



Capacitive Level Monitors for Liquids



measuring
•
monitoring
•
analysing

NCW



- Probe length up to 4000 mm
- p_{max} : 30 bar; t_{max} : 90/125 °C
- Mechanical connection:
G 1 male, G 2 male (PVDF version),
thread adapter
- Contact: max. 250 V_{AC}, 1 A
- Four designs for different
applications



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N1



Description

The KOBOLD capacitive level indicators type NCW serve to monitor liquid levels in tanks. They consist of a measuring probe and a connecting head with a plug-in evaluation module. Depending on the operating conditions, different probes are available:

- single probe for standard applications
- double probe with PVDF connection for non metallic tanks and at the same time aggressive medias
- single probe with external reference tube for non metallic tanks or media with very low dielectric constant and
- single probe with a split connecting head for liquid temperatures of up to 125 °C.

The devices do not have any mechanically moving parts and therefore hardly any mechanical wear. The plug-in evaluation modules can be changed easily so that the devices are really easy to maintain.

Working Principle

The measuring system is based on the capacitive measuring method. The measuring probe and the tank wall or the second electrode respectively form the plates of a capacitor, the medium in the tank is the dielectric fluid. The capacity depends on the medium. It is low if the measuring probe is not covered (empty tank) and it increases when the medium touches the measuring probe. This change is detected by the plug-in evaluation module and is being given out as a limit value signal.

Fields of Application

- Water or waterlike liquids
- Liquid food
- Chemical and aggressive liquids
- Oil
- Pharmaceutical liquids

Technical Details

Measuring principle: capacitive
 Probe length: 265... 4000 mm
 (shorter versions on request)

Medium temperature: max. 90 °C,
 up to max. 125 °C
 for model NCW-H

Ambient temperature: -10... +60 °C

Max. pressure: 30 bar at 20 °C
 10 bar at 90 °C

Media DK-value: $\epsilon_r = \text{min. } 1.5$

Materials

Housing: Polycarbonate

Connection: stainless steel 1.4305
 (models NCW-N, NCW-H, NCW-T)
 PVDF (model NCW-S)

Probe: NCW-N and NCW-H: stainless steel with PTFE coating
 NCW-S: PVDF coating
 NCW-T: stainless steel probe 1.4305 with internal sensor (st. steel with PTFE coating)

Mechanical connection: NCW-N, NCW-H, NCW-T: G 1 male
 NCW-S: G 2 male

Adapter: NCW-N, NCW-H, NCW-T:
 thread G 1 ¼ and G 1 ½
 weld-in sleeve (not for NCW-S)
 external Ø 40 mm

Power supply: 18... 36 V_{DC}, 24 V_{AC}, 110 V_{AC},
 230 V_{AC}, 50/60 Hz

Power consumption: max. 1 VA

Electr. connection: via 1 (2) cable gland M20x1,5

Contacts: relais output

Electr. switching values: max. 250 V_{AC}, 1 A

Protection: IP 65

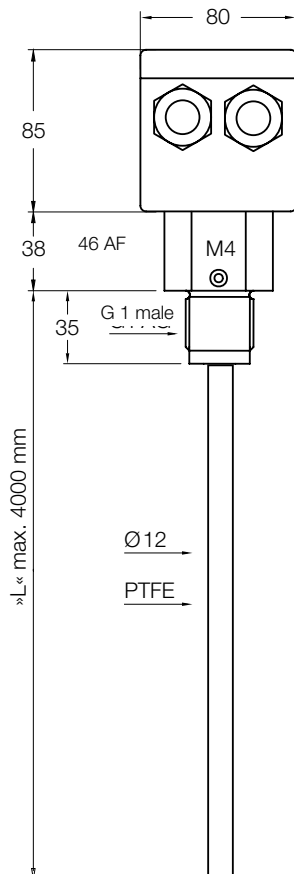
Order Details (Example: NCW-N 1 2G6 0 0)

Version	Probe length*	Mechanical connection	ATEX	Supply
NCW-N (standard) NCW-H (high temperature) NCW-T (with reference pipe)	1 = up to 1 m 2 = up to 2 m 3 = up to 3 m 4 = up to 4 m	2G6 = G 1, stainless steel	0 = without	0 = 230 V _{AC} 4 = 110 V _{AC} 2 = 24 V _{AC} 3 = 18...36 V _{DC}
NCW-S (two probe sensor with PVDF connection)		9G9 = G 2, PVDF		

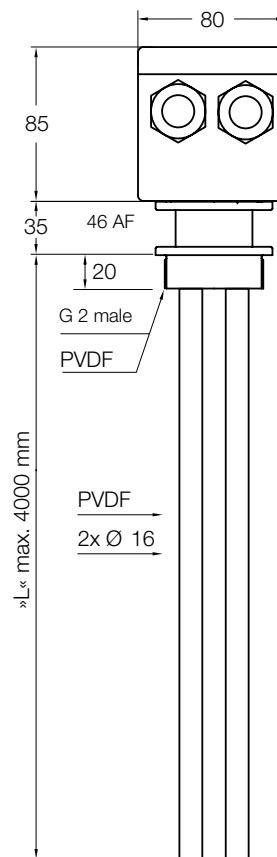
* Please specify specific application length »L« in writing.

Dimensions [mm]

NCW-N

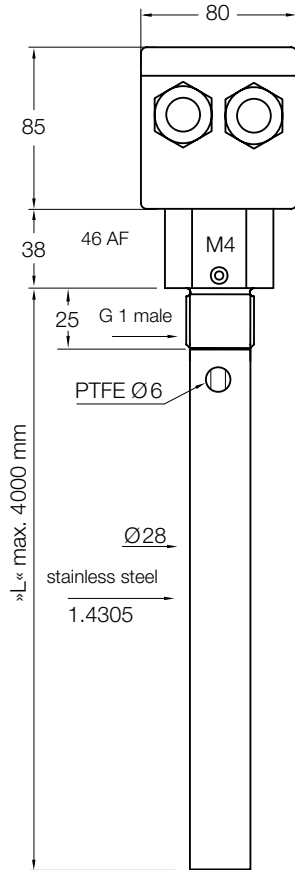


NCW-S

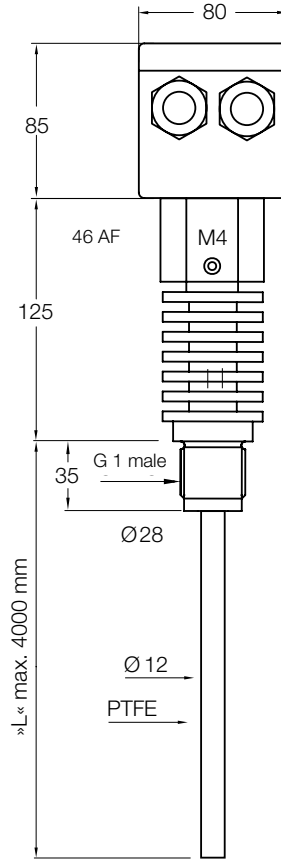


Dimensions [mm]

NCW-T

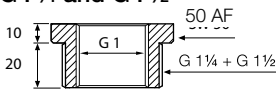


NCW-H

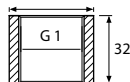


Spare Parts and Accessories

Thread adapter
G 1 ¼ and G 1 ½



Welding sleeve



Spare Parts/Accessories Model NMZ for capacitive level monitors NCW-N, NCW-T, NCW-H

Model	Design	Adapter type	Specials
NMZ	A = installation adapter (only for NCW-N, NCW-T, NCW-H)	G7 = stainless steel thread adapter for G 1¼ G8 = stainless steel thread adapter for G 1½ S6 = st. steel welding sleeve, external Ø 40 m	0 = without Y = version according to description