NEW

Linear Measuring Technology
Draw wire mechanics with encoder or analogue sensor

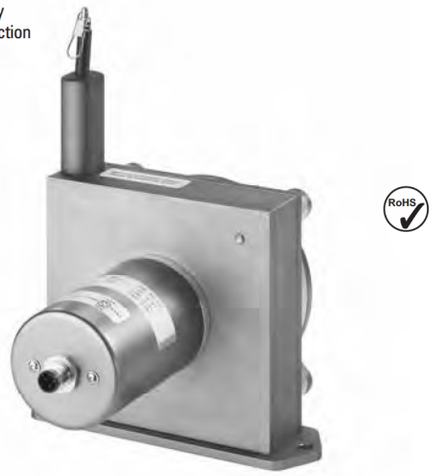
Kübler

Draw wire encoder C120

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

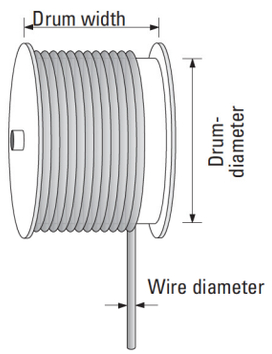
Versatile

- **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:	**6000 mm**
Extension force Fmin:	5.4 N
Fmax:	7.8 N
Max. speed:	10 m/s
Max. acceleration:	140 m/s^2
Linearity:	analogue output: 0.1 % (of the measuring range) encoder: 0.05 % (of the measuring range)
Weight:	approx. 1600 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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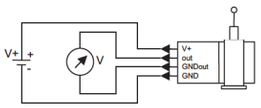
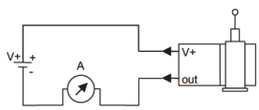
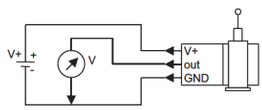
Electrical characteristics (digital output):

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

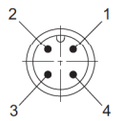
Electrical characteristics (analogue output):

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):

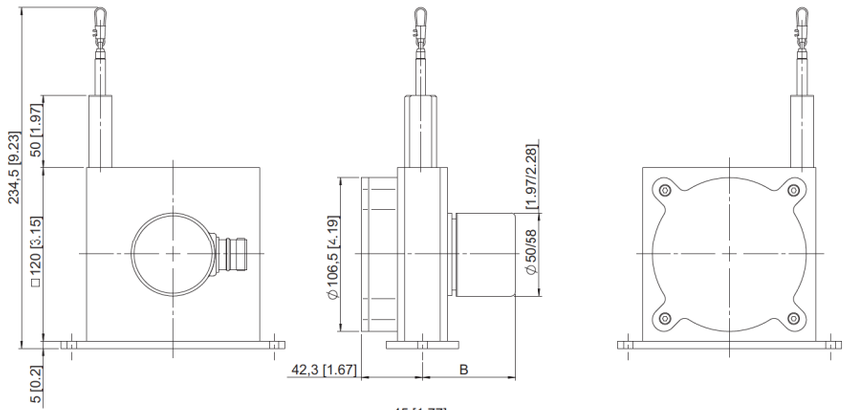
Pin	Cable colour	0 ... 10 V	4 ... 20 mA	1 kOhm
1	brown	V+	V+	V+
2	white	Signal	n. c.	Slider
3	blue	GND	Signal	GND
4	black	GND Sig.	n. c.	n. c.

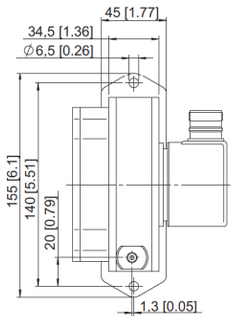
Connector (analogue output):



Dimensions:

Draw wire mechanics with encoder





Dimension **B** depends on the encoder used	
Encoder	B
Sendix incremental (5000) D8.4C1.XXXX.**00**XX.XXXX	54.25
Sendix absolut (5863) D8.4C1.XXXX.**63**XX.XXXX	66.75
Sendix absolut (5868) D8.4C1.XXXX.**68**XX.XXX	93.25

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Order code with encoder: **D8.4C1.XXXX.XXXX.XXXX**

- Draw wire mechanics
- Measuring range*
  0600 = 6000 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 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 5863 or 5868, drum circumference 317.68 mm		
Absolute encoder	5863	5868
Pulses/revolution	2048/ 11 bits	4096, programmable via the bus/ 12 bits
Pulses/mm	6.4	12.9
Resolution [mm]	~0.16	~0.08

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

D8.4C1.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:

D8.4C1.XXXX.6324.G123 — Sendix absolut 5**8**63 encoder with **SSI interface** (Gray code), 2048 pulses/rev., Set key, 10 ... 30 V DC, radial 12 pole M23 connector (8.5863.1224.G123)

D8.4C1.XXXX.6822.2113 — Sendix absolut 5**8**68 encoder with **CANopen interface**, 4096 pulses/rev. programmable via the bus, Set key, 10 ... 30 V DC, M12 connector (8.5868.1222.2113)

D8.4C1.XXXX.6832.3113 — Sendix absolut 5**8**68 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
  0600 = 6000 mm
  *other measuring ranges on request

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Dimensions:
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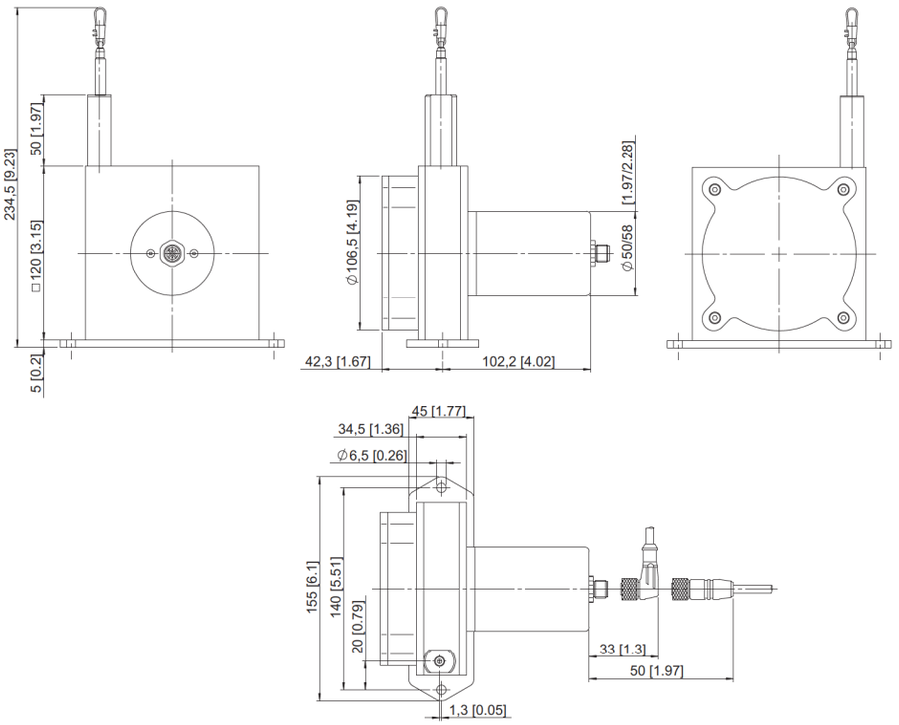

Order code with analogue sensor:

D8.3C1.XXXX.XXXX.0000

Draw wire mechanics

Measuring range*
0600 = 6000 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