

# Linear Measuring Technology

## Draw wire mechanics with encoder or analogue sensor **Draw wire encoder B80** Measuring length max. 3 m

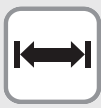


The draw-wire mechanics B80 can be used up to a measuring length of 3 metres.

These draw-wire mechanics may be combined with the proven Kübler Sendix encoders with incremental or absolute interface, as well as with analogue sensors.



Max. acceleration



Long service life



Wide temperature range



High IP value



Reverse polarity protection

### Robust

- The titanium-anodised aluminium housing and the stainless steel wires allow for using the mechanics even in harsh conditions
- Wear-free wire exit thanks to diamond-polished ceramic guide

### Versatile

- High traverse speed, up to 10 m/s
- High acceleration, up to 140 m/s<sup>2</sup>
- Quick fastening by means of 2 screws
- Various connection possibilities available

### Order code with encoder

**D8.4B1 . XXXX . XX XX . XXXX**  
Type                      a                      b                      c                      d                      e

#### a Measuring range

0100 = 1000 mm  
 0200 = 2000 mm  
 0300 = 3000 mm  
 other measuring ranges on request

#### b Encoder used

00 = Sendix incremental 5000  
 63 = Sendix absolute 5863  
 68 = Sendix absolute 5868

#### c Output circuit

depends on the encoder used

#### e Resolution / Protocol / Options

depends on the encoder used

#### d Type of connection

depends on the encoder used

#### Standard resolutions for draw wire with incremental encoder Sendix 5000, drum circumference 200 mm

	200	2000	4000
Pulses / revolution			
Pulses / mm	1	10	20
Resolution (mm)	1	0.1	0.05

#### Standard resolutions for draw wire with absolute encoder Sendix 5863 or 5868, drum circumference 200 mm

Absolute encoder	5863	5868
Pulses / revolution	2048 / 11 bit	4096, programmable via the bus / 12 bit
Pulses / mm	10.24	20.48
Resolution (mm)	-0.1	~ 0.05

#### Recommended standard device:

##### D8.4B1.XXXX.0054.2000

Draw wire with mounted encoder Sendix 5000 incremental (8.5000.8354.2000)

- Push-pull with inverted signals
- Supply voltage 10...30 V DC
- M23 connector, 8-pin, radial
- 2000 pulses per revolution

##### D8.4B1.XXXX.6324.G123

Draw wire with mounted encoder Sendix 5863 (8.5863.1224.G123)

- SSI Interface
- Supply voltage 10...30 V DC
- SSI Gray Code
- M23 connector, 12-pin, radial
- Resolution 2048 PPR
- SET button and status LED

##### D8.4B1.XXXX.6822.2113

Draw wire with mounted encoder Sendix 5868 (8.5868.1222.2113)

- CANopen Interface
- Supply voltage 10...30 V DC
- M12 connector
- CANopen Encoder profile V3.2
- SET button

##### D8.4B1.XXXX.6832.3113

Draw wire with mounted encoder Sendix 5868 (8.5868.1232.3113)

- Profibus Interface
- Supply voltage 10...30 V DC
- M12 connector
- Profibus Encoder profile Class2
- SET button

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**Draw wire mechanics with encoder or analogue sensor**

**Draw wire encoder B80**

**Measuring length max. 3 m**

**Order code with analogue sensor**

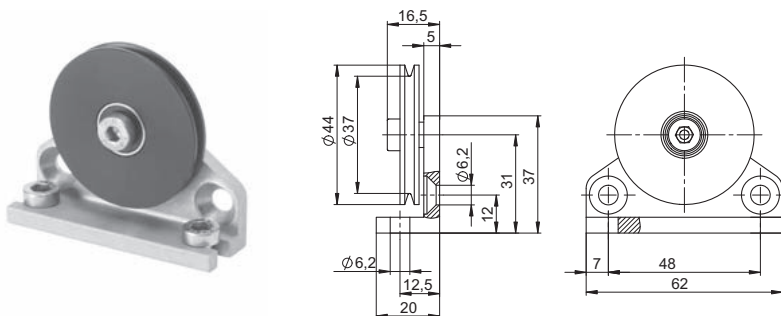
**D8.3B1 . XXXX . XXX X . 0000**  
 Type                      **a**                      **b**                      **c**

**a** *Measuring range*  
 0100 = 1000 mm  
 0200 = 2000 mm  
 0300 = 3000 mm  
 other measuring ranges on request

**b** *Analogue sensor output / Supply voltage*  
 A11 = 4 ... 20 mA / 12 ... 30 V DC  
 A22 = 0 ... 10 V / 12 ... 30 V DC  
 A33 = Potentiometer 1 kOhm / max. 30 V DC

**c** *Type of connection*  
 1 = cable axial (2 m PVC cable)  
 3 = M12 connector, 4-pin

## Guide pulley for draw-wire encoder



Order code for the set:  
 - Guide pulley (anodised aluminium)  
 - 2x countersunk screws for lateral fixing  
 - 2x hexagonal screws for fixing on a flat surface

**8.0000.7000.0045**

### Mechanical characteristics (draw wire mechanics):

Measuring range	1000 mm	2000 mm	3000 mm
Extension force	F <sub>min</sub> 6.9 N	6.4 N	6.9 N
	F <sub>max</sub> 8.3 N	7.8 N	9.8 N
Max. speed	10 m/s	10 m/s	10 m/s
Max. acceleration	140 m/s <sup>2</sup>	140 m/s <sup>2</sup>	140 m/s <sup>2</sup>
Linearity (of the measuring range)	analogue output 0.15 %	0.1 %	0.1 %
	encoder 0.05 %	0.05 %	0.05 %
Weight	approx. 750 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)		

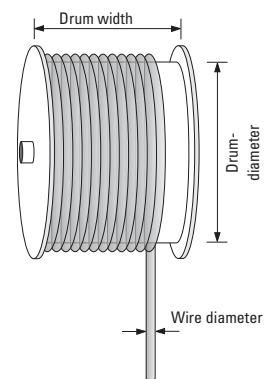
### Operating principle

#### 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.



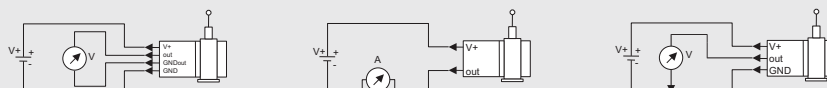
### Electrical characteristics (digital output)

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°C ... +60°C	-20°C ... +60°C	-20°C ... +85°C

#### Connection diagrams



**CE compliant** acc. to EN 61000-6-2, EN 61000-6-3

**RoHS compliant** acc. to EU guideline 2002/95/EG

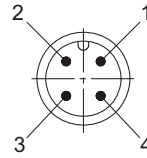
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### Terminal assignment (analogue output)

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

### Connector (analogue output)

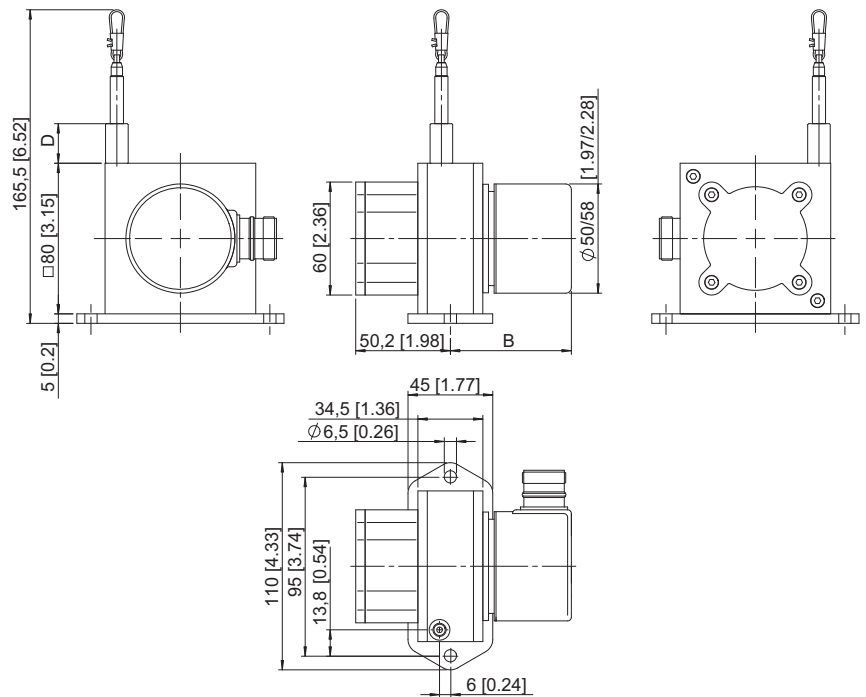


### Dimensions

#### Draw wire mechanics with encoder

Measuring range [mm]	D [mm]
1000	21
2000	35
3000	35

Dimension B depends on the encoder used	
Encoder	B
Sendix incremental (5000) D8.4B1.XXXX.00XX.XXXX	54.25
Sendix absolute (5863) D8.4B1.XXXX.63XX.XXXX	66.75
Sendix absolute (5868) D8.4B1.XXXX.68XX.XXXX	93.25



#### Draw wire mechanics with analogue sensor

Sensor type	Measuring length [mm]	B	D
Potentiometer	1000	74	21
	2000	74	21
	3000	102.5	35
4 ... 20 mA 0 ... 10 V	1000	87.5	21
	2000	87.5	21
	3000	102.3	35

