M-Zert
Zertifiziertes QM-System
DIN EN ISO 9001
Zertifikat-Nr. 01017

Capacitive Level Meter for Liquids

KOBOLD

measuring • monitoring • analysing

NMC

- Probe lengths up to 4000 mm
- Measuring error: < 1.5 % of probe length
- p_{max}: -1 ... +30 bar; t_{max}: -20 ... +90 °C / -20 ... +200 °C
- Mech. connection: G 1 male, G 2 male (PVDF version), thread adapter
- Level indicator in percent, 4-20 mA analogue output
- Four devices for various applications
- For ATEX applications

N2

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Description

The KOBOLD capacitive level indicators type NMC serve to measure 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 module can de 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. The more the medium touches the measuring probe, the higher the capacity. This change is detected by the plug-in evaluation module and transformed in a percentage display or a 4 -20 mA signal.

Fields of application

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

Technical Data

Measuring principle:	capacitive (for liquids up to 1000 pF)
Probe length:	265...4000 mm (shorter versions on request)
Measuring error:	<1,5 % of probe length
Temperature of medium:	-20 ... +90 °C, -20 ... +200 °C for Model NMC-H
Ambient temperature:	-10 ... +60 °C
Max. pressure:	-1 ... +30 bar
Media DC-value:	ε_r = min. 1.5
Materials:	Housing: Polycarbonate
	Connection: stainless steel 1.4305 (model NMC-N, NMC-H, NMC-T
	PVDF (model NMC-S)
	Probe: stainless steel with PTFE coating for model NMC-N and NMC-H
	PVDF-coating for model NMC-S
	stainless steel probe 1.4305 with internal sensor (stainless steel for PTFE coating) for model NMC-T
Process connection:	G 1 male for model NMC-N, NMC-H, NMC-T
	G 2 male for model NMC-S
	Adapter for model NMC-N, NMC-H, NMC-T: thread G 1 ¼, G 1 ½
	welding-in sleeve (not for NMC-S) Ø external 40 mm
Display:	4-line LCD, alphanumeric, Display of % and mA (with one position after the decimal point)
Supply voltage:	10 ... 35 V_{DC} 12...30 V_{DC} for ATEX
Electrical connection:	1 x M20 x 150
Output:	4-20 mA, 2-wire
Protection:	IP 65
ATEX:	Ex II 2/1 GD Ex ia IIC T4 Gb/Ga Ex ia IIIC T85°C Db/Da 20°C<Ta<+60°C

No responsibility taken for errors;
subject to change without prior notice.

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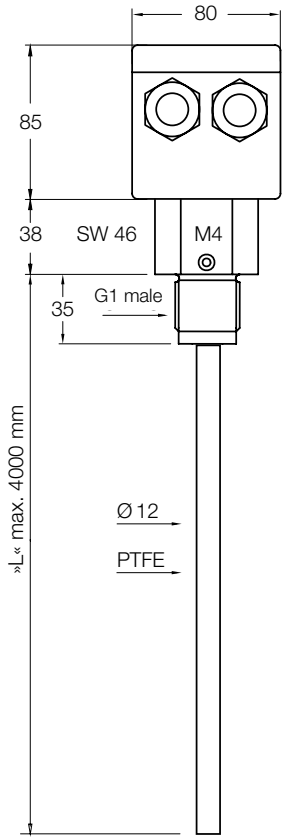
Order Details (Example: **NMC-N 1 2G6 0 3**)

Version	Probe length*	Mechanical connection	ATEX	Supply
NMC-N (Standard) **NMC-H** (High temperature) **NMC-T** (with reference pipe)	**1** = up to 1 metre **2** = up to 2 metre **3** = up to 3 metre	**2G6** = G1, stainless steel	**0** = without **E** = ATEX	**3** = 10 ... 35 V_{DC} (12 ... 30 V_{DC} for ATEX)
NMC-S (two probe sensor with PVDF connection)	**4** = up to 4 metre	**9G9** = G2, PVDF		

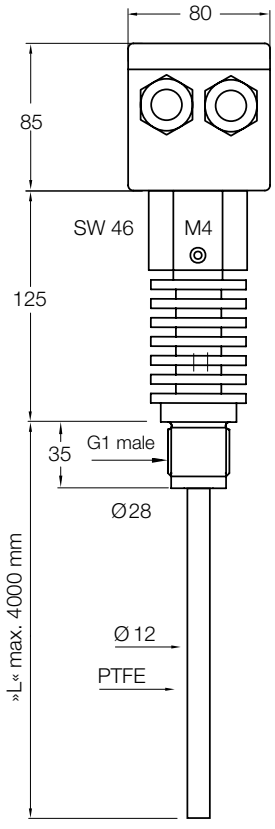
* Please specify specific application length »L« in writing

Dimensions [mm]

NMC-N



NMC-H



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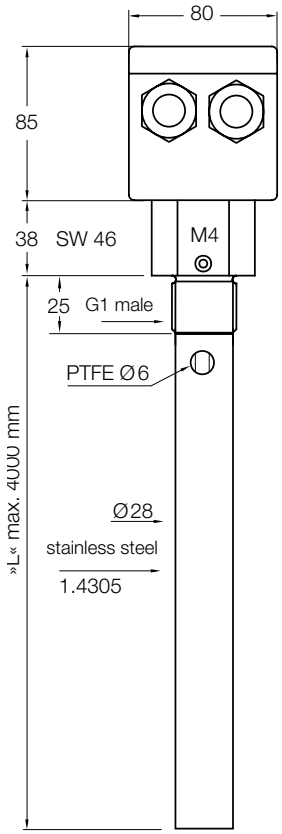
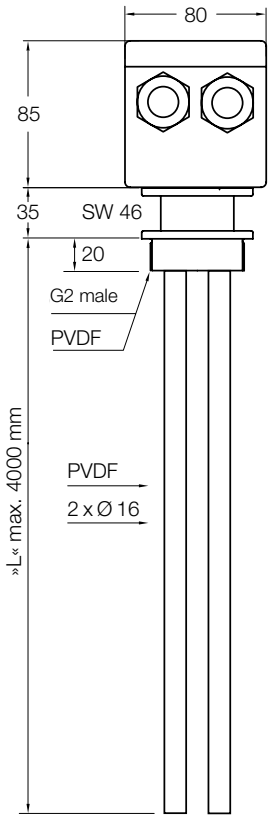
Dimensions [mm]

NMC-T

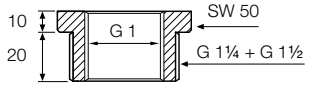


NMC-S

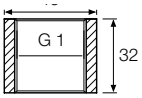


Spare parts and accessories (Dimensions in mm)

Thread adapter for
G 1 ¼ and G 1 ½



Welding sleeve



Spare parts/Accessories Model NMZ for capacitive level monitors NMC-N, NMC-T, NMC-H

Model	Design	Adapter type	Specials
NMZ	**A** = Installation adapter (only for NMC-N, NMC-T, NMC-H)	**G7** = stainless steel thread adapter for G 1 ¼ **G8** = stainless steel thread adapter for G 1 ½ **S6** = stainless steel welding sleeve, external Ø 40 mm	**0** = without **Y** = version according to description

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