

# Float switch

## Series Miniature-Float switch

Description **MSN1-NI-R3/8ST-2O 0120**

Article number **6891173046**

**Wiring diagram**  
(non-actuated state)

**Performance diagram**

| U [V] | I [A] |
|-------|-------|
| 24    | 0,833 |
| 36    | 0,555 |

**Characteristic features in accordance with EN 60947-5-1**

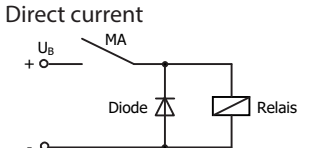
| Electrical data           |       |   |
|---------------------------|-------|---|
| Operational voltage range | $U_b$ | 10-36 V   |
| max. switching current    |       | 1,0 A   |
| max. switching capacity   |       | 20 VA   |
| mechanical life           |       | $10^7$ to $10^9$ switches depending on the load |
| Switching element         |       | 2 x N.C., rising level                          |
| Protection class          |       | III   |

| Mechanical data         |   |
|-------------------------|---|
| Bolting material        | X6CrNiMoTi17-12-2 (1.4571)  |
| Hexagon nut material    | X10CrNiS18-9 (1.4305)   |
| Switching tube material | X6CrNiMoTi17-12-2 (1.4571)  |
| Float material          | X6CrNiMoTi17-12-2 (1.4571)  |
| - density               | about 0,65 g/cm <sup>3</sup> ±10 %  |
| - depth of immersion    | 18 mm ± 2 mm ( to a fluid-density of 1 g/cm <sup>3</sup> )                        |
| Gasket material         | NBR   |
| Grip ring material      | X5CrMo17-12-2 (1.4122)  |
| Ambient air temperature | -5 °C to +60 °C   |
| Liquid temperature      | -5 °C to +60 °C   |
| Connection              | Plug M12x1 (4-pole, DC)   |
| Protection type         | IP 65 acc to IEC529 / EN 60529<br>(only in fully locked position with it's plugs) |
| Max. pressure           | 10 bar  |

| General details   |
|---|
| <p>Repeatability of switching points is <math>\pm 0,05</math> mm based on the same geometrical conditions as of a switch device.<br/>                     The measures of the switching points refer to a fluid-density of 1 g/cm<sup>3</sup>.<br/>                     The tolerance of the switching points is <math>\pm 2</math> mm<br/>                     Pay attention to the contact protection, when switching inductive or capacitive loads. Maximum data must not be exceeded!</p> |

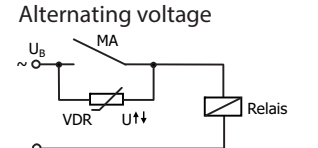
### Inductive loads

**Direct current**

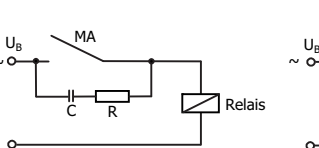


Suppression of voltage peaks with a free-wheeling diode

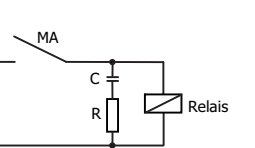
**Alternating voltage**



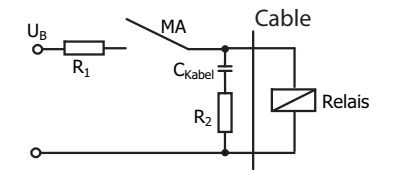
Suppression of voltage peaks with a VDR



Suppression of voltage peaks with an RC element



### Capacitive loads and lamp loads



Contact protection with resistors for limiting current

