

Linear Measuring Technology

Draw wire mechanics with encoder or analogue sensor

Draw wire encoder B80



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 ... +90 °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

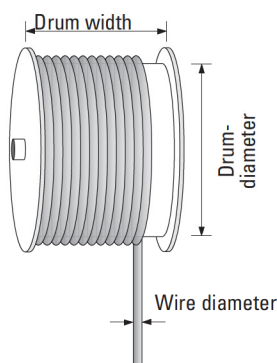
Versatile

- **Suitable for various sensors/encoders**
 - Absolute
 - Fieldbus
 - Incremental
 - Analogue
- **Quick mounting**
Fastening by means of 2 screws
- **Flexible connection possibilities**
Cable, connector, radial, axial
- **Linearity up to 0.05 %**

Mechanical characteristics (draw wire mechanics):

Measuring range:	1000 mm	2000 mm	3000 mm
Extension force Fmin:	5.4 N	5.4 N	5.4 N
Fmax:	6.6 N	7.8 N	9.1 N
Max. speed:	10 m/s	10 m/s	10 m/s
Max. acceleration:	140 m/s ²	140 m/s ²	140 m/s ²
Linearity:	analogue output: 0.1 % (of the measuring range) encoder: 0.05 % (of the measuring range)		
Weight:	approx. 750 g (depending on the sensor/encoder used)		
Materials:	housing: titanium-anodised aluminium wire: stainless steel \varnothing 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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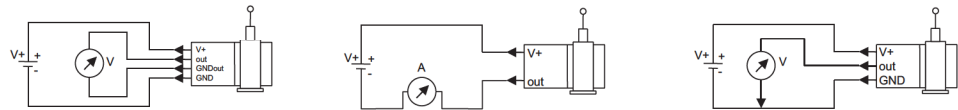
Electrical characteristics (digital output):

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:



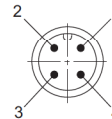
CE compliant according to:

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

Terminal assignment (analogue output):

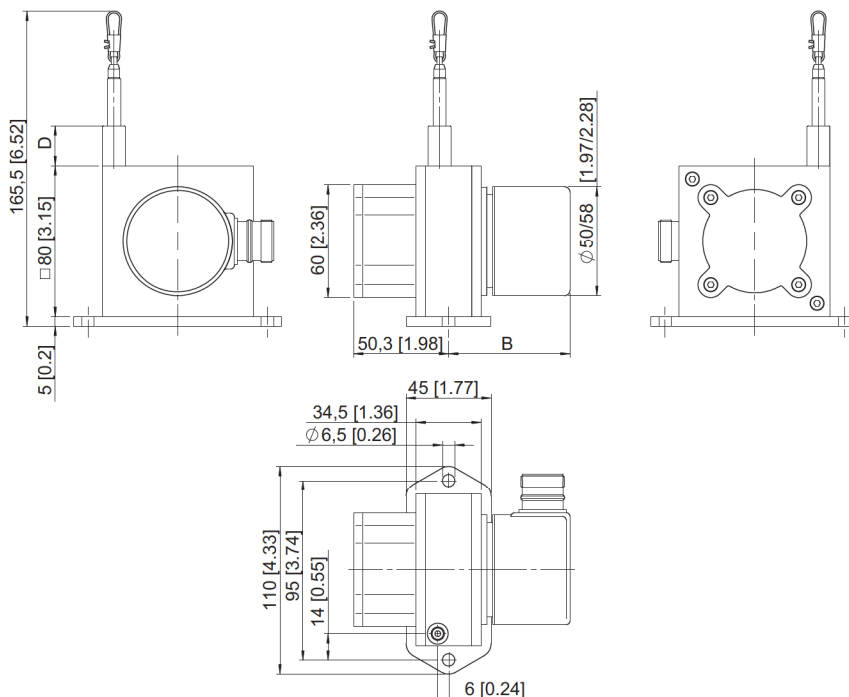
Pin	Cable colour	0 ... 10 V	4 ... 20 mA	1 kOhm
1	brown	V+	V+	V+
2	white	Signal	n. c.	Slider
3	blue	GND	Signal	GND
4	black	GND Sig.	n. c.	n. c.

Connector (analogue output):



Dimensions:

Draw wire mechanics with encoder



Measuring range [mm]	D
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 absolut (5863) D8.4B1.XXXX.63XX.XXXX	66.75
Sendix absolut (5868) D8.4B1.XXXX.68XX.XXX	93.25

Draw wire encoder B80

Order code with encoder:

D8.4B1.XXXX.XXXX.XXXX

Draw wire mechanics

Measuring range*

- 0100 = 1000 mm
- 0200 = 2000 mm
- 0300 = 3000 mm

*other measuring ranges on request

Resolution/protocol/options
depending on the encoder used

Type of connection:*
depending on the encoder used

Output: *
depending on the encoder used

Encoder used*
00 = Sendix incremental 5000
63 = Sendix absolut 5863
68 = Sendix absolut 5868

*You will find our recommended encoders below

Standard resolutions for draw wire with incremental encoder Sendix 5000, drum circumference 200 mm			
Pulses/revolution	200	2000	4000
Pulse/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
Pulse/revolution	2048/11 bits	4096, programmable via the bus/ 12 bits
Pulse/mm	10.24	20.48
Resolution [mm]	~0.1	~0.05

Recommended standard device
with **incremental** encoder
Sendix 5000:

D8.4B1.XXXX.0053.2000

The standard device is supplied mounted. The mounted encoder is the Sendix incremental 5000 encoder, Connector axial 8 pin M12, Push-pull with inverted signals, supply voltage 10 ... 30 V DC (8.5000.8353.2000)

Recommended standard device
with **absolute** encoder
Sendix 5863 or 5868:

D8.4B1.XXXX.6324.G123

Sendix absolut 5863 encoder with **SSI interface** (Gray code), 2048 pulses/rev., Set key, 10 ... 30 V DC, radial 12 pole M23 connector (8.5863.1224.G123)

D8.4B1.XXXX.6822.2113

Sendix absolut 5868 encoder with **CANopen interface**, 4096 pulses/rev. programmable via the bus, Set key, 10 ... 30 V DC, M12 connector (8.5868.1222.2113)

D8.4B1.XXXX.6832.3113

Sendix absolut 5868 encoder with **Profibus connection**, 4096 pulses/rev. programmable via the bus, Set key, 10 ... 30 V DC, M12 connector (8.5868.1232.3113)

Measuring range

- 0100 = 1000 mm
- 0200 = 2000 mm
- 0300 = 3000 mm

*other measuring ranges on request

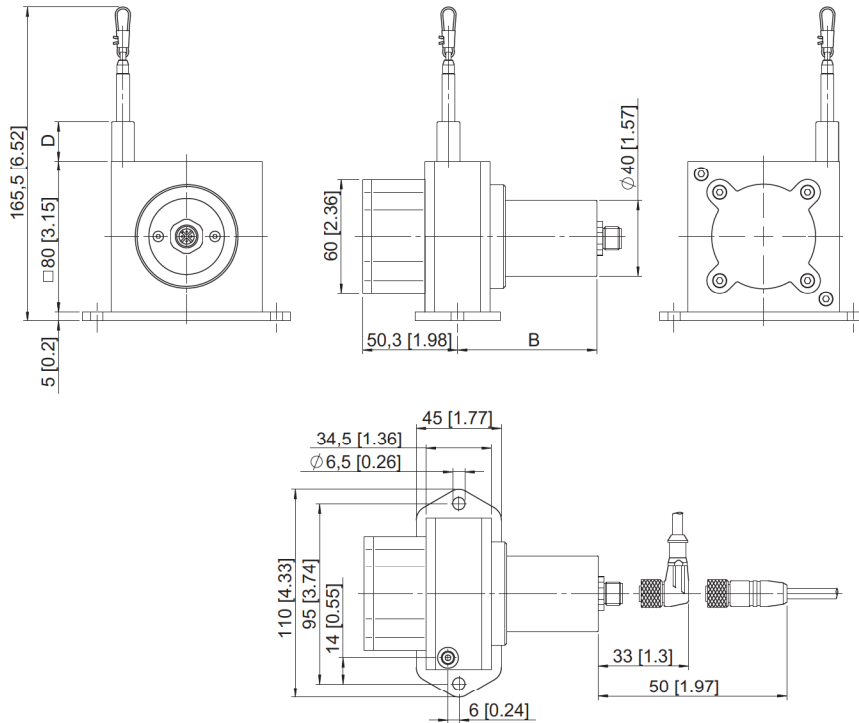
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Dimensions:

Draw wire mechanics with analogue sensor



Sensor type	Measuring length [mm]	B	D
Potentiometer	1000	74	21
	2000		
	3000	102.25	35
0 ... 10 V 4 ... 20 mA	1000	87.5	21
	2000		
	3000	102.25	35

Order code with analogue sensor:
D8.3B1.XXXX.XXXX.0000

Draw wire mechanics

Measuring range*

- 0100 = 1000 mm
- 0200 = 2000 mm
- 0300 = 3000 mm

*other measuring ranges on request

Type of connection:

- 1 = Axial cable, length 2m
- 3 = 4-pole M12 connector

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

