- 4-channel
- Outputs EEx ia IIC
- Device installation in zone 1, zone 2 or zone 22
- Module can be exchanged under voltage in Zone 1 (hot swap)
- Outputs for controlling valves
- Lead breakage (LB) monitoring and short-circuit (SC) monitoring for each field circuit
- EMC acc. to NAMUR NE 21

Function

The RSD-BO-Ex4 supplies power to and switches up to four intrinsically safe valves in the hazardous area.

Each output has the characteristics of a voltage source with 24 V and 267 Ω. The output current is limited to 45 mA.

In the hazardous area, at least 45 mA are available for the valves at a current flow of 12 V.

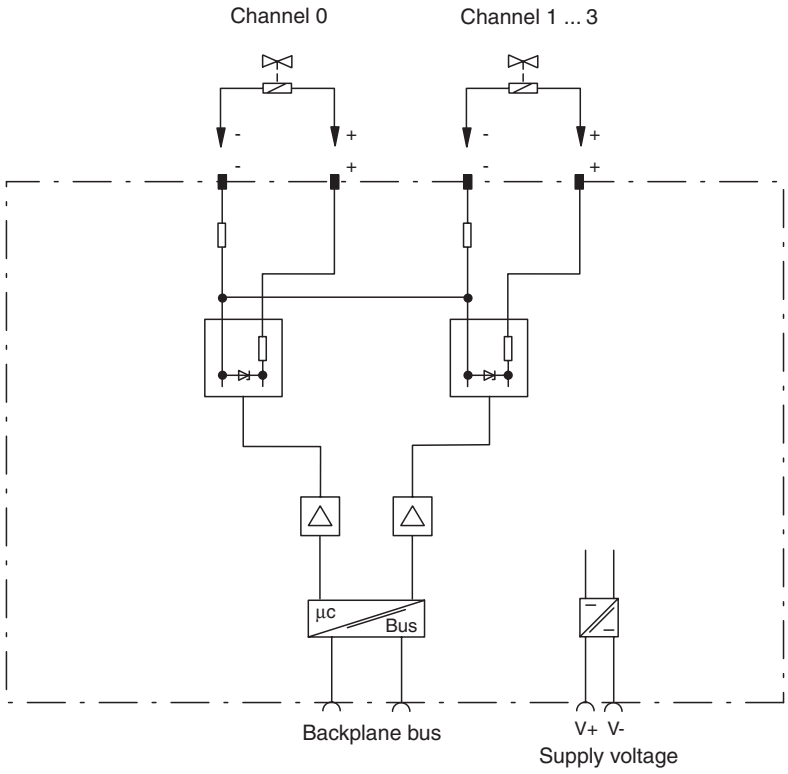
Messages concerning lead breakage or short circuiting of field circuits are transferred via the bus.

The outputs are galvanically isolated from the bus and the supply.

Application

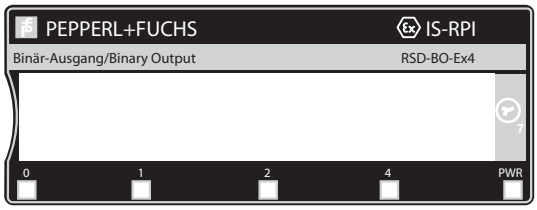
Control/supply for valves, audible alarms, indicators etc. in hazardous area.

Connection



Composition

Front View



LED PWR	green: Power-ON module is operating
LED 0 ... 3	channels 0 ... 3 yellow: output active flashing red: lead breakage/short circuit
LED 0	red: internal fault (module) or Power-ON test

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Supply	
Connection	terminals 34, 50 V+; 35, 51 V-
Rated voltage	8.88 ... 9.5 V
Power loss	5 W
Power consumption	7.5 W
Internal bus	
Connection	backplane bus
Interface	manufacturer specific bus
Cycle time	1.6 ms
Output	
Limit	current I_E: ≥45 mA voltage U_E: 24 V at 0 mA; 12 V at 45 mA
Connection	terminals 0+, 1-; 4+, 5-; 8+, 9-; 12+, 13-
Switching frequency f	10 Hz
Transfer characteristics	
Step response	1.2 ms
Switching frequency	10 Hz
Directive conformity	
Electromagnetic compatibility	
Directive 2004/108/EC	EN 61326-1:2006
Explosion protection	
Directive 94/9/EC	EN 60079-0: 2006, EN 60079-11: 2007, EN 60079-26: 2007, EN 61241-0: 2006, EN 61241-11: 2006
Standard conformity	
Insulation coordination	EN 50178
Electrical isolation	EN 60079-11:2007
Electromagnetic compatibility	NE 21:2006
Protection degree	IEC 60529
Climatic conditions	IEC 60721
Ambient conditions	
Classification	3K3
Ambient temperature	-20 ... 70 °C (253 ... 343 K)
Storage temperature	-20 ... 100 °C (253 ... 373 K)
Relative humidity	95 % non-condensing
Shock resistance	15 g peak, 11 ms period
Vibration resistance	2 g , 10 ... 500 Hz according to IEC 60068-2-6
Damaging gas	acc. to ISA-S71.04-1985, severity level G3
Mechanical specifications	
Connection type	terminals
Core cross-section	≤ 2.5 mm^2
Protection degree	IP20, for in-situ installation a separate housing is required with a minimum of IP54
Mass	approx. 285 g
Mounting	DIN rail mounting
Data for application in conjunction with hazardous areas	
EC-Type Examination Certificate	DMT 98 ATEX E 031 X , for additional certificates see www.pepperl-fuchs.com
Group, category, type of protection	⟨Ex⟩ II (1)2G EEx ia/ib IIB/IIC II (1D)(2D)
Temperature class	T4
Supply	only in connection with the power units RSD2-PSD2-Ex4.34, RSA6-PSD-Ex4.34
Output	
External capacitance C_o	87 nF
External inductance L_o	2 mH
Voltage U_i	27.4 V
Current I_i	Ex ia: 110 mA ; Ex ib: 55.5 mA
Power P_i	753 mW
Internal bus	customer specific
Statement of conformity	
Group, category, type of protection, temperature classification	⟨Ex⟩ II 3D IP54 T 90°C
Electrical isolation	
Internal bus/power supply	safe electrical isolation acc. to EN 60079-11: 2007, voltage peak value 60 V
Output/power supply	safe electrical isolation acc. to EN 60079-11: 2007, voltage peak value 60 V
Output/Internal bus	safe electrical isolation acc. to EN 60079-11: 2007, voltage peak value 60 V
Output/output	no electrical isolation

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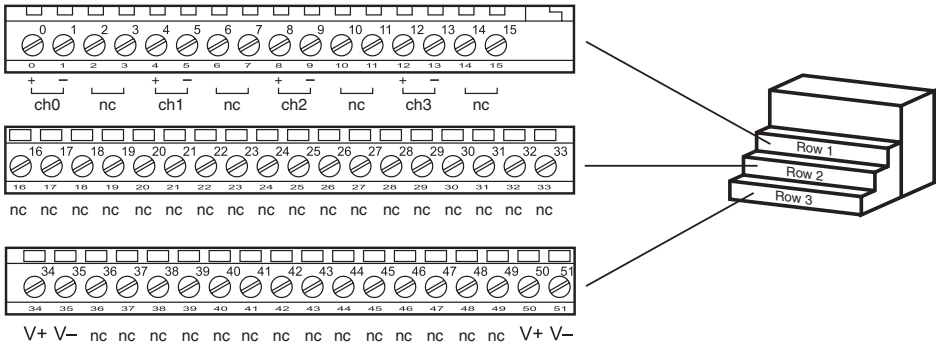
Electrical connection

Terminal base assignment



Supplementary information

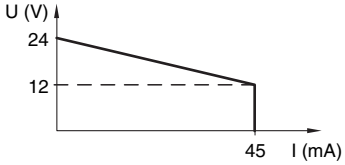
EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed. For information see www.pepperl-fuchs.com.

Notes

- 4 output channels with a common power supply
- Signalling of lead break/short-circuit via the internal bus to the control system and red flashing fault-LEDs for each channel
- Lead break/short-circuit monitoring via the bus is disabled channel by channel
- Electronic short-circuit protection; fault signal via the bus
- Safe status of the outputs can be configured for each channel
- Indication of the switching state via yellow LED
- Connecting terminals of different channels is not permitted
- 1 power supply channel for 1 module
- The outputs have a common supply (minus)
- The module must be powered via the intrinsically safe power supplies RSD2-PSD2-Ex4.34 or RSA6-PSD-Ex4.34

In order to reach the EMC protection class, screened power lines must be used.

Output characteristic



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Supported solenoid valves

Manufacturer	Coil	Valve model
ASCO		6300045
Bürkert	AC10	0590 Exi
Bürkert		6518 Exi
Bürkert		6519 Exi
Bürkert	AC21 [1)]	0450 Exi
Bürkert		5470 Exi
Bürkert		6516 Exi
Bürkert		6517 Exi
Bürkert		8640 Exi
Bürkert	G1642735 [2)]	6104 Exi
Bürkert		6510 Exi
Bürkert		6511 Exi
Bürkert		6524 Exi
Bürkert		6525 Exi
Herion		2001
Herion		2002
Herion		2014
Herion		2034-2038
Hörbiger		P8 381-RF-C
Honeywell	295 Ohm	
Honeywell	23 Ohm	
Honeywell	340 Ohm	
KV Autom		KVE 131
Maxeal	Coil IC02	
Nass Magnet	Coil 1259, 1439	
Parker Lucifer		492335
Parker Lucifer		492560
Parker Lucifer		492565.01
Parker Lucifer		492560.01
Parker Lucifer		492570.01
Parker Lucifer		492580.01
Parker Lucifer		490885
Parker Lucifer		490890
RGS	Coil EP100/ia	
Samson		3766-1.3 (ia IIC)
Samson		3766-1.4 (ia IIC)
Samson		3963-12
Samson		3963-17
Seitz	11 G52	
Telektron	Coil L (12 ... 14)	

[1)] Limited input range (temperature class, mounting) in accordance with Bürkert Part. No. Ex-95.D2.2160
[2)] Limited input range (ambient temperature class, mounting) in accordance with Bürkert Part. No. Ex-95.D2.2159

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