

# Linear Measuring Technology

<b>Draw wire mechanics with encoder or analogue sensor</b>	<b>Draw wire encoder B75</b>	<b>Measuring length max. 3 m Traverse speed max. 0.8 m/s</b>
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The draw wire mechanics B75 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.



**Compact and versatile**

- Compact housing
- Variable mounting possibilities
- Low-wear wire exit

**Order code with encoder**

<b>D8.15</b> <small>Type</small>	<b>03</b> <small>a</small>	<b>. XX XX</b> <small>b c d</small>	<b>. XXXX</b> <small>e</small>
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**a** *Measuring range*  
03 = 3000 mm  
other measuring ranges on request

**b** *Encoder used*  
2Z = 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

Standard resolutions for draw wire with incremental encoder Sendix 5000, drum circumference 200 mm			
Pulses / revolution	200	2000	4000
Pulses / mm	1	10	20
Resolution (mm)	1	0.1	0.05

Standard resolutions for draw wire with absolute encoder Sendix F5863 / F5868 or 5863 / 5868, drum circumference 200 mm		
Absolute encoder	F5863 / 5863	F5868 / 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 devices**

Order No. draw wire encoder	Mounted encoder	Interface	Power supply	Type of connection	Resolution / Protocol	Options
D8.1503.2Z54.2000	Sendix 5000 (8.5000.8354.2000)	PushPull with inv. signal	10...30 V DC	1 x M12 connector radial	2000 ppr	no option
D8.1503.F324.G123	Sendix F5863 (8.F5863.1224.G123)	SSI	10...30 V DC	1 x M23 connector radial	SSI-Gray-Code	Set button + Status LED
D8.1503.6324.G123	Sendix 5863 (8.5863.1224.G123)	SSI	10...30 V DC	1 x M23 connector radial	SSI-Gray-Code	Set button + Status LED
D8.1503.F82E.2123	Sendix F5868 (8.F5868.122E.2123)	CANopen	10...30 V DC	1 x M12 connector radial	CANopen encoder profile DS406 V3.2	Set button
D8.1503.6822.2123	Sendix 5868 (8.5868.1222.2123)	CANopen	10...30 V DC	2 x M12 connector radial	CANopen encoder profile DS406 V3.2	Set button
D8.1503.6832.3113	Sendix 5868 (8.5868.1232.3113)	PROFIBUS	10...30 V DC	3 x M12 connector radial	Profibus-DP V0 encoder profile Class 2	Set button
D8.1503.68B2.B212	Sendix 5868 (8.5868.12B2.B212)	EtherCAT	10...30 V DC	3 x M12 connector radial	EtherCAT with CoE 3.2.10	no option
D8.1503.68C2.C212	Sendix 5868 (8.5868.12C2.C212)	PROFINET IO	10...30 V DC	3 x M12 connector radial	PROFINET Encoder Profil Version 4.1	no option

**Order code with analogue sensor**

<b>D8.35</b> <small>Type</small>	<b>03</b> <small>a</small>	<b>. XXX</b> <small>b c</small>	<b>2 . 0000</b> <small>d</small>
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**a** *Measuring range*  
03 = 3000 mm  
other measuring ranges on request

**b** *Analogue sensor output / Power supply*  
A11 = 4 ... 20 mA / 12 ... 30 V DC  
A22 = 0 ... 10 V DC / 12 ... 30 V DC  
A33 = Potentiometer 10 kΩ / max. 30 V DC

**c** *Type of connection*  
2 = M12 connector, 4 pin, radial (wire exit direction)

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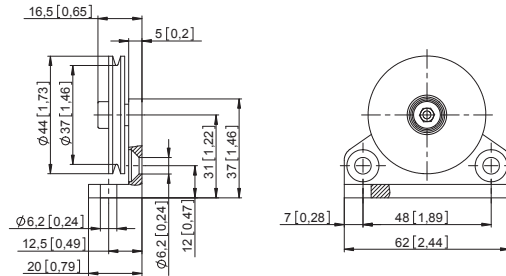
**Draw wire mechanics with encoder or analogue sensor**

**Draw wire encoder B75**

**Measuring length max. 3 m  
Traverse speed max. 0.8 m/s**

## Guide pulley for draw wire encoder

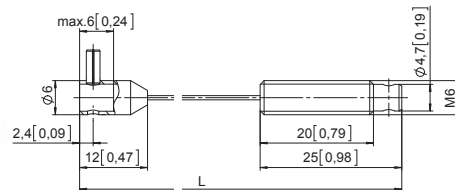
Order No.



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**

## Extension cable



Steel wire 2 m [6.56']  
 Steel wire 5 m [16.40']  
 Steel wire 10 m [32.81']  
 Paraleine 2 m [6.56']

**8.0000.7000.0033**

**8.0000.7000.0034**

**8.0000.7000.0035**

**8.0000.7000.0032**

## Connection technology for analogue sensor

### Connector, self-assembly (straight)

M12 female connector with coupling nut

**8.0000.5116.0000**

### Cordset, pre-assembled

M12 female connector with coupling nut, 2 m [6.56'] PVC cable

**05.00.6081.2211.002M**

## Technical data

### Mechanical characteristics (draw wire mechanics)

<b>Measuring range</b>	3000 mm		
<b>Traversing speed</b>	max. 0.8 m/s		
<b>Working temperature</b>	-40°C ... +80°C [-40°F ... +176°F]		
<b>Protection</b>	IP65		
<b>Weight</b>	approx. 500 g [17.67 oz]		
<b>Required force <math>F_{min}</math></b>	3 N		
<b>Linearity</b>	± 0.35 %		
<b>Repetition accuracy</b>	± 0.15 mm		
<b>Werkstoffe</b>	housing	plastic / Die-cast zinc	
	wire	stainless steel Ø 0.9 mm, plastic-coated	

### Electrical characteristics

<b>Analogue output</b>	0 ... 10 V DC	4 ... 20 mA	Potentiometer 10 kΩ
<b>Power supply</b>	15 ... 28 V DC	-	-
<b>Operating range</b>	-	15 ... 28 V DC	max. 48 V DC
<b>Load</b>	max. 500 Ω	max. 500 Ω	-
<b>Temperature range</b>	-40°C ... +80°C [-40°F ... +176°F]		
<b>CE compliant acc. to</b>	EMC guideline 2004/108/EC		
<b>RoHS compliant acc. to</b>	guideline 2011/65/EU		

## Terminal assignment (analogue output)

Colour	BN	WH	GN	
Pin M12	1	2	3	4
0 ... 10 V DC	+ 24 V DC	0 V	$U_{out}$	n.c.
4 ... 20 mA	+I	-I	n.c.	n.c.
Potentiometer 10 kΩhm	Po	Pe	S	n.c.

### 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.

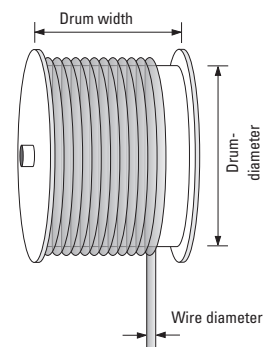
## Operating principle

### Construction

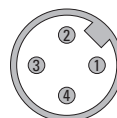
The core of a draw wire device is a drum mounted on bearings, onto which a wire is wound. Winding takes place via a spring-loaded device.

### Note

Exceeding the maximum extension length of the draw wire will lead to damage to the wire and the mechanics.



## Connector (analogue output)



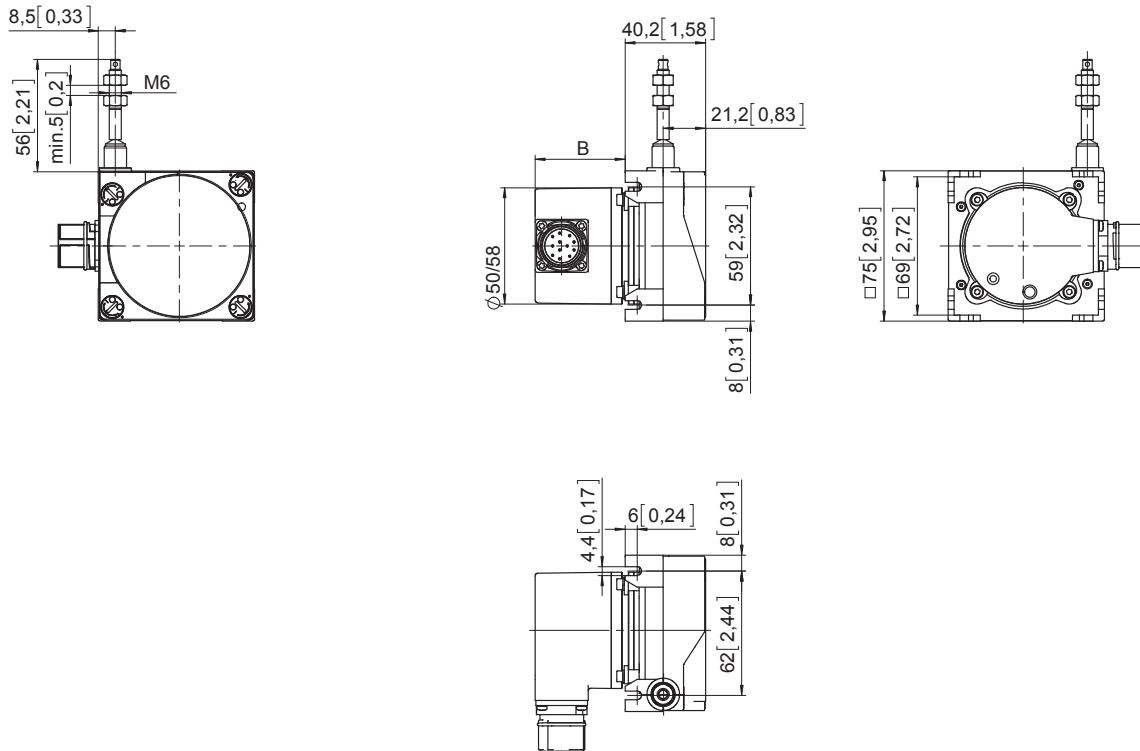
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## Dimensions

Dimensions in mm [inch]

### With encoder



### With analogue sensor

