



Optical Level Sensors



measuring
•
monitoring
•
analysing

OPT



- Repeatability: $\pm 1\text{mm}$
- p_{max} : 10 bar; t_{max} : 80 °C
- Connection:
R 1/2", M 14
- Material (sensor):
Polysulfone
Material (housing):
Polypropylene or
stainless steel



N

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Description

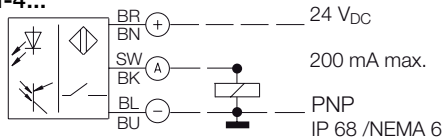
The optical level sensors of model OPT have been developed for monitoring **transparent** liquids. Due to the very small dimensions, very slight switching hysteresis and high repeatability, the instruments are also suited for service in small vessels. The optical sensor is situated in a robust housing. It comprises a plastic hollow hemisphere, in which the infrared diode is fitted as a transmitter and a semiconductor as a receiver. When the sensor is not wetted by liquid, the infrared light is reflected fully from the surface of the hemisphere to the receiver. As soon as the sensor is covered with liquid, the refractive index on the boundary layer changes and most of the light escapes into the liquid. Less light then reaches the receiver, which allows switching to take place. The level probe should not be fitted with the sensor pointing downwards, as errors can occur due to drops of liquid sticking to it.

Applications

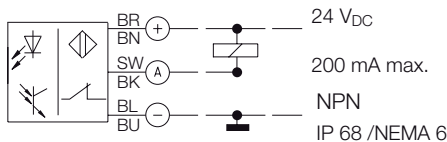
- Motor vehicle industry
- Leakage protection
- Medical technology
- Drinks vending machines

Electrical connection diagram

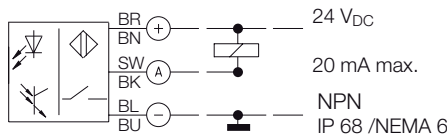
OPT-4...



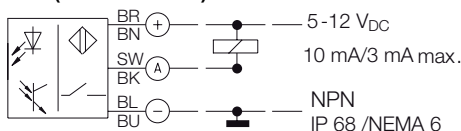
OPT-5...



OPT-6...



OPT-0... (OEM version)



Order Details (Example: OPT-0 1 10)

Model	Version	Housing material	Connection male thread
OPT-	0 = 5-12 V _{DC} , NPN, OEM (without CE)	1 = Polypropylene 2 = stainless steel	10 = M14 with nut
	4 = 24 V _{DC} ±15%, PNP		22 = R _{1/2}
	5 = 24 V _{DC} ±15%, NPN		N4 = 1/2" NPT
	6 = 24 V _{DC} ±15%, NPN		
MSR-010	Contact protecting relay for OPT-4 and OPT-5, 230 V _{AC}		

Technical Details

Operating temperature: -20 ... +80 °C
 Operating pressure: max. 10 bar
 Protection: IP 68
Material
 Housing: OPT_1__: Polypropylene
 OPT_2__: stainless steel (1.4301)
 Polysulfone
 Sensor: Polysulfone
 Cable: Polyurethane 1,5 m, Ø 4,5 mm
 O-ring: OPT_2__: FPM
 Hexagon nut: OPT_10: Polyamide
 Flat gasket: OPT_10: FPM
Electrical data
 Repeatability: ±1 mm
 Hysteresis: ±1 mm
 Response time: 50 µs (with rising level)
 1 s (with falling level)
 depending on viscosity

OPT-0 (OEM-version, without CE-marking)

Power supply: 5 - 12 V_{DC} ± 5%
 Current input: 15 mA typ. at 5 V_{DC} (without load)
 Output: NPN, open collector, function N/O contact (WET on)
 Current output: 10 mA max. at 25 °C
 3 mA max. at 80 °C

OPT-4

Power supply: 24 V_{DC} ± 15%
 Current input: 17 mA typ. at 24 V_{DC} (without load)
 Output: PNP, open collector, function N/O contact (WET on)
 Current output: 200 mA, short-circuit-proof

OPT-5

Power supply: 24 V_{DC} ± 15%
 Current input: 17 mA typ. at 24 V_{DC} (without load)
 Output: NPN, open collector, function N/C contact (DRY on)
 Current output: 200 mA, short-circuit-proof

OPT-6

Power supply: 24 V_{DC} ± 15%
 Current input: 17 mA typ. at 24 V_{DC} (without load)
 Output: NPN, open collector, function N/O contact (WET on)
 Current output: 20 mA max, not short-circuit-proof

Dimensions

