



- 8-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 position controllers, I/P converters and valves
- Transmission of HART signals into the hazardous area
- Lead breakage (LB) monitoring and short-circuit (SC) monitoring for each field circuit
- EMC acc. to NAMUR NE 21

Function

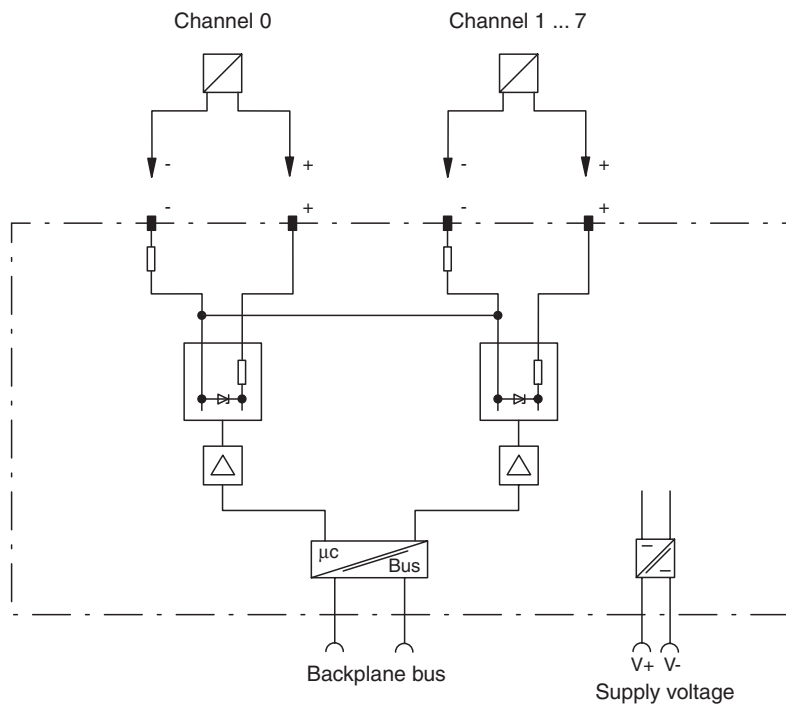
In the analogue mode the RSD-UO-Ex8.H transfers up to eight 0/4 mA ... 20 mA signals to the hazardous area. Loads in a range of 0 Ω ... 750 Ω can be connected. The device allows for monitoring and programming of positioners which support the HART protocol. In the binary mode each output has the characteristics of a voltage source with 20.5 V, 250 Ω. The output current is limited to 22 mA. At a current of 20 mA at least 15.5 V are available to the field devices in the hazardous area.

The outputs are galvanically isolated from the bus and the supply. Messages concerning lead breakage or short-circuiting of field circuits are transferred via the bus. The integrated HART multiplexer allows a bidirectional HART communication and is transparent for HART commands of the revisions 3, 4 and 5. Additional HART multiplexer commands such as setting up loops (REBUILD) and cyclic loop status monitoring (LOOP STATUS) are supported. By means of the HART readback function the analogue value of the module is compared with the digital process variable (PV) of the field device. In case of a deviation a status information is given.

Note

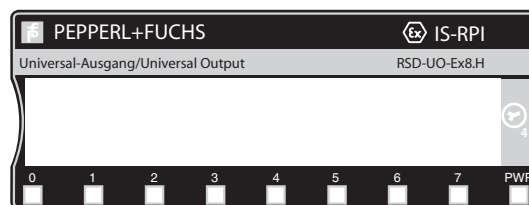
The RSD-UO-Ex8.H can exclusively be operated using the PROFIBUS gateways RSD-GW2-Ex1.PA:** and RSD-GW3-Ex2.DPE.**.

Connection



Composition

Front View



- LED PWR green: Power-ON
module is operating
flashing green: Power-ON
no connection to internal bus
- LED 0 ... 7 flashing red: lead breakage or short circuit
yellow: HART indicator or switching state of binary output
- LED 0 red: internal fault (module) or Power-ON test

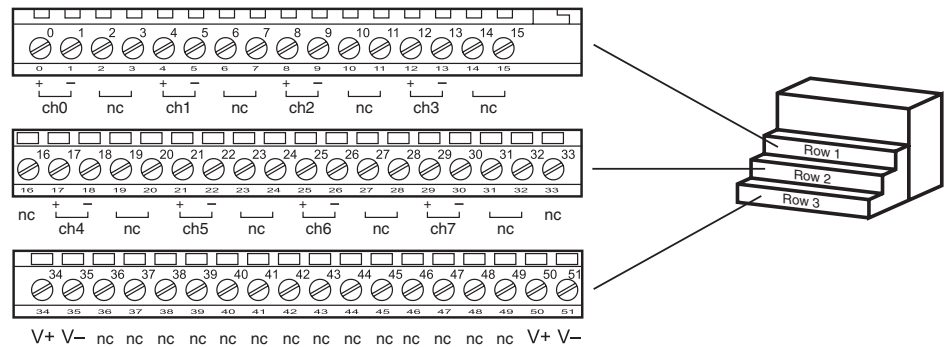
Supply	
Connection	terminals 34, 50 V+; 35, 51 V-
Rated voltage	8.88 ... 9.5 V
Power loss	6 W
Power consumption	8.5 W
Internal bus	
Connection	backplane bus
Interface	manufacturer specific bus
Cycle time	1.6 ms
Output	
Connection	terminals 0+, 1-; 4+, 5-; 8+, 9-; 12+, 13-; 17+, 18-; 21+, 22-; 25+, 26-; 29+, 30-
Analog mode	
Current	0 ... 22 mA
Load	0 ... 750 Ω
Lead monitoring	breakage: 2 mA , short-circuit load < 35 Ω
Binary mode	
Lead monitoring	breakage: 500 μA , short-circuit load < 35 Ω
Transfer characteristics	
Resolution	13 Bit
Step response	HART mode 115 ms (0 ... 99 % of the output signal) standard mode 18 ms (0 ... 99 % of the output signal)
Deviation	0,1 % of output signal range at 25 °C (298 K)
Influence of ambient temperature	0.008 %/K from output signal range
Switching frequency	15 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
Protection degree	IEC 60529
Climatic conditions	IEC 60721
Ambient conditions	
Classification	3K3
Ambient temperature	-20 ... 70 °C (-4 ... 158 °F)
Storage temperature	-20 ... 100 °C (-4 ... 212 °F)
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 on-site installation a separate housing is required with a minimum of IP54
Mass	approx. 270 g
Mounting	DIN rail mounting
Data for application in connection with Ex-areas	
EC-Type Examination Certificate	
Group, category, type of protection	DMT 00 ATEX E 040 X , for additional certificates see www.pepperl-fuchs.com ⊕ 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	164 nF
External inductance L _o	3.5 mH
Voltage U _i	21.6 V
Current I _i	92 mA
Power P _i	0.5 W
Internal bus	customer specific

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Statement of conformity	
Group, category, type of protection, temperature class	Ex II 3D IP54 T 90°C
Electrical isolation	
Input/input	no electrical isolation
Input/power supply	safe electrical isolation acc. to EN 60079-11: 2007, voltage peak value 60 V
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

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.

Application

- Control of intrinsically safe solenoid valves in the hazardous area
- Control of intrinsically safe HART position controllers in the hazardous area
- The RSD-UO-Ex8.H allows a bidirectional communication with a HART position controller

Notes

- Signalling of lead breakage/short-circuit via the internal bus to the control system and red flashing fault-LEDs for each channel
- Lead breakage/short-circuit monitoring via the bus is disabled channel per channel
- 1 power supply channel for 1 module
- The outputs have a common supply (minus)
- The module has to be powered via the intrinsically safe power supplies RSD2-PSD2-Ex4.34 or RSA6-PSD-Ex4.34

Analogue mode

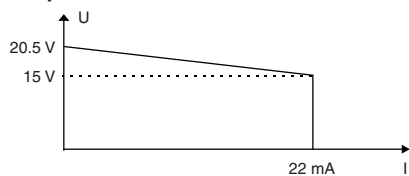
- Rated supply current range 4 mA ... 20 mA
- Total supply current range 0 mA ... 22 mA
- Safe status of the outputs can be configured for each channel
- Load 0 Ω ... 750 Ω

Binary mode

- Indication of the switching state via yellow LED
- Safe status of the outputs can be configured for each channel

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Output characteristic



Supported solenoid valves

Manufacturer	Coil	Valve model
Samsomatic		3701-42
Samsomatic		3776-1..1
Samsomatic		3776-1..2
Samsomatic		3963-11,12
Samson		3766-1.2, -1.3
Samson		3767-1.2, -1.3
Samson		3963-17
Seitz		PV 12F73
Telektron	Coil L (12 ... 14)	