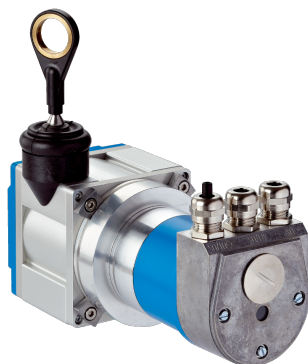


BTFO8-C1HM0241

HighLine

WIRE DRAW ENCODERS

SICK
Sensor Intelligence.



Ordering information

| Type | Part no. |
|----------------|----------|
| BTF08-C1HM0241 | 1034317 |

Included in delivery: ATM60-C1H13x13 (1), MRA-F080-102D2 (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

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 ... 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.

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 | ✓ |

Electronics

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

¹⁾ Order bus adapter separately.

Mechanics

| | |
|---|---|
| Weight | 1.89 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 | ATM60 CANopen, ATM60-C1H13X13, 1030025 |
| Mounted mechanic | MRA-F080-102D2, 6028625 |

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.

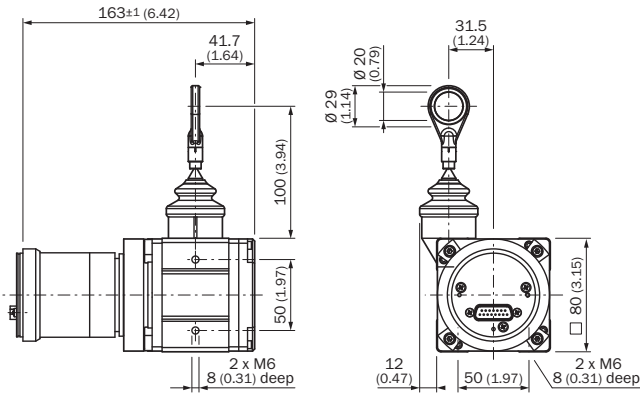
Ambient data

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

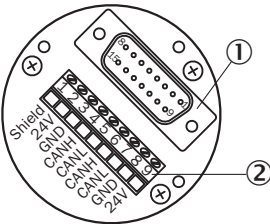
Classifications

| | |
|-----------------------|----------|
| 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. |
|---|---|--|----------|
| Others | | | |
|  | <ul style="list-style-type: none">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 |

| | Brief description | Type | Part no. |
|---|--|-------------------|----------|
|  | <ul style="list-style-type: none"> Description: Compressed air attachment for MRA-F080... and MRA-F130... HighLine wire draw mechanism | MRA-F-P | 6073769 |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 |
|  | <ul style="list-style-type: none"> 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 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, 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 |
|  | <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 |
|  | <ul style="list-style-type: none"> Description: Additional brush attachment for wire draw mechanism MRA-F080 (2 m and 3 m from HighLine series) | MRA-F080-B | 6045341 |
|  | <ul style="list-style-type: none"> Description: Wire draw deflection pulley for wire draw mechanism MRA-F080 (2m and 3m from HighLine series) | MRA-F080-R | 6028632 |
|  | <ul style="list-style-type: none"> 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 |

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.”

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Contacts and other locations –www.sick.com