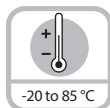


Linear Position Technology

Draw Wire Mechanics with Encoder or Analog Sensor

Mini Draw Wire Encoder DW55



Temperature



Short-circuit protected



Reverse polarity protection

Rugged

- Reinforced plastic housing (1 m wire).
- Stainless steel cable
- Zinc die cast housing (2 m wire).



Analog output

CANopen
SAE J1939

Versatile

- Radial or axial cable exit.
- Analog outputs 4-20 mA, 0-10 V or resistance.
- Incremental push-pull output.
- Absolute encoder output options.

Compact

- Measuring length up to 2,000 mm.
- 40 x 40 x 58 mm housing (1 m wire).
- 40 x 40 x 72.3 mm housing (2 m wire).

Mechanical Characteristics (Draw Wire Mechanics):

Measuring range:	1,000 mm	2,000 mm
Max. speed:	2.62 ft/s (0.8 m/s)	3.28 ft/s (1.0 m/s)
Working temperature	+32 to +122 °F (0 to +50 °C)	+14 to +176 °F (-10 to +80 °C)
Protection acc. to EN60529:	IP50	IP65
Weight:	approx. 0.44 lbs (0.2 kg)	0.7 lbs (0.32 kg)
Required force:	0.45 lbs (2N)	0.45 lbs (2N)
Repeat accuracy:	±0.15 mm	±0.15 mm
Linearity:	±0.35%	±0.35%

Material: Housing: plastic/zinc die cast
Wiring: stainless steel Ø 0.45 mm, plastic coated

Electrical Characteristics (Absolute Encoder):

The electrical characteristics of the draw wire encoder assembly may be found in the catalog pages of the encoder selected.

Mini Draw Wire Encoder DW55

Mechanical Characteristics (Draw wire with incremental encoder):

Measuring range:	up to 2,000 mm
Absolute accuracy:	±0.1% for the whole measuring range
Repetition accuracy:	±0.15 mm per direction of travel
Resolution (incremental):	0.1 mm (0.025 mm post-quadrature) [standard encoder with 1,000 ppr.]
Traversing speed:	max. 2.62 ft/s (800 mm/s)
Required force:	approx. 2.25 lbs (10 N) (on wire)
Material:	Housing: reinforced plastic, Wire: stainless steel ø 0.45 mm, plastic coated
Weight:	approx. 0.463 lbs (0.210 kg)
Protection acc. to EN 60529:	IP54 from housing side
Working temperature:	-4 to +185 °F (-20 to +85 °C)
Shock resistance acc. to DIN-IEC 68-2-27:	100 g (1,000 m/s ²), 6 ms
Vibration resistance acc. to DIN-IEC 68-2-27:	10 g (100 m/s ²), 55-2,000 Hz
The electrical characteristics of the draw wire encoder assembly may be found in the catalog pages of the encoder selected.	

Electrical Characteristics (Absolute Encoder):

The electrical characteristics of the draw wire encoder assembly may be found in the catalog pages of the encoder selected.

Electrical Characteristics (Incremental Output):

Output circuits [Key Code]:	Push-Pull [2D]	Push-Pull [2A]
Supply voltage:	5-24 VDC	8-30 VDC
Current consumption (without load):	max. 50 mA	max. 50 mA
Permitted load per channel:	max. ±50 mA	max. ±50 mA
Pulse rate:	max. 160 kHz	max. 160 kHz
Switching level high:	min. +V – 2.5 V	min. +V – 3 V
Switching level low:	max. 0.5 V	max. 2.5 V
Rise time tr:	max. 1 µs	max. 1 µs
Fall time tf:	max. 1 µs	max. 1 µs
Short-circuit protected:	yes	yes
Electrical Characteristics (Absolute Encoder):	The electrical characteristics of the draw wire encoder assembly may be found in the catalog pages of the encoder selected.	

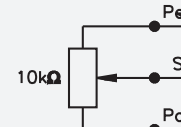
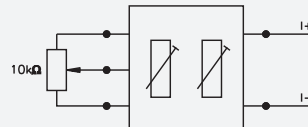
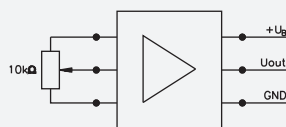
Description of the Incremental Encoder (Connected on Load Side)

- Compensation for temperature and aging
- Short-circuit protected outputs
- Reverse polarity protected power-supply input
- Push-pull output

Electrical Characteristics (Analog Output):

Analog output [Key Code]:	0-10 V [8C]	4-20 mA [7F]	Potentiometer 10 kΩ [PB]
Supply voltage:	15-28 VDC	15-28 VDC	Max. 48 VDC
Temperature range:	+32 to +122 °F (0 to +50 °C)	+32 to +122 °F (0 to +50 °C)	+32 to +122 °F (0 to +50 °C)
Load:	max 500 Ω	max 500 Ω	-

Connection diagrams:



RoHS Compliant acc. to EU guideline 2011/65/EU

Linear Position Technology

Draw Wire Mechanics with Encoder or Analog Sensor

Mini Draw Wire Encoder DW55

Part Number Key: DW55 with Encoder

A	B		C		D		E		F
DW	2000	-	55	-	46	-	3C12S12M	-	CT1M

A	Type
DW	Draw Wire

B	Measuring Range
2000	2 m Steel Wire, IP65

C	Housing
55	40 mm

D	Encoder Type
46	RM-46, Absolute, SSI
47	RM-47, Absolute, CANopen
99	RM-99, Absolute, SSI
101	RM-101, Absolute, CANopen, SAE J1939

E	Voltage Supply and Output Type
	Dependent on Encoder Selected ¹⁾

F	Type of Connection
	Dependent on Encoder Selected ¹⁾

¹⁾Recommended encoders listed below

Standard resolutions for draw wire with absolute encoder RM-46/RM-99 (12-bit ST) or RM-47/RM-101 (12-bit ST, programmable via the bus)

Drum circumference (mm)	1000
Pulses/revolution (ppr)	4096
Pulses/mm	41
Resolution (mm)	0.02

Recommended standard variants (with absolute encoder)

Draw wire assembly	Mounted encoder	Interface	Power supply	Type of connection	Resolution / Protocol	Option
DW2000-55-99-3C12S12M-H1181	RM-99T6S-3C12S12M-H1181	SSI	10-30 VDC	Radial M12 connector	4096 ppr / SSI-Gray-Code	-
DW2000-55-101-9D38B-H1151	RM-101T6S-9D38B-H1151	CANopen	10-30 VDC	Radial M12 connector	CANopen encoder profile DS406 V4.0	-
DW2000-55-101-9F43B-H1151	RM-101T6S-9F43B-H1151	SAE J1939	10-30 VDC	Radial M12 connector	CAN high-speed acc. to ISO 11898, CAN specification 2.0 B	-
DW2000-55-46-3C12S12M-CT1M	RM-46T6S-3C12S12M-CT1M	SSI	10-30 VDC	Tangential cable, 1 m	4096 ppr / SSI-Gray-Code	-
DW2000-55-47-9D32B-CT1M	RM-47T6S-9D32B-CT1M	CANopen	10-30 VDC	Tangential cable, 1 m	CANopen encoder profile DS406 V3.2	-

Linear Position Technology

Draw Wire Mechanics with Encoder or Analog Sensor

Mini Draw Wire Encoder DW55

Part Number Key: DW55 with Encoder (analog, scalable with limit switch function)

A	B		C		D		E		F
DW	2000	-	55	-	97	-	7ASALWL	-	H1151

A	Type
DW	Draw Wire

D	Encoder Type
97	RM-97, Absolute, Analog

B	Measuring Range
2000	2 m Steel Wire, IP65

E	Voltage Supply and Output Type
Dependent on Encoder Selected ¹⁾	

C	Housing
55	40 mm

F	Type of Connection
Dependent on Encoder Selected ¹⁾	

¹⁾Recommended encoders listed below

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

Draw wire assembly	Mounted encoder	Interface	Power supply	Type of connection	Resolution / Protocol	Option
DW2000-55-97-7ASALWL-H1151	RM-97T6S-7ASALWL-H1151	Analog, 4-20 mA	10-30 VDC	Radial M12 connector	12 Bit / 4-20 mA	scalable with limit switch function ¹⁾
DW2000-55-97-8BSALWL-H1151	RM-97T6S-8BSALWL-H1151	Analog, 0-10 V	15-30 VDC	Radial M12 connector	12 Bit / 0-10 V	scalable with limit switch function ¹⁾
DW2000-55-97-7ASALNS-H1151	RM-97T6S-7ASALNS-H1151	Analog, 4-20 mA	10-30 VDC	Radial M12 connector	12 Bit / 4-20 mA	scalable without limit switch function ¹⁾
DW2000-55-97-8BSALNS-H1151	RM-97T6S-8BSALNS-H1151	Analog, 0-10 V	15-30 VDC	Radial M12 connector	12 Bit / 0-10 V	scalable without limit switch function ¹⁾

¹⁾Unscaled

Part Number Key: DW55 Incremental

A	B		C		D		E	F		G
DW	1000	-	55	-	01	-	2A	1000	-	CA

A	Type
DW	Draw Wire

E	Voltage Supply and Output Type
2A	8-30 VDC, Push-Pull (w/ Inverted Signals)
2D	5-24 VDC, Push-Pull (w/ Inverted Signals)

B	Measuring Range
1000	1 m Steel Wire
2000	2 m Steel Wire

F	Pulse Rate
1000	

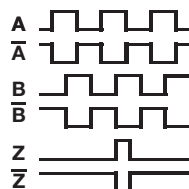
C	Housing
55	40 mm

G	Type of Connection
CA	Axial Cable (2 m PVC)

D	Encoder Type
01	RI-01, Incremental

Standard Wiring:

Color:	Signal:
WH	Common
BN	+V
GN	A
YE	\bar{A}
GY	B
PK	\bar{B}
BU	Z
RD	\bar{Z}



* Index present every 100 mm every linear travel.

Linear Position Technology

Draw Wire Mechanics with Encoder or Analog Sensor

Mini Draw Wire Encoder DW55

Part Number Key: DW55 Analog Sensor

A	B		C		D		E
DW	1000	-	55	-	7F	-	H1141

A	Type
DW	Draw Wire

B	Measuring Range
1000	1 m Steel Wire, IP50
2000	2 m Steel Wire, IP65

C	Housing
55	40 mm

D	Voltage Supply and Output Type
7F	15-28 VDC, 4-20 mA
8D	15-28 VDC, 0-10 V
PB	48 VDC max, 10 kΩ, Potentiometer

E	Type of Connection
H1141	Radial 4-pin M12 Eurofast Connector ¹⁾
C	Radial Cable (2 m PVC) ¹⁾
CA	Axial Cable (2 m PVC) ²⁾

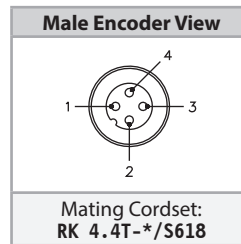
¹⁾ Only available with measuring range '2000'
²⁾ Only available with measuring range '1000'

Standard Wiring:

Color	WH	BN	GN
Pin M12	2	1	3/BU
4-20 mA	*-I	+I	N/C
0-10 VDC	GND	15-28 V	V _{out}
Pot. 10 kΩ	Pe, end position	Po, start position	Wiper contact

* Loop powered

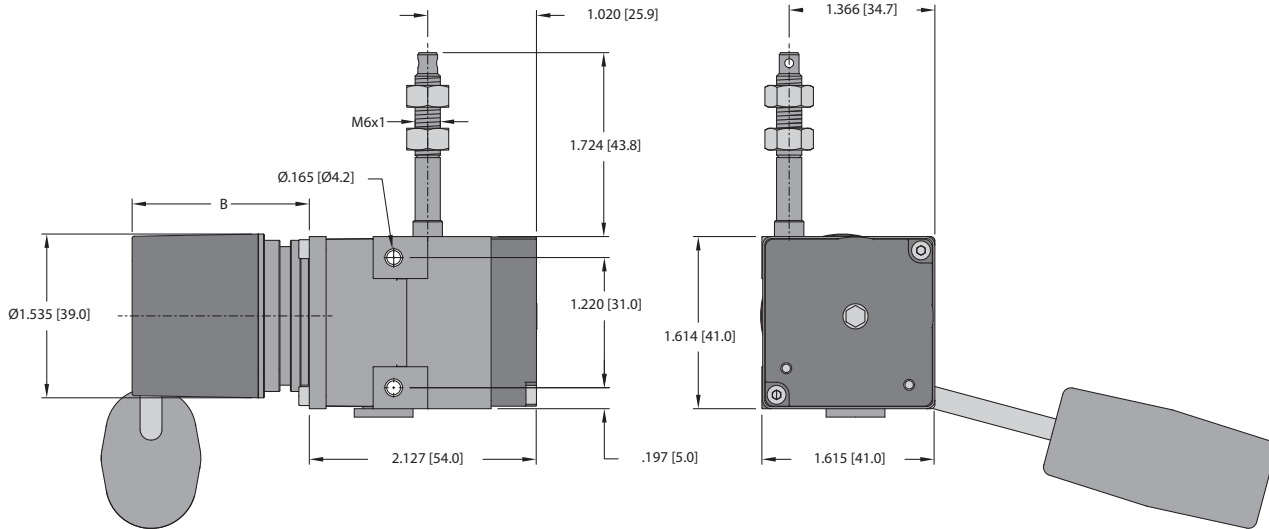
Wiring Diagram:



* Length in meters.

Mini Draw Wire Encoder DW55

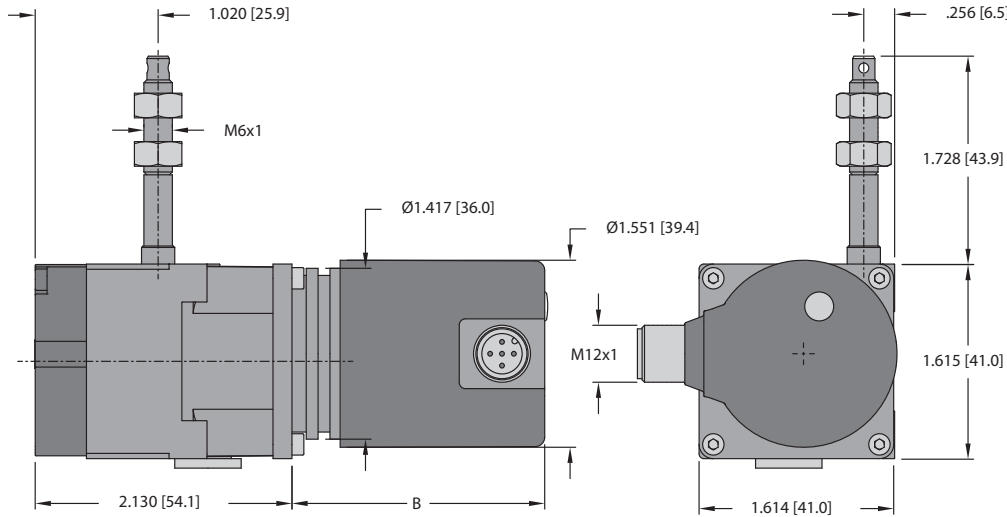
Dimensions: DW55 with RM-46/47 Encoder



Dimension B depends on the encoder used

Encoder	B in. [mm]
DW2000-55-46-*****_*****	1.56 [39.70]
DW2000-55-47-*****_*****	1.56 [39.70]

Dimensions: DW55 with RM-97/99/101 Encoder



Dimension B depends on the encoder used

Encoder	B in. [mm]
DW2000-55-97-*****_*****	2.10 [53.25]
DW2000-55-99-*****_*****	2.10 [53.25]
DW2000-55-101-*****_*****	2.10 [53.25]

Accessories:

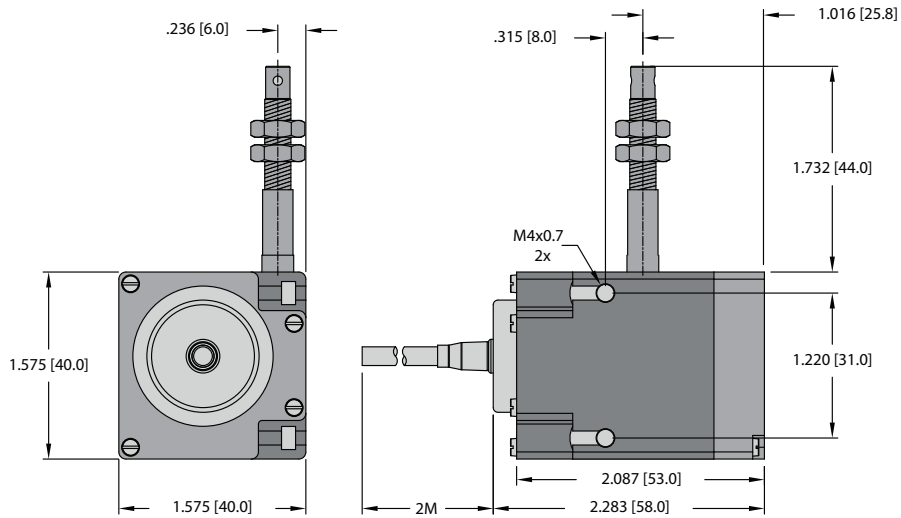
- See page H1, Connectivity, for cables and connectors

Linear Position Technology

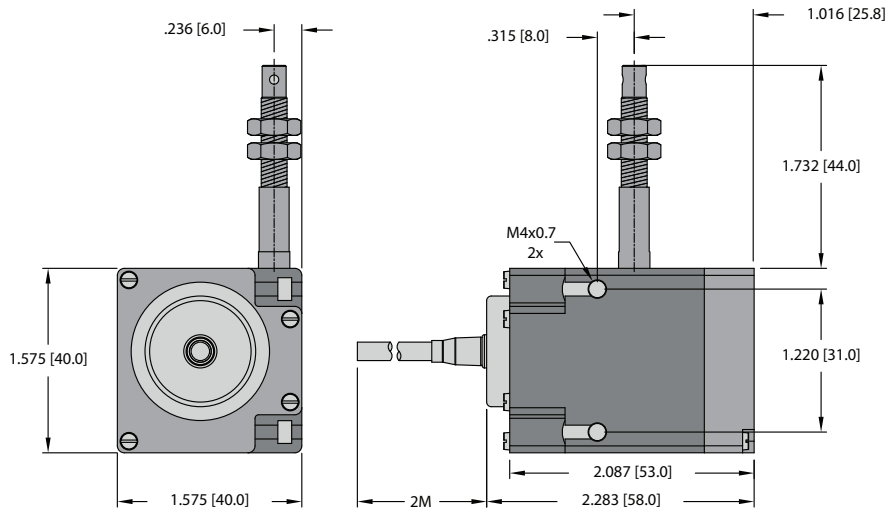
Draw Wire Mechanics with Encoder or Analog Sensor

Mini Draw Wire Encoder DW55

Dimensions: DW55 Incremental



Dimensions: DW1000-55-**-CA

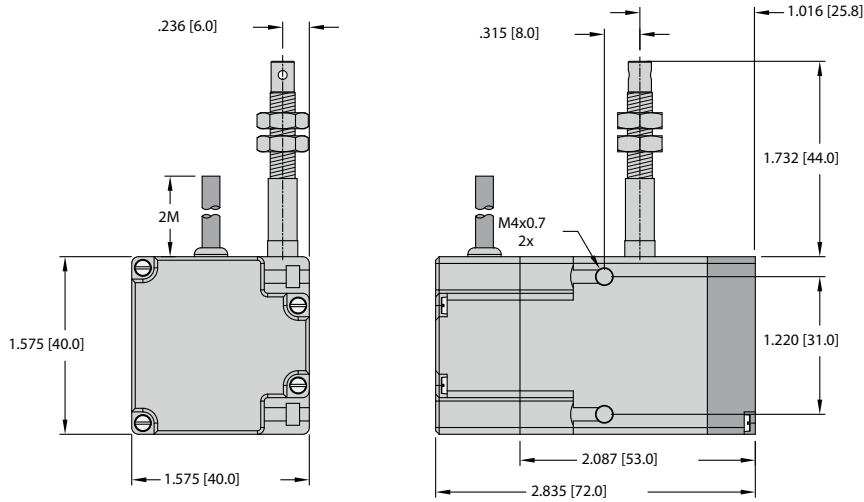


Accessories:

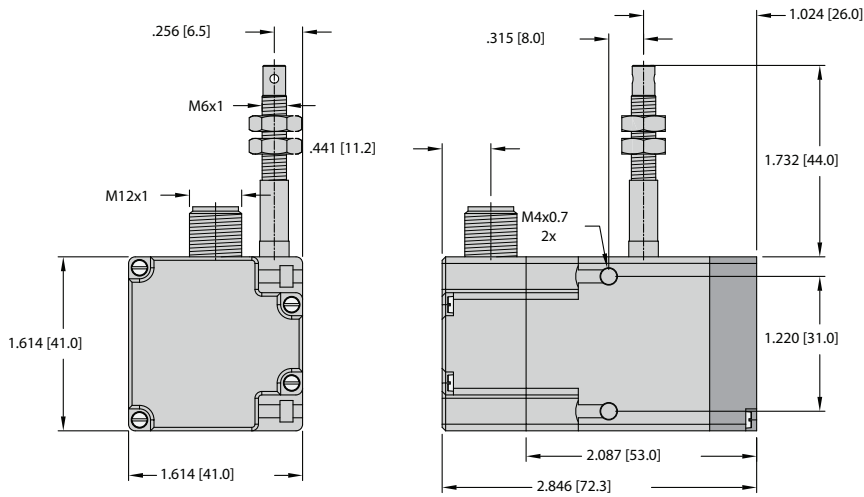
- See page H1, Connectivity, for cables and connectors

Mini Draw Wire Encoder DW55

Dimensions: DW2000-55--C**



Dimensions: DW2000-55--H1141**



Accessories:

- See page H1, Connectivity, for cables and connectors