

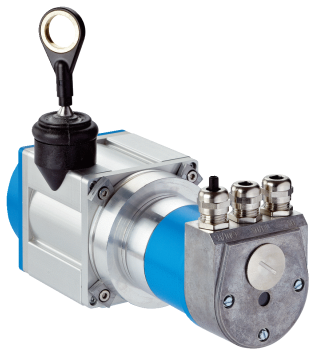


BTFO8-C1HM0341

HighLine

WIRE DRAW ENCODERS

SICK
Sensor Intelligence.



Ordering information

| Type | Part no. |
|----------------|----------|
| BTF08-C1HM0341 | 1034895 |

Included in delivery: ATM60-C1H13x13 (1), MRA-F080-103D2 (1)

Bus adapter not included with delivery

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

A succession solution with the same wire draw mechanism and a functionally largely compatible encoder can be found at the link below. our sales department will be happy to assist if you have any further questions about selecting a suitable succession solution.

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



Detailed technical data

Performance

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

¹⁾ The values shown have been rounded.

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).

³⁾ Value applies to wire draw mechanism.

Interfaces

| | |
|----------------------------------|---------|
| Communication interface | CANopen |
| Programmable/configurable | ✓ |

Electrical data

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

¹⁾ Order bus adapter separately.

²⁾ 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

| | |
|-------------------------------------------------|-----------------------------------------------------------|
| Weight | 2.09 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 | 3.2 m |
| Wire acceleration | 40 m/s ² |
| Operating speed | 8 m/s |
| Mounted encoder | ATM60 CANopen, ATM60-C1H13X13, 1030025 |
| Mounted mechanic | MRA-F080-103D2, 6030125 |

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

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.

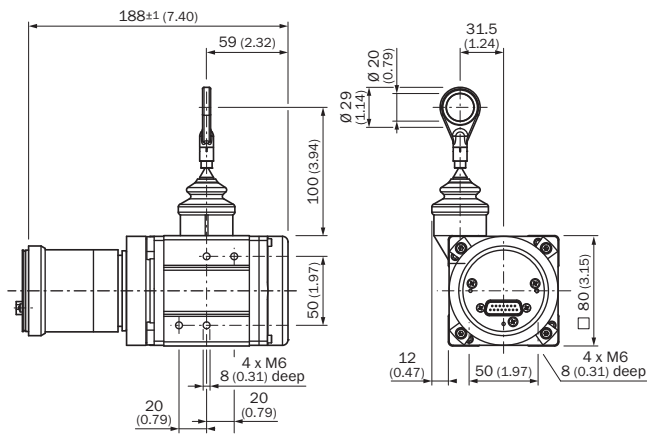
Ambient data

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

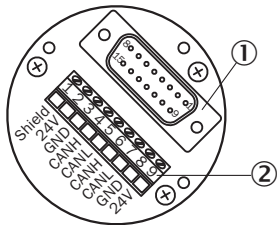
Classifications

| | |
|-----------------------|----------|
| 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 |

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) | 0 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) | 0 V (GND) |
| 9 | - | U _S (24 V) | Operating voltage 10 ... 32 V |

Recommended accessories

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

| | Brief description | Type | Part no. |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------|
| Bus adapter | | | |
|  | KR1 bus adapter, 1 x PG | AD-ATM60-KR1CO | 2029230 |
| | KR2 bus adapter, 2 x PG | AD-ATM60-KR2CO | 2029231 |
| | KR3 bus adapter, 3 x PG | AD-ATM60-KR3CO | 2029232 |
| | SR1 bus adapter, 1 x M12, 5-pin | AD-ATM60-SR1CO | 2031686 |
| | SR2 bus adapter, 2 x M12, 5-pin | AD-ATM60-SR2CO | 2020935 |
| Wire draw mechanism | | | |
|  | HighLine wire draw mechanism for servo flange with 6 mm shaft, measuring range 0 m ... 3 m | MRA-F080-103D2 | 6030125 |
| Flanges | | | |
|  | 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 M3 x 10 | BEF-FA-020-050WDE | 2073776 |
| Other mounting accessories | | | |
|  | 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 |
|  | Additional brush attachment for wire draw mechanism MRA-F080 (2 m and 3 m from HighLine series) | MRA-F080-B | 6045341 |
|  | Wire draw deflection pulley for wire draw mechanism MRA-F080 (2m and 3m from HighLine series) | MRA-F080-R | 6028632 |
| Plug connectors and cables | | | |
|  | <ul style="list-style-type: none"> • Connection type head A: Flying leads • Connection type head B: Flying leads • Signal type: CANopen, DeviceNet™ • Cable: 4-wire, twisted pair • Description: CANopen, DeviceNet™, shielded • Note: Wire shield Al-Pt film, overall shield C-screen tin-plated | LTG-2804-MW | 6028328 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight • Connection type head B: Male connector, M12, 5-pin, straight • Signal type: CANopen, DeviceNet™ • Cable: 6 m, 5-wire, PUR, halogen-free • Description: 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 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight • 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 |

| | Brief description | Type | Part no. |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------|
|  | <ul style="list-style-type: none">• 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 |

SICK AT A GLANCE

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