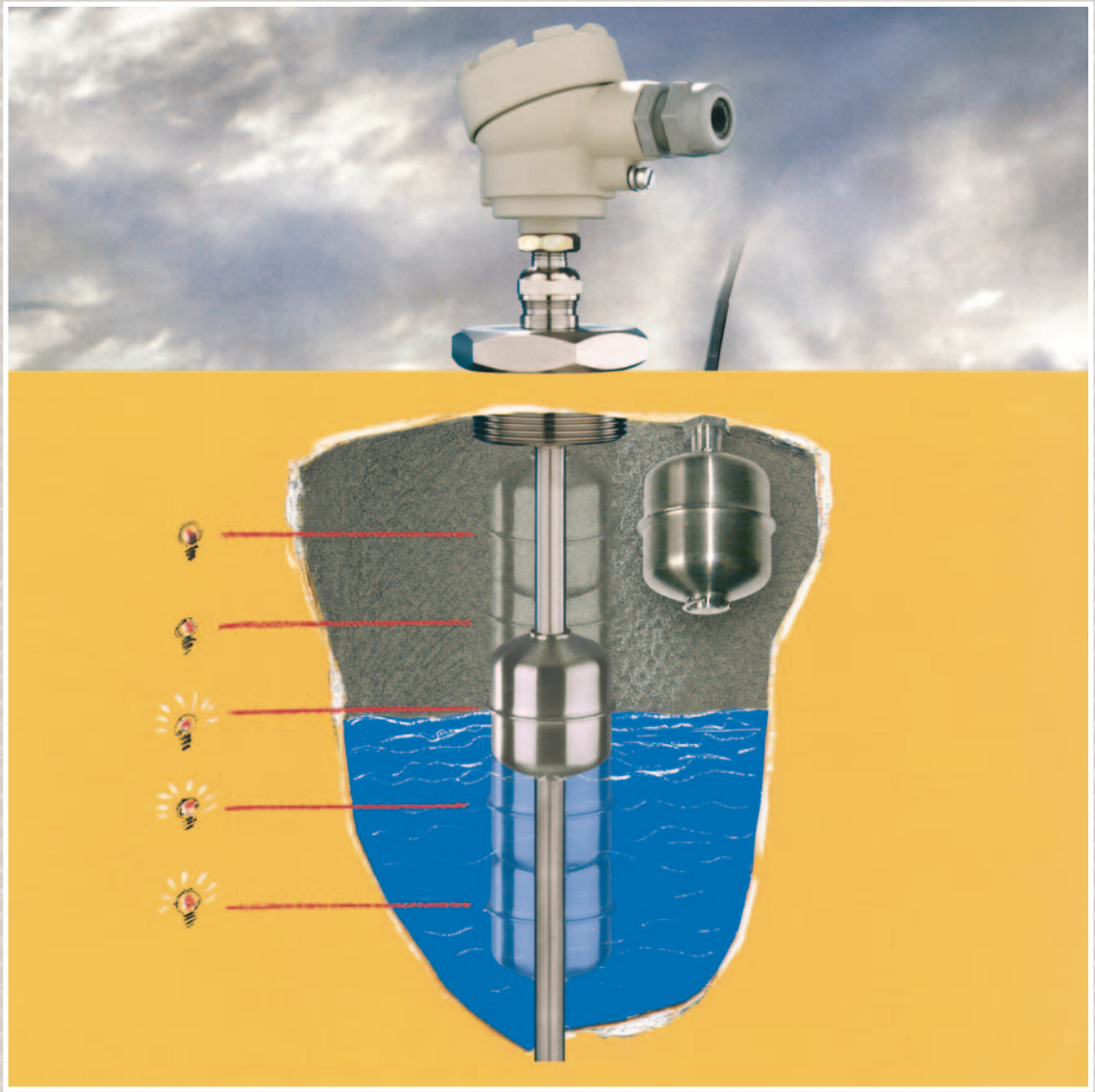
NIVOPOINT

MAGNETIC FLOAT LEVEL SWITCHES



OUR PROFESSION IS YOUR LEVEL

APPLICATION - NIVOPOINT MR & MP SERIES

The interaction of the magnetic float and the reed switches (incorporated in the protection tube) is the basis of the operation of the NIVOPOINT MR and MP magnetic float level switch series. NIVOPOINT level switches can be installed in small stand-alone or built-in tanks. They are suitable for level indication of normal and explosive liquids and for level-control tasks. The instrument consists of a probe tube with magnetic float and a housing containing the connection terminals. The magnetic float moves alongside the protection tube tracking the level of the liquid and activating the reed switches. As the float passes a switch it changes the output state of the switch which retains this state latching until the level decreases and the float moves again along the respective switch to switch its state back. The parts of the device are made of stainless steel or plastic. Ex version is only available in stainless steel version.

MAIN FEATURES

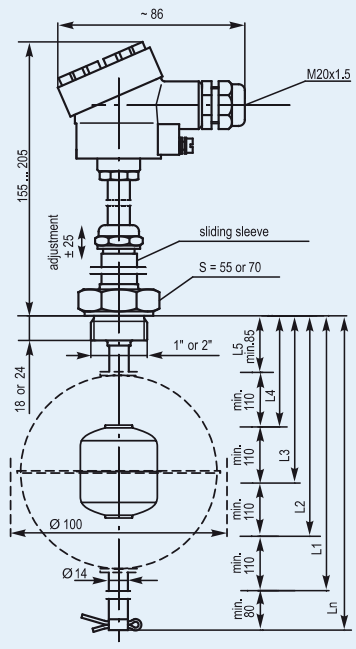
- Operates without auxiliary power
- Wetted parts are made of stainless steel or plastic
- Max. 5 switching points
- Explosion proof ATEX certified versions
- Suitable up to +150°C and 25 bar
- ±25 mm vertical adjustment possibility

APPLICATION RANGE

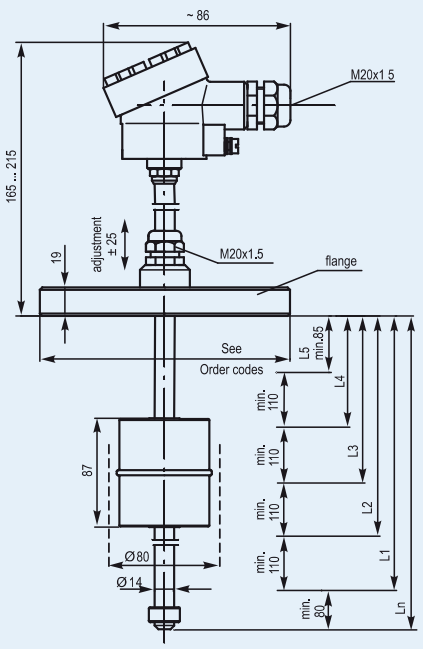
- Multipoint level switching
- Pump control
- Level control in small tanks of industrial equipments

DIMENSIONS

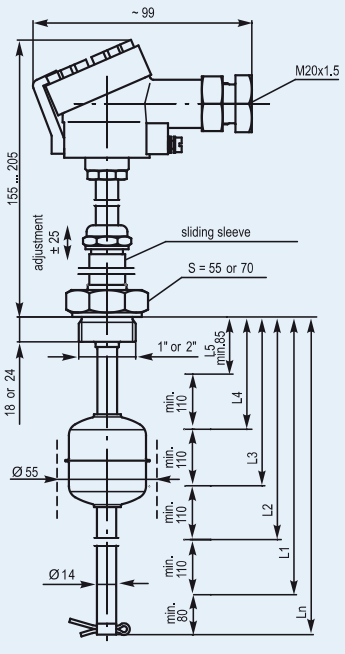
STANDARD MR□-□□□ VERSION



STANDARD MP□-□□□ VERSION

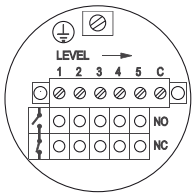


EX MR□-□□□ VERSION



ELECTRICAL CONNECTION

The wiring diagram can be found on the inside of the cover where the output states of the switches are also marked (NO or NC). Depending on the grounding system, the internal or the external grounding point has to be connected to the grounding network.



TECHNICAL DATA

TYPE	MR□-□□□		MP□-□□□	MR□-□□□ Ex
Insertion length	0.25 m ... 3 m			
Material of wetted parts	Stainless steel (DIN 1.4571 / BS 316Ti)		PVDF float / PFA coated guiding tube	Stainless steel (DIN 1.4571 / BS 316Ti)
Max. process pressure	2,5 MPa (25 bar) at +20 °C		0,3 MPa (3 bar) at +20 °C	2,5 MPa (25 bar) at +20 °C-on
Medium density	min. 0.8 g/cm³	min. 0.5 g/cm³	min. 0.6 g/cm³	min. 0.8 g/cm³
Float shape(1)	cylindrical	ball	cylindrical	cylindrical
Medium temperature	–40 °C ... +150 °C		–40 °C ... +80 °C	See table of temperature classes of Ex approved models
Ambient temperature	–40 °C ... +100 °C		–40 °C ... +100 °C	
Output(3)	1 ... 5 pcs. reed-switches, connecting one side of each, NO/NC			
Switching rate	120 W / VA, 250 V AC / DC, 3 A / reed relay, max. 9 A			
Switching hysteresis	< 10 mm			
Distance between switch points	min. 110 mm			
Electrical connection	M20x1.5 for cables Ø6 to Ø12 mm			M20x1.5 for cables Ø9.5 to Ø10 mm
	terminal, wire cross section: 0,5 ... 2,5 mm²			
Process connection	1" BSP, 2" BSP, 1" NPT, 2" NPT		PP flange , DN 80 / DN 100	1" BSP, 2" BSP, 1" NPT, 2" NPT
Gasket	Klingerit		–	Klingerit
Electrical protection	Class I, Protecting cable 4 mm²			
Mechanical protection	IP 65 according to EN 60529:2001			
Certificate for Ex versions	–			Ex II 2 G EEx d IIC T3 ...T6
Dimension of the housing	116 x 80 x 65 mm			124 x 80 x 65 mm
Mass	0.4 kg + 0.3 kg/fm			0.45 kg + 0.3 kg/fm

(1) the minimum required space (hole diameter) can be found in the 'Dimensions' section
(2) if Ø96 float is needed it has to be given in the order
(3) customised connections available for max. 6 terminals

Temperature classes of Ex approved models

CLASS	T6	T5	T4	T3
Max. ambient temperature (from -20°C)	+80 °C	+95 °C	+85 °C	+70 °C
Max. medium temperature (from -20°C)	+85 °C	+100 °C	+135 °C	+150 °C

ORDER CODE

NIVOPOINT M □ □ – □ □ □ – □ (4)

TYPE	CODE
Stainless steel	R
Plastic coating and plastic float	P

CONNECTION	CODE
1" BSP	A
2" BSP	C
1" NPT	D
2" NPT	G
DN 80 PN16 PP	P
DN 100 PN16 PP	R

SWITCH POINT	CODE
1 pc NO/NC	1
2 pcs NO/NC	2
3 pcs NO/NC	3
4 pcs NO/NC	4
5 pcs NO/NC	5

CODE	LENGTH		CODE
0	0 m	0 m	0
1	1 m	0.1 m	1
2	2 m	0.2 m	2
3	3 m	0.3 m	3
		0.4 m	4
		0.5 m	5
		0.6 m	6
		0.7 m	7
		0.8 m	8
		0.9 m	9

FLOAT / EX	CODE
(5) / normal	3
cyl. 1.4571 / Ex	7

(4) The order code of an Ex version should end in **'Ex'**
(5) Depends on the order: cyl.; ball; MP version: cyl./PVDF
The order should contain the corresponding information about the distance between switching points, operation mode (NO or NC) and type of the float. Default operating mode (NO or NC) means that the switches are in a specified states when the float is in its bottom position
For the MRC types the cylindrical float can be passed through the 2" BSP bore

APPLICATION - NIVOPOINT MZ SERIES

The NIVOPOINT MZ magnetic float level switch is applicable for maximum and high fail-safe level indications in tanks containing liquid medium. The small size and easy mounting allows indication of maximum level using the process connection of a tank fitting or an existing appliance. Level is detected by a magnetic float that moves along a protecting tube that is immersed in the liquid. As the magnetic float follows the level up and down, it activates the reed switch in the probe. Depending on the position of the float the reed switch opens or closes.
Changing the default NO or NC state of the reed switch can be done by inverting the float.
The process connection is 1/4" or 2" BSP threaded connection depending on order code.
The level switch should be mounted on a tank from inside and fixed with a nut from outside. Through the 2" BSP connection the cylindrical float can be fitted into the tank, thus the level switch may be installed from the outer side of the tank.

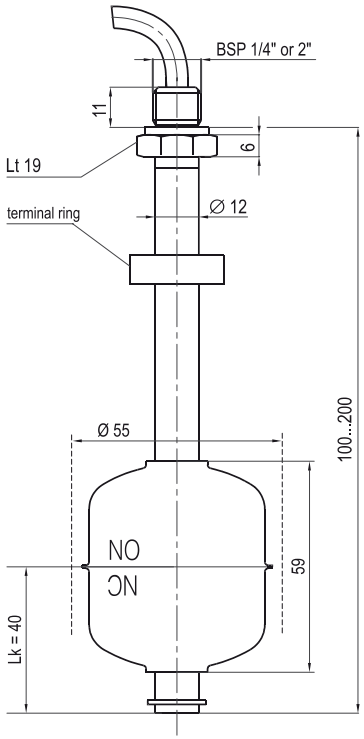
All wetted parts are made of stainless steel.

TECHNICAL DATA

TYPE	MZ□-101, MZ□-102
Insertion length	100 – 200 mm
Material of wetted parts	stainless steel 1.4571
Process pressure	max. 25 bar
Medium density	min. 0.7 kg/dm^3
Medium temperature	–40... +120 °C
Ambient temperature	–20... +70 °C
Output	1 reed-switch, NO or NC depending on float orientation
Switching rate	120 W / VA 250 V AC / DC max. 3A
Switching point (L_K)	40 mm ±3 mm from the bottom of the protecting tube
Float shape(1)	cylindrical
Electrical connection	500 mm(2) (or by order), 2x0.75 mm^2 cable with silicon sealing (ext Ø 5 mm)
Process connection	BSP 1/4" or 2"
Electrical protection	Class II. reinforced insulation
Mechanical protection	IP 68
Mass	0.15 kg

(1) the minimum required space (hole diamater) can be found in the 'Dimensions' section
(2) custom lenghts are also available on request

DIMENSIONS



ORDER CODE

NIVOPOINT M Z ■ – ■ ■ ■ – ■

CONNECTION	CODE
1/4" BSP	S
2" BSP	C

SWITCH	CODE
1 piece	1

LENGTH	CODE
0 m	0

LENGTH	CODE
0.1 m	1
0.2 m	2

FLOAT	CODE
Normal	3

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