

Linear measuring technology

Draw-wire encoder C105	Compact-Line	Measuring length max. 6 m
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The draw-wire encoder C105 features a compact design. It is available with various wire types. All encoders with 58 mm synchro flange and 6 mm shaft, as well as analog sensors with redundant interfaces can be combined with this draw-wire mechanism. The cable and connector orientations of the encoder can easily be adapted to the position of the mechanism. A flexible wire outlet compensates mounting tolerances.

Analog output	2xAnalog output			
			SAE J1939	

Wide temperature range	High protection level	Reverse polarity protection	Interchangeable installation	Flat design

Flexible and compact

- Encoder replacement and connection technology adaptation possible by the user.
- Measuring lengths from 3 m to 6 m.
- Simple adaptation of the position for the connection technology.
- Flexible wire outlet and different wire types.
- Compact design.
- Simple installation.
- Scalable analog output with limit switch function.
- Redundant sensors.

Order code with encoder (incremental, absolute)

D8.1 **X****X****X** . **X****X****X****X** . **X****X****X****X**

Type **a** **b** **c** **d** **e** **f**

- | | | | | | |
|---|--|---|---|--|---|
| <p>a Wire type</p> <p>1 = steel wire</p> <p>2 = Para-Line¹⁾</p> <p>5 = Steel wire, plastic coated</p> | <p>c Encoder used</p> <p>2Z = Sendix 5000, incremental</p> <p>M3 = Sendix M5863, absolute</p> <p>F3 = Sendix F5863, absolute</p> <p>63 = Sendix 5863, absolute</p> <p>M8 = Sendix M5868, absolute</p> <p>F8 = Sendix F5868 absolute</p> <p>68 = Sendix 5868, absolute</p> | <p>d Output circuit</p> <p>depends on the encoder used</p> | <p>e Type of connection</p> <p>depends on the encoder used</p> | <p>f Resolution / Protocol / Options</p> <p>depends on the encoder used</p> | <p><i>Draw-wire mechanism without encoder</i></p> <p>write 0 in c, d, e + f</p> <p>Example: D8.1106.0000.0000</p> |
|---|--|---|---|--|---|

Standard resolutions for draw-wire with incremental encoder Sendix 5000			
Drum circumference [mm]	200	200	200
Pulses / revolution [ppr]	200	2000	4000
Pulses / mm	1	10	20
Resolution [mm]	1	0.1	0.05

Standard resolutions for draw-wire with absolute encoder Sendix M5863 (12 bit ST) or M5868 (12 bit ST, programmable via bus)	
Drum circumference [mm]	200
Pulses / revolution [ppr]	4096
Pulses / mm	20.5
Resolution [mm]	0.05

Recommended standard variants (with incremental, absolute encoder)

Order no. draw-wire encoder	Mounted encoder	Interface	Power supply	Type of connection	Resolution / Protocol	Option
D8.1xxx.2Z54.2000	Sendix 5000 (8.5000.B154.2000)	Push-pull with inverted signal	10 ... 30 V DC	1 x radial M12 connector	2000 ppr	-
D8.1xxx.M324.G222	Sendix M5863 (8.M5863.4124.G222)	SSI	10 ... 30 V DC	1 x radial M12 connector	4096 ppr / SSI-Gray-Code	-
D8.1xxx.M824.2122	Sendix M5868 (8.M5868.4124.2122)	CANopen	10 ... 30 V DC	1 x radial M12 connector	CANopen encoderprofil DS406 V4.0	-

1) Wire type **a** = 2 (Para-Line) not available for measuring range 6 m.

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Other variants (with absolute encoder)

Order no. draw-wire encoder	Mounted encoder	Interface	Power supply	Type of connection	Resolution / Protocol	Option
D8.1xxx.F326.G223	Sendix F5863 (8.F5863.2126.G223)	SSI	10 ... 30 V DC	1 x radial M12 connector	4096 ppr / SSI-Gray-Code	SET button + status LED
D8.1xxx.6326.G223	Sendix 5863 (8.5863.2126.G223)	SSI	10 ... 30 V DC	1 x radial M12 connector	4096 ppr / SSI-Gray-Code	SET button + status LED
D8.1xxx.F82E.2123	Sendix F5868 (8.F5868.212E.2123)	CANopen	10 ... 30 V DC	1 x radial M12 connector	CANopen encoder profile DS406 V3.2	SET button
D8.1xxx.6822.2123	Sendix 5868 (8.5868.2122.2123)	CANopen	10 ... 30 V DC	2 x radial M12 connector	CANopen encoder profile DS406 V3.2	SET button
D8.1xxx.M834.3222	Sendix M5868 (8.M5868.4134.3222)	SAE J1939	10 ... 30 V DC	1 x radial M12 connector	SAE J1939	-
D8.1xxx.M844.4122	Sendix M5868 (8.M5868.4144.4122)	IO-Link	18 ... 30 V DC	1 x radial M12 connector	IO-Link	-
D8.1xxx.6832.3113	Sendix 5868 (8.5868.2132.3113)	PROFIBUS	10 ... 30 V DC	3 x radial M12 connector	Profibus-DP V0 encoder profile Class 2	SET button
D8.1xxx.68B2.B212	Sendix 5868 (8.5868.21B2.B212)	EtherCAT	10 ... 30 V DC	3 x radial M12 connector	EtherCAT with CoE 3.2.10	-
D8.1xxx.F8CN.C122	Sendix F5868 (8.F5868.21CN.C122)	PROFINET IO	10 ... 30 V DC	3 x axial M12 connector	PROFINET encoder profile version 4.2	-
D8.1xxx.F8AN.A222	Sendix F5868 (8.F5868.21AN.A222)	EtherNet/IP	10 ... 30 V DC	3 x axial M12 connector	EtherNet/IP	-

Order code with encoder (analog, scalable with limit switch function)

D8.1	XXX	.	M1	XX	.	XXXX
Type	a	b	c	d	e	f

- a** Wire type
1 = steel wire
2 = Para-Line ¹⁾
5 = Steel wire, plastic coated
 - b** Measuring range
A1 = 3 m
04 = 4 m
05 = 5 m
06 = 6 m ²⁾
 - c** Encoder used
M1 = Sendix M5861, absolute ²⁾
 - d** Output circuit
depends on the encoder used
 - e** Type of connection
depends on the encoder used
 - f** Resolution / Protocol / Options
depends on the encoder used
- Draw-wire mechanism without encoder write 0 in **c, d, e + f**
Example: D8.1106.0000.0000*

Recommended standard variants (with encoder analog, scalable with limit switch function)

Order no. draw-wire encoder	Mounted encoder	Interface	Power supply	Type of connection	Resolution / Protocol	Option
D8.1xxx.M134.3512	Sendix M5861 (8.M5861.4134.3512)	Analog, 4 ... 20 mA	10 ... 30 V DC	radial M12 connector	12 Bit / 4 ... 20 mA	scalable with limit switch function ³⁾
D8.1xxx.M144.4512	Sendix M5861 (8.M5861.4144.4512)	Analog, 0 ... 10 V	15 ... 30 V DC	radial M12 connector	12 Bit / 0 ... 10 V	scalable with limit switch function ³⁾
D8.1xxx.M134.3612	Sendix M5861 (8.M5861.4134.3612)	Analog, 4 ... 20 mA	10 ... 30 V DC	radial M12 connector	12 Bit / 4 ... 20 mA	scalable without limit switch function ³⁾
D8.1xxx.M144.4612	Sendix M5861 (8.M5861.4144.4612)	Analog, 0 ... 10 V	15 ... 30 V DC	radial M12 connector	12 Bit / 0 ... 10 V	scalable without limit switch function ³⁾

Order code with analog sensor (scaled to measuring range)

D8.3	1	XX	.	XXX	2	.	0000
Typ	a	b	c	d			

- a** Wire type
1 = steel wire (ø 0,6 mm)
- b** Measuring range
05 = 5 m
06 = 6 m
- c** Redundant sensor / supply voltage
R11 = 2 x 4 ... 20 mA / 10 ... 30 V DC
R33 = 2 x potentiometer 10 kΩ / max. 30 V DC
- d** Type of connection
2 = radial M12 connector, 8-pin

1) Wire type **a** = 2 (Para-Line) not available for measuring range 6 m.
2) With ccw option.
3) Delivery condition: unscaled.
Description for scaling and limit switch function see data sheet M5861.

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Technical data

Mechanical characteristics	
Measuring range	3000 ... 6000 mm
Speed max.	3000 mm/s
Acceleration max.	23.5 m/s ²
Extension force F_{min}	8 N
Repeat accuracy	±0.25 mm
Working temperature	with encoder -20 °C ... +80 °C [-4 °F ... +176 °F] -40 °C ... +80 °C [-40 °F ... +176 °F], optional on request, speed max. 800 mm/s with analog sensor -40 °C ... +80 °C [-40 °F ... +176 °F]
Weight	approx. 800 g [28.22 oz]
Drum circumference	200 mm
Wire	Para-Line ø 0,6 mm steel wire ø 0,6 mm

Electrical characteristics analog sensor R11	
Supply voltage	10 ... 30 V DC
Output current	4 ... 20 mA (2x) 20 ... 4 mA (2x) 4 ... 20 mA + 20 ... 4 mA

For the electrical characteristics as well as for the terminal assignment, please refer to the data sheet of the encoder used.

Electrical characteristics analog sensor R33	
Analog output	2 x potentiometer
Output	10 kΩ
Supply voltage	max. 30 V DC
Load capacity	2 W at 70 °C
Resistance tolerance	±5 %
Standard terminal resistance	0.5Ω or 1Ω
Linearity tolerance	±0.25 %

Approvals		
CE compliant in accordance with	EMC Directive	2014/30/EU
	RoHS Directive	2011/65/EU
UKCA compliant in accordance with	EMC Regulations	S.I. 2016/1091
	RoHS Regulations	S.I. 2012/3032

Terminal assignment (analog output)

Analog sensor R11 , redundant (2 x 4 ... 20 mA)	M12 connector, 8 pin		R/I-converter 1		R/I-converter 2						
		Signal:	+V 1	I _{out} 1	+V 2	I _{out} 2	n.c.	n.c.	n.c.	n.c.	
		Pin:	1	3	5	7	2	4	6	8	
Analog sensor R33 , redundant (2 x Potentiometer 1 kΩ)	M12 connector, 8 pin		Potentiometer 1			Potentiometer 2					
		Signal:	+V 1	Out 1	0 V 1	n.c.	+V 2	Out 2	0 V 2		n.c.
		Pin:	1	2	3	4	5	6	7	8	

Top view of mating side, male contact base



M12 connector, 8-pin

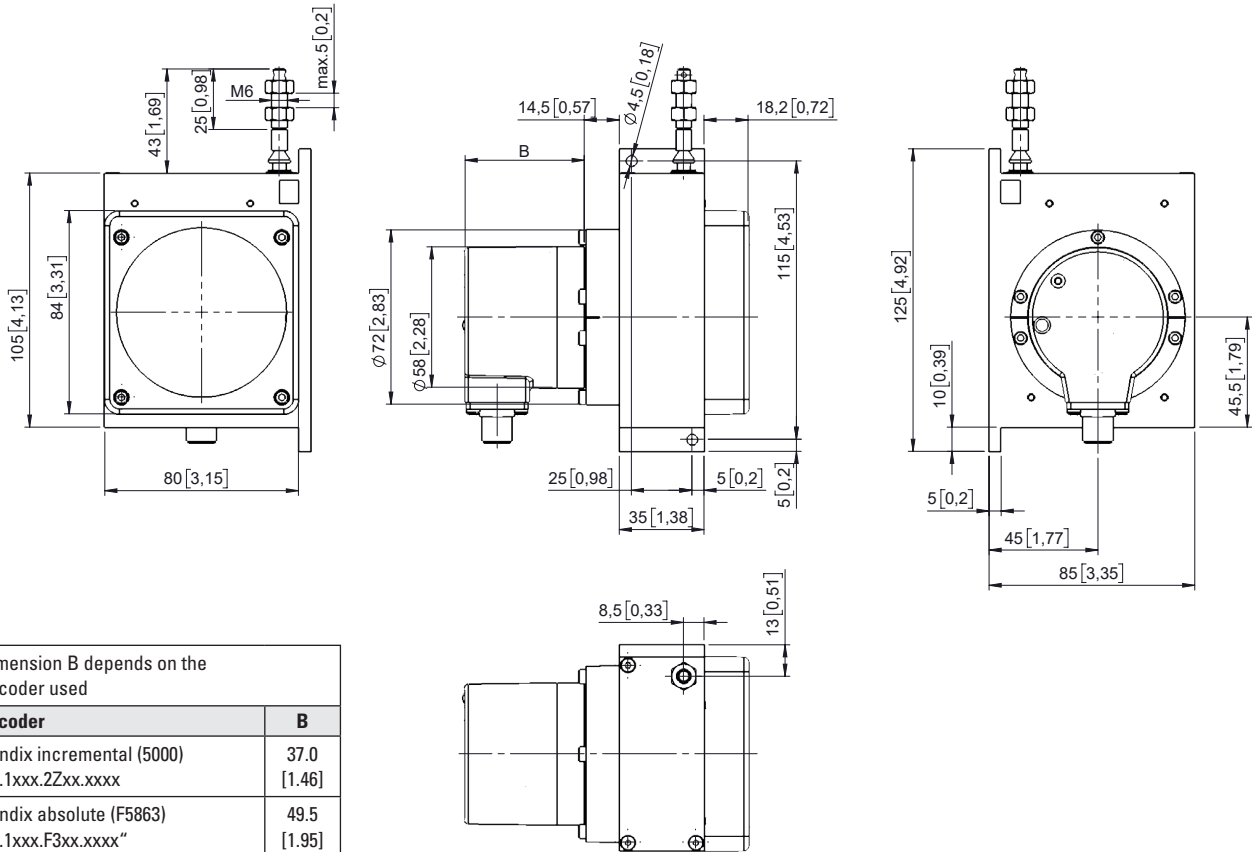
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Dimensions

Dimensions in mm [inch]

Draw-wire mechanics with encoder



Dimension B depends on the encoder used	
Encoder	B
Sendix incremental (5000) D8.1xxx.2Zxx.xxxx	37.0 [1.46]
Sendix absolute (F5863) D8.1xxx.F3xx.xxxx"	49.5 [1.95]
Sendix absolute (5863) D8.1xxx.63xx.xxxx	49.5 [1.95]
Sendix absolute (F5868, CANopen) D8.1xxx.F8xx.21xx	70.0 [2.76]
Sendix absolute (F5868, EtherNet/IP) D8.1xxx.F8xx.A2xx	59.5 [2.34]
Sendix absolute (F5868, EtherNet/IP) D8.1xxx.68xx.A2xx	77.2 [3.04]
Sendix absolute (F5868, EtherNet/IP) D8.1xxx.Mxxx.xxxx	49.8 [1.96]

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Compact-Line

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Dimensions

Dimensions in mm [inch]

Draw-wire mechanics with encoder

