



BTF08-P1BM0241

HighLine

WIRE DRAW ENCODERS





Ordering information

Туре	part no.
BTF08-P1BM0241	1060966

Included in delivery: A3M60B-S1PB013x13 (1), MRA-F080-102D2 (1)

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



Detailed technical data

Safety-related parameters

MTTF _D (mean time to dangerous failure)	60 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 2 m
Encoder	Absolute encoders
Resolution (wire draw + encoder)	0.02 mm ^{1) 2)}
Repeatability	≤ 1 mm ³⁾
Linearity	≤ ± 2 mm ³⁾
Hysteresis	≤ 2 mm ³⁾

 $^{^{1)}}$ The values shown have been rounded.

Interfaces

Communication interface	PROFIBUS DP
Programmable/configurable	√

Electronics

Connection type	Male connector, 2x, M12, 5-pin, axial Female connector, 1x, M12, 5-pin, axial
Supply voltage	10 V 32 V
Power consumption	≤ 1.5 W (without load)

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	1.58 kg
Measuring wire material	Highly flexible stranded steel 1,4401 stainless steel V4A
Measuring wire diameter	1.35 mm
Weight (measuring wire)	7.1 g/m
Housing material, wire draw mechanism	Aluminum (anodized), aluminum die cast (nickel-plated)
Spring return force	6 N 14 N ¹⁾
Length of wire pulled out per revolution	200 mm
Life of wire draw mechanism	Typ. 1,000,000 cycles ^{2) 3)}
Actual wire draw length	2.2 m
Wire acceleration	40 m/s ²
Operating speed	8 m/s
Mounted encoder	A3M60, A3M60B-S1PB013X13, 1051018
Mounted mechanic	MRA-F080-102D2, 6028625

 $^{^{1)}}$ 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 IP67, Encoder (IEC 60529) 1)
Operating temperature range	-10 °C +70 °C

 $^{^{1)}}$ With mating connector fitted.

Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓

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

²⁾ Average values, which depend on the application.

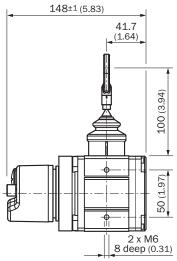
³⁾ The service life depends on the type of load. This is influenced by environmental conditions, the installation location, the measuring range in use, the traversing speed, and acceleration.

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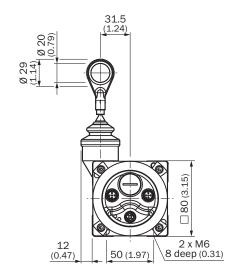
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ECLASS 12.0	27270503
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486
UNSPSC 16.0901	41112113

Dimensional drawing



Dimensions in mm (inch)



Recommended accessories

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

	Brief description	Туре	part no.		
Mounting syst	Mounting systems				
0	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		
	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		
	Description: Additional brush attachment for wire draw mechanism MRA-F080 (2 m and 3 m from HighLine series)	MRA-F080-B	6045341		
	Description: Wire draw deflection pulley for wire draw mechanism MRA-F080 (2m and 3m from HighLine series)	MRA-F080-R	6028632		

	Brief description	Туре	part no.
connectors and cables			
	Connection type head A: Female connector, M12, 4-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm²	DOS-1204-G	6007302
No.	 Connection type head A: Female connector, M12, 5-pin, straight, B-coded Connection type head B: Male connector, M12, 5-pin, straight, B-coded Signal type: Fieldbus, PROFIBUS DP Cable: 10 m, 2-wire, PUR, halogen-free Description: Fieldbus, twisted pair, shielded, PROFIBUS DP Note: Wire shield AI-Pt film, overall shield C-screen tin-plated Application: Zones with oils and lubricants, Drag chain operation 	DSL-1205-G10MQ	6032640
1	 Connection type head A: Flying leads Connection type head B: Flying leads Signal type: PROFIBUS DP Items supplied: By the meter Cable: 2-wire, PUR Description: PROFIBUS DP, shielded 	LTG-2102-MW	6021355
	 Connection type head A: Male connector, M12, 4-pin, straight, B-coded Signal type: PROFIBUS DP Description: PROFIBUS DP, terminal resistor 	STE-END-Q	6021156
	Connection type head A: Female connector, M12, 4-pin, angled, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm²	DOS-1204-W	6007303
	 Connection type head A: Male connector, M12, 5-pin, straight, B-coded Signal type: PROFIBUS DP Description: PROFIBUS DP, shielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² 	STE-1205-GQ	6021354
	 Connection type head A: Female connector, M12, 5-pin, straight, B-coded Signal type: PROFIBUS DP Description: PROFIBUS DP, shielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² 	DOS-1205-GQ	6021353
	Connection type head A: Female connector, M12, 5-pin, angled, B-coded Signal type: PROFIBUS DP Description: PROFIBUS DP, shielded Connection systems: Spring-cage connection Permitted cross-section: 0.14 mm² 0.5 mm²	DOS-1205-WQ	6041429
	 Connection type head A: Male connector, M12, 5-pin, angled, B-coded Signal type: PROFIBUS DP Description: PROFIBUS DP, shielded Connection systems: Spring-cage connection Permitted cross-section: 0.14 mm² 0.5 mm² 	STE-1205-WQ	6041428
	Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 2-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Note: Voltage supply Application: Zones with oils and lubricants	DOL-1202-W05MC	6042067
	Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 10 m, 2-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Note: Voltage supply Application: Zones with oils and lubricants	DOL-1202-W10MC	6042068
	 Items supplied: 1 x female connector M12, 4-pin, angled, 1 x female connector M12, 5-pin, angled, male connector M12, 5-pin, angled, cable? Description: Unshielded 	DOS-3XM12-W	2058177

	Brief description	Туре	part no.
	Note: Set of connectors		
	 Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, shielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A25-050UB6XLEAX	2095733
	 Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 10 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, shielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A25-100UB6XLEAX	2095734
	 Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 20 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, shielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A25-200UB6XLEAX	2095738
Ti.	 Connection type head A: Male connector, M12, 2-pin, straight, B-coded Connection type head B: Flying leads Signal type: Fieldbus, PROFIBUS DP Cable: 15 m, 2-wire, PUR, halogen-free Description: Fieldbus, shielded, PROFIBUS DP Application: Drag chain operation, Zones with oils and lubricants 	YM2B22-150P- B1XLEAX	2106276
	 Connection type head A: Male connector, M12, 2-pin, angled, B-coded Connection type head B: Flying leads Signal type: Fieldbus, PROFIBUS DP Cable: 5 m, 2-wire, PUR, halogen-free Description: Fieldbus, shielded, PROFIBUS DP Application: Drag chain operation, Zones with oils and lubricants 	YN2B22-050P- B1XLEAX	2106277
	 Connection type head A: Female connector, M12, 2-pin, angled, B-coded Connection type head B: Flying leads Signal type: Fieldbus, PROFIBUS DP Cable: 5 m, 2-wire, PUR, halogen-free Description: Fieldbus, shielded, PROFIBUS DP Application: Drag chain operation, Zones with oils and lubricants 	YG2B22-050P- B1XLEAX	2106274
-	 Connection type head A: Female connector, M12, 2-pin, angled, B-coded Connection type head B: Flying leads Signal type: Fieldbus, PROFIBUS DP Cable: 10 m, 2-wire, PUR, halogen-free Description: Fieldbus, shielded, PROFIBUS DP Application: Drag chain operation, Zones with oils and lubricants 	YG2B22-100P- B1XLEAX	2106275
	 Connection type head A: Male connector, M12, 2-pin, angled, B-coded Connection type head B: Flying leads Signal type: Fieldbus, PROFIBUS DP Cable: 10 m, 2-wire, PUR, halogen-free Description: Fieldbus, shielded, PROFIBUS DP Application: Drag chain operation, Zones with oils and lubricants 	YN2B22-100P- B1XLEAX	2106278
Tion of the second	 Connection type head A: Male connector, M12, 2-pin, straight, B-coded Connection type head B: Flying leads Signal type: Fieldbus, PROFIBUS DP Cable: 10 m, 2-wire, PUR, halogen-free Description: Fieldbus, shielded, PROFIBUS DP Application: Drag chain operation, Zones with oils and lubricants 	YM2B22-100P- B1XLEAX	2106271
0	 Connection type head A: Female connector, M12, 2-pin, straight, B-coded Connection type head B: Flying leads Signal type: Fieldbus, PROFIBUS DP Cable: 10 m, 2-wire, PUR, halogen-free Description: Fieldbus, shielded, PROFIBUS DP Application: Drag chain operation, Zones with oils and lubricants 	YF2B22-100P- B1XLEAX	2106269
	 Connection type head A: Female connector, M12, 2-pin, straight, B-coded Connection type head B: Flying leads Signal type: Fieldbus, PROFIBUS DP Cable: 15 m, 2-wire, PUR, halogen-free Description: Fieldbus, shielded, PROFIBUS DP Application: Drag chain operation, Zones with oils and lubricants 	YF2B22-150P- B1XLEAX	2106272
	Connection type head A: Female connector, M12, 2-pin, straight, B-coded Connection type head B: Flying leads	YF2B22-200P- B1XLEAX	2106273

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	Brief description	Туре	part no.	
	 Signal type: Fieldbus, PROFIBUS DP Cable: 20 m, 2-wire, PUR, halogen-free Description: Fieldbus, shielded, PROFIBUS DP Application: Drag chain operation, Zones with oils and lubricants 			
	 Connection type head A: Female connector, M12, 2-pin, straight, B-coded Connection type head B: Flying leads Signal type: Fieldbus, PROFIBUS DP Cable: 5 m, 2-wire, PUR, halogen-free Description: Fieldbus, shielded, PROFIBUS DP Application: Drag chain operation, Zones with oils and lubricants 	YF2B22-050P- B1XLEAX	2121936	
No.	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, shielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF2A25-020UB6XLEAX	2145583	
	 Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 1 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, shielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A25-010UB6XLEAX	2145582	
	 Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 0.6 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, shielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A25- C60UB6XLEAX	2145581	
Wire draw mechanism				
	 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 2 m Items supplied: Without encoder 	MRA-F080-102D2	6028625	

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