



- Fieldbus distributor with individually short-circuit current limited outputs
- 4 intrinsically safe EEx ia IIC outputs in accordance to IEC 60079-27 (FISCO) and Entity
- High power in the field due to Ex e/Ex i power feed concept
- Installation in zone 1 resp. Class I Div. 2 and zone 22
- Variants for cabinet installation on DIN mounting rail
- Different housing and cable connection variants for installation in the field
- Switchable integrated fieldbus terminator
- Efficient shielding concept due to electrical isolation between the fieldbus trunk and the intrinsically safe outputs

**Function**

In FOUNDATION Fieldbus H1 or PROFIBUS PA topologies for explosion hazardous environments the FieldBarrier combines three essential functions:

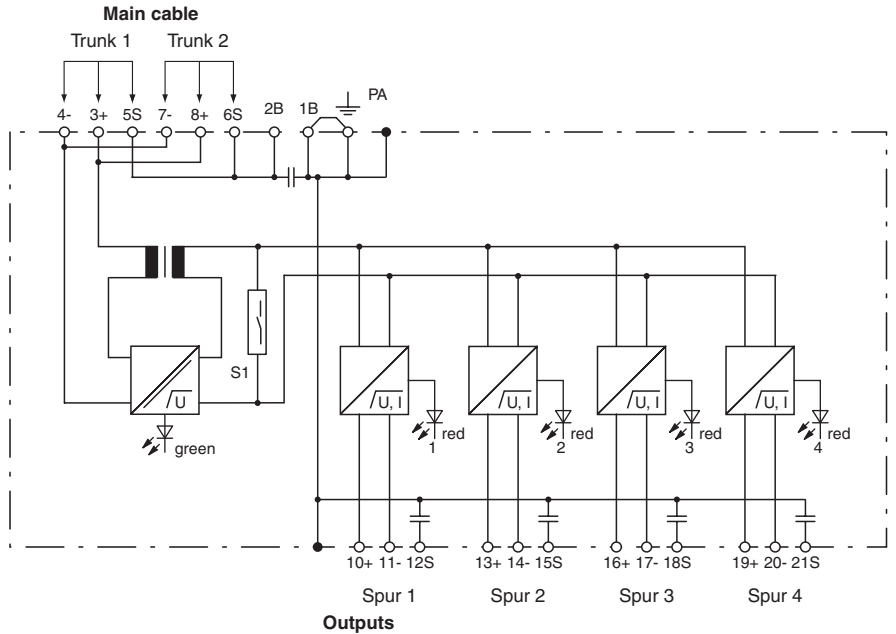
- distribution of the trunk line to up to four branch lines for fieldbus devices
- supply of the connected devices in the explosion protection method "intrinsic safety" (EEx ia IIC)
- protection of the trunk against negative influences due to short circuit current limitation for each branch line

Each output allows the connection of an intrinsically safe field device with a power consumption of up to 40 mA. Each output cable can run up to 120 m without the need for termination.

The trunk connections are designed in protection type "increased safety" (EEx e) and thus allow a high supply current in the fieldbus segment. Several FieldBarriers can be daisy-chained on one trunk. Switchable fieldbus terminators are integrated.

**Connection**

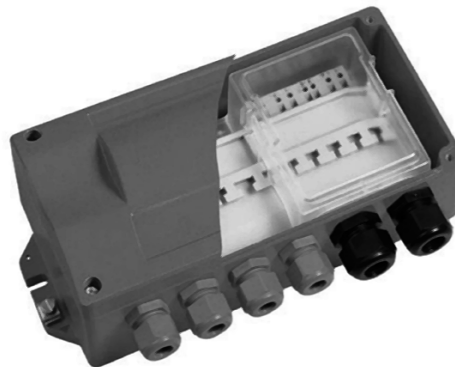
Connections for the non-intrinsically safe fieldbus segment



Connections for intrinsically safe fieldbus devices

S1: Fieldbus terminator, switchable

**Composition**



FieldBarrier F2D0-FB-\* in F2 housing for installation in the field



FieldBarrier RD0-FB-\* for cabinet installation on DIN rail

Release date 2009-02-03 10:38 Date of issue 2009-02-03 T16395\_ENG.xml

<b>Fieldbus interface</b>	
Main cable (Trunk)	
Connection	input (Trunk IN): terminals 3+, 4-, 5s output (Trunk OUT): terminals 7-, 8+, 6s
Rated voltage	32 ... 16 V DC
Rated current	31 mA ... 26 mA (without load) 77 mA ... 115 mA (at 20 mA load per input) 120 mA ... 209 mA (at 40 mA load per input) 135 mA ... 241 mA(short-circuit on all outputs)
Outputs	
Connection	output 1: terminals 10+, 11-, 12S shield; output 2: terminals 13+, 14-, 15S shield; output 3: terminals 16+, 17-, 18S shield; output 4: terminals 19+, 20-, 21S shield
Rated voltage	10 ... 13 V
Rated current	≤ 43 mA
Short-circuit current	≤ 50 mA
Terminating impedance	100 Ω switchable on
<b>Indicators/operating means</b>	
LED voltage Fieldbus	green: on, bus voltage existent
LED state outputs	red flashing: short-circuit
<b>Electrical isolation</b>	
Main wire/outputs	isolation is not affected by interference according to EN 50020, voltage peak value 375 V
<b>Directive conformity</b>	
Electromagnetic compatibility	
Directive 2004/108/EC	EN 61326-1:2006
<b>Standard conformity</b>	
Electromagnetic compatibility	NE 21:2006
Protection degree	IEC/EN 60529
Fieldbus standard	IEC 61158-2
Climatic conditions	DIN IEC 721
<b>Ambient conditions</b>	
Ambient temperature	see table 2
Storage temperature	-40 ... 85 °C (233 ... 358 K)
<b>Mechanical specifications</b>	
Connection type	see table 2
Core cross-section	up to 2.5 mm <sup>2</sup>
Cable diameter	see table 3
Cable gland	see table 2
Housing	see figures 1 and 2
Housing material	
R... DIN rail housing	PA 6.6
F2... aluminium housing	ALSI12 (Cu) DIN1725 (Si 1,2%), anodised
Protection degree	see table 5
Mass	see table 5
Mounting	see table 5
<b>Data for application in conjunction with hazardous areas</b>	
EC-Type Examination Certificate	PTB 02 ATEX 2086
Group, category, type of protection, temperature classification	⊕ II 2(1G/D) G EEx me [ia] IIC T4
Main cable (Trunk)	
Safety maximum voltage $U_m$	253 V AC
Outputs	
Voltage $U_o$	15.75 V
Current $I_o$	248 mA
Power $P_o$	975 mW
Declaration of conformity	
Group, category, type of protection, temperature classification	⊕ II 3 D Ex tD A22 IP54 T135 °C4 (non-conductive dust)
Directive conformity	
Directive 94/9 EC	EN 50014:1997+A1+A2 , EN 61241-0:2007 , EN 61241-1:2007 , EN 50020:1994,EN 50019:2000, EN 50028:1987
<b>International approvals</b>	
FM approval	CoC 3015728
Control drawing	No. 116-0226

Release date 2009-02-03 10:38 Date of issue 2009-02-03 T16395\_ENG.xml

Approved for	Class I, Division 2, Groups A, B, C, D / Class I, Zone 2, AEx nA [ia] IIC T4
CSA approval	CoC 1592754
Control drawing	No. 116-0266
Approved for	Class I, Division 2, Groups A, B, C, D / Class I, Zone 2, Ex nA [ia] IIC T4
IEC-Ex approval	IECEX PTB 03.0003
Approved for	Ex me [ia] IIC T4
<b>Certificates and approvals</b>	
Marine approval	DNV A-10798

Supplementary information

EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed. For information see www.pepperl-fuchs.com.

Type code/order designation

Type of housing

- F2D0** Field housing for FieldBarrier with 4 outputs, aluminium
- RD0** FieldBarrier with 4 outputs without field housing, for mounting in cabinet on DIN rail

Type of device

- FB** FieldBarrier, 4 outputs EEx ia, trunk EEx e

Explosion protection method

- Ex** intrinsically safe outputs EEx ia

Number of outputs

4

Type of cable connection

Fieldbus-independent: variants with field housing and cable glands or without field housing

- FF** Field housing with plug connection for FOUNDATION Fieldbus
- PA** Field housing with plug connection for PROFIBUS PA

Connection of trunk cable

similar to output cable resp. variant without field housing

- CG** Cable gland, plastic, M20
- CGB** Cable gland, nickel plated brass, M20
- CGS** Cable gland, stainless steel, M20
- CGAB** Cable gland for armoured cables, nickel plated brass, M20

Connection of output cable

Variant without field housing

- COM** Variant without field housing, plug-in terminals
- CG** Cable gland, plastic, M16
- CGB** Cable gland, nickel plated brass, M16
- CGS** Cable gland, stainless steel, M16
- CGAB** Cable gland for armoured cables, nickel plated brass, M20
- CG2** Cable gland, plastic, M20
- CGS2** Cable gland, stainless steel, M20
- 7/8S** Plug connection, stainless steel, 7/8"
- M12B** Plug connection, nickel plated brass, M12 x 1
- M12S** Plug connection, stainless steel, M12 x 1

	-	<b>FB</b>	-	<b>Ex</b>	<b>4</b>	.		.		.	
<b>A</b>	-	<b>B</b>	-	<b>C</b>	<b>D</b>	.	<b>E</b>	.	<b>F</b>	.	<b>G</b>

Identification for assignment of the type code to the following tables

Example:

FieldBarrier for cabinet installation on standard DIN rail, 4 intrinsically safe outputs for FOUNDATION Fieldbus H1 and PROFIBUS PA: RD0-FB-Ex4

Example:

FieldBarrier in field housing aluminium, trunk cable connection terminals, glands stainless steel, 4 intrinsically safe outputs, plug connector 7/8" stainless steel, pin assignment for FOUNDATION Fieldbus H1: F2D0-FB-Ex4.FF.CGS.7/8S

**Note: Not all variants are available. For available variants please contact your Pepperl+Fuchs representative.**

Release date 2009-02-03 10:38 Date of issue 2009-02-03 T16395\_ENG.xml

Dimensions

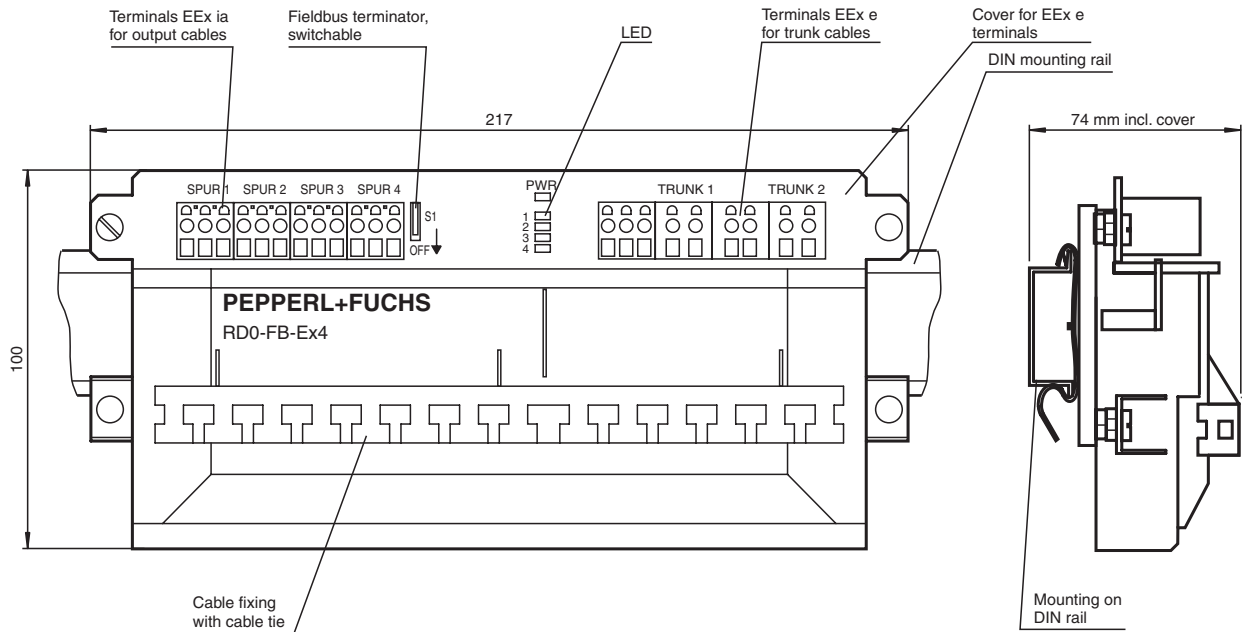


Figure 1: RD0-FB-Ex4 for cabinet installation on DIN rail, terminal connections see table 1

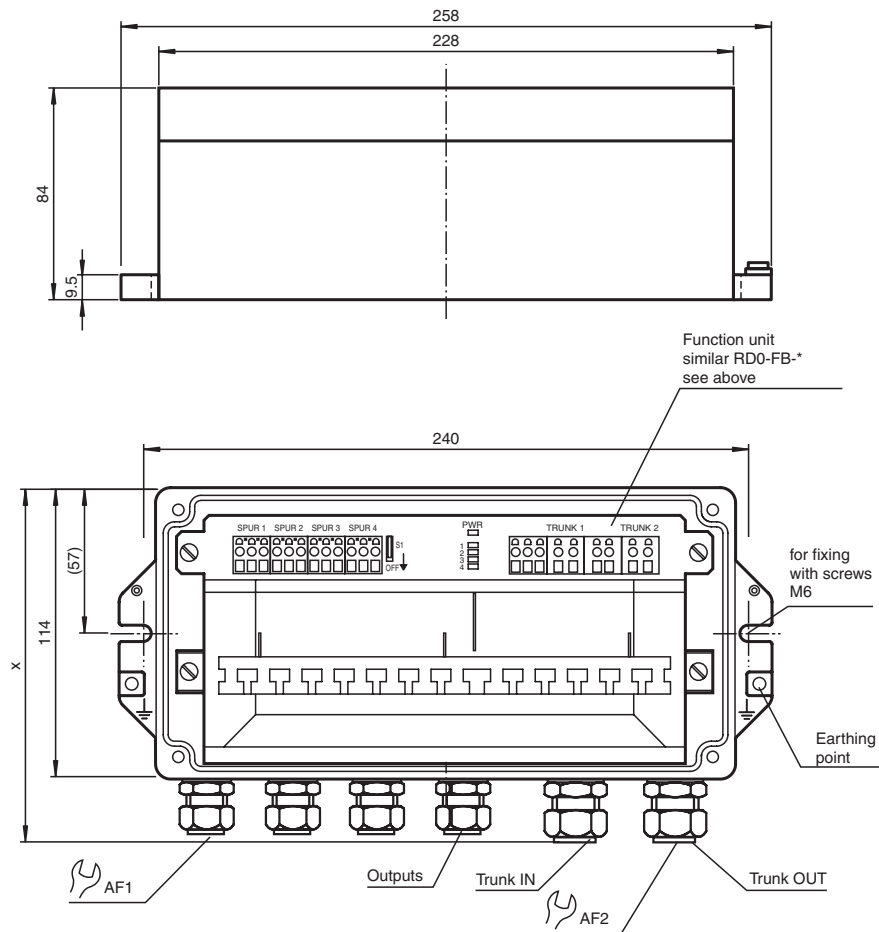


Figure 2: F2D0-FB-Ex4.\* with aluminium housing, connection variants and dimensions see table 2 ... 4

Electrical connection

Table 1: Connection of terminals

Terminals	Function
10+, 13+, 16+, 19+	Spur EEx ia +

Release date 2009-02-03 10:38 Date of issue 2009-02-03 T16395\_ENG.xml

Terminals	Function
11-, 14-, 17-, 20-	Spur EEx ia -
12s, 15s, 18s, 21s	Spur shield
3+	Trunk 1, EEx e +
4-	Trunk 1, EEx e -
5s	Trunk 1, shield
7-	Trunk 2, EEx e -
8+	Trunk 2, EEx e +
6s	Trunk 2, shield
1B	Spur, shield bridge
2B	Trunk, shield bridge
PA	Potential equalization

The terminals 5s and 6s are connected internally with terminal 2B.

The terminals 12s, 15s, 18s and 21s are connected internally with terminal 1B.

The terminal PA is connected to the housing earthing point (versions with field housing only).

Capacitive grounding is delivery standard for the cable shields. By bridging 1B and 2B the trunk shields can be hard grounded.

Variant RD0-FB-Ex4.COM has plug-in output terminals.

Table 2: Variations of cable connections, housing types and temperature ranges

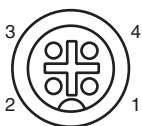
Type of connection, identification F, G	Type of cable connection	F2 housing, outside dimension "X" (mm)	SW1 (mm)	SW2 (mm)	Temperature range (°C)
CG	Terminals, cable glands plastic	140	20	24	-30 ... 70
CGB	Terminals, cable glands nickel plated brass	140	20	24	-40 ... 70
CGS	Terminals, cable glands stainless steel	140	22	24	-40 ... 70
CGAB	Terminals, cable glands nickel plated brass for armoured cable	160	24	24	-40 ... 70
CG2	Terminals, cable glands plastic	140	24	24	-30 ... 70
CGS2	Terminals, cable glands stainless steel	140	24	24	-40 ... 70
M12B	Plug connection M12 x 1, nickel plated brass	135	n.a.	n.a.	-25 ... 70
M12S	Plug connection M12 x 1, stainless steel	135	n.a.	n.a.	-25 ... 70
7/8S	Plug connection 7/8", stainless steel	135	n.a.	n.a.	-40 ... 70
without field housing (RD0-*)	Terminals	n.a.	n.a.	n.a.	-50 ... 70

Table 3: Cable diameter depending on cable gland

Type of connection identification F, G	Output cable diameter (mm)	Trunk cable diameter (mm)
CG	5 ... 10	7 ... 12
CGB	5 ... 10	7 ... 12
CGS	5 ... 10	7 ... 12
CGAB	8.5 ... 16 outside 6 ... 12 inside 0 ... 1.25 armour	8.5 ... 16 outside 6 ... 12 inside 0 ... 1.25 armour
CG2	7 ... 12	7 ... 12
CGS2	7 ... 12	7 ... 12

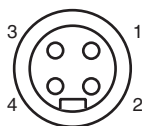
Table 4: Pin assignment of plug connections

Outputs



Plug connection M12 x 1

Outputs



Plug connection 7/8"

Pin	PROFIBUS PA	FOUNDATION Fieldbus
1	PA+	Data-
2	n.c. (GND)	Data+
3	PA-	Shield
4	Shield	n.c. (GND)

Note for connector variants: Outputs are always sockets (female).

## Mechanical data

Table 5: Mechanical specifications

Housing type, identification A	Protection degree	Mass (g)	Mounting
F2D0	IP67	3350	Panel mounting
RD0	IP20	1050	Mounting on DIN rail in cabinet

## Installation note

see manual

## Accessories

Socket M12 x 1:	blind plug	VAZ-V1-B
Socket M20:	blind plug	CG EX PLUG MT 20X
Socket 7/8":	blind plug	V9-R-F-COV

## Spare parts

Electronic spare part for F2D0-FB-Ex4.\* and F6D0-FB-Ex4.\*.  
SPD0-FB-Ex4, without housing, plastic cover and plastic cord