PRODUCT CATALOG

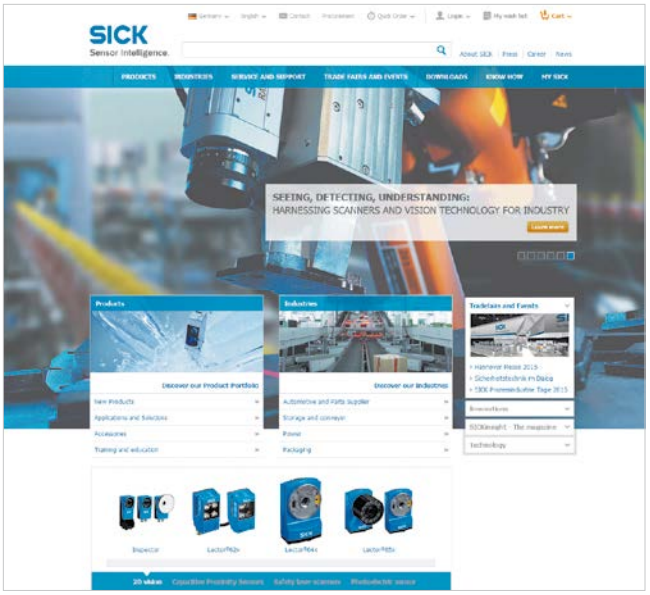
MAGNETIC CYLINDER SENSORS

Position sensors, sensors for T-slot cylinders,
sensors for C-slot cylinders, sensor adapters for other cylinder types

SICK
Sensor Intelligence.

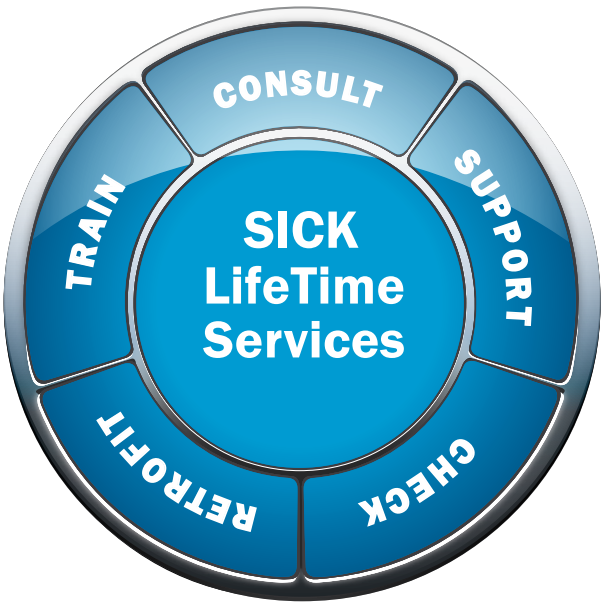
REGISTER AT WWW.SICK.COM TODAY AND ENJOY ALL THE BENEFITS

- Select products, accessories, documentation and software quickly and easily.
- Create, save and share personalized wish lists.
- View the net price and date of delivery for every product.
- Requests for quotation, ordering and delivery tracking made easy.
- Overview of all quotations and orders.
- Direct ordering: submit even very complex orders in moments.
- View the status of quotations and orders at any time. Receive e-mail notifications of status changes.
- Easily repeat previous orders.
- Conveniently export quotations and orders to work with your systems.



SERVICES FOR MACHINES AND SYSTEMS: SICK LifeTime Services

Our comprehensive and versatile LifeTime Services are the perfect addition to the comprehensive range of products from SICK. The services range from product-independent consulting to traditional product services.



Consulting and design
Safe and professional

Product and system support
Reliable, fast and on-site

Verification and optimization
Safe and regularly inspected

Upgrade and retrofits
Easy, safe, economical

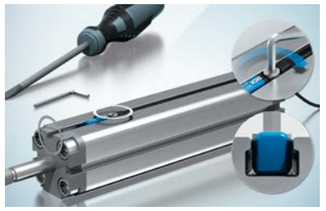
Training and education
Practical, focused and professional

A POWERFUL PRODUCT PORTFOLIO WITH EXCELLENT FEATURES

Analog piston position output

SICK position sensors continuously and permanently record the piston position in pneumatic cylinders and provide decisive added value for automated process and quality control. They combine innovative technologies with high levels of user-friendliness.

Quick and easy drop-in mounting with combination screw



The innovative housing concept enables simple, direct cylinder sensor mounting by dropping it into the slot from above. Side retaining ribs hold the sensor in position before a quarter-turn of the captive eccentric screw closes the lock.

LED as visual adjustment indicator with monitoring function

Designed with clearly visible LEDs, the MZT8 magnetic cylinder sensor offers high levels of user-friendliness. A yellow LED acts as a visual adjustment indicator, permanently lighting up yellow during the switching operation if the MZT8 is mounted correctly. A green LED shows the active operational status of the sensor and therefore acts as a monitoring function.

Highly rugged design for a long service life

SICK cylinder sensors work with maximum reliability – even in harsh, demanding environments. Whether for cooling lubricants, high-pressure cleaning, or risks of explosion, SICK has the right sensor variant for practically every application, which allows it to provide high process reliability with minimal maintenance work requirements.

You can find more information in Chapter B – Technology from ➜ page B-12 onward.

Product family	Page	Principle of operation: Measuring	Principle of operation: Detecting	Direct mounting: T-slot	Direct mounting: C-slot	Mounting via adapter: Round body cylinder	Mounting via adapter: Profile cylinder	Mounting via adapter: Tie-rod cylinder	Mounting via adapter: T-slot cylinder	Mounting via adapter: Dove-tail groove cylinder	Mounting via adapter: SMC rail (E)CDQ2	Mounting via adapter: SMC cylinder with C-slot	Mounting via adapter: Festo cylinder DSBC	Mounting via adapter: SMC cylinder CP96	
Position sensors															
MPS-T	➜ C-26	●	●	●		●	●	●		●	SMC (E)CDQ2	SMC	Festo DSBC	SMC CP96	C
MPS-C	➜ C-34	●	●		●	●	●	●			SMC (E)CDQ2	SMC	Festo DSBC	SMC CP96	
MPA	➜ C-40	●	●			●		●	●		SMC (E)CDQ2	SMC	Festo DSBC	SMC CP96	
Sensors for T-slot cylinders															
MZ2Q-T	➜ D-52		●	●		●	●	●		●	SMC (E)CDQ2	SMC	Festo DSBC	SMC CP96	D
MZT8	➜ D-58		●	●		●	●	●		●	SMC (E)CDQ2	SMC	Festo DSBC	SMC CP96	
MZT8 ATEX	➜ D-64		●	●		●	●	●		●	SMC (E)CDQ2	SMC	Festo DSBC	SMC CP96	
MZT8 VIA	➜ D-70		●	●		●	●	●		●	SMC (E)CDQ2	SMC	Festo DSBC	SMC CP96	
MZT7	➜ D-76		●	●		●	●	●		●	SMC (E)CDQ2	SMC	Festo DSBC	SMC CP96	
RZT7	➜ D-82		●	●		●	●	●		●	SMC (E)CDQ2	SMC	Festo DSBC	SMC CP96	
Sensors for C-slot cylinders															
MZ2Q-C	➜ E-94		●		●	●	●	●			SMC (E)CDQ2	SMC	Festo DSBC	SMC CP96	E
MZC1	➜ E-100		●		●	●	●	●			SMC (E)CDQ2	SMC	Festo DSBC	SMC CP96	
MZC1 VIA	➜ E-106		●		●	●	●	●			SMC (E)CDQ2	SMC	Festo DSBC	SMC CP96	
RZC1	➜ E-112		●		●	●	●	●			SMC (E)CDQ2	SMC	Festo DSBC	SMC CP96	

A

WE DELIVER “SENSOR INTELLIGENCE.”

SICK sensor solutions for industrial automation are the result of exceptional dedication and experience. From development all the way to service: The people at SICK are committed to investing all their expertise in providing with the very best sensors and system solutions possible.

A company with a culture of success

Almost 7,000 people are on staff, with products and services available to help SICK sensor technology users increase their productivity and reduce their costs. Founded in 1946 and headquartered in Waldkirch, Germany, SICK is a global sensor specialist with more than 50 subsidiaries and representations worldwide. The people work with pleasure at SICK.

This is demonstrated by the accolades that the company is regularly awarded in the “Great Place to Work” competition. This lively corporate culture holds strong appeal for qualified and skilled persons. In SICK, they are part of a company that ensures an excellent balance between career progression and quality of life.

8016544/2016-10-07
Subject to change without notice

A

Innovation for the leading edge

SICK sensor systems simplify and optimize processes and allow for sustainable production. SICK operates at many research and development centers all over the world. Co-designed with customers and universities, our innovative sensor products and solutions are made to give a decisive edge. With an impressive track record of innovation, we take the key parameters of modern production to new levels: reliable process control, safety of people and environmental protection.

A corporate culture for sustainable excellence

SICK is backed by a holistic, homogeneous corporate culture. We are an independent company. And our sensor technology is open to all system environments. The power of innovation has made SICK one of the technology and market leaders – sensor technology that is successful in the long term.

A

“SENSOR INTELLIGENCE.” FOR ALL REQUIREMENTS

SICK is a renowned expert in many industries, and is entirely familiar with the critical challenges they face. While speed, accuracy and availability take center stage in all industries, technical implementations vary greatly. SICK puts its vast experience to use to provide with precisely the solution you need.

For applications worldwide

Hundreds of thousands of installations and applications go to prove that SICK knows the different industries and their processes inside out. This tradition of uncompromising expertise is ongoing: As we move into the future, we will continue to design, implement and optimize customized solutions in our application centers in Europe, Asia and North America. You can count on SICK as a reliable supplier and development partner.

8016544/2016-10-07
Subject to change without notice

A

For your specific industry

With a track record of proven expertise in a great variety of industries, SICK has taken quality and productivity to new heights. The automotive, pharmaceutical, electronics and solar industries are just a few examples of sectors that benefit from our know-how. In addition to increasing speed and improving traceability in warehouses and distribution centers, SICK solutions provide accident protection for automated guided vehicles. SICK system solutions for analysis and flow measurement of gases and liquids enable environmental protection and sustainability in, for example, energy production, cement production or waste incineration plants.

For performance across the board

SICK provides the right technology to respond to the tasks involved in industrial automation: measuring, detecting, monitoring and controlling, protecting, networking and integrating, identifying, positioning. Our development and industry experts continually create groundbreaking innovations to solve these tasks.

→ www.sick.com/industries

A

SERVICES FOR MACHINES AND SYSTEMS: SICK LifeTime Services

SICK LifeTime Services is a comprehensive set of high-quality services provided to support the entire life cycle of products and applications from plant walk-through to upgrades. These services increase the safety of people, boost the productivity of machines and serve as the basis for our customers' sustainable business success. LifeTime Services range from product-independent consulting to traditional product services and are characterized by extensive industry expertise and more than 60 years of experience.

8016544/2016-10-07

➜ www.sick.com/service

Consulting and design

- Plant walk-through
- Risk assessment
- Safety concept
- Safety software and hardware design
- Validation of functional safety
- CE-conformance check

Product and system support

- Installation
- Commissioning
- Start-up support
- Calibrations
- Telephone support
- 24-hour helpline
- SICK Remote Service
- Troubleshooting on site
- Repairs
- Exchange units
- Extended warranty

Verification and optimization

- Inspection
- Stop time measurement
- Machine safety inspection
- Electrical equipment check
- Accident investigation
- Initial verification
- Performance check
- Maintenance

Upgrade and retrofits

- Upgrade services

Training and education

- Training
- Seminars
- Web training

A

VERSATILE PRODUCT RANGE FOR INDUSTRIAL AUTOMATION

From the simple acquisition task to the key sensor technology in a complex production process: With every product from its broad portfolio, SICK offers a sensor solution that best combines cost effectiveness and safety.

→ www.sick.com/products

Photoelectric sensors

- Miniature photoelectric sensors
- Small photoelectric sensors
- Compact photoelectric sensors
- Cylindrical photoelectric sensors
- Fiber-optic sensors and fibers
- MultiTask photoelectric sensors

Proximity sensors

- Inductive proximity sensors
- Capacitive proximity sensors
- Magnetic proximity sensors

Magnetic cylinder sensors

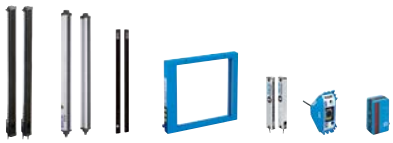
- Position sensors
- Sensors for T-slot cylinders
- Sensors for C-slot cylinders
- Sensor adapters for other cylinder types

Registration sensors

- Contrast sensors
- Markless sensors
- Color sensors
- Luminescence sensors
- Fork sensors
- Array sensors
- Register sensors
- Glare sensors

Automation light grids

- Measuring automation light grids
- Switching automation light grids



8016544/2016-10-07
Subject to change without notice

A

Opto-electronic protective devices

- Safety laser scanners
- Safety light curtains
- Safety camera systems
- Multiple light beam safety devices
- Single-beam photoelectric safety switches
- Mirror columns and device columns

Safety switches

- Electro-mechanical safety switches
- Non-contact safety switches
- Safety command devices

sens:Control – safe control solutions

- Safe sensor cascade
- Safety controllers
- Safety relays

Gas analyzers

- Gas transmitters
- In-situ gas analyzers
- Extractive gas analyzers

Dust measuring devices

- Scattered light dust measuring devices
- Transmittance dust measuring devices
- Gravimetric dust measuring devices

Analyzer solutions

- CEMS solutions
- Process solutions

A

Traffic sensors

- Tunnel sensors
- Overheight detectors
- Visual range measuring devices

Ultrasonic gas flow measuring devices

- Volume flow measuring devices
- Mass flow measuring devices
- Flow velocity measuring devices
- Gas flow meters

Identification solutions

- Image-based code readers
- Bar code scanners
- RFID
- Hand-held scanners
- Connectivity

Vision

- 2D vision
- 3D vision

Distance sensors

- Short range distance sensors (Displacement)
- Mid range distance sensors
- Long range distance sensors
- Linear measurement sensors
- Ultrasonic sensors
- Optical data transmission
- Position finders

8016544/2016-10-07

A

Detection and ranging solutions

- 2D laser scanners
- 3D laser scanners
- Radar sensors

Motor feedback systems

- Motor feedback system rotary HIPERFACE®
- Motor feedback system rotary HIPERFACE DSL®
- Motor feedback system rotary incremental
- Motor feedback system rotativ incremental with commutation
- Motor feedback system linear HIPERFACE®

Encoders

- Absolute encoders
- Incremental encoders
- Linear encoders
- Wire draw encoders
- Safety encoders

Fluid sensors

- Level sensors
- Pressure sensors
- Flow sensors
- Temperature sensors

System solutions

- Customized analyzer systems
- Collision awareness systems
- Robot guidance systems
- Object detection systems
- Profiling systems
- Quality control systems
- Security systems
- Track and trace systems
- Functional safety systems

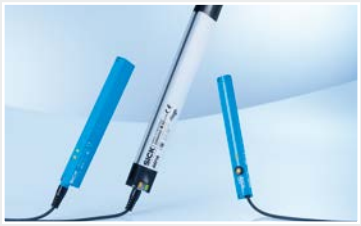
B

TREND-SETTING POSITION DETECTION

The key for fast, accurate detection of piston positions in pneumatic actuators: high-performance, efficient solutions. A wide variety of cylinder types, grippers or slides and diverse slot geometries initially appear to demand a large range of sensors – or even a sophisticated sensor concept to accommodate all the differences. However, innovative magnetic cylinder sensors from SICK enable direct mounting in pneumatic actuators with T- or C-slots and utilize effective adapter solutions to expand the application potential of many machines and production plants.

8016544/2016-10-07
Subject to change without notice

MAGNETIC CYLINDER SENSORS



POSITION SENSORS

High-resolution position detection for pneumatic cylinders

Chapter C, from ➜ page C-20

SENSORS FOR T-SLOT CYLINDERS

Precision and power: equipped for all installation locations and conditions

Chapter D, from ➜ page D-46

SENSORS FOR C-SLOT CYLINDERS

Reliable, powerful, rugged: ideal for use in short-stroke cylinders, linear slides and grippers

Chapter E, from ➜ page E-88

THE MAGNETIC CYLINDER SENSORS ARE CONNECTED USING ADAPTERS

SENSOR ADAPTERS FOR OTHER CYLINDER TYPES

Fewer product variants, identical standards: thanks to intelligent and tailored mounting systems that are compatible with the sensors from SICK

Chapter F, from ➜ page F-118

INTELLIGENT SENSORS FOR PNEUMATIC CYLINDERS

Pneumatic sensors by SICK impress with their intelligent functionality, their reliability, and their efficiency. With the MPS product family for direct mounting on T-slot and C-slot cylinders, and MPA for large piston diameters and long strokes, a sophisticated solution is available for every cylinder model.

B

The benefits of SICK position sensors at a glance

- Developed for and perfectly matched to non-contact distance measuring on pneumatic drives
- Time and money can be saved thanks to quick installation with mounting on the outside of the cylinder and easy integration even into existing equipment
- No complicated integration into the cylinder, no drilling of the piston rod
- Significant cost savings thanks to direct detection of the piston magnet without separate position encoders or additional mechanics
- Piston position is output as an analog signal, IO-Link process data, or flexible switching point

Quick and easy mounting

Since the position sensors are mounted externally, it is possible to integrate them on the pneumatic cylinder at will at any suitable point in a machine. Even the installation direction can be freely selected. As the sensors detect the piston magnet directly, neither a separate position encoder nor a mechanism is required for their attachment to the piston rod of the cylinder.

Smart Sensor Solutions powered by IO-Link

By seamlessly integrating sensors into an automation network, you can tap into new ways of increasing flexibility, reliability, and efficiency and in so doing increase the productivity of a machine or system. In addition, the Smart Sensor Solutions technology creates advanced diagnostics and alarm functions as well as various options for configuring process data (position, switching points, logic).

Sensor solutions for every cylinder

SICK position sensors deliver genuine added value in terms of flexibility of drive selection. With sensors in various designs, SICK can offer the right solution for virtually any cylinder profile, thereby maximizing flexibility where drive selection is concerned – entirely independent of manufacturer, of course. What's more, all product families are available in variants for multi-grade measuring ranges for both short and long strokes.

Easy to operate

SICK position sensors offer particular benefits for the operators and users of machinery. Even post-installation, sensor settings such as measuring range, analog output, switching points, or switching behavior can be adapted to changes in the production process via a teach-in button or IO-Link. The ability to adapt the sensor parameters via IO-Link from the controller is of particular benefit if the pneumatic drives are difficult to access or are located in a fenced-off area of the system.

Easy mounting on pneumatic cylinder.

The right sensor solution for any pneumatic cylinder.

User-friendly sensor setting via teach-in button.

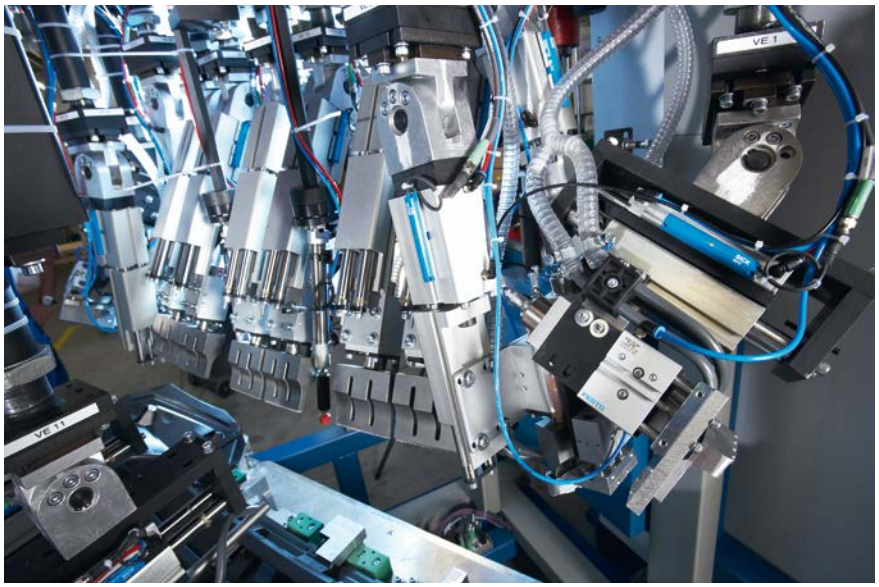
IO-Link increases the performance of the sensors and expands their potential scope of application.

8016544/2016-10-07

EXPANSION OF FIELDS OF APPLICATION FOR PNEUMATIC CYLINDERS AND DRIVES

Position sensors by SICK significantly expand the field of application of pneumatic cylinders and drives with their intelligent functionality. Efficient solutions for flexible machine concepts as well as optimum process control and quality monitoring can be implemented with the support of these sensors.

High-precision monitoring of process windows in ultrasonic welding



SICK position sensors can be relied upon to very precisely detect and monitor the position of the sonotrodes in order to keep the ultrasonic welding process safely within a narrowly defined tolerance window. The sensors can be accessed from the outside without stopping and entering a system; if they need to be adjusted, the necessary work can be carried out without having to stop the machine and lose time due to retooling.

Position sensors. . . . . .Chapter C

Additional areas of application

Process quality and product quality

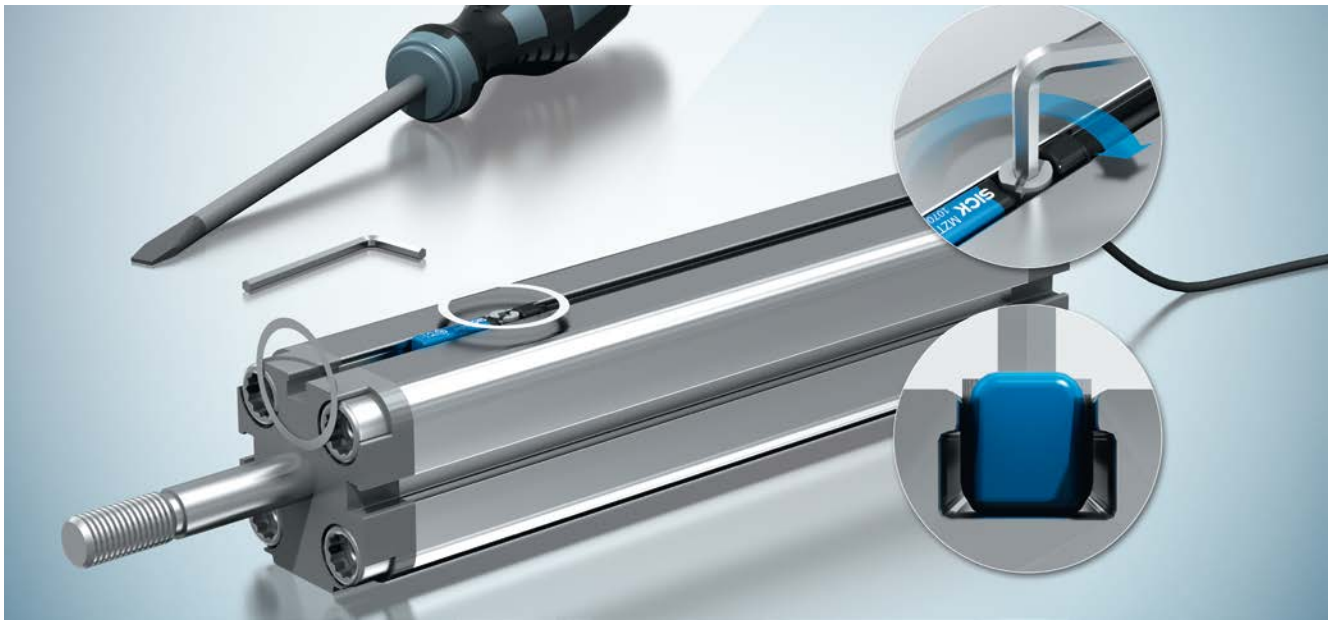
- Automotive and parts supplier industry
  - Check for correct mounting and component dimensions
- Machine tools
  - Monitoring of the feed movement of the grinding disc to assure optimum surface quality of the workpiece
  - Monitoring on punching machines to ensure that the stamp penetrates the material at exactly the right depth
- Electronics production
  - Monitoring of the correct contact position of electronic components
- Handling and assembly technology
  - Measuring of material thickness and thus detection of OK and NOK parts
- Metal and steel processing
  - Double sheet detection

Flexible Automation

- Consumer goods and packaging
  - Quick adaptation of modified formats and process parameters
- Handling and assembly technology
  - Detection of the position, situation, and size of workpieces
- Packaging machines
  - Synchronization of multiple pneumatic movements in order to increase the cycle time of a machine

THE RIGHT SOLUTION FOR EVERY INSTALLATION SITUATION

Whether for direct mounting or mounting via adapter, SICK has a solution for practically every mounting situation. This makes simple mounting and low storage costs possible because only a few production variants are required.



Simply insert and fix in place in no time

An innovative housing concept ensures that SICK magnetic cylinder sensors can be easily inserted into any common C-slot or T-slot – depending on the variant – from above and fixed with a captive combination screw.
Sensor mounting is incredibly easy and user-friendly. The sensor retaining ribs on the side offer a key advantage during this process. They hold the sensor in place in the slot even before stainless-steel screw is tightened, preventing the sensor from sliding back out the slot – even if mounting it over head.

A quarter-turn of the combination screw then completes the time-saving drop-in mounting and locks the sensor securely in place. The stainless-steel screw also prevents the sensor from slipping or shifting in the slot, even in the event of heavy vibrations.
Mounting the sensor in any position is much easier than with many other sensors.

- The result: A solution that saves time during the mounting process and service work

The sensor retaining ribs on the side ensure that the sensor is securely held in the slot even before the combination screw is tightened, making even overhead mounting a breeze.

The combination screw: captive and locked fast with just one quarter-turn.

Sensors for T-slot cylinder . . . . . Chapter D
Sensors for C-slot cylinder. . . . . .Chapter E

8016544/2016-10-07
Subject to change without notice

A solution for almost every cylinder profile

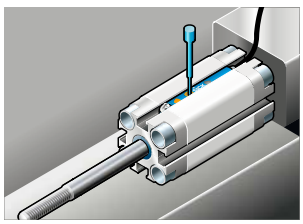
An extensive range of mounting adapter accessories are available for cylinders without a slot. This means that with just a few product variants, the magnetic cylinder sensors from SICK are able to cover practically every common type of cylinder, such as round, tie-rod, and profile cylinders.

- The result: A solution that saves space and costs in storage and reduces documentation and service work

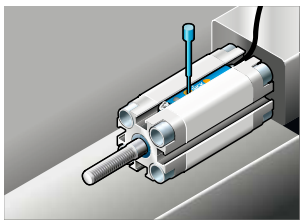
Astonishingly efficient: 2-point teach

The sensors for C-slots and T-slots feature a groundbreaking principle as they have two programmable switching points (2-point teach) – all the while occupying just one slot. These sensors were developed for quicker and more economical end position definition and intermediate position detection on pneumatic cylinders and grippers. Since these sensors only occupy one slot, they are also suitable for use in the most confined installation situations.

- The result: A solution that saves mounting space, cabling work, time, and costs



First teach
Bring the piston to the desired position 1 and teach-in the sensor for the first time.



Second teach
Bring the piston to the desired position 2 and teach-in the sensor again.

Sensor adapters for other cylinder types . . . . . .Chapter F
Accessories. . . . . Chapter G

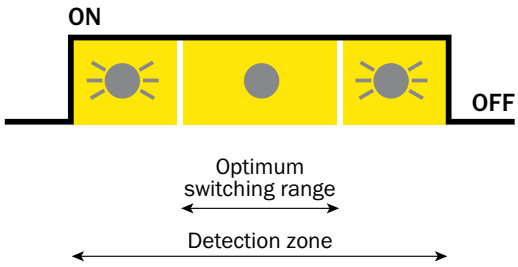
TAKING SWITCHING RELIABILITY AND USER-FRIENDLINESS TO THE NEXT LEVEL

The magnetic cylinder sensors offer even more excellent features for optimum mounting. An visual adjustment indicator optimizes precision – and an additional power LED makes handling easier.

B

LED for easy installation and mounting position monitoring

An LED acts as a visual installation aid and marks the optimum switching point. If the sensor is placed in that position, the LED lights up continuously during switching operations. If the yellow LED flashes, the magnetic field strength has changed. The cylinder piston is in the upper or lower outer areas of the detection zone. The sensor switches faultlessly and provides an output signal within the entire detection zone, even in the outer areas. If the LED does not light up, the cylinder piston is located outside of the sensor's detection zone. In this case, the magnet field is too weak for a reliable output signal and the sensor does not switch.



▸ The result: A solution that saves time during installation and commissioning

Bright power LED

In addition to the visual installation aid, magnetic cylinder sensors are also fitted with a green power LED. This lights up permanently if the sensor is in operation, acting as a monitoring function. Even from a long distance, the bright green LED is immediately visible and provides direct feedback during operation and maintenance.

▸ The result: A solution that saves time and reduces work during operation and maintenance

8016544/2016-10-07
Subject to change without notice

RELIABLE POSITION DETECTION – EVEN IN DEMANDING ENVIRONMENTS

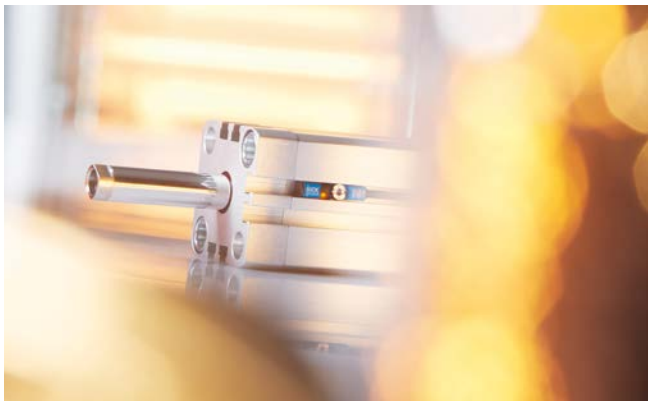
SICK provides a suitable sensor for practically every application. As a result, almost nothing can stand in the way of precise piston position detection – not even challenging ambient conditions.

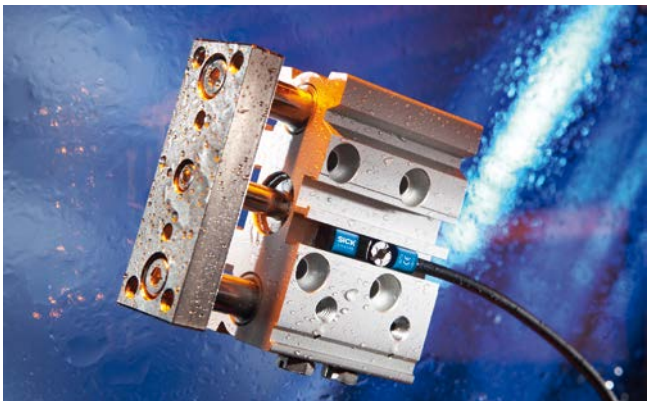
Virtually problem-free at high temperatures

Special high-temperature variants enable use at temperatures up to 100 °C. This means that magnetic cylinder sensors are able to provide reliable switching signals even in tough environments, such as the metal-working industry.

Rugged design ensures long service life

There are also variants with an enclosure rating of up to IP 69K for applications where cylinder sensors come into frequent contact with water or are subject to high-pressure cleaning. The rugged housing and electronics are resistant to cleaning agents, cooling lubricants, and other production chemicals.





Outstanding explosion protection according to ATEX

SICK provides magnetic cylinder sensors that even meet the highest standard for use in explosion-hazardous areas. In the NAMUR version, the MZT8, for example, fulfills the requirements of the highest ATEX Category 1D, 1G (dust and gas) for use in areas with constant, long-term, or frequent explosive atmospheres. SICK has also versions in ATEX category 3D, 3G for use in areas with a lower risk of explosion. The variants for these explosion-protection categories cover applications in silo hatches, elevators, mills, or conveyors.

▸ The result: A wide range of applications – even in challenging ambient conditions

C

POSITION SENSORS

Intelligent position detection – designed for pneumatic drives

Position sensors detect the piston position of pneumatic actuators using a direct, non-contact method. They continuously supply data via analog outputs or IO-Link, enabling flexible machine concepts and making it possible to solve tasks in areas such as quality monitoring and process control. The sensors are mounted externally on the cylinder, ensuring they are fast to install – even in existing machines.

Your benefits

- Extensive portfolio for almost every kind of pneumatic actuator, whether the application involves compact cylinders, standard cylinders, slides, or grippers
- Straightforward installation as no additional mechanical components or position elements are required
- Quick and easy adjustment of sensor settings and parameters during operation (format changes, workpiece changes)
- More flexibility compared to conventional cylinder sensors, as it is possible to define multiple switching points in the smallest of spaces
- Excellent reliability thanks to the rugged sensor design and non-contact measurement principle
- Advanced diagnostic options thanks to data transmission via IO-Link interface

8016544/2016-10-07

C

OVERVIEW OF POSITION SENSORS

C

Product	Housing properties												
	Direct mounting		Mounting via adapter									Housing material	
	T-slot	C-slot	Round body cylinder	Profile cylinder	Tie-rod cylinder	T-slot cylinder	Dove-tail groove cylinder	SMC rail (E)CDQ2	SMC cylinder with C-slot	Festo cylinder DSBC	SMC cylinder CP96	Plastic	Aluminum
Position sensors													
 MPS-T	■		■	■	■		■	■	■			■	
 MPS-C		■	■	■	■			■				■	
 MPA			■		■	■				■	■		■

8016544/2016-10-07
Subject to change without notice

Sensor properties					Page
	Specific features			Measuring ranges	
	IO-Link	Analog output	Teach-in	100 mm 200 mm 300 mm 400 mm 500 mm 600 mm 700 mm 800 mm 900 mm 1,000 mm	
	■	■	■	32 mm ... 256 mm	→ C-26
	■	■	■	32 mm ... 256 mm	→ C-34
	■	■	■	107 mm ... 1,007 mm	→ C-40

C

PRODUCT FAMILY OVERVIEW

MPS-T

The intelligent T-slot position sensor

Technical data overview	
Output function	Analog / IO-Link
IO-Link	✔
Teach-in	✔
Cylinder types with adapter	Round body cylinder Profile cylinder and tie-rod cylinder Cylinders with dovetail-slot SMC rails CDQ2 SMC rails ECDQ2 SMC cylinders with C-slot
Measuring range	32 mm ... 256 mm
Housing length	45 mm ... 269 mm
Supply voltage	15 V DC ... 30 V DC

At a glance

- Position sensor for direct mounting in T-slots on pneumatic cylinders
- Sensor variants with measuring ranges of 32 mm to 256 mm
- Analog outputs (for current or voltage), switching output, and IO-Link
- Mounting on other cylinder types (e.g., round body cylinders) is possible with adapters

Detailed information → C-26

		
	MPS-C	**MPA**
	The intelligent C-slot position sensor	The intelligent position sensor for large cylinders
	Analog, IO-Link, Output type	Analog, IO-Link
	✔	✔
	✔	✔
	Round body cylinder Profile cylinder and tie-rod cylinder SMC rails CDQ2 SMC rails ECDQ2	Round body cylinder Tie-rod cylinder T-slot cylinder Festo cylinder DSBC SMC cylinder CP96
	25 mm ... 200 mm	107 mm ... 1,007 mm
	41 mm ... 215 mm	109 mm ... 1,009 mm
	12 V DC ... 30 V DC	15 V DC ... 30 V DC
	• Position sensor for direct mounting in C-slots on pneumatic cylinders and grippers • Sensor variants with measuring ranges of 25 mm to 200 mm • Analog outputs (for current or voltage), switching output, and IO-Link • Mounting on other cylinder types (e.g., round body cylinders) is possible with adapters	• Position sensor for use on pneumatic cylinders • Sensor variants with measuring ranges of 107 mm to 1,007 mm • Analog outputs (for current or voltage), switching output, and IO-Link • Mounting with adapters on a multitude of cylinder types (tie-rod cylinders, round body cylinders, profile cylinders)
	→ C-34	→ C-40

C

THE INTELLIGENT T-SLOT POSITION SENSOR

C

Product description

MPS-T position sensors continuously detect the piston position of pneumatic actuators using a direct, non-contact method. They can be mounted in T-slots without the need for additional accessories. The sensor settings can be adjusted during installation and during operation later on, using a teach pad or – depending on the variant – using IO-Link. The sensors continuously supply data via analog outputs or IO-Link, enabling flexible machine concepts and making it possible to solve tasks in areas such as quality monitoring and process control in conjunction with pneumatic cylinders and drives. This continuous transfer of position data upgrades the functionality of the pneumatic cylinders by making them more intelligent – and, as a result, more versatile.

At a glance

- Position sensor for direct mounting in T-slots on pneumatic cylinders
- Sensor variants with measuring ranges of 32 mm to 256 mm
- Analog outputs (for current or voltage), switching output, and IO-Link
- Mounting on other cylinder types (e.g., round body cylinders) is possible with adapters

Your benefits

- Rapid mounting and exchange of sensors with drop-in
- Straightforward installation as no additional mechanical components or position elements are required
- Can be integrated into the machine at any time, as the sensor is attached to the cylinder externally
- Easy adjustment of sensor settings and parameters during operation using a teach field or IO-Link
- More flexibility compared to conventional cylinder sensors, as it is possible to define multiple switching points in the smallest of spaces
- Long service life thanks to non-contact measurement principle
- Advanced diagnostic options thanks to data transmission via IO-Link

IO-Link

Additional information

→ www.sick.com/MPS-T

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.

8016544/2016-10-07
Subject to change without notice

Detailed technical data

Features

	MPS-T with analog output	MPS with IO-Link
Cylinder type	T-slot	
Cylinder types with adapter	Round body cylinder Profile cylinder and tie-rod cylinder Cylinders with dovetail-slot SMC rails CDQ2, SMC rails ECDQ2 SMC cylinders with C-slot	
Measuring range	32 mm ... 256 mm [1] (depending on type)	
Housing length	45 mm ... 269 mm (depending on type)	
Output function	Analog	IO-Link
Analog output (voltage)	0 V ... 10 V	–
Analog output (current)	4 mA ... 20 mA	–
Teach-in	✔ (depending on type)	✔
Enclosure rating [2]	IP 67	

[1] ± 1 mm.

[2] According to EN 60529.

Mechanics/electronics

	MPS-T with analog output	MPS with IO-Link
Supply voltage [1]	15 V DC ... 30 V DC	
Power consumption [2]	≤ 22 mA	≤ 25 mA
Max. load resistance [3]	≤ 500 Ω	
Min. load resistance [4]	≥ 2 kΩ	
Protection class	III	
Time delay before availability	1.5 s	
Required magnetic field sensitivity, typ.	3 mT / 2 mT (depending on type)	3 mT
Resolution, typ. [5]	0.03 % FSR (max. ≥ 0.05 mm)	
Linearity error, typ. [6]	0.3 mm	
Repeat accuracy, typ. [7]	0.06 % FSR (≥ 0.1 mm)	
Sampling rate, typ. [8]	1 ms	
IO-Link	–	✔
Status indicator LED	✔	
Reverse polarity protection	✔	
Short-circuit protection	✔	
Ambient operating temperature	–20 °C ... +70 °C	
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm	
EMC [9]	According to EN 60947-5-2	
Housing material	Plastic	
Cable material	PUR	
Conductor cross-section	0.08 mm²	
UL File No.	NRKH.E181493	

[1] Reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

[2] Without load.

[3] Power Output, at 24 V.

[4] Voltage output.

[5] FSR: Full Scale Range; max. measuring range.

[6] At 25 ° C, linearity error (maximum deviation) depending on response curve and minimal deviation function.

[7] At 25 ° C, repeatability magnet movement in one direction.

[8] Only in standard mode, not in IO-Link mode.

[9] The analog measured value can deviate under transient conditions.

Ordering information

Other models ➔ www.sick.com/MPS-T

MPS-T with analog output

- **Output function:** Analog
- **Cable material:** PUR

Measuring range [1]	Housing length	Teach-in	Connection [2]	Connection diagram	Type	Part no.
32 mm	45 mm	✔	Cable, 2 m	Cd-359	MPS-032TSTU0	1045667
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-032TSTP0	1045666
		–	Cable, 2 m	Cd-359	MPS-032TSNU0	1050918
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-032THNP0	1072897
64 mm	77 mm	✔	Cable, 2 m	Cd-359	MPS-064TSTU0	1045669
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-064TSTP0	1045668
		–	Cable, 2 m	Cd-359	MPS-064TSNU0	1050919
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-064TSNP0	1053836
96 mm	109 mm	✔	Cable, 2 m	Cd-359	MPS-096TSTU0	1045671
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-096TSTP0	1045670
		–	Cable, 2 m	Cd-359	MPS-096TSNU0	1050920
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-096TSNP0	1053837
128 mm	141 mm	✔	Cable, 2 m	Cd-359	MPS-128TSTU0	1045673
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-128TSTP0	1045672
		–	Cable, 2 m	Cd-359	MPS-128TSNU0	1050921
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-128TSNP0	1053838
160 mm	173 mm	✔	Cable, 2 m	Cd-359	MPS-160TSTU0	1050740
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-160TSTP0	1050685
		–	Cable, 2 m	Cd-359	MPS-160TSNU0	1050922
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-160TSNP0	1053839
192 mm	205 mm	✔	Cable, 2 m	Cd-359	MPS-192TSTU0	1050738
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-192TSTP0	1047728
		–	Cable, 2 m	Cd-359	MPS-192TSNU0	1050923
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-192TSNP0	1053840
224 mm	237 mm	✔	Cable, 2 m	Cd-359	MPS-224TSTU0	1050741
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-224TSTP0	1050686
		–	Cable, 2 m	Cd-359	MPS-224TSNU0	1050924
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-224TSNP0	1053841
256 mm	269 mm	✔	Cable, 2 m	Cd-359	MPS-256TSTU0	1050739
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-256TSTP0	1050551
		–	Cable, 2 m	Cd-359	MPS-256TSNU0	1050925
			Cable with M8 male connector, 4-pin, 0.3 m	Cd-034	MPS-256TSNP0	1053842

[1] ± 1 mm.

[2] Do not bend below 0 °C.

C

8016544/2016-10-07

MPS-T with IO-Link

- **Output function:** IO-Link
- **Cable material:** PUR

Measuring range [1]	Housing length	Teach-in	Connection [2]	Connection diagram	Type	Part no.
32 mm	45 mm	✔	Cable with M12 male connector, 4-pin, 0.3 m	Cd-179	MPS-032TLTQ0	1062506
64 mm	77 mm	✔	Cable with M12 male connector, 4-pin, 0.3 m	Cd-179	MPS-064TLTQ0	1062507
96 mm	109 mm	✔	Cable with M12 male connector, 4-pin, 0.3 m	Cd-179	MPS-096TLTQ0	1062508
128 mm	141 mm	✔	Cable with M12 male connector, 4-pin, 0.3 m	Cd-179	MPS-128TLTQ0	1062518
160 mm	173 mm	✔	Cable with M12 male connector, 4-pin, 0.3 m	Cd-179	MPS-160TLTQ0	1062521
192 mm	205 mm	✔	Cable with M12 male connector, 4-pin, 0.3 m	Cd-179	MPS-192TLTQ0	1062519
224 mm	237 mm	✔	Cable with M12 male connector, 4-pin, 0.3 m	Cd-179	MPS-224TLTQ0	1062522
256 mm	269 mm	✔	Cable with M12 male connector, 4-pin, 0.3 m	Cd-179	MPS-256TLTQ0	1062520

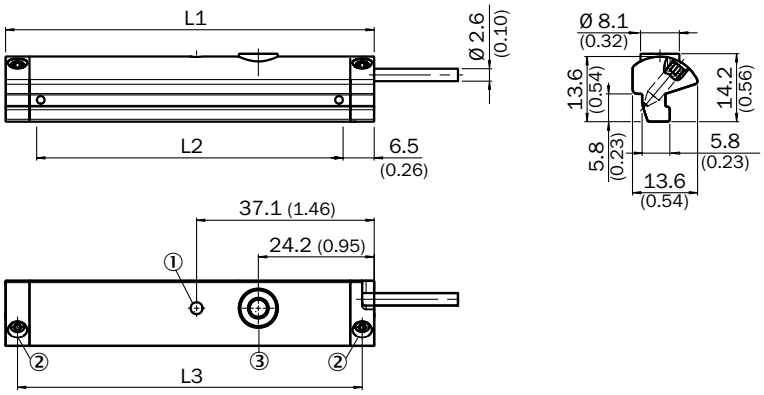
[1] ± 1 mm.

[2] Do not bend below 0 °C.

C

Dimensional drawing (Dimensions in mm (inch))

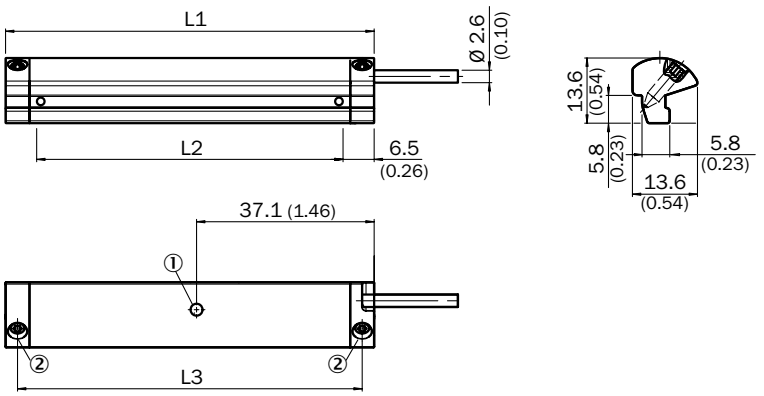
Teach-in



	Total length (L1) mm	Measuring range (L2) mm	Distance mounting screws (L3) mm
MPS-32	45	32	40
MPS-64	77	64	72
MPS-96	109	96	104
MPS-128	141	128	136
MPS-160	173	160	168
MPS-192	205	192	200
MPS-224	237	224	232
MPS-256	269	256	264

① Function indicator
② Fixing screw
③ Teach-in button

Without teach-in

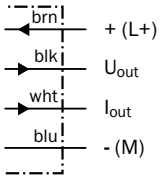


	Total length (L1) mm	Measuring range (L2) mm	Distance mounting screws (L3) mm
MPS-32	45	32	40
MPS-64	77	64	72
MPS-96	109	96	104
MPS-128	141	128	136
MPS-160	173	160	168
MPS-192	205	192	200
MPS-224	237	224	232
MPS-256	269	256	264

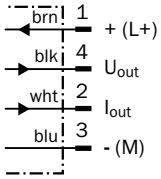
① Function indicator
② Fixing screw

Connection diagram

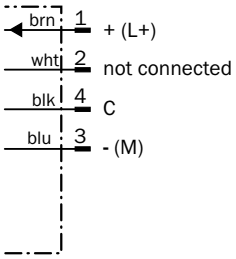
Cd-359



Cd-034



Cd-179



Recommended accessories

Mounting systems

For round body cylinders

Figure	Material	Description	Type	Part no.
	Plastic, Aluminum	Mounting bracket on round body cylinder with piston diameter of 12 mm [1]	BEF-KHZ-RT-12	2077681
		Mounting bracket on round body cylinder with piston diameter of 16 mm [1]	BEF-KHZ-RT-16	2077680
		Mounting bracket on round body cylinder with piston diameter of 20 mm [1]	BEF-KHZ-RT-20	2077679
		Mounting bracket on round body cylinder with piston diameter of 25 mm [1]	BEF-KHZ-RT-25	2077678
		Mounting bracket on round body cylinder with piston diameter of 32 mm [1]	BEF-KHZ-RT-32	2077677
		Mounting bracket on round body cylinder with piston diameter of 40 mm [1]	BEF-KHZ-RT-40	2077676
		Mounting bracket on round body cylinder with piston diameter of 50 mm [1]	BEF-KHZ-RT-50	2077675
		Mounting bracket on round body cylinder with piston diameter of 63 mm [1]	BEF-KHZ-RT-63	2077674
	Stainless steel, Zinc cast	Mounting bracket on round body cylinder with piston diameter of 8 mm ... 25 mm [2]	BEF-KHZ-RT1-25	2077682
		Mounting bracket on round body cylinder with piston diameter of 8 mm ... 63 mm [2]	BEF-KHZ-RT1-63	2077683
		Mounting bracket on round body cylinder with piston diameter of 8 mm ... 130 mm [2]	BEF-KHZ-RT1-130	2077684

[1] Ambient temperature min 0 °C max 50 °C.

[2] Ambient temperature min –30 °C max 80 °C.

For cylinders with dovetail-slot

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for cylinder with dovetail slot	BEF-KHZ-ST1	2022703

For profile cylinders and tie-rod cylinders

Figure	Material	Description	Type	Part no.
	Zinc diecast	Mounting bracket for integrated profile cylinder/tie-rod cylinder	BEF-KHZ-PT1	2022702

For SMC cylinders with C-slot

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket with T-slot for mounting a MPS on SMC C-slot cylinders. For each MPS a minimum of 2 brackets is recommended.	BEF-KHZ-CT23	2074119

For SMC rails CDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails CDQ2 (T-slot)	BEF-KHZ-TT2	2046440

For SMC rails ECDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails ECDQ2 (T-slot)	BEF-KHZ-TT1	2046439

Others

Figure	Description	Type	Part no.
	Label Holder, 2.5 mm to 3.5 mm, 10 pcs.	LABEL HOLDER	2086019
	Cable clips T-slot, 10 pcs./bag	CABLE CLIPS	2059322

Connection systems

Connecting cables with female connector

M12, 4-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M12, 4-pin, straight, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-1204-G02M	6009382
			5 m, 4-wire	DOL-1204-G05M	6009866
	Female connector, M12, 4-pin, angled, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-1204-W02M	6009383
			5 m, 4-wire	DOL-1204-W05M	6009867

M8, 4-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Locking nut material:** CuZn, nickel-plated brass

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 4-pin, straight, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-G02M	6009870
			5 m, 4-wire	DOL-0804-G05M	6009872
	Female connector, M8, 4-pin, angled, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-W02M	6009871
			5 m, 4-wire	DOL-0804-W05M	6009873

C

Female connectors (ready to assemble), M12, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M12, 4-pin, straight, unshielded	Screw-type terminals	DOS-1204-G	6007302
	Female connector, M12, 4-pin, angled, unshielded	Screw-type terminals	DOS-1204-W	6007303

Female connectors (ready to assemble), M8, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M8, 4-pin, straight, unshielded	Screw-type terminals	DOS-0804-G	6009974
	Female connector, M8, 4-pin, angled, unshielded	Solder connection	DOS-0804-W	6009975

C

Male connectors (ready to assemble), M12, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M12, 4-pin, straight, unshielded	Screw-type terminals	STE-1204-G	6009932
	Male connector, M12, 4-pin, angled, unshielded	Screw-type terminals	STE-1204-W	6022084

Male connectors (ready to assemble), M8, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M8, 4-pin, straight, unshielded	Screw-type terminals	STE-0804-G	6037323

For more accessories, see ➜ G-130

8016544/2016-10-07

C

THE INTELLIGENT C-SLOT POSITION SENSOR

Product description

MPS-C position sensors continuously detect the piston position of pneumatic actuators using a direct, non-contact method. They can be mounted in C-slots without the need for additional accessories. The sensor settings can be adjusted during installation and during operation later on, using a teach field or IO-Link. The sensors continuously supply data via analog outputs or IO-Link, enabling flexible machine concepts and making it possible to solve tasks in areas such as quality monitoring and process control in conjunction with pneumatic cylinders and drives. This continuous transfer of position data upgrades the functionality of the pneumatic cylinders by making them more intelligent – and, as a result, more versatile.

At a glance

- Position sensor for direct mounting in C-slots on pneumatic cylinders and grippers
- Sensor variants with measuring ranges of 25 mm to 200 mm
- Analog outputs (for current or voltage), switching output, and IO-Link
- Mounting on other cylinder types (e.g., round body cylinders) is possible with adapters

Your benefits

- Rapid mounting and exchange of sensors with drop-in
- Straightforward installation as no additional mechanical components or position elements are required
- Can be integrated into the machine at any time, as the sensor is attached to the cylinder externally
- Easy adjustment of sensor settings and parameters during operation using a teach pad or IO-Link
- More flexibility compared to conventional cylinder sensors, as it is possible to define multiple switching points in the smallest of spaces
- Excellent reliability thanks to the rugged sensor design and non-contact measurement principle
- Advanced diagnostic options thanks to data transmission via IO-Link

Additional information

→ www.sick.com/MPS-C

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.

8016544/2016-10-07

Detailed technical data

Features

Cylinder type	C-slot
Cylinder types with adapter	Round body cylinder Profile cylinder and tie-rod cylinder SMC rails CDQ2 SMC rails ECDQ2
Measuring range	25 mm ... 200 mm [1] (depending on type)
Housing length	41 mm ... 215 mm (depending on type)
Output function	Analog, IO-Link, Output type
Analog output (voltage)	0 V ... 10 V
Analog output (current)	4 mA ... 20 mA
Teach-in	✔
Enclosure rating [2]	IP 67

[1] ± 1 mm.

[2] According to EN 60529.

C

Mechanics/electronics

Supply voltage [1]	12 V DC ... 30 V DC
Power consumption [2]	≤ 42 mA
Max. load resistance [3]	≤ 500 Ω
Min. load resistance [4]	≥ 2 kΩ
Protection class	III
Time delay before availability	1.5 s
Required magnetic field sensitivity, typ.	3 mT
Resolution, typ.	≥ 50 µm
Linearity error, typ. [5]	0.3 mm
Repeat accuracy, typ. [6]	0.1 mm
Sampling rate, typ. [7]	1 ms
Digital switching output	✔
IO-Link	✔
Status indicator LED	✔
Reverse polarity protection	✔
Short-circuit protection	✔
Ambient operating temperature	–20 °C ... +70 °C
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm
EMC [8]	According to EN 60947-5-7
Housing material	Plastic
Cable material	PUR
Conductor cross-section	0.08 mm²
UL File No.	NRKH.E181493

[1] Reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

[2] Without load.

[3] Power Output, at 24 V.

[4] Voltage output.

[5] At 25 ° C, linearity error (maximum deviation) depending on response curve and minimal deviation function.

[6] At 25 ° C, repeatability magnet movement in one direction.

[7] Only in standard mode, not in IO-Link mode.

[8] The analog measured value can deviate under transient conditions.

Ordering information

Other models ➔ www.sick.com/MPS-C

- **Output function:** Analog, IO-Link, Output type
- **Teach-in:** ✔
- **Cable material:** PUR

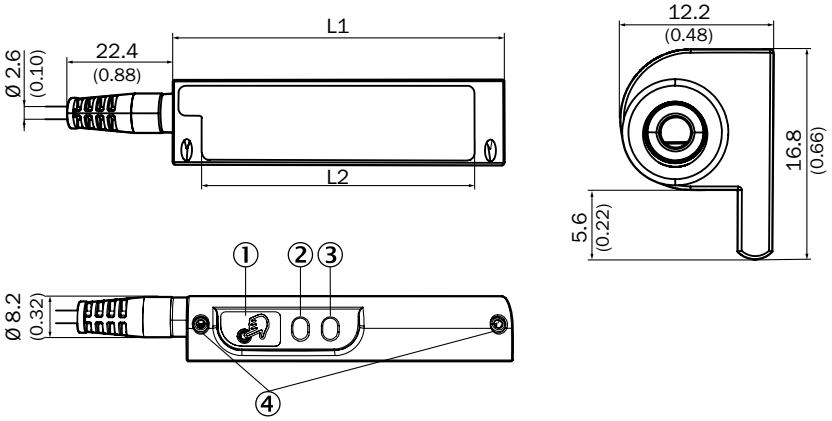
Measuring range [1]	Housing length	Connection [2]	Connection diagram	Type	Part no.
25 mm	41 mm	Cable, 2 m	Cd-358	MPS-025CLTU0	1079359
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-357	MPS-025CLTP0	1079358
50 mm	65 mm	Cable, 2 m	Cd-358	MPS-050CLTU0	1079361
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-357	MPS-050CLTP0	1079360
100 mm	115 mm	Cable, 2 m	Cd-358	MPS-100CLTU0	1079363
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-357	MPS-100CLTP0	1079362
200 mm	215 mm	Cable, 2 m	Cd-358	MPS-200CLTU0	1079365
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-357	MPS-200CLTP0	1079364

[1] ± 1 mm.

[2] Do not bend below 0 °C.

C

Dimensional drawing (Dimensions in mm (inch))

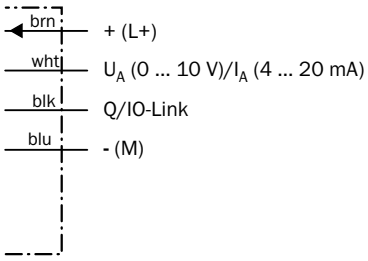


	Total length (L1) mm	Measuring range (L2) mm
MPS-xxx	40.6	25
MPS-xxx	64.9	50
MPS-xxx	114.9	100
MPS-xxx	214.7	200

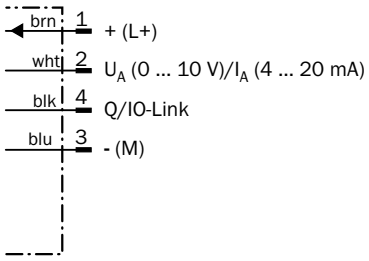
① Teach-in button
② Status LEDs
③ Operating LEDs
④ Fixing screw SW1.5

Connection diagram

Cd-358



Cd-357



8016544/2016-10-07

Recommended accessories

Mounting systems

For round body cylinders

Figure	Material	Description	Type	Part no.
	Stainless steel, Aluminum	Mounting bracket on round body cylinder with piston diameter of 1 mm ... 25 mm [1]	BEF-KHZ-RC1-25	2077685
		Mounting bracket on round body cylinder with piston diameter of 1 mm ... 130 mm [1]	BEF-KHZ-RC1-130	2077686

[1] Ambient temperature min –30 °C max 80 °C.

For profile cylinders and tie-rod cylinders

Figure	Material	Description	Type	Part no.
	Zinc diecast	Mounting bracket for integrated profile cylinder/tie-rod cylinder	BEF-KHZ-PC1	2076170

For SMC rails CDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails CDQ2 (C-slot)	BEF-KHZ-TC2	2046442

For SMC rails ECDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails ECDQ2 (C-slot)	BEF-KHZ-TC1	2046441

Others

Figure	Description	Type	Part no.
	Label Holder, 2.5 mm to 3.5 mm, 10 pcs.	LABEL HOLDER	2086019

C

Connection systems

Connecting cables with female connector

M8, 4-pin, PUR, halogen-free, Oil / grease resistant

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 4-pin, straight, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-G02MC	6025894
			5 m, 4-wire	DOL-0804-G05MC	6025895
	Female connector, M8, 4-pin, angled, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-W02MC	6025897
			5 m, 4-wire	DOL-0804-W05MC	6025898

M8, 4-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Locking nut material:** CuZn, nickel-plated brass

C

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 4-pin, straight, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-G02M	6009870
			5 m, 4-wire	DOL-0804-G05M	6009872
	Female connector, M8, 4-pin, angled, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-W02M	6009871
			5 m, 4-wire	DOL-0804-W05M	6009873

Female connectors (ready to assemble), M8, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M8, 4-pin, straight, unshielded	Screw-type terminals	DOS-0804-G	6009974
	Female connector, M8, 4-pin, angled, unshielded	Solder connection	DOS-0804-W	6009975

Male connectors (ready to assemble), M8, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M8, 4-pin, straight, unshielded	Screw-type terminals	STE-0804-G	6037323

For more accessories, see ➜ G-130

8016544/2016-10-07

C

THE INTELLIGENT POSITION SENSOR FOR LARGE CYLINDERS

C

Product description

MPA position sensors continuously detect the piston position of pneumatic actuators using a direct, non-contact method. The sensors in the MPA product family are ideal for large piston diameters and long strokes. The sensor settings can be adjusted during installation and during operation later on, using a teach field or – depending on the variant – using IO-Link. The sensors continuously supply data via analog outputs or IO-Link, enabling flexible machine concepts and making it possible to solve tasks in areas such as quality monitoring and process control in conjunction with pneumatic cylinders and drives. This continuous transfer of position data upgrades the functionality of the pneumatic cylinders by making them more intelligent – and, as a result, more versatile.

At a glance

- Position sensor for use on pneumatic cylinders
- Sensor variants with measuring ranges of 107 mm to 1,007 mm
- Analog outputs (for current or voltage), switching output, and IO-Link
- Mounting with adapters on a multitude of cylinder types (tie-rod cylinders, round body cylinders, profile cylinders)

Your benefits

- Straightforward installation as no position elements or additional mechanical components are required for coupling with the piston rod
- Can be integrated into the machine at any time, as the sensor is attached to the cylinder externally
- Easy adjustment of sensor settings and parameters during operation using a teach pad or IO-Link
- More flexibility compared to conventional cylinder sensors, as it is possible to define multiple switching points in the smallest of spaces
- Maximum reliability thanks to the rugged aluminum housing and non-contact measurement principle
- Advanced diagnostic options thanks to data transmission via IO-Link

IO-Link

Additional information

➜ www.sick.com/MPA

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.

8016544/2016-10-07
Subject to change without notice

Detailed technical data

Features

Cylinder types with adapter	Round body cylinder Tie-rod cylinder T-slot cylinder Festo cylinder DSBC SMC cylinder CP96
Measuring range	107 mm ... 1,007 mm [1] (depending on type)
Housing length	109 mm ... 1,009 mm (depending on type)
Output function	Analog, IO-Link
Analog output (voltage)	0 V ... 10 V
Analog output (current)	4 mA ... 20 mA
Teach-in	✔
Enclosure rating [2]	IP 65, IP 67, IP 68

[1] ± 1 mm.
[2] According to EN 60529.

C

Mechanics/electronics

Supply voltage [1]	15 V DC ... 30 V DC
Power consumption [2]	≤ 35 mA
Max. load resistance [3]	≤ 500 Ω
Min. load resistance [4]	≥ 2 kΩ
Protection class	III
Required magnetic field sensitivity, typ.	2 mT
Resolution, typ. [5]	0.03 % FSR (max. ≥ 0.06 mm)
Linearity error, typ. [6]	0.5 mm
Repeat accuracy, typ. [7]	0.06 % FSR (≥ 0.1 mm)
Sampling rate, typ. [8]	1.15 ms
IO-Link	✔
Status indicator LED	✔
Reverse polarity protection	✔
Short-circuit protection	✔
Ambient operating temperature	–20 °C ... +70 °C
Shock and vibration resistance	30 g, 11 ms/10 Hz ... 55 Hz, 1 mm
EMC [9]	According to EN 60947-5-2
Housing material	Aluminum, plastic
Cable material	PUR
Conductor cross-section	0.08 mm²
UL File No.	NRKH.E181493

[1] Reverse-polarity protected, operation in short-circuit protected network: max. 8 A.
[2] Without load.
[3] Power Output, at 24 V.
[4] Voltage output.
[5] FSR: Full Scale Range; max. measuring range.
[6] At 25 ° C, linearity error (maximum deviation) depending on response curve and minimal deviation function.
[7] At 25 ° C, repeatability magnet movement in one direction.
[8] Only in standard mode, not in IO-Link mode.
[9] The analog measured value can deviate under transient conditions.

Ordering information

Other models ➜ www.sick.com/MPA

- **Output function:** Analog, IO-Link
- **Teach-in:** ✔
- **Cable material:** PUR

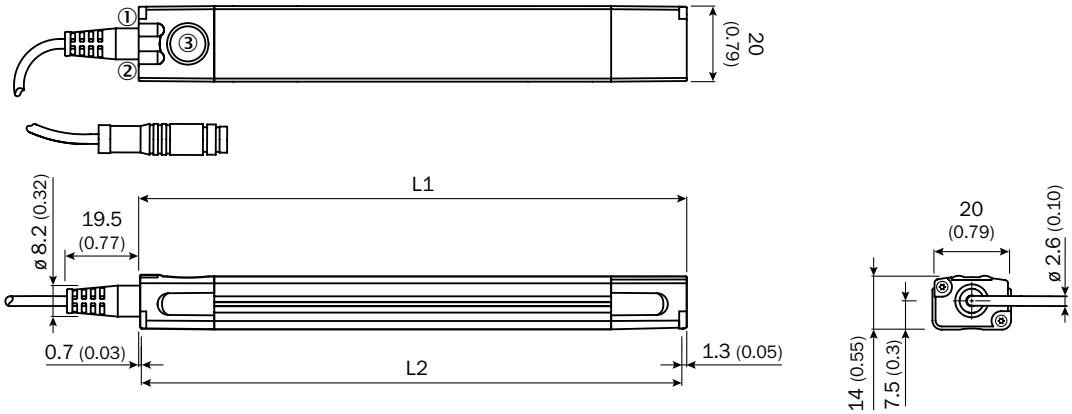
Measuring range [1]	Housing length	Connection [2]	Connection diagram	Type	Part no.
107 mm	109 mm	Cable, 2 m	Cd-354	MPA-107THTU0	1059443
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-107THTP0	1059442
143 mm	145 mm	Cable, 2 m	Cd-354	MPA-143THTU0	1059445
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-143THTP0	1059444
179 mm	181 mm	Cable, 2 m	Cd-354	MPA-179THTU0	1059447
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-179THTP0	1059446
215 mm	217 mm	Cable, 2 m	Cd-354	MPA-215THTU0	1059449
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-215THTP0	1059448
251 mm	253 mm	Cable, 2 m	Cd-354	MPA-251THTU0	1059451
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-251THTP0	1059450
287 mm	289 mm	Cable, 2 m	Cd-354	MPA-287THTU0	1059453
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-287THTP0	1059452
323 mm	325 mm	Cable, 2 m	Cd-354	MPA-323THTU0	1059455
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-323THTP0	1059454
359 mm	361 mm	Cable, 2 m	Cd-354	MPA-359THTU0	1059457
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-359THTP0	1059456
395 mm	397 mm	Cable, 2 m	Cd-354	MPA-395THTU0	1059459
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-395THTP0	1059458
431 mm	433 mm	Cable, 2 m	Cd-354	MPA-431THTU0	1059461
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-431THTP0	1059460
467 mm	469 mm	Cable, 2 m	Cd-354	MPA-467THTU0	1059463
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-467THTP0	1059462
503 mm	505 mm	Cable, 2 m	Cd-354	MPA-503THTU0	1059465
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-503THTP0	1059464
539 mm	541 mm	Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-539THTP0	1059466
575 mm	577 mm	Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-575THTP0	1059467
611 mm	613 mm	Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-611THTP0	1059468
647 mm	649 mm	Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-647THTP0	1059469
683 mm	685 mm	Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-683THTP0	1059470
719 mm	721 mm	Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-719THTP0	1059471
755 mm	757 mm	Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-755THTP0	1059472
791 mm	793 mm	Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-791THTP0	1059473
827 mm	829 mm	Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-827THTP0	1059474
863 mm	865 mm	Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-863THTP0	1059475
899 mm	901 mm	Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-899THTP0	1059476
935 mm	937 mm	Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-935THTP0	1059477
971 mm	973 mm	Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-971THTP0	1059478
1,007 mm	1,009 mm	Cable with M8 male connector, 4-pin, 0.3 m	Cd-355	MPA-1007THTP0	1059479

[1] ± 1 mm.

[2] Do not bend below 0 °C.

8016544/2016-10-07
Subject to change without notice

Dimensional drawing (Dimensions in mm (inch))



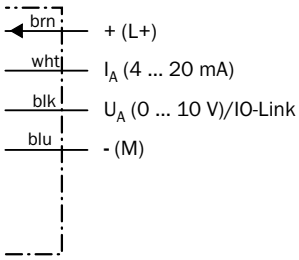
	Total length (L1) mm	Measuring range (L2) mm
MPA-107	109	107
MPA-143	145	143
MPA-179	181	179
MPA-215	217	215
MPA-251	253	251
MPA-287	289	287
MPA-323	325	323
MPA-359	361	359
MPA-395	397	395
MPA-431	433	431
MPA-467	469	467
MPA-503	505	503
MPA-539	541	539

	Total length (L1) mm	Measuring range (L2) mm
MPA-575	577	575
MPA-611	613	611
MPA-647	649	647
MPA-683	685	683
MPA-719	721	719
MPA-755	757	755
MPA-791	793	791
MPA-827	829	827
MPA-863	865	863
MPA-899	901	899
MPA-935	937	935
MPA-971	973	971
MPA-1007	1,009	1,007

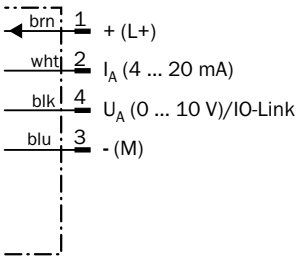
① Function signal indicator 1
② Function signal indicator 2
③ Teach-Pad

Connection diagram

Cd-354



Cd-355



C

Recommended accessories

Mounting systems

For profile cylinders and tie-rod cylinders

Figure	Material	Measuring range sensor (amount of required brackets)	Description	Type	Part no.
	Aluminum alloy (adapter), Stainless steel V2A (mounting-/fixing screw)	107 mm ... 251 mm (2 pcs.) 287 mm ... 431 mm (3 pcs.) 467 mm ... 647 mm (4 pcs.) 683 mm ... 791 mm (5 pcs.) 827 mm ... 1,007 mm (6 pcs.)	For tie-rod cylinder (diameter tie-rod max. 18 mm)	BEF-KHZPZ1MPA	2065578

For round body cylinders

Figure	Material	Measuring range sensor (amount of required brackets)	Description	Type	Part no.
	Stainless steel V2A	107 mm ... 359 mm (2 pcs.) 395 mm ... 647 mm (3 pcs.) 683 mm ... 935 mm (4 pcs.) 971 mm ... 1,007 mm (5 pcs.)	For round body cylinders with diameter up to 85 mm	BEF-KHZR085MPA	2066626
			For round body cylinders with diameter up to 135 mm	BEF-KHZR135MPA	2066627
			For round body cylinders with diameter up to 210 mm	BEF-KHZR210MPA	2066628

For T-slot cylinders

Figure	Material	Measuring range sensor (amount of required brackets)	Description	Type	Part no.
	Stainless steel V2A (bracket/mounting screw), Brass (fixing screw/sliding nut)	107 mm ... 251 mm (2 pcs.) 287 mm ... 431 mm (3 pcs.) 467 mm ... 647 mm (4 pcs.) 683 mm ... 791 mm (5 pcs.) 827 mm ... 1,007 mm (6 pcs.)	For T-slot cylinders	BEF-KHZT01MPA	2065575

For Festo cylinders DSBC

Figure	Material	Measuring range sensor (amount of required brackets)	Description	Type	Part no.
	Stainless steel V2A	107 mm ... 251 mm (2 pcs.) 287 mm ... 431 mm (3 pcs.) 467 mm ... 647 mm (4 pcs.) 683 mm ... 791 mm (5 pcs.) 827 mm ... 1,007 mm (6 pcs.)	Sensor adapter DSBC-32	BEF-KHZPF032MPA	2086744
			Sensor adapter DSBC-40	BEF-KHZPF040MPA	2086745
			Sensor adapter DSBC-50	BEF-KHZPF050MPA	2086746
			Sensor adapter DSBC-63	BEF-KHZPF063MPA	2086747
			Sensor adapter DSBC-80	BEF-KHZPF080MPA	2086748
			Sensor adapter DSBC-100	BEF-KHZPF100MPA	2086749
			Sensor adapter DSBC-125	BEF-KHZPF125MPA	2086750

For SMC cylinders CP96

Figure	Material	Messbereich Sensor (Anzahl benötigter Halter)	Description	Type	Part no.
	Stainless steel V2A	107 mm ... 251 mm (2 pcs.) 287 mm ... 431 mm (3 pcs.) 467 mm ... 647 mm (4 pcs.) 683 mm ... 791 mm (5 pcs.) 827 mm ... 1,007 mm (6 pcs.)	Sensor adapter CP96-63	BEF-KHZTS063MPA	2086756
			Sensor adapter CP96-80	BEF-KHZTS080MPA	2086757
			Sensor adapter CP96-100	BEF-KHZTS100MPA	2086758
			Sensor adapter CP96-125	BEF-KHZTS125MPA	2086759

C

8016544/2016-10-07

Mounting brackets [1)]

Figure	Material	Measuring range sensor (amount of required brackets)	Description	Type	Part no.
	Stainless steel V2A (bracket/mounting screw), Brass (fixing screw)	107 mm ... 251 mm (2 pcs.) 287 mm ... 431 mm (3 pcs.) 467 mm ... 647 mm (4 pcs.) 683 mm ... 791 mm (5 pcs.) 827 mm ... 1,007 mm (6 pcs.)	Bracket for low mounting	BEF-WNL01MPA	2065973
			Bracket for lateral mounting	BEF-WNZ01MPA	2065577

[1)] For measuring application with separate encoder (e.g. magnet).

Magnets

Figure	Description	Type	Part no.
	Magnet with mounting hole for M4 countersunk screw, Ø 15.2 mm, height 6 mm	Magnet	5327349

Others

Figure	Description	Type	Part no.
	Label Holder, 2.5 mm to 3.5 mm, 10 pcs.	LABEL HOLDER	2086019

C

Connection systems

Connecting cables with female connector

M8, 4-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Locking nut material:** CuZn, nickel-plated brass

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 4-pin, straight, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-G02M	6009870
			5 m, 4-wire	DOL-0804-G05M	6009872
	Female connector, M8, 4-pin, angled, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-W02M	6009871
			5 m, 4-wire	DOL-0804-W05M	6009873

Female connectors (ready to assemble), M8, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M8, 4-pin, straight, unshielded	Screw-type terminals	DOS-0804-G	6009974
	Female connector, M8, 4-pin, angled, unshielded	Solder connection	DOS-0804-W	6009975

Male connectors (ready to assemble), M8, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M8, 4-pin, straight, unshielded	Screw-type terminals	STE-0804-G	6037323

For more accessories, see ➜ G-130

SENSORS FOR T-SLOT CYLINDERS

D

Reliable, powerful, rugged – magnetic cylinder sensors by SICK for the T-slot

Magnetic cylinder sensors from SICK offer the perfect option for all conventional pneumatic actuators with T-slots. They are precisely tailored for the different nut tolerances. Thanks to the huge range of magnetic cylinder sensors to choose from, we can meet your every need. Drop-in mounting, short, compact design with enormous retaining force, combination bolt, safe switching point detection, sensors with two switching points, and universal mounting options using an adapter make it clear: Magnetic cylinder sensors from SICK are prepared for all installation sites and situations.

Your benefits

- Simple adjustment in nearly all conventional pneumatic cylinders, linear slides, and grippers with T-slots
- Time-saving mounting thanks to innovative and user-friendly mounting equipment
- Increased sensor service life due to enclosure rating up to IP 69K
- Simple and time-saving installation and replacement due to drop-in mounting. It is not necessary to remove the end caps.
- Maximum diversity in supply: PNP/NPN, reed 3-wire, reed 2-wire, reed for high-voltage applications, sensors with two switching points in one housing, variants with ATEX 3D/3G and ATEX 3G, and weld immune sensors

8016544/2016-10-07

D

OVERVIEW OF SENSORS FOR T-SLOT CYLINDERS

Product		Housing properties								
		Direct mounting	Mounting via adapter						Housing material	
		T-slot	Round body cylinder	Profile cylinder	Tie-rod cylinder	Dove-tail groove cylinder	SMC rail (E)CDQ2	SMC cylinder with C-slot	Plastic	
Sensors for T-slot cylinders										
	MZ2Q-T	■	■	■	■	■	■	■	■	
	MZT8	■	■	■	■	■	■	■	■	
	MZT8 VIA	■	■	■	■	■	■	■	■	
	MZT8 ATEX	■	■	■	■	■	■	■	■	
	MZT7	■	■	■	■	■	■	■	■	
	RZT7	■	■	■	■	■	■	■	■	

D

8016544/2016-10-07

	Sensor properties													Page
	Switching output/analog output					**Specific features**								
	PNP	NPN	Reed	Normally closed	Normally open	Temperature resistant up to 100 °C	Visual installation aid (VIA)	Enclosure rating IP 69K	Combination screw	IO-Link	Teach-in	ASIC from SICK	2 programmable switching points	
	■	■			■					■	■		■	→ D-52
	■	■		■	■	■		■	■			■		→ D-58
	■				■		■	■	■			■		→ D-64
	■				■				■			■		→ D-70
	■	■		■	■				■					→ D-76
			■	■	■				■					→ D-82

D

PRODUCT FAMILY OVERVIEW

				
	MZ2Q-T	**MZT8**	**MZT8 VIA**	
	Magnetic cylinder sensors with two individually adjustable switching points	Typically SICK: quick mounting, precise switching, high temperature resistance	Typically SICK: precision sensors for high machine output	
Technical data overview				
Output function	NO	NO / NC	NO	
IO-Link	– / ✔	–	–	
Special features	–	Temperature-resistant up to 100 °C	Visual installation aid/ LED indicator (yellow) Power LED (green)	
Teach-in	✔	–	–	
Cylinder types with adapter	Round body cylinder Profile cylinder and tie-rod cylinder Cylinders with dovetail-slot SMC rails CDQ2 SMC rails ECDQ2 SMC cylinders with C-slot	Round body cylinder Profile cylinder and tie-rod cylinder Cylinders with dovetail-slot SMC rails CDQ2 SMC rails ECDQ2 SMC cylinders with C-slot	Round body cylinder Profile cylinder and tie-rod cylinder Cylinders with dovetail-slot SMC rails CDQ2 SMC rails ECDQ2 SMC cylinders with C-slot	
Housing length	40 mm	24 mm	24 mm	
Supply voltage	12 V DC ... 30 V DC	10 V DC ... 30 V DC	10 V DC ... 30 V DC	
At a glance				
	• Can be used in all standard cylinders, linear slides, and grippers using the T-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders, and cylinders with a dovetail groove • Drop-in mounting from above simplifies handling and assembly • Easy adjustment of two switching points via teach-in pushbutton • LEDs for indicating the two switching points • Detection range up to 50 mm stroke	• Can be used in all standard cylinders, linear slides, and grippers using the T-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders, and cylinders with a dovetail groove • Drop-in mounting from above simplifies handling and assembly • Locking screw combines an Allen key and slotted screw • High-temperature variants: temperature-resistant up to 100 °C • Very short sensor housing for use in short stroke cylinders • Enclosure ratings: IP 67, IP 68, IP 69K	• Can be used in all standard cylinders, linear slides, and grippers using the T-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders, and cylinders with a dovetail groove • Drop-in mounting from above simplifies handling and assembly • Locking screw combines an Allen key and slotted screw • Yellow LED as visual installation aid and switching status indicator • Operating indicator via green LED • Very short sensor housing for use in short stroke cylinders • Enclosure ratings: IP 67, IP 68, IP 69K	
Detailed information	→ D-52	→ D-58	→ D-64	

D

8016544/2016-10-07
Subject to change without notice

			
	MZT8 ATEX	**MZT7**	**RZT7**
	Typically SICK: maximum performance for potentially explosive areas	The essentials taken to the max	The essentials taken to the max
	NO	NO / NC	NO / NC
	–	–	–
	–	–	–
	–	–	–
	Round body cylinder Profile cylinder and tie-rod cylinder Cylinders with dovetail-slot SMC rails CDQ2 SMC rails ECDQ2 SMC cylinders with C-slot	Round body cylinder Profile cylinder and tie-rod cylinder Cylinders with dovetail-slot SMC rails CDQ2 SMC rails ECDQ2 SMC cylinders with C-slot	Round body cylinder Profile cylinder and tie-rod cylinder Cylinders with dovetail-slot SMC rails CDQ2 SMC rails ECDQ2 SMC cylinders with C-slot
	24 mm	29.5 mm	29.5 mm / 32.5 mm
	8.2 V DC ... 20 V DC 10 V DC ... 26 V DC	10 V DC ... 30 V DC	5 V AC/DC ... 230 V AC/DC
	• Can be used in all standard cylinders, linear slides, and grippers using the T-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders, and cylinders with a dovetail groove • Drop-in mounting from above simplifies handling and assembly • Locking screw combines an Allen key and slotted screw • Variants fulfill the requirements of ATEX categories 1D, 1G and 3D, 3G • Very short sensor housing for use in short stroke cylinders • Enclosure rating: IP 67	• Can be used in all standard cylinders, linear slides, and grippers using the T-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders, and cylinders with a dovetail groove • Drop-in mounting from above simplifies handling and assembly • Locking screw combines an Allen key and slotted screw • LED for indicating the output state • Enclosure rating: IP 67	• Can be used in all standard cylinders, linear slides, and grippers using the T-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders, and cylinders with a dovetail groove • Drop-in mounting from above simplifies handling and assembly • Locking screw combines an Allen key and slotted screw • LED for indicating the output state (depending on type) • Enclosure rating: IP 67 • Supply voltage up to 230 V
	→ D-70	→ D-76	→ D-82

D

MAGNETIC CYLINDER SENSORS WITH TWO INDIVIDUALLY ADJUSTABLE SWITCHING POINTS

Product description

On pneumatic cylinders, grippers, or carriages, the MZ2Q magnetic cylinder sensors from SICK are able to detect two end positions or intermediate positions with just one sensor. This is achieved by using two individually adjustable switching points in one sensor housing. This is much easier, quicker, and more cost-effective than conventional solutions, since only one slot is used. As a result, mounting and cabling overheads are halved and applications can be solved efficiently.

At a glance

- Can be used in all standard cylinders, linear slides, and grippers using the T-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders, and cylinders with a dovetail groove
- Drop-in mounting from above simplifies handling and assembly
- Easy adjustment of two switching points via teach-in pushbutton
- LEDs for indicating the two switching points
- Detection range up to 50 mm stroke

Your benefits

- One sensor, two switching points: Reduces commissioning time and costs
- Maximum flexibility thanks to a detection zone up to 50 mm
- Suitable for precise pneumatic applications due to intuitive and precise definition of two switching points
- Quick and easy installation and sensor replacement thanks to drop-in sensor mounting
- Flexible sensor settings, monitoring, advanced diagnostics and visualization through IO-Link (depending on type)

IO-Link

Additional information

→ www.sick.com/MZ2Q-T

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.

8016544/2016-10-07
Subject to change without notice

Detailed technical data

Features

Cylinder type	T-slot
Cylinder types with adapter	Round body cylinder Profile cylinder and tie-rod cylinder Cylinders with dovetail-slot SMC rails CDQ2 SMC rails ECDQ2 SMC cylinders with C-slot
Housing length	40 mm
Output type	PNP / NPN (depending on type)
Output function	NO
Teach-in	✔
Enclosure rating [1]	IP 67

[1] According to EN 60529.

Mechanics/electronics

Detection zone	0 mm 50 mm
Supply voltage	12 V DC ... 30 V DC / 15 V DC ... 30 V DC (depending on type)
Power consumption [1]	≤ 15 mA
Voltage drop	≤ 2.2 V
Continuous current I_a	≤ 100 mA
Protection class	III
Hysteresis, typ.	1 mT
Repeatability [2]	≤ 0.1 mT
IO-Link	✔ (depending on type)
Reverse polarity protection	✔
Short-circuit protection	✔
Power-up pulse protection	✔
Ambient operating temperature	–20 °C ... +75 °C
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm
EMC	According to EN 60947-5-2
Housing material	Plastic
Cable material	PUR
Conductor cross-section	0.08 mm²
UL File No.	NRKH.E181493

[1] Without load.

[2] Ub and Ta constant.

Ordering information

Other models ➜ www.sick.com/MZ2Q-T

MZ2Q-T

- **IO-Link:** –
- **Supply voltage:** 12 V DC ... 30 V DC

Output type	Connection	Connection diagram	Type	Part no.
PNP	Cable, 4-wire, 2 m	Cd-033	MZ2Q-FTZPS-KU0	1029845
	Cable, 4-wire, 5 m	Cd-033	MZ2Q-FTZPS-KUB	1045267
	Cable with M8 male connector, 4-pin, 0.3 m	Cd-032	MZ2Q-FTZPS-KP0	1029846
	Cable with connector M8, 4-pin, with knurled nuts, 0.5 m	Cd-032	MZ2Q-FTZPS-KR0	1041322
	Cable with connector M12, 4-pin, with knurled nuts, 0.3 m	Cd-032	MZ2Q-FTZPS-KQ0	1041323
	Cable with connector M12, 4-pin, with knurled nuts, 0.8 m	Cd-032	MZ2Q-TFSPS-KQD	1062172
NPN	Cable, 4-wire, 2 m	Cd-033	MZ2Q-FTZNS-KU0	1048103

MZ2Q-T with IO-Link

- **IO-Link:** ✔
- **Supply voltage:** 15 V DC ... 30 V DC

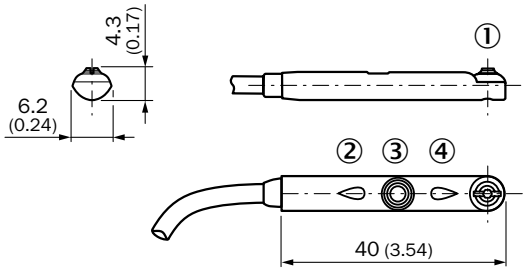
Output type	Connection	Connection diagram	Type	Part no.
PNP	Cable with M12 male connector, 4-pin, 0.3 m	Cd-032	MZ2Q-TSLPS-KQ0	1042228

D

8016544/2016-10-07

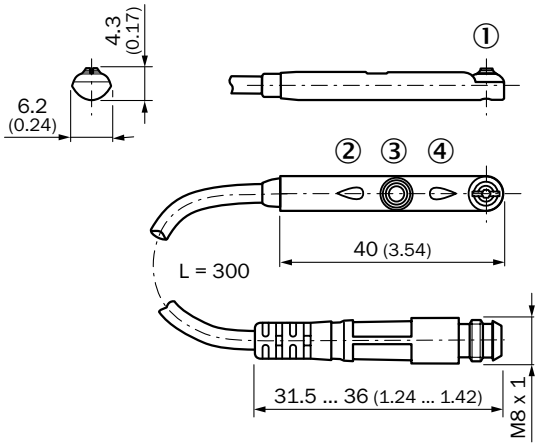
Dimensional drawings (Dimensions in mm (inch))

Cable



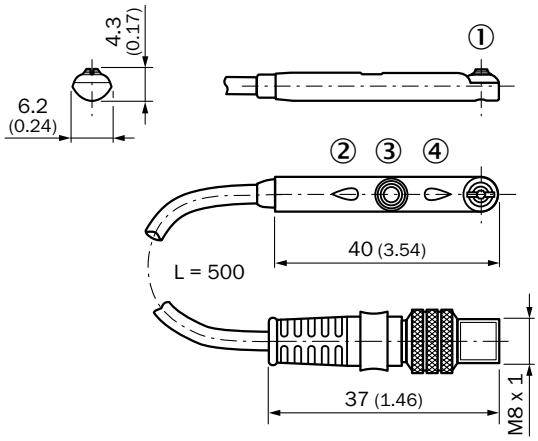
① Fixing screw
② Indication LED
③ Teach-in button
④ Indication LED

Cable with connector M8



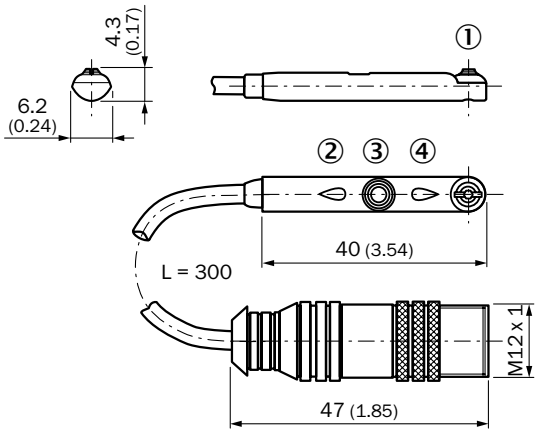
① Fixing screw
② Indication LED
③ Teach-in button
④ Indication LED

Cable with connector M8, with knurled nuts



① Fixing screw
② Indication LED
③ Teach-in button
④ Indication LED

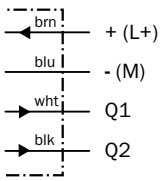
Cable with connector M12, with knurled nuts



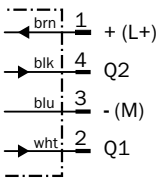
① Fixing screw
② Indication LED
③ Teach-in button
④ Indication LED

Connection diagram

Cd-033



Cd-032



D

Recommended accessories

Mounting systems

For round body cylinders

Figure	Material	Description	Type	Part no.
	Plastic, Aluminum	Mounting bracket on round body cylinder with piston diameter of 12 mm [1]	BEF-KHZ-RT-12	2077681
		Mounting bracket on round body cylinder with piston diameter of 16 mm [1]	BEF-KHZ-RT-16	2077680
		Mounting bracket on round body cylinder with piston diameter of 20 mm [1]	BEF-KHZ-RT-20	2077679
		Mounting bracket on round body cylinder with piston diameter of 25 mm [1]	BEF-KHZ-RT-25	2077678
		Mounting bracket on round body cylinder with piston diameter of 32 mm [1]	BEF-KHZ-RT-32	2077677
		Mounting bracket on round body cylinder with piston diameter of 40 mm [1]	BEF-KHZ-RT-40	2077676
		Mounting bracket on round body cylinder with piston diameter of 50 mm [1]	BEF-KHZ-RT-50	2077675
		Mounting bracket on round body cylinder with piston diameter of 63 mm [1]	BEF-KHZ-RT-63	2077674
	Stainless steel, Zinc cast	Mounting bracket on round body cylinder with piston diameter of 8 mm ... 130 mm [2]	BEF-KHZ-RT1-130	2077684
		Mounting bracket on round body cylinder with piston diameter of 8 mm ... 25 mm [2]	BEF-KHZ-RT1-25	2077682
		Mounting bracket on round body cylinder with piston diameter of 8 mm ... 63 mm [2]	BEF-KHZ-RT1-63	2077683

[1] Ambient temperature min 0 °C max 50 °C.

[2] Ambient temperature min –30 °C max 80 °C.

For cylinders with dovetail-slot

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for cylinder with dovetail slot	BEF-KHZ-ST1	2022703

For profile cylinders and tie-rod cylinders

Figure	Material	Description	Type	Part no.
	Zinc diecast	Mounting bracket for integrated profile cylinder/tie-rod cylinder	BEF-KHZ-PT1	2022702

For SMC rails CDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails CDQ2 (T-slot)	BEF-KHZ-TT2	2046440

For SMC rails ECDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails ECDQ2 (T-slot)	BEF-KHZ-TT1	2046439

Others

Figure	Description	Type	Part no.
	Label Holder, 2.5 mm to 3.5 mm, 10 pcs.	LABEL HOLDER	2086019
	Cable clips T-slot, 10 pcs./bag	CABLE CLIPS	2059322

Connection systems

Connecting cables with female connector, M12, 4-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M12, 4-pin, straight, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-1204-G02M	6009382
			5 m, 4-wire	DOL-1204-G05M	6009866
	Female connector, M12, 4-pin, angled, with 3 LEDs, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-1204-L02M	6027945
			5 m, 4-wire	DOL-1204-L05M	6027944
	Female connector, M12, 4-pin, angled, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-1204-W02M	6009383
			5 m, 4-wire	DOL-1204-W05M	6009867

Connecting cables with female connector, M8, 4-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Locking nut material:** CuZn, nickel-plated brass

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 4-pin, straight, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-G02M	6009870
			5 m, 4-wire	DOL-0804-G05M	6009872
	Female connector, M8, 4-pin, angled, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-W02M	6009871
			5 m, 4-wire	DOL-0804-W05M	6009873

Female connectors (ready to assemble), M12, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M12, 4-pin, straight, unshielded	Screw-type terminals	DOS-1204-G	6007302
	Female connector, M12, 4-pin, angled, unshielded	Screw-type terminals	DOS-1204-W	6007303

Female connectors (ready to assemble), M8, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M8, 4-pin, straight, unshielded	Screw-type terminals	DOS-0804-G	6009974
	Female connector, M8, 4-pin, angled, unshielded	Solder connection	DOS-0804-W	6009975

Male connectors (ready to assemble), M12, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M12, 4-pin, straight, unshielded	Screw-type terminals	STE-1204-G	6009932
	Male connector, M12, 4-pin, angled, unshielded	Screw-type terminals	STE-1204-W	6022084

Male connectors (ready to assemble), M8, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M8, 4-pin, straight, unshielded	Screw-type terminals	STE-0804-G	6037323

For more accessories, see ➜ G-130

TYPICALLY SICK: QUICK MOUNTING, PRECISE SWITCHING, HIGH TEMPERATURE RESISTANCE

D

Product description

The MZT8 magnetic cylinder sensor from SICK is the flexible solution for detecting the piston position in pneumatic actuators. The sensor can be inserted into cylinders very easily and, with the screw-and-washer assembly, tightened with just a quarter turn of a screwdriver or Allen key. It is not only the perfect fit in the slot that makes the MZT8 ideal for use in pneumatic cylinders with T-slots. Patented GMR technology and the SICK ASIC ensure that the sensor only needs one attempt to deliver precise switching. Multiple switching operations are suppressed, which results in increased machine performance. The MZT8 is available in a range of variants up to an enclosure rating of IP 69K and with a temperature resistance of up to 100 °C. This ensures the sensor has a long service life and reduces maintenance costs.

At a glance

- Can be used in all standard cylinders, linear slides, and grippers using the T-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders, and cylinders with a dovetail groove
- Drop-in mounting from above simplifies handling and assembly
- Locking screw combines an Allen key and slotted screw
- High-temperature variants: temperature-resistant up to 100 °C
- Very short sensor housing for use in short stroke cylinders
- Enclosure ratings: IP 67, IP 68, IP 69K

Your benefits

- Can be used at temperatures up to 100 °C
- Very rugged housing with enclosure rating IP 67, IP 68, or IP 69K extends the service life of the sensor
- Increases machine output though precise switching at the first attempt
- Quick and easy mounting using an Allen key or flat-head screwdriver
- Saves time on initial installation and when replacing devices as the sensor can be easily inserted into the slot from above. The end caps of the cylinder do not have to be removed.
- Low maintenance costs as the sensor is resistant to shock and vibration, meaning it does not slide about in the slot

Additional information

→ www.sick.com/MZT8

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.

8016544/2016-10-07
Subject to change without notice

Detailed technical data

Features

Cylinder type	T-slot
Cylinder types with adapter	Round body cylinder Profile cylinder and tie-rod cylinder Cylinders with dovetail-slot SMC rails CDQ2 SMC rails ECDQ2 SMC cylinders with C-slot
Housing length	24 mm
Output type	PNP / NPN (depending on type)
Switching frequency	1,000 Hz
Output function	NO / NC (depending on type)
Enclosure rating	IP 68 [1] IP 67 [1] ,IP 69K [2] IP 68 [1] ,IP 69K [2] (depending on type)
Special features	Temperature-resistant up to 100 °C

[1] According to EN 60529 (IP 67 / IP 68)
[2] According to DIN 40050 (IP 69K)

Mechanics/electronics

Supply voltage	10 V DC ... 24 V DC / 10 V DC ... 30 V DC (depending on type)
Power consumption [1]	≤ 10 mA
Voltage drop	≤ 2.2 V
Continuous current I_a	≤ 50 mA / ≤ 200 mA (depending on type)
Protection class	III
Response sensitivity, typ.	2.6 mT / 2.8 mT (depending on type)
Overrun distance, typ.	3 mm / 9 mm (depending on type)
Hysteresis, typ.	≤ 0.5 mT
Repeatability [2]	≤ 0.1 mT
Reverse polarity protection	✔
Short-circuit protection	✔
Power-up pulse protection	✔
Ambient operating temperature	0 °C ... +100 °C / -30 °C ... +80 °C (depending on type)
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm
EMC	According to EN 60947-5-2
Housing material	Plastic
Cable material	PVC / PUR (depending on type)
Conductor cross-section	0.14 mm²
UL File No.	NRKH.E181493

[1] Without load.
[2] Ub and Ta constant.

D

Ordering information

Other models ➜ www.sick.com/MZT8

MZT8 - overrun distance short - Temperature-resistant up to 100 °C

- **Overrun distance, typ.:** 3 mm
- **Ambient temperature operation:** 0 °C ... +100 °C
- **Supply voltage:** 10 V DC ... 24 V DC
- **Continuous current I_A:** ≤ 50 mA

Output type	Output function	Connection type	Cable material	Enclosure rating	Connection diagram	Type	Part no.
PNP	NO	Cable, 3-wire, 2 m	PVC	IP 68, IP 69K	Cd-001	MZT8-2V6PSTKW0	1073269
		Cable, 3-wire, 5 m	PVC	IP 68, IP 69K	Cd-001	MZT8-2V6PSTKWB	1073270
		Cable, 3-wire, 10 m	PVC	IP 68, IP 69K	Cd-001	MZT8-2V6PSTKWD	1073271
		Cable with connector M8, 3-pin, 0.3 m	PVC	IP 68, IP 69K	Cd-002	MZT8-2V6PSTKP0	1073268

MZT8 - overrun distance short

- **Overrun distance, typ.:** 3 mm
- **Ambient temperature operation:** –30 °C ... +80 °C
- **Supply voltage:** 10 V DC ... 30 V DC
- **Continuous current I_A:** ≤ 200 mA

Output type	Output function	Connection type	Cable material	Enclosure rating	Connection diagram	Type	Part no.
PNP	NO	Cable, 3-wire, 2 m	PUR	IP 68, IP 69K	Cd-001	MZT8-03VPS-KU0	1044469
			PVC	IP 67, IP 69K	Cd-001	MZT8-03VPS-KW0	1044349
		Cable, 3-wire, 3 m	PUR	IP 68, IP 69K	Cd-001	MZT8-03VPS-KUA	1044466
		Cable, 3-wire, 5 m	PUR	IP 68, IP 69K	Cd-001	MZT8-03VPS-KUB	1044470
			PVC	IP 67, IP 69K	Cd-001	MZT8-03VPS-KWB	1048314
		Cable, 3-wire, 10 m	PUR	IP 68, IP 69K	Cd-001	MZT8-03VPS-KUD	1054051
		Cable with connector M8, 3-pin, 0.3 m	PUR	IP 68	Cd-002	MZT8-03VPS-KP0	1044458
		Cable with connector M8, 3-pin, 0.75 m	PUR	IP 68	Cd-002	MZT8-03VPS-KPD	1044461
		Cable with connector M8, 3-pin, with knurled nuts, 0.3 m	PUR	IP 68	Cd-002	MZT8-03VPS-KRD	1044464
		Cable with connector M8, 3-pin, with knurled nuts, 0.5 m	PUR	IP 68	Cd-002	MZT8-03VPS-KR0	1044459
		Cable with connector M8, 3-pin, with knurled nuts, 5 m	PUR	IP 68	Cd-002	MZT8-03VPS-KRB	1044463
		Cable with connector M12, 3-pin, 0.3 m	PUR	IP 68	Cd-002	MZT8-03VPS-KQ0	1044460
		Cable with connector M12, 3-pin, 1 m	PUR	IP 68	Cd-002	MZT8-03VPS-KQD	1058317
	NC	Cable, 3-wire, 2 m	PUR	IP 68, IP 69K	Cd-003	MZT8-03VPO-KU0	1044931
		Cable, 3-wire, 10 m	PUR	IP 68, IP 69K	Cd-003	MZT8-03VPO-KUD	1060429
		Cable with connector M8, 3-pin, 0.3 m	PUR	IP 68	Cd-004	MZT8-03VPO-KP0	1044930
NPN	NO	Cable, 3-wire, 2 m	PUR	IP 68, IP 69K	Cd-001	MZT8-03VNS-KU0	1044934
			PVC	IP 68, IP 69K	Cd-001	MZT8-03VNS-KW0	1044468
		Cable, 3-wire, 3 m	PUR	IP 68, IP 69K	Cd-001	MZT8-03VNS-KUA	1068912
		Cable with connector M8, 3-pin, 0.3 m	PUR	IP 68	Cd-002	MZT8-03VNS-KP0	1044932
		Cable with connector M8, 3-pin, with knurled nuts, 0.5 m	PUR	IP 68	Cd-002	MZT8-03VNS-KR0	1044935

D

8016544/2016-10-07
Subject to change without notice

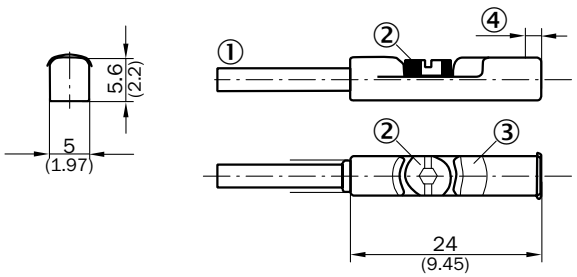
MZT8 - overrun distance long

- **Overrun distance, typ.:** 9 mm
- **Ambient temperature operation:** –30 °C ... +80 °C
- **Supply voltage:** 10 V DC ... 30 V DC
- **Continuous current I_A:** ≤ 200 mA

Output type	Output function	Connection type	Cable material	Enclosure rating	Connection diagram	Type	Part no.
PNP	NO	Cable, 3-wire, 2 m	PUR	IP 68, IP 69K	Cd-001	MZT8-28VPS-KU0	1048049
		Cable, 3-wire, 5 m	PVC	IP 67, IP 69K	Cd-001	MZT8-28VPS-KWB	1057030
		Cable with connector M8, 3-pin, 0.3 m	PUR	IP 68	Cd-002	MZT8-28VPS-KP0	1048048
		Cable with connector M8, 3-pin, with knurled nuts, 0.5 m	PUR	IP 68	Cd-002	MZT8-28VPS-KR0	1048050
		Cable with connector M12, 3-pin, 0.3 m	PUR	IP 68	Cd-002	MZT8-28VPS-KQ0	1048051
		Cable with connector M12, 3-pin, 0.5 m	PUR	IP 68	Cd-002	MZT8-28VPS-KQD	1058311
NPN	NO	Cable, 3-wire, 2 m	PUR	IP 68, IP 69K	Cd-001	MZT8-28VNS-KUA	1068535

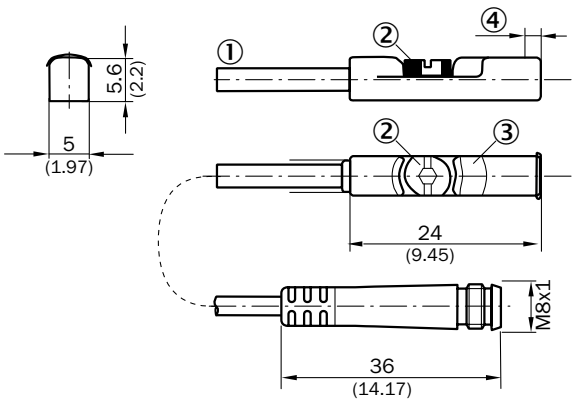
Dimensional drawings (Dimensions in mm (inch))

Cable



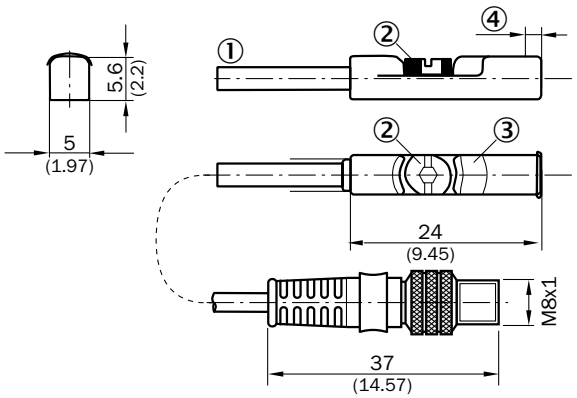
① Connection
② Fixing screw
③ Indication LED
④ Position of sensor element; short overrun distance: 2 mm; long overrun distance: 1.7 mm

Cable with connector M8



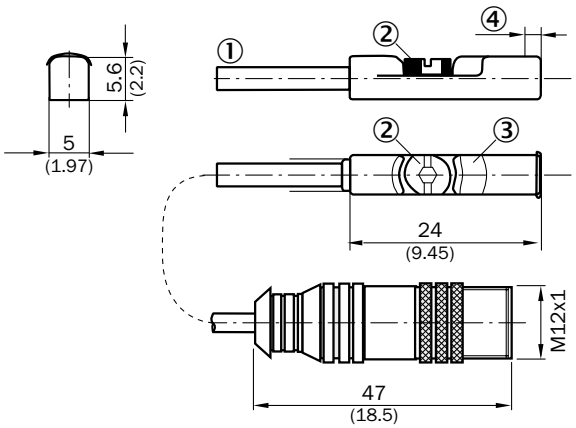
① Connection
② Fixing screw
③ Indication LED
④ Position of sensor element; short overrun distance: 2 mm; long overrun distance: 1.7 mm

Cable with connector M8, with knurled nuts



① Connection
② Fixing screw
③ Indication LED
④ Position of sensor element; short overrun distance: 2 mm; long overrun distance: 1.7 mm

Cable with M12 male connector

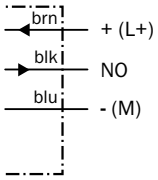


① Connection
② Fixing screw
③ Indication LED
④ Position of sensor element; short overrun distance: 2 mm; long overrun distance: 1.7 mm

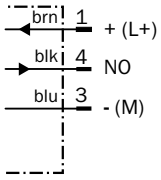
D

Connection diagram

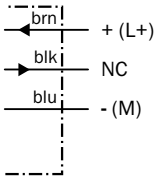
Cd-001



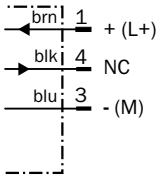
Cd-002



Cd-003



Cd-004



Recommended accessories

Mounting systems

For round body cylinders

Figure	Material	Description	Type	Part no.
	Plastic, Aluminum	Mounting bracket on round body cylinder with piston diameter of 12 mm [1]	BEF-KHZ-RT-12	2077681
		Mounting bracket on round body cylinder with piston diameter of 16 mm [1]	BEF-KHZ-RT-16	2077680
		Mounting bracket on round body cylinder with piston diameter of 20 mm [1]	BEF-KHZ-RT-20	2077679
		Mounting bracket on round body cylinder with piston diameter of 25 mm [1]	BEF-KHZ-RT-25	2077678
		Mounting bracket on round body cylinder with piston diameter of 32 mm [1]	BEF-KHZ-RT-32	2077677
		Mounting bracket on round body cylinder with piston diameter of 40 mm [1]	BEF-KHZ-RT-40	2077676
		Mounting bracket on round body cylinder with piston diameter of 50 mm [1]	BEF-KHZ-RT-50	2077675
		Mounting bracket on round body cylinder with piston diameter of 63 mm [1]	BEF-KHZ-RT-63	2077674
	Stainless steel, Zinc cast	Mounting bracket on round body cylinder with piston diameter of 8 mm ... 25 mm [2]	BEF-KHZ-RT1-25	2077682
		Mounting bracket on round body cylinder with piston diameter of 8 mm ... 63 mm [2]	BEF-KHZ-RT1-63	2077683
		Mounting bracket on round body cylinder with piston diameter of 8 mm ... 130 mm [2]	BEF-KHZ-RT1-130	2077684

[1] Ambient temperature min 0 °C max 50 °C.

[2] Ambient temperature min –30 °C max 80 °C.

For cylinders with dovetail-slot

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for cylinder with dovetail slot	BEF-KHZ-ST1	2022703

For profile cylinders and tie-rod cylinders

Figure	Material	Description	Type	Part no.
	Zinc diecast	Mounting bracket for integrated profile cylinder/tie-rod cylinder	BEF-KHZ-PT1	2022702

For SMC rails CDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails CDQ2 (T-slot)	BEF-KHZ-TT2	2046440

For SMC rails ECDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails ECDQ2 (T-slot)	BEF-KHZ-TT1	2046439

D

8016544/2016-10-07
Subject to change without notice

Others

Figure	Description	Type	Part no.
	Label Holder, 2.5 mm to 3.5 mm, 10 pcs.	LABEL HOLDER	2086019
	Cable clips T-slot, 10 pcs./bag	CABLE CLIPS	2059322

Device protection (mechanical)

Figure	Material	Description	Type	Part no.
	Die-cast zinc	Protective adapter	BEF-SG-MRZT	2077201

Connection systems

Connecting cables with female connector, M12, 3-pin, PUR, halogen-free

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M12, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-G02MC	6039075
			5 m, 3-wire	DOL-1203-G05MC	6039076
	Female connector, M12, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-W02MC	6039078
			5 m, 3-wire	DOL-1203-W05MC	6039079

Connecting cables with female connector, M8, 3-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-G02M	6010785
			5 m, 3-wire	DOL-0803-G05M	6022009
	Female connector, M8, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-W02M	6008489
			5 m, 3-wire	DOL-0803-W05M	6022010

Female connectors (ready to assemble), M8, 3-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Screw-type terminals	DOS-0803-G	7902077
	Female connector, M8, 3-pin, angled, unshielded	Solder connection	DOS-0803-W	7902078

Male connectors (ready to assemble), M8, 3-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M8, 3-pin, straight, unshielded	Screw-type terminals	STE-0803-G	6037322

For more accessories, see ➜ G-130

D

TYPICALLY SICK: PRECISION SENSORS FOR HIGH MACHINE OUTPUT

D

Product description

The MZT8 magnetic cylinder sensor from SICK is the flexible solution for detecting the piston position in pneumatic actuators. The sensor can be inserted into cylinders very easily and, with the screw-and-washer assembly, tightened with just a quarter turn of a screwdriver or Allen key. It is not only the perfect fit in the slot that makes the MZT8 ideal for use in pneumatic cylinders with T-slots. Patented GMR technology and the SICK ASIC ensure that the sensor only needs one attempt to deliver precise switching. Multiple switching operations are suppressed, which results in increased machine performance. The MZT8 is available in a range of variants up to an enclosure rating of IP 69K. This ensures the sensor has a long service life and reduces maintenance costs. The yellow LED serves as an optical adjustment indicator and makes it easier to install the sensor and monitor its mounting position. The additional green LED indicates whether the MZT8 is in operation.

At a glance

- Can be used in all standard cylinders, linear slides, and grippers using the T-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders, and cylinders with a dovetail groove
- Drop-in mounting from above simplifies handling and assembly
- Locking screw combines an Allen key and slotted screw
- Yellow LED as visual installation aid and switching status indicator
- Operating indicator via green LED
- Very short sensor housing for use in short stroke cylinders
- Enclosure ratings: IP 67, IP 68, IP 69K

Your benefits

- Easy installation and mounting position monitoring thanks to yellow LED
- Additional powerful green LED acts as a status indicator
- Very rugged housing with enclosure rating IP 67, IP 68, or IP 69K extends the service life of the sensor
- Increases machine output though precise switching at the first attempt
- Quick and easy mounting using an Allen key or flat-head screwdriver
- Saves time on initial installation and when replacing devices as the sensor can be easily inserted into the slot from above. The end caps of the cylinder do not have to be removed.
- Low maintenance costs as the sensor is resistant to shock and vibration, meaning it does not slide about in the slot

Additional information

→ www.sick.com/MZT8_VIA

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.

8016544/2016-10-07
Subject to change without notice

Detailed technical data

Features

Cylinder type	T-slot
Cylinder types with adapter	Round body cylinder Profile cylinder and tie-rod cylinder Cylinders with dovetail-slot SMC rails CDQ2 SMC rails ECDQ2 SMC cylinders with C-slot
Housing length	24 mm
Output type	PNP
Switching frequency	1,000 Hz
Output function	NO
Enclosure rating	IP 68 [1] IP 68 [1], IP 69K [2] (depending on type)
Special features	Visual installation aid/LED indicator (yellow) Power LED (green)

[1] According to EN 60529 (IP 67 / IP 68)

[2] According to DIN 40050 (IP 69K)

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC
Power consumption [1]	≤ 10 mA
Voltage drop	≤ 2.2 V
Continuous current I_a	≤ 200 mA
Protection class	III
Response sensitivity, typ.	2.6 mT
Overrun distance, typ.	3 mm
Hysteresis, typ.	≤ 0.5 mT
Repeatability [2]	≤ 0.1 mT
Reverse polarity protection	✔
Short-circuit protection	✔
Power-up pulse protection	✔
Ambient operating temperature	–30 °C ... +80 °C
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm
EMC	According to EN 60947-5-2
Housing material	Plastic, PA12
Cable material	PUR
Conductor cross-section	0.14 mm²
UL File No.	NRKH.E181493

[1] Without load.

[2] Ub and Ta constant.

D

Ordering information

Other models ➜ www.sick.com/MZT8_VIA

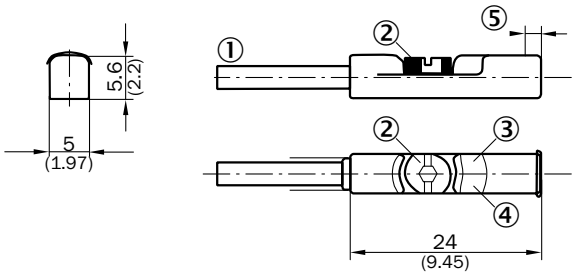
MZT8 VIA

- **Special features:** visual installation aid/LED indicator (yellow), Power LED (green)
- **Overrun distance, typ.:** 3 mm

Output type	Output function	Connection type	Cable material	Enclosure rating	Connection diagram	Type	Part no.
PNP	NO	Cable, 3-wire, 2 m	PUR	IP 68, IP 69K	Cd-001	MZT8-2V6PSAKU0	1073265
		Cable, 3-wire, 5 m	PUR	IP 68, IP 69K	Cd-001	MZT8-2V6PSAKUB	1073266
		Cable, 3-wire, 10 m	PUR	IP 68, IP 69K	Cd-001	MZT8-2V6PSAKUD	1073267
		Cable with connector M8, 3-pin, 0.3 m	PUR	IP 68	Cd-002	MZT8-2V6PSAKP0	1073264

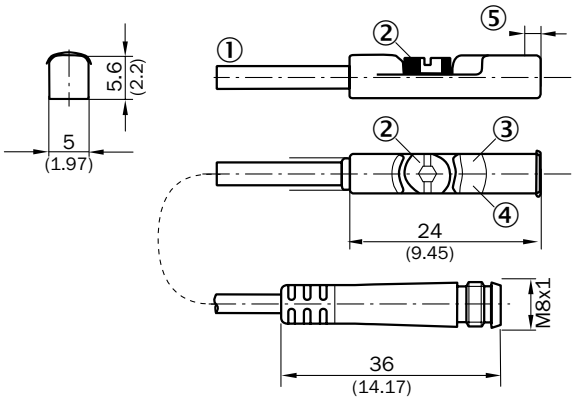
Dimensional drawings (Dimensions in mm (inch))

Cable



① Connection
② Fixing screw
③ Visual installation aid/LED indicator (yellow)
④ Power LED (green)
⑤ Position sensor element; Overrun distance short: 2 mm

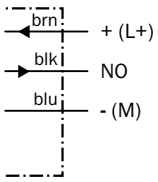
Cable with connector M8



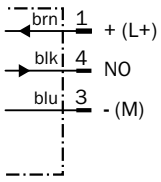
① Connection
② Fixing screw
③ Visual installation aid/LED indicator (yellow)
④ Power LED (green)
⑤ Position sensor element; Overrun distance short: 2 mm

Connection diagram

Cd-001



Cd-002



Recommended accessories

Mounting systems

For round body cylinders

Figure	Material	Description	Type	Part no.
	Plastic, Aluminum	Mounting bracket on round body cylinder with piston diameter of 12 mm [1]	BEF-KHZ-RT-12	2077681
		Mounting bracket on round body cylinder with piston diameter of 16 mm [1]	BEF-KHZ-RT-16	2077680
		Mounting bracket on round body cylinder with piston diameter of 20 mm [1]	BEF-KHZ-RT-20	2077679
		Mounting bracket on round body cylinder with piston diameter of 25 mm [1]	BEF-KHZ-RT-25	2077678
		Mounting bracket on round body cylinder with piston diameter of 32 mm [1]	BEF-KHZ-RT-32	2077677
		Mounting bracket on round body cylinder with piston diameter of 40 mm [1]	BEF-KHZ-RT-40	2077676
		Mounting bracket on round body cylinder with piston diameter of 50 mm [1]	BEF-KHZ-RT-50	2077675
		Mounting bracket on round body cylinder with piston diameter of 63 mm [1]	BEF-KHZ-RT-63	2077674
	Stainless steel, Zinc cast	Mounting bracket on round body cylinder with piston diameter of 8 mm ... 25 mm [2]	BEF-KHZ-RT1-25	2077682
		Mounting bracket on round body cylinder with piston diameter of 8 mm ... 63 mm [2]	BEF-KHZ-RT1-63	2077683
		Mounting bracket on round body cylinder with piston diameter of 8 mm ... 130 mm [2]	BEF-KHZ-RT1-130	2077684

[1] Ambient temperature min 0 °C max 50 °C.

[2] Ambient temperature min –30 °C max 80 °C.

For cylinders with dovetail-slot

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for cylinder with dovetail slot	BEF-KHZ-ST1	2022703

For profile cylinders and tie-rod cylinders

Figure	Material	Description	Type	Part no.
	Zinc diecast	Mounting bracket for integrated profile cylinder/tie-rod cylinder	BEF-KHZ-PT1	2022702

For SMC rails CDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails CDQ2 (T-slot)	BEF-KHZ-TT2	2046440

For SMC rails ECDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails ECDQ2 (T-slot)	BEF-KHZ-TT1	2046439

Others

Figure	Description	Type	Part no.
	Label Holder, 2.5 mm to 3.5 mm, 10 pcs.	LABEL HOLDER	2086019
	Cable clips T-slot, 10 pcs./bag	CABLE CLIPS	2059322

D

Device protection (mechanical)

Figure	Material	Description	Type	Part no.
	Die-cast zinc	Protective adapter	BEF-SG-MRZT	2077201

Connection systems

Connecting cables with female connector, M12, 3-pin, PUR, halogen-free

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M12, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-G02MC	6039075
			5 m, 3-wire	DOL-1203-G05MC	6039076
	Female connector, M12, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-W02MC	6039078
			5 m, 3-wire	DOL-1203-W05MC	6039079

Connecting cables with female connector, M8, 3-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-G02M	6010785
			5 m, 3-wire	DOL-0803-G05M	6022009
	Female connector, M8, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-W02M	6008489
			5 m, 3-wire	DOL-0803-W05M	6022010

Female connectors (ready to assemble), M8, 3-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Screw-type terminals	DOS-0803-G	7902077
	Female connector, M8, 3-pin, angled, unshielded	Solder connection	DOS-0803-W	7902078

Male connectors (ready to assemble), M8, 3-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M8, 3-pin, straight, unshielded	Screw-type terminals	STE-0803-G	6037322

For more accessories, see ➜ G-130

8016544/2016-10-07

TYPICALLY SICK: MAXIMUM PERFORMANCE FOR POTENTIALLY EXPLOSIVE AREAS

Product description

The MZT8 ATEX magnetic cylinder sensor from SICK is the flexible solution for detecting the piston position in pneumatic actuators in explosion-hazardous areas. The NAMUR version meets the most exacting standards and fulfills the requirements of the highest ATEX category 1D, 1G (dust and gas). As such it satisfies the requisite conditions for use in areas in which the atmosphere is explosive permanently, for prolonged periods of time, or frequently. SICK has also versions in ATEX category 3D, 3G for use in areas with a lower risk of explosion. These different explosion-protected variants of the MZT8 ATEX are suitable for use in silo hatches, elevators, mills, or conveyors.

At a glance

- Can be used in all standard cylinders, linear slides, and grippers using the T-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders, and cylinders with a dovetail groove
- Drop-in mounting from above simplifies handling and assembly
- Locking screw combines an Allen key and slotted screw
- Variants fulfill the requirements of ATEX categories 1D, 1G and 3D, 3G
- Very short sensor housing for use in short stroke cylinders
- Enclosure rating: IP 67

Your benefits

- Explosion protection at the highest level: NAMUR version for ATEX category 1D, 1G
- Quick and easy mounting using an Allen key or flat-head screwdriver
- Saves time on initial installation and when replacing devices as the sensor can be easily inserted into the slot from above. The end caps of the cylinder do not have to be removed.
- Low maintenance costs as the sensor is resistant to shock and vibration, meaning it does not slide about in the slot

Additional information

→ www.sick.com/MZT8_ATEX

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.

8016544/2016-10-07
Subject to change without notice

Detailed technical data

Features

	Namur, 1G, 1D	3G, 3D
Cylinder type	T-slot	
Cylinder types with adapter	Round body cylinder Profile cylinder and tie-rod cylinder Cylinders with dovetail-slot SMC rails CDQ2 SMC rails ECDQ2 SMC cylinders with C-slot	
Housing length	24 mm	
Output type	NAMUR [1]	PNP
Switching frequency	1,000 Hz	
Output function	-	NO
Enclosure rating [2]	IP 67	

[1] According NAMUR EN 60947-5-6. Using of isolated switch amplifier with certificates of conformity for explosion areas is recommended (U ≤ 20 V; I ≤ 60 mA; P ≤ 100 mW). See “accessories” on page G-137.

[2] According to EN 60529 (IP 67 / IP 68)

Mechanics/electronics

	Namur, 1G, 1D	3G, 3D
Supply voltage	8.2 V DC ... 20 V DC [1]	10 V DC ... 26 V DC [2]
Power consumption [3]	≤ 10 mA	
Voltage drop	≤ 2.2 V	
Continuous current I_a	≤ 60 mA [1]	≤ 50 mA [2]
Ex area category	1G, 1D	3G, 3D
Device labeling	II 1G Ex ia IIC T4 Ga, II 1D Ex ia IIIC T135 °C Da	II 3G Ex nA op is IIC T4 Gc X, II 3D Ex tc IIIC T135 °C Dc X
Response sensitivity, typ.	2.8 mT	
Overrun distance, typ.	9 mm	
Hysteresis, typ.	≤ 0.5 mT	
Repeatability [4]	≤ 0.1 mT	
Reverse polarity protection	✔	
Short-circuit protection	✔	
Power-up pulse protection	✔	
Ambient operating temperature	–25 °C ... +80 °C	–20 °C ... +50 °C
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm	
EMC	According to EN 60947-5-2	
Housing material	Plastic	
Cable material	PVC	
Conductor cross-section	0.14 mm²	

[1] According NAMUR EN 60947-5-6. Using of isolated switch amplifier with certificates of conformity for explosion areas is recommended (U ≤ 20 V; I ≤ 60 mA; P ≤ 100 mW) See “accessories” on page G-137.

[2] Depend on ambient temperature. For details see operating instructions under „performance data of the sensor“.

[3] Without load.

[4] Ub and Ta constant.

D

Ordering information

Other models ➜ www.sick.com/MZT8_ATEX

MZT8 ATEX, Namur, 1G, 1D

- **Supply voltage:** 8.2 V DC ... 20 V DC [1]
- **Continuous current I_A:** ≤ 60 mA [1]
- **Overrun distance, typ.:** 9 mm

Output type	Connection type	Cable material	Enclosure rating	Connection diagram	Type	Part no.
NAMUR [2]	Cable, 2-wire, 2 m	PVC	IP 67	Cd-305	MZT8-2V8-N-KW0	1069424
	Cable, 2-wire, 3 m	PVC	IP 67	Cd-305	MZT8-2V8-N-KWA	1070456
	Cable, 2-wire, 5 m	PVC	IP 67	Cd-305	MZT8-2V8-N-KWB	1070461
	Cable, 2-wire, 6 m	PVC	IP 67	Cd-305	MZT8-2V8-N-KWDS01	1070462
	Cable, 2-wire, 7 m	PVC	IP 67	Cd-305	MZT8-2V8-N-KWDS02	1070463
	Cable, 2-wire, 10 m	PVC	IP 67	Cd-305	MZT8-2V8-N-KWDS03	1070464
	Cable with connector M8, 2-pin, 0.3 m	PVC	IP 67	Cd-306	MZT8-2V8-N-KP0	1070465
	Cable with connector M8, 2-pin, with knurled nuts, 0.5 m	PVC	IP 67	Cd-306	MZT8-2V8-N-KR0	1070466
	Cable with connector M12, 2-pin, with knurled nuts, 0.3 m	PVC	IP 67	Cd-306	MZT8-2V8-N-KQ0	1070467

[1] Depend on ambient temperature. For details see operating instructions under „performance data of the sensor“.

[2] According NAMUR EN 60947-5-6. Using of isolated switch amplifier with certificates of conformity for explosion areas is recommended (U ≤ 20 V; I ≤ 60 mA; P ≤ 100 mW). See “accessories” on page G-137.

D

MZT8 ATEX, 3G, 3D

- **Supply voltage:** 10 V DC ... 26 V DC [1]
- **Continuous current I_A:** ≤ 50 mA [1]
- **Overrun distance, typ.:** 9 mm

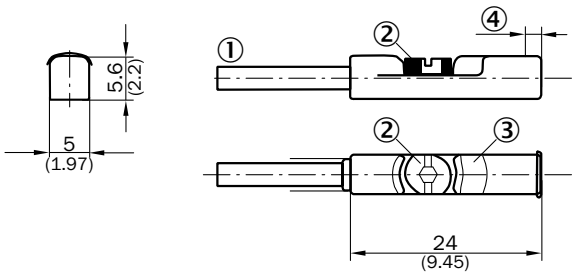
Output type	Output function	Connection type	Cable material	Enclosure rating	Connection diagram	Type	Part no.
PNP	NO	Cable, 3-wire, 2 m	PVC	IP 67	Cd-307	MZT8-03VPS-KWX	1073405
		Cable with connector M8, 3-pin, with knurled nuts, 0.3 m	PVC	IP 67	Cd-308	MZT8-03VPS-KRX	1073406
		Cable with connector M12, 3-pin, with knurled nuts, 0.3 m	PVC	IP 67	Cd-308	MZT8-03VPS-KQX	1073407

[1] Depend on ambient temperature. For details see operating instructions under „performance data of the sensor“.

8016544/2016-10-07

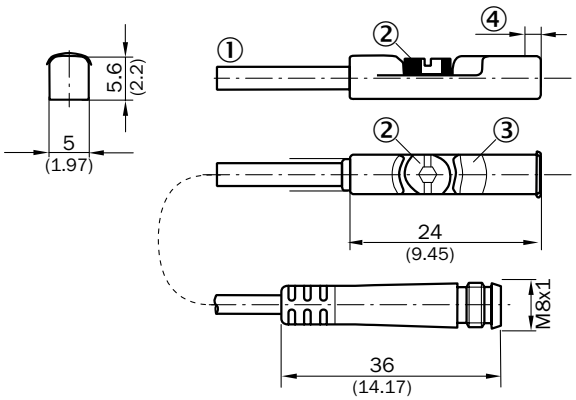
Dimensional drawings (Dimensions in mm (inch))

Cable



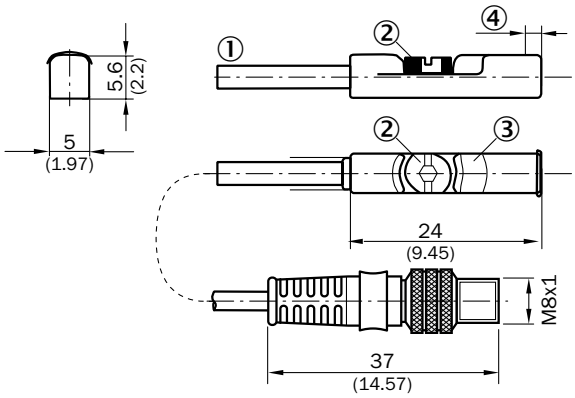
① Connection
② Fixing screw
③ Indication LED
④ Position of sensor element; short overrun distance: 2 mm;
long overrun distance: 1.7 mm

Cable with connector M8



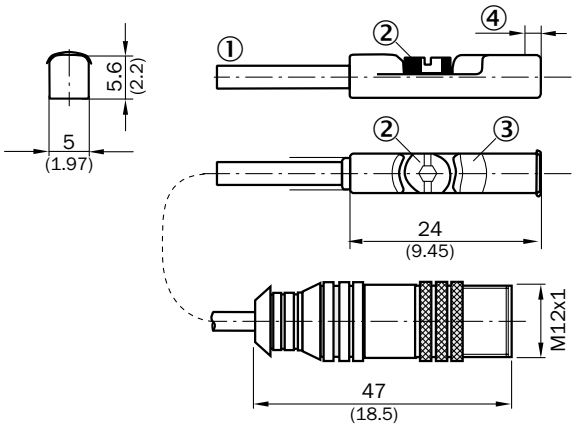
① Connection
② Fixing screw
③ Indication LED
④ Position of sensor element; short overrun distance: 2 mm;
long overrun distance: 1.7 mm

Cable with connector M8, with knurled nuts



① Connection
② Fixing screw
③ Indication LED
④ Position of sensor element; short overrun distance: 2 mm;
long overrun distance: 1.7 mm

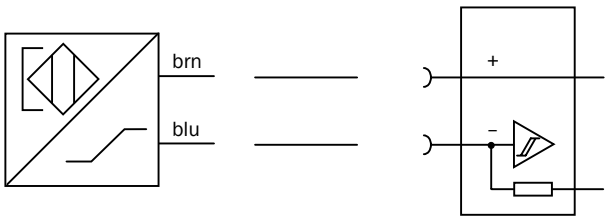
Cable with M12 male connector



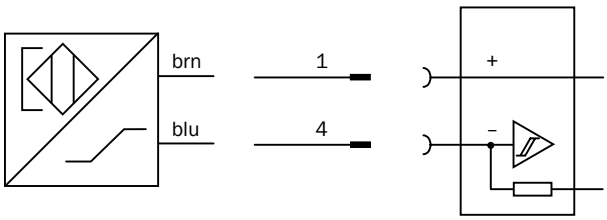
① Connection
② Fixing screw
③ Indication LED
④ Position of sensor element; short overrun distance: 2 mm;
long overrun distance: 1.7 mm

Connection diagram

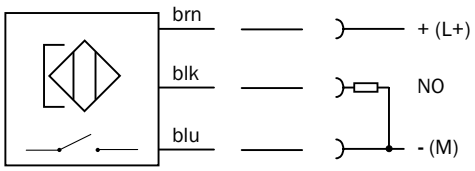
Cd-305



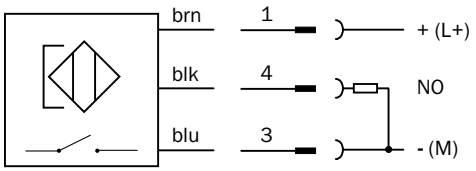
Cd-306



Cd-307



Cd-308



D

Recommended accessories

Mounting systems

For round body cylinders

Figure	Material	Description	Type	Part no.
	Plastic, Aluminum	Mounting bracket on round body cylinder with piston diameter of 12 mm [1]	BEF-KHZ-RT-12	2077681
		Mounting bracket on round body cylinder with piston diameter of 16 mm [1]	BEF-KHZ-RT-16	2077680
		Mounting bracket on round body cylinder with piston diameter of 20 mm [1]	BEF-KHZ-RT-20	2077679
		Mounting bracket on round body cylinder with piston diameter of 25 mm [1]	BEF-KHZ-RT-25	2077678
		Mounting bracket on round body cylinder with piston diameter of 32 mm [1]	BEF-KHZ-RT-32	2077677
		Mounting bracket on round body cylinder with piston diameter of 40 mm [1]	BEF-KHZ-RT-40	2077676
		Mounting bracket on round body cylinder with piston diameter of 50 mm [1]	BEF-KHZ-RT-50	2077675
		Mounting bracket on round body cylinder with piston diameter of 63 mm [1]	BEF-KHZ-RT-63	2077674
	Stainless steel, Zinc cast	Mounting bracket on round body cylinder with piston diameter of 8 mm ... 25 mm [2]	BEF-KHZ-RT1-25	2077682
		Mounting bracket on round body cylinder with piston diameter of 8 mm ... 63 mm [2]	BEF-KHZ-RT1-63	2077683
		Mounting bracket on round body cylinder with piston diameter of 8 mm ... 130 mm [2]	BEF-KHZ-RT1-130	2077684

[1] Ambient temperature min 0 °C max 50 °C.

[2] Ambient temperature min –30 °C max 80 °C.

For cylinders with dovetail-slot

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for cylinder with dovetail slot	BEF-KHZ-ST1	2022703

For profile cylinders and tie-rod cylinders

Figure	Material	Description	Type	Part no.
	Zinc diecast	Mounting bracket for integrated profile cylinder/tie-rod cylinder	BEF-KHZ-PT1	2022702

For SMC rails CDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails CDQ2 (T-slot)	BEF-KHZ-TT2	2046440

For SMC rails ECDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails ECDQ2 (T-slot)	BEF-KHZ-TT1	2046439

Others

Figure	Description	Type	Part no.
	Label Holder, 2.5 mm to 3.5 mm, 10 pcs.	LABEL HOLDER	2086019
	Cable clips T-slot, 10 pcs./bag	CABLE CLIPS	2059322

Device protection (mechanical)

Figure	Material	Description	Type	Part no.
	Die-cast zinc	Protective adapter	BEF-SG-MRZT	2077201

Connection systems

Modules and gateways, Power supply modules

Figure	Brief description	Type	Part no.
	NAMUR isolatig amplifier, Cable fault detection, Switching outputs: 2 NO relay (1 per channel), Supply voltage: 24 V ... 230 V, Voltage type: AC/DC	EN2-2EX1	6041096
	NAMUR isolatig amplifier, Cable fault detection, Switching outputs: 2 NO relay (1 per channel), Supply voltage: 19,2 V ... 30 V, Voltage type: DC	EN2-2EX3	6041095

Connecting cables with female connector, M12, 3-pin, PUR, halogen-free

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M12, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-G02MC	6039075
			5 m, 3-wire	DOL-1203-G05MC	6039076
	Female connector, M12, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-W02MC	6039078
			5 m, 3-wire	DOL-1203-W05MC	6039079

Connecting cables with female connector, M8, 3-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-G02M	6010785
			5 m, 3-wire	DOL-0803-G05M	6022009
	Female connector, M8, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-W02M	6008489
			5 m, 3-wire	DOL-0803-W05M	6022010

Female connectors (ready to assemble), M8, 3-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Screw-type terminals	DOS-0803-G	7902077
	Female connector, M8, 3-pin, angled, unshielded	Solder connection	DOS-0803-W	7902078

Male connectors (ready to assemble), M8, 3-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M8, 3-pin, straight, unshielded	Screw-type terminals	STE-0803-G	6037322

For more accessories, see ➜ G-130

D

THE ESSENTIALS TAKEN TO THE MAX

Product description

The SICK MZT7 magnetic cylinder sensor with GMR technology reliably detects the piston position in pneumatic drives. The MZT7 can be mounted directly into all cylinders with standard T-slots. SICK also has an extensive range of adapters which enable the MZT7 to be used with other cylinder types. The MZT7 is characterized by its simple mounting principle: Insert the sensor into the slot and rotate the fixing screw a quarter turn to fix it securely to the cylinder.

At a glance

- Can be used in all standard cylinders, linear slides, and grippers using the T-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders, and cylinders with a dovetail groove
- Drop-in mounting from above simplifies handling and assembly
- Locking screw combines an Allen key and slotted screw
- LED for indicating the output state
- Enclosure rating: IP 67

Your benefits

- A sensor for a wide range of applications: The sensor design fits into all standard T-slots used around the world, regardless of the cylinder profile or make
- Simple mounting: Thanks to the retaining ribs on the side, the sensor holds its position even before the screw is tightened, ensuring that it does not fall out
- Fast mounting: The sensor is fixed quickly and securely in the slot simply by rotating the fixing screw a quarter turn
- The rugged fixing screw holds the sensor in the required position, even when exposed to shock and vibration
- It is easy to replace the sensor during servicing without removing the end caps

D

Additional information

➜ www.sick.com/MZT7

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.

8016544/2016-10-07
Subject to change without notice

Detailed technical data

Features

Cylinder type	T-slot
Cylinder types with adapter	Round body cylinder Profile cylinder and tie-rod cylinder Cylinders with dovetail-slot SMC rails CDQ2 SMC rails ECDQ2 SMC cylinders with C-slot
Housing length	29.5 mm
Output type	PNP / NPN (depending on type)
Switching frequency	1,000 Hz
Output function	NO / NC (depending on type)
Enclosure rating [1]	IP 65, IP 67

[1] According to EN 60529.

Mechanics/electronics

Supply voltage [1]	10 V DC ... 30 V DC
Power consumption [2]	≤ 8 mA
Voltage drop	≤ 2 V
Continuous current I_a	≤ 100 mA
Protection class	III
Response sensitivity, typ.	3 mT
Overrun distance, typ.	10 mm
Hysteresis, typ.	< 0.8 mT
Repeatability [3]	≤ 0.1 mT
Status indicator LED	✔
Reverse polarity protection	✔
Short-circuit protection	✔
Ambient operating temperature	–30 °C ... +80 °C (PUR) –30 °C ... +80 °C (PVC) (depending on type)
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm
EMC	According to EN 60947-5-2
Housing material	Plastic
Cable material	PUR / PVC (depending on type)
Conductor cross-section	0.14 mm² / 0.12 mm² (depending on type)

[1] Limit values when operated in short-circuit protected network: max. 8 A.

[2] Without load.

[3] Ub and Ta constant.

D

Ordering information

Other models ➔ www.sick.com/MZT7

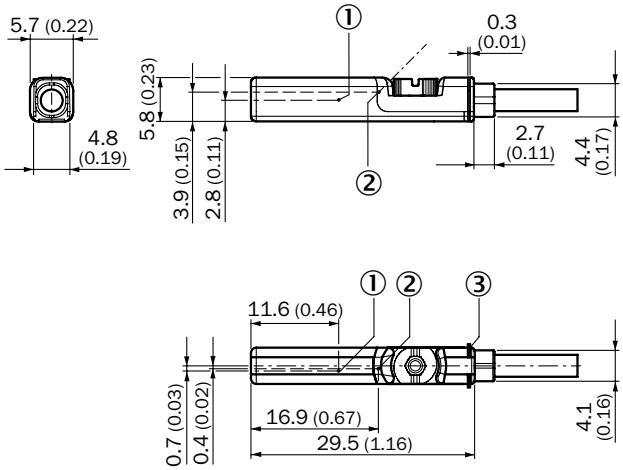
MZT7

- **Overrun distance, typ.:** 10 mm

Output type	Output function	Connection type	Cable material	Enclosure rating	Connection diagram	Type	Part no.
PNP	NO	Cable, 3-wire, 2 m	PUR	IP 65, IP 67	Cd-001	MZT7-03VPS-KU0	1070829
			PVC	IP 65, IP 67	Cd-001	MZT7-03VPS-KW0	1070838
		Cable, 3-wire, 5 m	PUR	IP 65, IP 67	Cd-001	MZT7-03VPS-KUB	1070833
			PVC	IP 65, IP 67	Cd-001	MZT7-03VPS-KWB	1070842
		Cable with connector M8, 3-pin, 0.3 m	PUR	IP 65, IP 67	Cd-002	MZT7-03VPS-KP0	1070814
		Cable with connector M8, 3-pin, with knurled nuts, 0.5 m	PUR	IP 65, IP 67	Cd-002	MZT7-03VPS-KR0	1070821
		Cable with connector M12, 3-pin, with knurled nuts, 0.3 m	PUR	IP 65, IP 67	Cd-002	MZT7-03VPS-KQ0	1070825
	NC	Cable, 3-wire, 2 m	PUR	IP 65, IP 67	Cd-003	MZT7-03VPO-KU0	1070830
		Cable with connector M8, 3-pin, 0.3 m	PUR	IP 65, IP 67	Cd-004	MZT7-03VPO-KP0	1070818
NPN	NO	Cable, 3-wire, 2 m	PUR	IP 65, IP 67	Cd-001	MZT7-03VNS-KU0	1070831
			PVC	IP 65, IP 67	Cd-001	MZT7-03VNS-KW0	1070840
		Cable, 3-wire, 5 m	PUR	IP 65, IP 67	Cd-001	MZT7-03VNS-KUB	1070835
			PVC	IP 65, IP 67	Cd-001	MZT7-03VNS-KWB	1070844
		Cable with connector M8, 3-pin, 0.3 m	PUR	IP 65, IP 67	Cd-002	MZT7-03VNS-KP0	1070819
		Cable with connector M8, 3-pin, with knurled nuts, 0.5 m	PUR	IP 65, IP 67	Cd-002	MZT7-03VNS-KR0	1070823
		Cable with connector M12, 3-pin, with knurled nuts, 0.3 m	PUR	IP 65, IP 67	Cd-002	MZT7-03VNS-KQ0	1070827
	NC	Cable, 3-wire, 2 m	PUR	IP 65, IP 67	Cd-003	MZT7-03VNO-KU0	1070832
		Cable with connector M8, 3-pin, 0.3 m	PUR	IP 65, IP 67	Cd-004	MZT7-03VNO-KP0	1070820

D

Dimensional drawing (Dimensions in mm (inch))

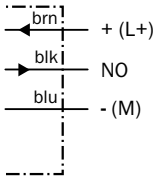


① Position sensor element
② Indication LED
③ Retaining ribs

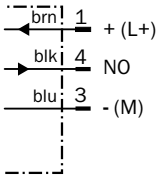
8016544/2016-10-07
Subject to change without notice

Connection diagram

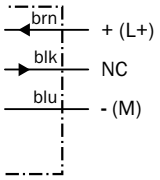
Cd-001



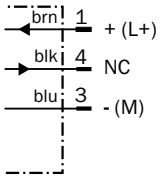
Cd-002



Cd-003



Cd-004



Recommended accessories

Mounting systems

For round body cylinders

Figure	Material	Description	Type	Part no.
	Plastic, Aluminum	Mounting bracket on round body cylinder with piston diameter of 12 mm [1]	BEF-KHZ-RT-12	2077681
		Mounting bracket on round body cylinder with piston diameter of 16 mm [1]	BEF-KHZ-RT-16	2077680
		Mounting bracket on round body cylinder with piston diameter of 20 mm [1]	BEF-KHZ-RT-20	2077679
		Mounting bracket on round body cylinder with piston diameter of 25 mm [1]	BEF-KHZ-RT-25	2077678
		Mounting bracket on round body cylinder with piston diameter of 32 mm [1]	BEF-KHZ-RT-32	2077677
		Mounting bracket on round body cylinder with piston diameter of 40 mm [1]	BEF-KHZ-RT-40	2077676
		Mounting bracket on round body cylinder with piston diameter of 50 mm [1]	BEF-KHZ-RT-50	2077675
		Mounting bracket on round body cylinder with piston diameter of 63 mm [1]	BEF-KHZ-RT-63	2077674
	Stainless steel, Zinc cast	Mounting bracket on round body cylinder with piston diameter of 8 mm ... 25 mm [2]	BEF-KHZ-RT1-25	2077682
		Mounting bracket on round body cylinder with piston diameter of 8 mm ... 63 mm [2]	BEF-KHZ-RT1-63	2077683
		Mounting bracket on round body cylinder with piston diameter of 8 mm ... 130 mm [2]	BEF-KHZ-RT1-130	2077684

[1] Ambient temperature min 0 °C max 50 °C.

[2] Ambient temperature min –30 °C max 80 °C.

For cylinders with dovetail-slot

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for cylinder with dovetail slot	BEF-KHZ-ST1	2022703

For profile cylinders and tie-rod cylinders

Figure	Material	Description	Type	Part no.
	Zinc diecast	Mounting bracket for integrated profile cylinder/tie-rod cylinder	BEF-KHZ-PT1	2022702

For SMC rails CDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails CDQ2 (T-slot)	BEF-KHZ-TT2	2046440

For SMC rails ECDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails ECDQ2 (T-slot)	BEF-KHZ-TT1	2046439

D

Others

Figure	Description	Type	Part no.
	Label Holder, 2.5 mm to 3.5 mm, 10 pcs.	LABEL HOLDER	2086019
	Cable clips T-slot, 10 pcs./bag	CABLE CLIPS	2059322

Device protection (mechanical)

Figure	Material	Description	Type	Part no.
	Die-cast zinc	Protective adapter	BEF-SG-MRZT	2077201

Connection systems

Connecting cables with female connector, M12, 3-pin, PUR, halogen-free

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M12, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-G02MC	6039075
			5 m, 3-wire	DOL-1203-G05MC	6039076
	Female connector, M12, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-W02MC	6039078
			5 m, 3-wire	DOL-1203-W05MC	6039079

Connecting cables with female connector, M8, 3-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-G02M	6010785
			5 m, 3-wire	DOL-0803-G05M	6022009
	Female connector, M8, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-W02M	6008489
			5 m, 3-wire	DOL-0803-W05M	6022010

Female connectors (ready to assemble), M8, 3-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Screw-type terminals	DOS-0803-G	7902077
	Female connector, M8, 3-pin, angled, unshielded	Solder connection	DOS-0803-W	7902078

Male connectors (ready to assemble), M8, 3-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M8, 3-pin, straight, unshielded	Screw-type terminals	STE-0803-G	6037322

For more accessories, see ➜ G-130

8016544/2016-10-07

THE ESSENTIALS TAKEN TO THE MAX

Product description

The SICK RZT7 magnetic cylinder sensor with reed contact reliably detects the piston position in pneumatic drives. The RZT7 can be mounted directly into all cylinders with standard T-slots. SICK also has an extensive range of adapters which enable the RZT7 to be used with other cylinder types. The RZT7 is characterized by its simple mounting principle: Insert the sensor into the slot and rotate the fixing screw a quarter turn to fix it securely to the cylinder.

At a glance

- Can be used in all standard cylinders, linear slides, and grippers using the T-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders, and cylinders with a dovetail groove
- Drop-in mounting from above simplifies handling and assembly
- Locking screw combines an Allen key and slotted screw
- LED for indicating the output state (depending on type)
- Enclosure rating: IP 67
- Supply voltage up to 230 V

Your benefits

- A sensor for a wide range of applications: The sensor design fits into all standard T-slots used around the world, regardless of the cylinder profile or make
- Simple mounting: Thanks to the retaining ribs on the side, the sensor holds its position even before the screw is tightened, ensuring that it does not fall out
- Fast mounting: The sensor is fixed quickly and securely in the slot simply by rotating the fixing screw a quarter turn
- The rugged fixing screw holds the sensor in the required position, even when exposed to shock and vibration
- It is easy to replace the sensor during servicing without removing the end caps

Additional information

→ www.sick.com/RZT7

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.

8016544/2016-10-07
Subject to change without notice

Detailed technical data

Features

	AC/DC 3-wire	AC/DC 2-wire
Cylinder type	T-slot	
Cylinder types with adapter	Round body cylinder Profile cylinder and tie-rod cylinder Cylinders with dovetail-slot SMC rails CDQ2 SMC rails ECDQ2 SMC cylinders with C-slot	
Housing length	29.5 mm	29.5 mm / 32.5 mm (depending on type)
Output type	Reed	
Switching frequency	400 Hz	
Output function	NO	NO / NC (depending on type)
Enclosure rating	IP 65, IP 67 [1]	

[1] According to EN 60529.

Mechanics/electronics

	AC/DC 3-wire	AC/DC 2-wire
Supply voltage [1]	5 V AC/DC ... 30 V AC/DC	5 V AC/DC ... 30 V AC/DC 5 V AC/DC ... 120 V AC/DC 5 V AC/DC ... 230 V AC/DC (depending on type)
Voltage drop	≤ 0.1 V [2]	≤ 3.5 V
Continuous current I_a	≤ 500 mA [3] ≤ 300 mA [4]	≤ 100 mA [4]
Switching capacity	≤ 6 W	
Protection class	III	III / II (depending on type)
Response sensitivity, typ.	3 mT	
Overrun distance, typ.	10 mm	
Repeatability [5]	≤ 0.1 mT	
Status indicator LED	✔	✔ (except RZT7-03ZV0-KW0/1070866)
Reverse polarity protection	✔	–
Ambient operating temperature	–30 °C ... +80 °C (PUR) –30 °C ... +70 °C (PVC) (depending on type)	
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm	
EMC	According to EN 60947-5-2	
Housing material	Plastic	
Cable material	PUR / PVC (depending on type)	
Conductor cross-section	0.14 mm² / 0.12 mm² (depending on type)	

[1] Limit values when operated in short-circuit protected network: max. 8 A.

[2] For cable length up to 0.3 m.

[3] DC.

[4] AC.

[5] Ub and Ta constant.

D

Ordering information

Other models ➜ www.sick.com/RZT7

AC/DC 3-wire

- **Electrical wiring:** AC/DC 3-wire
- **Continuous current I_A:** ≤ 500 mA (DC.), ≤ 300 mA (AC.)

Supply voltage [1]	Protection class	Output function	Connection	Cable material	Enclosure rating [2]	Connection diagram	Type	Part no.
5 V AC/DC ... 30 V AC/DC	III	NO	Cable, 3-wire, 2 m	PUR	IP 65, IP 67	Cd-035	RZT7-03ZRS-KU0	1070850
				PVC	IP 65, IP 67	Cd-035	RZT7-03ZRS-KW0	1070852
			Cable, 3-wire, 5 m	PUR	IP 65, IP 67	Cd-035	RZT7-03ZRS-KUB	1070851
				PVC	IP 65, IP 67	Cd-035	RZT7-03ZRS-KWB	1070853
			Cable, 3-wire, 10 m	PVC	IP 65, IP 67	Cd-035	RZT7-03ZRS-KWD	1070854
			Cable with connector M8, 3-pin, 0.3 m	PUR	IP 65, IP 67	Cd-036	RZT7-03ZRS-KP0	1070847
			Cable with connector M8, 3-pin, with knurled nuts, 0.5 m	PUR	IP 65, IP 67	Cd-036	RZT7-03ZRS-KR0	1070848
			Cable with connector M12, 3-pin, with knurled nuts, 0.3 m	PUR	IP 65, IP 67	Cd-036	RZT7-03ZRS-KQ0	1070849

[1] Limit values when operated in short-circuit protected network: max. 8 A.

[2] According to EN 60529.

AC/DC 2-wire

- **Electrical wiring:** AC/DC 2-wire
- **Continuous current I_A:** ≤ 100 mA

Supply voltage [1]	Protection class	Output function	Connection	Cable material	Enclosure rating [2]	Connection diagram	Type	Part no.
5 V AC/DC ... 30 V AC/DC	III	NO	Cable, 2-wire, 2 m	PUR	IP 65, IP 67	Cd-037	RZT7-03ZUS-KU0	1070861
				PVC	IP 65, IP 67	Cd-037	RZT7-03ZUS-KW0	1070865
			Cable, 2-wire, 5 m	PUR	IP 65, IP 67	Cd-037	RZT7-03ZUS-KUB	1070863
				PVC	IP 65, IP 67	Cd-037	RZT7-03ZUS-KWB	1070867
			Cable with connector M8, 3-pin, 0.3 m	PUR	IP 65, IP 67	Cd-038	RZT7-03ZUS-KP0	1070855
			Cable with connector M8, 3-pin, with knurled nuts, 0.5 m	PUR	IP 65, IP 67	Cd-038	RZT7-03ZUS-KR0	1070857
			Cable with connector M12, 3-pin, with knurled nuts, 0.3 m	PUR	IP 65, IP 67	Cd-345	RZT7-03ZUS-KQ0	1070859
5 V AC/DC ... 120 V AC/DC	II	NC	Cable, 2-wire, 2 m	PVC	IP 65, IP 67	Cd-037	RZT7-03ZV0-KW0	1070866
5 V AC/DC ... 230 V AC/DC	II	NO	Cable, 2-wire, 2 m	PUR	IP 65, IP 67	Cd-037	RZT7-03ZWS-KU0	1070869
				PVC	IP 65, IP 67	Cd-037	RZT7-03ZWS-KW0	1070871
			Cable, 2-wire, 5 m	PUR	IP 65, IP 67	Cd-037	RZT7-03ZWS-KUB	1070870
				PVC	IP 65, IP 67	Cd-037	RZT7-03ZWS-KWB	1070872

[1] Limit values when operated in short-circuit protected network: max. 8 A.

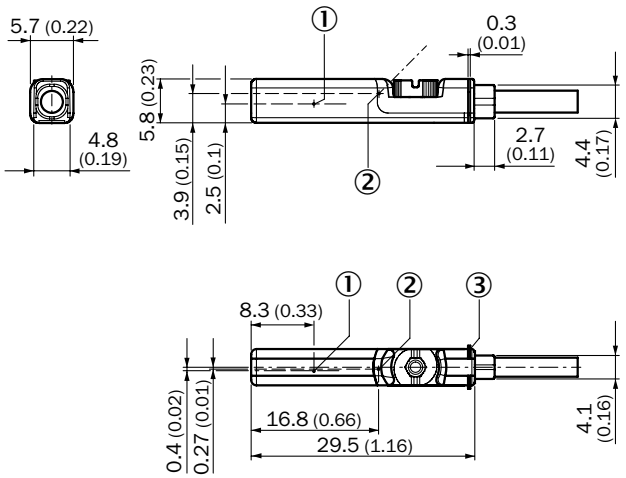
[2] According to EN 60529.

D

8016544/2016-10-07
Subject to change without notice

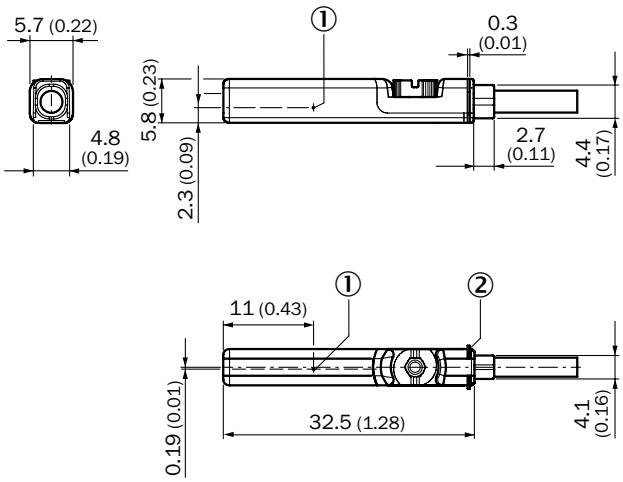
Dimensional drawings (Dimensions in mm (inch))

10 V AC/DC ... 30 V AC/DC



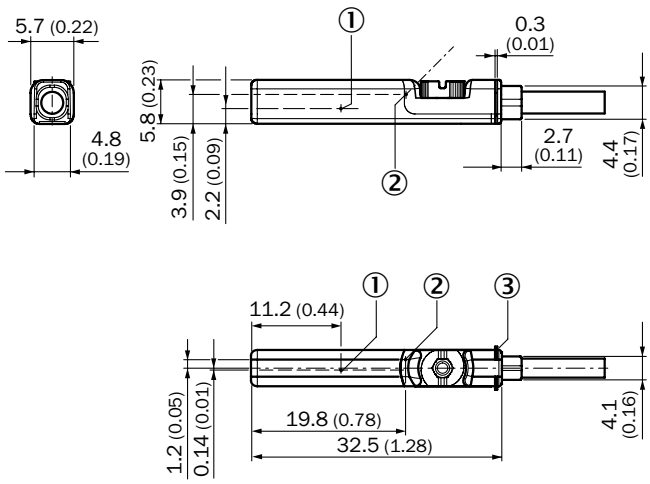
① Position sensor element
② Indication LED
③ Retaining ribs

10 V AC/DC ... 120 V AC/DC



① Position sensor element
② Retaining ribs

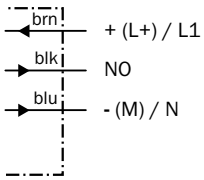
10 V AC/DC ... 230 V AC/DC



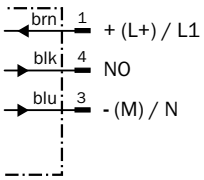
① Position sensor element
② Indication LED
③ Retaining ribs

Connection diagram

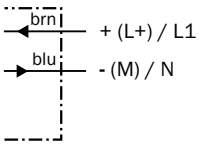
Cd-035



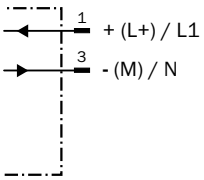
Cd-036



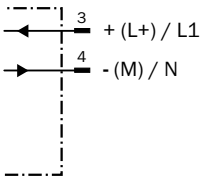
Cd-037



Cd-038



Cd-345



D

Recommended accessories

Mounting systems

For round body cylinders

Figure	Material	Description	Type	Part no.
	Plastic, Aluminum	Mounting bracket on round body cylinder with piston diameter of 12 mm [1]	BEF-KHZ-RT-12	2077681
		Mounting bracket on round body cylinder with piston diameter of 16 mm [1]	BEF-KHZ-RT-16	2077680
		Mounting bracket on round body cylinder with piston diameter of 20 mm [1]	BEF-KHZ-RT-20	2077679
		Mounting bracket on round body cylinder with piston diameter of 25 mm [1]	BEF-KHZ-RT-25	2077678
		Mounting bracket on round body cylinder with piston diameter of 32 mm [1]	BEF-KHZ-RT-32	2077677
		Mounting bracket on round body cylinder with piston diameter of 40 mm [1]	BEF-KHZ-RT-40	2077676
		Mounting bracket on round body cylinder with piston diameter of 50 mm [1]	BEF-KHZ-RT-50	2077675
		Mounting bracket on round body cylinder with piston diameter of 63 mm [1]	BEF-KHZ-RT-63	2077674
	Stainless steel, Zinc cast	Mounting bracket on round body cylinder with piston diameter of 8 mm ... 25 mm [2]	BEF-KHZ-RT1-25	2077682
		Mounting bracket on round body cylinder with piston diameter of 8 mm ... 63 mm [2]	BEF-KHZ-RT1-63	2077683
		Mounting bracket on round body cylinder with piston diameter of 8 mm ... 130 mm [2]	BEF-KHZ-RT1-130	2077684

[1] Ambient temperature min 0 °C max 50 °C.

[2] Ambient temperature min –30 °C max 80 °C.

For cylinders with dovetail-slot

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for cylinder with dovetail slot	BEF-KHZ-ST1	2022703

For profile cylinders and tie-rod cylinders

Figure	Material	Description	Type	Part no.
	Zinc diecast	Mounting bracket for integrated profile cylinder/tie-rod cylinder	BEF-KHZ-PT1	2022702

For SMC rails CDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails CDQ2 (T-slot)	BEF-KHZ-TT2	2046440

For SMC rails ECDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails ECDQ2 (T-slot)	BEF-KHZ-TT1	2046439

Others

Figure	Description	Type	Part no.
	Label Holder, 2.5 mm to 3.5 mm, 10 pcs.	LABEL HOLDER	2086019
	Cable clips T-slot, 10 pcs./bag	CABLE CLIPS	2059322

Device protection (mechanical)

Figure	Material	Description	Type	Part no.
	Die-cast zinc	Protective adapter	BEF-SG-MRZT	2077201

Connection systems

Connecting cables with female connector, M12, 3-pin, PUR, halogen-free

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M12, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-G02MC	6039075
			5 m, 3-wire	DOL-1203-G05MC	6039076
	Female connector, M12, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-W02MC	6039078
			5 m, 3-wire	DOL-1203-W05MC	6039079

Connecting cables with female connector, M8, 3-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-G02M	6010785
			5 m, 3-wire	DOL-0803-G05M	6022009
	Female connector, M8, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-W02M	6008489
			5 m, 3-wire	DOL-0803-W05M	6022010

Female connectors (ready to assemble), M8, 3-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Screw-type terminals	DOS-0803-G	7902077
	Female connector, M8, 3-pin, angled, unshielded	Solder connection	DOS-0803-W	7902078

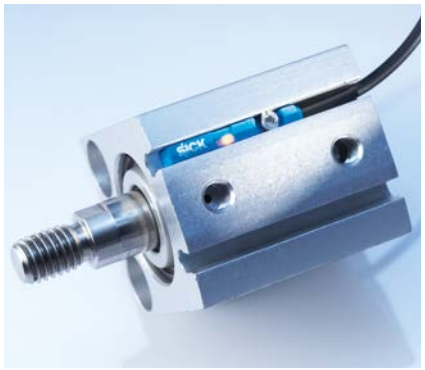
Male connectors (ready to assemble), M8, 3-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M8, 3-pin, straight, unshielded	Screw-type terminals	STE-0803-G	6037322

For more accessories, see ➜ G-130

D

SENSORS FOR C-SLOT CYLINDERS



E

Reliable, high-performance, rugged - magnetic cylinder sensors from SICK for the C-slot

Magnetic cylinder sensors from SICK ofter the perfect option for all conventional pneumatic actuators with C-slots. They are precisely tailored for different slot forms.
SICK offers a wide range of magnetic cylinder sensors to meet a variety of applications. Drop-in mounting, a short, compact and rugged design with strong retaining force, a combination screw, safe switching point detection, and an enclosure rating up to IP 69K make these magnetic cylinder sensors easy to install in nearly all installation sites and situations.

Your benefits

- Can be adjusted in all conventional pneumatic cylinders, linear slides, and grippers with C-slots
- Time-saving sensor mounting thanks to innovative and user-friendly mounting equipment
- Very short sensor housing means it can even be used in short-stroke cylinders
- Increased sensor service life due to enclosure rating up to IP 69K
- Simple and time-saving installation and replacement due to drop-in mounting. It is not necessary to remove the end caps.
- Maximum diversity in supply: PNP/NPN, reed 3-wire, reed 2-wire, reed for high-voltage applications, sensors with two switching points in one housing, and variants with an extremely rugged VISTAL® housing

8016544/2016-10-07
Subject to change without notice

E

OVERVIEW OF SENSORS FOR C-SLOT CYLINDERS

Product	Housing properties						
	Direct mounting	Mounting via adapter				Housing material	
	C-slot	Round body cylinder	Profile cylinder	Tie-rod cylinder	SMC rail (E)CDQ2	Plastic	
Sensors for C-slot cylinders							
 MZ2Q-C	■	■	■	■	■	■	
 MZC1	■	■	■	■	■	■	
 MZC1 VIA	■	■	■	■	■	■	
 RZC1	■	■	■	■	■	■	

E

8016544/2016-10-07

	Sensor properties												Page
	Switching output/analog output				**Specific features**								
	PNP	NPN	Reed	Normally open	Visual installation aid (VIA)	Enclosure rating IP 69K	Vistal®	Combination screw	IO-Link	Teach-in	ASIC from SICK	2 programmable switching points	
	■	■		■					■	■		■	→ E-94
	■	■		■		■	■	■			■		→ E-100
	■			■	■	■	■	■			■		→ E-106
			■	■		■	■	■			■		→ E-112

E

PRODUCT FAMILY OVERVIEW

			
	MZ2Q-C	**MZC1**	
	Magnetic cylinder sensors with two individually adjustable switching points	Drop-in, install, done	
Technical data overview			
Output function	NO	NO	
IO-Link	✔	–	
Teach-in	✔	–	
Special features	–	–	
Cylinder types with adapter	Round body cylinder Profile cylinder and tie-rod cylinder SMC rails CDQ2 SMC rails ECDQ2	Round body cylinder Profile cylinder and tie-rod cylinder SMC rails CDQ2 SMC rails ECDQ2	
Housing length	19.5 mm	23.7 mm	
Supply voltage	12 V DC ... 30 V DC	10 V DC ... 30 V DC	
At a glance			
	• Can be used in all standard cylinders, linear slides, and grippers using the C-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders • Drop-in mounting from above simplifies handling and assembly • Easy adjustment of two switching points via teach-in pushbutton • LEDs for indicating the two switching points • Detection range up to 50 mm stroke	• Can be used in all standard cylinders, linear slides, and grippers using the C-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders • Drop-in mounting from above simplifies handling and assembly • Locking screw combines an Allen key and slotted screw • LED for indicating the output state • Enclosure ratings: IP 67, IP 68, IP 69K	
Detailed information	➜ E-94	➜ E-100	

E

8016544/2016-10-07
Subject to change without notice

		
	MZC1 VIA	**RZC1**
	Drop-in, install, done	Drop-in, install, done
	NO	NO
	–	–
	–	–
	Visual installation aid/LED indicator (yellow) Power LED (green)	–
	Round body cylinder Profile cylinder and tie-rod cylinder SMC rails CDQ2 SMC rails ECDQ2	Round body cylinder Profile cylinder and tie-rod cylinder SMC rails CDQ2 SMC rails ECDQ2
	23.7 mm	26.3 mm
	10 V DC ... 30 V DC	5 V AC/DC ... 120 V AC/DC
	• Can be used in all standard cylinders, linear slides, and grippers using the C-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders • Drop-in mounting from above simplifies handling and assembly • Locking screw combines an Allen key and slotted screw • Yellow LED as visual installation aid and switching status indicator • Operating indicator via green LED • Enclosure ratings: IP 67, IP 68, IP 69K	• Can be used in all standard cylinders, linear slides, and grippers using the C-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders • Drop-in mounting from above simplifies handling and assembly • Locking screw combines an Allen key and slotted screw • LED for indicating the output state • Enclosure ratings: IP 67, IP 68, IP 69K • Supply voltage up to 230 V
	➜ E-106	➜ E-112

E

MAGNETIC CYLINDER SENSORS WITH TWO INDIVIDUALLY ADJUSTABLE SWITCHING POINTS

Product description

On pneumatic cylinders, grippers, or carriages, the MZ2Q magnetic cylinder sensors from SICK are able to detect two end positions or intermediate positions with just one sensor. This is achieved by using two individually adjustable switching points in one sensor housing. This is much easier, quicker, and more cost-effective than conventional solutions, since only one slot is used. As a result, mounting and cabling overheads are halved and applications can be solved efficiently.

At a glance

- Can be used in all standard cylinders, linear slides, and grippers using the C-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders
- Drop-in mounting from above simplifies handling and assembly
- Easy adjustment of two switching points via teach-in pushbutton
- LEDs for indicating the two switching points
- Detection range up to 50 mm stroke

Your benefits

- One sensor, two switching points: Reduces commissioning time and costs
- Maximum flexibility thanks to a detection zone up to 50 mm
- Suitable for precise pneumatic applications due to intuitive and precise definition of two switching points
- Quick and easy installation and sensor replacement thanks to drop-in sensor mounting
- Flexible sensor settings, monitoring, advanced diagnostics and visualization through IO-Link (depending on type)

IO-Link

Additional information

→ www.sick.com/MZ2Q-C

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.

8016544/2016-10-07
Subject to change without notice

Detailed technical data

Features

Cylinder type	C-slot
Cylinder types with adapter	Round body cylinder Profile cylinder and tie-rod cylinder SMC rails CDQ2 SMC rails ECDQ2
Housing length	19.5 mm
Output type	PNP / NPN (depending on type)
Output function	NO
Teach-in	✔
Enclosure rating [1]	IP 67

[1] According to EN 60529.

Mechanics/electronics

Detection zone	0 mm 50 mm
Supply voltage	12 V DC ... 30 V DC / 15 V DC ... 30 V DC (depending on type)
Power consumption [1]	≤ 15 mA
Voltage drop	≤ 2.2 V
Continuous current I_a	≤ 100 mA
Protection class	III
Hysteresis, typ.	1 mT
Repeatability [2]	≤ 0.1 mT
IO-Link	✔ (depending on type)
Reverse polarity protection	✔
Short-circuit protection	✔
Power-up pulse protection	✔
Ambient operating temperature	–20 °C ... +75 °C
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm
EMC	According to EN 60947-5-2
Housing material	Plastic
Cable material	PUR
Conductor cross-section	0.08 mm²
UL File No.	NRKH.E181493

[1] Without load.

[2] Ub and Ta constant.

Ordering information

Other models ➔ www.sick.com/MZ2Q-C

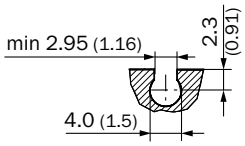
MZ2Q-C for SMC-C-slot

IO-Link	Output type	Connection	Connection diagram	Type	Part no.
–	PNP	Cable, 4-wire, 2 m	Cd-033	MZ2Q-CSSPSKU0	1042237
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-032	MZ2Q-CSSPSKP0	1042238
		Cable with connector M8, 4-pin, with knurled nuts, 0.5 m	Cd-032	MZ2Q-CSSPSKR0	1042239
		Cable with M12 male connector, 4-pin, 0.3 m	Cd-032	MZ2Q-CSSPSKQ0	1042240
	NPN	Cable, 4-wire, 3 m	Cd-033	MZ2Q-CSSNSKUA	1046234
✔	PNP	Cable with M12 male connector, 4-pin, 0.3 m	Cd-032	MZ2Q-CSLPSKQ0	1043696

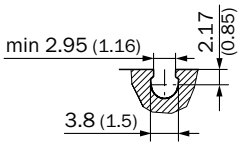
MZ2Q-C for Festo-C-slot

IO-Link	Output type	Connection	Connection diagram	Type	Part no.
–	PNP	Cable, 4-wire, 2 m	Cd-033	MZ2Q-CFSPSKU0	1042241
		Cable with M8 male connector, 4-pin, 0.3 m	Cd-032	MZ2Q-CFSPSKP0	1042242
		Cable with M12 male connector, 4-pin, 0.3 m	Cd-032	MZ2Q-CFSPSKQ0	1042244
		Cable with connector M8, 4-pin, with knurled nuts, 0.5 m	Cd-032	MZ2Q-CFSPSKR0	1042243
✔	PNP	Cable with M12 male connector, 4-pin, 0.3 m	Cd-032	MZ2Q-CFLPSKQ0	1043697

SMC C-Nut



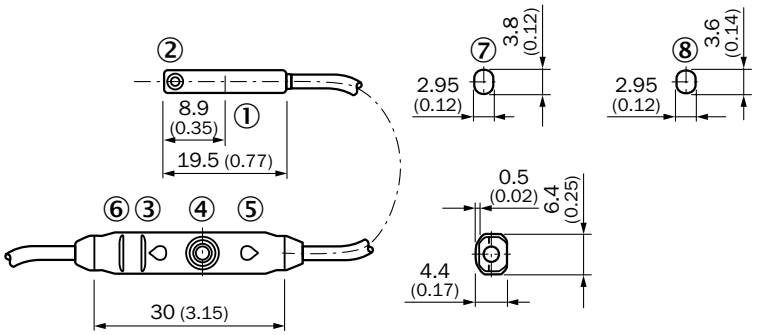
Festo C-Nut



E

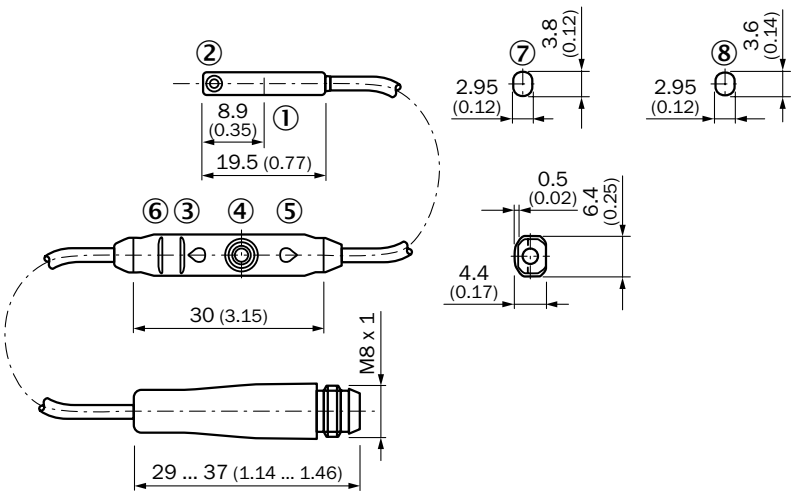
Dimensional drawings (Dimensions in mm (inch))

Cable



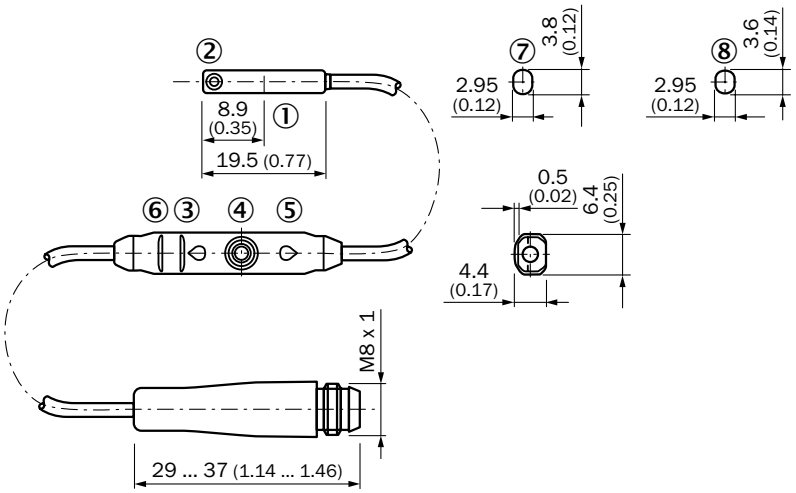
① Center of sensor element
② Fixing screw
③ Indication LED
④ Teach-in button
⑤ Indication LED
⑥ Ribbing for cable ties
⑦ For SMC/ Bimba cylinder
⑧ For festo cylinder

Cable with connector M8



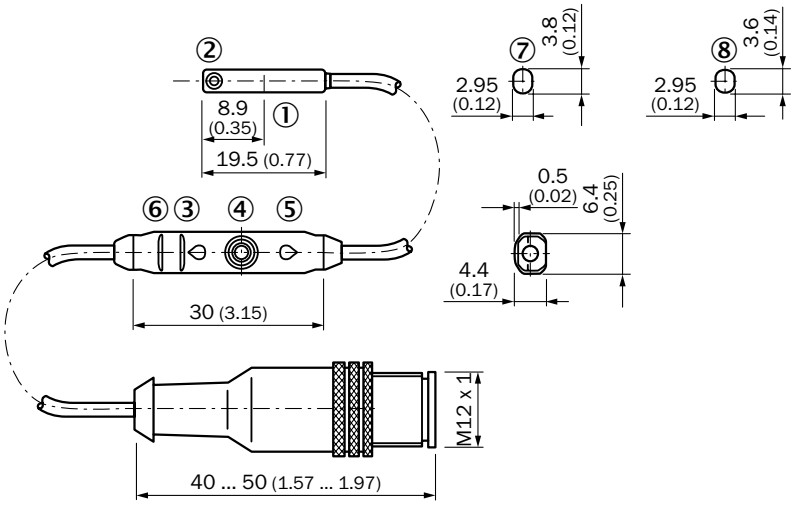
① Center of sensor element
② Fixing screw
③ Indication LED
④ Teach-in button
⑤ Indication LED
⑥ Ribbing for cable ties
⑦ For SMC/ Bimba cylinder
⑧ For festo cylinder

Cable with connector M8, with knurled nuts



① Center of sensor element
② Fixing screw
③ Indication LED
④ Teach-in button
⑤ Indication LED
⑥ Ribbing for cable ties
⑦ For SMC/ Bimba cylinder
⑧ For festo cylinder

Cable with M12 male connector

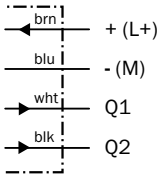


① Center of sensor element
② Fixing screw
③ Indication LED
④ Teach-in button
⑤ Indication LED
⑥ Ribbing for cable ties
⑦ For SMC/ Bimba cylinder
⑧ For festo cylinder

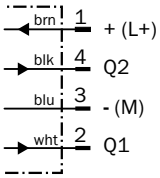
E

Connection diagram

Cd-033



Cd-032



Recommended accessories

Mounting systems

For round body cylinders

Figure	Material	Description	Type	Part no.
	Plastic, Aluminum	Mounting bracket on round body cylinder with piston diameter of 12 mm [1]	BEF-KHZ-RC-12	2077673
		Mounting bracket on round body cylinder with piston diameter of 16 mm [1]	BEF-KHZ-RC-16	2077672
		Mounting bracket on round body cylinder with piston diameter of 20 mm [1]	BEF-KHZ-RC-20	2077671
		Mounting bracket on round body cylinder with piston diameter of 25 mm [1]	BEF-KHZ-RC-25	2077670
		Mounting bracket on round body cylinder with piston diameter of 32 mm [1]	BEF-KHZ-RC-32	2077669
		Mounting bracket on round body cylinder with piston diameter of 40 mm [1]	BEF-KHZ-RC-40	2077668
		Mounting bracket on round body cylinder with piston diameter of 50 mm [1]	BEF-KHZ-RC-50	2077667
		Mounting bracket on round body cylinder with piston diameter of 63 mm [1]	BEF-KHZ-RC-63	2077666
	Stainless steel, Aluminum	Mounting bracket on round body cylinder with piston diameter of 1 mm ... 25 mm [2]	BEF-KHZ-RC1-25	2077685
		Mounting bracket on round body cylinder with piston diameter of 1 mm ... 130 mm [2]	BEF-KHZ-RC1-130	2077686

[1] Ambient temperature min 0 °C max 50 °C.

[2] Ambient temperature min –30 °C max 80 °C.

For profile cylinders and tie-rod cylinders

Figure	Material	Description	Type	Part no.
	Zinc diecast	Mounting bracket for integrated profile cylinder/tie-rod cylinder	BEF-KHZ-PC1	2076170

For SMC rails CDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails CDQ2 (C-slot)	BEF-KHZ-TC2	2046442

For SMC rails ECDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails ECDQ2 (C-slot)	BEF-KHZ-TC1	2046441

Others

Figure	Description	Type	Part no.
	Label Holder, 2.5 mm to 3.5 mm, 10 pcs.	LABEL HOLDER	2086019

Connection systems

Connecting cables with female connector, M12, 4-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M12, 4-pin, straight, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-1204-G02M	6009382
			5 m, 4-wire	DOL-1204-G05M	6009866
	Female connector, M12, 4-pin, angled, with 3 LEDs, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-1204-L02M	6027945
			5 m, 4-wire	DOL-1204-L05M	6027944
	Female connector, M12, 4-pin, angled, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-1204-W02M	6009383
			5 m, 4-wire	DOL-1204-W05M	6009867

Connecting cables with female connector, M8, 4-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Locking nut material:** CuZn, nickel-plated brass

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 4-pin, straight, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-G02M	6009870
			5 m, 4-wire	DOL-0804-G05M	6009872
	Female connector, M8, 4-pin, angled, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-W02M	6009871
			5 m, 4-wire	DOL-0804-W05M	6009873

Female connectors (ready to assemble), M12, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M12, 4-pin, straight, unshielded	Screw-type terminals	DOS-1204-G	6007302
	Female connector, M12, 4-pin, angled, unshielded	Screw-type terminals	DOS-1204-W	6007303

Female connectors (ready to assemble), M8, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M8, 4-pin, straight, unshielded	Screw-type terminals	DOS-0804-G	6009974
	Female connector, M8, 4-pin, angled, unshielded	Solder connection	DOS-0804-W	6009975

Male connectors (ready to assemble), M12, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M12, 4-pin, straight, unshielded	Screw-type terminals	STE-1204-G	6009932
	Male connector, M12, 4-pin, angled, unshielded	Screw-type terminals	STE-1204-W	6022084

Male connectors (ready to assemble), M8, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M8, 4-pin, straight, unshielded	Screw-type terminals	STE-0804-G	6037323

For more accessories, see ➜ G-130

DROP-IN, INSTALL, DONE

Product description

The MZC1 magnetic cylinder sensor from SICK is the flexible solution for detecting the piston position in pneumatic actuators. The MZC1 can be mounted directly into all cylinders with standard C-slots. SICK also has an extensive range of adapters which enable the MZC1 to be used with other cylinder types. The MZC1 is characterized by its simple mounting principle: Insert the sensor into the slot and rotate the fixing screw a quarter turn to fix it securely to the cylinder. Furthermore, the MZC1 is available in a range of variants up to an enclosure rating of IP 69K. This ensures the sensor has a long service life and reduces maintenance costs.

At a glance

- Can be used in all standard cylinders, linear slides, and grippers using the C-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders
- Drop-in mounting from above simplifies handling and assembly
- Locking screw combines an Allen key and slotted screw
- LED for indicating the output state
- Enclosure ratings: IP 67, IP 68, IP 69K

Your benefits

- A sensor for a wide range of applications: The sensor design fits into all standard C-slots used around the world, regardless of the cylinder profile or make
- Quick and easy mounting using an Allen key or flat-head screwdriver
- Low maintenance costs as the sensor is resistant to shock and vibration, meaning it does not slide about in the slot
- Saves time on initial installation and when replacing devices as the sensor can be easily inserted into the slot from above. The end caps of the cylinder do not have to be removed.
- Very rugged housing with enclosure rating IP 67, IP 68, or IP 69K extends the service life of the sensor

Additional information

→ www.sick.com/MZC1

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.

8016544/2016-10-07
Subject to change without notice

Detailed technical data

Features

Cylinder type	C-slot
Cylinder types with adapter	Round body cylinder Profile cylinder and tie-rod cylinder SMC rails CDQ2 SMC rails ECDQ2
Housing length	23.7 mm
Output type	PNP / NPN (depending on type)
Switching frequency	1,000 Hz
Output function	NO
Enclosure rating	IP 68 [1] IP 68, IP 69K [1] [2] (depending on type)

[1] According to EN 60529 (IP 67 / IP 68)

[2] According to DIN 40050 (IP 69K)

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC
Power consumption [1]	≤ 8 mA
Voltage drop	≤ 2.5 V
Continuous current I_a	≤ 100 mA
Protection class	III
Response sensitivity, typ.	2.2 mT / 4.25 mT (depending on type)
Overrun distance, typ.	4 mm / 7 mm (depending on type)
Hysteresis, typ.	≤ 0.8 mT
Repeatability [2]	≤ 0.1 mT
Reverse polarity protection	✔
Short-circuit protection	✔
Power-up pulse protection	✔
Ambient operating temperature	–30 °C ... +80 °C
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm
EMC	According to EN 60947-5-2
Housing material	Plastic
Cable material	PVC / PUR (depending on type)
Conductor cross-section	0.09 mm²
UL File No.	NRKH.E181493

[1] Without load.

[2] Ub and Ta constant.

E

Ordering information

Other models ➜ www.sick.com/MZC1

MZC1 – short overrun distance

- **Overrun distance, typ.:** 4 mm
- **Output function:** NO

Output type	Connection type	Enclosure rating	Cable material	Connection diagram	Type	Part no.
PNP	Cable, 3-wire, 2 m	IP 68, IP 69K	PVC	Cd-001	MZC1-2V2PS-KW0	1059740
			PUR	Cd-001	MZC1-2V2PS-KU0	1059738
	Cable, 3-wire, 5 m	IP 68, IP 69K	PVC	Cd-001	MZC1-2V2PS-KWB	1059741
			PUR	Cd-001	MZC1-2V2PS-KUB	1059739
	Cable with connector M8, 3-pin, 0.3 m	IP 68	PUR	Cd-002	MZC1-2V2PS-KP0	1059735
	Cable with connector M8, 3-pin, with knurled nuts, 0.3 m	IP 68	PUR	Cd-002	MZC1-2V2PS-KR0	1059737
	Cable with connector M8, 3-pin, with knurled nuts, 0.5 m	IP 68	PUR	Cd-002	MZC1-2V2PS-KRD	1060129
	Cable with connector M8, 3-pin, with knurled nuts, 1 m	IP 68	PUR	Cd-002	MZC1-2V2PS-KRDS02	1068563
	Cable with connector M12, 3-pin, 0.3 m	IP 68	PUR	Cd-002	MZC1-2V2PS-KQ0	1059736
NPN	Cable, 3-wire, 2 m	IP 68, IP 69K	PUR	Cd-001	MZC1-2V2NS-KU0	1059743
	Cable with connector M8, 3-pin, 0.3 m	IP 68	PUR	Cd-002	MZC1-2V2NS-KP0	1059744
	Cable with connector M8, 3-pin, with knurled nuts, 1 m	IP 68	PUR	Cd-002	MZC1-2V2NS-KRDS03	1068564
	Cable with connector M8, 3-pin, with knurled nuts, 0.5 m	IP 68	PUR	Cd-002	MZC1-2V2NS-KRD	1068562
	Cable with connector M8, 3-pin, with knurled nuts, 0.3 m	IP 68	PUR	Cd-002	MZC1-2V2NS-KR0	1059742
	Cable with connector M12, 3-pin, 0.3 m	IP 68	PUR	Cd-002	MZC1-2V2NS-KQ0	1077026

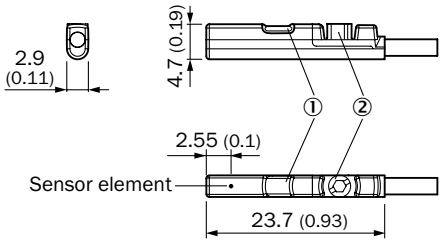
MZC1 – long overrun distance

- **Overrun distance, typ.:** 7 mm
- **Output function:** NO

Output type	Connection type	Enclosure rating	Cable material	Connection diagram	Type	Part no.
PNP	Cable, 3-wire, 2 m	IP 68, IP 69K	PUR	Cd-001	MZC1-4V3PS-KU0	1059755
	Cable with connector M8, 3-pin, 0.3 m	IP 68	PUR	Cd-002	MZC1-4V3PS-KP0	1059752
	Cable with connector M8, 3-pin, with knurled nuts, 0.3 m	IP 68	PUR	Cd-002	MZC1-4V3PS-KR0	1059753
	Cable with connector M12, 3-pin, 0.3 m	IP 68	PUR	Cd-002	MZC1-4V3PS-KQ0	1059754
NPN	Cable, 3-wire, 2 m	IP 68, IP 69K	PUR	Cd-001	MZC1-4V3NS-KU0	1059756
	Cable with connector M8, 3-pin, 0.3 m	IP 68	PUR	Cd-002	MZC1-4V3NS-KP0	1059757

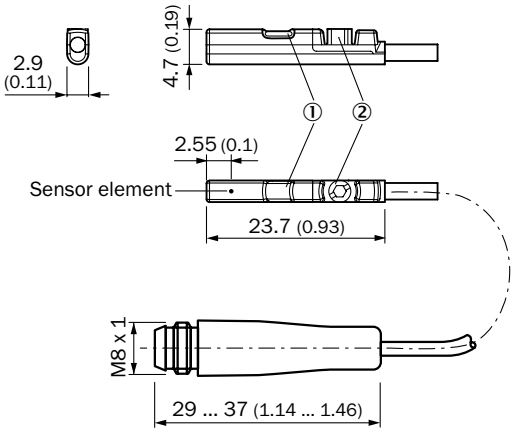
Dimensional drawings (Dimensions in mm (inch))

Cable



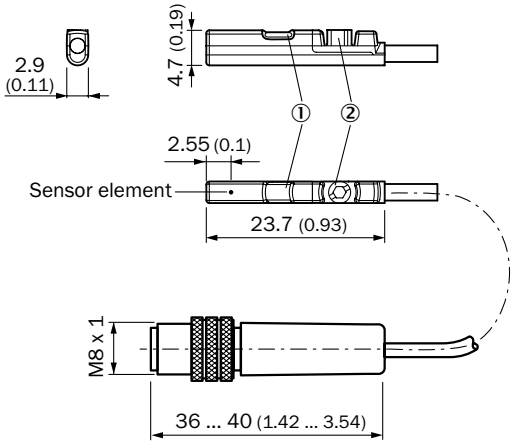
① Indication LED
② Fixing screw

Cable with connector M8



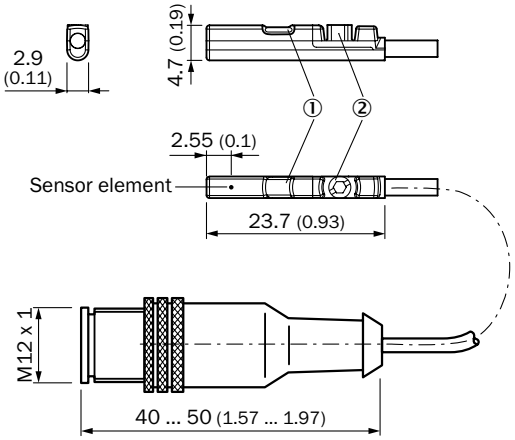
① Indication LED
② Fixing screw

Cable with connector M8, with knurled nuts



① Indication LED
② Fixing screw

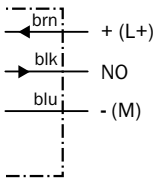
Cable with M12 male connector



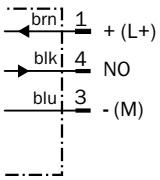
① Indication LED
② Fixing screw

Connection diagram

Cd-001



Cd-002



E

Recommended accessories

Mounting systems

For round body cylinders

Figure	Material	Description	Type	Part no.
	Plastic, Aluminum	Mounting bracket on round body cylinder with piston diameter of 12 mm [1]	BEF-KHZ-RC-12	2077673
		Mounting bracket on round body cylinder with piston diameter of 16 mm [1]	BEF-KHZ-RC-16	2077672
		Mounting bracket on round body cylinder with piston diameter of 20 mm [1]	BEF-KHZ-RC-20	2077671
		Mounting bracket on round body cylinder with piston diameter of 25 mm [1]	BEF-KHZ-RC-25	2077670
		Mounting bracket on round body cylinder with piston diameter of 32 mm [1]	BEF-KHZ-RC-32	2077669
		Mounting bracket on round body cylinder with piston diameter of 40 mm [1]	BEF-KHZ-RC-40	2077668
		Mounting bracket on round body cylinder with piston diameter of 50 mm [1]	BEF-KHZ-RC-50	2077667
		Mounting bracket on round body cylinder with piston diameter of 63 mm [1]	BEF-KHZ-RC-63	2077666
	Stainless steel, Aluminum	Mounting bracket on round body cylinder with piston diameter of 1 mm ... 25 mm [2]	BEF-KHZ-RC1-25	2077685
		Mounting bracket on round body cylinder with piston diameter of 1 mm ... 130 mm [2]	BEF-KHZ-RC1-130	2077686

[1] Ambient temperature min 0 °C max 50 °C.

[2] Ambient temperature min –30 °C max 80 °C.

For profile cylinders and tie-rod cylinders

Figure	Material	Description	Type	Part no.
	Zinc diecast	Mounting bracket for integrated profile cylinder/tie-rod cylinder	BEF-KHZ-PC1	2076170

For SMC rails CDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails CDQ2 (C-slot)	BEF-KHZ-TC2	2046442

For SMC rails ECDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails ECDQ2 (C-slot)	BEF-KHZ-TC1	2046441

Connection systems

Connecting cables with female connector, M12, 3-pin, PUR, halogen-free

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M12, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-G02MC	6039075
			5 m, 3-wire	DOL-1203-G05MC	6039076
	Female connector, M12, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-W02MC	6039078
			5 m, 3-wire	DOL-1203-W05MC	6039079

Connecting cables with female connector, M8, 3-pin, PUR, halogen-free, Oil / grease resistant

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-W02MC	6025891
			5 m, 3-wire	DOL-0803-W05MC	6025892

Connecting cables with female connector, M8, 3-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-G02M	6010785
			5 m, 3-wire	DOL-0803-G05M	6022009
	Female connector, M8, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-W02M	6008489
			5 m, 3-wire	DOL-0803-W05M	6022010

For more accessories, see ➜ G-130

E

DROP-IN, INSTALL, DONE

Product description

The MZC1 VIA magnetic cylinder sensor from SICK is the flexible solution for detecting the piston position in pneumatic actuators. The MZC1 VIA can be mounted directly into all cylinders with standard C-slots. SICK also has an extensive range of adapters which enable the MZC1 VIA to be used with other cylinder types. The MZC1 VIA is characterized by its simple mounting principle: Insert the sensor into the slot and rotate the fixing screw a quarter turn to fix it securely to the cylinder. The yellow LED serves as an optical adjustment indicator and makes it easier to install the sensor and monitor its mounting position. The additional green LED indicates whether the MZC1 VIA is in operation.

At a glance

- Can be used in all standard cylinders, linear slides, and grippers using the C-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders
- Drop-in mounting from above simplifies handling and assembly
- Locking screw combines an Allen key and slotted screw
- Yellow LED as visual installation aid and switching status indicator
- Operating indicator via green LED
- Enclosure ratings: IP 67, IP 68, IP 69K

Your benefits

- A sensor for a wide range of applications: The sensor design fits into all standard C-slots used around the world, regardless of the cylinder profile or make
- Easy installation and mounting position monitoring thanks to yellow LED
- Additional powerful green LED acts as a status indicator
- Quick and easy mounting using an Allen key or flat-head screwdriver
- Low maintenance costs as the sensor is resistant to shock and vibration, meaning it does not slide about in the slot
- Saves time on initial installation and when replacing devices as the sensor can be easily inserted into the slot from above. The end caps of the cylinder do not have to be removed.
- Very rugged housing with enclosure rating IP 67, IP 68, or IP 69K extends the service life of the sensor

Additional information

→ www.sick.com/MZC1_VIA

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.

8016544/2016-10-07
Subject to change without notice

Detailed technical data

Features

Cylinder type	C-slot
Cylinder types with adapter	Round body cylinder Profile cylinder and tie-rod cylinder SMC rails CDQ2 SMC rails ECDQ2
Housing length	23.7 mm
Output type	PNP
Switching frequency	1,000 Hz
Output function	NO
Enclosure rating	IP 68 [1] IP 68, IP 69K [1] [2] (depending on type)
Special features	Visual installation aid/LED indicator (yellow) Power LED (green)

[1] According to EN 60529 (IP 67 / IP 68)
[2] , According to DIN 40050 (IP 69K)

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC
Power consumption [1]	≤ 8 mA
Voltage drop	≤ 2.5 V
Continuous current I_a	≤ 100 mA
Protection class	III
Response sensitivity, typ.	2.2 mT
Overrun distance, typ.	4 mm
Hysteresis, typ.	≤ 0.8 mT
Repeatability [2]	≤ 0.1 mT
Reverse polarity protection	✔
Short-circuit protection	✔
Power-up pulse protection	✔
Ambient operating temperature	–30 °C ... +80 °C
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm
EMC	According to EN 60947-5-2
Housing material	Plastic
Cable material	PUR
Conductor cross-section	0.09 mm²
UL File No.	NRKH.E181493

[1] Without load.
[2] Ub and Ta constant.

Ordering information

Other models ➜ www.sick.com/MZC1_VIA

MZC1 VIA

- **Special features:** visual installation aid/LED indicator (yellow), Power LED (green)
- **Overrun distance, typ.:** 4 mm

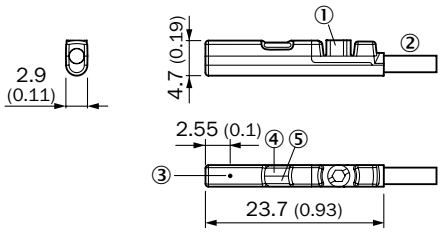
Output function	Output type	Connection type	Enclosure rating	Cable material	Connection diagram	Type	Part no.
NO	PNP	Cable, 3-wire, 5 m	IP 68, IP 69K	PUR	Cd-001	MZC1-2V2PSAKUB	1079050
		Cable, 3-wire, 2 m	IP 68, IP 69K	PUR	Cd-001	MZC1-2V2PSAKU0	1079049
		Cable with connector M8, 3-pin, 0.3 m	IP 68	PUR	Cd-002	MZC1-2V2PSAKP0	1079046
		Cable with connector M8, 3-pin, with knurled nuts, 0.3 m	IP 68	PUR	Cd-002	MZC1-2V2PSAKR0	1079047
		Cable with connector M12, 3-pin, 0.3 m	IP 68	PUR	Cd-002	MZC1-2V2PSAKQ0	1079048

E

8016544/2016-10-07

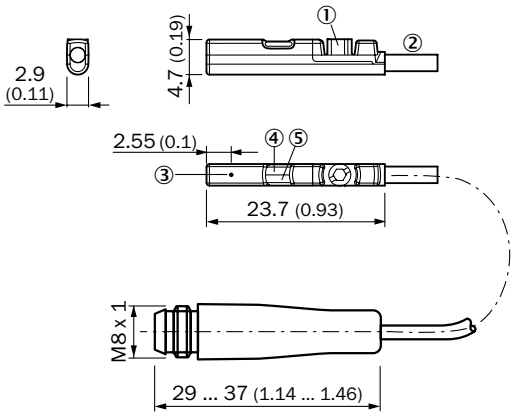
Dimensional drawings (Dimensions in mm (inch))

Cable



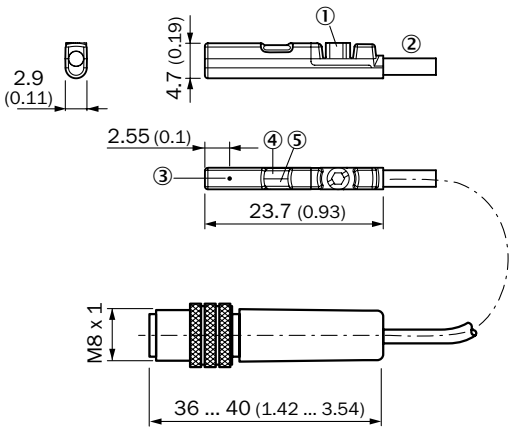
① Fixing screw
② Fixing screw
③ Connection
④ Position sensor element
⑤ Visual installation aid/LED indicator (yellow)
⑥ Power LED (green)

Cable with connector M8



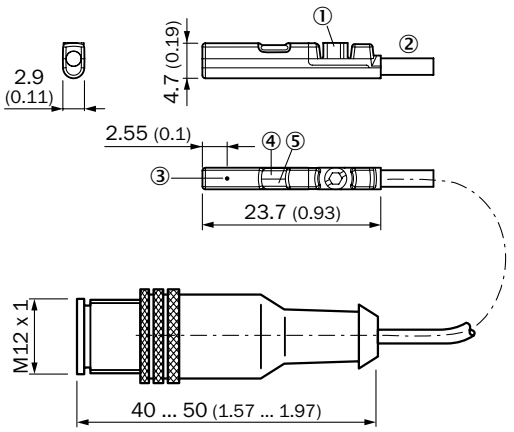
① Fixing screw
② Connection
③ Position sensor element
④ Visual installation aid/LED indicator (yellow)
⑤ Power LED (green)

Cable with connector M8, with knurled nuts



① Fixing screw
② Connection
③ Position sensor element
④ Visual installation aid/LED indicator (yellow)
⑤ Power LED (green)

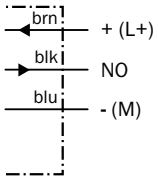
Cable with M12 male connector



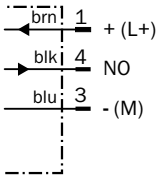
① Fixing screw
② Connection
③ Position sensor element
④ Visual installation aid/LED indicator (yellow)
⑤ Power LED (green)

Connection diagram

Cd-001



Cd-002



E

Recommended accessories

Mounting systems

For round body cylinders

Figure	Material	Description	Type	Part no.
	Plastic, Aluminum	Mounting bracket on round body cylinder with piston diameter of 12 mm [1]	BEF-KHZ-RC-12	2077673
		Mounting bracket on round body cylinder with piston diameter of 16 mm [1]	BEF-KHZ-RC-16	2077672
		Mounting bracket on round body cylinder with piston diameter of 20 mm [1]	BEF-KHZ-RC-20	2077671
		Mounting bracket on round body cylinder with piston diameter of 25 mm [1]	BEF-KHZ-RC-25	2077670
		Mounting bracket on round body cylinder with piston diameter of 32 mm [1]	BEF-KHZ-RC-32	2077669
		Mounting bracket on round body cylinder with piston diameter of 40 mm [1]	BEF-KHZ-RC-40	2077668
		Mounting bracket on round body cylinder with piston diameter of 50 mm [1]	BEF-KHZ-RC-50	2077667
		Mounting bracket on round body cylinder with piston diameter of 63 mm [1]	BEF-KHZ-RC-63	2077666
	Stainless steel, Aluminum	Mounting bracket on round body cylinder with piston diameter of 1 mm ... 25 mm [2]	BEF-KHZ-RC1-25	2077685
		Mounting bracket on round body cylinder with piston diameter of 1 mm ... 130 mm [2]	BEF-KHZ-RC1-130	2077686

[1] Ambient temperature min 0 °C max 50 °C.

[2] Ambient temperature min –30 °C max 80 °C.

For profile cylinders and tie-rod cylinders

Figure	Material	Description	Type	Part no.
	Zinc diecast	Mounting bracket for integrated profile cylinder/tie-rod cylinder	BEF-KHZ-PC1	2076170

For SMC rails CDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails CDQ2 (C-slot)	BEF-KHZ-TC2	2046442

For SMC rails ECDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails ECDQ2 (C-slot)	BEF-KHZ-TC1	2046441

Connection systems

Connecting cables with female connector, M12, 3-pin, PUR, halogen-free

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M12, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-G02MC	6039075
			5 m, 3-wire	DOL-1203-G05MC	6039076
	Female connector, M12, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-W02MC	6039078
			5 m, 3-wire	DOL-1203-W05MC	6039079

Connecting cables with female connector, M8, 3-pin, PUR, halogen-free, Oil / grease resistant

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-W02MC	6025891
			5 m, 3-wire	DOL-0803-W05MC	6025892

Connecting cables with female connector, M8, 3-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-G02M	6010785
			5 m, 3-wire	DOL-0803-G05M	6022009
	Female connector, M8, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-W02M	6008489
			5 m, 3-wire	DOL-0803-W05M	6022010

For more accessories, see ➜ G-130

E

DROP-IN, INSTALL, DONE

Product description

The RZC1 magnetic cylinder sensor with reed contact from SICK is the flexible solution for detecting the piston position in pneumatic actuators. The RZC1 can be mounted directly into all cylinders with standard C-slots. SICK also has an extensive range of adapters which enable the RZC1 to be used with other cylinder types. The RZC1 is characterized by its simple mounting principle: Insert the sensor into the slot and rotate the fixing screw a quarter turn to fix it securely to the cylinder. Furthermore, the RZC1 is available in a range of variants up to an enclosure rating of IP 69K. This ensures the sensor has a long service life and reduces maintenance costs.

At a glance

- Can be used in all standard cylinders, linear slides, and grippers using the C-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders
- Drop-in mounting from above simplifies handling and assembly
- Locking screw combines an Allen key and slotted screw
- LED for indicating the output state
- Enclosure ratings: IP 67, IP 68, IP 69K
- Supply voltage up to 230 V

Your benefits

- A sensor for a wide range of applications: The sensor design fits into all standard C-slots used around the world, regardless of the cylinder profile or make
- Quick and easy mounting using an Allen key or flat-head screwdriver
- Low maintenance costs as the sensor is resistant to shock and vibration, meaning it does not slide about in the slot
- Saves time on initial installation and when replacing devices as the sensor can be easily inserted into the slot from above. The end caps of the cylinder do not have to be removed.
- Very rugged housing with enclosure rating IP 67, IP 68, or IP 69K extends the service life of the sensor

Additional information

→ www.sick.com/RZC1

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.

8016544/2016-10-07
Subject to change without notice

Detailed technical data

Features

	AC/DC 3-wire	AC/DC 2-wire
Cylinder type	C-slot	
Cylinder types with adapter	Round body cylinder Profile cylinder and tie-rod cylinder SMC rails CDQ2 SMC rails ECDQ2	
Housing length	26.3 mm	
Output type	Reed	
Switching frequency	500 Hz	
Output function	NO	
Enclosure rating	IP 67 [1] IP 68 [1] IP 68 [1], IP 69K [2] (depending on type)	IP 67 [1]

[1] According to EN 60529 (IP 67 / IP 68)

[2] According to DIN 40050 (IP 69K)

Mechanics/electronics

	AC/DC 3-wire	AC/DC 2-wire
Supply voltage	5 V AC/DC ... 30 V AC/DC	5 V AC/DC ... 120 V AC/DC (depending on type)
Power consumption [1]	5 mA	
Voltage drop	< 0.5 V	< 3.2 V
Continuous current I_a	≤ 500 mA	≤ 50 mA
Switching capacity	≤ 10 W	1.5 W / 10 W (depending on type)
Protection class	III	II [2] [3] III (depending on type)
Overrun distance, typ.	7 mm	
Repeatability [4]	≤ 0.1 mT	
Reverse polarity protection	✔	–
Ambient operating temperature	–30 °C ... +80 °C	
Shock and vibration resistance	30 g, 11 ms / 10 ... 55 Hz, 1 mm	
EMC	According to EN 60947-5-2	
Housing material	Plastic, PA, strengthened	
Cable material	PUR	
Conductor cross-section	0.09 mm²	
UL File No.	NRKH.E181493	

[1] Without load.

[2] The sensor may only be used when mounted as a complete unit in the slot.

[3] , overvoltage category II.

[4] Ub and Ta constant.

Ordering information

Other models ➜ www.sick.com/RZC1

AC/DC 3-wire

- **Overrun distance, typ.:** 7 mm
- **Continuous current I_A:** ≤ 500 mA

Supply voltage	Connection	Enclosure rating	Connection diagram	Type	Part no.
5 V AC/DC ... 30 V AC/DC	Cable, 3-wire, 2 m	IP 68 [1] ,IP 69K [2]	Cd-035	RZC1-04ZRS-KU0	1059746
	Cable, 3-wire, 5 m	IP 68 [1] ,IP 69K [2]	Cd-035	RZC1-04ZRS-KUB	1059749
	Cable with connector M8, 3-pin, 0.3 m	IP 67 [1]	Cd-036	RZC1-04ZRS-KP0	1059747
	Cable with connector M8, 3-pin, with knurled nuts, 0.3 m	IP 68 [1]	Cd-036	RZC1-04ZRS-KR0	1059748
	Cable with connector M8, 3-pin, with knurled nuts, 0.5 m	IP 68 [1]	Cd-036	RZC1-04ZRS-KRD	1060130
	Cable with connector M12, 3-pin, 0.3 m	IP 68 [1]	Cd-036	RZC1-04ZRS-KQ0	1059745

[1] According to EN 60529 (IP 67 / IP 68)

[2] According to DIN 40050 (IP 69K)

AC/DC 2-wire

- **Overrun distance, typ.:** 7 mm
- **Continuous current I_A:** ≤ 50 mA

Supply voltage	Connection	Enclosure rating [1]	Connection diagram	Type	Part no.
5 V AC/DC ... 120 V AC/DC	Cable, 2-wire, 2 m	IP 67	Cd-037	RZC1-04ZUS-KU0	1059750
5 V AC/DC ... 30 V AC/DC	Cable, 2-wire, 2 m	IP 67	Cd-037	RZC1-04ZUS-KU0S01	1065397
	Cable, 2-wire, 3 m	IP 67	Cd-037	RZC1-04ZUS-KUAS02	1070035
	Cable, 2-wire, 5 m	IP 67	Cd-037	RZC1-04ZUS-KUBS03	1073286
	Cable with connector M8, 2-pin, 0.3 m	IP 67	Cd-338	RZC1-04ZUS-KP0	1059751

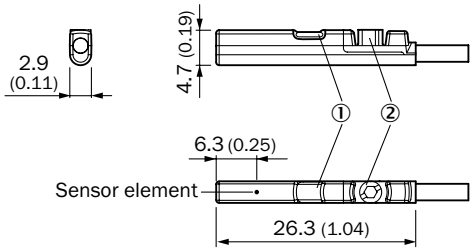
[1] According to EN 60529 (IP 67 / IP 68)

E

8016544/2016-10-07

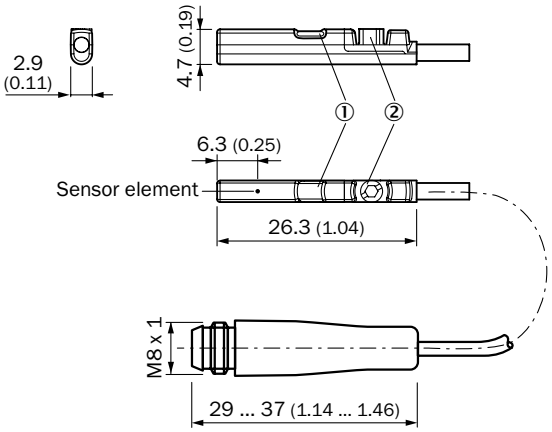
Dimensional drawings (Dimensions in mm (inch))

Cable



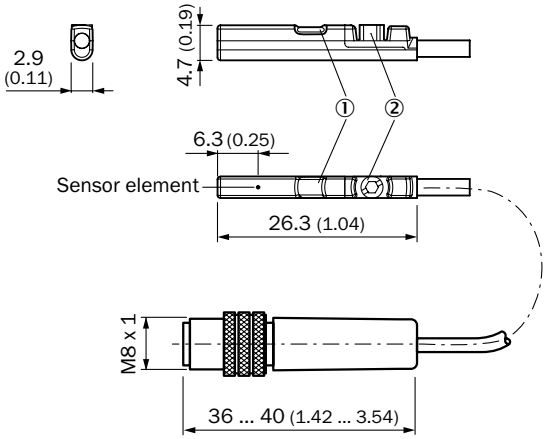
① Indication LED
② Fixing screw

Cable with connector M8



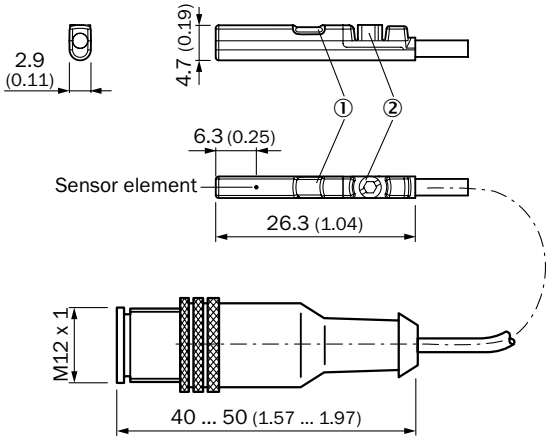
① Indication LED
② Fixing screw

Cable with connector M8, with knurled nuts



① Indication LED
② Fixing screw

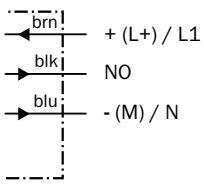
Cable with M12 male connector



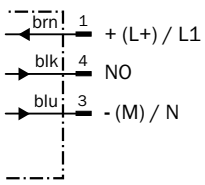
① Indication LED
② Fixing screw

Connection diagram

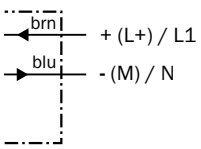
Cd-035



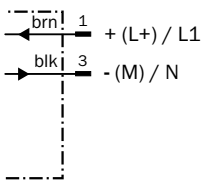
Cd-036



Cd-037



Cd-338



E

Recommended accessories

Mounting systems

For round body cylinders

Figure	Material	Description	Type	Part no.
	Plastic, Aluminum	Mounting bracket on round body cylinder with piston diameter of 12 mm [1]	BEF-KHZ-RC-12	2077673
		Mounting bracket on round body cylinder with piston diameter of 16 mm [1]	BEF-KHZ-RC-16	2077672
		Mounting bracket on round body cylinder with piston diameter of 20 mm [1]	BEF-KHZ-RC-20	2077671
		Mounting bracket on round body cylinder with piston diameter of 25 mm [1]	BEF-KHZ-RC-25	2077670
		Mounting bracket on round body cylinder with piston diameter of 32 mm [1]	BEF-KHZ-RC-32	2077669
		Mounting bracket on round body cylinder with piston diameter of 40 mm [1]	BEF-KHZ-RC-40	2077668
		Mounting bracket on round body cylinder with piston diameter of 50 mm [1]	BEF-KHZ-RC-50	2077667
		Mounting bracket on round body cylinder with piston diameter of 63 mm [1]	BEF-KHZ-RC-63	2077666
	Stainless steel, Aluminum	Mounting bracket on round body cylinder with piston diameter of 1 mm ... 25 mm [2]	BEF-KHZ-RC1-25	2077685
		Mounting bracket on round body cylinder with piston diameter of 1 mm ... 130 mm [2]	BEF-KHZ-RC1-130	2077686

[1] Ambient temperature min 0 °C max 50 °C.

[2] Ambient temperature min –30 °C max 80 °C.

For profile cylinders and tie-rod cylinders

Figure	Material	Description	Type	Part no.
	Zinc diecast	Mounting bracket for integrated profile cylinder/tie-rod cylinder	BEF-KHZ-PC1	2076170

For SMC rails CDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails CDQ2 (C-slot)	BEF-KHZ-TC2	2046442

For SMC rails ECDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.
	Aluminum	Mounting bracket for mounting on SMC rails ECDQ2 (C-slot)	BEF-KHZ-TC1	2046441

Connection systems

Connecting cables with female connector, M12, 3-pin, PUR, halogen-free

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M12, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-G02MC	6039075
			5 m, 3-wire	DOL-1203-G05MC	6039076
	Female connector, M12, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-W02MC	6039078
			5 m, 3-wire	DOL-1203-W05MC	6039079

Connecting cables with female connector, M8, 3-pin, PUR, halogen-free, Oil / grease resistant

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-W02MC	6025891
			5 m, 3-wire	DOL-0803-W05MC	6025892

Connecting cables with female connector, M8, 3-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-G02M	6010785
			5 m, 3-wire	DOL-0803-G05M	6022009
	Female connector, M8, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-W02M	6008489
			5 m, 3-wire	DOL-0803-W05M	6022010

For more accessories, see ➜ G-130

E

SENSOR ADAPTERS FOR OTHER CYLINDER TYPES

Flexible, user-friendly, suitable

F

To seamlessly integrate SICK magnetic cylinder sensors into a machine or system, mounting equipment tailored precisely to the pneumatic actuators and sensors is required. SICK offers reliable mounting accessories for all conventional round, tie-rod, profile and dove-tail groove cylinders. SICK develops specifically-designed mounting elements suitable for special applications based on individual customer requirements. These mounting elements are delivered along with the sensor.

8016544/2016-10-07
Subject to change without notice

F

FLEXIBLE, USER-FRIENDLY, SUITABLE

Product description

To seamlessly integrate SICK magnetic cylinder sensors into a machine or system, mounting equipment tailored precisely to the pneumatic actuators and sensors is required. SICK offers reliable mounting accessories for all conventional round, tie-rod, profile and dove-tail groove cylinders. SICK develops specifically-designed mounting elements suitable for special applications based on individual customer requirements. These mounting elements are delivered along with the sensor.

At a glance

- Mounting systems designed for SICK sensors
- For T-slot and C-slot sensors
- Application-specific solutions available for sensor mounting

Your benefits

- Fast commissioning and maintenance of systems and machines due to simple, practical sensor mounting
- Optimum sensor alignment due to the user-friendly mounting adapter
- Enhanced system availability

Additional information

→ www.sick.com/sensor_adapters_for_other_cylinder_types

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.

8016544/2016-10-07
Subject to change without notice

Ordering information

For round body cylinders

Figure	Material	Description	Type	Part no.	MPS-T	MPS-C	MPA	T-slot	C-slot
	Plastic, Aluminum	Mounting bracket on round body cylinder, with piston diameter of 12 mm	BEF-KHZ-RC-12 [1) 2)]	2077673	–	●	–	–	●
		Mounting bracket on round body cylinder, with piston diameter of 16 mm	BEF-KHZ-RC-16 [1) 2)]	2077672	–	●	–	–	●
		Mounting bracket on round body cylinder, with piston diameter of 20 mm	BEF-KHZ-RC-20 [1) 2)]	2077671	–	●	–	–	●
		Mounting bracket on round body cylinder, with piston diameter of 25 mm	BEF-KHZ-RC-25 [1) 2)]	2077670	–	●	–	–	●
		Mounting bracket on round body cylinder, with piston diameter of 32 mm	BEF-KHZ-RC-32 [1) 2)]	2077669	–	●	–	–	●
		Mounting bracket on round body cylinder, with piston diameter of 40 mm	BEF-KHZ-RC-40 [1) 2)]	2077668	–	●	–	–	●
		Mounting bracket on round body cylinder, with piston diameter of 50 mm	BEF-KHZ-RC-50 [1) 2)]	2077667	–	●	–	–	●
		Mounting bracket on round body cylinder, with piston diameter of 63 mm	BEF-KHZ-RC-63 [1) 2)]	2077666	–	●	–	–	●
	Plastic, Aluminum	Mounting bracket on round body cylinder, with piston diameter of 12 mm	BEF-KHZ-RT-12 [1) 2)]	2077681	●	–	–	●	–
		Mounting bracket on round body cylinder, with piston diameter of 16 mm	BEF-KHZ-RT-16 [1) 2)]	2077680	●	–	–	●	–
		Mounting bracket on round body cylinder, with piston diameter of 20 mm	BEF-KHZ-RT-20 [1) 2)]	2077679	●	–	–	●	–
		Mounting bracket on round body cylinder, with piston diameter of 25 mm	BEF-KHZ-RT-25 [1) 2)]	2077678	●	–	–	●	–
		Mounting bracket on round body cylinder, with piston diameter of 32 mm	BEF-KHZ-RT-32 [1) 2)]	2077677	●	–	–	●	–
		Mounting bracket on round body cylinder, with piston diameter of 40 mm	BEF-KHZ-RT-40 [1) 2)]	2077676	●	–	–	●	–
		Mounting bracket on round body cylinder, with piston diameter of 50 mm	BEF-KHZ-RT-50 [1) 2)]	2077675	●	–	–	●	–
		Mounting bracket on round body cylinder, with piston diameter of 63 mm	BEF-KHZ-RT-63 [1) 2)]	2077674	●	–	–	●	–
	Stainless steel, Zinc cast	Mounting bracket on round body cylinder, with piston diameter of 8 mm ... 25 mm	BEF-KHZ-RT1-25 [1) 3)]	2077682	●			●	–
		Mounting bracket on round body cylinder, with piston diameter of 8 mm ... 63 mm	BEF-KHZ-RT1-63 [1) 3)]	2077683	●	–	–	●	–
		Mounting bracket on round body cylinder, with piston diameter of 8 mm ... 130 mm	BEF-KHZ-RT1-130 [1) 3)]	2077684	●	–	–	●	–
	Stainless steel, Aluminum	Mounting bracket on round body cylinder, with piston diameter of 1 mm ... 25 mm	BEF-KHZ-RC1-25 [1) 3)]	2077685	–	●	–	–	●
		Mounting bracket on round body cylinder, with piston diameter of 1 mm ... 130 mm	BEF-KHZ-RC1-130 [1) 3)]	2077686	–	●	–	–	●
	Stainless steel V2A	For round body cylinders with diameter up to 85 mm	BEF-KHZR085MPA [4)]	2066626	–	–	●	–	–
		For round body cylinders with diameter up to 135 mm	BEF-KHZR135MPA [4)]	2066627	–	–	●	–	–
		For round body cylinders with diameter up to 210 mm	BEF-KHZR210MPA [4)]	2066628	–	–	●	–	–

[1)] For MPS two adapters are recommended.

[2)] Ambient temperature min 0 °C max 50 °C.

[3)] Ambient temperature min –30 °C max 80 °C.

[4)] Information for recommended order quantity you will find on page C-44.

F

For profile cylinders and tie-rod cylinders

Figure	Material	Description	Type	Part no.	MPS-T	MPS-C	MPA	T-slot	C-slot
	Aluminum alloy (adapter), Stainless steel V2A (mounting-/fixing screw)	For tie-rod cylinder (diameter tie-rod max. 18 mm)	BEF-KHZPZ1MPA [1]	2065578	–	–	●	–	–
	Zinc diecast	Mounting bracket for integrated profile cylinder/tie-rod cylinder	BEF-KHZ-PT1	2022702	●	–	–	●	–
			BEF-KHZ-PC1	2076170	–	●	–	–	●

[1] Information for recommended order quantity you will find on page C-44.

For T-slot cylinders

Figure	Material	Description	Type	Part no.	MPS-T	MPS-C	MPA	T-slot	C-slot
	Stainless steel V2A (bracket/mounting screw), Brass (fixing screw/sliding nut)	For T-slot cylinders	BEF-KHZT01MPA [1]	2065575	–	–	●	–	–

[1] Information for recommended order quantity you will find on page C-44.

For cylinders with dovetail-slot

Figure	Material	Description	Type	Part no.	MPS-T	MPS-C	MPA	T-slot	C-slot
	Aluminum	Mounting bracket for cylinder with dovetail slot	BEF-KHZ-ST1 [1] [2]	2022703	●	–	–	●	–

[1] For MPS two adapters are recommended.

[2] For lengths longer than MPS-160 at least three adapters are recommended.

F

For SMC rails ECDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.	MPS-T	MPS-C	MPA	T-slot	C-slot
	Aluminum	Mounting bracket for mounting on SMC rails ECDQ2 (T-slot)	BEF-KHZ-TT1 [1] [2]	2046439	●	–	–	●	–
		Mounting bracket for mounting on SMC rails ECDQ2 (C-slot)	BEF-KHZ-TC1 [1] [2]	2046441	–	●	–	–	●

[1] For MPS two adapters are recommended.

[2] For lengths longer than MPS-160 at least three adapters are recommended.

8016544/2016-10-07
Subject to change without notice

For SMC rails CDQ2 (T-/C-slot)

Figure	Material	Description	Type	Part no.	MPS-T	MPS-C	MPA	T-slot	C-slot
	Aluminium	Mounting bracket for mounting on SMC rails CDQ2 (T-slot)	BEF-KHZ-TT2 [1) 2)]	2046440	●	–	–	●	–
		Mounting bracket for mounting on SMC rails CDQ2 (C-slot)	BEF-KHZ-TC2 [1) 2)]	2046442	–	●	–	–	●

[1)] For MPS two adapters are recommended.

[2)] For lengths longer than MPS-160 at least three adapters are recommended.

For SMC cylinders with C-slot

Figure	Material	Description	Type	Part no.	MPS-T	MPS-C	MPA	T-slot	C-slot
	Aluminum	Mounting bracket with T-slot for mounting a MPS on SMC C-slot cylinders. For each MPS a minimum of 2 brackets is recommended.	BEF-KHZ-CT23 [1) 2)]	2074119	●	–	–	●	–

[1)] For MPS two adapters are recommended.

[2)] For lengths longer than MPS-160 at least three adapters are recommended.

For Festo cylinders DSBC

Figure	Material	Description	Type	Part no.	MPS-T	MPS-C	MPA	T-slot	C-slot
	Stainless steel V2A	Sensor adapter DSBC-32	BEF-KHZPF032MPA [1)]	2086744	–	–	●	–	–
		Sensor adapter DSBC-40	BEF-KHZPF040MPA [1)]	2086745	–	–	●	–	–
		Sensor adapter DSBC-50	BEF-KHZPF050MPA [1)]	2086746	–	–	●	–	–
		Sensor adapter DSBC-63	BEF-KHZPF063MPA [1)]	2086747	–	–	●	–	–
		Sensor adapter DSBC-80	BEF-KHZPF080MPA [1)]	2086748	–	–	●	–	–
		Sensor adapter DSBC-100	BEF-KHZPF100MPA [1)]	2086749	–	–	●	–	–
		Sensor adapter DSBC-125	BEF-KHZPF125MPA [1)]	2086750	–	–	●	–	–

[1)] Information for recommended order quantity you will find on page C-44.

For SMC cylinders CP96

Figure	Material	Description	Type	Part no.	MPS-T	MPS-C	MPA	T-slot	C-slot
	Stainless steel V2A	Sensor adapter CP96-63	BEF-KHZTS063MPA [1)]	2086756	–	–	●	–	–
		Sensor adapter CP96-80	BEF-KHZTS080MPA [1)]	2086757	–	–	●	–	–
		Sensor adapter CP96-100	BEF-KHZTS100MPA [1)]	2086758	–	–	●	–	–
		Sensor adapter CP96-125	BEF-KHZTS125MPA [1)]	2086759	–	–	●	–	–

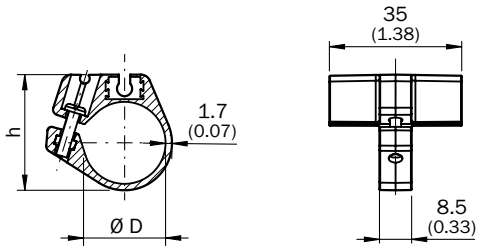
[1)] Information for recommended order quantity you will find on page C-44.

F

Dimensional drawings (Dimensions in mm (inch))

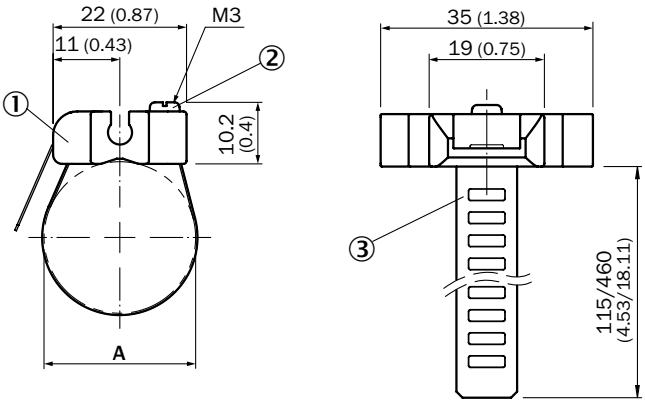
For round body cylinders

BEF-KHZ-RC-xx



Part no.	Type	Ø D	Ø D (cylinder piston)	H
2077673	BEF-KHZ-RC-12	13.5	12	22.4
2077672	BEF-KHZ-RC-16	17.7	16	26.6
2077671	BEF-KHZ-RC-20	21.7	20	30.6
2077670	BEF-KHZ-RC-25	26.8	25	35.7
2077669	BEF-KHZ-RC-32	34	32	42.9
2077668	BEF-KHZ-RC-40	42	42	50.9
2077667	BEF-KHZ-RC-50	52.9	50	61.8
2077666	BEF-KHZ-RC-63	65	63	73.9

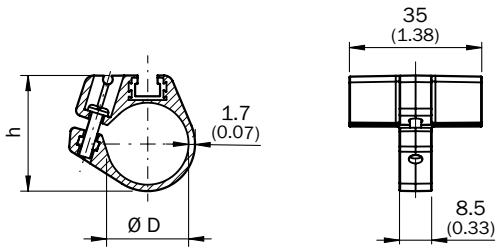
BEF-KHZ-RC1-130 / BEF-KHZ-RC1-25



① Sensoradapter with C-slot for round body cylinder
② Fixing screw
③ Strap

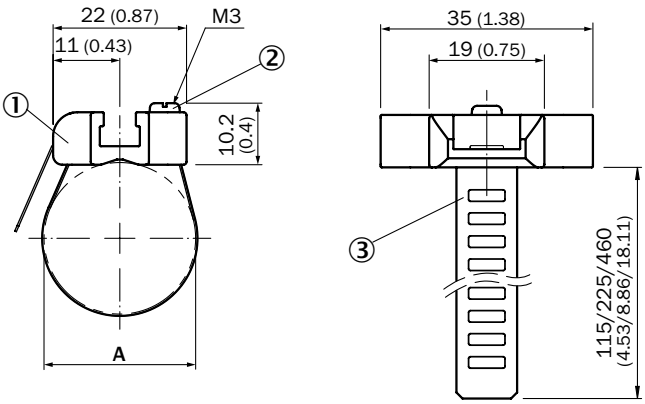
Part no.	Type	Ø D (cylinder piston)
2077673	BEF-KHZ-RC1-25	8 ... 25
2077672	BEF-KHZ-RC1-130	8 ... 130

BEF-KHZ-RT-xx



Part no.	Type	Ø D	Ø D (cylinder piston)	H
2077681	BEF-KHZ-RT-12	13.5	12	22.4
2077680	BEF-KHZ-RT-16	17.7	16	26.6
2077679	BEF-KHZ-RT-20	21.7	20	30.6
2077678	BEF-KHZ-RT-25	26.8	25	35.7
2077677	BEF-KHZ-RT-32	34	32	42.9
2077676	BEF-KHZ-RT-40	42	42	50.9
2077675	BEF-KHZ-RT-50	52.9	50	61,8
2077674	BEF-KHZ-RT-63	65	63	73.9

BEF-KHZ-RT1-xx



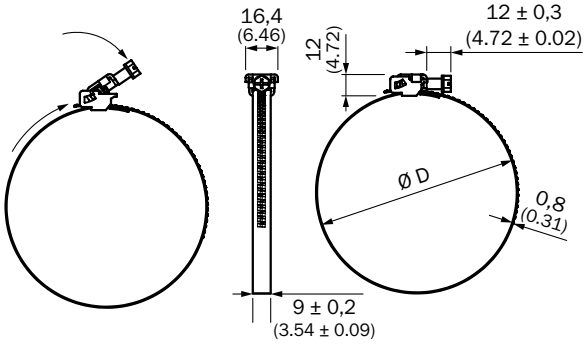
① Sensoradapter with T-slot
② Fixing screw
③ Strap

Part no.	Type	Ø D (cylinder piston)
2077682	BEF-KHZ-RT1-25	8 ... 25
2077683	BEF-KHZ-RT1-63	8 ... 63
2077684	BEF-KHZ-RT1-130	8 ... 130

F

8016544/2016-10-07
Subject to change without notice

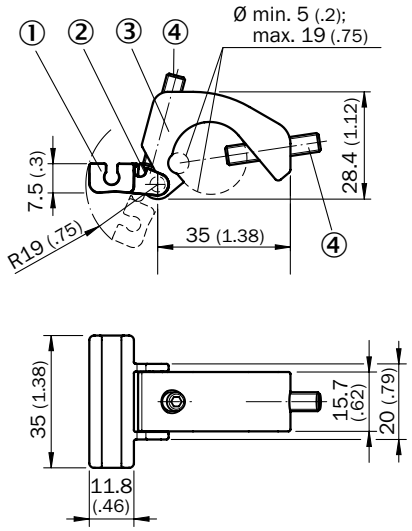
BEF-KHZR085MPA / BEF-KHZR135MPA / BEF-KHZR210MPA



	Diameter (D) mm
BEF-KHZR085MPA	25 - 100
BEF-KHZR135MPA	25 - 150
BEF-KHZR210MPA	25 - 225

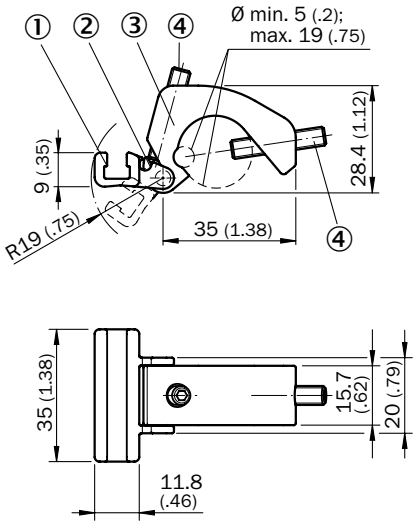
For profile and tie-rod cylinder

BEF-KHZ-PC1



① Sensoradapter with C-slot for magn. cylilnder sensors
② Fixing for cable < Ø 3.2 mm (0.126 inch)
③ Cylinderadapter
④ Mounting screws M5

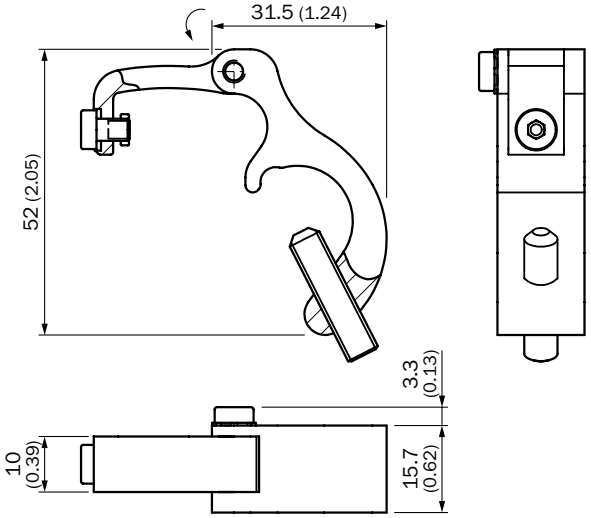
BEF-KHZ-PT1



① Sensoradapter with T-slot
② Fixing for cable < Ø 3.2 mm (0.126 inch)
③ Cylinderadapter
④ Mounting screws M5

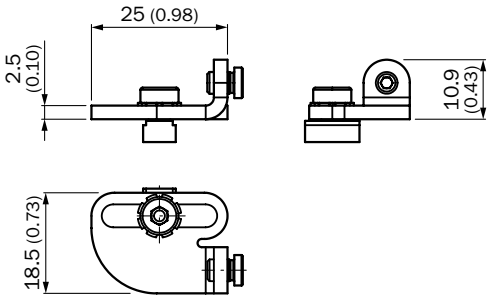
F

BEF-KHZPZ1MPA



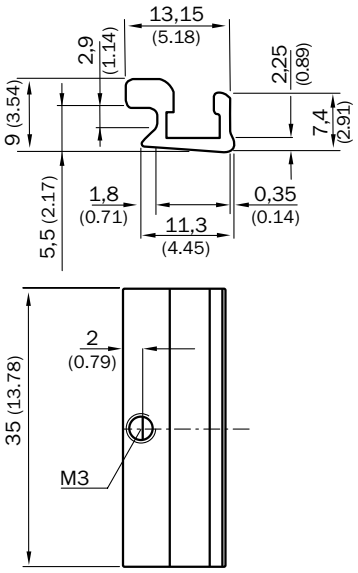
For T-slot cylinder

BEF-KHZT01MPA



For cylinders with dovetail-slot

BEF-KHZ-ST1

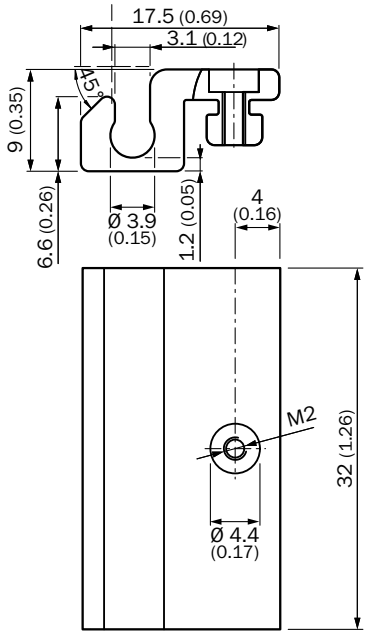


F

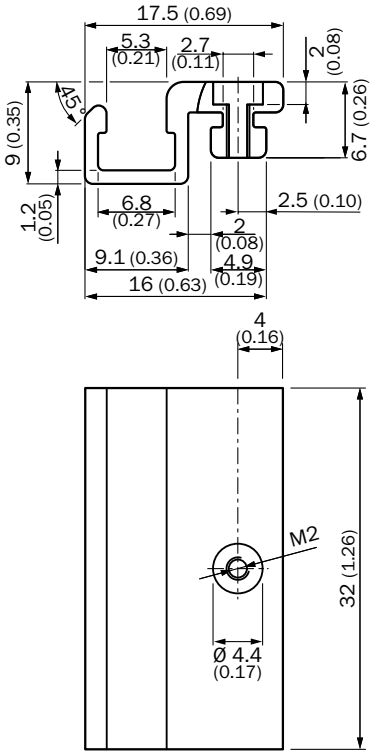
8016544/2016-10-07

For SMC rails ECDQ2 (T-/C-slot)

BEF-KHZ-TC1

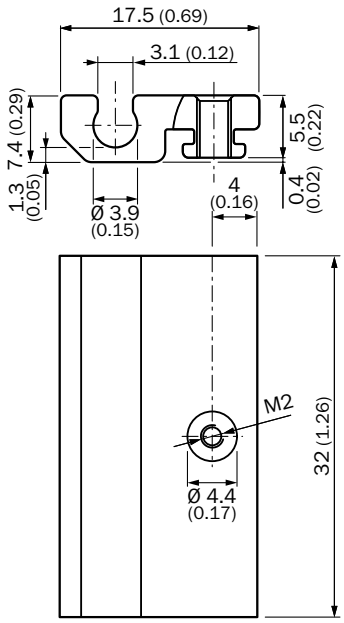


BEF-KHZ-TT1

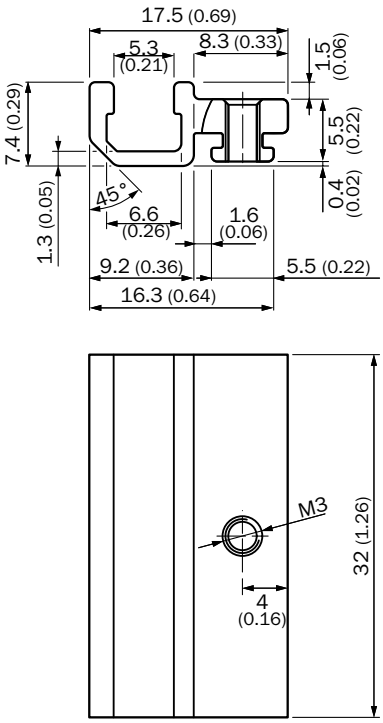


For SMC rails CDQ2 (T-/C-slot)

BEF-KHZ-TC2



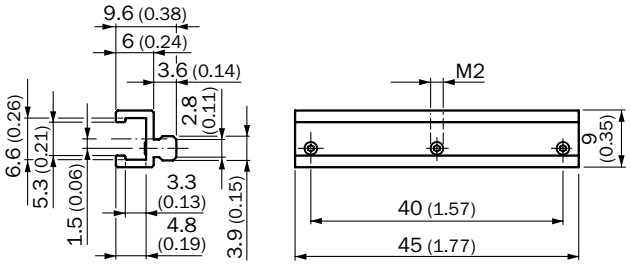
BEF-KHZ-TT2



F

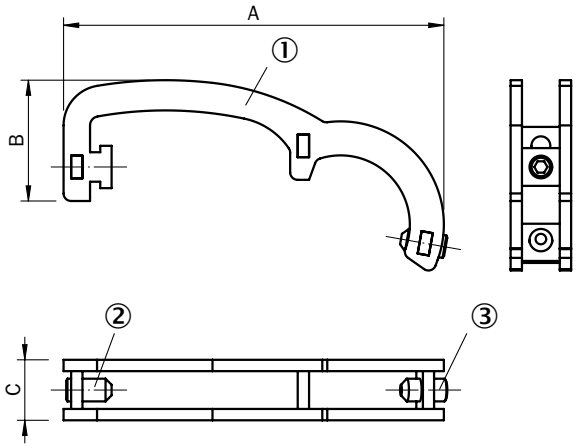
For SMC cylinders with C-slot

BEF-KHZ-CT23



For Festo cylinders DSBC

KHZPFxxxMPA

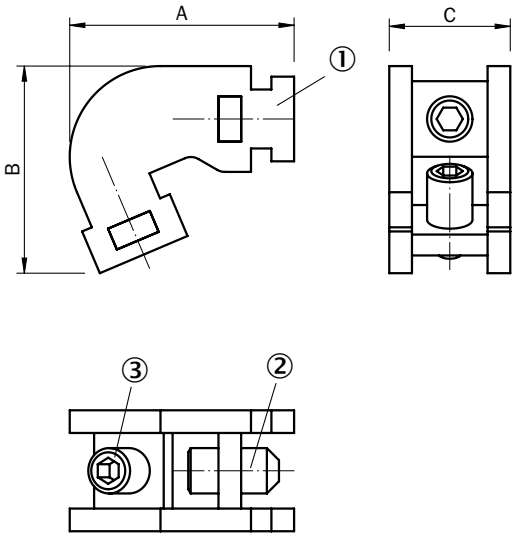


① Sensor adapter
② Mounting screw wrench size 1,5 for sensor
③ Mounting screw wrench size 1,5 for cylinder

Part no.	Type	A	B	C
2086744	KHZPF032MPA	38.7	16	8
2086745	KHZPF032MPA	40.7	16	8
2086746	KHZPF032MPA	46.1	16	8
2086747	KHZPF032MPA	50.3	16	8
2086748	BEF-KHZ-RT-32	54.6	16	8
2086749	BEF-KHZ-RT-40	55.5	17.3	8
2086750	BEF-KHZ-RT-50	58.4	23.4	8

For SMC cylinders CP96

BEF-KHZTSxxxMPA



① Sensor adapter
② Mounting screw wrench size 1,5 for sensor
③ Mounting screw wrench size 1,5 for cylinder

Part no.	Type	A	B	C
2086756	BEF-KHZTS063MPA	10.9	11.7	8
2086757	BEF-KHZTS080MPA	14.8	13.7	8
2086758	BEF-KHZTS100MPA	14.8	12.9	8
2086759	BEF-KHZTS125MPA	14.6	12.2	8

F

8016544/2016-10-07
Subject to change without notice

ACCESSORIES

Perfect sensor integration made easy

Innovative sensor technology is only one side of the coin when talking about intelligent automation solutions. The picture is completed by matching accessories for professional and cost-effective ntegration. Whether electrical connection technology or mechanical mounting systems, only the right integrative system products lead to a high quality, highly available application solution. The advantage? Magnetic cylinder sensors from SICK and accessories work in conjunction to offer maximum operational safety. In addition, the user is able to save additional costs for development, manufacture and procurement. A wide range of accessory components are always available on short-notice – convenient single-source availability in combination with sensors. And in the event that a custom solution is required, SICK is on your side as a reliable and competent partner. Tailored developments and adaptations can be implemented in just a short period of time.

G

8016544/2016-10-07
Subject to change without notice

G

Mounting systems

Product description

To integrate SICK sensors perfectly into a machine or system, mounting equipment tailored precisely to the sensors is required. Whether fine adjustment to precision equipment or protection against environmental conditions such as those in the lumber industry, SICK provides matching designs and products for installation, alignment and protection for its sensors. Customer- and system-specific mounting elements can also be developed and delivered together with the sensor for special applications in close collaboration with the customer.

Your benefits

- Fast commissioning and maintenance of systems and machines due to simple, practical sensor mounting
- Optimum alignment of the sensor to the object using the universal bar clamp system
- Enhanced system availability

At a glance

- Mounting systems designed for SICK sensors
- Application-specific solutions available for sensor mounting, alignment or protection

G

8016544/2016-10-07

Passive connection technology

Product description

A wide range of terminal screwed male and female connectors allows the user to implement their own customized wiring solutions. Different lengths and qualities of cable can be combined to suit the application, quickly and smoothly. Connecting cables, having a molded round connector on one end and the other end open, offer maximum flexibility to wire sensors.

Your benefits

- Operational safety because the connection systems are designed for the sensors
- High quality components with long service life helps reduce costs
- Reliable signal transmission is critical to high productivity

At a glance

- Terminal screwed connectors with screw connection or push-in connection (M8 right angle)
- Connecting and extension cables with PUR jacket for flexible and demanding areas of application and in drag chains. Very high resistance to oils, lubricants and coolants.
- Connecting and extension cables with PVC jacket for use with medium mechanical stresses in dry zones, such as assembly lines, packaging and material handling. The cable jacket features good resistance to chemicals, where in contrast PVC has only limited resistance to lubricants and coolants.
- Connecting and extension cables of the IP 69K series are especially suitable for use in the food and beverage industry due to their high resistance to chemicals, acids, alkalies and cleaning agents.

G

Plug connectors and cables

Connecting cables with female connector

M8, 3-pin, PUR, halogen-free, Oil / grease resistant

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU
- **Locking nut material:** Zinc die-cast, nickel-plated

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-G02MC	6025888
			5 m, 3-wire	DOL-0803-G05MC	6025889
			10 m, 3-wire	DOL-0803-G10MC	6025890
	Female connector, M8, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-W02MC	6025891
			5 m, 3-wire	DOL-0803-W05MC	6025892
			10 m, 3-wire	DOL-0803-W10MC	6025893

M8, 3-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU
- **Locking nut material:** Zinc die-cast, nickel-plated

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-G02M	6010785
			5 m, 3-wire	DOL-0803-G05M	6022009
			10 m, 3-wire	DOL-0803-G10M	6022011
	Female connector, M8, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-0803-W02M	6008489
			5 m, 3-wire	DOL-0803-W05M	6022010
			10 m, 3-wire	DOL-0803-W10M	6022012

M8, 4-pin, PUR, halogen-free, Oil / grease resistant

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU
- **Locking nut material:** Zinc die-cast, nickel-plated

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 4-pin, straight, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-G02MC	6025894
			5 m, 4-wire	DOL-0804-G05MC	6025895
			10 m, 4-wire	DOL-0804-G10MC	6025896
	Female connector, M8, 4-pin, angled, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-W02MC	6025897
			5 m, 4-wire	DOL-0804-W05MC	6025898
			10 m, 4-wire	DOL-0804-W10MC	6025899

M8, 4-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU
- **Locking nut material:** CuZn, nickel-plated brass

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M8, 4-pin, straight, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-G02M	6009870
			5 m, 4-wire	DOL-0804-G05M	6009872
			10 m, 4-wire	DOL-0804-G10M	6010754
	Female connector, M8, 4-pin, angled, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-0804-W02M	6009871
			5 m, 4-wire	DOL-0804-W05M	6009873
			10 m, 4-wire	DOL-0804-W10M	6010755

G

8016544/2016-10-07
Subject to change without notice

M12, 3-pin, PUR, halogen-free

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU
- **Locking nut material:** Zinc die-cast, nickel-plated

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M12, 3-pin, straight, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-G02MC	6039075
			5 m, 3-wire	DOL-1203-G05MC	6039076
			10 m, 3-wire	DOL-1203-G10MC	6039077
	Female connector, M12, 3-pin, angled, unshielded	Cable, Flying leads	2 m, 3-wire	DOL-1203-W02MC	6039078
			5 m, 3-wire	DOL-1203-W05MC	6039079
			10 m, 3-wire	DOL-1203-W10MC	6036752

M12, 4-pin, PUR, halogen-free, Oil / grease resistant

- **Cable material:** PUR, halogen-free
- **Connector material:** TPU
- **Locking nut material:** Zinc die-cast, nickel-plated

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M12, 4-pin, straight, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-1204-G02MC	6025900
			5 m, 4-wire	DOL-1204-G05MC	6025901
			10 m, 4-wire	DOL-1204-G10MC	6025902
	Female connector, M12, 4-pin, angled, with 3 LEDs, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-1204-L02MC	6039086
			5 m, 4-wire	DOL-1204-L05MC	6020398
			10 m, 4-wire	DOL-1204-L10MC	6039088
	Female connector, M12, 4-pin, angled, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-1204-W02MC	6025903
			5 m, 4-wire	DOL-1204-W05MC	6025904
			10 m, 4-wire	DOL-1204-W10MC	6025905

M12, 4-pin, PVC, chemical resistant

- **Cable material:** PVC
- **Connector material:** TPU
- **Locking nut material:** CuZn, nickel-plated brass

Figure	Connection type head A	Connection type head B	Connecting cable	Type	Part no.
	Female connector, M12, 4-pin, straight, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-1204-G02M	6009382
			5 m, 4-wire	DOL-1204-G05M	6009866
			10 m, 4-wire	DOL-1204-G10M	6010543
	Female connector, M12, 4-pin, angled, with 3 LEDs, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-1204-L02M	6027945
			5 m, 4-wire	DOL-1204-L05M	6027944
			10 m, 4-wire	DOL-1204-L10M	6027946
	Female connector, M12, 4-pin, angled, unshielded	Cable, Flying leads	2 m, 4-wire	DOL-1204-W02M	6009383
			5 m, 4-wire	DOL-1204-W05M	6009867
			10 m, 4-wire	DOL-1204-W10M	6010541

G

Female connectors (ready to assemble)

M8, 3-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M8, 3-pin, straight, unshielded	Screw-type terminals	DOS-0803-G	7902077
	Female connector, M8, 3-pin, angled, unshielded	Solder connection	DOS-0803-W	7902078

M12, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M12, 4-pin, straight, unshielded	Screw-type terminals	DOS-1204-G	6007302
	Female connector, M12, 4-pin, angled, unshielded	Screw-type terminals	DOS-1204-W	6007303

M8, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Female connector, M8, 4-pin, straight, unshielded	Screw-type terminals	DOS-0804-G	6009974
	Female connector, M8, 4-pin, angled, unshielded	Solder connection	DOS-0804-W	6009975

Male connectors (ready to assemble)

M8, 3-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M8, 3-pin, straight, unshielded	Screw-type terminals	STE-0803-G	6037322

M8, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M8, 4-pin, straight, unshielded	Screw-type terminals	STE-0804-G	6037323

M12, 4-pin

Figure	Connection type head A	Connection type head B	Type	Part no.
	Male connector, M12, 4-pin, straight, unshielded	Screw-type terminals	STE-1204-G	6009932
	Male connector, M12, 4-pin, angled, unshielded	Screw-type terminals	STE-1204-W	6022084

G

8016544/2016-10-07

Modules and gateways

Fieldbus modules

Figure	Brief description	Type	Part no.
	EtherCAT IO-Link Master, IO-Link V1.1, power supply via 7/8'' cable 24 V / 8 A, fieldbus connection via M12 cable	IOLG2EC-03208R01 (IO-Link Master)	6053254
	EtherNet/IP IO-Link Master, IO-Link V1.1, power supply via 7/8'' cable 24 V / 8 A, fieldbus connection via M12-cable	IOLG2EI-03208R01 (IO-Link Master)	6053255
	PROFINET IO-Link Master, IO-Link V1.1, Class A port, power supply via 7/8'' cable 24 V / 8 A, fieldbus connection via M12 cable	IOLG2PN-03208R01 (IO-Link Master)	6053253

Power supply modules

Figure	Brief description	Type	Part no.
	NAMUR isolatig amplifier, Cable fault detection, Switching outputs: 2 NO relay (1 per channel), Supply voltage: 24 V ... 230 V, Voltage type: AC/DC	EN2-2EX1	6041096
	NAMUR isolatig amplifier, Cable fault detection, Switching outputs: 2 NO relay (1 per channel), Supply voltage: 19,2 V ... 30 V, Voltage type: DC	EN2-2EX3	6041095

Mounting systems

Device protection (mechanical)

Figure	Material	Description	Type	Part no.
	Die-cast zinc	Protective adapter	BEF-SG-MRZT	2077201

Mounting brackets [1]

Figure	Material	Description	Measuring range sensor (amount of required brackets)	Type	Part no.
	Stainless steel V2A (bracket/mounting screw), Brass (fixing screw)	Braket for low mounting	107 mm ... 251 mm (2 pcs.) 287 mm ... 431 mm (3 pcs.) 467 mm ... 647 mm (4 pcs.) 683 mm ... 791 mm (5 pcs.) 827 mm ... 1,007 mm (6 pcs.)	BEF-WNL01MPA [2]	2065973
		Braket for lateral mounting	107 mm ... 251 mm (2 pcs.) 287 mm ... 431 mm (3 pcs.) 467 mm ... 647 mm (4 pcs.) 683 mm ... 791 mm (5 pcs.) 827 mm ... 1,007 mm (6 pcs.)	BEF-WNZ01MPA [2]	2065577

[1] For measuring application with separate encoder (e.g. magnet).

[2] Parts only for MPA.

Magnets

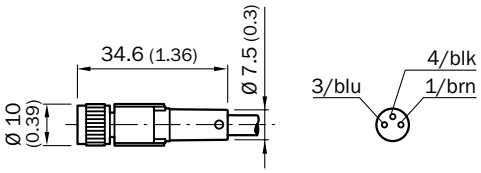
Figure	Description	Dimensions	Type	Part no.
	Magnet with mounting hole for M3 countersunk screw,	Ø 15.2 mm, height 6 mm	Magnet	5327349

Dimensional drawings

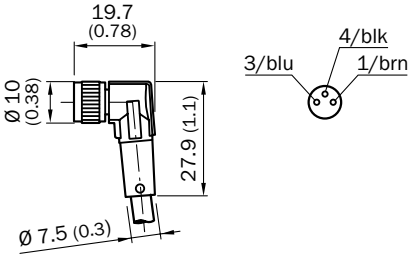
Plug connectors and cables

M8, 3-pin, PUR, halogen-free, Oil / grease resistant

DOL-0803-GxxMC

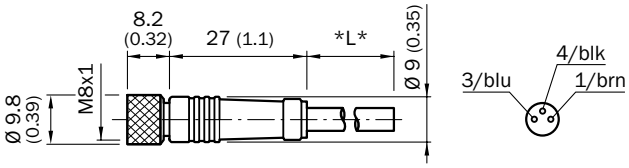


DOL-0803-WxxMC

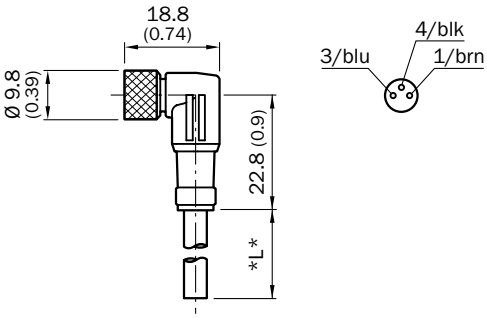


M8, 3-pin, PVC, chemical resistant

DOL-0803-GxxM

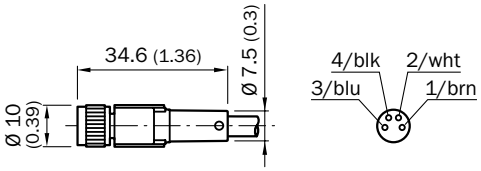


DOL-0803-WxxM

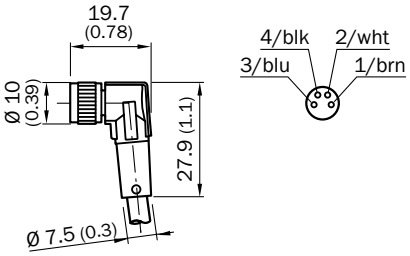


M8, 4-pin, PUR, halogen-free, Oil / grease resistant

DOL-0804-GxxMC

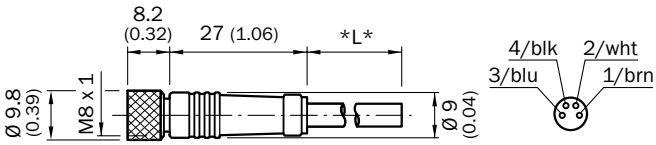


DOL-0804-WxxMC

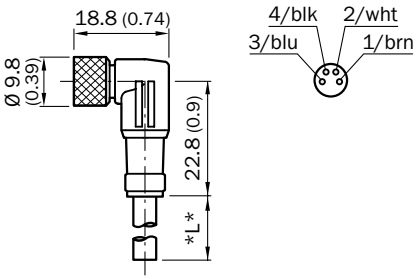


Connecting cables with female connectorM8, 4-pin, PVC, chemical resistant

DOL-0804-GxxM



DOL-0804-WxxM

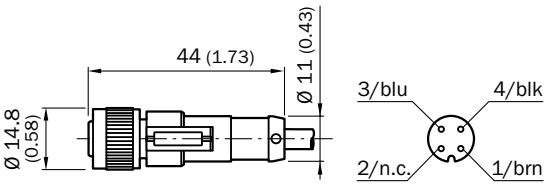


G

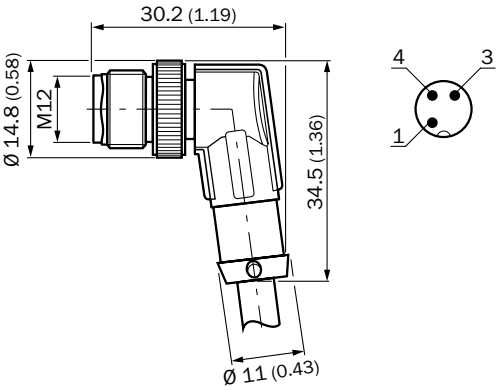
8016544/2016-10-07
Subject to change without notice

M12, 3-pin, PUR, halogen-free

DOL-1203-GxxMC

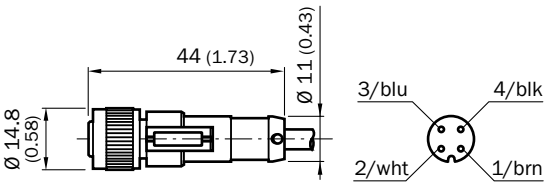


DOL-1203-WxxMC

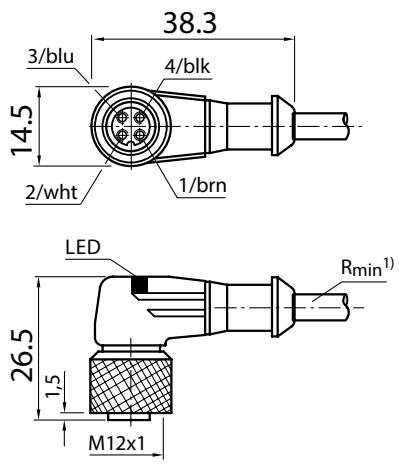


M12, 4-pin, PUR, halogen-free, Oil / grease resistant

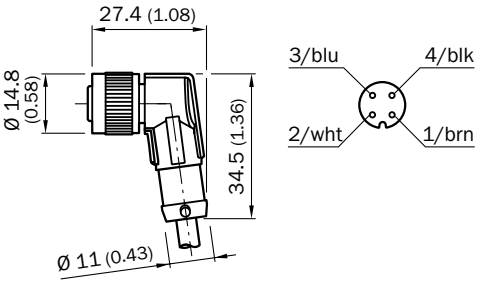
DOL-1204-GxxMC



DOL-1204-LxxMC

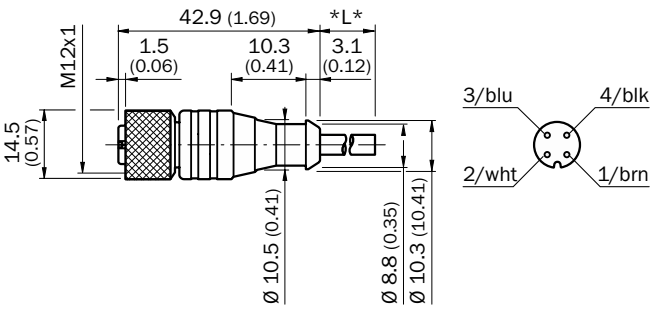


DOL-1204-WxxMC



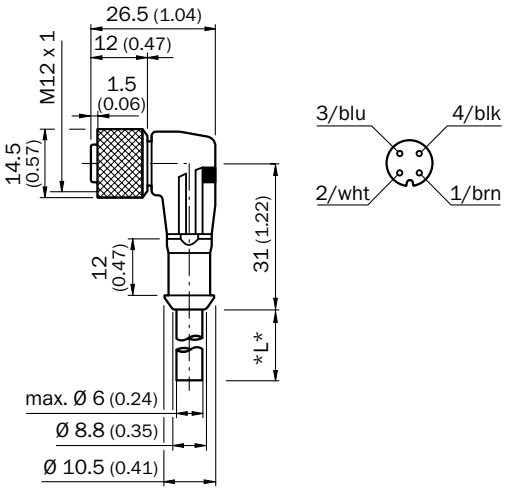
M12, 4-pin, PVC, chemical resistant

DOL-1204-GxxM

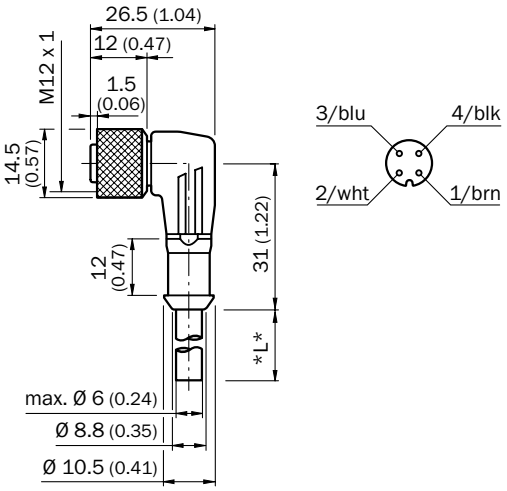


G

DOL-1204-LxxM



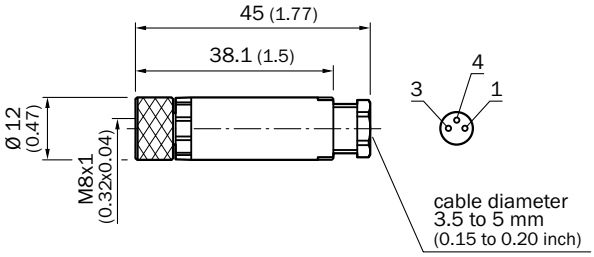
DOL-1204-WxxM



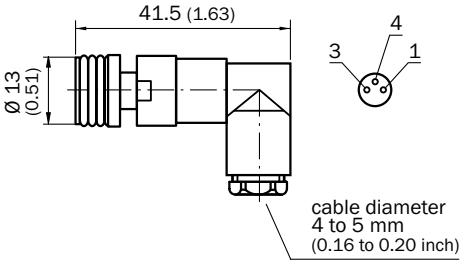
Female connectors (ready to assemble)

M8, 3-pin

DOS-0803-G (7902077)

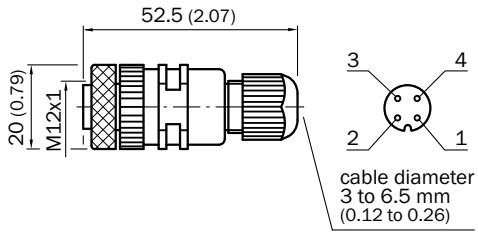


DOS-0803-W (7902078)

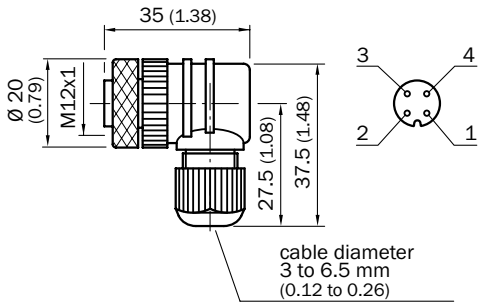


M12, 4-pin

DOS-1204-G (6007302)

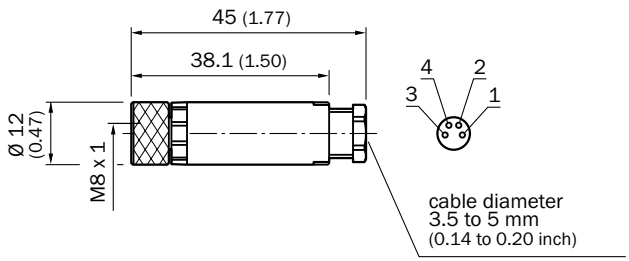


DOS-1204-W (6007303)

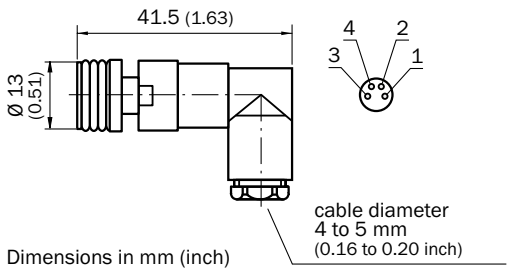


M8, 4-pin

DOS-0804-G (6009974)



DOS-0804-W (6009975)



Dimensions in mm (inch)

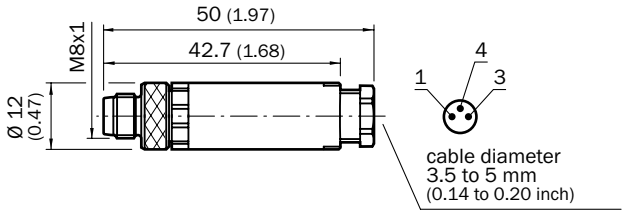
G

8016544/2016-10-07

Male connectors (ready to assemble)

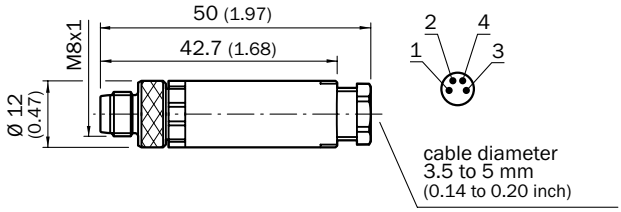
M8, 3-pin

STE-0803-G (6037322)



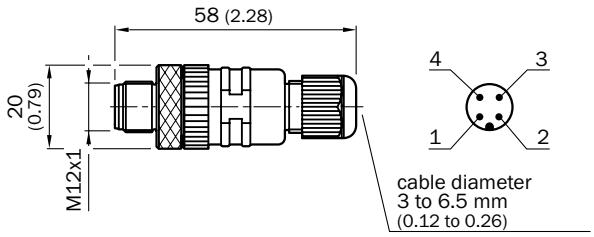
M8, 4-pin

STE-0804-G (6037323)

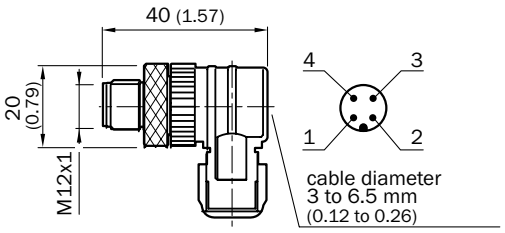


M12, 4-pin

STE-1204-G (6009932)



STE-1204-W (6022084)

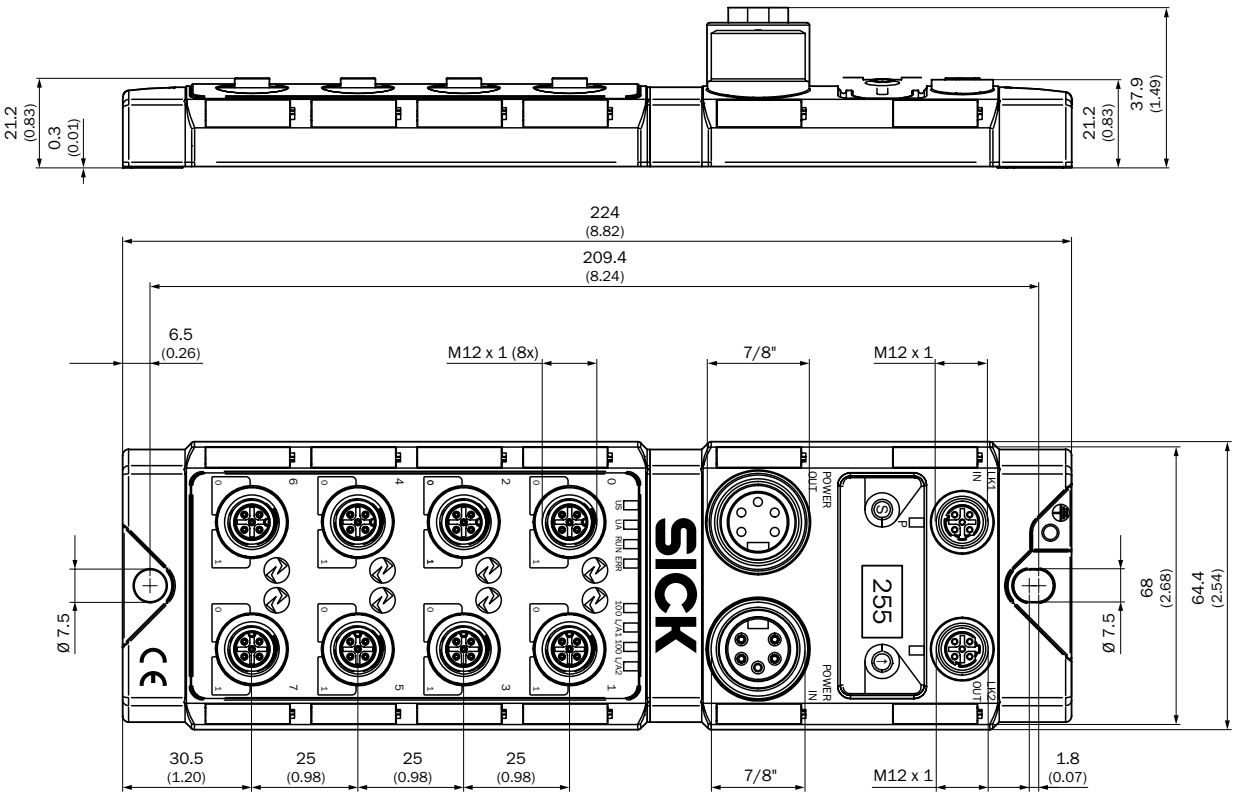


G

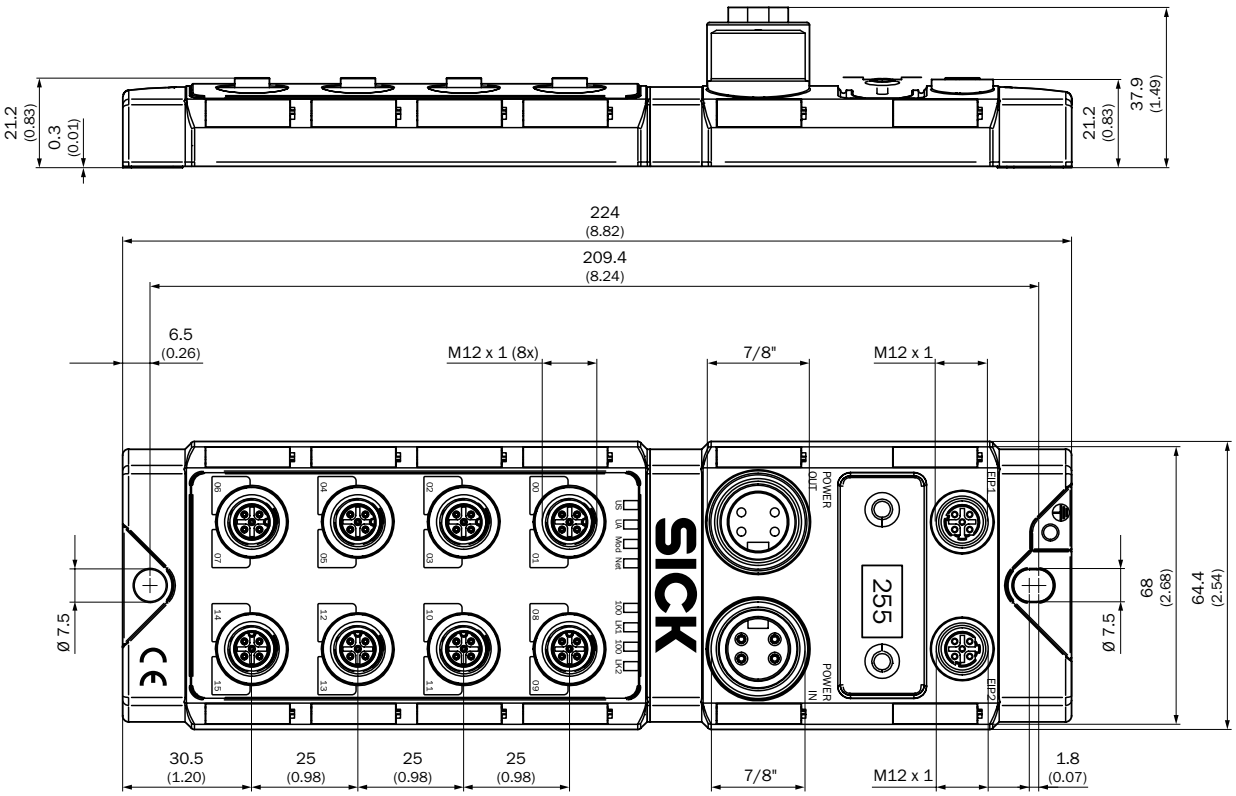
Modules and gateways

Fieldbus modules

IOLG2EC-03208R01 (IO-Link Master) (6053254)



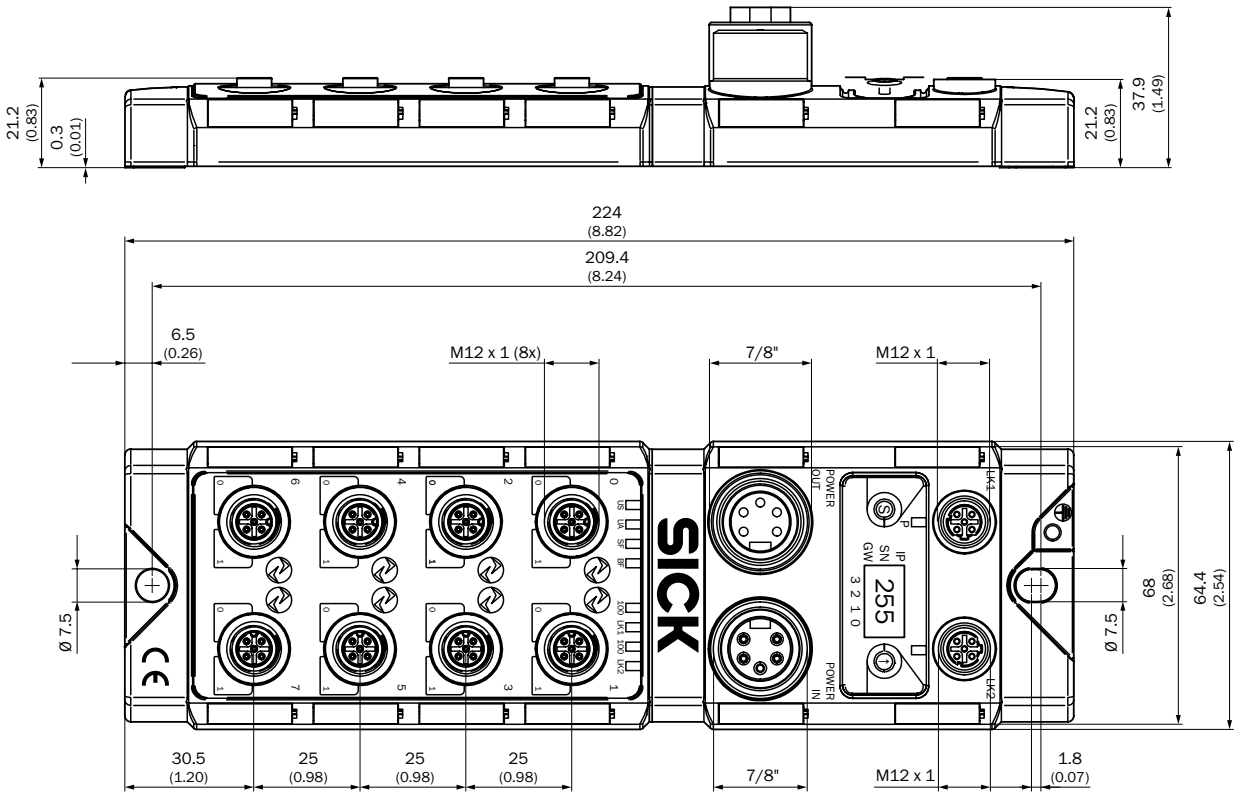
IOLG2EI-03208R01 (IO-Link Master) (6053255)



G

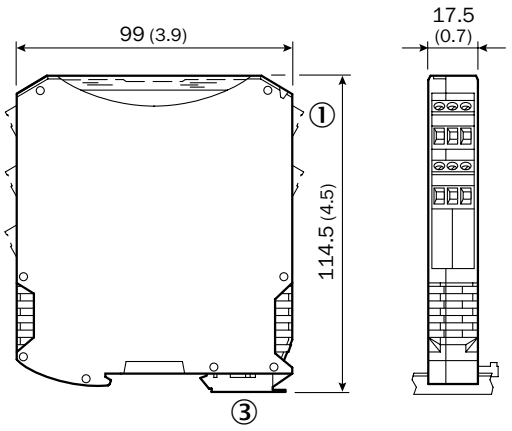
8016544/2016-10-07
Subject to change without notice

IOLG2PN-03208R01 (IO-Link Master) (6053253)

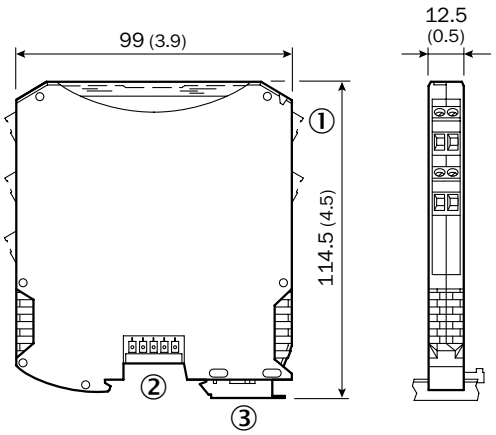


Power supply modules

EN2-2EX1 (6041096)



EN2-2EX3 (6041095)

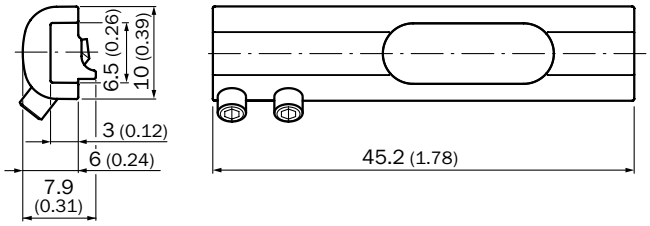


G

Mounting systems

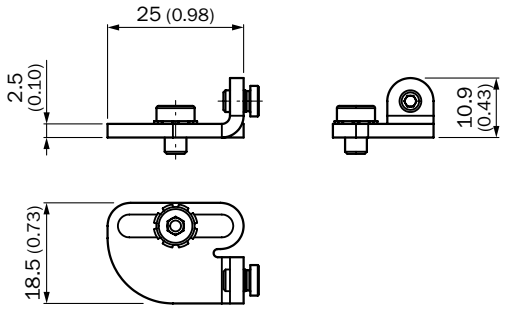
Device protection (mechanical)

BEF-SG-MRZT (2077201)

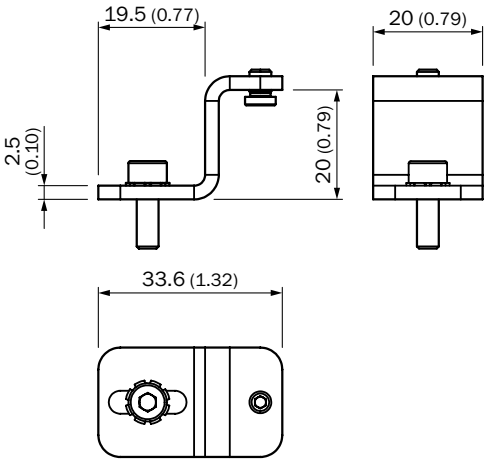


Mounting brackets

BEF-WNL01MPA (2065973)

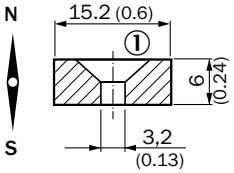


BEF-WNZ01MPA (2065577)



Magnets

Magnet (5327349)



① Reduction 90°

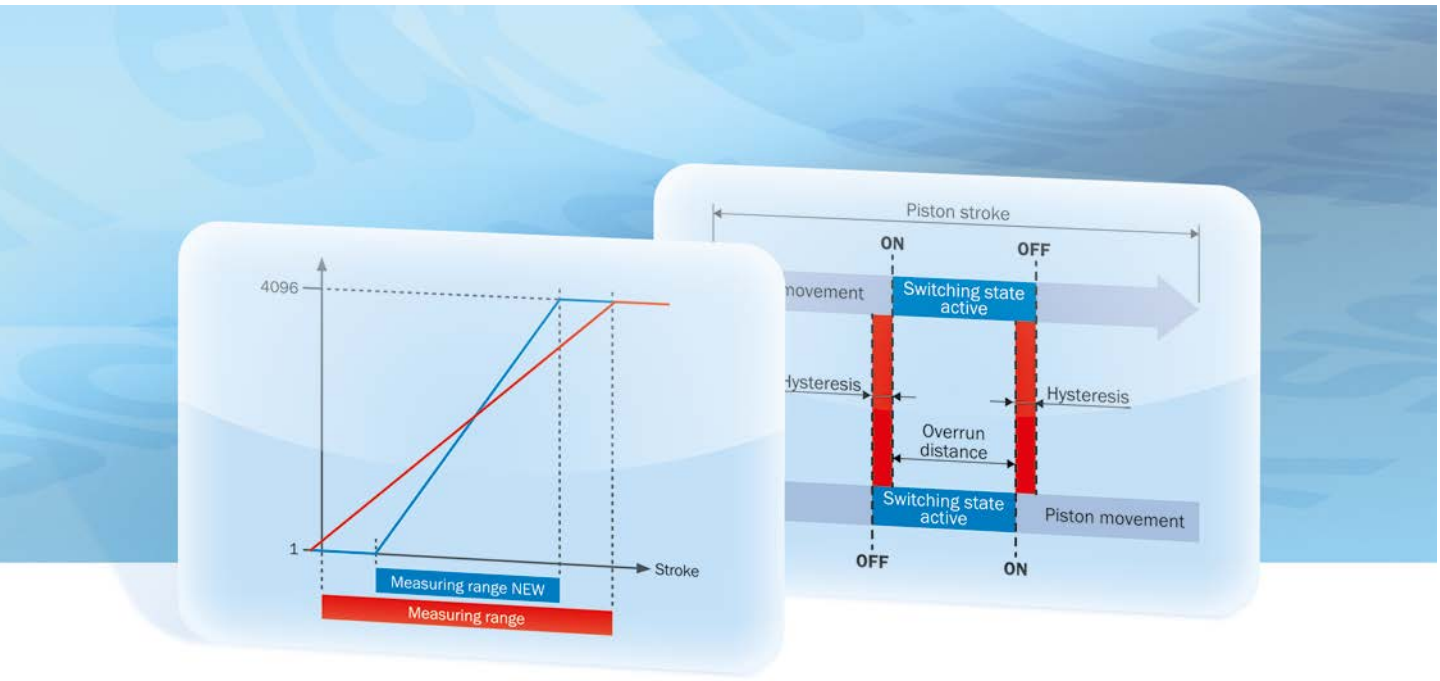
G

8016544/2016-10-07
Subject to change without notice

IMPORTANT INFORMATION ABOUT SICK SENSOR SOLUTIONS

From A for Ambient temperature, operation to W for Wire-break protection, the following pages contain explanations of key terminology in a concise, easy-to-read format. Definitions of all key terms related to innovations and proximity sensor solutions from SICK can be found here.

This glossary also provides valuable information about directives and standards such as conformity, protection classes, electrical characteristics and much more.



A

Ambient temperature, operation

The ambient temperature indicates the range within which the magnetic cylinder sensor works properly.

Analog output

Position sensors have a voltage output of 0 V ... 10 V as well as a current output of 4 mA ... 20 mA.

ATEX Directive 94/5/EC

➜ See “Explosion protection according to ATEX” on page H-154

B

Blind zone

The total length of the sensor is slightly longer than its measurement range. The difference is called the blind zone.

E

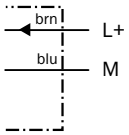
EC approval certificate

➜ See “Explosion protection according to ATEX” on page H-154

Electrical wiring

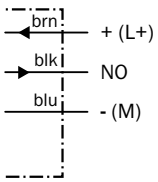
Example connection diagram DC 2-wire:

2-wire, NO

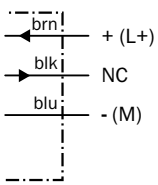


Example connection diagram DC 3-wire:

3-wire PNP, NO

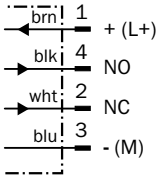


3-wire, NPN, NC



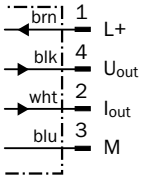
Example connection diagram DC 4-wire:

4-wire, NC / NO



Analog output

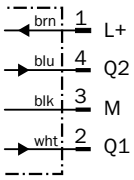
➜ See “Analog output” on page H-148



Example connection diagram DC 4-wire, PNP/NPN NC:

Two point teach

➜ See “Teach-in” on page H-152



EMC

According to EC Directive 2004/108/EC on electromagnetic compatibility, systems and components must satisfy certain properties in order to function smoothly in an electromagnetic environment.

Enclosure rating

The IP enclosure rating indicates the extent of a device’s protection against contact with impurities such as dust or water. The code starts with the letters IP and is followed by the first digit, which is an ascending indicator of the degree of protection against contact and impurities, while the second digit is an indicator of protection against ingress of water:

IP 65: Complete protection against dust and protection against water jets

IP 67: Complete protection against dust and protection against water in 1 m of water for a period of 30 minutes at a constant room temperature

IP 68: Freely definable

IP 69K: Protection against high pressure cleaning according to EN 60529. Jet duration 30 s depending on jet angle 0° ... 90° in 30° steps at a water pressure of 80 bar ... 100 bar and a water temperature of 80 ± 5 °C.

➜ See “Fig. Enclosure rating” on page H-153

H

Equipment category

➜ See “Explosion protection according to ATEX” on page H-154

Equipment groups

➜ See “Explosion protection according to ATEX” on page H-154

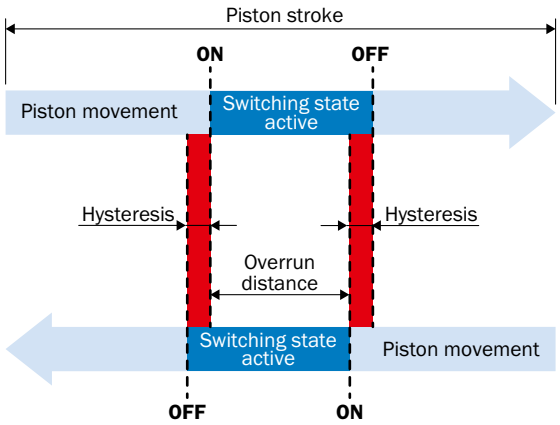
Explosive groups

➜ See “Explosion protection according to ATEX” on page H-154

H

Hysteresis

Hysteresis denotes the area between the point at which the piston movement switches the sensor to the active state and the point at which the switching state becomes inactive through movement in the opposite direction. If the cylinder piston is stopped in this area, the switching behavior becomes unstable and can be easily adversely affected by external influences.



➜ See “Overrun distance” on page H-150

L

Linearity error

The linearity error describes the maximum deviation of the output signal from an ideal straight line. It is measured in millimeters. Determination of the linearity error: The measured values are first recorded. An adjustment calculation (method of the smallest maximum deviation) is used to set a reference line from these measured values. The maximum deviation of the recorded measured values from this reference line is then specified in millimeters as the linearity error.

Load resistance, min.

Describes the smallest current which is required for self-supply of 2-wire sensors to function in the switched-on state.

M

Magnetic field sensitivity

Corresponds to the magnetic field strength in mT (millitesla), which is necessary to obtain a switching signal for the sensor: sensors with higher sensitivity can detect even the weakest magnetic fields.

Max. tightening torque

The maximum allowable force that can be used when turning a screw without damaging the thread.

Minimum operating current I_m

➜ See “Load resistance, min.” on page H-149

N

NAMUR

Standardization association for measurement and control.

No-load current

➜ See “Power consumption” on page H-150

Nominal sensitivity

➜ See “Magnetic field sensitivity” on page H-149

O

Off-state current

Describes the current flowing in the off state in the load circuit of the sensor.

Output current

Current for analog devices varies according to the magnetic field strength (e.g., in the range 4 mA to 20 mA). This allows the exact position of the cylinder piston to be determined.

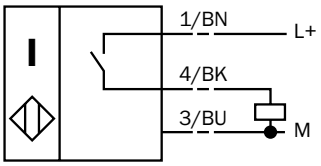
Output current I_a

Constant current is defined as the maximum load current for continuous operation.

Output function

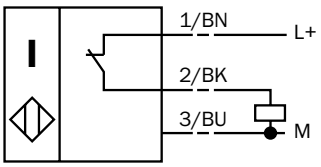
NO

A magnetic cylinder sensor's output circuit with NO function is energized when a target is detected, and de-energized when no target is detected.



NC

A magnetic cylinder sensor's output circuit with NC function is de-energized when a target is detected, and energized when no target is detected.

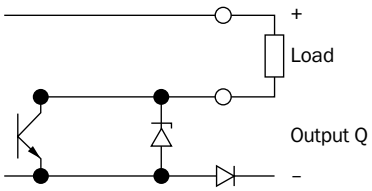


Output type

A output type is the output via which the switching state of the sensor is digitally outputted.

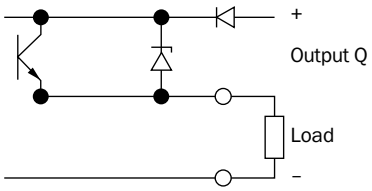
NPN output

The negative potential is connected to the load. This output is also referred to as negative switching or current-sinking.



PNP output

The positive potential is connected to the load. This output is also known as positive switching or current sourcing.



Output voltage

Voltage for analog devices varies according to the magnetic field strength (e.g., in the range 0 V to 10 V). This allows the exact position of the cylinder piston to be determined.

Overrun distance

Corresponds to the path that the cylinder piston travels while the sensor is in the active state.

P

Power consumption

Power consumption refers to the current consumption of 3- and 4-wire sensors without a load being connected.

Power-up pulse protection

The power-up pulse suppression is used to suppress pulses by connecting of the operating voltage.

Protection class

Electrical equipment is classified in relation to existing safety measures for prevention of electric shocks. Protection classes are defined in DIN EN 61140. There are four protection classes ranging from “Basic insulation” (Class 0) to “Safety extra-low voltage (Class 1), double insulation (Class 2), safety transformer” (Class 3).

Left: Protection Class 1; middle: Protection Class 2; right: Protection Class 3

R

Repeat accuracy

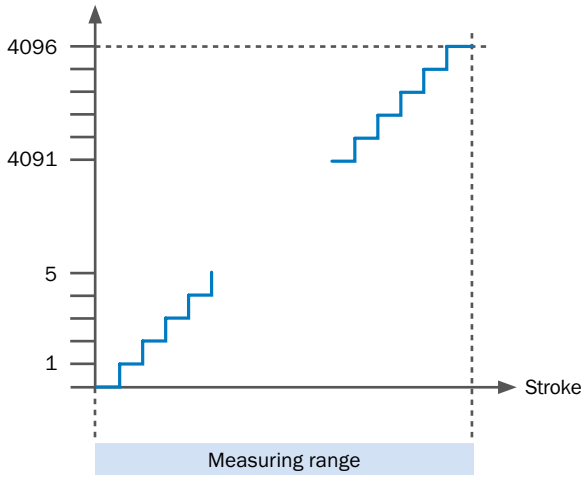
➜ See “Reproducibility” on page H-150

Reproducibility

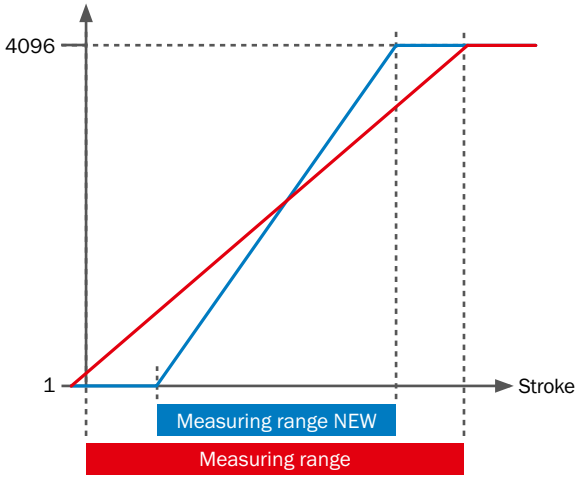
Reproducibility/repeat accuracy of analog sensors is defined as any move to a preset position from the same direction always. It is specified as a percentage or reproducibility of the upper range value (URV).

Resolution

The resolution of analog sensors describes the smallest measurable change in signal output. It is determined by moving the magnet until a change occurs on the signal output. The distance traveled is the resolution of the sensor. This deviation is specified as a percentage of the upper range value (URV). The resolution of the output signal A_{SIGNAL} is essentially determined by the digital/analog converter and is 12 bit (i.e., 4096 stages or 0.024% of the URV).



The resolution of the digital/analog converter is 12 bits or 4096 stages.



The resolution can be increased in the application if the measuring range is reduced. This applies only for a measuring range of approx. 200 mm.

Example of calculating the resolution

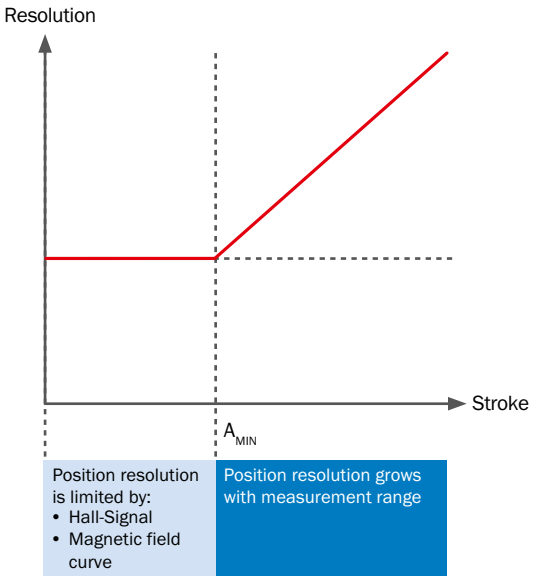
An analog position sensor with a maximum measurement range of 256 mm is used on a pneumatic cylinder. In this case, the resolution is calculated as follows:

A_{POS} = MB / A_{SIGNAL} = 256 mm / 4096 = 0.0625 mm

Now the measuring range is adjusted to a stroke of 40 mm:

A_{POSNEU} = MB_{NEU} / A_{SIGNAL}
= 220 mm /4096 = 0,0537 mm

Result: The teach process was able to improve the position resolution by 0.0088 mm. However, this increase in resolution is set by the hall signal and magnetic field curve. (chart on the right).



Reverse polarity protection

Reverse polarity protection is protection built into a sensor against damage caused by mixing supply voltage connections.

Ripple

Residual ripple is defined as the superimposed AC component (maximum allowable peak, expressed as a % of UV) of the DC operating voltage (typically 10 %).

S

Sampling rate

The sampling rate indicates the time interval in which the signal on the analog output is updated.

Shock resistance

According to IEC 60068-2-27
6 shocks (six separate tests) are executed in each direction along three mutually perpendicular axes:

Pulse shape:	half sine
Acceleration:	≤ 30 g
Pulse duration:	11 ms

Short-circuit protection
Short-circuit protection protects against overload and a direct short circuit. After exceeding the trigger threshold, the output is disabled. Then it is periodically (pulsed) queried whether the short circuit persists. After eliminating the short-circuit, the output is switched on again.

Short-time withstand current
Describes the current which can temporarily flow in the load circuit, without the sensor being destroyed.

Supply voltage
The supply voltage describes the voltage range within which the sensor works properly.

Switching frequency
The switching frequency is the number of switching operations a sensor can perform within a specified time interval.

T

Teach-in
The user can use the Teach function to easily and precisely adjust the measuring range. Zero and end points can be freely selected. The optimal resolution is also achieved in this step because the full measuring range is used for the required length of stroke.

Temperature classes
➜ See “Explosion protection according to ATEX” on page H-154

Temperature drift
This parameter of analog sensors defines the measurement error caused by any change in the ambient temperature. It is specified as a percentage of the upper range value (URV).

Time delay before availability
The time delay before availability is the time it takes for the sensor to be ready after power-up.

Types of flammable protection
➜ See “Explosion protection according to ATEX” on page H-154

V

VIA (visual installation aid)
A VIA (visual installation aid) is an installation aid in the form of a clearly visible yellow LED that marks the optimum switching point using a corresponding optical signal. In the optimum switching range, it lights up continuously and starts flashing in the outer areas of the detection zone. If the LED does not light up, the cylinder piston is located outside of the sensor’s detection zone.

Vibration resistance
According to IEC 60068-2-6
The test shall be conducted in three mutually perpendicular axes under the following conditions:
Frequency range: 10 Hz to 55 Hz
Amplitude: 1 mm
Oscillation period: 5 min
Duration of the service life at resonance frequency or at 55 Hz: 30 min on each axis.

Voltage drop
Voltage drop is defined as the voltage loss that occurs with maximum continuous current I_a across the switching stage of the magnetic cylinder sensor. In particular, this behavior is observed in the series circuit.

W

Wire-break protection
Due to broken wire protection, the output remains locked if the supply cable breaks. Malfunctions are thereby prevented.

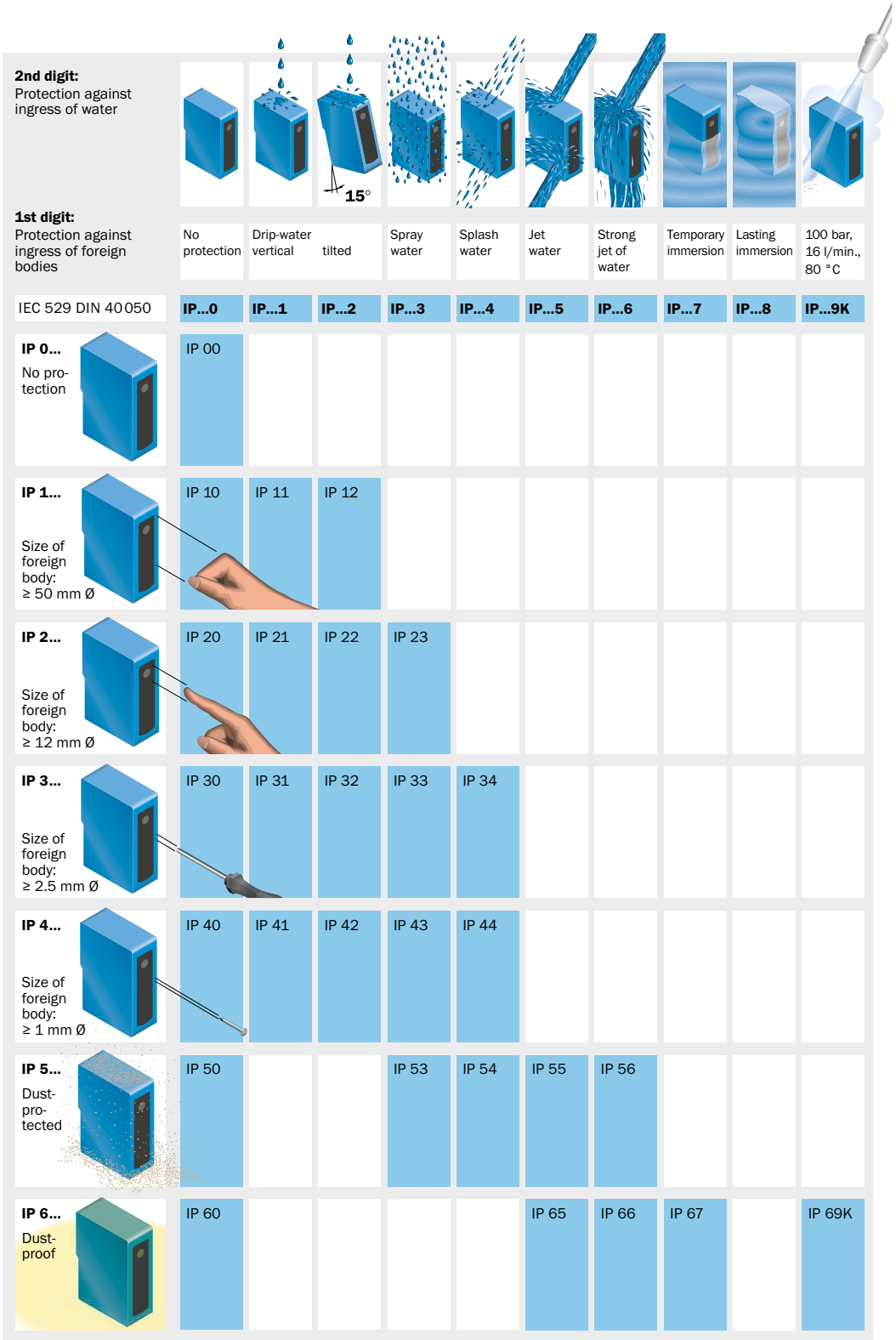


Fig. Enclosure rating

Explosion protection according to ATEX

ATEX Directive 94/9

The directive 94/9/EC has created in the European Union the framework for approximation of the laws of the Member States concerning equipment and protective systems for intended use in potentially explosive atmospheres. Generally called ATEX (for “Atmosphère explosible”), this directive was implemented in Germany with the 11th Ordinance of the Equipment and Product Safety Act (“Explosion Protection Regulation”/11th GPSGV). Thus, there exist detailed rules for the marketing of new equipment and protective systems for use in explosion-hazardous area. In accordance with the regulations of the directive, products are classified into equipment groups and categories.

Equipment groups

Equipment group I

Encompasses equipment for use in underground mining including surface equipment.

Equipment group II

Encompasses equipment for use in surface operations and is subdivided into categories 1 - 3.

Categories and criteria

Category 1 – Very high safety measures

Equipment for use in areas (zones) in which explosive atmospheres are present continuously, long-term or frequently. Even for rarely occurring problems, explosion protection must be guaranteed. This category corresponds to Zones 0 for gases, vapors and mists, as well as 20 for dust environments, where explosive atmosphere occurs continuously, long-term or frequently in form of a cloud of combustible dust in the air. The conditions of Zones 0 and 20 might also occur inside boxes, pipe lines and equipment.

Category 2 – High safety measures

Equipment for use in areas (zones) in which explosive atmospheres only occasionally occur. Explosion protection must also be guaranteed for frequently occurring equipment problems. This category corresponds to Zones 1 for gases, vapors and mists, as well as 21 for dust environments, where explosive atmosphere occurs occasionally in form of a cloud of combustible dust in the air under normal operation. This zone can, for example, include areas in the immediate vicinity of e.g. powder filling and emptying points and areas where dust deposits occur and in normal operation give rise occasionally to an explosive concentration of combustible dust when mixed with air.

Category 3 – Normal safety measures

Equipment for use in areas (zones) in which explosive atmospheres are not expected to occur. However, in the event that an explosive atmosphere does occur, it occurs only very rarely and only temporarily. Under normal operation, category 3 equipment must guarantee the required safety measures. The corresponding zones are Zone 2 for gases, vapors and mists, as well as 22 for areas in which under normal operation it not expected that an explosive atmosphere in the form of a cloud of combustible dust in air occurs and if it does, then only briefly. This can include areas around dust containing instruments, protective systems and components in which dust can escape due to lack of tightness and cause dust deposits.

Equipment group II						
Equipment for use in other explosion-hazardous area						
	Category 1		Category 2		Category 3	
Danger	Constant, frequent or over a long period		Occasional		Seldom and over a short period	
Requirement	Very high safety		High safety		Normal safety	
Zone	Zone 0	Zone 20	Zone 1	Zone 21	Zone 2	Zone 22
Substance group	G	D	G	D	G	D

G = Gas, D= Dust.

Certificate

After a test body for a device has ensured compliance with the basic safety requirements, it generates a test report. This test report is the basis for a certificate authority (notified body) to issue an EU-type examination certificate.
The CE and ATEX symbols may only be attached to the product when yet another certificate of a notified body per Directive 97/9 concerning the quality assurance of the production of the products has also been granted for the corresponding product group and when the manufacturer has issued a conformity declaration concerning the conformity of the products with the construction type treated in the EU-type examination certificate.

Principles of explosion protection

To establish uniform standards in the determination of protective measures, flammable liquids and gases are divided into explosion groups and temperature classes based on their explosion-relevant properties.

Explosive groups

Gases and vapors are classified into three explosive groups (IIA, IIB and IIC) based on their specific flammability. The danger increases from explosion group IIA to IIC (the higher IIC explosion group always includes the lower IIB and IIA groups).

Temperature classes

To facilitate the planning of an installation, 6 temperature classes (T1 to T6) have been established for the approved surface temperatures. Depending on their respective ignition temperatures, certain flammable gases and vapors can be classified under these temperature classes. For the temperature classes, the following maximum allowable surface temperatures are valid for equipment (the higher temperature classes encompass the lower classes, e.g. T6 includes the lower temperature classes T5 to T1):

Class	Max. surface temperature		
T1	450 °C	T4	135 °C
T2	300 °C	T5	100 °C
T3	200 °C	T6	85 °C

Ignition protection type

Technical means must be used to ensure that no ignition source can take effect according to the classification of a given explosive mixture (gap width, temperature class). There are several technical possibilities to achieve explosion protection of an electrical device. The types of ignition protection are listed in the table. On the explosive identification label of a device, the type of ignition protection accorded to the device is indicated by the initial letters of the type of ignition protection.

Ignition protection type	Description
Flameproof Encapsulation d (drive enclosure)	The components that could trigger ignition are installed in an housing that withstands the explosion pressure. The openings of the housing are designed such that an outward transmission of the explosion is prevented.
Enhanced safety e (enhanced safety)	The development of sparks, electric arcs, or impermissible temperatures that could function as a source of ignition, is prevented by additional measures and an increased degree of safety.
Pressurized apparatus p (pressurization, purging)	The housing of the devices is filled with a protective gas. An excess pressure is maintained so that an explosive gas mixture cannot reach the possible ignition sources arranged in the interior of the housing. If necessary, gas flows continuously through the housing.
Intrinsic safety i (intrinsic safety)	The supply of the electric equipment is led through a safety barrier that limits current and voltage to such an extent that the minimum ignition energy and ignition temperature of an explosive mixture is not reached.
Oil immersion o (oil immersion)	The parts of the electric equipment from which an ignition can arise are immersed in a protective liquid (mostly oil).
Sand encasing q (quartz filled)	The equipment is filled with fine-grained sand. A possible electric arc is cooled so much that the ignition of an explosive mixture is impossible. The surface temperature must not exceed the limit value.
Molded encapsulation m (molded)	The parts of the electric equipment that can create ignition sources are embedded in casting compound so that an electric arc cannot pass through to an explosive mixture outside the casing.
Ignition protection methods n (non-incendive, non-sparking)	In normal operation and with defined errors, there is no risk of ignition from the electric equipment.

All data without guarantee

Type	Part no.	Page
BEF-KHZ-CT23	2074119	→ F-123
BEF-KHZ-PC1	2076170	→ F-122
BEF-KHZ-PT1	2022702	→ F-122
BEF-KHZ-RC-12	2077673	→ F-121
BEF-KHZ-RC-16	2077672	→ F-121
BEF-KHZ-RC-20	2077671	→ F-121
BEF-KHZ-RC-25	2077670	→ F-121
BEF-KHZ-RC-32	2077669	→ F-121
BEF-KHZ-RC-40	2077668	→ F-121
BEF-KHZ-RC-50	2077667	→ F-121
BEF-KHZ-RC-63	2077666	→ F-121
BEF-KHZ-RC1-130	2077686	→ F-121
BEF-KHZ-RC1-25	2077685	→ F-121
BEF-KHZ-RT-12	2077681	→ F-121
BEF-KHZ-RT-16	2077680	→ F-121
BEF-KHZ-RT-20	2077679	→ F-121
BEF-KHZ-RT-25	2077678	→ F-121
BEF-KHZ-RT-32	2077677	→ F-121
BEF-KHZ-RT-40	2077676	→ F-121
BEF-KHZ-RT-50	2077675	→ F-121
BEF-KHZ-RT-63	2077674	→ F-121
BEF-KHZ-RT1-130	2077684	→ F-121
BEF-KHZ-RT1-25	2077682	→ F-121
BEF-KHZ-RT1-63	2077683	→ F-121
BEF-KHZ-ST1	2022703	→ F-122
BEF-KHZ-TC1	2046441	→ F-122
BEF-KHZ-TC2	2046442	→ F-123
BEF-KHZ-TT1	2046439	→ F-122
BEF-KHZ-TT2	2046440	→ F-123
BEF-KHZPF032MPA	2086744	→ F-123
BEF-KHZPF040MPA	2086745	→ F-123
BEF-KHZPF050MPA	2086746	→ F-123
BEF-KHZPF063MPA	2086747	→ F-123
BEF-KHZPF080MPA	2086748	→ F-123
BEF-KHZPF100MPA	2086749	→ F-123
BEF-KHZPF125MPA	2086750	→ F-123
BEF-KHZPZ1MPA	2065578	→ F-122
BEF-KHZR085MPA	2066626	→ F-121
BEF-KHZR135MPA	2066627	→ F-121
BEF-KHZR210MPA	2066628	→ F-121
BEF-KHZT01MPA	2065575	→ F-122
BEF-KHZTS063MPA	2086756	→ F-123
BEF-KHZTS080MPA	2086757	→ F-123
BEF-KHZTS100MPA	2086758	→ F-123
BEF-KHZTS125MPA	2086759	→ F-123
BEF-SG-MRZT	2077201	→ G-137
BEF-WNL01MPA	2065973	→ G-137
BEF-WNZ01MPA	2065577	→ G-137
DOL-0803-G02M	6010785	→ G-134
DOL-0803-G02MC	6025888	→ G-134
DOL-0803-G05M	6022009	→ G-134
DOL-0803-G05MC	6025889	→ G-134
DOL-0803-G10M	6022011	→ G-134
DOL-0803-G10MC	6025890	→ G-134

Type	Part no.	Page
DOL-0803-W02M	6008489	→ G-134
DOL-0803-W02MC	6025891	→ G-134
DOL-0803-W05M	6022010	→ G-134
DOL-0803-W05MC	6025892	→ G-134
DOL-0803-W10M	6022012	→ G-134
DOL-0803-W10MC	6025893	→ G-134
DOL-0804-G02M	6009870	→ G-134
DOL-0804-G02MC	6025894	→ G-134
DOL-0804-G05M	6009872	→ G-134
DOL-0804-G05MC	6025895	→ G-134
DOL-0804-G10M	6010754	→ G-134
DOL-0804-G10MC	6025896	→ G-134
DOL-0804-W02M	6009871	→ G-134
DOL-0804-W02MC	6025897	→ G-134
DOL-0804-W05M	6009873	→ G-134
DOL-0804-W05MC	6025898	→ G-134
DOL-0804-W10M	6010755	→ G-134
DOL-0804-W10MC	6025899	→ G-134
DOL-1203-G02MC	6039075	→ G-135
DOL-1203-G05MC	6039076	→ G-135
DOL-1203-G10MC	6039077	→ G-135
DOL-1203-W02MC	6039078	→ G-135
DOL-1203-W05MC	6039079	→ G-135
DOL-1203-W10MC	6036752	→ G-135
DOL-1204-G02M	6009382	→ G-135
DOL-1204-G02MC	6025900	→ G-135
DOL-1204-G05M	6009866	→ G-135
DOL-1204-G05MC	6025901	→ G-135
DOL-1204-G10M	6010543	→ G-135
DOL-1204-G10MC	6025902	→ G-135
DOL-1204-L02M	6027945	→ G-135
DOL-1204-L02MC	6039086	→ G-135
DOL-1204-L05M	6027944	→ G-135
DOL-1204-L05MC	6020398	→ G-135
DOL-1204-L10M	6027946	→ G-135
DOL-1204-L10MC	6039088	→ G-135
DOL-1204-W02M	6009383	→ G-135
DOL-1204-W02MC	6025903	→ G-135
DOL-1204-W05M	6009867	→ G-135
DOL-1204-W05MC	6025904	→ G-135
DOL-1204-W10M	6010541	→ G-135
DOL-1204-W10MC	6025905	→ G-135
DOS-0803-G	7902077	→ G-136
DOS-0803-W	7902078	→ G-136
DOS-0804-G	6009974	→ G-136
DOS-0804-W	6009975	→ G-136
DOS-1204-G	6007302	→ G-136
DOS-1204-W	6007303	→ G-136
EN2-2EX1	6041096	→ G-137
EN2-2EX3	6041095	→ G-137
IOLG2EC-03208R01 (IO-Link Master)	6053254	→ G-137
IOLG2EI-03208R01 (IO-Link Master)	6053255	→ G-137

Type	Part no.	Page
IOLG2PN-03208R01 (IO-Link Master)	6053253	→ G-137
Magnet	5327349	→ G-137
MPA-1007THTP0	1059479	→ C-42
MPA-107THTP0	1059442	→ C-42
MPA-107THTU0	1059443	→ C-42
MPA-143THTP0	1059444	→ C-42
MPA-143THTU0	1059445	→ C-42
MPA-179THTP0	1059446	→ C-42
MPA-179THTU0	1059447	→ C-42
MPA-215THTP0	1059448	→ C-42
MPA-215THTU0	1059449	→ C-42
MPA-251THTP0	1059450	→ C-42
MPA-251THTU0	1059451	→ C-42
MPA-287THTP0	1059452	→ C-42
MPA-287THTU0	1059453	→ C-42
MPA-323THTP0	1059454	→ C-42
MPA-323THTU0	1059455	→ C-42
MPA-359THTP0	1059456	→ C-42
MPA-359THTU0	1059457	→ C-42
MPA-395THTP0	1059458	→ C-42
MPA-395THTU0	1059459	→ C-42
MPA-431THTP0	1059460	→ C-42
MPA-431THTU0	1059461	→ C-42
MPA-467THTP0	1059462	→ C-42
MPA-467THTU0	1059463	→ C-42
MPA-503THTP0	1059464	→ C-42
MPA-503THTU0	1059465	→ C-42
MPA-539THTP0	1059466	→ C-42
MPA-575THTP0	1059467	→ C-42
MPA-611THTP0	1059468	→ C-42
MPA-647THTP0	1059469	→ C-42
MPA-683THTP0	1059470	→ C-42
MPA-719THTP0	1059471	→ C-42
MPA-755THTP0	1059472	→ C-42
MPA-791THTP0	1059473	→ C-42
MPA-827THTP0	1059474	→ C-42
MPA-863THTP0	1059475	→ C-42
MPA-899THTP0	1059476	→ C-42
MPA-935THTP0	1059477	→ C-42
MPA-971THTP0	1059478	→ C-42
MPS-025CLTP0	1079358	→ C-36
MPS-025CLTU0	1079359	→ C-36
MPS-032THNP0	1072897	→ C-28
MPS-032TLTQ0	1062506	→ C-29
MPS-032TSNU0	1050918	→ C-28
MPS-032TSTP0	1045666	→ C-28
MPS-032TSTU0	1045667	→ C-28
MPS-050CLTP0	1079360	→ C-36
MPS-050CLTU0	1079361	→ C-36
MPS-064TLTQ0	1062507	→ C-29
MPS-064TSNP0	1053836	→ C-28
MPS-064TSNU0	1050919	→ C-28
MPS-064TSTP0	1045668	→ C-28
MPS-064TSTU0	1045669	→ C-28
MPS-096TLTQ0	1062508	→ C-29
MPS-096TSNP0	1053837	→ C-28
MPS-096TSNU0	1050920	→ C-28
MPS-096TSTP0	1045670	→ C-28
MPS-096TSTU0	1045671	→ C-28
MPS-100CLTP0	1079362	→ C-36
MPS-100CLTU0	1079363	→ C-36
MPS-128TLTQ0	1062518	→ C-29
MPS-128TSNP0	1053838	→ C-28
MPS-128TSNU0	1050921	→ C-28
MPS-128TSTP0	1045672	→ C-28
MPS-128TSTU0	1045673	→ C-28
MPS-160TLTQ0	1062521	→ C-29
MPS-160TSNP0	1053839	→ C-28
MPS-160TSNU0	1050922	→ C-28
MPS-160TSTP0	1050685	→ C-28
MPS-160TSTU0	1050740	→ C-28
MPS-192TLTQ0	1062519	→ C-29
MPS-192TSNP0	1053840	→ C-28
MPS-192TSNU0	1050923	→ C-28
MPS-192TSTP0	1047728	→ C-28
MPS-192TSTU0	1050738	→ C-28
MPS-200CLTP0	1079364	→ C-36
MPS-200CLTU0	1079365	→ C-36
MPS-224TLTQ0	1062522	→ C-29
MPS-224TSNP0	1053841	→ C-28
MPS-224TSNU0	1050924	→ C-28
MPS-224TSTP0	1050686	→ C-28
MPS-224TSTU0	1050741	→ C-28
MPS-256TLTQ0	1062520	→ C-29
MPS-256TSNP0	1053842	→ C-28
MPS-256TSNU0	1050925	→ C-28
MPS-256TSTP0	1050551	→ C-28
MPS-256TSTU0	1050739	→ C-28
MZ2Q-CFLPSKQ0	1043697	→ E-96
MZ2Q-CFSPSKP0	1042242	→ E-96
MZ2Q-CFSPSKQ0	1042244	→ E-96
MZ2Q-CFSPSKR0	1042243	→ E-96
MZ2Q-CFSPSKU0	1042241	→ E-96
MZ2Q-CSLPSKQ0	1043696	→ E-96
MZ2Q-CSSNSKUA	1046234	→ E-96
MZ2Q-CSSPSKP0	1042238	→ E-96
MZ2Q-CSSPSKQ0	1042240	→ E-96
MZ2Q-CSSPSKR0	1042239	→ E-96
MZ2Q-CSSPSKU0	1042237	→ E-96
MZ2Q-FTZNS-KU0	1048103	→ D-54
MZ2Q-FTZPS-KP0	1029846	→ D-54
MZ2Q-FTZPS-KQ0	1041323	→ D-54
MZ2Q-FTZPS-KR0	1041322	→ D-54
MZ2Q-FTZPS-KU0	1029845	→ D-54
MZ2Q-FTZPS-KUB	1045267	→ D-54
MZ2Q-TFSPS-KQD	1062172	→ D-54
MZ2Q-TSLPS-KQ0	1042228	→ D-54
MZC1-2V2NS-KP0	1059744	→ E-102

Type	Part no.	Page
RZT7-03ZRS-KWB	1070853	→ D-84
RZT7-03ZRS-KWD	1070854	→ D-84
RZT7-03ZUS-KP0	1070855	→ D-84
RZT7-03ZUS-KQ0	1070859	→ D-84
RZT7-03ZUS-KR0	1070857	→ D-84
RZT7-03ZUS-KU0	1070861	→ D-84
RZT7-03ZUS-KUB	1070863	→ D-84
RZT7-03ZUS-KW0	1070865	→ D-84
RZT7-03ZUS-KWB	1070867	→ D-84
RZT7-03ZVO-KW0	1070866	→ D-84
RZT7-03ZWS-KU0	1070869	→ D-84
RZT7-03ZWS-KUB	1070870	→ D-84
RZT7-03ZWS-KW0	1070871	→ D-84
RZT7-03ZWS-KWB	1070872	→ D-84
STE-0803-G	6037322	→ G-136
STE-0804-G	6037323	→ G-136
STE-1204-G	6009932	→ G-136
STE-1204-W	6022084	→ G-136

8016544/2016-10-07 · SKOM · Pre USmod en46

SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 7,400 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, we are always close to our customers. 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 various 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 round out 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:

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and further locations → www.sick.com

SICK
Sensor Intelligence.