



## Compact

COMPACT DESIGN - WITH INTEGRATED ENCODER

Wire draw encoders

**SICK**  
Sensor Intelligence.

# COMPACT DESIGN - WITH INTEGRATED ENCODER



### Product description

In the Compact family, the encoder is integrated into the wire draw mechanism. This integration provides the encoder with the best possible protection in

harsh industrial environments. These encoders have a measuring range of up to 5 m with high resolution, plus incremental or absolute output.

### At a glance

- Measuring lengths from 2 m ... 5 m
- Integrated measuring system
- Compact housing (90 mm x 90 mm x 90 mm)

- Incremental and absolute versions
- High resolution

### Your benefits

- Industrial designed encoder integrated in an aluminum housing makes it less susceptible to external damage, saving time and reducing maintenance costs
- Extremely precise measurements by eliminating the coupling between the encoder and the mechanism

- Space-saving installation, since the encoder is directly integrated into the wire draw mechanics.
- Very precise measurements thanks to its high resolution



### Additional information

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→ [www.sick.com/Compact](http://www.sick.com/Compact)

For more information, simply enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.



## Fields of application

- Automated guided systems (fork height)
- Fork lift trucks
- Storage and rack operation equipment
- Wood processing machines
- Lifting platforms

## Detailed technical data

### Performance

#### BKS

|                          |                            |
|--------------------------|----------------------------|
| <b>Measurement range</b> | 0 m ... 2 m<br>0 m ... 5 m |
| <b>Encoder</b>           | Absolute encoders          |
| <b>Repeatability</b>     | ≤ 0.15 mm                  |
| <b>Linearity</b>         | ≤ ± 0.7 mm                 |

#### PKS

|                          |                            |
|--------------------------|----------------------------|
| <b>Measurement range</b> | 0 m ... 2 m<br>0 m ... 5 m |
| <b>Encoder</b>           | Incremental encoders       |
| <b>Repeatability</b>     | ≤ 0.15 mm                  |
| <b>Linearity</b>         | ≤ ± 0.7 mm                 |

#### XKS

|                          |  |
|--------------------------|--|
| <b>Measurement range</b> | 0 m ... 2 m<br>0 m ... 5 m               |
| <b>Encoder</b>           | Motor feedback systems rotary HIPERFACE® |
| <b>Repeatability</b>     | ≤ 0.15°                                  |
| <b>Linearity</b>         | ≤ ± 0.7 mm                               |

## Interfaces

#### BKS

|                                |     |
|--------------------------------|-----|
| <b>Communication interface</b> | SSI |
|--------------------------------|-----|

#### PKS

|                                |                            |
|--------------------------------|----------------------------|
| <b>Communication interface</b> | Incremental / TTL / RS-422 |
|--------------------------------|----------------------------|

#### XKS

|                                |            |
|--------------------------------|------------|
| <b>Communication interface</b> | HIPERFACE® |
|--------------------------------|------------|

## Electrical data

#### BKS

|  |  |
|--|--|
| <b>Connection type</b>                       | Male connector, M23, 12-pin, radial    |
| <b>Supply voltage</b>                        | 12 V ... 30 V                          |
| <b>MTTFd: mean time to dangerous failure</b> | 150 years (EN ISO 13849) <sup>1)</sup> |

<sup>1)</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.

## PKS

|  |  |
|--|--|
| <b>Connection type</b>                       | Male connector, M23, 12-pin, radial    |
| <b>Supply voltage</b>                        | 4.5 V ... 5.5 V                        |
| <b>Operating current</b>                     | ≤ 60 mA (without load)                 |
| <b>MTTFd: mean time to dangerous failure</b> | 400 years (EN ISO 13849) <sup>1)</sup> |

<sup>1)</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.

## XKS

|  |  |
|--|--|
| <b>Connection type</b>                       | Male connector, M12, 8-pin, radial     |
| <b>Supply voltage</b>                        | 7 V ... 12 V                           |
| <b>Operating current</b>                     | ≤ 60 mA (without load)                 |
| <b>MTTFd: mean time to dangerous failure</b> | 250 years (EN ISO 13849) <sup>1)</sup> |

<sup>1)</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

### BKS

|  | 0 m ... 2 m                                     | 0 m ... 5 m               |
|--|---|---------------------------|
| <b>Measuring wire material</b>               | Highly flexible stranded steel (PA 12 sheathed) |                           |
| <b>Housing material, wire draw mechanism</b> | Aluminum  |                           |
| <b>Spring return force</b>                   | 5 N ... 6 N <sup>1)</sup>                       | 4 N ... 6 N <sup>1)</sup> |
| <b>Life of wire draw mechanism</b>           | Typ. 800,000 cycles <sup>2) 3)</sup>            |                           |
| <b>Wire acceleration</b>                     | ≤ 20 m/s <sup>2</sup>                           |                           |
| <b>Operating speed</b>                       | 3.5 m/s   |                           |

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

<sup>2)</sup> A cycle consists of the wire being pulled out and drawn in.

<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.

### PKS

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## Ambient data

## BKS

|                                    |  |
|------------------------------------|--|
| <b>EMC</b>                         | According to EN 61000-6-2 and EN 61000-6-3                     |
| <b>Enclosure rating</b>            | IP52, Note required mounting position (according to IEC 60529) |
| <b>Operating temperature range</b> | -10 °C ... +70 °C  |

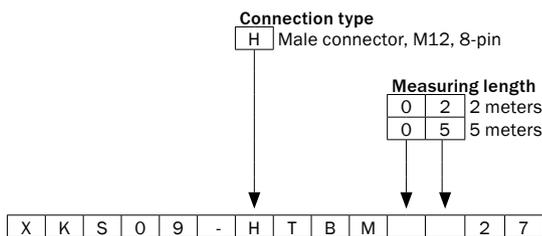
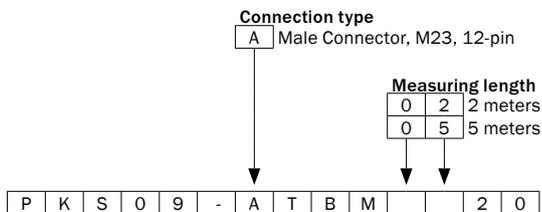
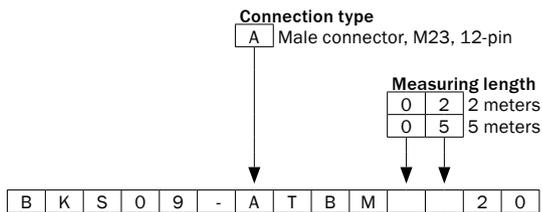
## PKS

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## XKS

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## Type code



## Ordering information

- **Measuring range:** 0 m ... 2 m

| Communication interface    | Connection type                     | Type           | Part no. |
|----------------------------|-------------------------------------|----------------|----------|
| SSI                        | Male connector, M23, 12-pin, radial | BKS09-ATBM0220 | 1035240  |
| Incremental / TTL / RS-422 | Male connector, M23, 12-pin, radial | PKS09-ATBM0220 | 1035242  |
| HIPERFACE®                 | Male connector, M12, 8-pin, radial  | XKS09-HTBM0227 | 1035436  |

- **Measuring range:** 0 m ... 5 m

| Communication interface    | Connection type                     | Type           | Part no. |
|----------------------------|-------------------------------------|----------------|----------|
| SSI                        | Male connector, M23, 12-pin, radial | BKS09-ATBM0520 | 1035241  |
| Incremental / TTL / RS-422 | Male connector, M23, 12-pin, radial | PKS09-ATBM0520 | 1035243  |
| HIPERFACE®                 | Male connector, M12, 8-pin, radial  | XKS09-HTBM0527 | 1035437  |

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- 
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SICK has extensive experience in various industries and understands their processes and requirements. With intelligent sensors, SICK delivers exactly what the 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 SICK a reliable supplier and development partner.

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