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PRODUCT OVERVIEW

HighLine

Wire draw encoders

SICK

Sensor Intelligence



WIRE DRAW ENCODERS

HighLine

Measuring lengths up to 60 m – heavy-duty wire draw encoder for indoor and outdoor use

With wire draw lengths from 2 to 60 m, the HighLine series of wire draw encoders have enormous range. Thanks to guide rollers, the HighLine series enables flexible measurement paths - even around obstacles. Their rugged housing and dirt-resistant brush assemblies allow the encoder to be used in the toughest of environments, including dust, shock and vibration, which ensure a long service life-time.

HighLine AT A GLANCE

BENEFITS

- Reliable solution for use in harsh ambient conditions
- Long service life due to rugged industrial housing
- Quick and easy installation without the need for precise linear guidance
- Low integration and maintenance costs
- Customization option reduces storage costs
- Analog interface speeds up commissioning and cost-effective interface card can be used

FEATURES

- Measuring lengths: 2 m ... 60 m
- Modular measuring system with a wide selection of interfaces/measuring lengths
- Very rugged system (dirt scraper, integrated brushes)
- High-quality winding mechanism and wire input
- High enclosure rating
- High shock and vibration resistance
- Extremely high resolution possible
- Expandable using external accessories

TECHNICAL DATA OVERVIEW

Measuring range	0 m ... 60 m
Resolution	0.0008 mm 0.2 mm
Communication interface	CANopen EtherNet/IP™ PROFIBUS DP PROFINET Incremental SSI SAE J1939 IO-Link DeviceNet™ - EtherCAT®

TYPE CODE

ABSOLUTE

Construction size

0	8	80 mm ¹⁾
1	3	130 mm ²⁾
1	9	190 mm ³⁾

Communication interface

A	SSI
C	CANopen ⁴⁾
D	DeviceNet ⁴⁾
E	EtherCAT®
H	HIPERFACE® (on request)
I	EtherNet/IP
K	SSI + SinCos (on request)
L	SSI + Incremental HTL (on request)
N	PROFINET
P	PROFIBUS
Q	IO-Link
R	SSI + Incremental programmable (on request)
S	SSI + SinCos programmable (on request)
T	SSI + Incremental TTL (on request)

Connection type

A	Male connector, M23, 12-pin, radial ⁵⁾
B	Male connector, 3 x M12, axial ⁶⁾
C	Male connector, M12, 8-polig, radial ⁵⁾
H	Male connector for field bus adapter ^{4) 7)}
K	Cable, 8-wire, universal, 1.5 m (on request)
L	Cable, 8-wire, universal, 3.0 m (on request)
M	Cable, 8-wire, universal, 5.0 m (on request)
N	Male connector, M12, 8-pin, universal ⁵⁾
Q	Male connector, M12, 5-pin, universal ⁸⁾
R	Male connector, M12, 4-pin, universal ⁹⁾

Measuring length

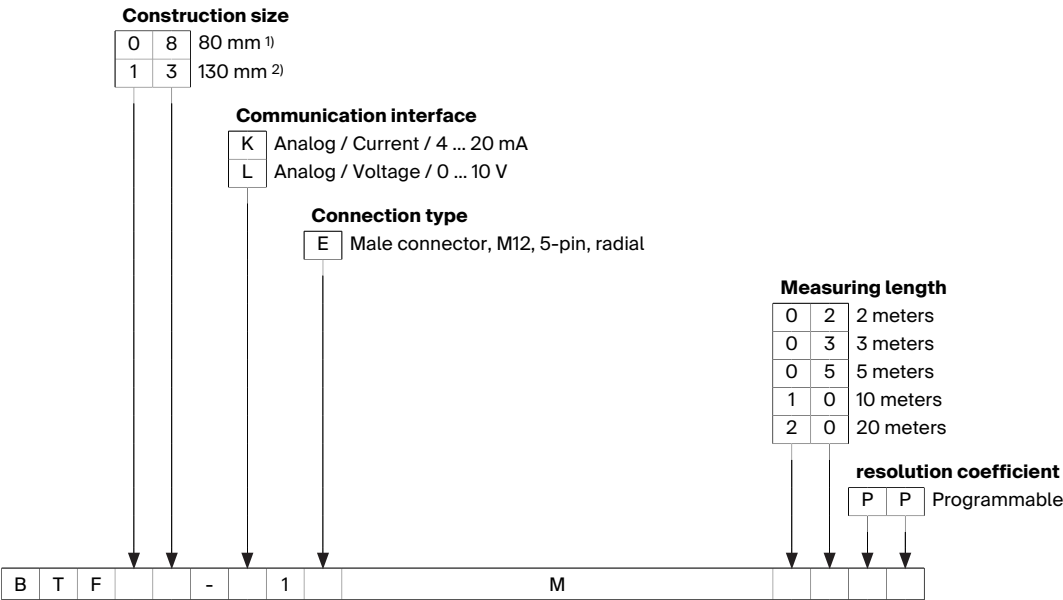
0	2	2 meters
0	3	3 meters
0	5	5 meters
1	0	10 meters
1	5	15 meters
2	0	20 meters
2	5	25 meters
3	0	30 meters
5	0	50 meters
6	0	60 meters

resolution coefficient

4	0	A = SSI with connection type A / measuring 2 m, 3 m
2	0	A = SSI with connection type A / measuring length 5 m, 10 m, 20 m, 30 m
1	0	A = SSI with connection type A / measuring length 50 m
4	1	A = SSI with connection type N / measuring length 2 m, 3 m
2	4	A = SSI with connection type N / measuring length 5 m, 10 m
2	5	A = SSI with connection type N / measuring length 20 m, 30 m
1	7	A = SSI with connection type N / measuring length 50 m
4	1	C = CANopen with connection type H ; D = DeviceNet; P = PROFIBUS / measuring length 2 m, 3 m
2	5	C = CANopen with connection type H; D = DeviceNet; P = PROFIBUS / measuring length 5 m, 10 m, 20 m, 30 m
1	7	C = CANopen with connection type H; D = DeviceNet; P = PROFIBUS / measuring length 50 m
8	2	C = CANopen with connection type Q; D = DeviceNet; P = PROFIBUS / measuring length 2 m, 3 m
4	9	C = CANopen with connection type Q; D = DeviceNet; P = PROFIBUS / measuring length 5 m, 10 m, 20 m, 30 m
3	3	C = CANopen with connection type Q; D = DeviceNet; P = PROFIBUS / measuring length 50 m
9	9	I = EtherNet/IP; E = EtherCAT®; N = PROFINET / measuring length 2 m, 3 m
9	9	I = EtherNet/IP; E = EtherCAT®; N = PROFINET / measuring length 5 m, 10 m, 20 m, 30 m
9	9	I = EtherNet/IP; E = EtherCAT®; N = PROFINET / measuring length 50 m
6	1	Q = IO-Link / Basic
6	2	Q = IO-Link / Advanced

- ¹⁾ Only in combination with measuring length 02 and 03.
- ²⁾ Only in combination with measuring length 05, 10, 15, 20, 25, 30.
- ³⁾ Only in combination with measuring length 50, 60.
- ⁴⁾ Field bus adapter for CANopen, DeviceNet, and PROFIBUS please order separatly.
- ⁵⁾ Only in combination with communication interface A.
- ⁶⁾ Only in combination with communication interfaces E, I, N and P.
- ⁷⁾ In combination with communication interfaces C, D and P).
- ⁸⁾ Only in combination with communication interface C.
- ⁹⁾ Only in combination with communication interface Q.

ANALOG



- ¹⁾ Only in combination with measuring length 02 and 03.
- ²⁾ Only in combination with measuring length 05, 10, 20.

INCREMENTAL

Construction size

0	8	80 mm ¹⁾
1	3	130 mm ²⁾
1	9	190 mm ³⁾

Communication interface

A	4.5 V ... 5.5 V, TTL/RS422
E	10 V ... 32 V, HTL/push pull
P	4.5 V ... 32 V, TTL/HTL, programmable (on request)
C	10 V ... 32 V, TTL/RS-422

Connection type

A	Male connector, M23, 12-pin, radial (on request)
B	Male connector, M23, 12-pin, axial (on request)
C	Male connector, M12, 8-pin, radial (on request)
K	Cable, 8-wire, universal, 1.5 m (on request)
L	Cable, 8-wire, universal, 3.0 m (on request)
M	Cable, 8-wire, universal, 5.0 m (on request)

Measuring length

0	2	2 meters
0	3	3 meters
0	5	5 meters
1	0	10 meters
2	0	20 meters
3	0	30 meters
5	0	50 meters

resolution coefficient

4	0	A = 4.5 V ... 5.5 V, TTL/RS422 / measuring length 2 m, 3 m
2	0	C = 10 V ... 32 V TTL/push pull / measuring length 5 m, 10 m, 20 m, 30 m
1	0	E = 10 V ... 32 V HTL/push pull / measuring length 50 m

P	R	F			-		1		M				
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¹⁾ Only in combination with measuring length 02 and 03.

2) Only in combination with measuring length 05, 10, 20, 30.

3) Only in combination with measuring length 50.

ADVANTAGES



HighLine – wire draw encoders for harsh environments

Dust or rain, heat or cold: The HighLine wire draw encoder is a very good solution for positioning tasks in harsh environments or for very long measuring ranges. With measuring lengths of 2 m to 60 m, its range of applications is almost limitless. The rugged IP64 industrial housing with two chambers – measuring chamber and spring chamber – and integrated dirt scraper protects the encoder and mechanics. Neither contamination nor normal mechanical influences affect the measurement accuracy. With extensible accessories and device adaptations, the HighLine can also be adapted to difficult ambient conditions.



Deflection rollers provide flexibility when extending the draw wire and allow the wire draw encoder to be integrated intelligently.



When winding and unwinding, the wire forms not several, but only one row on the measurement drum. This ensures a high measurement accuracy.



Measuring lengths of 2 m to 60 m are available, depending on the variant.



Rugged and compact: The HighLine is a good choice – it proves to be an especially resilient solution for measuring in harsh ambient conditions.



Can be adapted to different interface environments

Thanks to their modular concept, wire draw encoders are available with many different communication interfaces: IO-Link, CANopen, PROFINET, SSI, analog communication interfaces etc. This allows the HighLine to be very easily integrated into any control environment. It also makes it possible to utilize the individual encoder functions. For example, the diagnostic functions, parameterization via SOPAS, or using Smart Tasks to directly transmit speeds or the measuring distance covered.



The HighLine delivers continuous diagnostic data. This provides the foundation for safe process monitoring and increases the plant availability. Any developing faults can be detected early.



Ensuring future security: Thanks to the decentralized intelligence of IO-Link, diagnostic data can be saved, Smart Tasks such as length measurements can be executed and production processes with Industry 4.0 concepts can be designed with high efficiency.



Detecting faults early on: Extensive diagnostic functions are available with the PROFINET standard which improve the reliability of the measurement process and therefore increase machine availability and productivity.



Thanks to its modular design and intelligent functions, the HighLine can be precisely adapted to any system environment.

Select the right product variant and accessories directly online. There you will also find example applications as well as downloads such as CAD dimensional models, operating instructions and software.

www.sick.com/HighLine



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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnership with our customers is more than just a promise: Together, we optimize productivity, elevate quality, protect health and safety, and sustain the future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions.

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