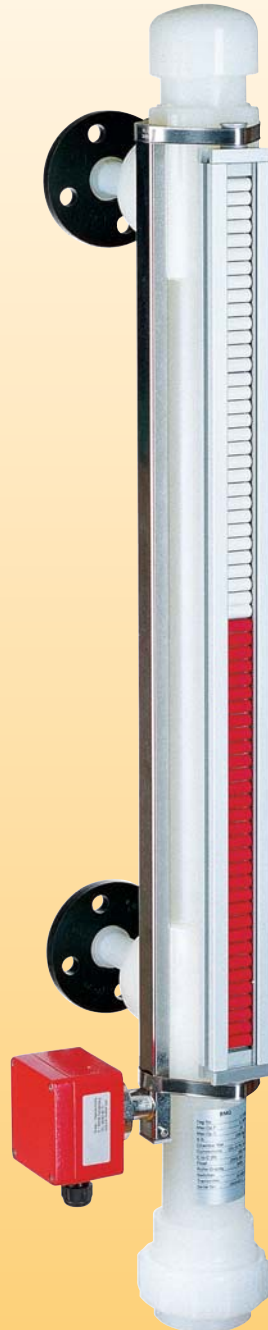




Bypass Level Indicators Plastic Version



measuring
•
monitoring
•
analysing



- Measuring length:
max. 4000 mm
- Pressure: max. 4 bar
- Temperature: max. 80 °C
- Viscosity: max. 200 mm²/s
- Connection:
DIN flange DN 20..50
ANSI flange ¾" ...2"
- Material:
PVC, PP, PVDF
- Resistant to acids
and alkali

N2



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KOBOLD Messring GmbH
Nordring 22-24
D-65719 Hofheim/Ts.
☎ +49(0)6192 299-0
Fax +49(0)6192 23398
E-Mail: info.de@kobold.com
Internet: www.kobold.com

Model:
NBK-15
NBK-16
NBK-17



Description

Kobold plastic level indicators are used for continuous measurement, display and monitoring of liquid levels. The bypass tube is attached sideways to the wall of the vessel.

According to the law of communicating tubes the level in the bypass tube equals the level in the vessel. A float with embedded circular magnets in the bypass tube follows the liquid level and transfers it in a non-contacting manner to a display fitted outside the tube or to a monitoring device. The following indication and monitoring devices are available:

Magnetic roller indicator

As the float passes by, the red/white rollers are rotated in succession by 180° around their own axes. The rollers change from white to red as the level rises and from red to white as the level falls. The level is continuously displayed as a red column, even when the power fails.

Transmitter

To remotely transmit the level a transmitter with a chain of resistors can be mounted outside the bypass tube. A continuous standard signal of 4 to 20 mA is generated by means of a fitted transmitter. This standard signal can then be displayed with analogue or digital indicating devices.

Limit contacts

One or more reed contacts for limit-value acquisition or also for level control can be secured to the bypass tube.

Applications

- Storage tanks
- Aggressive media
- Mixing vessels
- Water tanks

Technical Details

| | |
|------------------------|---|
| Measuring length: | 200 mm to 4000 mm |
| Bypass tube: | Ø 63 x 3 mm |
| Material: | PVC, PP, PVDF |
| Process connection: | flange DN 20-DN 50 ANSI ¾"-2", 150 lbs, RF |
| Operating pressure: | max. 4 bar |
| Operating temperature: | PVC: max. 40 °C PP: max. 60 °C PVDF: max. 80 °C |
| Min. density: | 0.57 kg/dm ³ |
| Seal: | O-ring, EPDM |
| Bypass pipe top: | pipe cap (dished boiler end DIN 2617) |
| Bypass pipe bottom: | threaded connection |
| Overall length: | depending on measuring length, see dimension drawing |
| Installation position: | vertical |

Roller indication:

| | |
|---------------------|--------------------|
| Housing: | aluminium anodized |
| Indication rollers: | PBT |
| Front cover: | Makrolon PC |

Limit contacts (NBK-RPVC, NBK-RSIL):

| | |
|-----------------------|---|
| Contact function: | bistable changeover contact (reed contact) |
| Max. switch capacity: | 230 V _{AC} , 60 VA, 1 A 230 V _{DC} , 30 W, 0.5 A |
| Cable: | 1 m PVC (NBK-RPVC) 1 m silicone (NBK-RSIL) |
| Protection: | IP 65 |

Transmitter type ...W:

| | |
|----------------------------|-------------------------|
| Measuring principle: | Reed contact chain |
| Total resistance: | approx. 3 - 5 Ω |
| Measuring-circuit voltage: | max. 24 V _{DC} |
| Measuring current: | max. 0.1 A |
| Resolution: | 10 mm |
| Protection: | IP 65 |

Transmitter type ...M:

Reed contact chain with 2-wire transmitter

| | |
|----------------------|--|
| Output: | 4 - 20 mA |
| Supply voltage: | 11 to 30 V _{DC} |
| Max. load: | 1000 Ω at U _B = 30 V _{DC} 700 Ω at U _B = 24 V _{DC} 50 Ω at U _B = 12 V _{DC} |
| Ambient temperature: | -20 to +60 °C |
| Resolution: | 10 mm |
| Protection: | IP 65 |



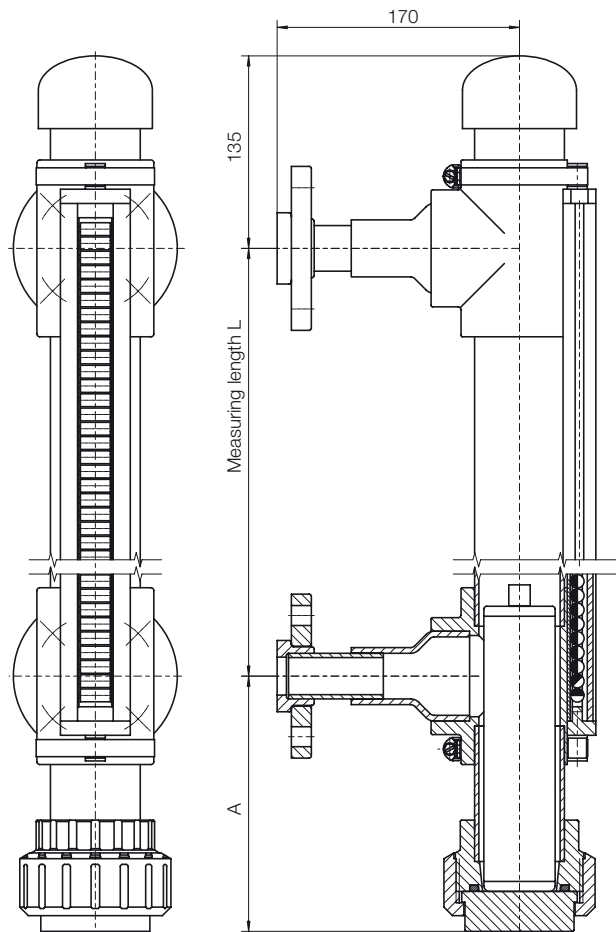
Clearance dimension A [mm]

| Model | Material | Medium densities | | | | |
|--------|----------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | | 0.57 kg/dm ³ | 0.63 kg/dm ³ | 0.74 kg/dm ³ | 0.85 kg/dm ³ | 1.25 kg/dm ³ |
| NBK-15 | PVC | 320 | 270 | 220 | 170 | 170 |

| Model | Material | Medium densities | | | | |
|--------|----------|------------------------|-------------------------|-------------------------|-------------------------|------------------------|
| | | 0.6 kg/dm ³ | 0.68 kg/dm ³ | 0.79 kg/dm ³ | 0.95 kg/dm ³ | 1.3 kg/dm ³ |
| NBK-16 | PP | 320 | 270 | 220 | 170 | 170 |

| Model | Material | Medium densities | | | | |
|--------|----------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | | 0.76 kg/dm ³ | 0.85 kg/dm ³ | 0.95 kg/dm ³ | 1.05 kg/dm ³ | 1.25 kg/dm ³ |
| NBK-17 | PVDF | 320 | 270 | 220 | 170 | 170 |

Dimensions



Order Details (Example: NBK-15 F 20 00 0)

| Model | Material | Connection | Nominal size | Roller indication | Transmitter |
|-----------|----------|--|--------------------|----------------------------------|---|
| NBK-15... | PVC | F = DIN flange A = ANSI flange | 20 = DN 20, 3/4" | 00 = without RP = PBT rollers | 0 = without W = chain of resistores M = chain of resistores with transmitter |
| NBK-16... | PP | | 25 = DN 25, 1" | | |
| NBK-17... | PVDF | | 32 = DN 32, 1 1/4" | | |
| | | | 40 = DN 40, 1 1/2" | | |
| | | | 50 = DN 50, 2" | | |
| NBK-RPVC | | Standard limit contact (bistable changeover contact), 1 m PVC cable | | | |
| NBK-RSIL | | Standard limit contact (bistable changeover contact), 1 m silicone cable | | | |

- Please specify in writing:
- measuring length
 - medium density
 - pressure stage (PN 10, PN 16, PN 25, PN 40)
 - operating pressure (max. 4 bar)
 - operating temperature

Control Devices and Relays

Pulse-Contact Protection Relays · Power Supply · Frequency Transmitter
 KOBOLD Bus System · Compact Chart Recorder · Sandwich AUF-Display
 Isolation Switching Amplifier · Display- and Control-Units · Batching System
 Counter and Flow Indicator · Electro-Mechanical Counters
 Universal Dosing Device · Universal Indicating Unit



KOBOLD Manufacturer for Innovative Instrumentation