

# Top-mounted level indicator For level measurement in liquid media Model UTN

WIKA data sheet LM 11.02



for further approvals  
see page 3

## Applications

- Chemical, petrochemical, natural gas, offshore industries
- Shipbuilding, machine building
- Power generating equipment, power plants
- Pharmaceutical, food and beverage industries, process water and drinking water treatment

## Special features

- Process- and procedure-specific production
- Operating limits:
  - Operating temperature:  $T = -60 \dots +300 \text{ }^{\circ}\text{C}$
  - Operating pressure:  $P = \text{Vacuum to } 40 \text{ bar}$
- Wide variety of different process connections
- Mounting of level sensors and magnetic switches possible as an option
- Explosion-protected versions

## Description

The model UTN top-mounted level indicator consists of a measuring chamber, a float with guide rod and a magnetic system. Mounting onto the vessel is made via appropriate process connections (flange, thread).

The permanent magnetic system, which is connected to the float via a guide rod, transmits the liquid level measured in the vessel by the float, contact-free, to the magnetic display mounted to the outside of the measuring chamber. In this magnetic display there are red/white plastic rollers or stainless steel flaps with bar magnets fitted at 10 mm intervals. The magnetic rollers or flaps are turned  $180^{\circ}$  through the walls of the measuring chamber. For an increasing level from white to red; for a falling level from red to white. Thus the magnetic display indicates the level of a vessel as a red column, without power supply.



Top-mounted level indicator, model UTN

## Further special features

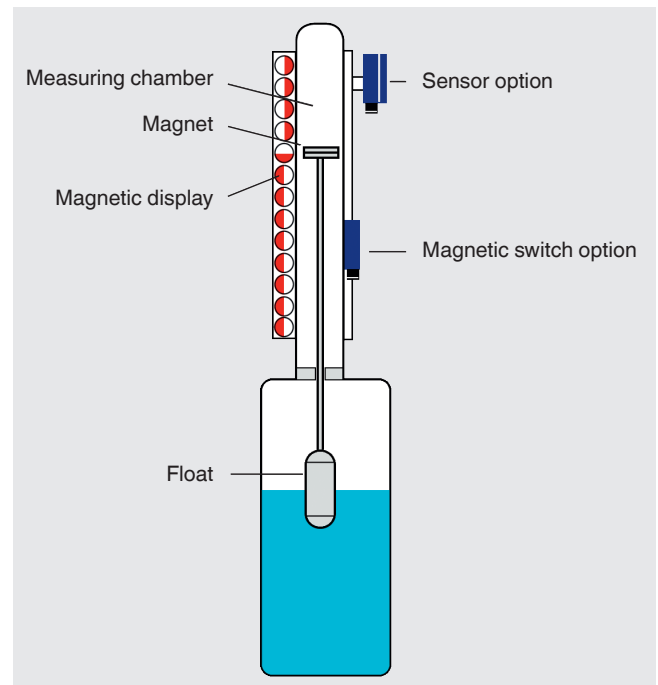
- Simple, robust and solid design
- Measuring and indicating of the filling height of aggressive, combustible, toxic, hot, agitated and highly contaminated media
- Without power supply the functioning of the magnetic roller display is guaranteed even in the case of power failures
- Applicable for all industrial applications by using various corrosion-resistant materials

## Options

The following optional instruments can be fitted to the outside of the UTN for indicating and controlling levels:

- Level sensors, models BLR, BLM  
Level sensors are used as measured value pick-ups for the continuous detection of the level in connection with transmitters. They transform the resistance value of the level sensors into a standardised analogue signal that is proportional to the height of the level.  
For further information on mounting, see operating instructions.
- Magnetic switch, model BGU  
Magnetic switches serve to detect the limits of levels. They generate a binary signal which can be fed to down-stream signalling or control equipment.  
For further information on mounting, see operating instructions.

## Illustration of the principle

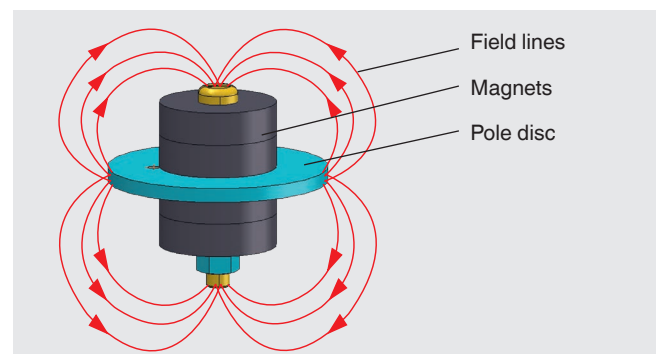


## Design and operating principle

- In a measuring chamber mounted to the top of a vessel a magnet is located, which is connected to the float via a guide rod and moves with the level of the medium to be measured.
- The magnetic field of the radial-symmetric magnetic system activates the magnetic display attached to the outside of the measuring chamber as well as the switching and measuring elements.

## Magnetic system

The magnetic system is assembled from a pole disc and various magnets. These can be individually adapted to the different chamber dimensions and for temperatures up to 300 °C.



## Model overview

Top-mounted level indicator model	Description	Material	Max. pressure in bar	Medium temperature in °C
UTN-C	42 mm version (standard)	Stainless steel 1.4571 (316Ti)	40	-120 ... +300
		Stainless steel 1.4401/1.4404 (316/316L)	40	-196 ... +300
UTN-S	60 mm version	Stainless steel 1.4571 (316Ti)	40	-120 ... +300
		Stainless steel 1.4401/1.4404 (316/316L)	40	-196 ... +300





### Design codes available

- AD2000
- ASME B31.3
- EN 13445

## CE classification

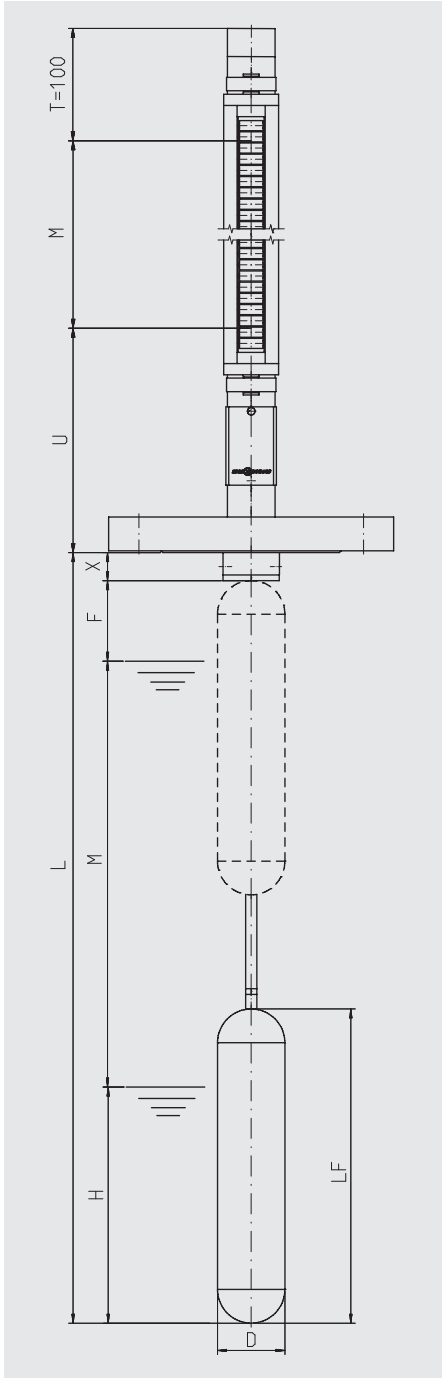
Model	DGRL	ATEX	CE
UTN-C00 UTN-S00	-	-	-
UTN-CA1, UTN-CA2, UTN-CBD, UTN-CGE, UTN-CBC UTN-SA1, UTN-SA2, UTN-SBD, UTN-SGE, UTN-SBC	x	-	x
UTN-C00C UTN-S00C	-	x	x
UTN-CA1C, UTN-CA2C, UTN-CBDC, UTN-CGEC, UTN-CBC UTN-SA1C, UTN-SA2C, UTN-SBDC, UTN-SGEC, UTN-SBC	x	x	x

## Approvals

Logo	Description	Country
 	<b>EU declaration of conformity</b> <ul style="list-style-type: none"> <li>■ Pressure equipment directive (option)</li> <li>■ ATEX directive (option) Hazardous areas Ex c Zone 0/1, gas II 1G c T1 ... T6 or II 1/2G c T1 ... T6</li> </ul> <p style="text-align: right;">KEMA 02 ATEX 2106 X</p>	European Union
	<b>EAC</b> <ul style="list-style-type: none"> <li>■ EMC directive (in connection with mounted components) No. RU D-DE.A301.B.00815</li> <li>■ Pressure equipment directive No. RU D-DE.MJU62.B.02027</li> <li>■ Hazardous areas (option) No. RU C-DE.GB08.B.01489</li> </ul>	Eurasian Economic Community
	<b>GOST</b> (in connection with reed sensor) Metrology, measurement technology No. 19358	Russia

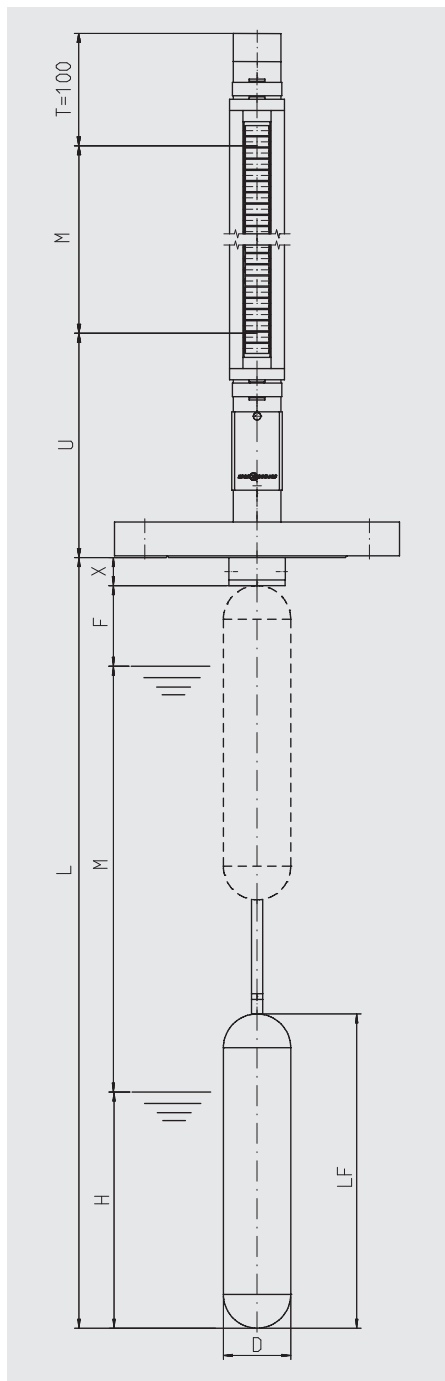
Approvals and certificates, see website

# Top-mounted level indicator, 42 mm version (standard) Model UTN-C



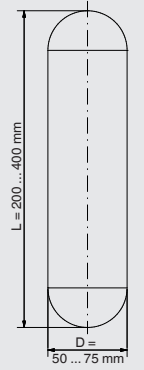
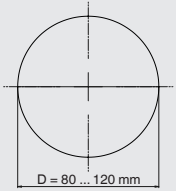
Specifications	
<b>Measuring chamber</b>	Ø 42.4 x 2 or Ø 42.2 x 2.77
<b>Chamber end top</b>	Flat top or pipe cap Options: Vent plug G 1/2"
<b>Process connection</b>	<ul style="list-style-type: none"> <li>■ Mounting thread G 2"</li> <li>■ Mounting flange                             <ul style="list-style-type: none"> <li>- DIN EN 1092-1: DN 50 ... DN 250, PN 6 ... PN 64</li> <li>- ASME B 16.5: 2" ... 10", class 150 ... 600</li> </ul> </li> </ul>
<b>Material</b>	<ul style="list-style-type: none"> <li>■ Measuring chamber, process connection: Stainless steel 1.4571 (316 Ti), 1.4401/1.4404 (316/316L)</li> <li>■ Guide rod: Titanium 3.7035</li> <li>■ Float: Stainless steel 1.4571 or titanium 3.7025</li> </ul> other materials on request
<b>Nominal pressure</b>	max. 40 bar
<b>Temperature range</b>	<ul style="list-style-type: none"> <li>■ 1.4571 (316 Ti): -120 ... +300 °C</li> <li>■ 1.4401/1.4404 (316/316L): -196 ... +300 °C</li> </ul>
<b>Max. insertion length L</b>	3,000 mm Other versions on request  With large lengths and lateral flows, a stilling well is recommended.
<b>Top stand-off T</b>	Standard 100 mm
<b>Bottom stand-off U</b>	min. 140 mm
<b>Guiding sleeve length X</b>	min. 25 mm
<b>Float</b>	see table page 6
<b>Magnetic display</b>	Model BMD-SA: < 200 °C Model BMD-FA: > 200 °C  For specifications, other versions and options see magnetic display for bypass level indicator, model BMD (data sheet LM 10.03)
<b>Further options</b>	<ul style="list-style-type: none"> <li>■ Magnetic switch: Model BGU, see data sheet LM 10.06</li> <li>■ Reed sensor: Model BLR, see data sheet LM 10.04</li> </ul>

## Top-mounted level indicator, 60 mm version Model UTN-S



Specifications	
<b>Measuring chamber</b>	Ø 60.3 x 2 or Ø 60.3 x 2.77
<b>Chamber end top</b>	Flat top or pipe cap Options: Vent plug G 1/2"
<b>Process connection</b>	Mounting flange - DIN EN 1092-1: DN 50 ... DN 250, PN 6 ... PN 64 - ASME B 16.5: 2" ... 10", class 150 ... 600
<b>Material</b>	<ul style="list-style-type: none"> <li>■ Measuring chamber, process connection: Stainless steel 1.4571 (316 Ti), 1.4401/1.4404 (316/316L)</li> <li>■ Guide rod: Titanium 3.7035</li> <li>■ Float: Stainless steel 1.4571 or titanium 3.7025</li> </ul> other materials on request
<b>Nominal pressure</b>	max. 40 bar
<b>Temperature range</b>	<ul style="list-style-type: none"> <li>■ 1.4571 (316 Ti): -120 ... +300 °C</li> <li>■ 1.4401/1.4404 (316/316L): -196 ... +300 °C</li> </ul>
<b>Max. insertion length L</b>	3,000 mm Other versions on request  With large lengths and lateral flows, a stilling well is recommended.
<b>Top stand-off T</b>	Standard 100 mm
<b>Bottom stand-off U</b>	min. 140 mm
<b>Guiding sleeve length X</b>	min. 25 mm
<b>Float</b>	see table page 6
<b>Magnetic display</b>	Model BMD-SA: < 200 °C Model BMD-FA: > 200 °C  For specifications, other versions and options see magnetic display for bypass level indicator, model BMD (data sheet LM 10.03)
<b>Further options</b>	<ul style="list-style-type: none"> <li>■ Magnetic switch: Model BGU, see data sheet LM 10.06</li> <li>■ Reed sensor: Model BLR, see data sheet LM 10.04</li> <li>■ Magnetostrictive sensor: Model BLM, see data sheet LM 10.05</li> </ul>

## Overview of floats

Float	Form	Material	Pressure range
	Cylinder (ZVS... / ZTS...)	Stainless steel 1.4571 or titanium	to 40 bar
	Ball (V... / T...)	Stainless steel 1.4571 or titanium	to 40 bar

Special versions on request

Float design according to process parameters density, pressure and temperature and insertion length L.

### Ordering information

Model / Approval / Material / Process specifications (operating temperature and pressure, density) / Process connection / Insertion length L / Measuring range M / Stilling well / Options

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