

1. INTRODUCTION

The **NIVOPPOINT** magnetic float level switches operate through the interaction between the magnet embedded in the float and the reed switches located in the probe shaft. As the magnetic float moves, the reed switches open or close accordingly. The probe may contain one or more reed switches, each paired with a magnetic float. The default open or closed state of each reed switch can be altered by inverting the float. These level switches are suitable for both low-level and high-level switching applications.

2. TECHNICAL DATA

2.1 General Data

MZ□-□□□-3	
Insertion length	0.1...1.5 m (3.9...59")
Material of wetted parts	Titanium / 1.4404 (316L equivalent) / 1.4435 float; 1.4571 probe tube
Max. process pressure	16 bar / 25 bar (232 / 362.6 psi) (see: 2.6 Float selection)
Min. medium density (Specific gravity)	0.45...0.8 kg/dm ³ (28.09...49.95 lb/ft ³) (see: 2.6 Float selection)
Nominal float sizes	See: 2.6 Float selection
Medium temperature	-40...+120 °C (-40...+248 °F)
Ambient temperature	-20...+70 °C (-4...+158 °F)
Output	1...3 reed-switches, NO/NC depending on float orientation
Switching rate	120 W / VA; 250 V AC / DC; max. 2 A ⁽¹⁾
Switching point	max. 3 (according to user specification)
Switching hysteresis	max. Δ8 mm (Δ0.315")
Distance between reed-switches	At least 90 mm (3.54")
Electrical connection	0.5 m (1.6 ft) long ⁽²⁾ 2× 0.75 mm ² (2× 18AWG), cable with silicon insulation
Seal	Klingerit (only for BSP)
Process connection	As per order code, (see 2.2 Order code)
Electrical protection	Class II, reinforced insulation
Ingress protection	IP68 (NEMA 6P equivalent) (20 m [787.4"])
Weight	~0.15...2.5 kg (~0.33...5.5 lbs) (depending on type) + cable: 0.03 kg/m (0.0017 lbs/inch)

⁽¹⁾ For inductive loads, it is not recommended to apply a current exceeding 10% of the rated current, as this may significantly reduce the lifespan of the switching element. For capacitive loads, it is essential to ensure that the inrush current does not exceed 300% of the rated current.

⁽²⁾ Different cable lengths available upon request.

2.2 Certificates

Certificates	Reference document number
 Bureau Veritas Certificate, Region: Marine	mzs1010a0600h_04

2.4 Order Code (Not all combinations are available.)

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Process connection	Code
1" BSP	A
1½" BSP	B
2" BSP	C
1" NPT	D
1¼" NPT	H
1½" NPT	E
2" NPT	G
¼" BSP (internally mountable)	S
¾" NPT (internally mountable)	U
2" NPT	G
2½" TriClamp	O
3" TriClamp	P
4" TriClamp	R

Number of switching points / floats	Code
1 switch / 1 float	1
2 switches / 2 floats	2
3 switches / 3 floats	3

Probe length ⁽¹⁾	Code
0	0
1 m (3.3 ft)	1

⁽¹⁾Max. 1.5 m (4.9 ft) probe length.

Probe length ⁽¹⁾	Code
0	0
0.1 m (0.3 ft)	1
0.2 m (0.7 ft)	2
0.3 m (1 ft)	3
0.4 m (1.3 ft)	4
0.5 m (1.6 ft)	5
0.6 m (2 ft)	6
0.7 m (2.3 ft)	7
0.8 m (2.6 ft)	8
0.9 m (3 ft)	9

NIVOPPOINT

MZ
MAGNETIC FLOAT SWITCH

USER'S MANUAL



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2.5 Dimensions⁽¹⁾

MZS-1□□-3	MZC/MZG-1□□-3 ⁽²⁾	MZC/MZG-3□□-3	MZO/MZP/MZR-3□□-3

⁽¹⁾ Dimensions L1, L2, L3 determine the distance between the switching points according to the user specification specified when ordering.

⁽²⁾ In the case of a Ø96 mm (Ø3.8") float, the distance between the switching points is min. 130 mm (5.1").

2.6 Float Selection

	MZS-101-3X-0C7-10	MZS-101-3M-600-00	MZS-101-3M-800-00 ⁽³⁾	MZS-101-3M- 900-00 700-00 ⁽³⁾	
Dimensions					
Min. medium density (Specific Gravity) [kg/dm ³]	0.7	0.45	0.55	0.55	0.8
Material	Titanium			Titanium	Austenitic stainless steel ⁽⁴⁾
Process pressure	16 bar (232 psi)			25 bar (363 psi)	

⁽³⁾ Standard float.

⁽⁴⁾ 1.4401 (316), 1.4404, 1.4435 (316L), 1.4571 (316Ti) etc.

3. INSTALLATION

The technological connection is defined by the order code, and it is used for the mechanical connection of the device.

The diameter of the opening for passing through the floats must be at least 3 mm (0.12") larger than the diameter of the float! If the device has a protective tube (to prevent corrugation or foaming), the tube's internal diameter must be 75 mm (2.95") for a 50 mm (2") or 54 mm (2.1") float and 130 mm (5.1") for a 96 mm (3.8") float.

ATTENTION!

The device must be installed in the tank in a vertical position! Protect the device from any mechanical damage, bending, or tension during installation and transport!

4. WIRING

The electrical connection is made via the built-in cable of the device. The default normally closed (NC) or normally open (NO) state of the reed-switch can be modified by inverting the float. The NO/NC switching mode is marked on the float. When the instrument is installed, the correctly readable sign marks the operation mode of the switch.

5. MAINTENANCE, REPAIR

The device does not require regular maintenance. The warranty terms are detailed in the warranty card. For repairs, the user must clean and disinfect the device, neutralize any chemical residues, and complete the [Returned Equipment Handling Form](#), which is available for download on our website. On the form, the user must declare the defect, provide the reason for return, and confirm that the device is clean and free of hazardous substances.

6. STORAGE CONDITIONS

Ambient temperature: -20...+60 °C (-4...+140 °F)
Relative humidity: max. 98% non-condensing!

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Information is accurate to the best of NIVELCO's knowledge.
We reserve the right to change specifications at any time