Thank you for choosing a NIVELCO instrument. We are sure that you will be satisfied throughout its use.

1. APPLICATION

The interaction of the magnetic float and the reed relays (incorporated in the protection tube) is the basis of the NIVOPOINT magnetic float level switch series operation. They are suitable for level indication of normal and explosive liquids, and can be used for level control tasks. The protecting tube contains a max. of 5 relays. Parts of the instrument are: probe tube with magnetic float and housing containing the connection terminal.

The magnetic float moves alongside the protection tube tracking the level of the liquid and activating the reed relays. As the float passes a relay it changes the output state of the relay which retains this state latching until the level decreases and the float moves again along the respective relay to switch its state back.

2. TECHNICAL DATA

2.1. GENERAL DATA

ТҮРЕ	MR 0- 000		MP C – 🗆 🗆 🗆	MR - 000-7 Ex	MRD – DDD-8 Ex	
Insertion length	0.25 m 3 m					
Material of wetted parts	Stainless steel (1.4571 / BS 316Ti)		PVDF float / PFA coated probe	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		
Medium density	min. 0.8 kg/dm ³	min. 0.5 kg/dm ³	min. 0.7 kg/dm ³	min. 0.8 kg/dm ³		
Nominal float dimensions / shape	Ø 52x59mm* cylinder	Ø 96 mm* ball	Ø 76x87 mm cylinder	Ø 52x59 mm cylinder		
Medium temp. range	-40 °C	⊦150 °C	-40 °C +80 °C			
Ambient temp. range	-40 °C +100 °C		-40 °C +100 °C	See temperature classes table		
Output	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					
Switch differential	< 10 mm					
Distance of switches	min. 110 mm					
Electrical connection	M20 x 1.5 for cables \varnothing 6 \varnothing 12			M20 x 1.5 for cables Ø 9.5 … Ø 10	M 20 x 1.5 (see: 5.1)	
	terminal, wire cross section: 0.5 2.5 mm ²					
Process connection			2" BSP 2" NPT			
Sealing material	Klingerit 400 — Klingerit 4		rit 400			
Electrical protection	Class I, Protecting cable 4 mm ²					
Ingress protection	IP 65					
Ex marking	_			🕢 II 2G Ex d IIC T6 T3 Gb		
Dimension of the hous.	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		

MR MAGNETIC FLOAT LEVEL SWITCH

USER'S MANUAL



Manufacturer 🐼 S.S. NIVELCO Process Control Co. H-1043 Budapest, Dugonics u. 11. Phone: (36-1) 889-0100 = Fax: (36-1) 889-0200 E-mail: sales@nivelco.com = www.nivelco.com

* dimensions of the float depend on the order

Note: the device must be installed with Ex d certified explosion-proof cable gland.

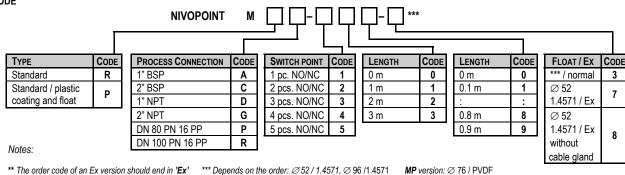
2.2. ADDITIONAL DATA FOR EX APPROVED MODELS

CLASS	T6	T5	T4	Т3
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

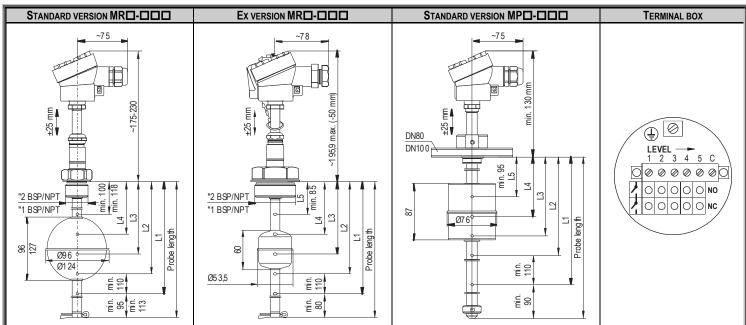
2.3. ACCESSORIES

- User's Manual
- Certificate of Warranty
- Declaration of Conformity
- 1 pc Gasket (for threaded versions)

2.4. ORDER CODE



2.5. DIMENSIONS



3. INSTALLATION

For mounting the unit 1", 2" BSP or NPT threads can be used. Minimal gap diameter for the float is \emptyset 55 mm. Use the M20x1.5 cable gland for electrical connection.

The only version that can be installed without removing the float from the shaft and reassembling it from the inside of the tank is the version with 2" (BSP or NPT) process connection. If protection tube is used the minimum tube diameter should be \emptyset 75 mm (for insertion lenght < 1.5m and \emptyset 95 mm for insertion length > 1.5m). When using a \emptyset 90 mm float the tube diameter should be min. \emptyset 130 mm.

WARNING!

The sliding sleeve must not be loosened in tanks under pressure.

The unit should be mounted in vertical position via its process connection and handled with care to avoid any damage or bend of the protection tube during transportation or installation.

4. WIRING

Depending on the grounding system either the inner or the outer grounding terminal should be connected to the EP network.

Standard version

Remove the cover. Feed the electrical cables through the cable gland and connect them in accordance with the sketch on the cover where the (NO/NC) states of the relays are marked. The terminal of the lowest switch point has to be number 1.

"C" is common terminal.

The cross section of the connecting cable has to be between 0.5 and 2.5 mm².

Ex version

Remove the safety clamp and screw the cover off. Feed the electrical cables through the cable gland and connect them in accordance with the sketch on the cover where the (NO/NC) states of the relays are marked.

Connect the grounding screw to the grounding system. Place the cover back and fasten the safety clamp by setting it into one of the notches of the cover.

5. SET UP, ADJUSTMENT

After screwing in and before tightening the sliding sleeve the direction of the cable gland and the position of the reed-relay set can be adjusted.

An open-end wrench should be used when loosening or screwing tight the sliding sleeve. The position of the reed-relay set can be vertically adjusted by a max. of \pm 25 mm.

5.1. SPECIAL CONDITIONS OF THE EX APPLICATION

The apparatus met the requirements specified for mechanical strength with reduced impact energy (4 J = 1 kg; 0.4 m). On the basis of the above the place and way of installation should guarantee the protection of the unit against external mechanical impacts during service.

Before the installation of the device it must be equipped with a certified cable gland with Ex d protection type. Prior to installing the Ex d certified cable gland the red protection cap should be removed.

6. MAINTENANCE, REPAIR

The unit does not require regular maintenance. In some instances, however, the probe may need occasional cleaning to remove surface deposits. This must be carried out gently, without harming the probe.

All repairs will be carried out at the manufacturer's premises.

7. STORAGE CONDITIONS

Ambient temperature: -20 °C ... +60 °C

8. WARRANTY

NIVELCO provides warranty of 3 (three) years in compliance with details described in the Warranty Card.

mra1053a0600h_08 March, 2015 Nivelco reserves the right to change technical specifications without notice.