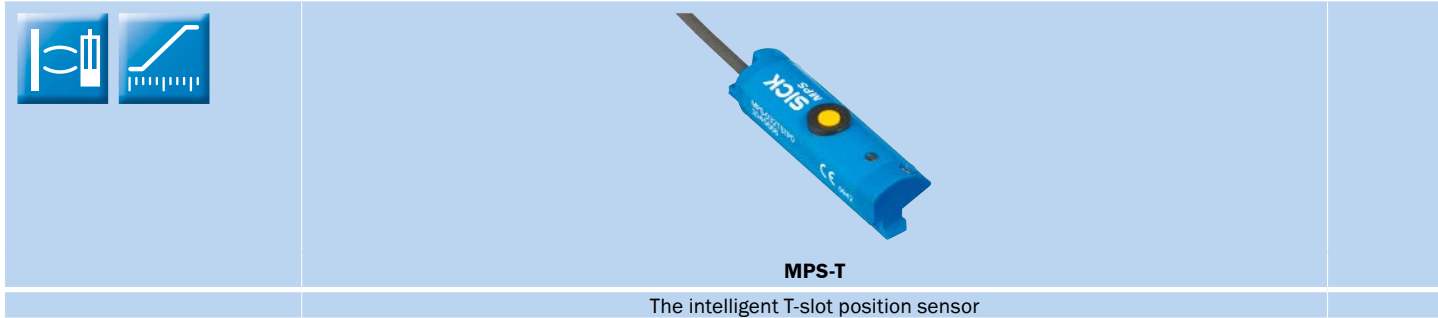# Magnetic cylinder sensors

OVERVIEW OF THE PRODUCTS

**Position sensors, sensors for T-slot cylinders,
sensors for C-slot cylinders**

SICK
Sensor Intelligence.

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 and tie-rod cylinders Dove-tail groove cylinder SMC rail CDQ2 SMC rail ECDQ2 SMC cylinder 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 from 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	➜ www.sick.com/MPS-T

	MPS-C	MPA
	MPS-C	**MPA**
	The intelligent C-slot position sensor	The intelligent position sensor for large cylinders
	Analog, IO-Link, switching output	Analog, IO-Link
	✔	✔
	Round body cylinder Profile and tie-rod cylinders SMC rail CDQ2 SMC rail 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

MPS-C	MPA
• Position sensor for direct mounting in C-slots on pneumatic cylinders and grippers • Sensor variants with measuring ranges from 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 from 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)
➜ www.sick.com/MPS-C	➜ www.sick.com/MPA

	MZ2Q-T	MZT7
	Magnetic cylinder sensors with two individually adjustable switching points	The essentials taken to the max

Technical data overview

Output function	N/O contact	N/O contact/N/C contact
IO-Link/teach-in	✔	–
Special features	–	2 x label holders plugged in
Cylinder types with adapter	Profile cylinder Tie-rod cylinder Round body cylinder Dove-tail groove cylinder SMC rail CDQ2 SMC rail ECDQ2	Profile cylinder Tie-rod cylinder Round body cylinder Dove-tail groove cylinder SMC rail CDQ2 SMC rail ECDQ2
Housing length	40 mm	29.5 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 T-slot and – with the help of adapters – in round rod, tie-rod, and profile cylinders, and cylinders with a dovetail groove • Insertion of the sensor into the slot from above makes mounting quick and easy • Easy adjustment of two switching points via teach-in pushbutton • LEDs to indicate both switching points • Detection zone 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 • Insertion of the sensor into the slot from above makes mounting quick and easy • Fixing screw combines hexagon socket screw and slotted screw elements • LED for indicating the output state • Enclosure rating: IP 67

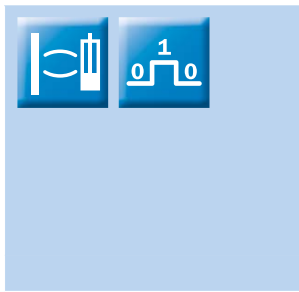| Detailed information	➔ www.sick.com/MZ2Q-T	➔ www.sick.com/MZT7

RZT7	MZT8
The essentials taken to the max	Typically SICK: quick mounting, precise switching, high temperature resistance
N/O contact/N/C contact	N/O contact/N/C contact
–	–
Expanded operating temperature	With 2 labeling grommets 50 units of collective packaging 20 ms pulse stretching Temperature-resistant up to 100 °C Expanded operating temperature
Profile cylinder Tie-rod cylinder Round body cylinder Dove-tail groove cylinder SMC rail CDQ2 SMC rail ECDQ2	Profile cylinder Tie-rod cylinder Round body cylinder Dove-tail groove cylinder SMC rail CDQ2 SMC rail ECDQ2
29.5 mm / 32.5 mm	24 mm
5 V AC/DC ... 30 V AC/DC 5 V AC/DC ... 230 V AC/DC [1] 5 V AC/DC ... 120 V AC/DC [2]	10 V DC ... 30 V 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
- Insertion of the sensor into the slot from above makes mounting quick and easy
- Fixing screw combines hexagon socket screw and slotted screw elements
- LED for indicating the output state
- Enclosure rating: IP 67
- Supply voltage up to 230 V

[1] Mains fuse F < 0.5 A, IEC 60127-2 Sheet 1.
[2] Mains fuse F < 0.8 A, IEC 60127-2 Sheet 1.

- 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
- Insertion of the sensor into the slot from above makes mounting quick and easy
- Fixing screw combines hexagon socket screw and slotted screw elements
- 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

➡ www.sick.com/RZT7   ➡ www.sick.com/MZT8

MZT8 VIA

Typically SICK: precision sensors for high machine output

Technical data overview	
Output function	N/O contact
IO-Link/teach-in	–
Special features	Optical adjustment indicator/LED (yellow) Power LED (green) Interior housing temperature (via IO-Link) Counter function (via IO-Link)
Cylinder types with adapter	Profile cylinder Tie-rod cylinder Round body cylinder Dove-tail groove cylinder SMC rail CDQ2 SMC rail ECDQ2
Housing length	24 mm
Supply voltage	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 • Insertion of the sensor into the slot from above makes mounting quick and easy • Fixing screw combines hexagon socket screw and slotted screw elements • Yellow LED as optical adjustment indicator and output state display • Green LED acts as a status indicator • Very short sensor housing for use in short stroke cylinders • Enclosure ratings: IP 67, IP 68, IP 69K • IO-Link and automation functions

Detailed information	➜ www.sick.com/MZT8_VIA

	MZT8 ATEX	MZT8 Twin
	Typically SICK: maximum performance for potentially explosive areas	Works with high precision: Cylinder sensor with two sensor heads
	N/O contact	N/O contact
	–	–
	–	Two sensor heads on one male connector
	Profile cylinder Tie-rod cylinder Round body cylinder Dove-tail groove cylinder SMC rail CDQ2 SMC rail ECDQ2	Profile cylinder Tie-rod cylinder Round body cylinder Dove-tail groove cylinder SMC rail CDQ2 SMC rail ECDQ2
	24 mm	24 mm
	8.2 V DC ... 20 V DC 10 V DC ... 26 V DC	10 V DC ... 30 V 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 • Insertion of the sensor into the slot from above makes mounting quick and easy • Fixing screw combines hexagon socket screw and slotted screw elements • The variants correspond to the requirements of ATEX categories 1D, 1G and 3D, 3G • Very short sensor housing for use in short stroke cylinders • Enclosure rating: IP 67	• Sensor variant for T-slot cylinder with two MZT8 sensor heads on one male connector • Sensors are inserted into the cylinder slot from above • Fixing screw combines hexagon socket screw and slotted screw elements • Temperature-resistant up to 80 °C • Very short sensor housing for use in short stroke cylinders • Enclosure rating: IP68
➔ www.sick.com/MZT8_ATEX	➔ www.sick.com/MZT8_Twin

	MZ2Q-C	MZC1	
	Magnetic cylinder sensors with two individually adjustable switching points	Insert, fasten, fitted	

Technical data overview

Output function	N/O contact	N/O contact/N/C contact	
IO-Link/teach-in	✔	–	
Special features	Special hysteresis Software V303	Sensor element distance 7.95 mm. 2 x label holders plugged in	
Cylinder types with adapter	SMC rail ECDQ2 SMC rail CDQ2	SMC rail CDQ2 SMC rail ECDQ2 Round body cylinder Profile and tie-rod cylinders	
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

MZ2Q-C:
- 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
- Insertion of the sensor into the slot from above makes mounting quick and easy
- Easy adjustment of two switching points via teach-in pushbutton
- LEDs to indicate both switching points
- Detection zone up to 50 mm stroke

MZC1:
- 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
- Insertion of the sensor into the slot from above makes mounting quick and easy
- Fixing screw combines hexagon socket screw and slotted screw elements
- LED for indicating the output state
- Enclosure ratings: IP 67, IP 68, IP 69K

Detailed information → www.sick.com/MZ2Q-C | → www.sick.com/MZC1

MZC1 VIA	MZC1 Twin
Insert, fasten, fitted	Works with high precision: Cylinder sensor with two sensor heads

N/O contact	N/O contact
–	–
Optical adjustment indicator/LED (yellow) Power LED (green) Interior housing temperature (via IO-Link) Counter function (via IO-Link)	Two sensor heads on one male connector
SMC rail CDQ2 SMC rail ECDQ2	SMC rail CDQ2 SMC rail ECDQ2 Round body cylinder Profile and tie-rod cylinders
23.7 mm	23.7 mm
10 V DC … 30 V DC	10 V DC … 30 V 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 • Insertion of the sensor into the slot from above makes mounting quick and easy • Fixing screw combines hexagon socket screw and slotted screw elements • Yellow LED as optical adjustment indicator and output state display • Green LED acts as a status indicator • Enclosure ratings: IP 67, IP 68, IP 69K • IO-Link and automation functions	• Sensor variant for C-slot cylinder with two MZC1 sensor heads on one male connector • Sensors are inserted into the cylinder slot from above • Combined fixing screw (hexagon socket screw and slotted screw) • Temperature-resistant up to 80 °C • Enclosure rating: IP68
➔ www.sick.com/MZC1_VIA	➔ www.sick.com/MZC1-Twin

	RZC1	MZC2	
	Insert, fasten, fitted	Short cylinder sensor for pneumatic grippers and miniature cylinders	

Technical data overview

Output function	N/O contact	N/O contact	
IO-Link/teach-in	–	–	
Special features	–	Completely embedded mounting in the slot, providing protection	
Cylinder types with adapter	SMC rail CDQ2 SMC rail ECDQ2	SMC rail ECDQ2 SMC rail CDQ2	
Housing length	26.3 mm	19.5 mm	
Supply voltage	5 V AC/DC ... 120 V AC/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 • Insertion of the sensor into the slot from above makes mounting quick and easy • Fixing screw combines hexagon socket screw and slotted screw elements • LED for indicating the output state • Enclosure ratings: IP 67, IP 68, IP 69K • Supply voltage up to 230 V	• Short housing (19.5 mm) for use in pneumatic grippers and miniature cylinders • Fits in all commonly-used C-slots, e.g. from SMC, Bimba, Schunk, Zimmer and Festo • Short, precise switching point, ideal for applications with small stroke • LED for indicating the output state • IP67 enclosure rating • Sensor fully recessed in the slot	

Detailed information	➜ www.sick.com/RZC1	➜ www.sick.com/MZC2	

	MZCG	MZCG VIA
	Extremely short cylinder sensor for pneumatic grippers and miniature cylinders	Extremely short cylinder sensor for pneumatic grippers and miniature cylinders
	NO / NC	N/O contact
	–	✔
	–	Optical adjustment indicator/LED (yellow) Power LED (green) Interior housing temperature (via IO-Link) Counter function (via IO-Link)
	SMC rail CDQ2 SMC rail ECDQ2	SMC rail CDQ2 SMC rail ECDQ2
	12.2 mm	12.2 mm
	10 V DC … 30 V DC	10 V DC … 30 V DC

• Extremely short housing (12.2 mm) for applications in pneumatic grippers and miniature cylinders • Fits in all commonly-used C-slots, e.g. from Schunk, Zimmer, Festo or SMC • Short, precise switching point, ideal for applications with small stroke • Cable suitable for drag chain • LED for indicating the output state • IP 68 enclosure rating	• Extremely short housing (12.2 mm) for applications in pneumatic grippers and miniature cylinders • Fits in all commonly-used C-slots, e.g. from Schunk, Zimmer, Festo or SMC • Short, precise switching point, ideal for applications with small stroke • Cable suitable for drag chain • IP 68 enclosure rating • Yellow LED as optical adjustment indicator and output state display • Green LED acts as a status indicator • IO-Link and automation functions
➜ www.sick.com/MZCG	➜ www.sick.com/MZCG_VIA

SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 9,700 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**

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