

# Linear Measuring Technology

## Draw wire mechanics with encoder or analogue sensor

### 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

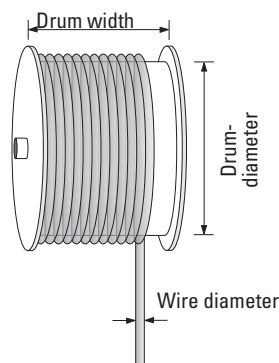
#### Versatile

- **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 <sup>2</sup>
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 $\varnothing$ 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.

# Linear Measuring Technology

## Draw wire mechanics with encoder or analogue sensor

### Draw wire encoder C120

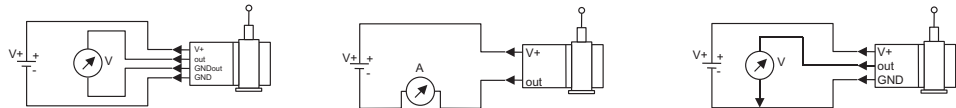
#### Electrical characteristics (digital output):

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:

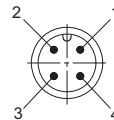


CE compliant according to: EN 61000-6-2, EN 61000-6-4, EN 61000-6-3

#### Terminal assignment (analogue output):

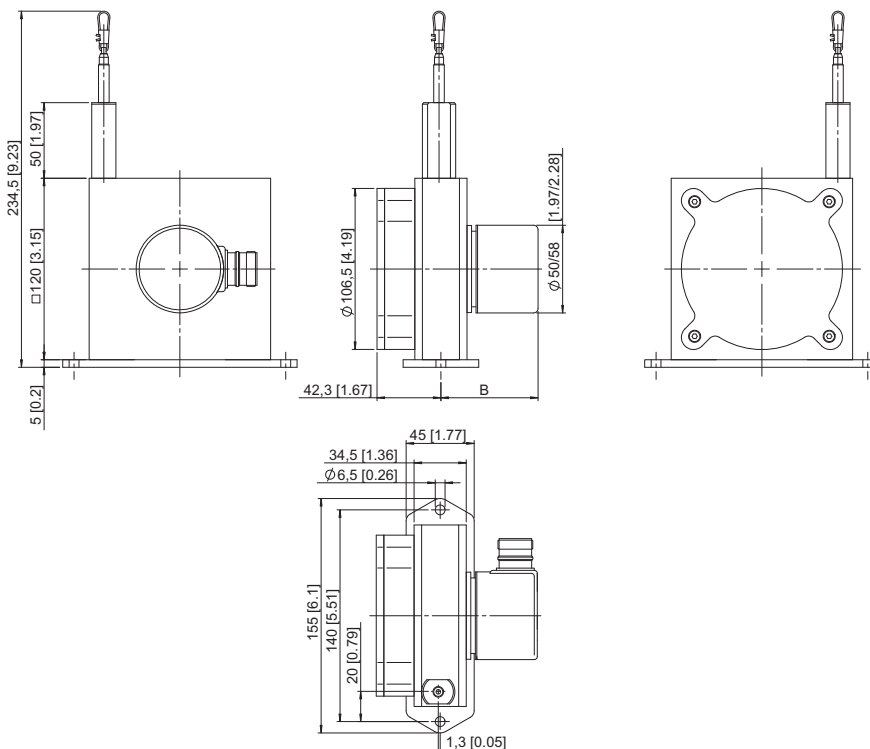
Pin	Cable colour	0 ... 10 V	4 ... 20 mA	1 kOhm
1	brown	V+	V+	V+
2	white	Signal	n. c.	Slider
3	blue	GND	Signal	GND
4	black	GND Sig.	n. c.	n. c.

#### Connector (analogue output):



#### Dimensions:

Draw wire mechanics with encoder



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

# Linear Measuring Technology

## Draw wire mechanics with encoder or analogue sensor

### Draw wire encoder C120

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 <b>incremental</b> 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 <b>absolute</b> 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 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)

**D8.4C1.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)

**D8.4C1.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

0600 = 6000 mm

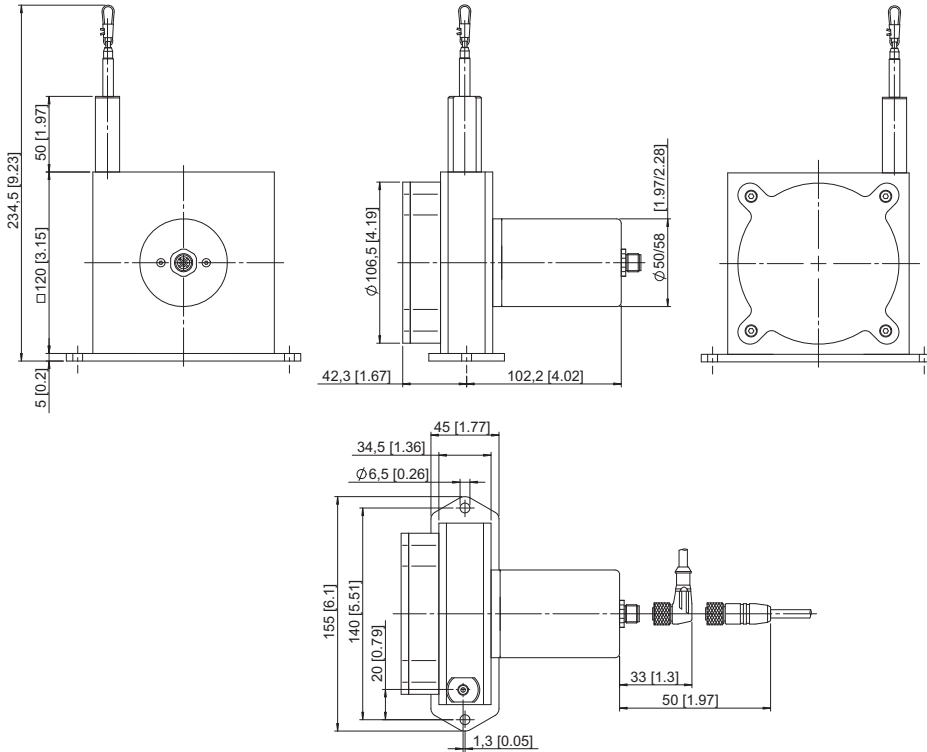
\*other measuring ranges on request

# Linear Measuring Technology

## Draw wire mechanics with encoder or analogue sensor

### Draw wire encoder C120

**Dimensions:**  
Draw wire mechanics with analogue sensor



Order code with analogue sensor:

**D8.3C1.XXXX.XXXX.0000**

Draw wire mechanics		Type of connection: 1 = Axial cable, length 2m 3 = 4-pole M12 connector
Measuring range* 0600 = 6000 mm		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

\*other measuring ranges on request

**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

