

# Linear measuring technology

<b>Draw-wire encoder A41</b>	<b>Compact-Line</b>	<b>Measuring length max. 2 m</b>
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The draw-wire mechanics A41 with absolute encoder excels with its compact construction.

These draw-wire mechanics can be equipped with multiturn encoders of the F366x and M366x series. The maximum measuring length is 2 meters.



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

## Compact and simple

- Measuring length up to 2000 mm.
- Scalable analog output with limit switch function.
- For applications with low traverse speeds.
- Easy mounting.
- Robust zinc die-cast housing.

## Order code with encoder (absolute)

<b>D5.55</b>	<b>02</b>	<b>. XX XX</b>	<b>. XXXX</b>
Type	a	b c d	e

- |   |  |   |  |
|---|--|---|--|
| <b>a</b> <i>Measuring range</i><br>02 = 2000 mm | <b>b</b> <i>Encoder used</i><br>M3 = Sendix M3663, absolute, SSI<br>F3 = Sendix F3663, absolute, SSI<br>M8 = Sendix M3668, absolute, CANopen<br>Sendix M3668, absolute, SAE J1939<br>Sendix M3668, absolute, IO-Link<br>F8 = Sendix F3668, absolute, CANopen | <b>c</b> <i>Output circuit</i><br>depends on the encoder used     | <b>e</b> <i>Resolution / Protocol / Options</i><br>depends on the encoder used |
|   |  | <b>d</b> <i>Type of connection</i><br>depends on the encoder used |  |

Standard resolutions for draw-wire with absolute encoder Sendix F3663/M3663 (12 bit ST) or F3668/M3668 (12 bit ST, programmable via bus)	
Drum circumference [mm]	100
Pulses / revolution [ppr]	4096
Pulses / mm	41
Resolution [mm]	0.02

## Recommended standard variants (with absolute encoder)

Order no. draw-wire encoder	Mounted encoder	Interface	Power supply	Type of connection	Resolution / Protocol	Option
D5.5502.M324.G222	Sendix M3663 (8.M3663.4124.G222)	SSI	10 ... 30 V DC	radial M12 connector	4096 ppr / SSI-Gray-Code	-
D5.5502.M824.2122	Sendix M3668 (8.M3668.4124.2122)	CANopen	10 ... 30 V DC	radial M12 connector	CANopen encoder profile DS406 V4.0	-
D5.5502.M834.3222	Sendix M3668 (8.M3668.4134.3222)	SAE J1939	10 ... 30 V DC	radial M12 connector	SAE J1939	-
D5.5502.M844.4122	Sendix M3668 (8.M3668.4144.4122)	IO-Link	18 ... 30 V DC	radial M12 connector	IO-Link	-
D5.5502.F321.G222	Sendix F3663 (8.F3663.4121.G222)	SSI	10 ... 30 V DC	tangential cable, 1 m	4096 ppr / SSI-Gray-Code	-
D5.5502.F821.2122	Sendix F3668 (8.F3668.4121.2122)	CANopen	10 ... 30 V DC	tangential cable, 1 m	CANopen encoder profile DS406 V3.2	-

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<b>Order code with encoder (analog, scalable with limit switch function)</b>	<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="padding: 2px;">D</td> <td style="padding: 2px;">5.55</td> <td style="padding: 2px;">02</td> <td style="padding: 2px;">.</td> <td style="padding: 2px;">M1</td> <td style="padding: 2px;">XX</td> <td style="padding: 2px;">.</td> <td style="padding: 2px;">XXXX</td> </tr> <tr> <td style="font-size: 8px;">Type</td> <td style="font-size: 8px;">a</td> <td style="font-size: 8px;">b</td> <td style="font-size: 8px;">c</td> <td style="font-size: 8px;">d</td> <td style="font-size: 8px;">e</td> <td colspan="2"></td> </tr> </table>	D	5.55	02	.	M1	XX	.	XXXX	Type	a	b	c	d	e		
D	5.55	02	.	M1	XX	.	XXXX										
Type	a	b	c	d	e												


- a** *Measuring range*  
02 = 2000 mm
- b** *Encoder used*  
M1 = Sendix M3661, absolute, analog <sup>1)</sup>
- c** *Output circuit*  
depends on the encoder used
- d** *Type of connection*  
depends on the encoder used
- e** *Resolution / Protocol / Options*  
depends on the encoder used

**Recommended standard variants (with encoder analog, scalable with limit switch function)**

Order no. draw-wire encoder	Mounted encoder	Interface	Power supply	Type of connection	Resolution / Protocol	Option
D5.5502.M134.3512	Sendix M3661 (8.M3661.4134.3512)	Analog, 4 ... 20 mA	10 ... 30 V DC	radial M12 connector	12 Bit / 4 ... 20 mA	scalable with limit switch function <sup>2)</sup>
D5.5502.M144.4512	Sendix M3661 (8.M3661.4144.4512)	Analog, 0 ... 10 V	15 ... 30 V DC	radial M12 connector	12 Bit / 0 ... 10 V	scalable with limit switch function <sup>2)</sup>
D5.5502.M134.3612	Sendix M3661 (8.M3661.4134.3612)	Analog, 4 ... 20 mA	10 ... 30 V DC	radial M12 connector	12 Bit / 4 ... 20 mA	scalable without limit switch function <sup>2)</sup>
D5.5502.M144.4612	Sendix M3661 (8.M3661.4144.4612)	Analog, 0 ... 10 V	15 ... 30 V DC	radial M12 connector	12 Bit / 0 ... 10 V	scalable without limit switch function <sup>2)</sup>

Accessories for draw-wire encoder	Dimensions in mm [inch]	Order no.
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**Guide pulley**



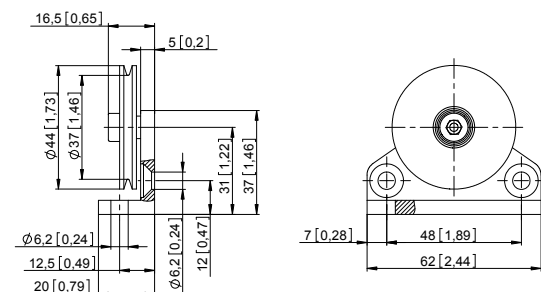
**Technical data:**

- mounting bracket (anodized alum.)
- guide pulley (plastic POM)
- ball bearing (type 696-2R5)


**Scope of delivery:**

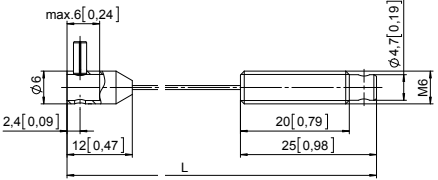
- 2 x countersunk screws for lateral fixing
- 2 x hexagonal screws for fixing on a flat surface

**8.0000.7000.0045**



**Extension cable (further on request)**





Steel wire 2 m [6.56'] **8.0000.7000.0033**

Steel wire 5 m [16.40'] **8.0000.7000.0034**

Steel wire 10 m [32.81'] **8.0000.7000.0035**

Paraleine 2 m [6.56'] **8.0000.7000.0032**

Cables and connectors	Order no.
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<b>Preassembled cables</b>	M12 female connector with coupling nut, 5-pin, A coded, straight single ended 2 m [6.56'] PVC cable	<b>05.00.6081.2211.002M</b>
<b>Connectors</b>	M12 female connector with coupling nut, 5-pin, A coded, straight (metal)	<b>8.0000.5116.0000</b>
	M12 female connector with coupling nut, 5-pin, A coded, straight (metal/plastic)	<b>05.B-8151-0/9</b>
	M12 female connector with coupling nut, 5-pin, A coded, right-angle (plastic)	<b>05.B-8251-0/9</b>

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

1) With ccw option.  
2) Delivery condition: unscaled.  
Description for scaling and limit switch function see data sheet M3661.

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## Technical data

Mechanical characteristics (draw-wire mechanics)	
<b>Measuring range</b>	up to 2000 mm
<b>Speed max.</b>	1000 mm/s
<b>Acceleration max.</b>	43,1 m/s <sup>2</sup> (9,8 m/s <sup>2</sup> at -40 °C ... +80 °C)
<b>Working temperature</b>	-10 °C ... +80 °C [+14 °F ... +176 °F] on request -40 °C ... +80 °C [-40 °F ... +176 °F]
<b>Weight</b>	approx. 200 g [7.06 oz]
<b>Required force</b>	≥ 2 N (on wire)
<b>Linearity</b>	±0.35 % for the whole measuring range
<b>Repetition accuracy</b>	±0.15 mm per direction of travel
<b>Material</b>	housing zinc die-cast wire stainless steel ø 0.45 mm

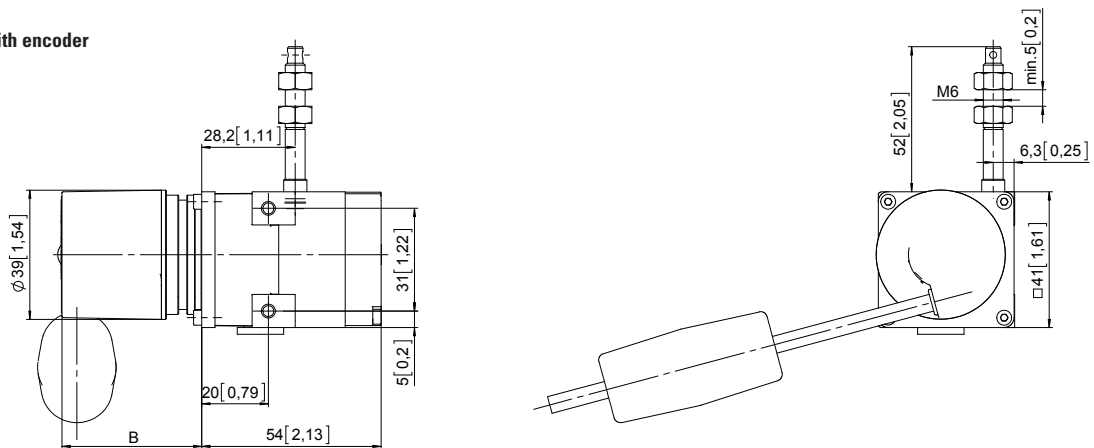
Electrical characteristics (encoder)	
The electrical characteristics can be found in the data sheets of the encoders.	

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

## Dimensions

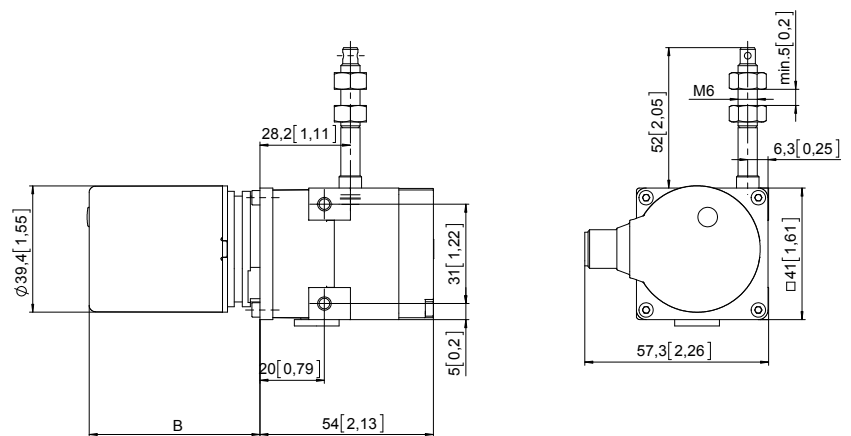
Dimensions in mm [inch]

### Draw-wire mechanics with encoder (tangential cable)



Dimension B depends on the encoder used	
Encoder	B
Sendix absolute (M366x) D5.5502.Mxxx.xxxx	50.25 [1.98]
Sendix absolute (F366x) D5.5502.Fxxx.xxxx	39.70 [1.56]

### Draw-wire mechanics with encoder (M12 connector)



Dimension B depends on the encoder used	
Encoder	B
Sendix absolute (F3663, SSI) D5.5502.Fxxx.xxxx	42.20 [1.66]
Sendix absolute (F3668, CANopen) D5.5502.Fxxx.xxxx	42.20 [1.66]
Sendix absolute (M3661, analog) D5.5502.Mxxx.xxxx	53.25 [2.10]