

# TV228 Buffer Amplifier for HART Positioner



The Buffer Amplifier TV228 separates intrinsically safe and non intrinsically safe circuits. It supplies galvanically isolated intelligent or conventional positioners. Connection to hand terminal or to personal computer can be made at every location in the signal loop. The bidirectional communication between a digital control system, a hand terminal or a PC is possible.

- Bidirectional communication with intelligent positioners (e.g. SRD991 by FOXBORO ECKARDT)
- Full support of HART protocol (also suited for FOXCOSM 4 to 20 mA)
- No external communication resistor required
- Versions in nest mounting and rail mounting
- 1 or 2 channel version with nest mounting
- Intrinsically safe [EEx ia] (of output)
- Output 4 to 20 mA
- Little natural energy consumption
- Concept of intrinsic safety includes linkage of operating device
- Galvanic isolation between all circuits
- Sockets for hand terminal or PC on the front
- EMC in accordance with the latest NAMUR-recommendations and international standards and laws

**Input**

Signal range . . . . . 4 to 20 mA  
 Voltage drop at input . . . . . < 2 V

**Output**

Analog output I<sub>A</sub> . . . . . 4 to 20 mA  
 Permissible load. . . . . 0 to 700 Ω  
 Nominal load for  
 HART communication . . . . . 250 Ω  
 Nominal load for  
 FOXCOSM communication  
 (only with 4 ... 20 mA). . . . . 500 Ω  
 Output current  
 limitation . . . . . < 50 mA  
 Residual ripple . . . . . < 1 % (amplitude)  
 Sockets for  
 communication. . . . . Ø 2 mm, at front plate

**Transmission characteristic**

Output to input . . . . . 1:1  
 Extended range . . . . . approx. 10 %  
 Load effect. . . . . < 0.1 %  
 Characteristic. . . . . linear  
 Deviation . . . . . < 0.15 %  
 Step response  
 (as per IEC 770). . . . . < 50 ms  
 Bandwidth for  
 Communication . . . . . 500 Hz to 10 kHz  
 Temperature effect  
 (0 to 60 °C) . . . . . 0.15 %/10K  
 Effect of  
 power supply tolerance . . . . . < 0.1 %  
 Galvanic isolation. . . . . between all circuits

**Power supply**

DC voltage. . . . . DC 24V, SELV, +30 %, -25 %  
 Permissible residual ripple . . . . . < 15 % (within tolerance band)  
 Power consumption . . . . . < 1.5 W  
 Start up current . . . . . < 15 x I<sub>nom</sub>

*For complete specification, refer to Product Specification Sheet PSS EII0222 A-(en)*

**Model Codes**

<b>Ex-Isolating Driver</b>	TV228		
<b>Version</b>			
Nest-Mounted Module, 2 Channels . . . . .		-M	
Nest-Mounted Module, 1 Channel . . . . .		-N	
Rail-Mounted Module, 1 Channel . . . . .		-S	
<b>Electrical Classification</b>			
ATEX [EEx ia] IIC/ FM intrinsically safe . . . . .		EGX	
for general purpose areas . . . . .		ZZZ	
<b>Options</b>			
spring terminals (only version -S). . . . .			-K

Auxiliaries for Nest Mounting see EIO9219