

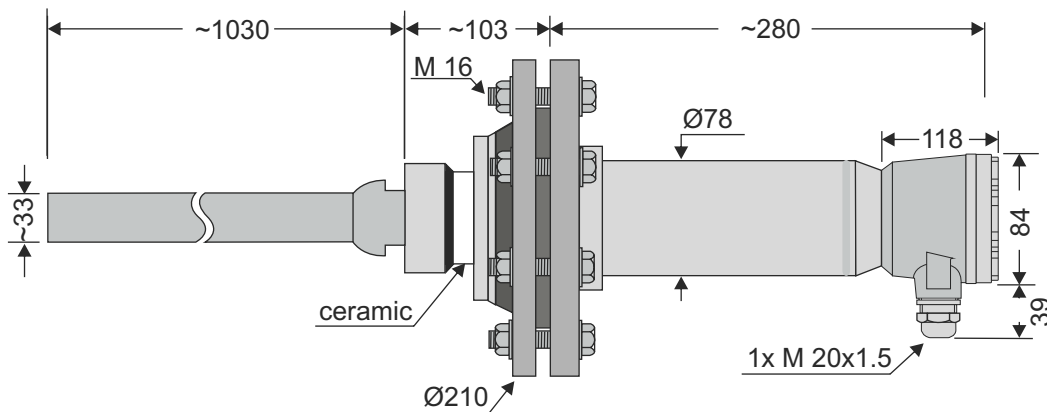
Compact level limit value switch

Characteristics

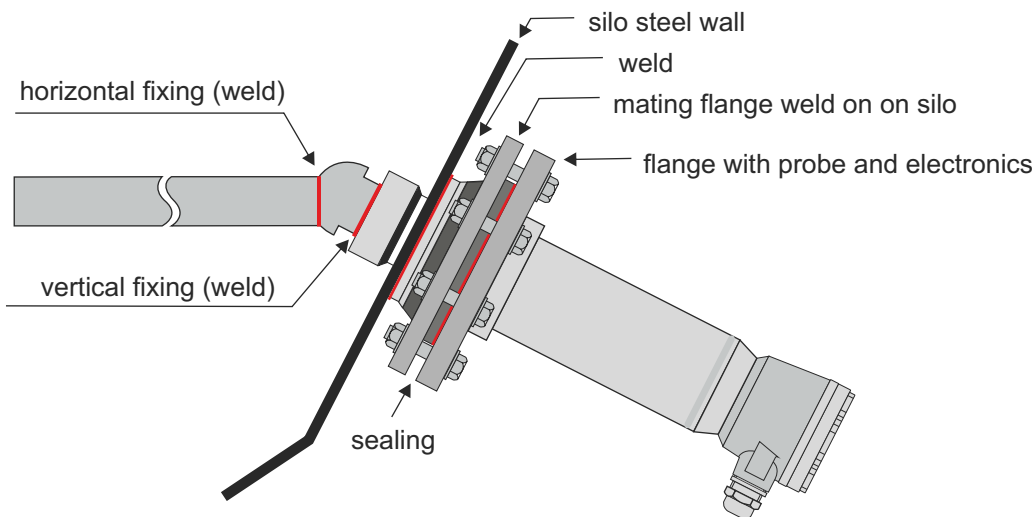


Measurement: capacitive
 Medium: bulk goods
 Dielectric constant: >2,5
 Output: potential free change over contact
 Process connection: DIN flange DN100
 Protection: degree IP 65
 Carrier for probe: Pythagoras ceramic
 Probe (tube): steel zinc plated
 System pressure: 10 bar maximum
 Voltage supply: 21...250 V AC/DC

Dimensions



Mounting



Applications

Usable for level limit detection in silos with bulk goods. The probe is nearly maintenance free, has no wear and it's very easy to mount it on steel silos and steel hoppers. With a modified mounting it is possible for use in eg silos made of concrete, too (counter electrode with grating).



Ordering code

F	G	X	X	X	X	X	X	-	X	X	X
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Measuring element:	capacitive	0
Switching range:	0...0,5 m	0
Output:	1 potential free changeover contact	0
Supply:	21...250 V AC/DC	0
Process connection:	DIN flange DN100	0
Other / accessories:	customized model	0

Technical data

Input

Measurement: capacitive
 Medium: sand, glass aggregate, gravel, moulding, sand, lime, ore (crushed), plaster, aluminium, shavings, cement, grain, pumice, flour, kaolin, sugar beet chips, fodder and similar bulk solids
 Initial capacitance: to approx. 400 pF adjustable
 Dielectric constant: $\epsilon_r > 2,5$
 Measuring frequency: approx. 770 kHz for short probes up to 4 m approx. 450 kHz for long probes
 Switching delay: approx. 0,5 s

Output

Relay: 1 change-over contact
 250 VAC / 4 A / 1000 VA / 500 kHz ($\cos\phi = 0,7$)
 100 VDC / 4 A / 100 W
 Operating life: $> 10^5$ switchings at maximum contact load
 Switching delay: additional 1,5 s
 Status indication: LED red

Ambient conditions

Operating temperature: -20 °C ... +400 °C (inside silo)
 Ambient temperature: -20...+60°C (electronics)
 Storing temperature: -40 °C ... +85 °C

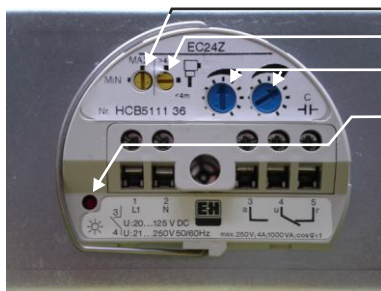
Power supply

Supply voltage: 20...125 VDC (in hazardous area)
 20...200 VDC (in non hazardous area)
 21...250 VAC, 50/60 Hz
 Current consumption: 5 mA maximal (eff.)
 Peak inrush current: 200 mA maximum, 5 ms maximum
 Pulse current: 50 mA maximum, 5 ms maximum
 Pulse frequency: approx. 1,5 s

Mechanics

Enclosure electronics:
 Material: diecast aluminium
 Probe: steel tube 1", zinc plated, 1000 mm
 Carrier: Pythagoras ceramic (Ø65x283 mm)
 Angle for probe: 90...180° (adjustable)
 Process connection:
 Standard: Flange: DN100/114 DIN 2633 C22.8 with 8 screws M16x60 and sealing
 Mating flange: DN100 DIN2527 RST37.2 (to weld on on silo wall)
 Option: customized
 Range of pressure: probe: PN10 / flange: PN16
 Protection: degree IP 65
 Connection: up to 2,5 mm², via cable entry 1x M20x1,5
 Weight: approx. 20 kg

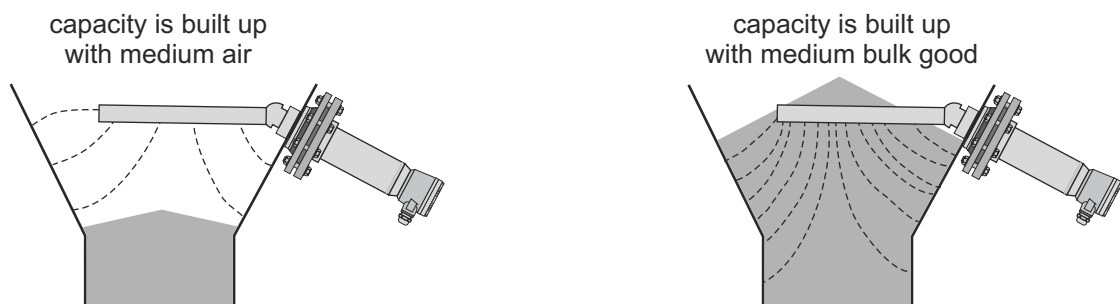
Adjustment



- rotary switch for fail-safe mode
- rotary switch for probe length
- adjusting elements for capacitance, fine and coarse
- LED to indicate switching mode

Principle of function

Probe (tube) and silo wall are the two electrodes of a capacitor which has a given capacity with medium air. When bulk good with a higher dielectric constant substitutes the air, the capacity of the capacitor raises and therefore the charging time raises, too. The electronics evaluates the changing of charging time and when it's reaching the limit value the relay point switches.



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