

posiwire<sup>®</sup>

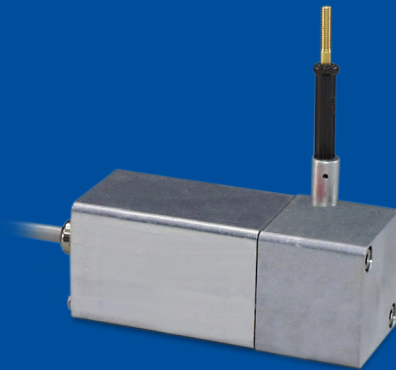
## Cable Extension Position Sensors, explosion protected



**WS10EX**



Displacement sensor with  
measurement length up to 1,250 mm,  
explosion protected (dust-EX)



- Protection class IP65
- Aluminum housing
- With explosion protection  
 II 3D Ex tc III C T80°C Dc X

### Product versions




Analog output (dust-EX-proof)



WS10EX - Cable Extension Position Sensor  
Version with analog output (dust-EX-proof)

Specifications

		Order options	
Measurement range	100 / 125 / 375 / 500 / 750 / 1000 / 1250 mm	<b>1</b>	100 / 125 / 375 / 500 / 750 / 1000 / 1250
Resolution	Quasi infinite		
Output	Potentiometer 1 kΩ Voltage 0 ... 10 V Current 4 ... 20 mA, 2 wire Current 4 ... 20 mA, 3 wire Excitation voltage WS-EX sensors: 24 V DC typical	<b>2</b>	R1K 10V 420A 420T
Linearity	±0.10% f.s. (standard) ±0.05% f.s. (optional)	<b>3</b>	L10 L05
Sensing device	Precision potentiometer		
Material	Aluminum measuring cable: stainless steel		
Protection class	Housing: IP65 Dust-EX-proof:  II 3D Ex tc IIIC T80°C Dc X (X = examined with low impact energy of 4 J)		
Cable fixing	M4 cable fixing Cable clip	<b>4</b>	M4 SB0
Connection	Cable output, standard length 2 m	<b>5</b>	
Temperature range	-20°C ... +40°C		
Weight	approx. 600 g		
<b>Standards</b>			
Dust-EX-proof	DIN EN 60079-0 (June 2014) DIN EN 60079-31 (December 2014)		
Shock	DIN EN 60068-2-27:2010, 50 g 11 ms, 100 shocks		
Vibration	DIN EN 60068-2-6:2008, 20 g 10 Hz-2 kHz, 10 cycles		
EMC	DIN EN 61326-1:2013		

Order code

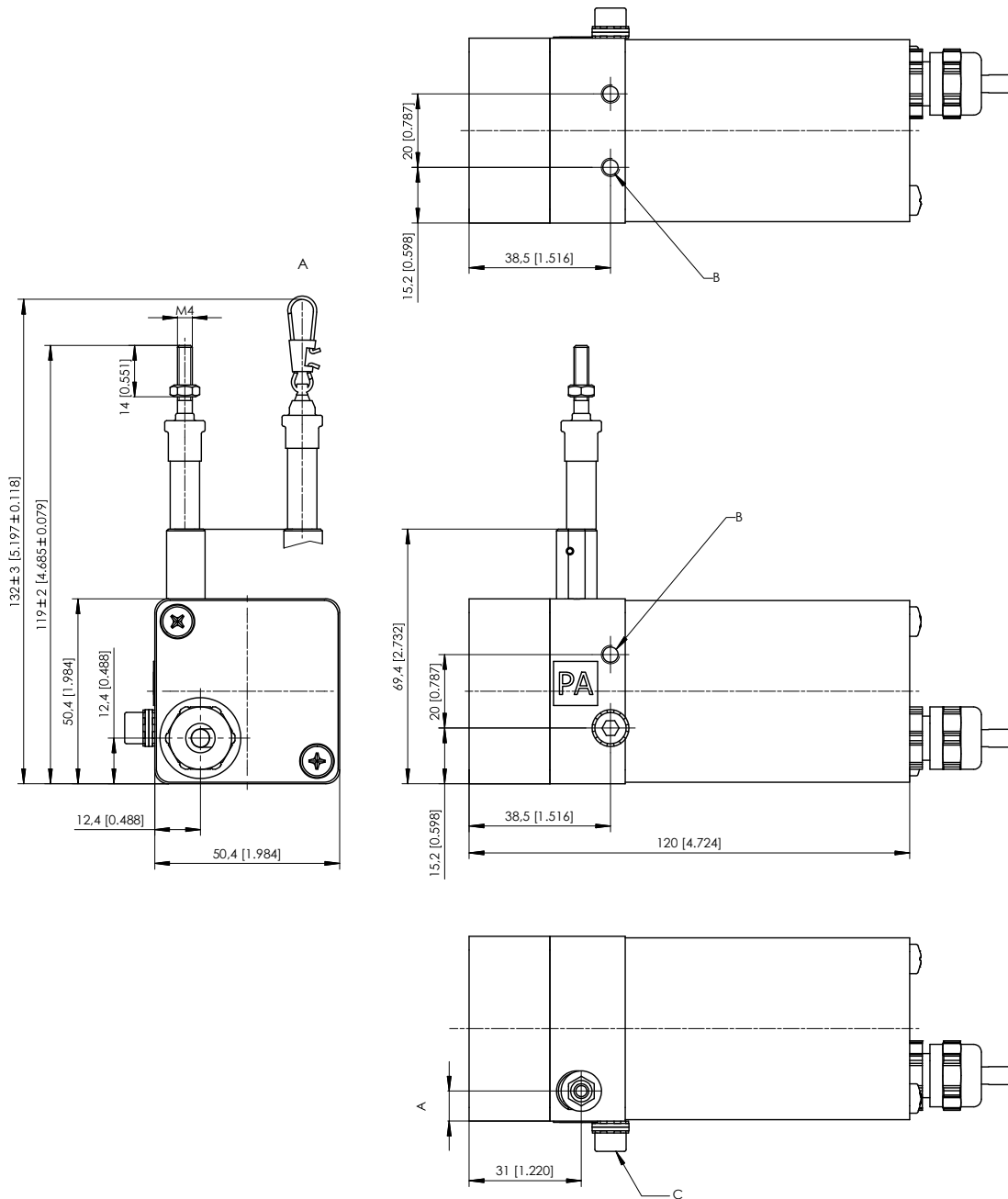
WS10EX – **1** – **2** – **3** – **4** – **5**

Order example: WS10EX – 1250 – 10V – L10 – M4 – KAB2M

Cable forces typical at = 20 °C	Measurement range	Maximum pull-out force	Minimum pull-in force
	[mm]	[N]	[N]
	100	4.7	3.0
	125	4.6	2.4
	375	7.4	3.9
	500	5.5	2.8
	750	7.6	3.8
	1000	5.3	2.9
	1250	4.6	2.4

## Dimensions

Measurement range 100 ... 1250 mm, analog output, Dust-Explosion-Proof



Dimensions in mm	Measurement range	A
	375; 750	12.7
	100; 125; 500; 1000; 1250	8.2


- A – Option SB0
- B – M5 - 8 [.315] deep
- C – Connection for potential equalization

Dimensions in mm [inch]  
Dimensions informative only.  
For guaranteed dimensions consult factory.

## Output specifications

### Analog outputs

#### Voltage divider

<b>R1K</b> Potentiometer 	Excitation voltage	24 V DC (32 V DC max. at 1 kΩ, max. power 1 W)
	Potentiometer impedance	1 kΩ ±10 %
	Thermal coefficient	±25 x 10 <sup>-6</sup> / °C f.s.
	Sensitivity	Depends on the measuring range, individual sensitivity of the sensor is specified on the label
	Voltage divider utilization range	approx. 3 % ... approx. 97 %
	Operating temperature	Refer to output specification
	EMC	DIN EN 61326-1:2013

#### NOTICE


#### The metal wiper of the potentiometer must be protected against current load

- Electrical current flow impact on the wiper causes linearity errors and shortens the lifetime of the potentiometer.

Additional information:


[https://www.asm-sensor.com/en/downloads.html?file=files/asmTheme/pdf/ws\\_poti\\_technote\\_en.pdf](https://www.asm-sensor.com/en/downloads.html?file=files/asmTheme/pdf/ws_poti_technote_en.pdf)

Signal wiring	Output signals	Cable color
	Poti +	white
	Poti GND	brown
	Poti slider	green
	Not connected	yellow
	Not connected	grey
	Not connected	pink
	Not connected	blue
	Not connected	red


<b>10V</b> Voltage output	Excitation voltage	24 V DC non stabilized (18 ... 27 V DC)
	Excitation current	20 mA max.
	Output voltage	0 ... 10 V DC
	Output current	2 mA max.
	Output load	> 5 kΩ
	Stability (temperature)	$\pm 50 \times 10^{-6} / ^\circ\text{C f.s.}$
	Protection	Reverse polarity, short circuit
	Output noise	0.5 mV <sub>RMS</sub>
	Operating temperature	Refer to output specification
	EMC	DIN EN 61326-1:2013

Signal wiring	Output signals	Cable color
	Excitation +	white
	Excitation GND*	brown
	Signal +	
	Signal GND*	yellow
	Not connected	grey
	Not connected	pink
	Not connected	blue
	Not connected	red

\*: internally connected

<b>420A</b> Current output (2 wire) 	Excitation voltage	24 V DC non stabilized (12 ... 27 V DC), measured at the sensor terminals
	Excitation current	35 mA max.
	Output current	4 ... 20 mA equivalent for 0 ... 100 % range
	Stability (temperature)	$\pm 100 \times 10^{-6}$ / °C f.s.
	Protection	Reversed polarity, short circuit
	Output noise	0.5 mV <sub>RMS</sub>
	Operating temperature	Refer to output specification
	EMC	DIN EN 61326-1:2013

Signal wiring	Signal	Cable color
	Signal +	white
	Signal -	brown
	Not connected	green
	Not connected	yellow
	Not connected	grey
	Not connected	pink
	Not connected	blue
	Not connected	red

<b>420T</b> Current output (3 wire) 	Excitation voltage	24 V DC non stabilized (18 ... 27 V DC)
	Excitation current	40 mA max.
	Load resistor	350 Ω max.
	Output current	4 ... 20 mA equivalent for 0 ... 100 % range
	Stability (temperature)	$\pm 50 \times 10^{-6} / ^\circ\text{C}$ f.s.
	Protection	Reverse polarity, short circuit
	Output noise	0.5 mV <sub>RMS</sub>
	Operating temperature	Refer to output specification
	EMC	DIN EN 61326-1:2013

Signal wiring	Output signals	Cable color
	Excitation +	white
	Excitation GND	brown
	Signal +	green
	Not connected	yellow
	Not connected	grey
	Not connected	pink
	Not connected	blue
	Not connected	red