

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



NIVOMAG

MK-200 MAGNETIC FLOATING
LEVEL SWITCH

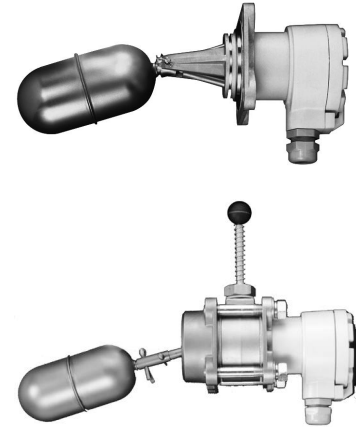
1. APPLICATION

The NIVOMAG MK-200 series magnetic floating level switches can control levels of various fluids.

2. TECHNICAL DATA

| Type | Horizontal Float | | | | Vertical Float |
|--------------------------|--|--------------------------------|--------------|--------------|----------------|
| | MK_-21_- | MK_-22_- | MKG-2_ | MKS-2_ | MK_-23_- |
| Nominal Pressure max. | 2.5 MPa (MKU: 0.2 MPa / 2.5 MPa) | | | | 1.6 MPa |
| Liquid temperature | MKA: -20°C to 250°C MKU: -20°C to +80°C | | 0°C to 100°C | 0°C to 200°C | -20°C...250°C |
| Ambient temperature | -20°C to +80°C | | | | |
| Liquid density | min 0,7 kg/dm ³ | | | | |
| Switch differential | Fixed | Adjustable | Fixed | Fixed | Adjustable |
| Protrusion length | See figures below | | | | |
| Material of vetted parts | SS316Ti | | | | |
| Housing material | Paint coated aluminium | | | | |
| Switch action | 1 micro-switch with 1 closing and 1 opening contact (NO and NC) | | | | |
| Switch rating | Standard | 250V AC12 10A; 220V DC13 0.6A | | | |
| | Ex version | 250V AC12 2.5A; 220V DC13 0,3A | | | |
| Electrical connection | 1 x Pg 16 cable 5 x 2,5 mm ² wire cross section (MKU: integrated cable) | | | | |
| Mechanical protection | IP 65 (MKU: IP68) | | | | |
| Electrical protection | Class I. | | | | |
| Ex protection mark | EEx dme IIC T4...T6 | | | | |
| Weight (approx) | 2,5 kg | | | | |

USER'S MANUAL



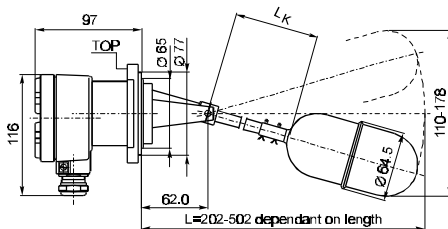
3. ACCESSORIES

1 User's Manual

4. OPERATION

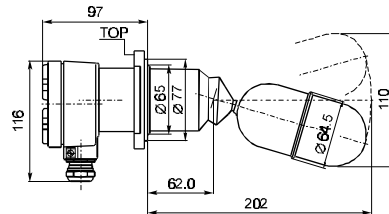
A magnet operated by the movement of a float will activate another magnet inside the switching enclosure. The magnet inside the enclosure operates a special switch. The movement of the float is transferred to the switch through magnetic coupling only, eliminating wear and contamination associated by traditional units.

5. DIMENSIONS



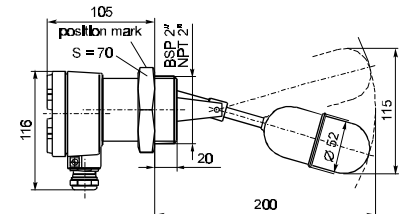
MKA-210-0

Fixed switch differential according to the arm length



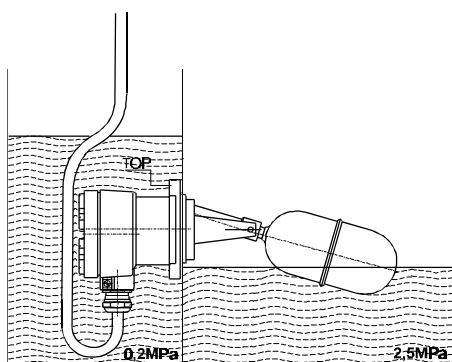
MKG 210- , MKS 210-

Fixed switch differential, with protection sleeve



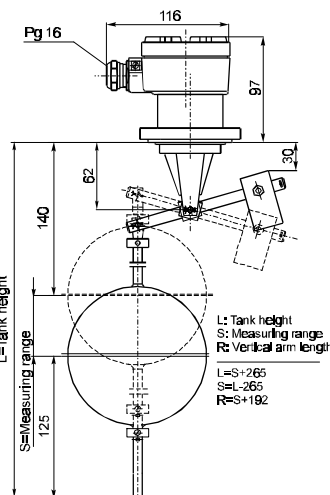
MKA-21B

Fixed switch differential, with 2" process connection



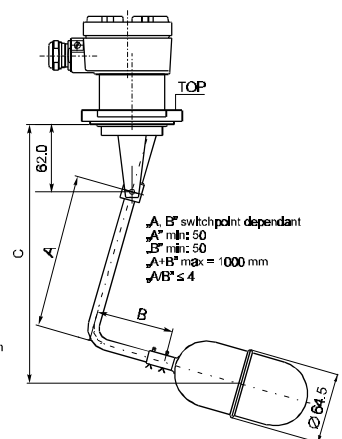
MKU-210

Fixed switch differential, for underwater application



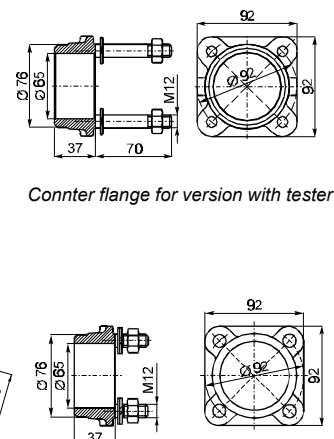
MKA-230

Adjustable switch differential, vertical mounting



MKA-210-4

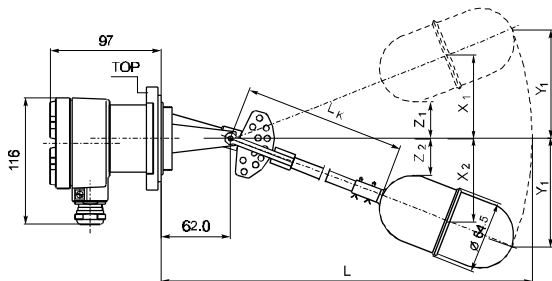
Adjustable switch differential, vertical mounting



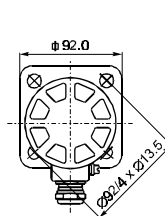
MKF- _ _

Square counter flange

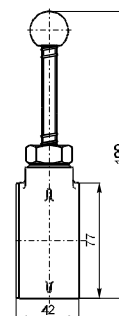
Manufacturer:
Nivelco Process Control Ltd.
H-1043 Budapest, Dugonics u. 11.
Phone: (36-1) 369-7575 Fax: (36-1) 369-8585



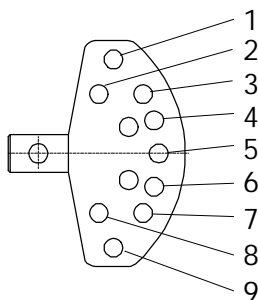
MKA-220
Adjustable switch differential, vertical mounting



Rectangular connection flange

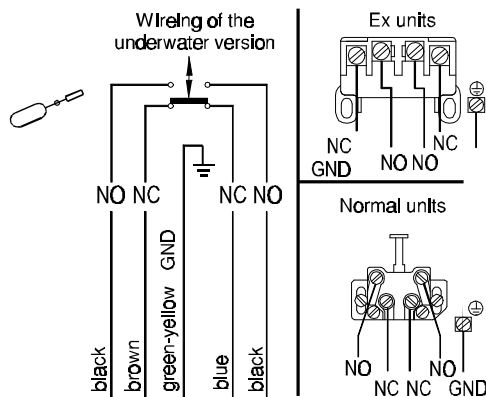


MKM-....
Tester



| Type: MKA-220- | -0 -9Ex | | | | | -1 -5Ex | | | | | -2 -6Ex | | | | | -3 -7Ex | | | | |
|----------------------------------|----------------|----------------|--------|----------------------------------|----------------------------------|----------------|----------------|--------|----------------------------------|----------------------------------|----------------|----------------|--------|----------------------------------|----------------------------------|----------------|----------------|--------|----------------------------------|----------------------------------|
| L _k = arm length [mm] | 0 | | | | | 100 | | | | | 200 | | | | | 300 | | | | |
| L = protrusion length [mm] | 268 | | | | | 350 | | | | | 450 | | | | | 550 | | | | |
| Pos. | X ₁ | X ₂ | Diff S | Y ₁ (Z ₁) | Y ₂ (Z ₂) | X ₁ | X ₂ | Diff S | Y ₁ (Z ₁) | Y ₂ (Z ₂) | X ₁ | X ₂ | Diff S | Y ₁ (Z ₁) | Y ₂ (Z ₂) | X ₁ | X ₂ | Diff S | Y ₁ (Z ₁) | Y ₂ (Z ₂) |
| 1-4 | +87 | +20 | 67 | 131 | (13) | +129 | +30 | 99 | 194 | (19) | +171 | +40 | 131 | 256 | (25) | 213 | +50 | 163 | 319 | (31) |
| 1-5 | +87 | +12 | 75 | 131 | 44 | +129 | +18 | 111 | 194 | 87 | +171 | +24 | 147 | 256 | 36 | 213 | +30 | 183 | 319 | 45 |
| 1-6 | +87 | -20 | 97 | 131 | 53 | +129 | -30 | 159 | 194 | 44 | +171 | -40 | 201 | 256 | 58 | 213 | -50 | 263 | 319 | 72 |
| 1-7 | +87 | -42 | 129 | 131 | 84 | +129 | -62 | 191 | 194 | 92 | +171 | -82 | 253 | 256 | 121 | 213 | -102 | 315 | 319 | 151 |
| 1-8 | +87 | -65 | 152 | 131 | 123 | +129 | -96 | 225 | 194 | 142 | +171 | -127 | 298 | 256 | 187 | 213 | -158 | 371 | 319 | 233 |
| 1-9 | +87 | -89 | 176 | 131 | 131 | +129 | -132 | 261 | 194 | 194 | +171 | -175 | 316 | 256 | 256 | 213 | -218 | 431 | 319 | 319 |
| 2-5 | +80 | +12 | 68 | 123 | 44 | +118 | +18 | 100 | 182 | 27 | +156 | +24 | 132 | 240 | 36 | 194 | +30 | 164 | 299 | 45 |
| 2-6 | +80 | -20 | 100 | 123 | 53 | +118 | -30 | 148 | 182 | 44 | +156 | -40 | 196 | 240 | 58 | 194 | -50 | 244 | 299 | 72 |
| 2-7 | +80 | -42 | 122 | 123 | 84 | +118 | -62 | 180 | 182 | 92 | +156 | -82 | 238 | 240 | 121 | 194 | -102 | 296 | 299 | 151 |
| 2-8 | +80 | -65 | 145 | 123 | 123 | +118 | -96 | 214 | 182 | 142 | +156 | +127 | 283 | 240 | 187 | 194 | -158 | 352 | 299 | 233 |
| 2-9 | +80 | -89 | 169 | 123 | 131 | +118 | -132 | 250 | 182 | 194 | +156 | -175 | 339 | 240 | 256 | 194 | -218 | 402 | 299 | 319 |
| 3-5 | +47 | +12 | 35 | 84 | 44 | +70 | +18 | 52 | 104 | 27 | +93 | +24 | 69 | 137 | 36 | +116 | +30 | 86 | 171 | 45 |
| 3-6 | +47 | -20 | 67 | 84 | 53 | +70 | -30 | 100 | 104 | 44 | +93 | -40 | 133 | 137 | 58 | +116 | -50 | 66 | 171 | 72 |
| 3-7 | +47 | -42 | 89 | 84 | 84 | +70 | -62 | 132 | 104 | 92 | +93 | -82 | 175 | 137 | 121 | +116 | -102 | 218 | 171 | 151 |
| 3-8 | +47 | -65 | 112 | 84 | 123 | +70 | -96 | 166 | 104 | 142 | +93 | -127 | 220 | 137 | 187 | +116 | -158 | 274 | 171 | 233 |
| 3-9 | +47 | -83 | 136 | 84 | 131 | +70 | -132 | 201 | 104 | 194 | +93 | -175 | 268 | 137 | 256 | +116 | -218 | 334 | 171 | 319 |
| 4-6 | +20 | -20 | 40 | 53 | 53 | +30 | -30 | 60 | 78 | 44 | +40 | -40 | 80 | 103 | 58 | +50 | -50 | 100 | 128 | 72 |
| 4-7 | +20 | -42 | 62 | 53 | 84 | +30 | -62 | 92 | 78 | 92 | +40 | -82 | 122 | 103 | 121 | +50 | -102 | 152 | 128 | 151 |
| 4-8 | +20 | -65 | 85 | 53 | 123 | +30 | -96 | 126 | 78 | 142 | +40 | -127 | 167 | 103 | 187 | +50 | -158 | 208 | 128 | 233 |
| 4-9 | +20 | -89 | 109 | 53 | 131 | +30 | -132 | 162 | 78 | 194 | +40 | -175 | 215 | 103 | 256 | +50 | -218 | 268 | 128 | 319 |
| 5-7 | -12 | -42 | 30 | 44 | 84 | -18 | -62 | 44 | 65 | 92 | -24 | -82 | 106 | 86 | 121 | -30 | -102 | 72 | 107 | 151 |
| 5-8 | -12 | -65 | 53 | 44 | 123 | -18 | -96 | 78 | 65 | 142 | -24 | -127 | 151 | 86 | 187 | -30 | -158 | 128 | 107 | 233 |
| 5-9 | -12 | -89 | 72 | 44 | 131 | -18 | -132 | 115 | 65 | 194 | -24 | -175 | 189 | 86 | 256 | -30 | -213 | 188 | 107 | 319 |
| 6-9 | -20 | -89 | 69 | 13 | 131 | -30 | -132 | 102 | 13 | 194 | -40 | -175 | 215 | 23 | 256 | -50 | -213 | 163 | 31 | 319 |

6. ELECTRICAL CONNECTION



7. MAINTANCE, REPAIR

The NIVOMAG MK-200 series devices do not require maintenance on a regular basis. In some instances, however, the device may need a cleaning from deposited material. Repairs during or after the guarantee period are effected at the Manufacturers.

8. STORAGE CONDITIONS

Environmental temperature range: -25°C to +60°C
Relative humidity: max. 98 %

9. WARRANTY

We provide a warranty for the period of 24 months. Warranty claims are observed on the simultaneous presentation of the User's Manual and the purchase invoice only.

All repairs under guarantee are performed on the Manufacturer's premises; the costs of dismantling, reinstalling or transport are borne by the Customer. Claims for guarantee are not valid in respect of failures due to abnormal usage, breakage, disaster, incompetent installation or usage.

The equipment sent back for repairs should be thoroughly cleaned or neutralised (disinfection) by the User.

10. QUALITY CERTIFICATE

Herewith we certify that the device of the type designation and factory number indicated above, complies with the values specified in the Technical Data, further, with the relevant rules of Safety of Labour at Work as well as the requirements in the relevant standards (EN 61010-1: 1994).

Type: **NIVOMAG MK_-2_-_-_-**
Serial number.:
Date of Manufacture:
Quality Control Manager:

11. TEST CERTIFIICATES FOR Ex VERSIONS

Herewith we certify that the device of the type designation and factory number indicated below was manufactured on the basis of the certificate issued by TÜV, Austria as well as in accordance with EN 50014:1977, EN 50018:1977, EN 50019:1977 and EN 50028:1987 and was tested in conformity with the "Procedure for the Performance of Routine Tests".

Type designation: **NIVOMAG MK_-2_-_-_- Ex**
Protection mark: **EEx dme IIC T4...T6**
Serial number:
Date of Manufacture:
Routine test performed by:
Quality Control Manager:

Subject to the instructions of the User's Manual and conforming with the prevailing standards, installation is permitted hazardous areas, whereby only the wetted parts are allowed to be placed in the ZONE 0 area.