

## Level indicators Series NPC



### Indicator by means of pulleys and counterweight system for liquids

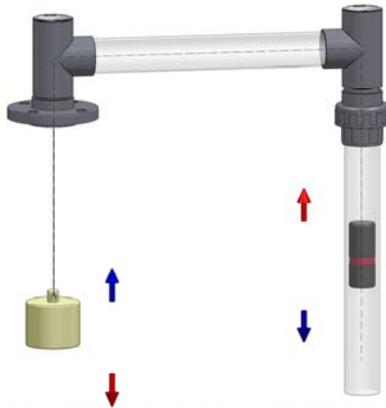
- Simple and cheap construction
- Suitable for almost all the liquids, even aggressive and corrosive fluids
- No risk of leakage
- Excellent chemical resistance
- Measuring range: up to 15 m
- Connections:
  - DN50 EN 1092-1 flanges. Other sizes on request
  - Solvent weld socket connection
- Materials:
  - Pulleys: PVC
  - Float: PP, PVC, PVDF, EN 1.4404 (AISI 316L)
  - External counterweight-indicator: PVC
- Local indication by means of external counterweight
- Options:
  - Switches
  - Electronic transmitter with 4-20 mA analog output for safe or hazardous area (Ex ia or Ex d protection, ATEX certified). HART, PROFIBUS, FIELDBUS, MODBUS RTU protocols available on request



## Working principle

A PVC counterweight which is joined to a PP, PVC, PVDF or EN 1.4404 float by means of a cable, moves along two protected pulleys and show the tank level externally. Changes in tank level displace the float up and down. This movement is transferred to the external counterweight.

The float is always wetted by process fluid. A magnet inside the counterweight allows this instrument to fit alarm switches or electronical transmitters.



## Applications

- Water treatment plants, storage of chemicals and petrochemical industry
- Paper and car industries

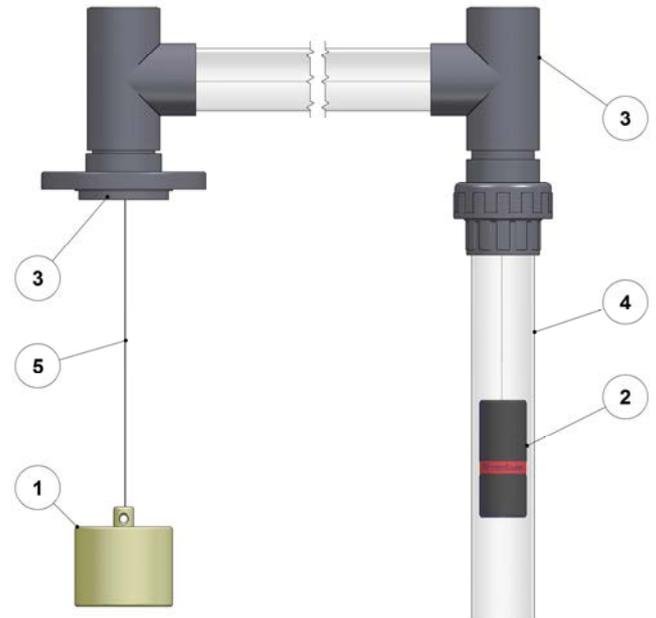
## Technical data

- **Liquid density:**  $\geq 0.8$  kg/l
- **Measuring range:** up to 15 m
- **Liquid temperature:**  $0^{\circ}\text{C} \dots +60^{\circ}\text{C}$
- **Ambient temperature:**  $0^{\circ}\text{C} \dots +60^{\circ}\text{C}$
- **Working pressure:** Ambient (PN10 on request)
- **Connections:**
  - DN50 EN 1092-1 flanges. Other sizes available
  - Solvent weld socket connection
- **Mounting:** on top of the tank
- **Scale in cm available on request**

## Limit switches and transmitters

- **LNPC-APR:** adjustable reed switches
- **LNPC-AMM:** adjustable micro-switches
- **LNPC-AMD:** adjustable inductive switches (+ relays on request)
- **LTE:** Resistive sensor. 4-20 mA output:
  - TR3420: 24 VDC 2-wire system, compact or DIN rail mounted, for safe area and with ATEX certificate Ex d
  - TR2420: 24 VDC 2-wire system, compact mounted, for safe area and with ATEX certificate Ex ia, and HART, PROFIBUS, FIELDBUS,... protocols
- **MT03L:** converter with display for panel mounting. MODBUS protocol on request

## Materials



N°	Description	Materials
1	Float	PP, PVC, PVDF EN 1.4404 (AISI 316L)
2	Counterweight-indicator	PVC
3	Pulleys	PVC
4	Tube *	Transparent PVC
5	Cable *	PP, EN 1.4401

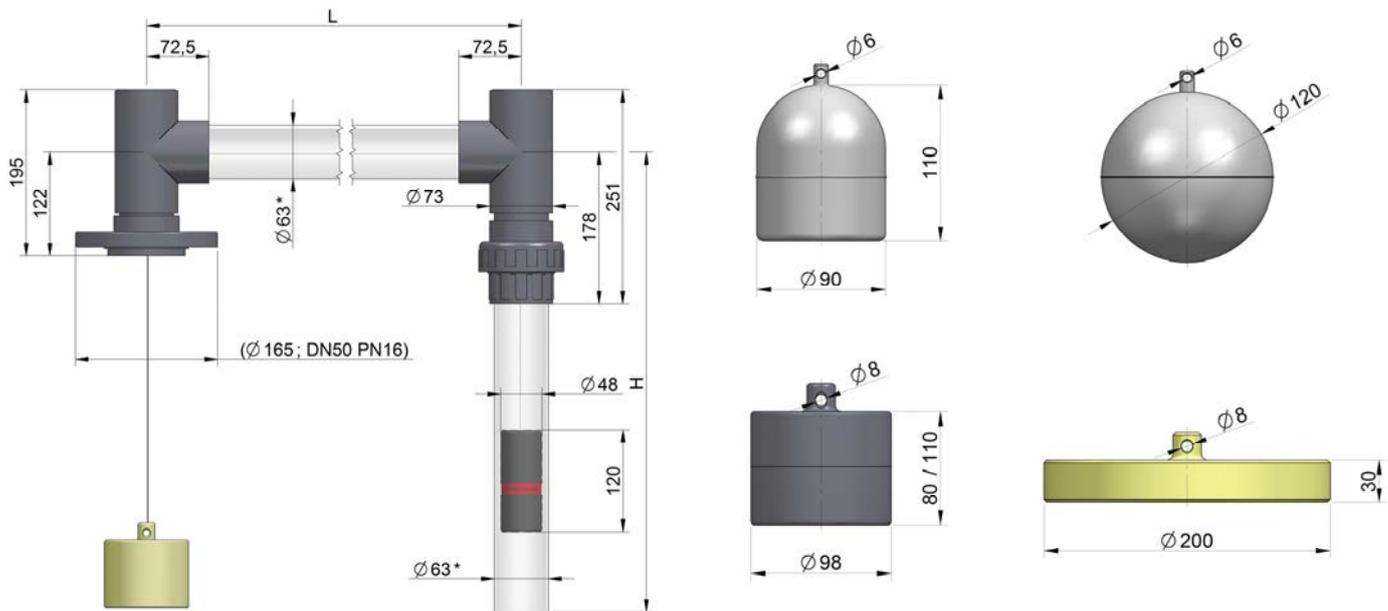
\* Supplied on request

## Float types



Materials	Dimensions mm	Liquid density kg/l
EN 1.4404	$\varnothing 120$	$\geq 0.8$
EN 1.4404	$\varnothing 90 \times 110$	$\geq 0.96$
PP	$\varnothing 98 \times 80$	$\geq 0.93$
PP	$\varnothing 98 \times 110$	$\geq 0.93$
PP	$\varnothing 200 \times 30$	$\geq 0.93$
PVC	$\varnothing 98 \times 80$	$\geq 0.93$

### Dimensions



Other flange sizes on request

\* Supplied on request

### Limit switches

#### Adjustable switch LNPC-AMM

- SPDT bi-stable micro-switch
- IP65 coated aluminium housing
- Contact rating: 3 A 220 VAC
- Hysteresis:  $\pm 6$  mm
- Liquid temperature:  $0^\circ\text{C} \dots +60^\circ\text{C}$
- Ambient temperature:  $0^\circ\text{C} \dots +60^\circ\text{C}$
- Mechanical life:  $20 \times 10^6$  operations
- Suitable for ATEX hazardous area "Simple apparatus"

#### Adjustable switch LNPC-APR

- SPDT bi-stable reed switch
- IP65 polycarbonate housing
- Contact rating: 0.5 A 220 VAC 60 VA
- Hysteresis:  $\pm 6$  mm
- Liquid temperature:  $0^\circ\text{C} \dots +60^\circ\text{C}$
- Ambient temperature:  $0^\circ\text{C} \dots +60^\circ\text{C}$
- Suitable for ATEX hazardous area "Simple apparatus"

#### Adjustable switch LNPC-AMD



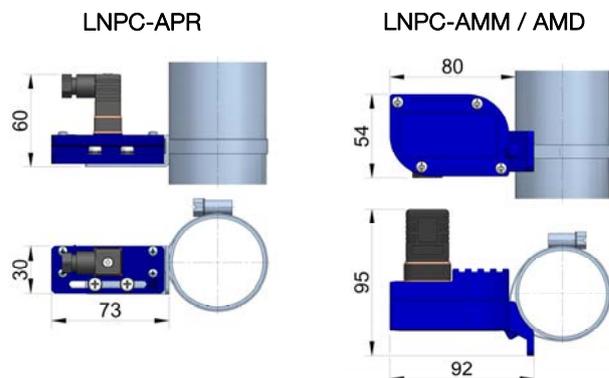
NAMUR (EN 60947-5-6) 3.5 mm slot type inductive detector activated by vane, mounted in an aluminium housing.

- Nominal voltage: 8.2 V / Operating voltage: 5 ... 25 V
- Liquid temperature:  $0^\circ\text{C} \dots +60^\circ\text{C}$
- Ambient temperature:  $0^\circ\text{C} \dots +60^\circ\text{C}$
- ATEX certificate Ex ia IIC T6 ... T1 Ga / Ex ia IIIC T85°C Da

#### Control relay (on request)

NAMUR input (EN 60947-5-6) for 1 or 2 inductive detectors.

- Power supply: 20 ... 30 VDC
- Consumption:  $< 1.3$  W
- Relay output:
  - $V_{\text{max}}$ : 253 VAC / 2A // 40 VDC / 2A resistive load
- Ambient temperature:  $0^\circ\text{C} \dots +60^\circ\text{C}$
- Ingress protection: IP20



## Transmitters

### Transmitter LTE 4-20 mA



Transmitter composed of a resistive sensor based on a reed and resistances chain, mounted on a printed circuit placed inside a guide tube. Not wetted by the process liquid.

Variations in level inside the tank move the external NPC counterweight, which by means of magnetic coupling changes the value of the resistance of the resistive sensor in correspondance to the measured liquid level.

These variations of resistance are processed by an electronic converter in order to obtain a 4-20 mA current output proportional to liquid level.



#### Technical data LTE

- Connection by means of IP65 connector, IP67 polycarbonate housing or IP68 aluminium housing
- Distance between reed switches: 10 mm
- Liquid temperature: 0°C ... +60°C
- Ambient temperature: 0°C ... +60°C

#### Transmitters series TR

- 2-wire system with 4-20 mA output
- **TR3420** safe area or hazardous area ATEX Ex d IIC T6
  - Power supply: 12 ... 36 VDC
  - Consumption: 0.8 W
  - Configuration by means of USB cable and software Winsmeter TR available for download at [www.tecfluid.com](http://www.tecfluid.com)

- **TR2420Ex** hazardous area ATEX Ex ia IIC T6
  - Power supply: 8 ... 30 VDC
- **TR2420H** (HART protocol), **TR2420FP** (Fieldbus/Profibus protocol). Also available in combination with their ATEX Ex ia versions

## Electronic converter



### Model MT03L

- Electronic converter for level applications
- Resistance and current inputs
- Programmable via USB cable by means of Tecfluid S.A. Winsmeter MT03 software or by means of keyboard and graphic display with intuitive menus
- Panel mounting with dimensions 96 x 96 mm DIN 43700
- Power supply: 100 ... 240 VAC 50 / 60 Hz  
18 ... 36 VDC
- Full diagnosis. User selectable password protection
- 5 digits level indication
- Programmable 4-20 mA analog output
- 2 x relay outputs programmable as level alarms
- Ingress protection: IP50 front, IP30 back (Optional IP65 front with silicone cover)
- Ambient temperature: -20°C ... +60°C
- MODBUS RTU RS485 protocol on request



MT03L



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Pressure Equipment Directive certified by



ATEX European Directive certified by



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