

MZC1-2V2PS-KQ0

MZC1

CYLINDER SENSORS





Ordering information

Туре	part no.
MZC1-2V2PS-KQ0	1059736

Other models and accessories → www.sick.com/MZC1



Detailed technical data

Features

Cylinder type	C-slot
Cylinder types with adapter	SMC rail CDQ2 SMC rail ECDQ2 Round body cylinder Profile cylinders and tie-rod cylinders
Housing length	23.7 mm
Switching output	PNP
Switching frequency	1,000 Hz
Output function	NO
Electrical wiring	DC 3-wire
Enclosure rating	IP68

Mechanics/electronics

Supply voltage 10 V DC 30 V DC Power consumption 8 mA, without load Voltage drop ≤ 2.5 V Continuous current Ia ≤ 100 mA Protection class III Response sensitivity, typ. 2.2 mT Overrun distance, typ. 4 mm ¹) Hysteresis, typ. ≤ 0.8 mT Reproducibility ≤ 0.1 mT ²) Reverse polarity protection Yes Short-circuit protection Yes Status indicator LED Yes Teach-in No	moonamoo, orootromoo	
Voltage drop ≤ 2.5 V Continuous current Ia ≤ 100 mA Protection class III Response sensitivity, typ. 2.2 mT Overrun distance, typ. 4 mm ¹) Hysteresis, typ. ≤ 0.8 mT Reproducibility ≤ 0.1 mT ²) Reverse polarity protection Yes Short-circuit protection Yes Status indicator LED Yes	Supply voltage	10 V DC 30 V DC
Continuous current I _a ≤ 100 mA Protection class III Response sensitivity, typ. 2.2 mT Overrun distance, typ. 4 mm ¹¹ Hysteresis, typ. ≤ 0.8 mT Reproducibility ≤ 0.1 mT ²¹ Reverse polarity protection Yes Short-circuit protection Yes Status indicator LED Yes	Power consumption	8 mA, without load
Protection class Response sensitivity, typ. 2.2 mT Overrun distance, typ. 4 mm ¹) Hysteresis, typ. Seproducibility Reverse polarity protection Short-circuit protection Yes Status indicator LED III 2.2 mT 2.2 mT 4 mm ¹) 4 mm ¹) 5 0.8 mT 8 0.1 mT ²) Yes Short-circuit protection Yes Status indicator LED	Voltage drop	≤ 2.5 V
Response sensitivity, typ. 2.2 mT Overrun distance, typ. 4 mm ¹) Hysteresis, typ. ≤ 0.8 mT Reproducibility ≤ 0.1 mT ²) Reverse polarity protection Yes Short-circuit protection Yes Status indicator LED Yes	Continuous current I _a	≤ 100 mA
Overrun distance, typ. 4 mm ¹) Hysteresis, typ. ≤ 0.8 mT Reproducibility ≤ 0.1 mT ²) Reverse polarity protection Yes Short-circuit protection Yes Status indicator LED Yes	Protection class	III
Hysteresis, typ. ≤ 0.8 mT Reproducibility ≤ 0.1 mT ²) Reverse polarity protection Yes Short-circuit protection Yes Status indicator LED Yes	Response sensitivity, typ.	2.2 mT
Reproducibility ≤ 0.1 mT ²) Reverse polarity protection Yes Short-circuit protection Yes Status indicator LED Yes	Overrun distance, typ.	4 mm ¹⁾
Reverse polarity protection Yes Short-circuit protection Yes Status indicator LED Yes	Hysteresis, typ.	≤ 0.8 mT
Short-circuit protection Yes Status indicator LED Yes	Reproducibility	\leq 0.1 mT $^{2)}$
Status indicator LED Yes	Reverse polarity protection	Yes
	Short-circuit protection	Yes
Teach-in No	Status indicator LED	Yes
	Teach-in	No

 $^{^{1)}}$ Distance covered by the encoder magnet while the sensor outputs a switching signal.

²⁾ Supply voltage U_B and constant ambient temperature Ta.

Power-up pulse protection Ambient operating temperature Shock and vibration resistance EMC According to EN 60947-5-2 Connection type Connection type Detail Conductor cross section Cable diameter Bending radius Torsion force Torsion cycles Drag chain parameters Drag chain parameters Cable outlet Cable outlet Housing Cable Material Yes -30 °C+80 °C 30 g, 11 ms / 10 55 Hz, 1 mm According to EN 60947-5-2 Cable with connector M12, 3-pin, drag chain use, 0.3 m 0.09 mm² 0.09 mm² 0.2.2 mm With fixed installation > 2 x cable diameter For flexible use > 5 x cable diameter ± 270° / 0.1 m 300,000 Traversing speed max. 3 m/s Acceleration max. 10 m/s² Bending cycles in the drag chain min. 5 million Axial Material		
Shock and vibration resistance EMC According to EN 60947-5-2 Cable with connector M12, 3-pin, drag chain use, 0.3 m Connection type Detail Conductor cross section Cable diameter Bending radius With fixed installation > 2 x cable diameter For flexible use > 5 x cable diameter Torsion force Torsion cycles Drag chain cycles Drag chain parameters Drag chain parameters Cable outlet Material Housing Cable PUR	Power-up pulse protection	Yes
EMC Connection type Connection type Detail Conductor cross section Cable diameter Bending radius Torsion force Torsion cycles Drag chain parameters Drag chain parameters Cable outlet Material According to EN 60947-5-2 Cable with connector M12, 3-pin, drag chain use, 0.3 m 0.09 mm² 0 2.2 mm With fixed installation > 2 x cable diameter For flexible use > 5 x cable diameter ± 270° / 0.1 m 300,000 Traversing speed max. 3 m/s Acceleration max. 10 m/s² Bending cycles in the drag chain min. 5 million Axial Material Housing Cable PUR	Ambient operating temperature	-30 °C +80 °C
Connection type Connection type Detail Conductor cross section Cable diameter Bending radius Viith fixed installation > 2 x cable diameter For flexible use > 5 x cable diameter Torsion cycles Torsion cycles Drag chain cycles Drag chain parameters Traversing speed max. 3 m/s Acceleration max. 10 m/s² Bending cycles in the drag chain min. 5 million Axial Material Housing Plastic PUR	Shock and vibration resistance	30 g, 11 ms / 10 55 Hz, 1 mm
Connection type Detail Conductor cross section Cable diameter Bending radius With fixed installation > 2 x cable diameter For flexible use > 5 x cable diameter For flexible use > 5 x cable diameter Torsion force ± 270° / 0.1 m 300,000 Drag chain cycles Drag chain parameters Traversing speed max. 3 m/s Acceleration max. 10 m/s² Bending cycles in the drag chain min. 5 million Axial Material Housing Plastic Cable PUR	EMC	According to EN 60947-5-2
Conductor cross section Cable diameter Bending radius With fixed installation > 2 x cable diameter For flexible use > 5 x cable diameter Torsion force ± 270° / 0.1 m 300,000 Drag chain parameters Drag chain parameters Traversing speed max. 3 m/s Acceleration max. 10 m/s² Bending cycles in the drag chain min. 5 million Cable outlet Material Housing Plastic PUR	Connection type	Cable with connector M12, 3-pin, drag chain use, 0.3 m
Cable diameter Bending radius With fixed installation > 2 x cable diameter For flexible use > 5 x cable diameter 1	Connection type Detail	
Bending radius With fixed installation > 2 x cable diameter For flexible use > 5 x cable diameter ± 270° / 0.1 m Torsion cycles 300,000 Drag chain parameters Drag chain parameters Traversing speed max. 3 m/s Acceleration max. 10 m/s² Bending cycles in the drag chain min. 5 million Cable outlet Housing Cable Plastic PUR	Conductor cross section	0.09 mm ²
For flexible use > 5 x cable diameter torsion force ± 270° / 0.1 m Torsion cycles 300,000 Drag chain cycles 5,000,000 Traversing speed max. 3 m/s Acceleration max. 10 m/s² Bending cycles in the drag chain min. 5 million Cable outlet Axial Material Housing Cable Plastic PUR	Cable diameter	Ø 2.2 mm
Torsion force ± 270° / 0.1 m Torsion cycles 300,000 Drag chain cycles 5,000,000 Traversing speed max. 3 m/s Acceleration max. 10 m/s² Bending cycles in the drag chain min. 5 million Cable outlet Material Housing Plastic Cable PUR	Bending radius	With fixed installation > 2 x cable diameter
Torsion cycles Drag chain cycles 5,000,000 Drag chain parameters Traversing speed max. 3 m/s Acceleration max. 10 m/s² Bending cycles in the drag chain min. 5 million Cable outlet Material Housing Cable PUR		For flexible use > 5 x cable diameter
Drag chain cycles Drag chain parameters Drag chain parameters Traversing speed max. 3 m/s Acceleration max. 10 m/s² Bending cycles in the drag chain min. 5 million Axial Material Housing Cable PUR	Torsion force	± 270° / 0.1 m
Drag chain parameters Traversing speed max. 3 m/s Acceleration max. 10 m/s² Bending cycles in the drag chain min. 5 million Axial Material Housing Plastic Cable PUR	Torsion cycles	300,000
Acceleration max. 10 m/s² Bending cycles in the drag chain min. 5 million Cable outlet Material Housing Plastic Cable PUR	Drag chain cycles	5,000,000
Bending cycles in the drag chain min. 5 million Cable outlet Material Housing Cable PUR	Drag chain parameters	Traversing speed max. 3 m/s
Cable outlet Axial Material Housing Plastic Cable PUR		Acceleration max. 10 m/s ²
Material Housing Plastic Cable PUR		Bending cycles in the drag chain min. 5 million
Housing Plastic Cable PUR	Cable outlet	Axial
Cable PUR	Material	
	Housing	Plastic
	Cable	PUR
UL File No. NRKH.E181493 & NRKH7.E181493	UL File No.	NRKH.E181493 & NRKH7.E181493

 $^{^{1)}}$ Distance covered by the encoder magnet while the sensor outputs a switching signal. $^{2)}$ Supply voltage U_B and constant ambient temperature Ta.

Safety-related parameters

MTTF _D	2,461 years
DC _{avg}	0 %
T _M (mission time)	20 years

Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓

Classifications

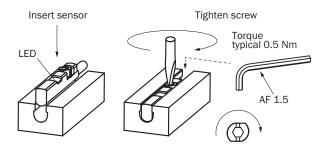
ECLASS 5.0	27270104
ECLASS 5.1.4	27270104
ECLASS 6.0	27270104
ECLASS 6.2	27270104
ECLASS 7.0	27270104
ECLASS 8.0	27270104

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ECLASS 8.1	27270104
ECLASS 9.0	27270104
ECLASS 10.0	27270104
ECLASS 11.0	27270104
ECLASS 12.0	27274301
ETIM 5.0	EC002544
ETIM 6.0	EC002544
ETIM 7.0	EC002544
ETIM 8.0	EC002544
UNSPSC 16.0901	39122230

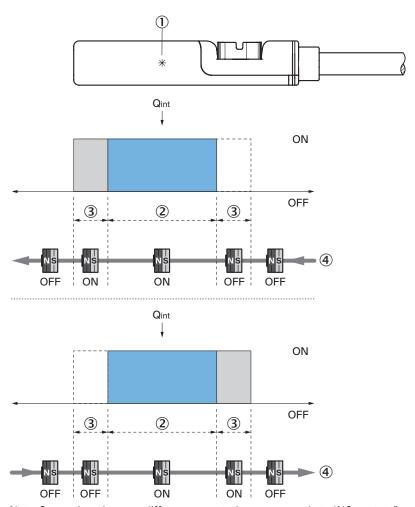
Installation note



Connection diagram Cd-002



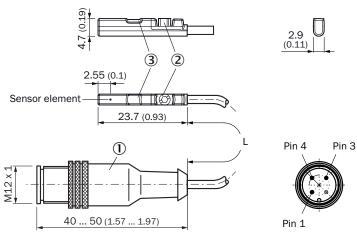
Functional principle Overrun distance



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 M12 male connector



Dimensions in mm (inch)

- ① Connection
- ② Fixing screw SW 1.5
- ③ Display LED

Part no.	Туре	L	Number of cores
1059736	MZC1-2V2PS-KQ0	0.3 m	3
1059754	MZC1-4V3PS-KQ0	0.3 m	3
1077026	MZC1-2V2NS-KQ0	0.3 m	3
1083652	MZC1-2V2PS-KQD	1 m	3

Recommended accessories

Other models and accessories → www.sick.com/MZC1

	Brief description	Туре	part no.			
Mounting sy	flounting systems					
0	Description: Mounting bracket on round body cylinder with piston diameter of 12 mm, ambient temperature min 0 °C max 50 °C Material: Plastic, Aluminum Details: Plastic, Aluminum Packing unit: 1 piece Suitable for: C-slot	BEF-KHZ-RC-12	2077673			
0	Description: Mounting bracket on round body cylinder with piston diameter of 16 mm, ambient temperature min 0 °C max 50 °C Material: Plastic, Aluminum Details: Plastic, Aluminum Packing unit: 1 piece Suitable for: C-slot	BEF-KHZ-RC-16	2077672			
0	Description: Mounting bracket on round body cylinder with piston diameter of 20 mm, ambient temperature min 0 °C max 50 °C Material: Plastic, Aluminum Details: Plastic, Aluminum Packing unit: 1 piece Suitable for: C-slot	BEF-KHZ-RC-20	2077671			
0	Description: Mounting bracket on round body cylinder with piston diameter of 25 mm, ambient temperature min 0 °C max 50 °C Material: Plastic, Aluminum Details: Plastic, Aluminum Packing unit: 1 piece Suitable for: C-slot	BEF-KHZ-RC-25	2077670			
0	Description: Mounting bracket on round body cylinder with piston diameter of 32 mm, ambient temperature min 0 °C max 50 °C Material: Plastic, Aluminum Details: Plastic, Aluminum Packing unit: 1 piece Suitable for: C-slot	BEF-KHZ-RC-32	2077669			
0	Description: Mounting bracket on round body cylinder with piston diameter of 40 mm, ambient temperature min 0 °C max 50 °C Material: Plastic, Aluminum Details: Plastic, Aluminum Packing unit: 1 piece Suitable for: C-slot	BEF-KHZ-RC-40	2077668			
0	Description: Mounting bracket on round body cylinder with piston diameter of 50 mm, ambient temperature min 0 °C max 50 °C Material: Plastic, Aluminum Details: Plastic, Aluminum Packing unit: 1 piece Suitable for: C-slot	BEF-KHZ-RC-50	2077667			
0	Description: Mounting bracket on round body cylinder with piston diameter of 63 mm, ambient temperature min 0 °C max 50 °C Material: Plastic, Aluminum Details: Plastic, Aluminum Packing unit: 1 piece Suitable for: C-slot	BEF-KHZ-RC-63	2077666			
	Description: Mounting bracket on round body cylinder with piston diameter of 1 mm 25 mm, ambient temperature min -30 °C max 80 °C Material: Stainless steel, Aluminum Details: Stainless steel, Aluminum Packing unit: 1 piece Suitable for: C-slot	BEF-KHZ-RC1-25	2077685			
a de la constante de la consta	Description: Mounting bracket on round body cylinder with piston diameter of 1 mm 130 mm, ambient temperature min -30 °C max 80 °C Material: Stainless steel, Aluminum Details: Stainless steel, Aluminum Packing unit: 1 piece Suitable for: C-slot	BEF-KHZ-RC1-130	2077686			
	Description: Mounting bracket for integrated profile cylinder/tie-rod cylinder Material: Zinc diecast	BEF-KHZ-PC1	2076170			
025-11-22 19 4 Subject to evange	Details: Zinc diecast Data sheet Terms supplied: Mounting hardware included without notice	CYLINDER SENSO	DRS SICK			

	Brief description	Туре	part no.		
connectors an	connectors and cables				
	Connection type head A: Female connector, M12, 3-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 0.6 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF2A13- C60UB1XLEAX	2145767		
	 Connection type head A: Female connector, M12, 3-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 3 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A13-030UB1XLEAX	2145769		
	Connection type head A: Female connector, M12, 3-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 1 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF2A13-010UB1XLEAX	2145768		
	 Connection type head A: Female connector, M12, 3-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 0.6 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YG2A13- C60UB1XLEAX	2145770		
>	 Connection type head A: Female connector, M12, 3-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 1 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YG2A13-010UB1XLEAX	2145771		
>	Connection type head A: Female connector, M12, 3-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 3 m, 3-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YG2A13-030UB1XLEAX	2145772		

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."

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