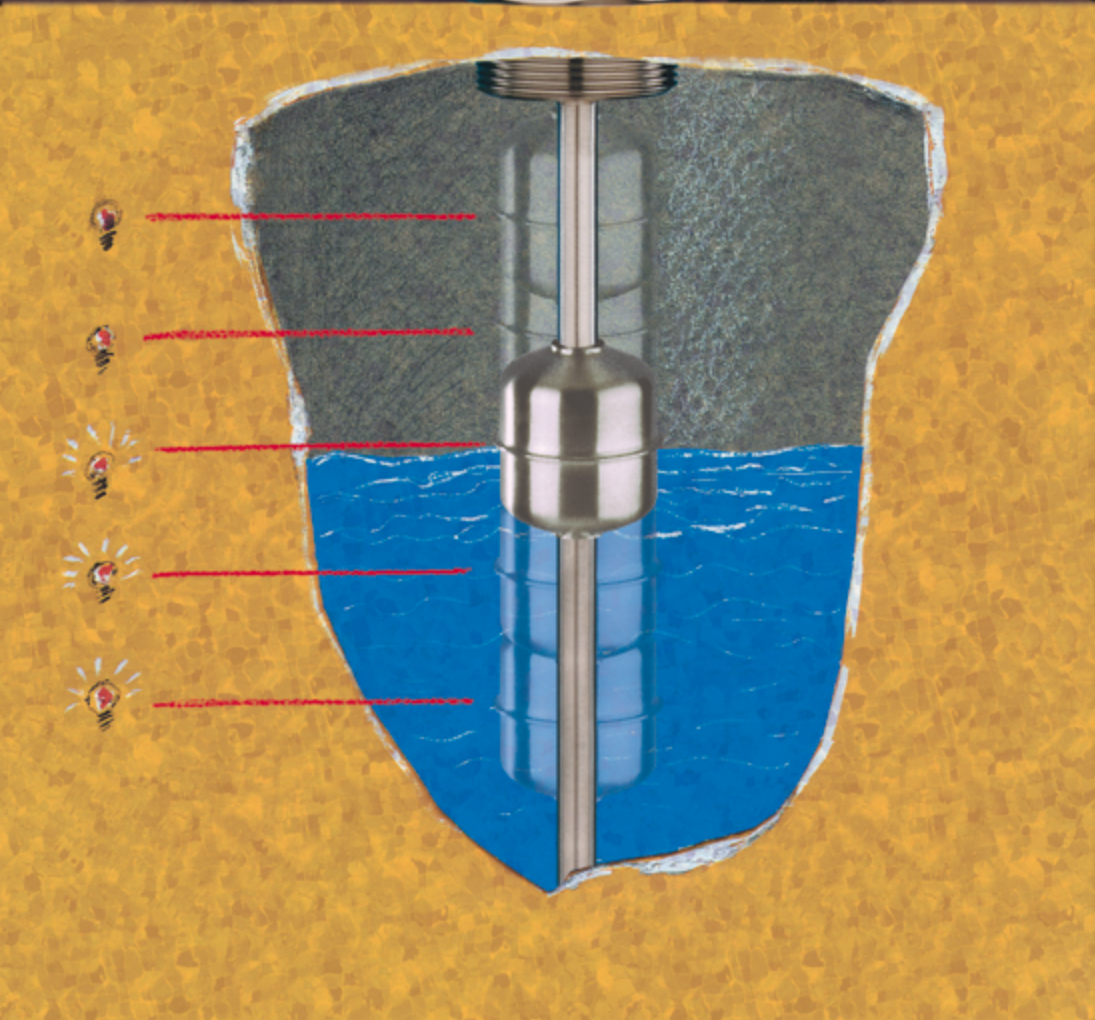


NIVOPOINT

MAGNETIC TRACKING LEVEL SWITCHES



NIVELCO

LEVEL SWITCHES

NIVOPOINT magnetic float level switches are suitable for single and multi-point level controlling tasks in non-hazardous and hazardous areas. The device consists of a probe tube, a float incorporating a magnet, and the housing that contains the connection terminals. Up to 5 switches can be connected to the probe. A sliding-sleeve on the top of the probe provides a simultaneous ± 25 mm adjustment possibility of the positioning of the switches. The wetted parts of the level switch are made of stainless steel. Plastic-coated versions are suitable for measuring aggressive liquids, and ATEX certified variants can be used with explosive materials. The measured medium and application determine floats and process connections.

The mini version of the NIVOPOINT magnetic float level switch is suitable for small tanks. The small size and easy installation make it perfect for detecting the maximum, minimum, or intermediate level using the tank's or device's connection stubs made for other purposes.

FEATURES

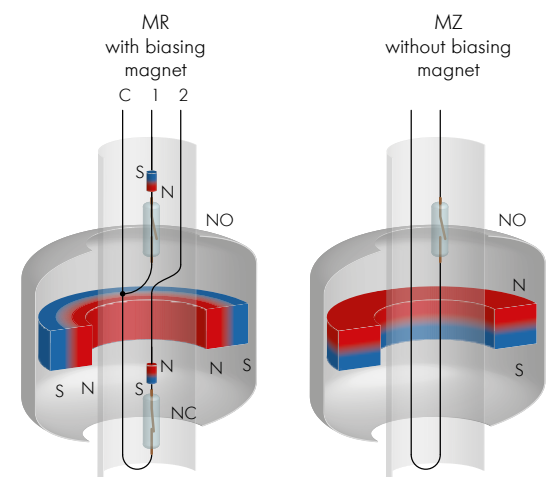
- Level switching without auxiliary power
- Up to 5 switching points
- Stainless steel and plastic-coated versions
- +150 °C process temperature
- Mini version
- Wide variety of floats
- IP67 / IP68
- Ex variant
- 5 years warranty

APPLICATIONS

- Multi-point level switching
- For controlling pumps, valves
- Level detection of aggressive liquids
- Level switching of explosive liquids

CERTIFICATES

- ATEX (Ex d G)
- Bureau Veritas (BV) (only for MZ□ types)



OPERATION

NIVOPOINT magnetic float level switches use the interaction between a magnet in the float and the reed switches in the probe. The float moves along the stem, following the level of the liquid and activating the reed switches. As the float moves along the reed switches, it changes their state (NO or NC), and they stay triggered until the liquid's level falls, and the float moves along the reed switches again, breaking off the self-holding state and restoring the previous state of the reed switches. The mini version does not contain biasing magnets. By following the level, the magnetic float activates the reed switches in the probe. The reed switches opens or close according to the position of the magnetic float. The default state is when the float is at the bottom position.

TECHNICAL DATA

	Standard (MR)	Plastic-coated (MP)	Explosion-proof (MR [Ex])	Mini (MZ)
Insertion length	0.25...3 m ⁽¹⁾			0.1...1.5 m
Material of wetted parts	1.4404 float / 1.4571	PVDF or PP float / PFA or PP-coated probe tube	Titan / 1.4404 / 1.4435 float; 1.4571 probe tube	
Max. process pressure	25 bar (2.5 MPa)	6 bar (0.6 MPa)	25 bar (2.5 MPa)	
Min. medium density	0.8 kg/dm ³	0.4 / 0.7 kg/dm ³	0.8 kg/dm ³	
Float sizes	See "Floats"			
Process temperature	-40...+150 °C	-40...+80 °C	See temperature data for Ex versions table	-40...+120 °C
Ambient temperature	-40...+95 °C			-20...+70 °C
Output	1...5 reed-switches, one connecting point of each is common NO/NC			1...3 reed-switches, NO/NC depending on float orientation
Switching rate	120 W/VA, 250 V AC/DC, 3 A Reed-relay, 9 A maximum altogether			120 W / VA; 250 V AC / DC; max. 3 A
Switching point	See auxiliary table of order codes			up to 3 (to be specified when ordering)
Switching differential	< 10 mm			max. Δ8 mm
Distance between reed-switches	At least 110 mm			At least 90 mm
Electrical connection	M20×1.5 cable gland, cable diameter: 6...12 mm		M20×1.5 cable gland, cable diameter: 7...12 mm ⁽²⁾	0.5 m long ⁽³⁾ cable with silicone insulation
	Terminal, 0.5...2.5 mm ² wire cross section			
Process connection	As per order code			
Seal	Klingerit ⁽⁴⁾	-	Klingerit ⁽⁴⁾	
Electrical protection	Class I (protective cable 4 mm ²)			Class II (reinforced insulation)
Ingress protection	IP67			IP68 (20 m)
Certification	-		ATEX: Ⓜ II 1/26 Ex db IIC T6...T3 Ga/Gb	Bureau Veritas
Housing dimensions	116 × 80 × 65 mm		124 × 80 × 65 mm	-
Weight	400 g + 300 g/m		450 g + 300 g/m	~0.15...2.5 kg (depending on order) + cable: 0.03 kg/m

⁽¹⁾ 3...4 m as per special offer, Ex version not available.

⁽³⁾ Available with different cable length.

⁽²⁾ The type MR□-□□□-8 Ex devices are shipped without cable glands.

⁽⁴⁾ Only for BSP.

TEMPERATURE DATA FOR Ex VERSIONS

Class	T6	T5	T4	T3
Highest ambient temperature	+65 °C	+80 °C	+95 °C	+95 °C
Highest medium temperature	+80 °C	+95 °C	+130 °C	+150 °C
Minimum ambient temperature	-40 °C			

REQUIRED SPECIFICATIONS IN THE ORDER

Switching point ⁽⁵⁾		Default operation mode ⁽⁶⁾	
		NO	NC
L1 ⁽⁴⁾ mm	<input type="checkbox"/>	<input type="checkbox"/>
L2 mm	<input type="checkbox"/>	<input type="checkbox"/>
L3 mm	<input type="checkbox"/>	<input type="checkbox"/>
L4 mm	<input type="checkbox"/>	<input type="checkbox"/>
L5 mm	<input type="checkbox"/>	<input type="checkbox"/>

⁽⁴⁾ L = insertion length (custom size available).

⁽⁵⁾ Min. distance of the switching points: 110 mm for MR□/MP□, 70 mm for MZ.

⁽⁶⁾ Default operation mode (NO/NC) is meant with bottom positioned float.

NIVOPOINT MR up to 5 switch points

5 years

Magnetic tracking float level switch with up to 5 switch points. Output: NO or NC with stainless steel rod probe and Ø54x60 mm stainless steel float and IP67 aluminum housing

Process connection

M R - -

A	1" BSP
C	2" BSP
D	1" NPT
G	2" NPT
O	2½" TriClamp
P	3" TriClamp
R	4" TriClamp

Number of switching points

M R - -

1	1 switch
2	2 switches
3	3 switches
4	4 switches
5	5 switches

Probe length (Ln)**

M R - -

nn	0.3...0.5 m; sold by the 0.1 m
oo	0.6...3 m; sold by the 0.1 m

nn = 03...05 : 0.3...0.5 m
oo = 06...30 : 0.6...3 m, ** 3...4 m as per special offer, Ex version not available

Ex certificate

M R - -

3	For non-hazardous area
7	Ex d G

Floats

5 years

Available on request (must be specified in the text of the order)

MRC-105-7M-700-00	Ø96 mm stainless steel (1.4404) ball float (for min. 0.55 kg/dm³ liquids)
MRC-105-7M-800-00	Ø124 mm stainless steel (1.4401) ball float (for min. 0.4 kg/dm³ liquids)
MRC-105-7M-900-00	Ø54x60 mm titanium float (for min. 0.55 kg/dm³ liquids)
MRC-106-7M-900-00	Ø50x100 mm titanium float (for min. 0.45 kg/dm³ liquids)

Accessories sold separately

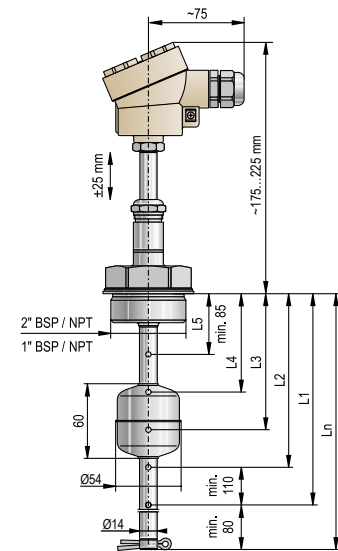
MRC-105-7M-600-00	Ø54x60 mm stainless steel (1.4401) ball float (for min. 0.8 kg/dm³ liquids)
MRC-105-7M-700-00	Ø96 mm stainless steel (1.4404) ball float (for min. 0.55 kg/dm³ liquids)
MRC-105-7M-800-00	Ø124 mm stainless steel (1.4401) ball float (for min. 0.4 kg/dm³ liquids)
MRC-105-7M-900-00	Ø54x60 mm titanium float (for min. 0.55 kg/dm³ liquids)
MRC-106-7M-900-00	Ø50x100 mm titanium float (for min. 0.45 kg/dm³ liquids)

FLOATS

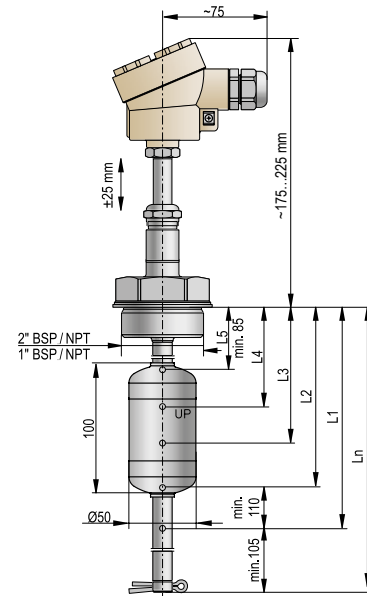
	MRC-106-7M-900-00	MRC-105-7M-700-00 ⁽¹⁾	MRC-105-7M-900-00	MRC-105-7M-600-00 ⁽¹⁾	MRC-105-7M-800-00
Dimensions					
Medium density (min.) [kg/dm³]	0.45	0.55	0.55	0.8	0.4
Material	Titanium	Austenitic stainless steel ⁽²⁾	Titanium		Austenitic stainless steel ⁽²⁾
Process pressure	16 bar			25 bar	

⁽¹⁾Standard float.

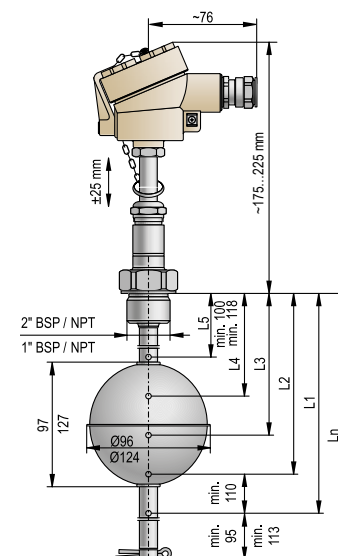
⁽²⁾ Austenitic stainless steel: 1.4401, 1.4404, 1.4435, 1.4571, etc.



MR□-□00-3



MR□-□00-3
+ MRC-106-7M-900-00



MR□-□00-7 Ex
+ MRC-105-7M-800-00

NIVOPOINT MP up to 5 switching points, plastic-coated **5 years**

Magnetic tracking float level switch with up to 5 switching points. Output: NO or NC with plastic-coated probe and Ø76x87 mm PVDF float and IP67 aluminum housing

Process connection

M P □ - □ □ □ - 3	
P	DIN DN80, PN16
R	DIN DN100, PN16

Number of switching points

M P □ - □ □ □ - 3	
1	1 switch
2	2 switches
3	3 switches
4	4 switches
5	5 switches

Probe length

M P □ - □ □ □ - 3	
0 5	0.5 m
n n	0.6...3 m; sold by the 0.1 m
nn = 06...30 : 0.6...3 m	

Float / Material

M P □ - □ □ □ - □	
3	Ø76 x 87 / PVDF

Floats **5 years**

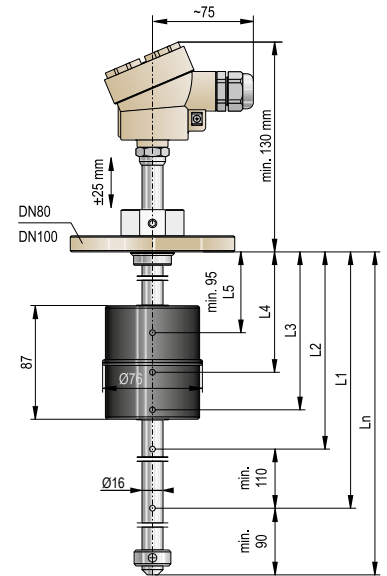
Available on request (must be specified in the text of the order)

MPP-105-3M-900-00 Ø76x87 mm PP float (for min. 0.4 kg/dm³ liquids)

Accessories sold separately

MPP-105-3M-200-00 Ø76x87 mm PVDF float (for min. 0.7 kg/dm³ liquids)

MPP-105-3M-900-00 Ø76x87 mm PP float (for min. 0.4 kg/dm³ liquids)



MP□-□00-3

FLOATS

	MPP-105-3M-200-00 ⁽¹⁾	MPP-105-3M-900-00
Dimensions		
Medium density (min.) [kg/dm ³]	0.7	0.4
Material	PVDF	PP
Process pressure	3 bar (0.3 MPa)	

⁽¹⁾ Standard float.

NIVOPOINT MZ (up to 3 switching points)

5 years

Magnetic float switch with up to 3 switching points with stainless steel rod probe and Ø54x60 mm stainless steel float, with integrated cable and IP68 protection

Process connection

M Z ■ - ■ ■ ■ - 3

C	2" BSP
G	2" NPT
S	¼" BSP (inner thread)
O	2½" TriClamp
P	3" TriClamp
R	4" TriClamp

Number of switching points / Number of floats

M Z ■ - ■ ■ ■ - 3

1	1 switch / 1 float
2	2 switches / 2 floats
3	3 switches / 3 floats

Probe length

M Z ■ - ■ ■ ■ - 3

n n	* 0.1...1.5 m; sold by the 0.1 m
nn = 01...15 : 0.1...1.5 m	
* Ln = 100 mm for L1 = 60 mm	

Cable

Sold by the meter over the standard 0.5 m

Floats

5 years

Available on request (must be specified in the text of the order)

MZS-101-3M-800-00	Ø96 mm stainless steel (1.4404) (for min. 0.55 kg/dm ³ liquids, from min. 200 mm probe length)
MZS-101-3M-900-00	Ø54x60 mm titanium float (for min. 0.55 kg/dm ³ liquids)
MZS-101-3X-0C7-10	Ø49x60 mm titanium float (for min. 0.7 kg/dm ³ liquids)
MZS-101-3M-600-00	Ø50x100 mm titanium float (for min. 0.45 kg/dm ³ liquids)

Accessories sold separately

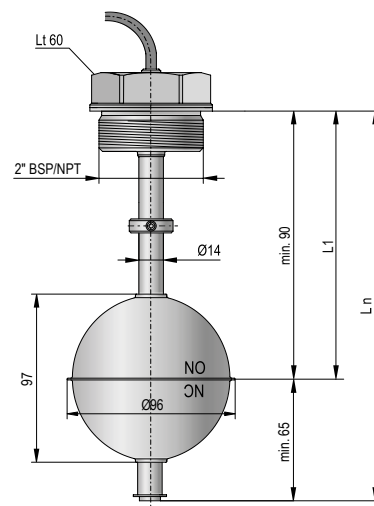
MZS-101-3M-700-00	Ø54x60 mm stainless steel (1.4404) (for min. 0.55 kg/dm ³ liquids)
MZS-101-3M-800-00	Ø96 mm stainless steel (1.4404) (for min. 0.55 kg/dm ³ liquids, from min. 200 mm probe length)
MZS-101-3M-900-00	Ø54x60 mm titanium float (for min. 0.55 kg/dm ³ liquids)
MZS-101-3X-0C7-10	Ø49x60 mm titanium float (for min. 0.7 kg/dm ³ liquids)
MZS-101-3M-600-00	Ø50x100 mm titanium float (for min. 0.45 kg/dm ³ liquids)

FLOATS

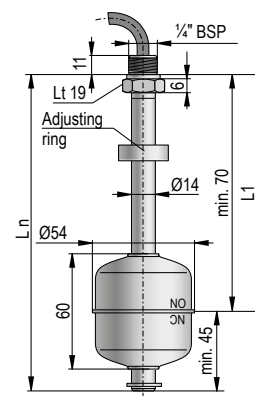
	MZS-101-3X-0C7-10	MZS-101-3M-600-00	MZS-101-3M-800-00	MZS-101-3M-	
				900-00	700-00 ⁽¹⁾
Dimensions					
Medium density (min.) [kg/dm ³]	0.7	0.45	0.55	0.55	0.8
Material	Titanium		Austenitic stainless steel ⁽²⁾	Titanium	Austenitic stainless steel ⁽²⁾
Process pressure	16 bar			25 bar	

⁽¹⁾ Mini version.

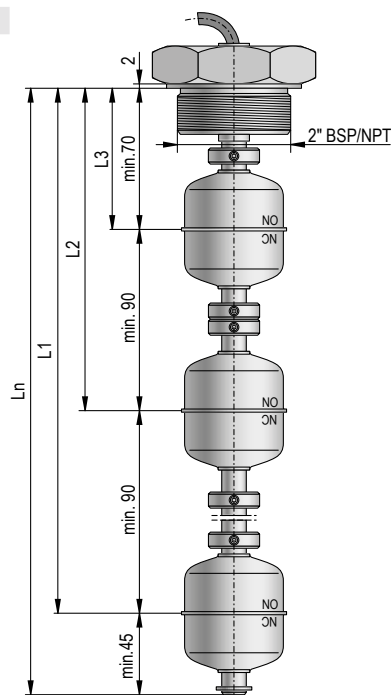
⁽²⁾ Austenitic stainless steel: 1.4401, 1.4404, 1.4435, 1.4571, etc.



MZC/MZG-1□□-3 with Ø96 mm float



MZS-101□□-3



MZC/MZG-3□□-3

NIV24

MZS-101-3

ООО "РусАвтоматизация"

454010 г. Челябинск, ул. Гагарина 5, оф. 507
 тел. 8-800-775-09-57 (звонок бесплатный), +7(351)799-54-26, тел./факс +7(351)211-64-57
info@rusautomation.ru; rusautomation.ru; www.rusautomation.ru