



## Over-Head Level Indicators



measuring  
•  
monitoring  
•  
analysing



- Measuring length:  
max. 4000 mm
- Pressure:  
max. PN 16/150 lbs
- Temperature: max. 120°C
- Viscosity: max. 200 mm<sup>2</sup>/s
- Connection:  
DIN flange DN 50/65  
ANSI flange 2"; 2 1/2"
- Material:  
stainless steel 1.4571
- Roller indication
- Limit contacts
- Analogue output



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**Model:**  
NBK-04



## Description

Kobold over-head level indicators are used for continuous measurement, display and monitoring of liquid levels. The float inside the tank is attached by means of a connecting rod to the magnet carrier in the over-head tube. The magnet fitted in the magnet carrier operates, in a non-contacting manner, the display and monitoring devices fitted outside tube.

### 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 in a tank or a mixer 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 or a magnetostrictive transducer 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

Over-head tube:	Ø 60.3 x 2 mm
Tank tube:	Ø 60.3 x 2 mm or 76.1 x 2 mm
Initial measurement:	270 mm from end of tank tube
Material:	st. steel 1.4571
Float:	titanium
Connecting rod:	Stange or tube from titanium or st. steel 1.4571 (depending on medium density and measuring length)
Flange nominal size:	DIN DN 50 or 65, PN 16 ANSI 2" or 2 1/2", 150 lbs
Max. operating pressure:	PN 16
Operating temperature:	-50 °C...+120 °C
Viscosity:	max. 200 mm <sup>2</sup> /s
Measuring length:	min. 600 mm max. 4000 mm
Total length:	see dimension drawing
Min. density:	0.43 kg/dm <sup>3</sup>
Roller indication:	aluminium section with polypropylene rollers
ATEX approval:	see separate description

### Technical Details Additional Features

#### Limit contacts, models NBK-R

Contact operation:	Bi-stable changeover contact
Switching hysteresis:	approximately 15 mm
Switching capacity:	60 W/VA; 230 V <sub>AC/DC</sub> / 1 A
Resistance:	100 mΩ
Medium temperature:	max. 100 °C
Ambient temperature:	max. 75 °C
Connection:	3 m PVC cable
Housing:	Polycarbonate
Protection:	IP 67

#### Reed contact resistor chain

##### model: ...W...

Total resistance:	approx. 5 kΩ
Meas. circuit voltage:	max. 24 V <sub>DC</sub>
Measuring current:	max. 0.1 A
Medium temperature:	max. 200 °C with thermal screening (Option N)
Ambient temperature:	max. 130 °C
Resolution:	10 mm (ML < 2000 mm) 20 mm (ML ≥ 2000 mm)
Housing:	Aluminum pressure-cast
Protection:	IP 65

#### Reed contact resistor chain with 2-wire transmitter

##### model: ...M...

Output:	4 - 20 mA
Auxiliary energy:	16 - 32 V <sub>DC</sub>
Load:	(U <sub>B</sub> - 9 V) / 0.02 A [Ω]
Medium temperature:	max. 120 °C
Ambient temperature:	max. 80 °C
Resolution:	10 mm (ML < 2000 mm) 20 mm (ML ≥ 2000 mm)
Housing:	Aluminum pressure-cast
Protection:	IP 65

#### Magnetostrictive sensor with 4-wire transmitter

##### model: ...T...

Output:	4 - 20 mA
Supply voltage:	24 V <sub>DC</sub> , max. 150 mA
Load:	max. 500 Ω
Max. length:	4000 mm
Medium temperature:	max. 120 °C
Ambient temperature:	max. 80 °C
Accuracy:	± 1 mm
Housing:	Aluminum pressure-cast
Protection:	IP 65

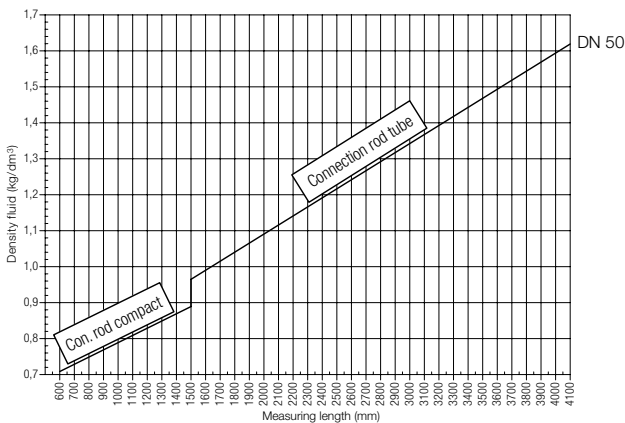


**Options**

- B-\* Display model ADI-B with bar graph, sturdy aluminum housing mounted on bypass tube. For description, see brochure Z2
  - C-\* Display appliance type ADI-K with bar graph and digital display, sturdy aluminium housing, mounted on the bypass tube. For description see brochure Z2
  - D-\* Display model ADI-D with digital display, sturdy aluminum housing mounted on bypass tube. For description, see brochure Z2
  - M1- Measuring scale to 120 °C, aluminum backing, engraved scale
  - M2- Measuring scale to 120 °C, aluminum backing, polyester foil scale
  - P- Radiographic examination DIN 54111 T1
  - Q- Dye penetration test DIN EN 571-1
  - X- Pressure test with water 1.5 x PN
  - Z- 3.1 certificate as per EN 10204
- \* Use only with option T (magnetostrictive measuring sensor) or option M (resistor chain with measuring transducer)

**Density/length of measuring tube diagram\***

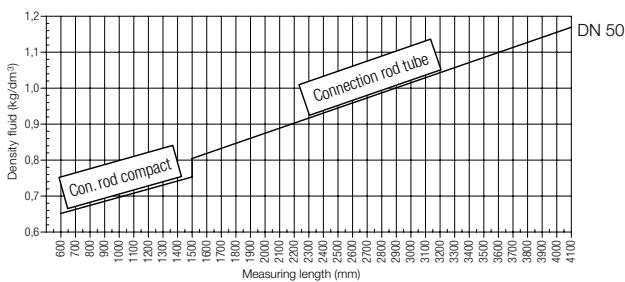
**NBK-04...8, Diagram 8**



**NBK-04...8**

Float: titanium  
 Connection rod: stainless steel, 1.4571  
 Process connection: DIN flange, DN 50  
 ANSI flange, 2"  
 Overhead and tank tube: Ø 60.3 mm  
 Min. medium density: 0.71 kg/dm³ at ML= 600 mm

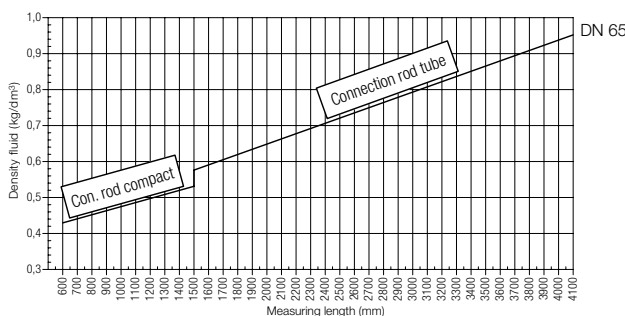
**NBK-04...6, Diagram 6**



**NBK-04...6**

Float: titanium  
 Connection rod: titanium  
 Process connection: DIN flange, DN 50  
 ANSI flange, 2"  
 Overhead and tank tube: Ø 60.3 mm  
 Min. medium density: 0.65 kg/dm³ at ML= 600 mm

**NBK-04...4, Diagram 4**



**NBK-04...4**

Float: titanium  
 Connection rod: stainless steel, 1.4571  
 Process connection: DIN flange, DN 65  
 ANSI flange, 2 1/2"  
 Overhead tube: Ø 60.3 mm  
 Tank tube: Ø 76.1 mm  
 Min. medium density: 0.43 kg/dm³ at ML= 600 mm

\* The floats could be adjusted to the densities above the graph.



**Order Details** (Example: NBK-04 F50 00 0 8)

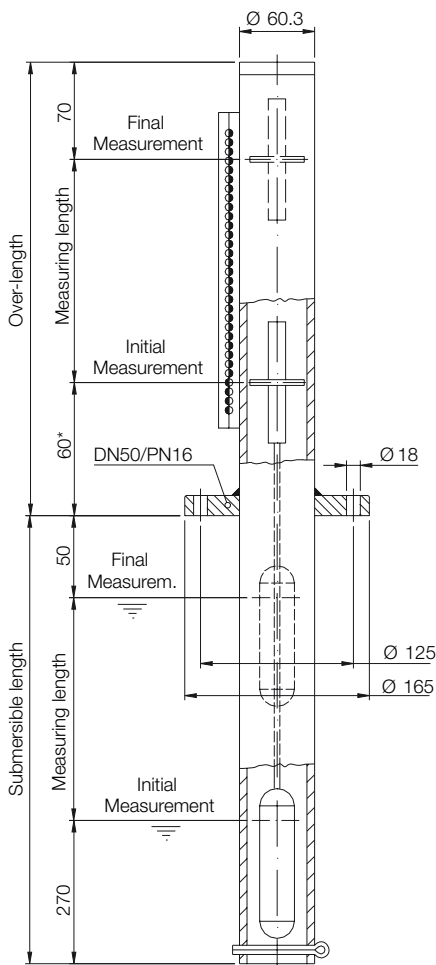
Model	Material	Connection and nominal size	Roller indication	Transmitter	Medium density and meas. length
NBK-04...	Stainless steel 1.4571	F50 = DIN flange DN 50 A50 = ANSI flange 2"	00 = without RP = PP rollers	0 = without W = Reed contact chain M = Reed contact chain with head mounted transmitter T = magnetostrictive	8 = see diagram 8 6 = see diagram 6
		F65 = DIN flange DN 65 A65 = ANSI flange 2 1/2"	00 = without RP = PP rollers		4 = see diagram 4
NBK-R	Standard limit contact (bistable changeover contact)				

Please specify measuring length L, density, pressure and temperature in writing!

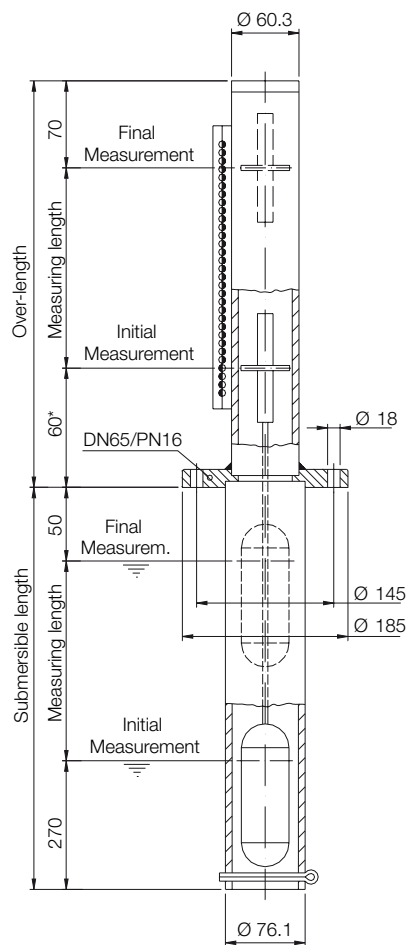
\* in case of using an transmitter: dimension = 80 mm

**Dimensions**

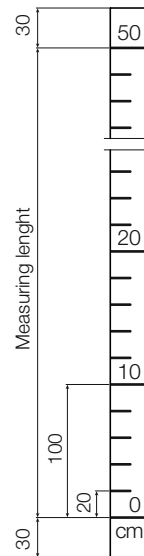
NBK-04...F50...



NBK-04...F65...



**Measuring scale engraved, aluminium backum, Option M1**



Submersible length = measuring length + 320 mm.  
Measuring length = Submersible length - 320 cm