



# MZC2-1V7NS-FR0

MZC2

CYLINDER SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
MZC2-1V7NS-FRO	1099966

Other models and accessories → [www.sick.com/MZC2](http://www.sick.com/MZC2)



### Detailed technical data

#### Features

<b>Cylinder type</b>	C-slot
<b>Preferred manufacturer slot</b>	Festo, Zimmer, Gimatic
<b>Housing length</b>	19.5 mm
<b>Switching output</b>	NPN
<b>Switching frequency</b>	1,000 Hz
<b>Output function</b>	NO
<b>Electrical wiring</b>	DC 3-wire
<b>Enclosure rating</b>	IP67
<b>Special features</b>	Completely embedded mounting in the slot, providing protection

#### Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC
<b>Power consumption</b>	8 mA, without load
<b>Voltage drop</b>	≤ 2.5 V
<b>Continuous current I<sub>a</sub></b>	≤ 100 mA
<b>Protection class</b>	III
<b>Response sensitivity, typ.</b>	1.7 mT
<b>Overrun distance, typ.</b>	2 mm <sup>1)</sup>
<b>Hysteresis, typ.</b>	≤ 0.4 mT
<b>Reproducibility</b>	≤ 0.1 mT <sup>2)</sup>
<b>Reverse polarity protection</b>	Yes
<b>Short-circuit protection</b>	Yes
<b>Status indicator LED</b>	Yes
<b>Teach-in</b>	No
<b>Power-up pulse protection</b>	Yes

<sup>1)</sup> Distance covered by the encoder magnet while the sensor outputs a switching signal.

<sup>2)</sup> Supply voltage U<sub>B</sub> and constant ambient temperature T<sub>a</sub>.

<b>Ambient operating temperature</b>	-25 °C ... +75 °C
<b>Shock and vibration resistance</b>	30 g, 11 ms / 10 ... 55 Hz, 1 mm
<b>EMC</b>	According to EN 60947-5-2
<b>Connection type</b>	Cable with plug M8, 3-pin, with knurled nut, drag chain use, 0.5 m
<b>Connection type Detail</b>	
Conductor cross section	0.09 mm <sup>2</sup>
Cable diameter	Ø 1.9 mm
Bending radius	With fixed installation = 12 x cable diameter For flexible use = 15 x cable diameter
Cable outlet	Axial
<b>Material</b>	
Housing	Plastic
Cable	PUR
<b>UL File No.</b>	E181493

<sup>1)</sup> Distance covered by the encoder magnet while the sensor outputs a switching signal.

<sup>2)</sup> Supply voltage  $U_B$  and constant ambient temperature  $T_a$ .

### Safety-related parameters

<b>MTTF<sub>D</sub></b>	1,469 years
<b>DC<sub>avg</sub></b>	0 %
<b>T<sub>M</sub> (mission time)</b>	20 years

### Certificates

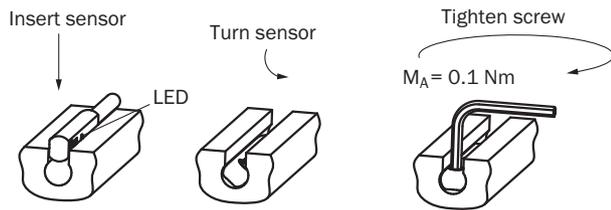
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China RoHS</b>	✓
<b>cULus certificate</b>	✓

### Classifications

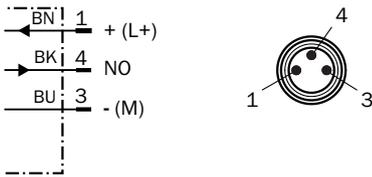
<b>ECLASS 5.0</b>	27270104
<b>ECLASS 5.1.4</b>	27270104
<b>ECLASS 6.0</b>	27270104
<b>ECLASS 6.2</b>	27270104
<b>ECLASS 7.0</b>	27270104
<b>ECLASS 8.0</b>	27270104
<b>ECLASS 8.1</b>	27270104
<b>ECLASS 9.0</b>	27270104
<b>ECLASS 10.0</b>	27270104
<b>ECLASS 11.0</b>	27270104
<b>ECLASS 12.0</b>	27274301
<b>ETIM 5.0</b>	EC002544
<b>ETIM 6.0</b>	EC002544

<b>ETIM 7.0</b>	EC002544
<b>ETIM 8.0</b>	EC002544
<b>UNSPSC 16.0901</b>	39122230

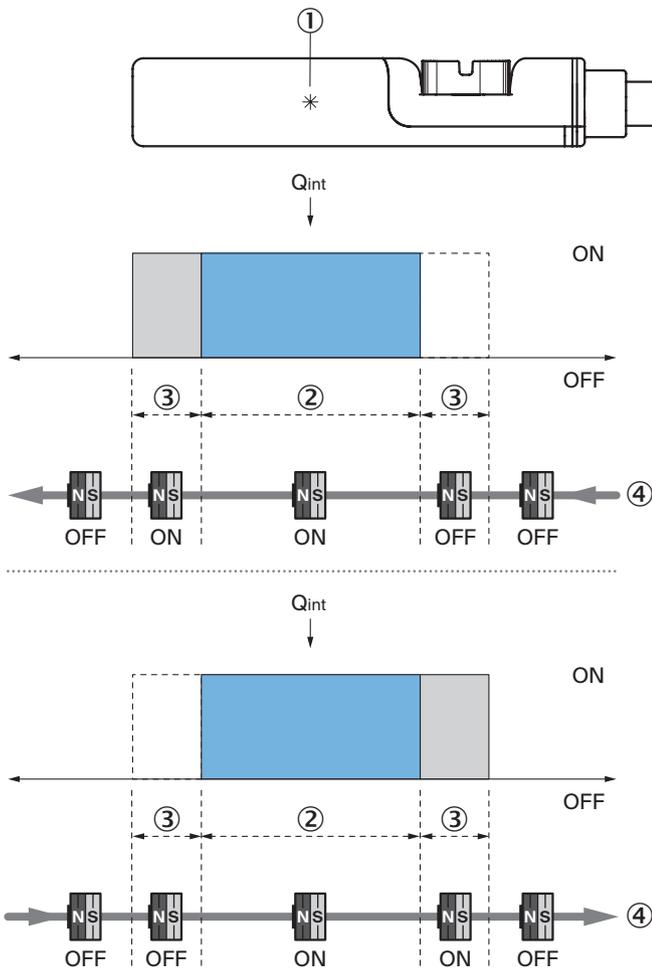
### Installation note



### Connection diagram Cd-419



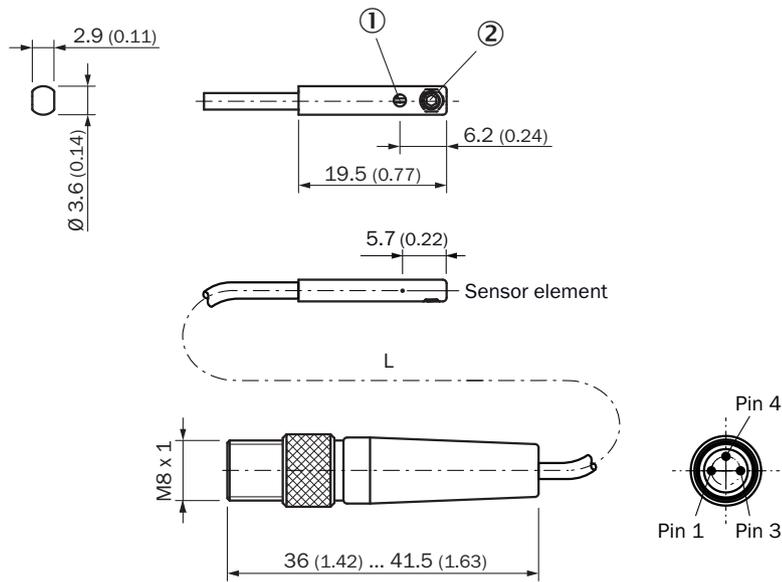
Functional principle Overrun distance



Note: Sensor housing may differ; representation corresponds to “NO contact” output function; overrun distance = switching point width + hysteresis

- ① Position sensor element
- ② Width of the switching point
- ③ Hysteresis
- ④ Direction of movement of the magnet

### Dimensional drawing Cable with plug M8, with knurled nut



Dimensions in mm (inch)

- ① LED indicator yellow
- ② threaded pins M2,5 x 2

		<b>L</b>	
1099966	MZC2-1V7NS-FR0	0.5	3
1099965	MZC2-1V7PS-FR0	0.5	3
1113680	MZC2-1V7PS-FRX	0.5	3

## Recommended accessories

Other models and accessories → [www.sick.com/MZC2](http://www.sick.com/MZC2)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 1 mm ... 25 mm, ambient temperature min -30 °C max 80 °C</li> <li><b>Material:</b> Stainless steel, Aluminum</li> <li><b>Details:</b> Stainless steel, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>	BEF-KHZ-RC1-25	2077685
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 1 mm ... 130 mm, ambient temperature min -30 °C max 80 °C</li> <li><b>Material:</b> Stainless steel, Aluminum</li> <li><b>Details:</b> Stainless steel, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>	BEF-KHZ-RC1-130	2077686
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 63 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>	BEF-KHZ-RC-63	2077666
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 50 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>	BEF-KHZ-RC-50	2077667
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 40 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>	BEF-KHZ-RC-40	2077668
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 32 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>	BEF-KHZ-RC-32	2077669
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 25 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>	BEF-KHZ-RC-25	2077670
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 20 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>	BEF-KHZ-RC-20	2077671
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 16 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>	BEF-KHZ-RC-16	2077672
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket on round body cylinder with piston diameter of 12 mm, ambient temperature min 0 °C max 50 °C</li> <li><b>Material:</b> Plastic, Aluminum</li> <li><b>Details:</b> Plastic, Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> C-slot</li> </ul>	BEF-KHZ-RC-12	2077673

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 3-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 2 m, 3-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF8U13-020VA1XLEAX	2095860
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 3-pin, angled, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 2 m, 3-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YG8U13-020VA1XLEAX	2096165
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 3-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 0.6 m, 3-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF8U13-C60VA1XLEAX	2146368

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)