

# Level control

## → Level control relay - 17.5 mm

- Level control by means of a discrete sensor



MNS

### Part numbers

Type	Sensing	Nominal voltage (V)	Code
MNS	By discrete sensor	24 → 240 V $\sim$	84870720

### Product adaptations



- Customisable colours and labels
- Fixed time delay or adjustable range

### Accessories

Description	Code
Removable sealable cover for 17.5 mm casing	84800000

### General characteristics

Supply	
Supply voltage $U_n$	24 V → 240 V $\sim$
Voltage supply tolerance	-15% / +10%
Operating range	20.4 V → 264 V $\sim$
Polarity with DC voltage	No
$\sim$ supply voltage frequency	50/60 Hz $\pm$ 10%
Power consumption at $U_n$	5.5 VA in $\sim$ / 2 W in $\text{---}$
Immunity from micro power cuts	< 5 ms
Inputs and measuring circuit	
Display precision	$\pm$ 10% of full scale
Digital probe input circuit	Volt-free contact
Max. voltage at probe terminals	Supply voltage $U_n$
Minimum pushbutton activation duration	50 ms
Max input current	1 mA
Max. length of probe cables	100 m
Timing	
Delay on threshold crossing	1 → 10 s, (1/+10%)
Repetition accuracy with constant parameters	$\pm$ 0.5%
Reset time	< 100 ms
Output	
Type of output	1 single pole changeover relay
Type of contacts	No cadmium
Maximum breaking voltage	250 V $\sim$
Max. breaking current	5 A $\sim$
Min. breaking current	10 mA / 5 V $\text{---}$
Electrical life (number of operations)	$1 \times 10^6$
Breaking capacity (resistive)	1250 VA $\sim$
Maximum rate	360 operations/hour at full load
Operating categories acc. to IEC 60947-5-1	AC 12, AC 13, AC 14, AC 15, DC 12, DC 13, DC 14
Mechanical life (operations)	$30 \times 10^6$
Insulation	
Nominal insulation voltage IEC 60664-1	250 V
Insulation coordination (IEC 60664-1 / 60255-5)	Overvoltage category III: degree of pollution 3
Rated impulse withstand voltage IEC 60664-1/60255-5	4 kV (1.2 / 50 $\mu$ s)
Dielectric strength IEC 60664-1/60255-5	2 kV AC 50 Hz 1 min
Insulation resistance IEC 60664-1 / 60255-5	> 500 $\Omega$ / 500 V $\text{---}$

## General characteristics

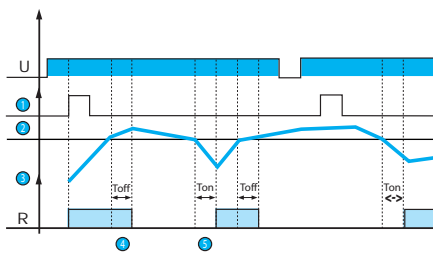
### General characteristics

Display power supply	Green LED
Display relay	Yellow LED
Casing	17.5 mm
Mounting	On 35 mm symmetrical DIN rail, IEC/EN 60715
Mounting position	All positions
Material: enclosure plastic type VO to UL94 standard	Incandescent wire test according to IEC 60695-2-11 & NF EN 60695-2-11
Protection (IEC 60529)	Terminal block: IP 20 Casing: IP 30
Weight	80 g
Connecting capacity IEC 60947-1	Rigid: 1 x 4 <sup>2</sup> - 2 x 2.5 <sup>2</sup> mm <sup>2</sup> , 1 x 11 AWG - 2 x 14 AWG Flexible with ferrules: 1 x 2.5 <sup>2</sup> - 2 x 1.5 <sup>2</sup> mm <sup>2</sup> , 1 x 14 AWG - 2 x 16 AWG
Max. tightening torques IEC 60947-1	0.6 → 1 Nm / 5.3 → 8.8 Lbf.in
Operating temperature IEC 60068-2	-20 → +50°C
Storage temperature IEC 60068-2	-40 → +70°C
Humidity IEC 60068-2-30	2 x 24 hr cycle 95% RH max. without condensation 55°C
Vibrations according to IEC/EN60068-2-6	10 → 150 Hz, A = 0.035 mm
Shocks IEC 60068-2-6	5 g

### Standards

Marking	CE (LVD) 73/23/EEC - EMC 89/336/EEC
Product standard	NF EN 60255-6 / CEI 60255-6 / UL 508 / CSA C22.2 N°14
Electromagnetic compatibility	Immunity EN 61000-6-2/IEC 61000-6-2 Emission EN 61000-6-4/EN 61000-6-3 IEC 61000-6-4/IEC 61000-6-3 Emission EN 55022 class B
Certifications	UL, CSA, GL pending
Conformity with environmental directives	RoHS, WEEE

## Principles



- 1 Cycle start PB
- 2 High threshold level
- 3 Monitored level
- 4 Ton time delay
- 5 Toff time delay

### Operating principle

#### MNS - Level controller using a discrete sensor

This product is designed to control a level by means of a discrete probe (float switch).

On power-up, the relay remains in the rest position. The level control function only begins after the pushbutton (PB) is pressed. This pushbutton is located on the front of the product, but can also be remotely located between Y1 and A1.

The output relay only closes if the float switch is open. If the level rises enough to make the float switch close, the relay will be deactivated after the time delay Toff.

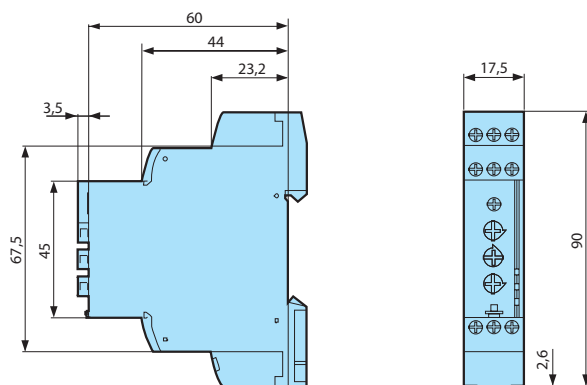
When the level drops and the probe opens, the relay is re-energised after the time delay Ton.

The LEDs flash when the product is energised but the cycle has not started (PB has not yet been pressed).

The time delays Ton and Toff are set at between 0.1 and 10 sec by means of two potentiometers on the front face.

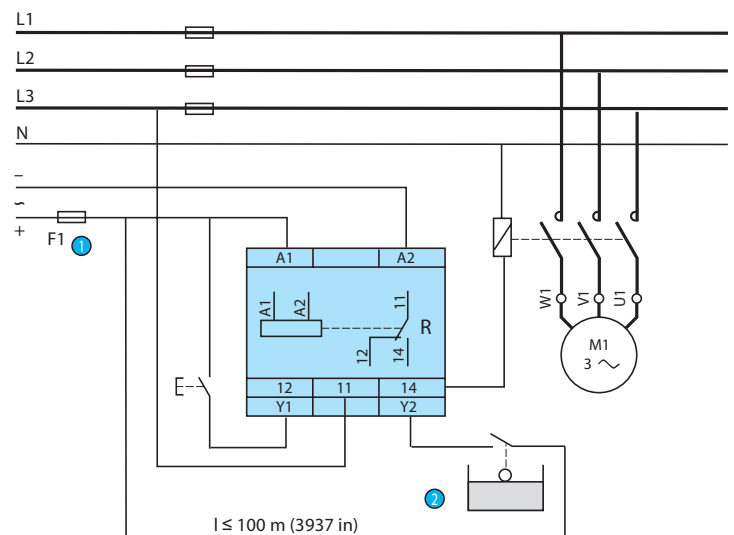
## Dimensions (mm)

### MNS



## Connections

### MNS



- 1 1 A fast-blow fuse or cut-out
- 2 "Float" switch