

# BTF19-C1HM5017

HighLine

WIRE DRAW ENCODERS

**SICK**  
Sensor Intelligence.

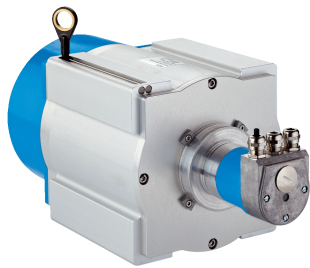


Illustration may differ



### Ordering information

Type	Part no.
BTF19-C1HM5017	1034322

**Included in delivery:** ATM60-C1H13x13 (1), MRA-F190-150D2 (1)

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

Other models and accessories → [www.sick.com/HighLine](http://www.sick.com/HighLine)

### Detailed technical data

#### Performance

BTF

<b>Measurement range</b>	0 m ... 50 m
<b>Encoder</b>	Absolute encoders
<b>Resolution (wire draw + encoder)</b>	0.06 mm <sup>1) 2)</sup>
<b>Repeatability</b>	≤ 5 mm <sup>3)</sup>
<b>Linearity</b>	≤ ± 2 mm <sup>3)</sup>
<b>Hysteresis</b>	≤ 10 mm <sup>3)</sup>

<sup>1)</sup> The values shown have been rounded.

<sup>2)</sup> 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).

<sup>3)</sup> Value applies to wire draw mechanism.

#### Interfaces

BTF

<b>Communication interface</b>	CANopen
<b>Programmable/configurable</b>	✓

#### Electrical data

BTF

<b>Connection type</b>	Connection adapter for CANopen <sup>1)</sup>
<b>Supply voltage</b>	10 V ... 32 V
<b>Power consumption</b>	≤ 2 W (without load)
<b>MTTFd: mean time to dangerous failure</b>	150 years (EN ISO 13849-1) <sup>2)</sup>

<sup>1)</sup> Please order the bus adaptor separately.

<sup>2)</sup> 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.

## Mechanical data

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<b>Measuring wire material</b>	Highly flexible stranded steel 1,4401 stainless steel V4A
<b>Weight (measuring wire)</b>	7.1 g/m
<b>Housing material, wire draw mechanism</b>	Aluminum (anodized), zinc die cast
<b>Spring return force</b>	18 N ... 37 N <sup>1)</sup>
<b>Length of wire pulled out per revolution</b>	491.5 mm
<b>Life of wire draw mechanism</b>	Typ. 1,000,000 cycles <sup>2) 3)</sup>
<b>Actual wire draw length</b>	50.2 m
<b>Wire acceleration</b>	18 m/s <sup>2</sup>
<b>Operating speed</b>	4 m/s
<b>Mounted encoder</b>	ATM60 CANopen, ATM60-C1H13X13, 1030025
<b>Mounted mechanic</b>	MRA-F190-150D2, 6028630

<sup>1)</sup> These values were measured at an ambient temperature of 25 °C. There may be variations at other temperatures.

<sup>2)</sup> Average values, which depend on the application.

<sup>3)</sup> 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.

## Ambient data

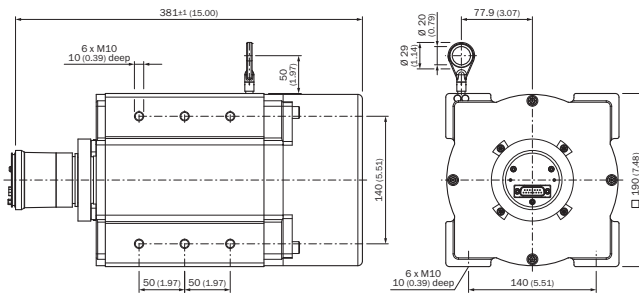
BTF

<b>EMC</b>	According to EN 61000-6-2 and EN 61000-6-3
<b>Enclosure rating</b>	IP31
<b>Operating temperature range</b>	-20 °C ... +70 °C

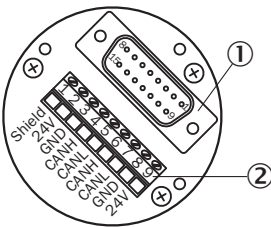
## Classifications

<b>ECl@ss 5.0</b>	27270590
<b>ECl@ss 5.1.4</b>	27270590
<b>ECl@ss 6.0</b>	27270590
<b>ECl@ss 6.2</b>	27270590
<b>ECl@ss 7.0</b>	27270590
<b>ECl@ss 8.0</b>	27270590
<b>ECl@ss 8.1</b>	27270590
<b>ECl@ss 9.0</b>	27270590
<b>ECl@ss 10.0</b>	27270613
<b>ECl@ss 11.0</b>	27270503
<b>ETIM 5.0</b>	EC001486
<b>ETIM 6.0</b>	EC001486
<b>ETIM 7.0</b>	EC001486
<b>UNSPSC 16.0901</b>	41112113

### Dimensional drawing (Dimensions in mm (inch))












### PIN assignment



### Recommended accessories

Other models and accessories → [www.sick.com/HighLine](http://www.sick.com/HighLine)

	Brief description	Type	Part no.
<b>Flanges</b>			
	Flange adapter for HighLine wire draw mechanisms, adaption of face mount flange with centering hub 20 mm to 50 mm servo flange, Aluminum, including 3 countersunk screws M4 x 10	BEF-FA-020-050WDE	2073776
<b>Other mounting accessories</b>			
	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
	Compressed air attachment for MRA-F080... and MRA-F130... HighLine wire draw mechanism	MRA-F-P	6073769
<b>Adapters and distributors</b>			
	Bus adaptor KR1, 1 x PG	AD-ATM60-KR1CO	2029230
	Bus adaptor KR2, 2 x PG	AD-ATM60-KR2CO	2029231
	Bus adaptor KR3, 3 x PG	AD-ATM60-KR3CO	2029232
	Bus adaptor SR1, 1 x M12, 5-pin	AD-ATM60-SR1CO	2031686
	Bus adaptor SR2, 2 x M12, 5-pin	AD-ATM60-SR2CO	2020935

	Brief description	Type	Part no.
<b>Plug connectors and cables</b>			
	Head A: Flying leads Head B: Flying leads Cable: CANopen, DeviceNet™, shielded Wire shield Al-Pt film, overall shield C-screen tin-plated	LTG-2804-MW	6028328
	Head A: female connector, M12, 5-pin, straight Head B: male connector, M12, 5-pin, straight Cable: CANopen, DeviceNet™, PUR, halogen-free, unshielded, 6 m	DSL-1205-G06MK	6028327
	Head A: female connector, M12, 5-pin, straight Cable: CANopen, DeviceNet™, shielded	D0S-1205-GA	6027534
	Head A: male connector, M12, 5-pin, straight, A-coded Cable: CANopen, DeviceNet™, shielded	STE-1205-GA	6027533
<b>Wire draw mechanism</b>			
	HighLine wire draw mechanism for servo flange with 6 mm shaft, measuring range 0 m ... 50 m	MRA-F190-150D2	6028630

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)