posiwire®
Cable Extension Position Sensors

WS42C

Displacement sensor with measurement length up to 1,000 mm

- **Protection class IP50**
- **High-performance POM housing**
- **With precision potentiometer**

Product versions

V / mA **Analog output**

V / mA

WS42C - Cable Extension Position Sensor
Version with analog output

Specifications

			Order options
Measurement range	750 / 1000 mm	1	**750 / 1000**
Resolution	Analog: quasi infinite		
Output	Potentiometer 1 kΩ Voltage 0.5 ... 10 V Current 4 ... 20 mA, 2 wire	2	**R1K** **10V5** **420A**
Linearity	±0.35% f.s., other values on request	3	**L35**
Mounting	Mounting brackets Spacer nuts	4	**1** **2**
Sensing device	Precision potentiometer		
Material	POM measuring cable: stainless steel		
Protection class	IP50		
Connection	Cable output, standard length 2 m Connector M8, 4-pin (only for output R1K)	5	**KAB2M** **M8**
Temperature range	-15 ... +60 °C, max. 85 % RH, non condensing		
Weight	Approx. 175 g		
Pull-out force	750 mm: 2.5 N 1000 mm: 1.7 N		
EMC	DIN EN 61326-1:2013		

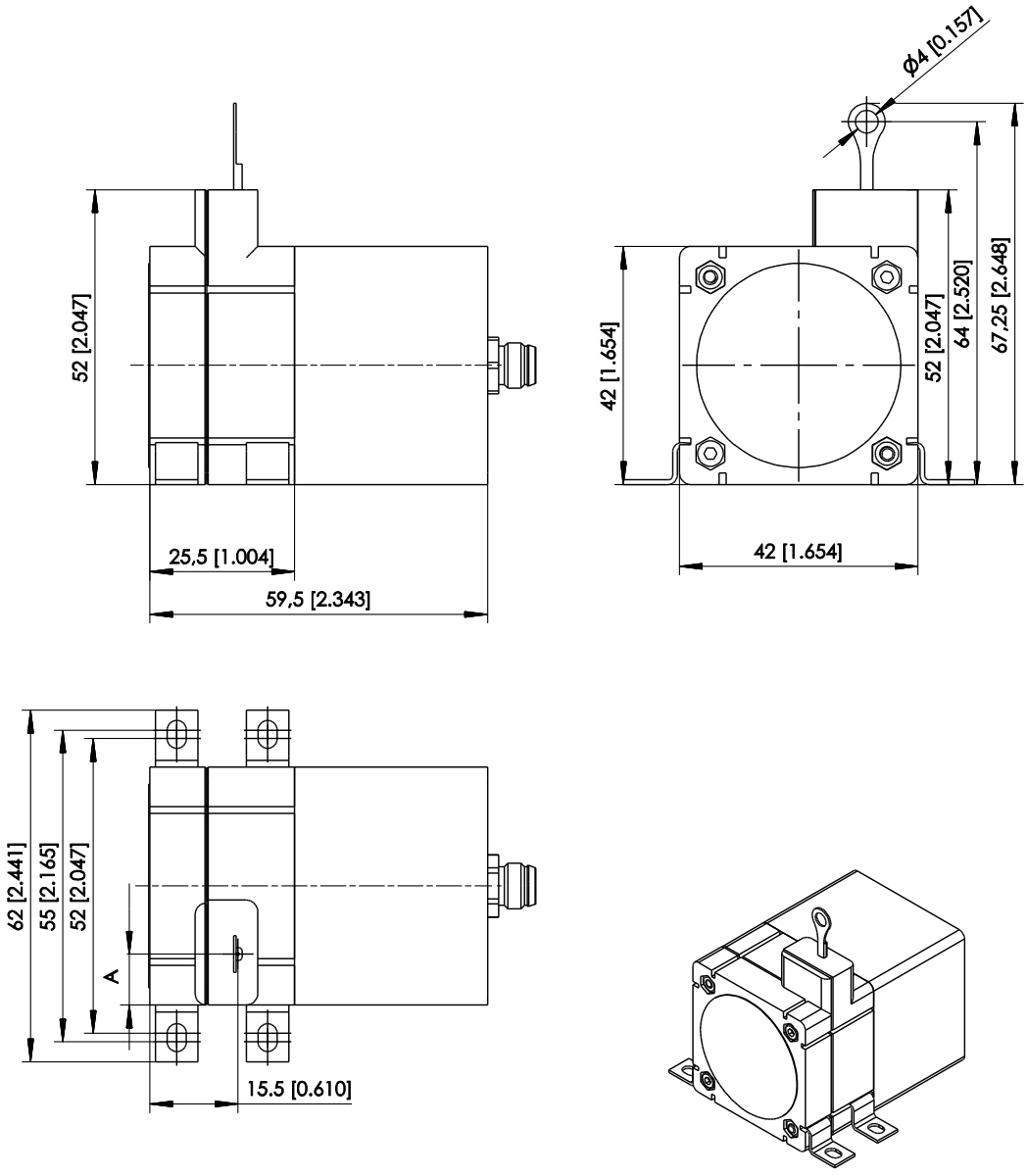
Order code

WS42C – 1 – 2 – 3 – 4 – 5

Order example: WS42C – 750 – 420A – L35 – 1 – KAB2M

Dimensions

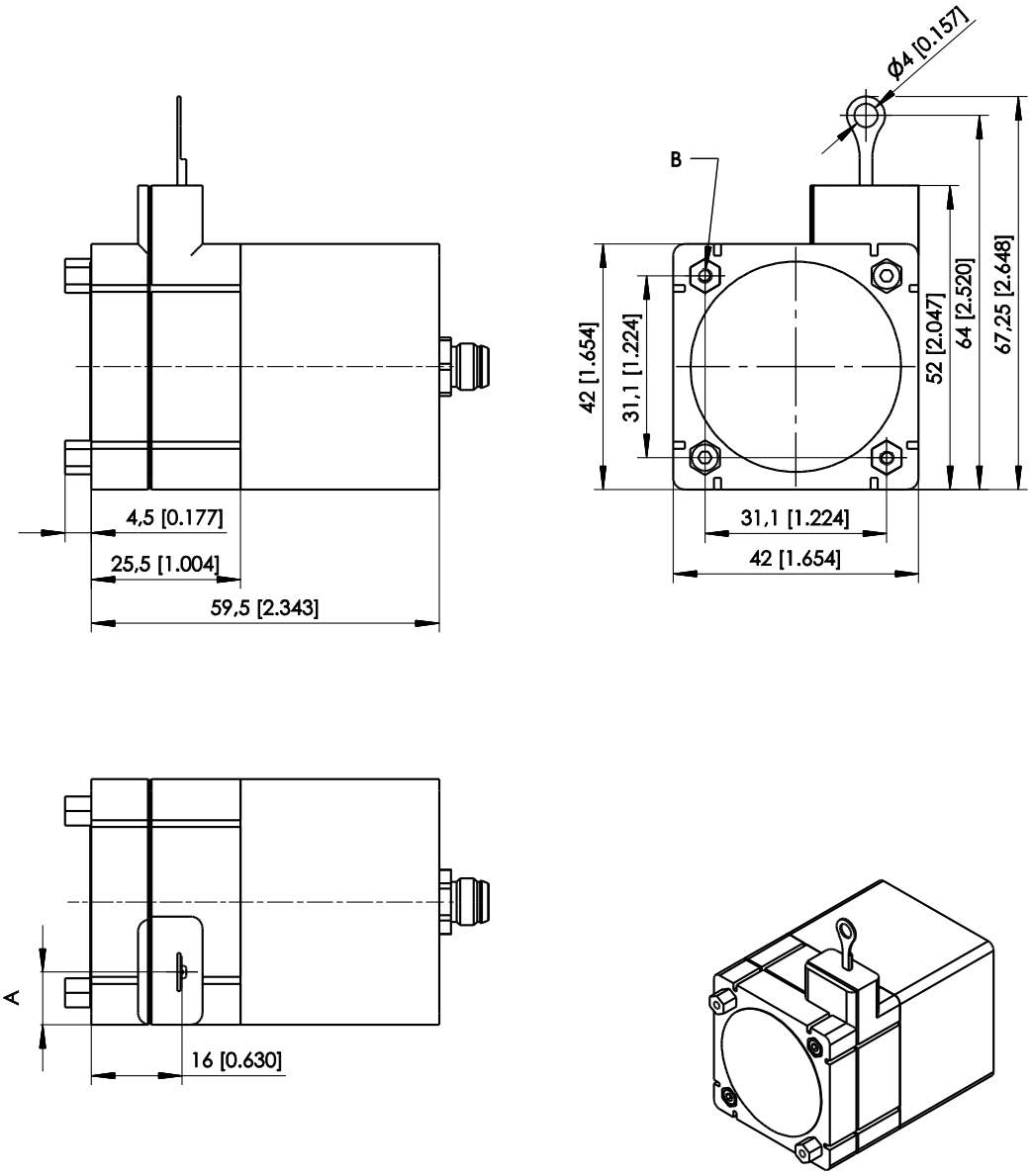
Measurement range 750 … 1000 mm, R1K, 10V5, 420A, mounting brackets



Dimensions in mm	Measurement range	A
	750	9
	1000	3.3

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

Measurement range 750 … 1000 mm, R1K, 10V5, 420A, spacer nuts



Dimensions in mm	Measurement range	A
	750	9
	1000	3.3

B – 2 x M2,5 – 4,5 [.177] deep

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

Output specifications
Analog outputs
Voltage divider

R1K Potentiometer 	Excitation voltage	32 V DC max. at 1 kΩ (max. power 1 W)
	Potentiometer impedance	1 kΩ ±10 %
	Thermal coefficient	±25 x 10^{-6} / °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 potentiometer must be connected as a voltage divider!

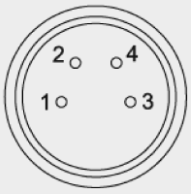
The following processing circuit has to be implemented according to the circuit scheme in the Appendix (see „Output information“)!

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

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

Additional information:
https://www.asm-sensor.com/en/downloads.html?file=files/asmTheme/pdf/ws_poti_technote_en.pdf

Signal wiring
Connector M8, 4 pin



View to sensor connector

Signal	Connector pin no.	Cable color
Poti +	1	white
Poti GND	2	brown
Poti slider	3	green
-	4	-

10V5 Voltage output 	Excitation voltage	18 ... 27 V DC non stabilized
	Excitation current	20 mA max.
	Output voltage	0.5 ... 10 V DC
	Output current	2 mA max.
	Output load	> 5 kΩ
	Stability (temperature)	±50 x 10^{-6} / °C f.s.
	Protection	Reverse polarity, short circuit
	Output noise	0.5 mV_{RMS}
	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
	Signal GND*	yellow

420A Current output (2 wire) 	Excitation voltage	18 ... 27 V DC non stabilized, measured at the sensor terminals
	Excitation current	35 mA max.
	Output current	4 ... 20 mA equivalent for 0 ... 100 % range
	Stability (temperature)	±100 x 10^{-6} / °C f.s.
	Protection	Reversed polarity, short circuit
	Output noise	0.5 mV_{eff}
	Operating temperature	Refer to output specification
	EMC	DIN EN 61326-1:2013

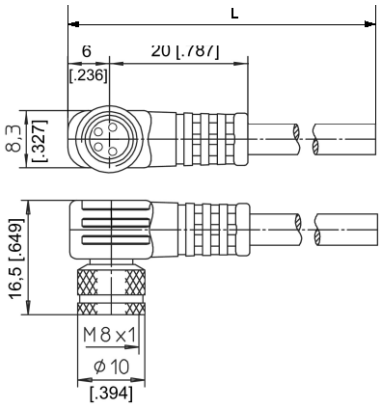
Signal wiring	**Output signals**	**Cable color**
	Signal +	white
	Signal -	brown

Accessories
Connector cable M8, 4 pin
(angular coupling)

shielded

The 4-lead shielded cable is supplied with a mating 4-pin 90° M8 connector at one end and 4 wires at the other end. Available lengths are 2 m, 5 m and 10 m.

Wire cross sectional area 0.14 mm²



Order code

	KAB - xM – M8/4F/W - LITZE
IP69:	**KAB - xM – M8/4F/W/69K - LITZE**

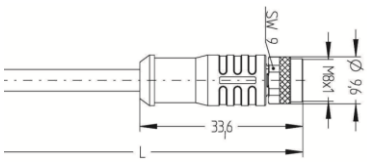
xM = length in m

Connector cable M8, 4 pin
(straight coupling)

shielded

The 4-lead shielded cable is supplied with a mating 4-pin M8 connector at one end and 4 wires at the other end. Available lengths are 2 m, 5 m and 10 m.

Wire cross sectional area 0.14 mm²



Order code

	KAB - xM – M8/4F/G - LITZE
IP69:	**KAB - xM – M8/4F/G/69K - LITZE**

xM = length in m

Signal wiring M8, 4 pin	**Plug connection / Cable color**			
	1	2	3	4
	brown	white	blue	black

Applicable for cable carriers

Maximum movement speed	3 m/s
Maximum acceleration	5 m/s²
Minimum bending radius	10 x cable diameter

Mounting bracket WS42 / WS42C

(only for sensors with spacer nuts)

Order code WS42-BFW1