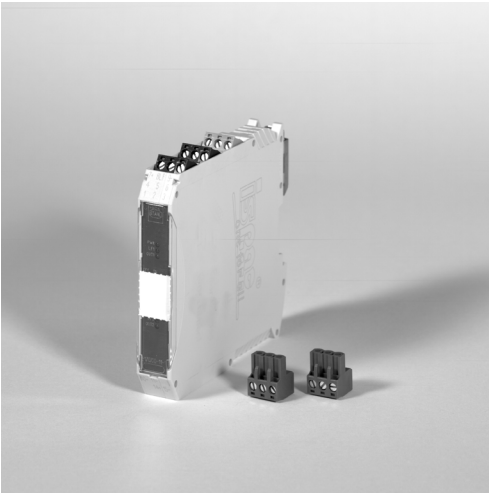


**VS 403 Ex i**

**Isolated switching amplifier**

en 2019/08/12 50111302-04



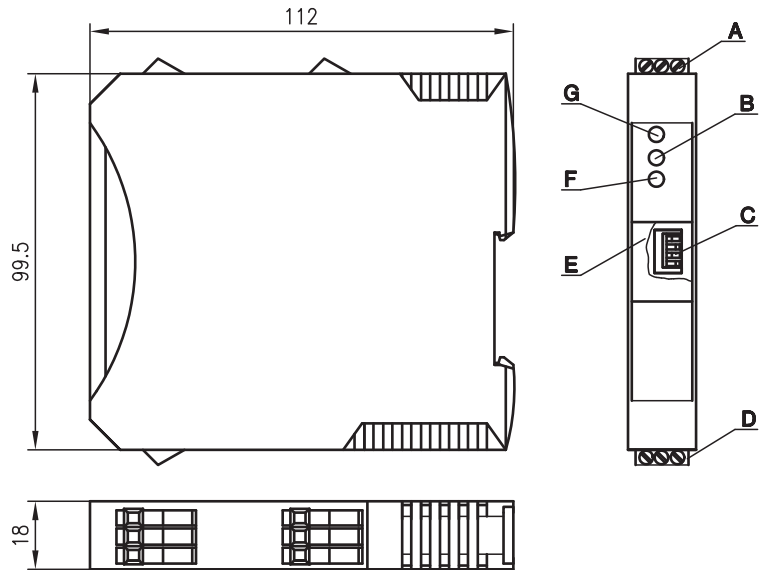
- Intrinsically safe input [ja Ga] IIC
- Input, output and operating voltage are galvanically isolated
- Wire break monitoring (can be deactivated)
- Operating modes adjustable
- Switching output with signal relay or transistor (NPN)
- 1 channel
- Top hat rail mounting
- Europe (ATEX): Gas and dust DMT 02 ATEX E 195 X
- $\text{Ex II 3 (1) G Ex nA nC [ja Ga] IIC T4 Gc}$
- $\text{Ex II (1) D [Ex ia Da] IIIC}$
- Functional safety (IEC 61508)  
Test report: Exida STAHL 09/03-52 R019  
max. SIL: 2



**Accessories:**

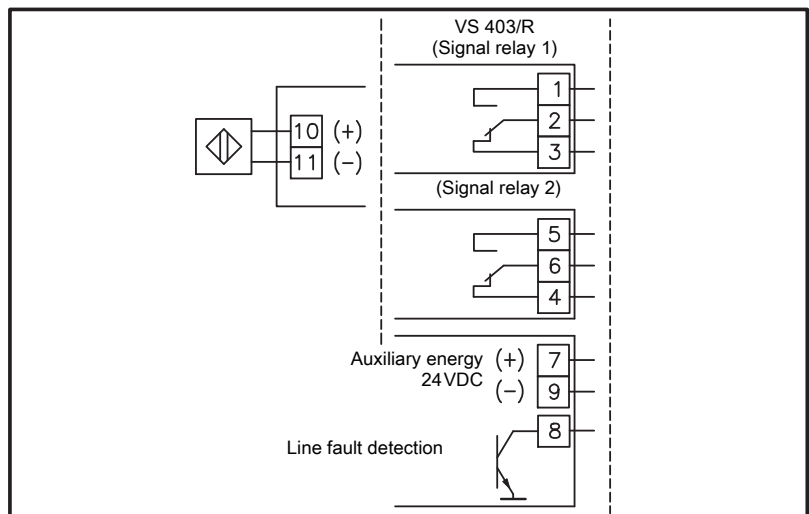
- Blue connection cable for intrinsically safe circuits (BK7 ... Ex)

**Dimensioned drawing**



- A** Connection terminals: operating voltage and switching output
- B** Wire break LF 1
- C** Switch for setting the operating modes
- D** Connection terminals: intrinsically safe input Exi (blue)
- E** Description field
- F** Switching state OUT 1
- G** Auxiliary energy available PWR

**Electrical connection**



**Settings**

To change the operating mode, open the transparent front flap and make the desired setting on the DIP switch.

Switch in left position (OFF): function OFF

Switch in right position (ON): function ON

OFF	ON	Line fault detection ON/OFF
<input type="checkbox"/>	<input type="checkbox"/>	Normal/inverted direction of action (corresponds to light/dark switching of the sensor signal)
<input type="checkbox"/>	<input type="checkbox"/>	Switch has no function
<input type="checkbox"/>	<input type="checkbox"/>	Switch has no function

Normal direction of action -switch to left (OFF)- corresponds to figure for electrical connection. On delivery, both switches are in the OFF position (function off).

We reserve the right to make changes • PAL\_VS403NR\_EXi\_en\_50111302\_04\_fm

**Technical data**

**Electrical data**

Operating voltage	18 ... 31.2VDC
Residual ripple	≤ 3.6V <sub>SS</sub>
Power consumption	≤ 0.8W

**Ex i input**

Acc. to IEC 60 947-5-6 (NAMUR)	
Current I <sub>E</sub> for ON	≥ 2.1mA
Current I <sub>E</sub> for OFF	≤ 1.2mA
Open-circuit voltage	≤ 8.2V
Short-circuit current	≤ 8.2mA
Internal resistance	1000Ω

**Output**

	<b>VS 403/R</b>
Minimum load	1V/100μA
Maximum load DC	125V/1A
Maximum load AC	125V/1A
Maximum switching power	25W/50VA
Able to withstand overload currents	-

**Time behavior**

Switching frequency (max.)	15Hz
Switching delay ON → OFF	5ms
Switching delay OFF → ON	5ms

**Indicators**

LED 1 green PWR	Auxiliary energy available
LED 2 red LF 1	Wire break
LED 3 yellow OUT 1	Switching output ON

**Mechanical data**

Housing	Plastic (polyamide 6.6)
Fire resistance housing	VO (UL standard 94)
Weight	180g
Mounting type	In zone 2, division 2 and in safe area On DIN rail

**Environmental data**

Ambient temp. (operation/storage)	-20°C ... +70°C/-40°C ... +80°C
Degree of protection housing	IP 30
Degree of protection terminals	IP 20
Electromagnetic compatibility	IEC 60 947-5-6, NAMUR NE 21

**Safety-related data**

Certification (ATEX)	 II 3 (1) G Ex nA nC [ia Ga] IIC T4 Gc
	 II (1) D [Ex ia Da] IIIC

**Inputs (individual channels)**

Max. voltage U <sub>0</sub>	9.6 V
Max. current I <sub>0</sub>	10 mA
Max. power P <sub>0</sub>	24 mW
Max. connectable capacitance C <sub>0</sub>	IIC 3.6μF
	IIB 26μF
Max. connectable inductance L <sub>0</sub>	IIC 350mH
	IIB 1000mH
Inner capacitance C <sub>i</sub>	2.42 nF
Inner inductance L <sub>i</sub>	Negligible
Maximum safe voltage	253 V

**Error detection input**



Wire break	I <sub>E</sub> < 0.05 ... 0.35mA
Short-circuit	R <sub>E</sub> < 100 ... 360Ω
Line fault display	Red LED
Line fault and auxiliary power failure message	NPN transistor, open collector, max. load 30V/100mA, switches to ground in the case of a fault; pac-bus: potential-free contact

**Tables**

**Diagrams**

**Notes**

**Observe intended use!**

-  The product may only be put into operation by competent persons.
-  Only use the product in accordance with its intended use.

- When connecting sensor and isolated switching amplifier, make sure not to exceed the permissible limit values for intrinsic safety.
- Line fault and auxiliary power failure message. In the case of a fault, the auxiliary contact (30V/100mA) is switched to ground.

**Order guide**

Designation	Part no.
VS 403/R	50040826