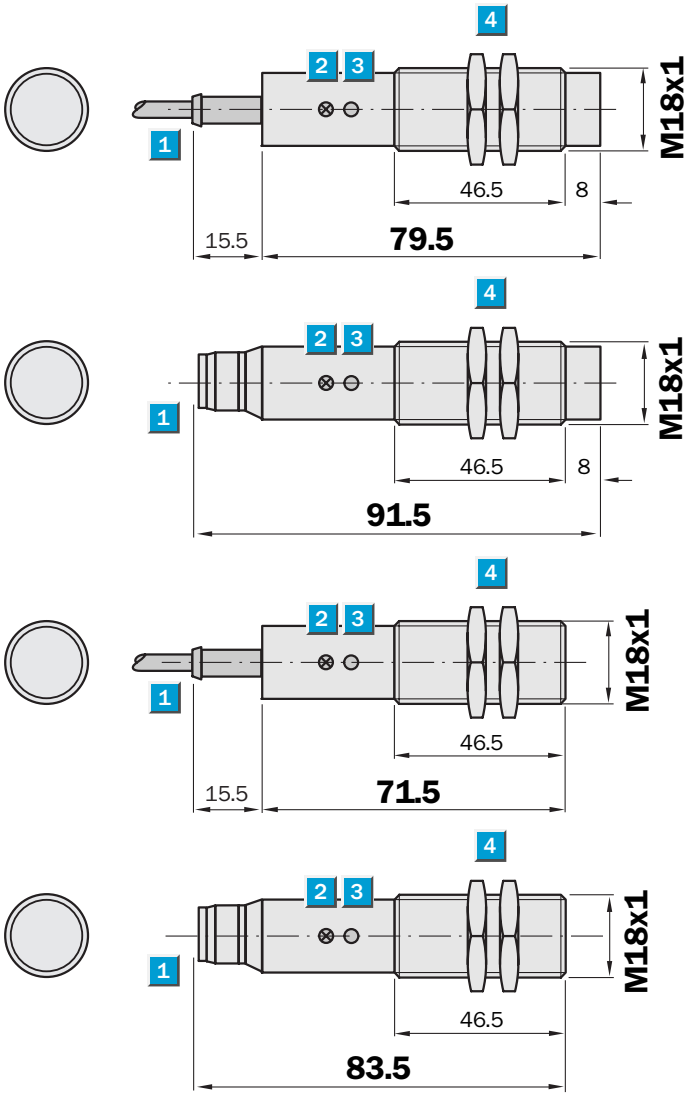
Sensing range 8 / 12 mm

Capacitive sensor

- High EMC immunity
- Short-circuit protection (pulsed)
- Complementary output function
- Enclosure rating IP 67
- LED status indicator

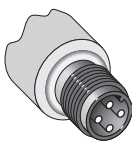
Dimensional drawing



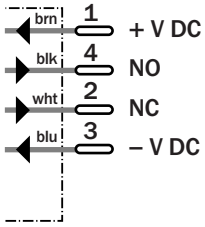
1 Connection
2 Display LED
3 Potentiometer
4 Fastening nuts (2 x); width across 24, Plastic

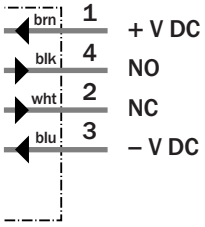
Connection type

CM18-08BNP-KC1	CM18-08BNP-KW1
CM18-08BPP-KC1	CM18-08BPP-KW1
CM18-12NNP-KC1	CM18-12NNP-KW1
CM18-12NPP-KC1	CM18-12NPP-KW1



M12, 4-pin	4 x 0.34 mm²





See chapter Accessories

Connector, M12, 4-pin
Mounting systems

Technical specifications	CM18-	08BNP -KC1	08BNP -KW1	08BPP -KC1	08BPP -KW1	12NNP -KC1	12NNP -KW1	12NPP -KC1	12NPP -KW1
Sensing range S_n	8 mm	■	■	■	■				
	12 mm					■	■	■	■
Electrical configuration	DC 4-wire	■	■	■	■	■	■	■	■
Supply voltage V_s	DC 10 ... 40 V	■	■	■	■	■	■	■	■
Ripple U_{pp}	≤ 10 %[1]	■	■	■	■	■	■	■	■
Voltage drop U_d	≤ 2.5 V[2]	■	■	■	■	■	■	■	■
Power consumption	≤ 10 mA[3]	■	■	■	■	■	■	■	■
Continuous current I_a	≤ 200 mA	■	■	■	■	■	■	■	■
Time delay before availability t_v	≤ 100 ms	■	■	■	■	■	■	■	■
Hysteresis H, of s_r	4 ... 20 %	■	■	■	■	■	■	■	■
Repeatability R	≤ 5 % (U_b and T_a constant)[4]	■	■	■	■	■	■	■	■
Temperature drift, of s_r	± 10 %	■	■	■	■	■	■	■	■
EMC	According to EN 60947-5-2	■	■	■	■	■	■	■	■
Switching output	NPN	■	■			■	■		
	PNP			■	■			■	■
Output function	Complementary	■	■	■	■	■	■	■	■
Installation	Flush	■	■	■	■				
	Non-flush					■	■	■	■
Connection type	Connector, M12, 4-pin	■		■		■		■	
	Cable, PVC, 2 m		■		■		■		■
Enclosure rating	IP 67[5]	■	■	■	■	■	■	■	■
Max. switching frequency	30 Hz	■	■	■	■	■	■	■	■
Dimensions	M18 x 1[6]	■	■	■	■	■	■	■	■
Short-circuit protection	✓[7]	■	■	■	■	■	■	■	■
Reverse polarity protection	✓	■	■	■	■	■	■	■	■
Power-up pulse suppression	✓	■	■	■	■	■	■	■	■
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm	■	■	■	■	■	■	■	■
Ambient temperature operation	-25 °C ... +80 °C	■	■	■	■	■	■	■	■
Housing material	Plastic	■	■	■	■	■	■	■	■
Tightening torque	2.6 Nm	■	■	■	■	■	■	■	■

[1] of U_b
[2] at I_a max
[3] without load
[4] of s_r
[5] according to EN 60529
[6] Thread diameter x pitch (mm)
[7] (pulsed)

Order information	
Type	**Order no.**
CM18-08BNP-KC1	6 021 456
CM18-08BNP-KW1	6 021 455
CM18-08BPP-KC1	6 020 388
CM18-08BPP-KW1	6 020 136
CM18-12NNP-KC1	6 021 458
CM18-12NNP-KW1	6 021 457
CM18-12NPP-KC1	6 020 410
CM18-12NPP-KW1	6 020 389

Sensing range 8 mm

Capacitive sensor

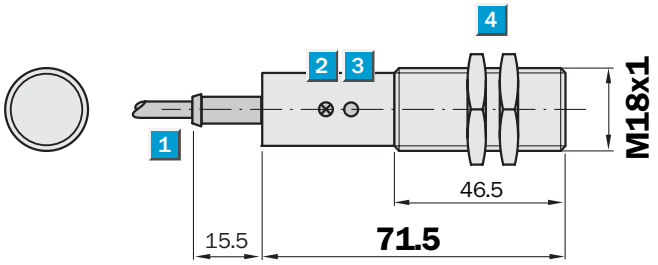
- PTFE housing with M18 x 1 mm
- High EMC immunity
- Short-circuit protection (pulsed)
- Complementary output function
- Enclosure rating IP 67
- LED status indicator

CE

See chapter Accessories

Mounting systems

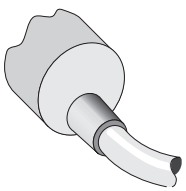
Dimensional drawing



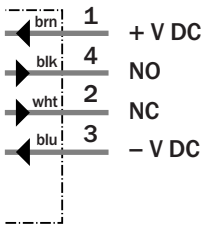
1 Connection
2 Display LED
3 Potentiometer
4 Fastening nuts (2 x); width across 24, PTFE

Connection type

CM18-08BNP-TW0
CM18-08BPP-TW0



4 x 0.34 mm²



Technical specifications	CM18-	08BNP -TW0	08BPP -TW0								
Sensing range S_n	8 mm										
Electrical configuration	DC 4-wire										
Supply voltage V_s	DC 10 ... 40 V										
Ripple U_{pp}	≤ 10 %[1]										
Voltage drop U_d	≤ 2.5 V[2]										
Power consumption	≤ 10 mA[3]										
Continuous current I_a	≤ 200 mA										
Time delay before availability t_v	≤ 100 ms										
Hysteresis H, of s_r	4 ... 20 %										
Repeatability R	≤ 5 % (U_b and T_a constant)[4]										
Temperature drift, of s_r	± 10 %										
EMC	According to EN 60947-5-2										
Switching output	NPN										
	PNP										
Output function	Complementary										
Installation	Flush										
Connection type	Cable, PVC, 2 m										
Enclosure rating	IP 67[5]										
Max. switching frequency	30 Hz										
Dimensions	M18 x 1[6]										
Short-circuit protection	✓[7]										
Reverse polarity protection	✓										
Power-up pulse suppression	✓										
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm										
Ambient temperature operation	-25 °C ... +60 °C										
Housing material	PTFE/teflon										
Tightening torque	2.6 Nm										

[1] of U_b
[2] at I_a max
[3] without load
[4] of s_r
[5] according to EN 60529
[6] Thread diameter x pitch (mm)
[7] (pulsed)

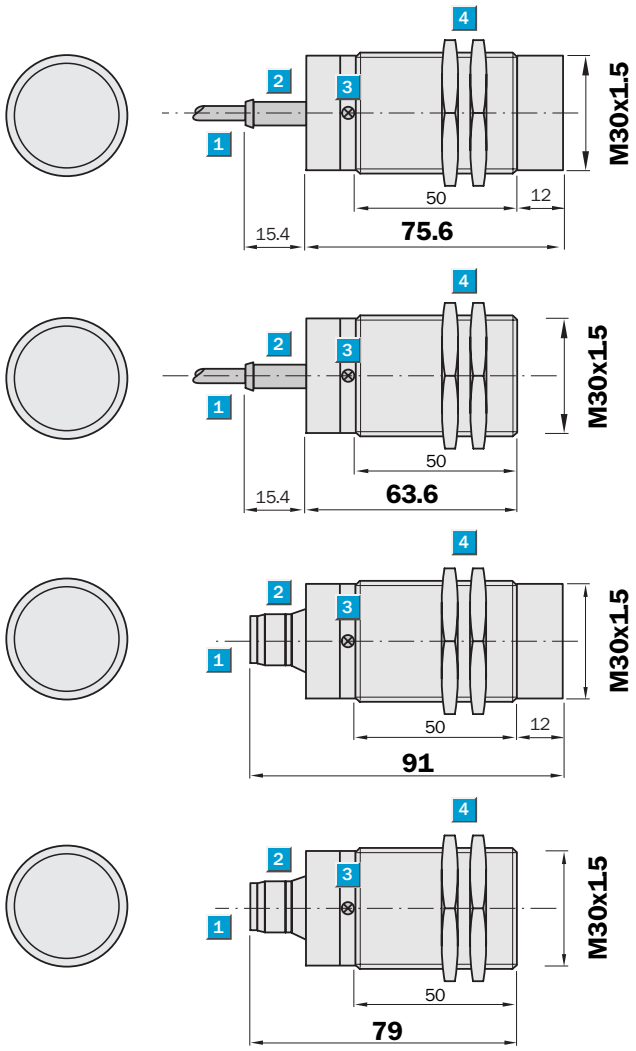
Order information	
Type	**Order no.**
CM18-08BNP-TW0	6 026 194
CM18-08BPP-TW0	6 026 195

Sensing range 16 / 25 mm

Capacitive sensor

- High EMC immunity
- Short-circuit protection (pulsed)
- Complementary output function
- Enclosure rating IP 67
- LED status indicator

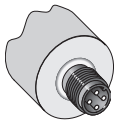
Dimensional drawing



1 Connection
2 Potentiometer
3 Display LED
4 Fastening nuts (2 x); width across 36, Plastic

Connection type

CM30-16BNP-KC1	CM30-16BNP-KW1
CM30-16BPP-KC1	CM30-16BPP-KW1
CM30-25NNP-KC1	CM30-25NNP-KW1
CM30-25NPP-KC1	CM30-25NPP-KW1

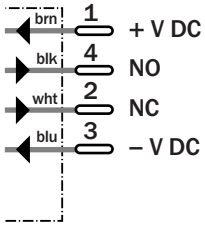


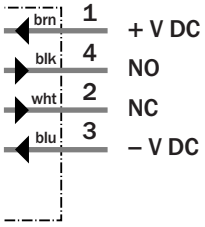
See chapter Accessories

Connector, M12, 4-pin

Mounting systems

M12, 4-pin	4 x 0.34 mm²





Technical specifications	CM30-	16BNP -KC1	16BNP -KW1	16BPP -KC1	16BPP -KW1	25NNP -KC1	25NNP -KW1	25NPP -KC1	25NPP -KW1
Sensing range S_n	16 mm	■	■	■	■				
	25 mm					■	■	■	■
Electrical configuration	DC 4-wire	■	■	■	■	■	■	■	■
Supply voltage V_s	DC 10 ... 40 V	■	■	■	■	■	■	■	■
Ripple U_{pp}	≤ 10 %[1]	■	■	■	■	■	■	■	■
Voltage drop U_d	≤ 2.5 V[2]	■	■	■	■	■	■	■	■
Power consumption	≤ 10 mA[3]	■	■	■	■	■	■	■	■
Continuous current I_a	≤ 200 mA	■	■	■	■	■	■	■	■
Time delay before availability t_v	≤ 100 ms	■	■	■	■	■	■	■	■
Hysteresis H, of s_r	4 ... 20 %	■	■	■	■	■	■	■	■
Repeatability R	≤ 5 % (U_b and T_a constant)[4]	■	■	■	■	■	■	■	■
Temperature drift, of s_r	± 10 %	■	■	■	■	■	■	■	■
EMC	According to EN 60947-5-2	■	■	■	■	■	■	■	■
Switching output	NPN	■	■			■	■		
	PNP			■	■			■	■
Output function	Complementary	■	■	■	■	■	■	■	■
Installation	Flush	■	■	■	■				
	Non-flush					■	■	■	■
Connection type	Connector, M12, 4-pin	■		■		■		■	
	Cable, PVC, 2 m		■		■		■		■
Enclosure rating	IP 67[5]	■	■	■	■	■	■	■	■
Max. switching frequency	50 Hz	■	■	■	■	■	■	■	■
Dimensions	M30 x 1.5[6]	■	■	■	■	■	■	■	■
Short-circuit protection	✓[7]	■	■	■	■	■	■	■	■
Reverse polarity protection	✓	■	■	■	■	■	■	■	■
Power-up pulse suppression	✓	■	■	■	■	■	■	■	■
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm	■	■	■	■	■	■	■	■
Ambient temperature operation	-25 °C ... +80 °C	■	■	■	■	■	■	■	■
Housing material	Plastic	■	■	■	■	■	■	■	■
Tightening torque	7.5 Nm	■	■	■	■	■	■	■	■

[1] of U_b
[2] at I_a max
[3] without load
[4] of s_r
[5] according to EN 60529
[6] Thread diameter x pitch (mm)
[7] (pulsed)

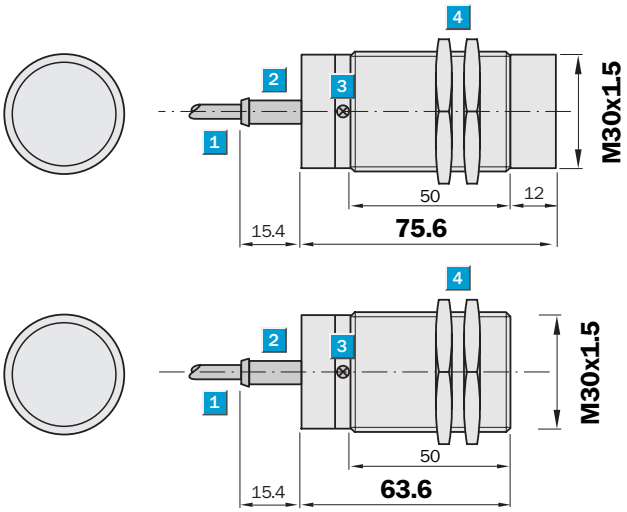
Order information	
Type	**Order no.**
CM30-16BNP-KC1	6 021 460
CM30-16BNP-KW1	6 021 459
CM30-16BPP-KC1	6 020 475
CM30-16BPP-KW1	6 020 473
CM30-25NNP-KC1	6 021 462
CM30-25NNP-KW1	6 021 461
CM30-25NPP-KC1	6 020 477
CM30-25NPP-KW1	6 020 476

Sensing range 16 / 25 mm

Capacitive sensor

- AC 2-wire, 250 V
- High EMC immunity
- Configurable output function
- Enclosure rating IP 67
- LED status indicator

Dimensional drawing

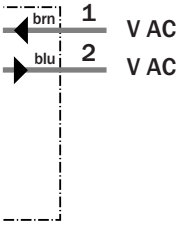


1 Connection
2 Potentiometer
3 Display LED
4 Fastening nuts (2 x); width across 36, Plastic

Connection type

CM30-25NAP-KW1
CM30-16BAP-KW1

2 x 0.5 mm²



See chapter Accessories

Mounting systems

Technical specifications	CM30-	25NAP-KW1	16BAP-KW1								
Sensing range S_n	25 mm	■									
	16 mm		■								
Electrical configuration	AC 2-wire	■	■								
Supply voltage V_s	AC 20 ... 250 V	■	■								
Ripple U_{pp}	≤ 10 %[1]	■	■								
Voltage drop U_d	≤ 10 V[2]	■	■								
Power consumption	≤ 10 mA[3]	■	■								
Continuous current I_a	≤ 500 mA	■	■								
Time delay before availability t_v	≤ 100 ms	■	■								
Hysteresis H, of s_r	4 ... 20 %	■	■								
Repeatability R	≤ 5 % (U_b and T_a constant)[4]	■	■								
Temperature drift, of s_r	± 10 %	■	■								
EMC	According to EN 60947-5-2	■	■								
Output function	Configurable	■	■								
Installation	Non-flush	■									
	Flush		■								
Connection type	Cable, PVC, 2 m	■	■								
Enclosure rating	IP 67[5]	■	■								
Max. switching frequency	10 Hz	■	■								
Dimensions	M30 x 1.5[6]	■	■								
Reverse polarity protection	✓	■	■								
Power-up pulse suppression	✓	■	■								
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm	■	■								
Ambient temperature operation	-25 °C ... +80 °C	■	■								
Housing material	Plastic	■	■								
Tightening torque	7.5 Nm	■	■								

[1] of U_b
[2] at I_a max
[3] without load
[4] of s_r
[5] according to EN 60529
[6] Thread diameter x pitch (mm)

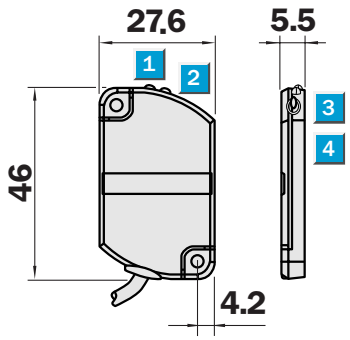
Order information	
Type	**Order no.**
CM30-25NAP-KW1	6 028 413
CM30-16BAP-KW1	6 028 411

Sensing range 10 mm

Capacitive sensor

- Thin profile:
  28 x 46 x 5.5 mm (w x h x d)
- Adjustable sensing range
  1 ... 10 mm, non-flush
- Short circuit and
  reverse polarity protection
- Teach-in via button or COM-input

Dimensional drawing

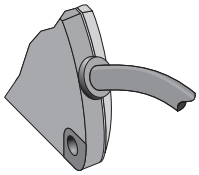


1 Indicator LED green
2 Indicator LED yellow
3 Teach button
4 Sensing area

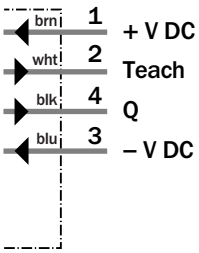
CE

Connection type

CQ28-10NNP-KW1
CQ28-10NPP-KW1



4 x 0.14 mm²



Technical specifications	CQ28-	10NNP -KW1	10NPP -KW1
Sensing range S_n	10 mm		
Electrical configuration	DC 4-wire		
Supply voltage V_s	DC 10 ... 30 V		
Ripple U_{pp}	≤ 10 %		
Voltage drop U_d	≤ 2.5 V[1]		
Power consumption	≤ 12 mA[2]		
Continuous current I_a	≤ 200 mA		
Time delay before availability t_v	300 ms		
Hysteresis H, of s_r	Depending on teach adjustment		
Repeatability R	≤ 5 % (U_b and T_a constant)[3]		
Temperature drift, of s_r	± 10 %		
EMC	According to EN 60947-5-2		
Switching output	NPN		
	PNP		
Output function	Programmable		
Installation	Non-flush		
Connection type	Cable, PVC, 2 m		
Enclosure rating	IP 68[4]		
Max. switching frequency	10 Hz		
Dimensions	28 x 46 x 5.5 mm[5]		
Short-circuit protection	✓		
Reverse polarity protection	✓		
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm		
Ambient temperature operation	-20 °C ... +85 °C		
Ambient temperature storage	-40 °C ... +85 °C		
Housing material	Plastic, PBT		

[1] at I_a max
[2] without load
[3] of s_r
[4] according to EN 60529
[5] Width x height x depth

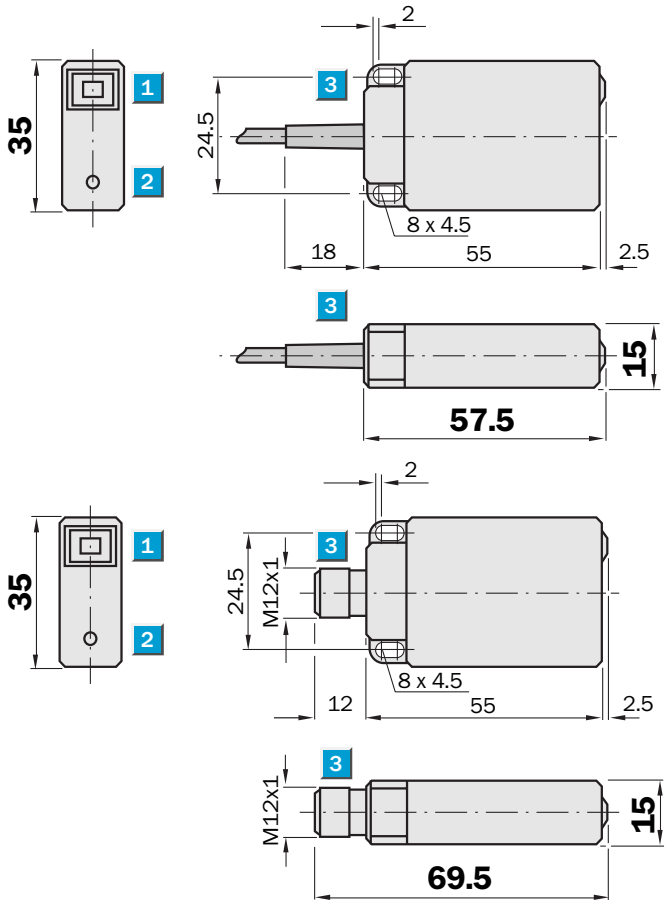
Order information	
Type	**Order no.**
CQ28-10NNP-KW1	6 030 133
CQ28-10NPP-KW1	6 030 132

Sensing range 25 mm

Capacitive sensor

- High EMC immunity
- Short-circuit protection (pulsed)
- Complementary output function
- Enclosure rating IP 67
- LED status indicator

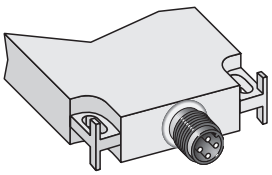
Dimensional drawing



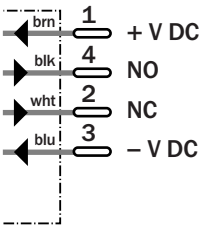
1 Display LED
2 Potentiometer
3 Connection

Connection type

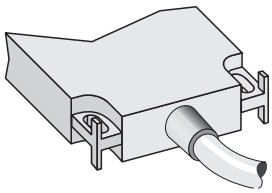
CQ35-25NNP-KC1
CQ35-25NPP-KC1



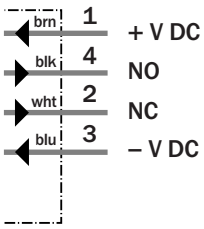
M12, 4-pin



CQ35-25NNP-KW1
CQ35-25NPP-KW1



4 x 0.34 mm²



See chapter Accessories
Connector, M12, 4-pin

Technical specifications	CQ35-	25NNP -KC1	25NNP -KW1	25NPP -KC1	25NPP -KW1						
Sensing range S_n	25 mm	■	■	■	■						
Electrical configuration	DC 4-wire	■	■	■	■						
Supply voltage V_s	DC 10 ... 40 V	■	■	■	■						
Ripple U_{pp}	≤ 10 %[1]	■	■	■	■						
Voltage drop U_d	≤ 2.5 V[2]	■	■	■	■						
Power consumption	≤ 10 mA[3]	■	■	■	■						
Continuous current I_a	≤ 200 mA	■	■	■	■						
Time delay before availability t_v	≤ 100 ms	■	■	■	■						
Hysteresis H, of s_r	4 ... 20 %	■	■	■	■						
Repeatability R	≤ 5 % (U_b and T_a constant)[4]	■	■	■	■						
Temperature drift, of s_r	± 10 %	■	■	■	■						
EMC	According to EN 60947-5-2	■	■	■	■						
Switching output	NPN	■	■								
	PNP			■	■						
Output function	Complementary	■	■	■	■						
Installation	Non-flush	■	■	■	■						
Connection type	Connector, M12, 4-pin	■		■							
	Cable, PVC, 2 m		■		■						
Enclosure rating	IP 67[5]	■	■	■	■						
Max. switching frequency	50 Hz	■	■	■	■						
Dimensions	35 x 15 x 69.5 mm[6]	■		■							
	35 x 15 x 57.5 mm[6]		■		■						
Short-circuit protection	✓[7]	■	■	■	■						
Reverse polarity protection	✓	■	■	■	■						
Power-up pulse suppression	✓	■	■	■	■						
Shock/vibration stress	30 g, 11 ms/10 ... 55 Hz, 1 mm	■	■	■	■						
Ambient temperature operation	-25 °C ... +75 °C	■	■	■	■						
Housing material	Plastic	■	■	■	■						

[1] of U_b
[2] at I_a max
[3] without load
[4] of s_r
[5] according to EN 60529
[6] Width x height x depth
[7] (pulsed)

Order information

Type	Order no.
CQ35-25NNP-KC1	6 021 464
CQ35-25NNP-KW1	6 021 463
CQ35-25NPP-KC1	6 020 479
CQ35-25NPP-KW1	6 020 478