

# Linear measuring technology

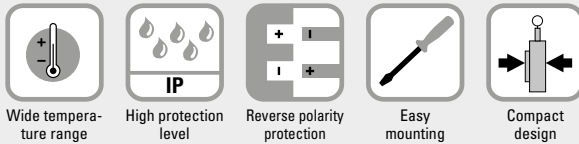
**Draw-wire encoder A40 / A41**    **Compact-Line**    **Measuring length A40 max. 1 m**  
**Measuring length A41 max. 2 m**



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



### 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**    **draw-wire encoder**    **D5.350X . AXX X . 0000**

- |  |   |   |
|--|---|---|
| <p><b>a</b> Measuring range</p> <ul style="list-style-type: none"> <li>1 = 1000 mm</li> <li>2 = 2000 mm</li> </ul> | <p><b>b</b> Output circuit</p> <ul style="list-style-type: none"> <li>11 = analog output 4 ... 20 mA</li> <li>22 = analog output 0 ... 10 V DC</li> <li>supply voltage 15 ... 28 V DC</li> <li>33 = potentiometer output 10 kΩ</li> </ul> | <p><b>c</b> Type of connection</p> <ul style="list-style-type: none"> <li>1 = cable 2 m [6.56'] for measuring range 1000 mm: axial</li> <li>for measuring range 2000 mm: radial</li> <li>2 = radial M12 connector, 4-pin</li> <li>(only available for measuring range 2000 mm)</li> </ul> |
|--|---|---|

**Stock types**  
**D5.3501.A111.0000**  
**D5.3502.A111.0000**

Accessories for draw-wire encoder	Dimensions in mm [inch]	Order no.
<p><b>Guide pulley</b></p> <p>Technical data:                      - mounting bracket (anodized alum.)                      - guide pulley (plastic POM)                      - ball bearing (type 696-2R5)</p> <p>Scope of delivery:                      - 2 x countersunk screws for lateral fixing                      - 2 x hexagonal screws for fixing on a flat surface</p>		<b>8.0000.7000.0045<sup>1)</sup></b>
<p><b>Extension cable</b> (further on request)</p>		<ul style="list-style-type: none"> <li>Steel wire 2 m [6.56']    <b>8.0000.7000.0033</b></li> <li>Steel wire 5 m [16.40']    <b>8.0000.7000.0034</b></li> <li>Steel wire 10 m [32.81']    <b>8.0000.7000.0035</b></li> <li>Paraleine 2 m [6.56']    <b>8.0000.7000.0032</b></li> </ul>

1) Stock types

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

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

Approvals		
<b>CE compliant</b> 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	

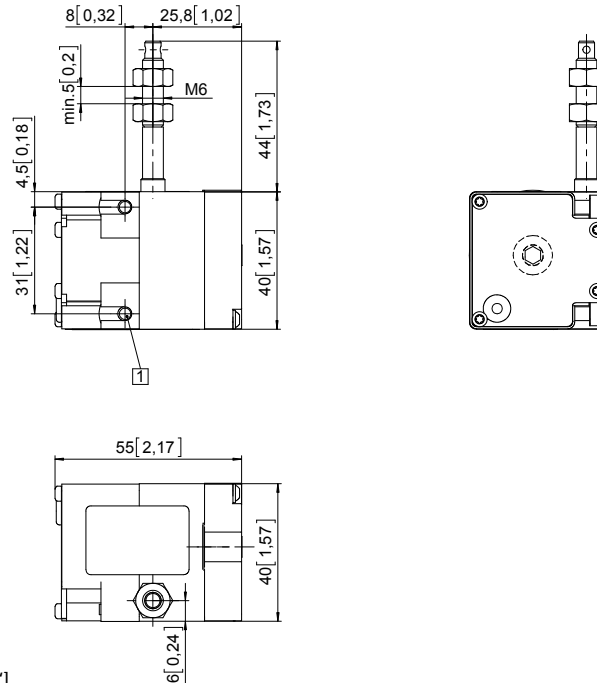
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## Dimensions

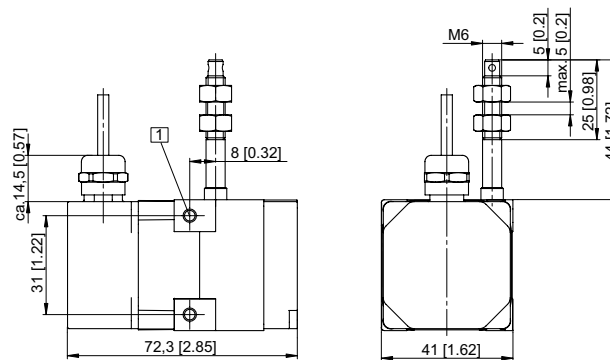
Dimensions in mm [inch]

for measuring range 1000 mm

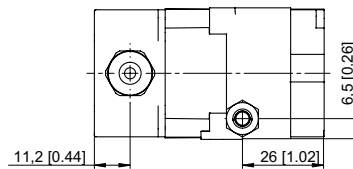


1 2 x M4, max. screw-in depth 8 mm [0.32"]

for measuring range 2000 mm



cable connection



M12 connector

