



Capacitive Sensors

Capacitive sensors for analog distance measurement

Capacitive sensors for analog distance measurement have a measuring range of 0 to 8 mm. Their current output signal is 4 to 20 mA. They are installed flush and are available in an M18 housing.

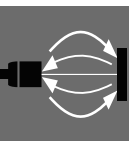


Capacitive Sensor for Analog Distance Measurement

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803



Basic information and definitions can be found on **page 934**.



Capacitive Sensor for Analog Distance Measurement

The capacitive analog sensor detects objects without contact, so that the detected object is not worn down mechanically. Object color and surface properties do not influence its measurement results.

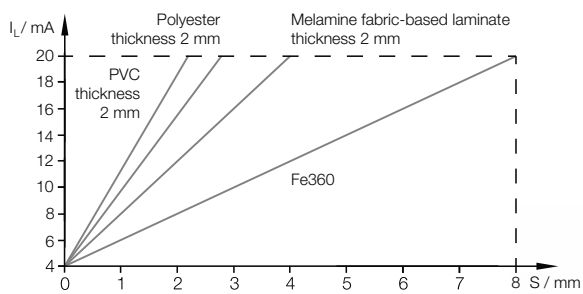
Technical details

- Adjustable measuring range of 0...8 mm
- Flush installation
- Output signal, current 4...20 mA
- Housing M8

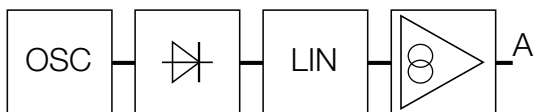
Function

The capacitive distance sensor measures objects that are in its response range without contact. As soon as the object enters it, the electrical field changes its sensing surface and, with it, the output current. In this way, material composition, size and distance of the object to the sensing surface can be determined.

The output signal (4...20 mA) can be adapted to the material using the potentiometer (LED lights green). It is evaluated directly on the analog output of the controller.



A further benefit: A flashing LED signals to the user an excessively high-impedance load.

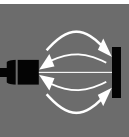


Capacitive Sensor for Analog Distance Measurement

Standard sensor, cylinder design, DC 3-wire, M18x1



Size	M18x1	
Mounting type	Flush	
Measuring range	0...8 mm	
Output current	4...20 mA	
PNP/NPN and NO/NC user selectable	Ordering code	BCW0001
	Part number	BCW M18B4M1-ICM80C-DV02
Supply voltage U_s	12...35 V DC	
Rated insulation voltage U_i	75 V DC	
No-load supply current I_0 max.	< 17 mA	
Polarity reversal protected/transposition protected/short-circuit protected	Yes/Yes/Yes, with load monitoring	
Ambient temperature T_a	-10...+55 °C	
Switching frequency f	100 Hz (3 dB limit frequency)	
Supply voltage/output function indicator	Green LED/Red LED	
Degree of protection as per IEC 60529	IP 67	
Material	Housing	Stainless steel
	Sensing surface	PBT
Connection	2 m PVC cable, 3 x 0.25 mm ²	



Capacitive Sensors

Capacitive Sensors for Object Detection

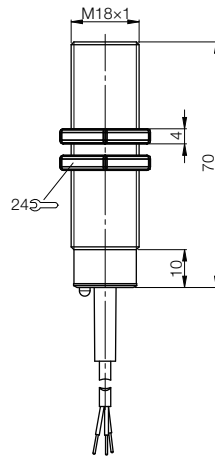
Capacitive Sensors for Level Detection

Capacitive Sensors with Special Properties

Capacitive Sensors for Analog Distance Measurement

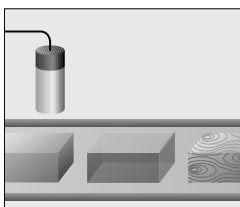
Cylinder Designs

Accessories for Capacitive Sensors

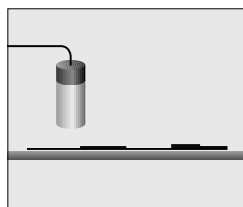


Applications

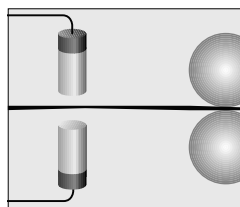
The capacitive analog sensor makes linear evaluation of a position possible for the first time; as soon as an object is located within the sensor's measuring range, a precise output current is produced. The uses shown represent only a fraction of the multifaceted application options provided by the capacitive analog sensor.



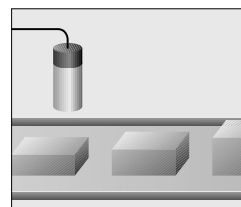
Material selection



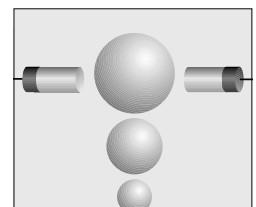
Measuring nonmetallic coating thicknesses



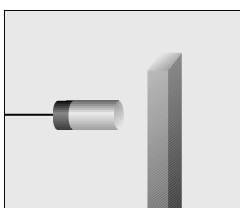
Product thickness monitoring



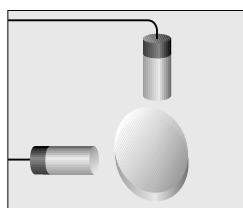
Height measurement



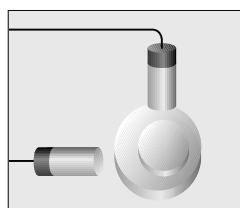
Determining diameters



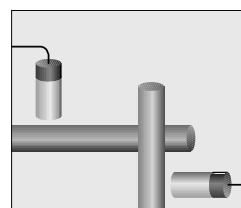
Static/Dynamic movement



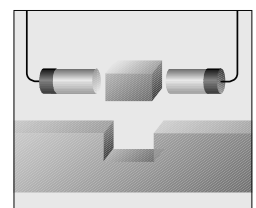
Registering radial runout



Concentricity and eccentricity



Axial and radial concentricity deviation



Monitoring fit