

Linear measuring technology

Draw wire mechanics with encoder or analogue sensor	Draw wire encoder C120	Measuring length max. 6 m Traverse speed max. 10 m/s
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These draw wire mechanics C120 can be used up to a measuring length of 6 metres.

This 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 140 m/s ²	Long service life	Wide temperature range	High protection level IP	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 special plain bearing guide.

Versatile

- High traverse speed, up to 10 m/s.
- High acceleration, up to 140 m/s².
- Quick fastening by means of 2 screws.
- Various connection possibilities available.

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Order code with encoder

D8.4C1 . 0600 . XX XX . XXXX
Type a b c d e

a Measuring range
0600 = 6000 mm

b Encoder used
00 = Sendix incremental 5000
F3 = Sendix absolute 5863
63 = Sendix absolute 5863
F8 = Sendix absolute 5868
68 = Sendix absolute 5868

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

Optional on request

- Other measuring ranges
- Cable diameter 1 mm
- Ring eye instead of cable clip
- Modified cable and/or connector orientation
- Modified cable outlet direction
- Sensor protection level IP67

Standard resolutions for draw wire with incremental encoder Sendix 5000, drum circumference 317.68 mm		
Pulses / revolution	500	2000
Pulses / mm	1.6	6.3
Resolution (mm)	~ 0.63	~ 0.16

Standard resolutions for draw wire with absolute encoder Sendix F5863 or F5868 / 5863 or 5868, drum circumference 317.68 mm		
	F5863 / 5863	F5868 / 5868
Absolute encoder	F5863 / 5863	F5868 / 5868
Pulses / revolution	2048 / 11 bit	4096, programmable via the bus / 12 bit
Pulses / mm	6.4	12.9
Resolution (mm)	~ 0.16	~ 0.08

Recommended standard devices

Order no. draw wire encoder	Mounted encoder	Interface	Power supply	Type of connection	Resolution / Protocol	Options
D8.4C1.XXXX.0054.2000	Sendix 5000 (8.5000.8354.2000)	PushPull with inv. signal	10 ... 30 V DC	1 x radial M12 connector	2000 ppr	no option
D8.4C1.XXXX.F324.G123	Sendix F5863 (8.F5863.1224.G123)	SSI	10 ... 30 V DC	1 radial M23 connector	SSI-Gray-Code	Set button + Status LED
D8.4C1.XXXX.6324.G123	Sendix 5863 (8.5863.1224.G123)	SSI	10 ... 30 V DC	1 radial M23 connector	SSI-Gray-Code	Set button + Status LED
D8.4C1.XXXX.F82E.2123	Sendix F5868 (8.F5868.122E.2123)	CANopen	10 ... 30 V DC	1 radial M12 connector	CANopen encoder profile DS406 V3.2	Set button
D8.4C1.XXXX.6822.2123	Sendix 5868 (8.5868.1222.2123)	CANopen	10 ... 30 V DC	2 radial M12 connector	CANopen encoder profile DS406 V3.2	Set button
D8.4C1.XXXX.6832.3113	Sendix 5868 (8.5868.1232.3113)	Profibus	10 ... 30 V DC	3 radial M12 connector	PROFIBUS DP V0 encoder profile Class 2	Set button
D8.4C1.XXXX.68B2.B212	Sendix 5868 (8.5868.12B2.B212)	EtherCAT	10 ... 30 V DC	3 radial M12 connector	EtherCAT with CoE 3.2.10	no option
D8.4C1.XXXX.68C2.C212	Sendix 5868 (8.5868.12C2.C212)	Profinet	10 ... 30 V DC	3 radial M12 connector	PROFINET encoder profile version 4.1	no option

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Order code with analogue sensor	D8.3C1 . 0600 . XXXX . 0000
a Measuring range 0600 = 6000 mm	b Analogue sensor output / power supply A11 = 4 ... 20 mA / 12 ... 30 V DC A22 = 0 ... 10 V / 12 ... 30 V DC A33 = potentiometer 1 kΩ / max. 30 V DC
c Type of connection 1 = axial cable, 2 m [6.56'] PVC 3 = M12 connector, 4-pin	<i>Optional on request</i> - Other measuring ranges - Cable diameter 1 mm - Ring eye instead of cable clip - Modified cable and/or connector orientation - Modified cable outlet direction - Sensor protection level IP67 - Increased linearity

Guide pulley for draw wire encoder	Order no.
	Order code for the set: - Guide pulley (anodised aluminium) - 2 x countersunk screws for lateral fixing - 2 x hexagonal screws for fixing on a flat surface
	8.0000.7000.0045

Connection technology for analogue sensor	Order no.
Connector, self-assembly (straight)	M12 female connector with coupling nut
Cordset, pre-assembled	M12 female connector with coupling nut, 2 m [6.56'] PVC cable
	8.0000.5116.0000 05.00.6081.2211.002M

Technical data

Mechanical characteristics (draw wire mechanics)	
Measuring range	6000 mm
Extension force	F _{min} 8.8 N F _{max} 12.3 N
Max. speed.	10 m/s
Max. acceleration	140 m/s ²
Linearity	analogue output ±0.1 % (of the measuring range) with encoder ±0.05 % (of the measuring range)
Weight	approx. 1600 g [56.44 oz] (depending on the sensor/encoder used)
Material	housing titanium-anodised aluminium wire stainless steel Ø 0.5 mm (Ø 1 mm can be supplied as a special up to measuring range 3000 mm)
Protection selon EN 60529	IP65 (sensor)

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

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 (analogue output)			
Analogue output	0 ... 10 V	4 ... 20 mA	Potentiometer
Output	0 ... 10 V / galv. isolated, 4 conductors	4 ... 20 mA / 2 conductors	1 kΩ
Power supply	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	-
Working temperature	-20°C ... +60°C [-4°F ... +140°F]	-20°C ... +60°C [-4°F ... +140°F]	-20°C ... +85°C [-4°F ... +185°F]
Connection diagrams			
CE compliant acc. to	EMC guideline 2004/108/EC RoHS guideline 2011/65/EU		

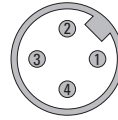
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Terminal assignment (analogue output)

Pin	1	2	3	4
Cable colour	BN	WH	BU	BK
0 ... 10 V	+V	Signal	0 V	0 V Sig.
4 ... 20 mA	+V	n. c.	Signal	n. c.
1 kΩ	+V	Slider	0 V	n. c.

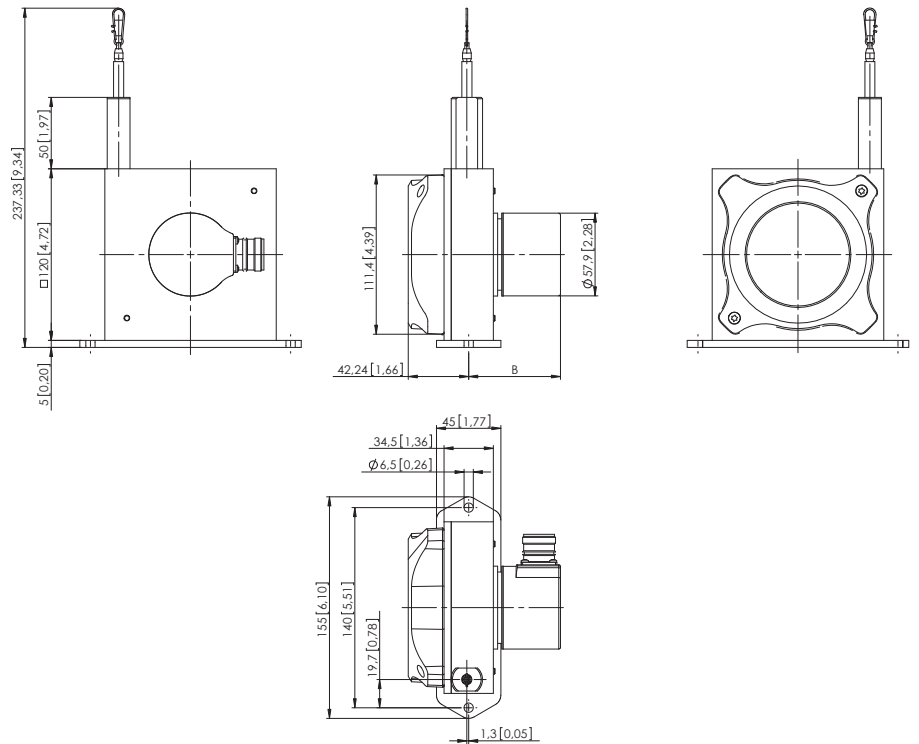
Connector (analogue output)



Dimensions

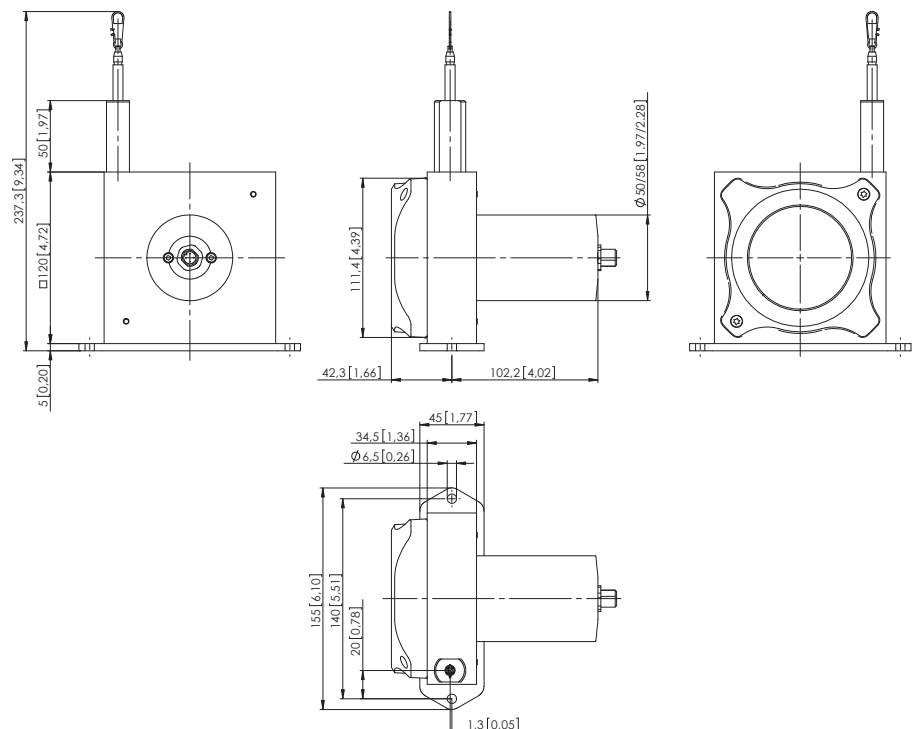
Dimensions in mm [inch]

Draw wire mechanics with encoder



Dimension B depends on the encoder used	
Encoder	B
Sendix incremental (5000) D8.4C1.XXXX.00XX.XXXX	54.25 [2.12]
Sendix absolute (5863) D8.4C1.XXXX.63XX.XXXX	66.75 [2.63]
Sendix absolute (5868) D8.4C1.XXXX.68XX.XXXX	93.25 [3.67]

Draw wire mechanics with analogue sensor



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