

# Linear Measuring Technology

## Draw wire mechanics with encoder or analogue sensor

### Draw wire encoder A50



Wide temperature-range



Shock/vibration resistant



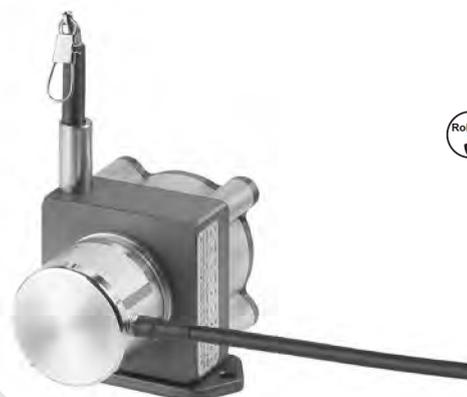
High IP protection rating



Reverse polarity protection

#### Robust

- **Insensitive to the environment**  
Titanium-anodised aluminium housing
- **High-resistance wire**  
Stainless steel wire
- **Wire exit free from wear**  
Diamond-polished ceramic guide
- **Can be used in a wide temperature range without extra charge**  
max. -20 ... +85 °C



#### Dynamic

- **High traverse speed**
- **High acceleration**  
Dynamic spring traction by means of a constant force spring, long service life, approx. 2 million complete cycles

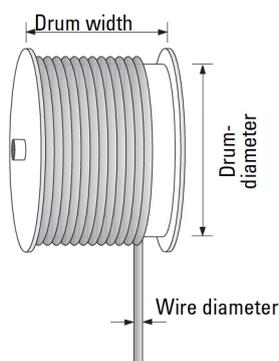
#### Versatile

- **Suitable for various sensors/encoders**
  - Incremental
  - Analogue
- **Quick mounting**  
Fastening by means of 2 screws
- **Flexible connection possibilities**  
Cable, M12 connector, radial, axial

#### Mechanical characteristics (draw wire mechanics):

Measuring range:	250 mm	500 mm	1250 mm
Extension force F <sub>min</sub> :	5.2 N	5.2 N	3.8 N
F <sub>max</sub> :	6.3 N	7.3 N	5.4 N
Max. speed:	8 m/s	8 m/s	10 m/s
Max. acceleration:	85 m/s <sup>2</sup>	85 m/s <sup>2</sup>	100 m/s <sup>2</sup>
Linearity:	analogue output: 0.1 % (of the measuring range) encoder: 0.05 % (of the measuring range)		
Weight:	approx. 330 g (depending on the sensor/encoder used)		
Materials:	housing: titanium-anodised aluminium wire: stainless steel ø 0.5 mm		
Protection (sensor):	IP65 (IP67 on request for encoders)		
Lifetime	> 2 million full cycles		

#### Operating principle:



#### Construction:

The core of a draw wire device is a drum mounted on bearings, onto which a wire is wound. Winding takes place via a spring-loaded device.

#### Note

Exceeding the maximum extension length of the draw wire will lead to damage to the wire and the mechanics.

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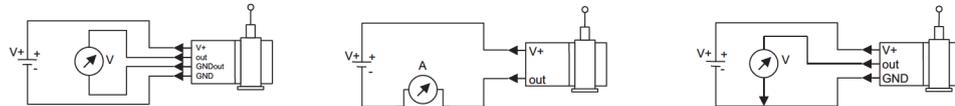
#### Electrical characteristics (digital output):

The electrical characteristics of the draw wire mechanics with digital output can be found in the data sheets of the encoders.

#### Electrical characteristics (analogue output):

Analogue output:	0 ... 10 V	4 ... 20 mA	Potentiometer
Output:	0 ... 10 V galvanically isolated, 4 conductors	4 ... 20 mA 2 conductors	1 kOhm
Supply voltage:	12 ... 30 V DC	12 ... 30 V DC	max. 30 V DC
Recommended slider current:	–	–	< 1 µA
Max. current consumption:	22.5 mA (no load)	50 mA	–
Reverse polarity protection:	yes	yes	–
Operating temperature:	-20 ... +60 °C	-20 ... +60 °C	-20 ... +85 °C

Connection diagrams:



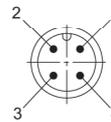
CE compliant according to:

EN 61000-6-2, EN 61000-6-4, EN 61000-6-3

#### Terminal assignment (analogue output):

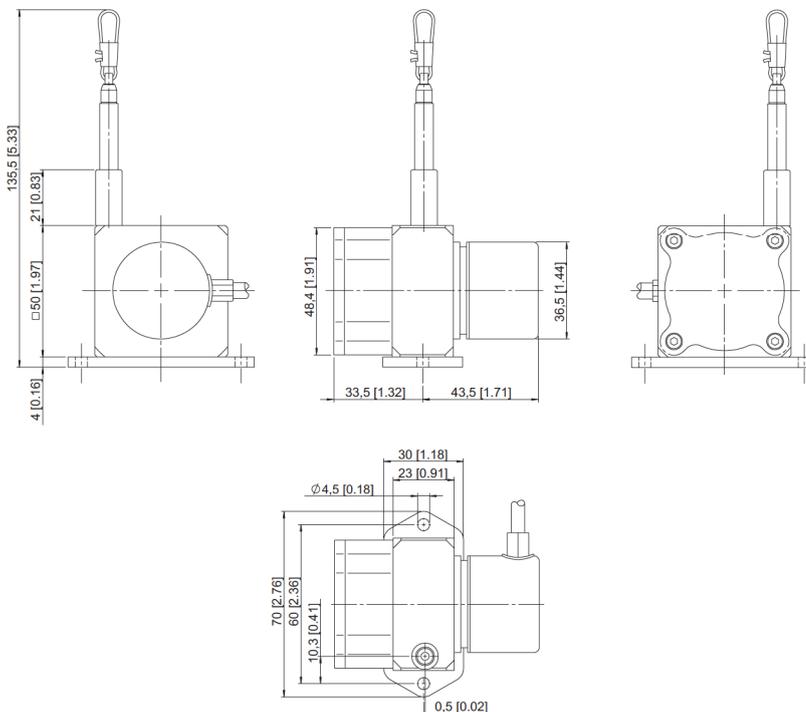
Pin	Cable colour	0 ... 10 V	4 ... 20 mA	1 kOhm
1	brown	V+	V+	V+
2	white	Signal	n. c.	Slider
3	blue	GND	Signal	GND
4	black	GND Sig.	n. c.	n. c.

#### Connector (analogue output):



#### Dimensions:

Draw wire mechanics with encoder



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## Draw wire mechanics with encoder or analogue sensor

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Order code with encoder:

**D8.6A1.XXXX.XXXX.XXXX**

Draw wire mechanics

Measuring range\*

0025 = 250 mm

0050 = 500 mm

0125 = 1250 mm

\*other measuring ranges on request

Number of pulses  
(e.g. 500 pulses => 0500)

Type of connection:  
1 = Axial cable (2 m PVC cable)  
2 = Radial cable (2 m PVC cable)

Output:  
4 = Push-pull with inverted signals,  
supply voltage 8 ... 30 V DC

Encoder used  
36 = Encoder Type 3610

Available resolution, drum circumference 125 mm			
Pulses/revolution	125	1250	2500
Pulses/mm	1	10	20
Resolution [mm]	1	0.1	0.05

Recommended standard device  
with encoder:

**D8.6A1.0125.3642.1250**

Number of pulses  
(e.g. 500 pulses => 0500)

Type of connection:  
2 = Radial cable (2 m PVC cable)

Output:  
4 = Push-pull with inverted signals,  
supply voltage 8 ... 30 V DC

Encoder used  
36 = Encoder Type 3610

Wire length  
0125 = 1250 mm

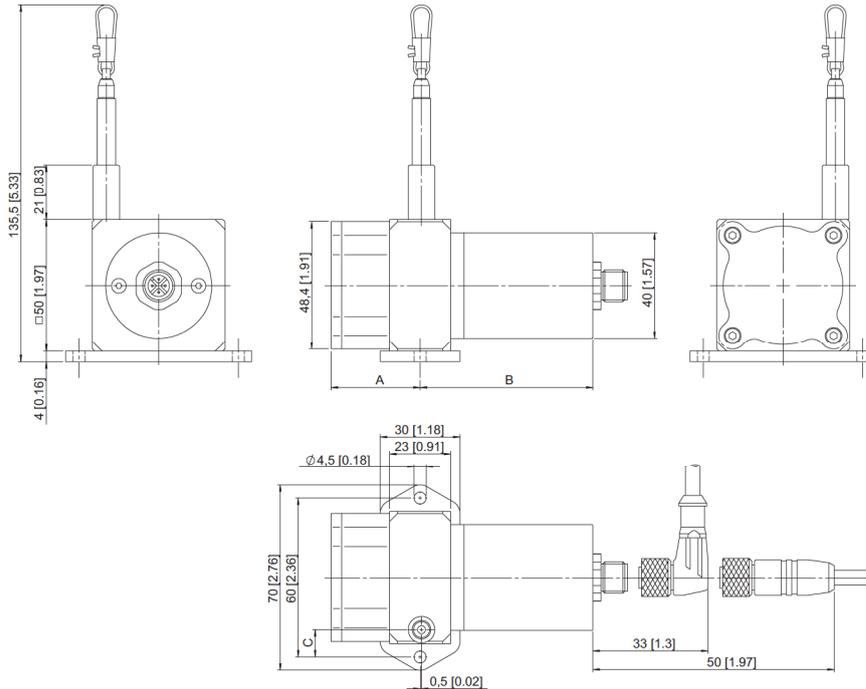
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#### Dimensions:

Draw wire mechanics with analogue sensor



Sensor type	Measuring length [mm]	A	B	C
Potentiometer	250	26.5	65	21.6
	500	26.5		21.6
	1250	33.5	10.3	
0 ... 10 V 4 ... 20 mA	250	26.5	78.5	21.6
	500	26.5		21.6
	1250	33.5		10.3

Order code with analogue sensor:

**D8.3A1.XXXX.XXXX.0000**

Draw wire mechanics	Type of connection: 1 = Axial cable, length 2 m 3 = 4-pole M12 connector
Measuring range* 0025 = 250 mm 0050 = 500 mm 0125 = 1250 mm *other measuring ranges on request	Analogue sensor output A11 = 4 ... 20 mA Supply voltage 12 ... 30 V DC A22 = 0 ... 10 V Supply voltage 12 ... 30 V DC A33 = Potentiometer 1 kOhm Max. supply voltage 30 V DC

#### Accessories:

Guide pulley for draw-wire encoder



Order code for the set:  
 (Guide pulley, 2x countersunk screws for lateral fixing, 2x hexagonal screws for fixing on a flat surface)  
**8.0000.7000.0045**

