

# Linear measuring technology

<b>Draw-wire encoder A40 / A41</b>	<b>Compact-Line</b>	<b>Measuring length A40 max. 1 m</b> <b>Measuring length A41 max. 2 m</b>
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The draw-wire encoders A40 and A41 with analog output is characterized by its compact design. They are available with a potentiometer, voltage or current output.



Analog output

Wide temperature range	High protection level	Reverse polarity protection	Easy mounting	Compact design

## Compact and simple

- Measuring length up to 2000 mm.
- For applications with a low traversing speed.
- Easy to install.
- Robust zinc die-cast housing.

**Order code** **D5.350X.AXX.X.0000**  
**draw-wire encoder** Type **a** **b** **c**

**a** Measuring range  
 1 = 1000 mm  
 2 = 2000 mm

**b** Output circuit  
 11 = analog output 4 ... 20 mA  
 22 = analog output 0 ... 10 V DC  
 supply voltage 15 ... 28 V DC  
 33 = potentiometer output 10 kΩ

**c** Type of connection  
 1 = cable 2 m [6.56'] for measuring range 1000 mm: axial  
 for measuring range 2000 mm: radial  
 2 = radial M12 connector, 4-pin  
 (only available for measuring range 2000 mm)

Accessories for draw-wire encoder	Dimensions in mm [inch]	Order no.	
<b>Guide pulley</b> 	Technical data: - mounting bracket (anodized alum.) - guide pulley (plastic POM) - ball bearing (type 696-2R5)	Scope of delivery: - 2 x countersunk screws for lateral fixing - 2 x hexagonal screws for fixing on a flat surface	<b>8.0000.7000.0045</b>
<b>Extension cable</b> (further on request) 		Steel wire 2 m [6.56'] Steel wire 5 m [16.40'] Steel wire 10 m [32.81'] Paraleine 2 m [6.56']	<b>8.0000.7000.0033</b> <b>8.0000.7000.0034</b> <b>8.0000.7000.0035</b> <b>8.0000.7000.0032</b>

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Cables and connectors		Order no.
<b>Preassembled cables</b>	M12 female connector with coupling nut, 4-pin, A coded, straight single ended 2 m [6.56'] PUR cable	<b>05.00.6061.6211.002M</b>
<b>Connector, self-assem Connectors bly</b>	M12 female connector with coupling nut, 4-pin, A coded, straight (plastic)	<b>05.B8141-0</b>
	M12 male connector with external thread, 4-pin, A coded, straight (metal/plastic)	<b>05.BS8141-0</b>
	M12 female connector with coupling nut, 4-pin, A coded, right-angle (plastic)	<b>05.B8241-0</b>

Further Kübler cables and connectors can be found at: [kuebler.com/connection-technology](http://kuebler.com/connection-technology)

## Technical data

Mechanical characteristics (draw-wire mechanics)		
Measuring range	1000 mm (A40)	2000 mm (A41)
Speed max.	0.8 m/s	1 m/s
Acceleration max.	43.1 m/s <sup>2</sup>	43.1 m/s <sup>2</sup>
Working temperature	0 °C ... 50 °C [+32 °F ... +122 °F]	-10 °C ... +80 °C [+14 °F ... +176 °F]
Protection (sensor) acc. to EN 60529	IP50	IP65
Weight	approx. 200 g [7.06 oz]	approx. 320 g [11.29 oz]
Extension force F <sub>min</sub>	2 N	
Repeat accuracy	±0.15 mm	
Linearity	±0.35 %	
Material	housing plastic / zinc die-cast	wire stainless-steel ø 0.45 mm plastic-coated

Electrical characteristics			
Analog output	0 ... 10 V	4 ... 20 mA	potentiometer 10 kΩ
Supply voltage	15 ... 28 V DC	–	–
Operating range	–	15 ... 28 V DC	max. 48 V DC
Temperature range	0 °C ... 50 °C [+32 °F ... +122 °F]	0 °C ... 50 °C [+32 °F ... +122 °F]	0 °C ... 50 °C [+32 °F ... +122 °F]
Load	max. 500 Ω	max. 500 Ω	–

Approvals		
CE compliant in accordance with		
EMC Directive	2014/30/EU	
RoHS Directive	2011/65/EU	

## Terminal assignment

Analog sensor <b>A11</b> (4 ... 20 mA)			R/I converter				
		Signal:	+V	I <sub>out</sub>	n.c.	n.c.	
	Cable	Core color:	BN	WH	GN		
	M12 connector, 4-pin	Pin:	1	2	3	4	
Analog sensor <b>A22</b> (0 ... 10 V DC)			R/U converter				
		Signal:	+V	0 V	U <sub>out</sub>	n.c.	
	Cable	Core color:	BN	WH	GN		
	M12 connector, 4-pin	Pin:	1	2	3	4	
Analog sensor <b>A33</b> (Potentiometer 10 kΩ)			Potentiometer				
		Signal:	+V	0 V	Out	n.c.	
	Cable	Core color:	BN	WH	GN		
	M12 connector, 4-pin	Pin:	1	2	3	4	

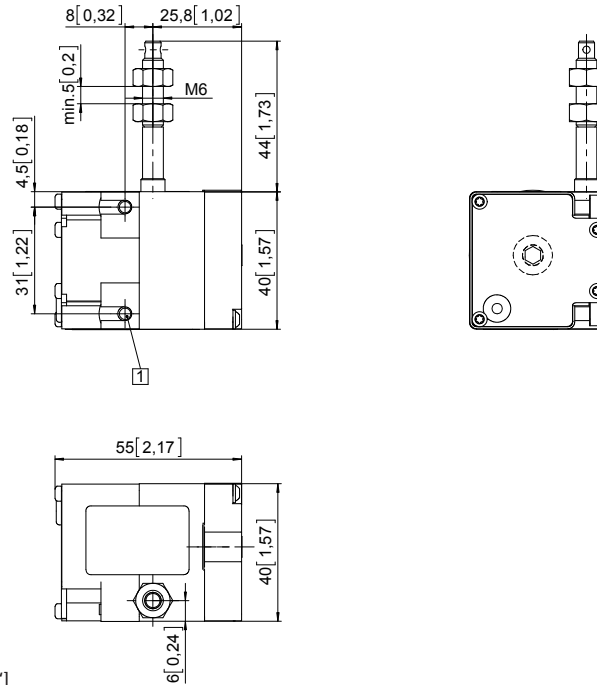
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## Dimensions

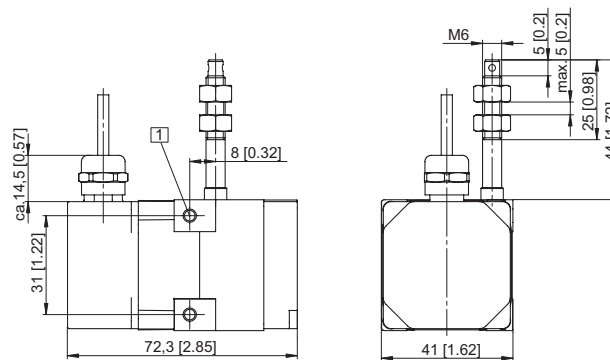
Dimensions in mm [inch]

for measuring range 1000 mm

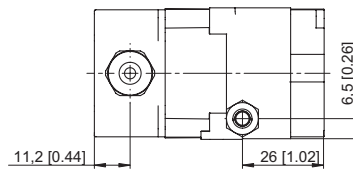


1 2 x M4, max. screw-in depth 8 mm [0.32"]

for measuring range 2000 mm



cable connection



M12 connector

