be installed quickly and securely. Variants are available for eight segments with simplex supply and for four or eight segments with redundant supply.

Connectors are integrated in this version to connect the AKB336 system cable for Yokogawa ALF111 host assemblies.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
Installation in			•			

	NEC 505 Class I			NEC 506		
Zone	0	1	2	20	21	22
Installation in			•			•

	NEC 500					
	Class I		Class II		Class III	
Division	1	2	1	2	1	2
Installation in		•		•		•

Selection Table

Product Description		ISbus fieldbus technology Yokogawa bus-Carrier					
Connection	Trunk supply	Number of segments	Number of slots	Product Type	Art. No.	PS	Weight kg
To Yokogawa ALF111 FF H1 hosts	Redundant	8	16 FPS + 1 DCM	9419/08R-YO1-02A5	221456 ▲	23	1.200




The shield terminals (see accessories) must be ordered separately for the bus-carrier.

Please order fieldbus power supplies (FPS), diagnosis communication module (DCM) and linking devices (LD) separately.

Technical Data

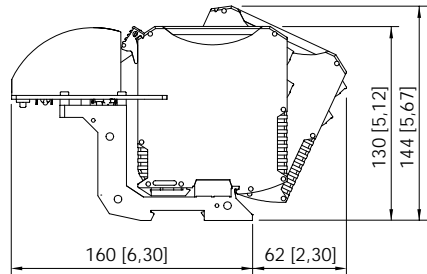
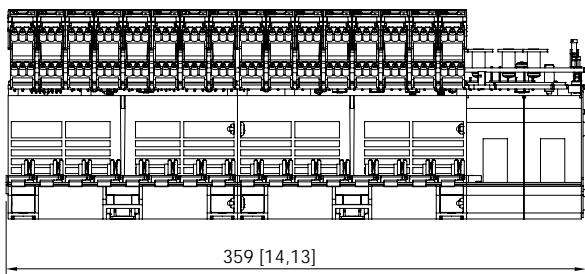
Explosion Protection	
IECEx gas explosion protection	Ex nA nC IIC T4 Gc
ATEX gas explosion protection	Ⓔ II 3 G Ex nA nC IIC T4 Gc
EAC gas explosion protection	Ⓕ 2 Ex nA nC IIC T4 Gc X
Certificates	ATEX (BVS), Brazil (ULB), Canada (FM), EAC (Sertium), IECEx (BVS), India (PESO), USA (FM)
Electrical Data	
Error detection Power Fail (pri / red)	Contact "PF" (35 V /100 mA) closed in good conditions
Error detection Diagnostic	Contact "Dia" (35 V /100 mA) closed in good conditions
Auxiliary Power	
Nominal voltage	24 V DC
Redundant supply	yes, diode-decoupled
Ambient Conditions	
Ambient temperature	-20 °C ... +70 °C

Technical Data	
Mechanical Data	
Connection Trunk	to the terminals of the bus-Carrier or of the fieldbus power supply
Connection Host / red. host	via system plug for Yokogawa AKB336 system cable
Connection DCM	via ribbon cable using plug connectors
Connection shield	via integrated shield bus or to terminal connections "S"

Accessories				
Figure	Description	Art. No.	PS	Weight kg
Diagnosis Communication Module 9415				
	Transmission of diagnostics data for up to 8 segments via FF H1	207903	23	0.240
Fieldbus Power Supply				
	Fieldbus power supply, diagnostics and adjustable warning level	200588 ▲	23	0.135
Spring-loaded clamping bracket				
	Spring-loaded clamping bracket KLBÜ C01	113509	Z2	0.001

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





- Time- and cost-saving installation on DIN rails or mounting plates
- high availability thanks to redundant auxiliary power supply with signalling contact and separate signalling contact for segment errors
- Special slot for FG-200 linking device for the Softing pnGate PA and for DCM series 9415 for online transmission of physical layer diagnostics

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WebCode **9419C**



Modbus TCP



9419 series bus carriers allow 9412 series fieldbus power supplies for FF H1 segments to be installed quickly and securely. Variants are available for four or eight segments with simplex supply and for four segments with redundant supply.

Softing FG-200 HSE/FF Modbus linking devices and pnGate PA can be integrated into this version, and can link up to eight H1 segments to the Modbus TCP protocol or PROFINET.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
Installation in			•			

Selection Table

ISbus fieldbus technology bus-Carrier for linking device						
Product Description	Number of segments	Number of slots	Product Type	Art. No.	PS	Weight kg
Redundant	4	8 FPS + 2 LD + 1 DCM	9419/04R-LD1-02E1	250241 ▲	23	0.980




The shield terminals (see accessories) must be ordered separately for the bus-carrier.

Please order fieldbus power supplies (FPS), diagnosis communication module (DCM) and linking devices (LD) separately.

Technical Data

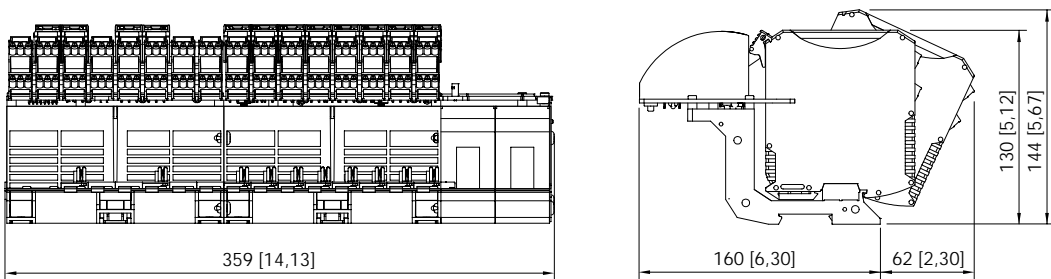
Explosion Protection	
IECEx gas explosion protection	Ex nA nC IIC T4 Gc
ATEX gas explosion protection	Ⓔ II 3 G Ex nA nC IIC T4 Gc
Certificates	ATEX (BVS), Brazil (ULB), EAC (Sertium), IECEx (BVS), India (PESO)
Electrical Data	
Error detection Power Fail (pri / red)	Contact "PF" (35 V /100 mA) closed in good conditions
Error detection Diagnostic	Contact "Dia" (35 V /100 mA) closed in good conditions
Auxiliary Power	
Nominal voltage	24 V DC
Redundant supply	yes, diode-decoupled
Ambient Conditions	
Ambient temperature	-20 °C ... +60 °C
Mechanical Data	
Connection Trunk	to the terminals of the bus-Carrier or of the fieldbus power supply

Technical Data	
Mechanical Data	
Connection DCM	see operating instructions Series 9415
Connection shield	Shield terminal or plug connector or shield bus with strain relief
Connection Linking Device	Fieldbuses automatically by clicking into place in the slot provided. Auxiliary power automatically by clicking into place on the slot provided. Ethernet (HSE / Modbus TCP), PROFINET through RJ45 connector

Accessories		Art. No.	PS	Weight kg
Diagnosis Communication Module 9415				
	Transmission of diagnostics data for up to 8 segments via FF H1	207903	23	0.240
Fieldbus Power Supply				
	Fieldbus power supply, diagnostics and adjustable warning level	200588 ▲	23	0.135
Spring-loaded clamping bracket				
	Spring-loaded clamping bracket KLBÜ C01	113509	Z2	0.001

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





- For connecting four intrinsically safe (FISCO/Entity) fieldbus devices in Zone 1
- Operated using High Power Trunk concept
- Reduced start-up current thanks to power management and short-circuit limiting with disconnection

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WebCode 9411C



9411/21 series Ex i field device couplers for Zone 1 with galvanic separation can be used for interference-free connection of four FF H1 or PROFIBUS PA field devices on the High Power Trunk. The spurs with type of protection ia can be used for fieldbus devices in Zone 1 (FISCO, Entity) and are protected by a short-circuit limiting function. The integrated power management minimises start-up and short-circuit currents. Available with screw terminals or spring clamp terminals.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
Ex interface	•	•	•	•	•	•
Installation in		•	•		•	•


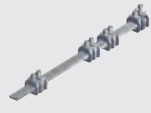


	NEC 505 Class I			NEC 506		
Zone	0	1	2	20	21	22
Ex interface	•	•	•	•	•	•
Installation in		•	•		•	•

	NEC 500					
	Class I		Class II		Class III	
Division	1	2	1	2	1	2
Ex interface	•	•	•	•	•	•
Installation in		•		•		•

Selection Table						
Product Description		ISbus fieldbus technology Field device coupler				
Number of channels	Connection type	Product Type	Art. No.	PS	Weight kg	
4	Screw terminal, detachable	9411/21-230-31	206826 ▲	23	0.870	
Field enclosures in polyester or stainless steel: customer specific solutions on request						

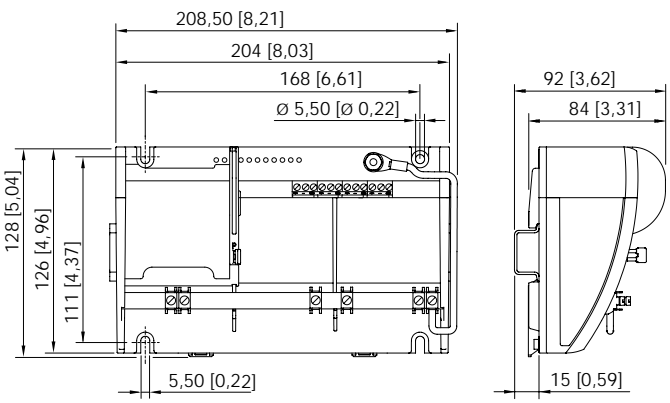
Technical Data	
Explosion Protection	
IECEx gas explosion protection	Ex mb e ib [ia Ga] IIC T4 Gb
IECEx dust explosion protection	[Ex ia Da] IIIC
ATEX gas explosion protection	Ⓔ II 2 (1) G Ex mb e ib [ia Ga] IIC T4 Gb
ATEX dust explosion protection	Ⓔ II (1) D [Ex ia Da] IIIC
EAC gas explosion protection	Ⓔ 1 Ex e ib mb [ia Ga] IIC T4 Gb X
EAC dust explosion protection	Ⓔ [Ex ia Da] IIIC
Certificates	ATEX (BVS), Brazil (ULB), Canada (FM), EAC (Sertium), IECEx (BVS), International (FF), USA (FM)
Auxiliary Power	
Power dissipation max.	1.8 W
Notes	Auxiliary power is not necessary, the field device coupler will be supplied by the trunk
Input	
Voltage range Trunk	16 – 32 V

Technical Data	
Output	
Output current	0 mA ... 41 mA; per spur
Output voltage	Min. 10 V at 41 mA
Ambient Conditions	
Ambient temperature	-40 °C ... +75 °C
Mechanical Data	
Field enclosure	Without, DIN rail mounting

Accessories				
Figure	Description	Art. No.	PS	Weight kg
Earthing bar set for 4 Spurs				
	Earthing bar 9411 spring terminal strap with 6 terminals	202774 ▲	Z2	0.128
	Earthing bar 9411 screw terminals	161929 ▲	Z2	0.080
Fieldbus Power Supply				
	Fieldbus power supply and diagnostics	200586	23	0.135
Fieldbus Wizard Engineering Tool				
	Engineering tool for segment design of foundation fieldbus or Profibus PA fieldbus installations Download under www.fieldbus-solutions.info	-	-	-

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





- For connecting eight intrinsically safe (FISCO/Entity) fieldbus devices in Zone 1
- Operated using High Power Trunk concept
- Reduced start-up current thanks to power management and short-circuit limiting with disconnection

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WebCode **9411D**



9411/21 series Ex i field device couplers for Zone 1 with galvanic separation can be used for interference-free connection of eight FF H1 or PROFIBUS PA field devices on the High Power Trunk. The spurs with type of protection ia can be used for fieldbus devices in Zone 1 (FISCO, Entity) and are protected by a short-circuit limiting function.

The integrated power management minimises start-up and short-circuit currents.

Available with screw terminals or spring clamp terminals.

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

Selection Table





Product Description		ISbus fieldbus technology Field device coupler			
Number of channels	Connection type	Product Type	Art. No.	PS	Weight kg
8	Screw terminal, detachable	9411/21-230-41	206829 ▲	23	0.890

Field enclosures in polyester or stainless steel: customer specific solutions on request

Technical Data

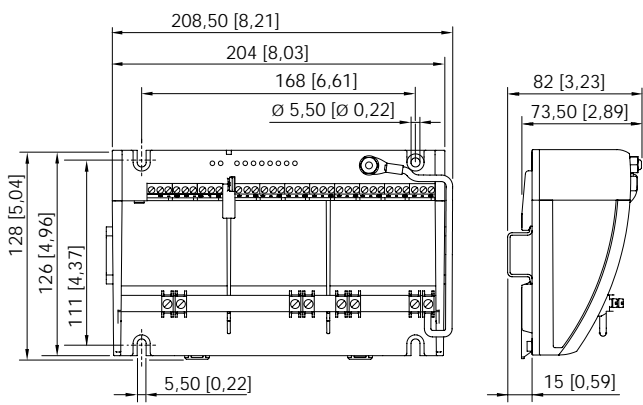
Explosion Protection	
IECEx gas explosion protection	Ex mb e ib [ia Ga] IIC T4 Gb
IECEx dust explosion protection	[Ex ia Da] IIIC
ATEX gas explosion protection	Ⓔ II 2 (1) G Ex mb e ib [ia Ga] IIC T4 Gb
ATEX dust explosion protection	Ⓔ II (1) D [Ex ia Da] IIIC
EAC gas explosion protection	Ⓔ 1 Ex e ib mb [ia Ga] IIC T4 Gb X
EAC dust explosion protection	Ⓔ [Ex ia Da] IIIC
Certificates	ATEX (BVS), Brazil (ULB), Canada (FM), EAC (Sertium), IECEx (BVS), International (FF), USA (FM)
Auxiliary Power	
Power dissipation max.	1.8 W
Notes	Auxiliary power is not necessary, the field device coupler will be supplied by the trunk
Input	
Voltage range Trunk	16 – 32 V

Technical Data	
Output	
Output current	0 mA ... 41 mA; per spur
Output voltage	Min. 10 V at 41 mA
Ambient Conditions	
Ambient temperature	-40 °C ... +75 °C
Mechanical Data	
Field enclosure	Without, DIN rail mounting

Accessories				
Figure	Description	Art. No.	PS	Weight kg
Earthing bar set for 8 Spurs				
	Earthing bar 9411 spring terminal strap with 10 terminals	202775 ▲	Z2	0.200
	Earthing bar 9411 screw terminals	161930 ▲	Z2	0.090
Fieldbus Power Supply				
	Fieldbus power supply and diagnostics	200586	23	0.135
Fieldbus Wizard Engineering Tool				
	Engineering tool for segment design of foundation fieldbus or Profibus PA fieldbus installations Download under www.fieldbus-solutions.info	-	-	-

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



Field Device Coupler, 8 Spurs, without enclosure



- For connecting four(FISCO, Entity) fieldbus devices in Zone 2
- Operated using High Power Trunk concept
- Reduced start-up current thanks to power management and short-circuit limiting with disconnection

A5

WebCode **9411E**



9411/24 series Ex i field device couplers for Zone 2 with galvanic separation can be used for interference-free connection of up to four intrinsically safe FF H1 or PROFIBUS PA field devices on the High Power Trunk. The spurs with type of protection ia can be used for fieldbus devices in Zones 1 and 2 and are protected by a short-circuit limiting function. The integrated power management minimises start-up and short-circuit currents. Available with screw terminals or spring clamp terminals.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
Ex interface	•	•	•	•	•	•
Installation in			•		•	•

	NEC 505 Class I			NEC 506		
Zone	0	1	2	20	21	22
Ex interface	•	•	•	•	•	•
Installation in			•		•	•

	NEC 500					
	Class I		Class II		Class III	
Division	1	2	1	2	1	2
Ex interface	•	•	•	•	•	•
Installation in		•		•		•

Selection Table


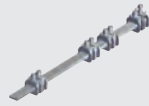


Product Description		ISbus fieldbus technology Field device coupler			
Number of channels	Connection type	Product Type	Art. No.	PS	Weight kg
4	Screw terminal, detachable	9411/24-330-31	206838 ▲	23	0.735

Field enclosures in polyester or stainless steel: customer specific solutions on request

Technical Data

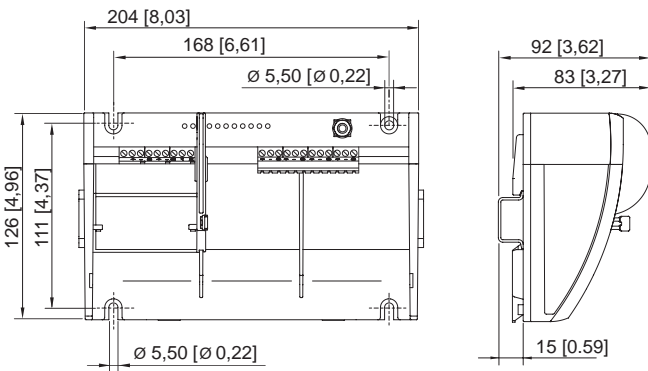
Explosion Protection	
IECEx gas explosion protection	Ex nA [ia Ga] IIC T4 Gc
IECEx dust explosion protection	[Ex ia Da] IIIC
ATEX gas explosion protection	Ⓔ II 3 (1) G Ex nA [ia Ga] IIC T4 Gc
ATEX dust explosion protection	Ⓔ II (1) D [Ex ia Da] IIIC
EAC gas explosion protection	Ⓔ 2 Ex nA [ia Ga] IIC T4 Gc X
EAC dust explosion protection	Ⓔ [Ex ia Da] IIIC
Certificates	ATEX (BVS), Brazil (ULB), Canada (FM), EAC (Sertium), IECEx (BVS), International (FF), USA (FM)
Auxiliary Power	
Power dissipation max.	1.8 W
Notes	Auxiliary power is not necessary, the field device coupler will be supplied by the trunk
Input	
Voltage range Trunk	16 – 32 V

Technical Data	
Output	
Output current	0 mA ... 41 mA; per spur
Output voltage	Min. 10 V at 41 mA
Ambient Conditions	
Ambient temperature	-40 °C ... +75 °C
Mechanical Data	
Field enclosure	Without, DIN rail mounting

Accessories				
Figure	Description	Art. No.	PS	Weight kg
Earthing bar set for 4 Spurs				
	Earthing bar 9411 spring terminal strap with 6 terminals	202774 ▲	Z2	0.128
	Earthing bar 9411 screw terminals	161929 ▲	Z2	0.080
Fieldbus Power Supply				
	Fieldbus power supply and diagnostics	200586	23	0.135
Fieldbus Wizard Engineering Tool				
	Engineering tool for segment design of foundation fieldbus or Profibus PA fieldbus installations Download under www.fieldbus-solutions.info	-	-	-

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





- For connecting eight (FISCO, Entity) fieldbus devices in Zone 2
- Operated using High Power Trunk concept
- Reduced start-up current thanks to power management and short-circuit limiting with disconnection

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WebCode **9411F**



9411/24 series Ex i field device couplers for Zone 2 with galvanic separation can be used for interference-free connection of up to eight intrinsically safe FF H1 or PROFIBUS PA field devices on the High Power Trunk. The spurs with type of protection ia can be used for fieldbus devices in Zones 1 and 2 and are protected by a short-circuit limiting function. The integrated power management minimises start-up and short-circuit currents. Available with screw terminals or spring clamp terminals.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
Ex interface	•	•	•	•	•	•
Installation in			•		•	•





	NEC 505 Class I			NEC 506		
Zone	0	1	2	20	21	22
Ex interface	•	•	•	•	•	•
Installation in			•		•	•

	NEC 500					
	Class I		Class II		Class III	
Division	1	2	1	2	1	2
Ex interface	•	•	•	•	•	•
Installation in		•		•		•

Selection Table						
Product Description		ISbus fieldbus technology Field device coupler				
Number of channels	Connection type	Product Type	Art. No.	PS	Weight kg	
8	Screw terminal, detachable	9411/24-330-41	206839 ▲	23	0.735	
Field enclosures in polyester or stainless steel: customer specific solutions on request						

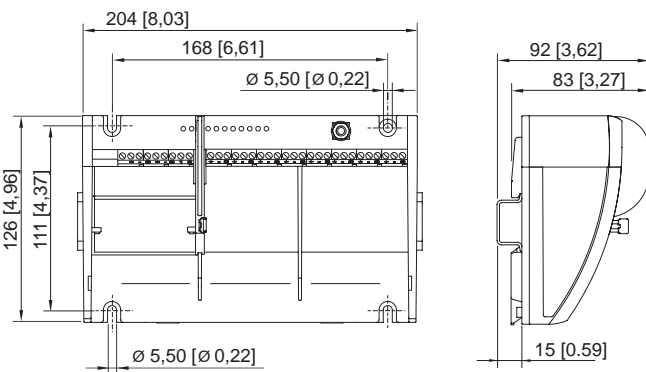
Technical Data	
Explosion Protection	
IECEx gas explosion protection	Ex nA [ia Ga] IIC T4 Gc
IECEx dust explosion protection	[Ex ia Da] IIIC
ATEX gas explosion protection	Ⓔ II 3 (1) G Ex nA [ia Ga] IIC T4 Gc
ATEX dust explosion protection	Ⓔ II (1) D [Ex ia Da] IIIC
EAC gas explosion protection	Ⓔ 2 Ex nA [ia Ga] IIC T4 Gc X
EAC dust explosion protection	Ⓔ [Ex ia Da] IIIC
Certificates	ATEX (BVS), Brazil (ULB), Canada (FM), EAC (Sertium), IECEx (BVS), International (FF), USA (FM)
Auxiliary Power	
Power dissipation max.	1.8 W
Notes	Auxiliary power is not necessary, the field device coupler will be supplied by the trunk
Input	
Voltage range Trunk	16 – 32 V

Technical Data	
Output	
Output voltage	Min. 10 V at 41 mA
Output current	0 mA ... 41 mA; per spur
Ambient Conditions	
Ambient temperature	-40 °C ... +75 °C
Mechanical Data	
Field enclosure	Without, DIN rail mounting

Accessories				
Figure	Description	Art. No.	PS	Weight kg
Earthing bar set for 8 Spurs				
	Earthing bar 9411 spring terminal strap with 10 terminals	202775 ▲	Z2	0.200
	Earthing bar 9411 screw terminals	161930 ▲	Z2	0.090
Fieldbus Power Supply				
	Fieldbus power supply and diagnostics	200586	23	0.135
Fieldbus Wizard Engineering Tool				
	Engineering tool for segment design of foundation fieldbus or Profibus PA fieldbus installations Download under www.fieldbus-solutions.info	-	-	-

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





- For connecting four, eight or 12 fieldbus devices in Zone 2
- Ex nA or ic spurs
- Operated using High Power Trunk concept
- Reduced start-up current thanks to power management and short-circuit limiting with disconnection

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WebCode **9410A**



9410 series Ex n field device couplers for Zone 2 can be used for interference-free connection of up to 12 FOUNDATION Fieldbus H1 or PROFIBUS PA field devices on the High Power Trunk. The spurs with type of protection nA or ic can be used for fieldbus devices in Zones 2 (ic, nA) and 1 (d, q, m) and are protected by a short-circuit limiting function.

The integrated power management minimises start-up and short-circuit currents.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
Ex interface			•			
Installation in			•			

	NEC 505 Class I			NEC 506		
Zone	0	1	2	20	21	22
Ex interface			•			
Installation in			•			

	NEC 500					
	Class I		Class II		Class III	
Division	1	2	1	2	1	2
Ex interface		•				
Installation in		•				

Selection Table




Product Description		ISbus fieldbus technology Field device coupler			
Number of channels	Connection type	Product Type	Art. No.	PS	Weight kg
12	Screw terminals, pluggable	9410/34-330-60	207906 ▲	23	0.900

Field enclosures in polyester or stainless steel: Customer specific solutions on request

Technical Data

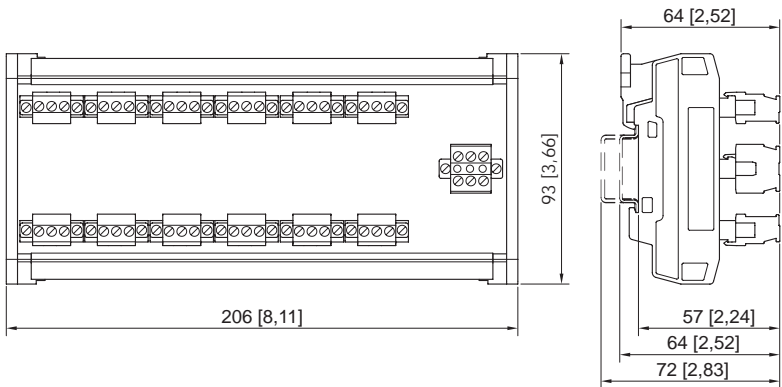
Explosion Protection	
IECEX gas explosion protection	Ex nA [ic] IIC T4 Gc
ATEX gas explosion protection	⊕ II 3 G Ex nA [ic] IIC T4 Gc
EAC gas explosion protection	⊕ 2 Ex nA [ic] IIC T4 Gc X
Certificates	ATEX (BVS), Brazil (ULB), Canada (FM), EAC (Sertium), IECEx (BVS), International (FF), USA (FM)
Auxiliary Power	
Power dissipation max.	1.2 W
Notes	Auxiliary power is not necessary, the field device coupler will be supplied by the trunk
Input	
Voltage range Trunk	9 – 32 V
Output	
Output current	0 mA ... 41 mA; per spur
Output voltage	Min. 10 V at 41 mA

Technical Data	
Ambient Conditions	
Ambient temperature	-40 °C ... +75 °C
Mechanical Data	
Field enclosure	Without, DIN rail mounting
Spurs ic only in connection with an ic-voltage-limited fieldbus power supply (e.g. R. STAHL 9412/01 or 9412/02)	

Accessories		Art. No.	PS	Weight kg
Figure	Description			
Fieldbus Power Supply				
	For supply of a non-intrinsically safe trunk. Advanced version (Diagnosis and Alarming integrated).	200589	23	0.135
Fieldbus Wizard Engineering Tool				
	Engineering tool for segment design of foundation fieldbus or Profibus PA fieldbus installations Download under www.fieldbus-solutions.info	-	-	-
Terminator				
	Fieldbus Terminator "Ex m"	168062 ▲	Z2	0.080

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



Field Device Coupler, 12 Spurs, without enclosure

▲ Preferred products – in stock or available at short notice
25-Oct-2019- PK-en



- "i" version of Zone 1 EOL resistor for FISCO/Entity fieldbuses and "m" version for non-intrinsically safe fieldbuses (High Power Trunk)
- Extremely compact design for installation in M20 line entrances
- For use directly in enclosures or field devices

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WebCode **9418A**



9418 series fieldbus terminators perform the role of end-of-line resistors for PROFIBUS PA or FOUNDATION™ Fieldbus H1 fieldbuses. Ex i and Ex m versions are available for intrinsically safe FISCO/Entity and non-intrinsically safe (High Power Trunk) fieldbuses. The extremely compact design saves space when installing the terminators in M20 line entrances. They are easy to spot, even when installed.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
Ex interface		•	•		•	•
Installation in		•	•		•	•

	NEC 505 Class I			NEC 506		
Zone	0	1	2	20	21	22
Ex interface		•	•			
Installation in		•	•			



	NEC 500					
	Class I		Class II		Class III	
Division	1	2	1	2	1	2
Ex interface	•	•	•	•	•	•
Installation in	•	•	•	•	•	•

Selection Table

Product Description		ISbus fieldbus technology Fieldbus terminator			
Version	Fieldbus	Product Type	Art. No.	PS	Weight kg
Ex m fieldbus terminator	Non-intrinsically safe (Ex e)	9418/01-201-10	168062 ▲	Z2	0.080

Technical Data

Variant	Ex m fieldbus terminator
Explosion Protection	
IECEx gas explosion protection	Ex mb IIC T6/T5 Gb
IECEx dust explosion protection	Ex tb IIIC T65 °C ... T100 °C Db
ATEX gas explosion protection	⊕ II 2 G Ex mb IIC T6/T5 Gb
ATEX dust explosion protection	⊕ II 2 D Ex tb IIIC T65 °C ... T100 °C Db
EAC gas explosion protection	⊕ 1 Ex mb IIC T6/T5 Gb
EAC dust explosion protection	⊕ Ex tb IIC T65 °C/T100 °C Db
Certificates	ATEX (PTB), Brazil (ULB), Canada (FM), EAC (Sertium), IECEx (PTB), USA (FM)
Electrical Data	
End-of-line resistor capacitance	1 µF
Resistance value	100 Ω
Auxiliary Power	
Nominal voltage	< 32 V
Ambient Conditions	
Ambient temperature	-40 °C ... +40 °C (IIC T6) (T65 °C) -40 °C ... +75 °C (T5) (T100 °C)

Accessories				
Figure	Description	Art. No.	PS	Weight kg
Cable gland				
	8161/7-M20-1304 4 ... 13 mm ² , 50 pieces (delivery lot*)	239156 ▲	10	0.013
	8161/8 Ex i (black with blue cap nut) 8161/8-M20-1304 4 ... 13 mm ² 50 pieces (delivery lot*)	239164 ▲	10	0.013

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*) Purchase order quantity in [pieces], the delivery quantity is automatically rounded to the delivery lot.

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

