

BTF13-D1HM3025

HighLine

WIRE DRAW ENCODERS





Ordering information

Туре	Part no.
BTF13-D1HM3025	1034315

Included in delivery: ATM60-D1H13x13 (1), MRA-F130-130D1 (1)

Bus adapter not included with delivery

Product is supplied fully assembled. See individual components for further technical data

Other models and accessories → www.sick.com/HighLine



Detailed technical data

Safety-related parameters

$MTTF_D$ (mean time to dangerous failure)	150 years (EN ISO 13849-1) 1)

¹⁾ This product is a standard product and does not constitute a safety component as defined in the Machinery Directive. Calculation based on nominal load of components, average ambient temperature 40 °C, frequency of use 8760 h/a. All electronic failures are considered hazardous. For more information, see document no. 8015532.

Performance

Measurement range	0 m 30 m
Encoder	Absolute encoders
Resolution (wire draw + encoder)	0.04 mm ^{1) 2)}
Repeatability	≤ 2 mm ³⁾
Linearity	≤ ± 2 mm ³⁾
Hysteresis	≤ 5 mm ³⁾

¹⁾ The values shown have been rounded.

Interfaces

Communication interface	DeviceNet™
Programmable/configurable	✓

Electronics

Connection type	Bus adapter for DeviceNet ¹⁾
Supply voltage	10 V 32 V
Power consumption	≤ 2 W (without load)

¹⁾ Order bus adapter separately.

²⁾ Example calculation based on the BTF08 with PROFINET: 200 mm (wire draw length per revolution - see Mechanical data): 262,144 (number of steps per revolution) = 0.001 mm (resolution of wire draw + encoder combination).

 $^{^{}m 3)}$ Value applies to wire draw mechanism.

Mechanics

Weight	6.79 kg
Measuring wire material	Highly flexible stranded steel 1,4401 stainless steel V4A
Measuring wire diameter	0.81 mm
Weight (measuring wire)	2.6 g/m
Housing material, wire draw mechanism	Aluminum (anodised), plastic
Spring return force	10 N 20 N ¹⁾
Length of wire pulled out per revolution	332.4 mm
Life of wire draw mechanism	Typ. 1,000,000 cycles ^{2) 3)}
Actual wire draw length	30.2 m
Wire acceleration	15 m/s ²
Operating speed	6 m/s
Mounted encoder	ATM60 DeviceNet, ATM60-D1H13X13, 1030018
Mounted mechanic	MRA-F130-130D1, 6028629

 $^{^{1)}}$ These values were measred at an ambient temperature of 25 $\,^{\circ}$ C. There may be variations at other temperatures.

Ambient data

EMC	According to EN 61000-6-2 and EN 61000-6-3
Enclosure rating	IP64, mounted mechanic
Operating temperature range	-20 °C +70 °C

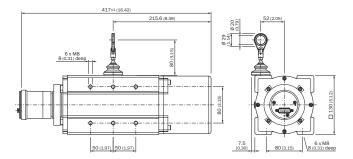
Classifications

ECLASS 5.0	27270590
ECLASS 5.1.4	27270590
ECLASS 6.0	27270590
ECLASS 6.2	27270590
ECLASS 7.0	27270590
ECLASS 8.0	27270590
ECLASS 8.1	27270590
ECLASS 9.0	27270590
ECLASS 10.0	27270613
ECLASS 11.0	27270503
ECLASS 12.0	27270503
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486
UNSPSC 16.0901	41112113

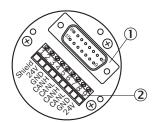
²⁾ Average values, which depend on the application.

³⁾ The service life depends on the type of load. This is influenced by environmental conditions, the installation location, the measuring range in use, the traversing speed, and acceleration.

Dimensional drawing (Dimensions in mm (inch))



PIN assignment



- ① Internal plug connector to encoder
- ② External connection to the bus

Terminal strip	Male device connector	Signal	Explanation
1	1	shield	Screen
2	2	U _S (24 V)	Operating voltage 10 32 V
3	3	GND (COM)	O V (GND)
4	4	CAN _H	CAN Bus Signal high
5	5	CAN _L	CAN Bus Signal low
6	-	CAN _H	CAN Bus Signal high
7	-	CAN _L	CAN Bus Signal low
8	-	GND (COM)	O V (GND)
9	-	U _S (24 V)	Operating voltage 10 32 V

Recommended accessories

Other models and accessories → www.sick.com/HighLine

	Brief description	Туре	Part no.
Others			
	Description: Joint ball for later insertion in wire end ring with 20 mm diameter. The use of this joint ball enables movement in multiple levels of freedom.	Joint protection for wire rope BTF/PRF/MRA	5318683
	Description: Compressed air attachment for MRA-F080 and MRA-F130 HighLine wire draw mechanism	MRA-F-P	6073769

	Brief description	Туре	Part no.
82.9	 Product family: Flanges and nozzles Description: Flange adapter for HighLine wire draw mechanisms, adaption of face mount flange with centering hub 20 mm to 50 mm servo flange Material: Aluminum Details: Aluminum Items supplied: Including 3 countersunk screws M3 x 10 	BEF-FA-020-050WDE	2073776
100	 Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Male connector, M12, 5-pin, straight, A-coded Signal type: Fieldbus, CANopen, DeviceNet™ Cable: 6 m, 5-wire, PUR, halogen-free Description: Fieldbus, CANopen, DeviceNet™, unshielded, Head A: female connector, M12, 5-pin, straight Head B: male connector, M12, 5-pin, straight Cable: drop cable, PUR, halogen-free, unshielded, 2 x 0.34 mm², Ø 6.9 mm 	DSL-1205-G06MK	6028327
	 Connection type head A: Flying leads Connection type head B: Flying leads Signal type: CANopen, DeviceNet™ Items supplied: By the meter Cable: 4-wire, twisted pair Description: CANopen, DeviceNet™, shielded Note: Wire shield AI-Pt film, overall shield C-screen tin-plated 	LTG-2804-MW	6028328
	 Connection type head A: Female connector, M12, 5-pin, straight, X-coded Signal type: CANopen, DeviceNet™ Description: CANopen, DeviceNet™, shielded, Head A: female connector, M12, 5-pin, straight, shielded, for cable diameter 4.5 mm 7 mm Head B: - Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² 	DOS-1205-GA	6027534
	 Connection type head A: Male connector, M12, 5-pin, straight, A-coded Signal type: CANopen, DeviceNet™ Description: CANopen, DeviceNet™, shielded, Head A: male connector, M12, 5-pin, straight, A coded, shielded, for cable diameter 4 mm 8 mm Head B: - Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² 	STE-1205-GA	6027533
	• Description: Additional brush attachment for wire draw mechanism MRA-F130 (5 m, 10 m, 20 m and 30 m from $^{\zeta}$ HighLine series)	MRA-F130-B	6038562
	Description: Wire draw deflection pulley for wire draw mechanism MRA-F130 (5m, 10m, 20m and 30m from HighLine series)	MRA-F130-R	6028631
	 Product segment: Wire draw mechanism Product family: Wire draw mechanism for wire draw encoders Description: HighLine wire draw mechanism for servo flange with 6 mm shaft, measuring range 0 m 30 m Items supplied: Without encoder 	MRA-F130-130D1	6028629

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