

Resistive level detector ES 2001



- For all electrically conductive liquids
- Adjustable sensitivity, timer; selectable operating mode

Functions:

- On /Off level controller between 2 rods
- Level regulation (filling/draining) between 2 thresholds (3 rods)
- Compatible with all our electrodes

APPLICATIONS

- Control of the level height of electrically conductive liquids
- Fill or drain automated operation

DESCRIPTION

Probes and electrodes are specially designed for different type of applications. ES2001 is used as a limit value detector on conductive liquids; Probes and rods are chosen according to the application.

Detection sensitivity to different type of liquids is set through the built-in potentiometer from 1 to 150 k Ω .

The hysteresis between on/off switchings of output relay is about 20% of sensibility. Such a narrow hysteresis limits false detections by a leakage current due to presence of mist, foam or condensed vapors.

With both timers, it is easy to adjust the level detection or level regulation to prevent false triggering due to wave effects.

For level detection, 1 relay ES2001 is necessary for each independant trigger point.

TECHNICAL FEATURES

Power supply	230, 115, 48, 24 V AC – 50/60 hz 24, 12 V DC
Consumption	\leq 2 VA
Outputs	2 Change-over contacts Max. 250 V AC; 5 A; 500 VA Max. 125 V DC; 1 A; 40 W
Powered detection loop	Galvanic insulation < 6 V AC / < 2 mA
Hysteresis	About 20 % of sensitivity
Sensitivity	Adjustable on 2 ranges 1 ... 70 k Ω (Low range) 5 ... 150 k Ω (High range)
Operating status	N.O. or N.C through DIP switch
Timer	Delay "ON" and "OFF" from 0.5 to 3 s Adjustable through a potentiometer
Ambient temperature	-15 ... +45 °C
Mounting	Rail DIN 46277
Protection	IP 40 (tropicalization on request)

EC Conformity: The instrument meets the legal requirements of the current European Directives

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ES 2001

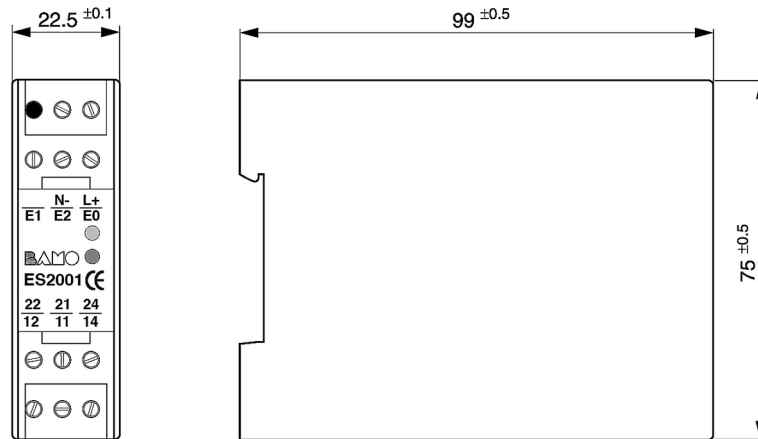
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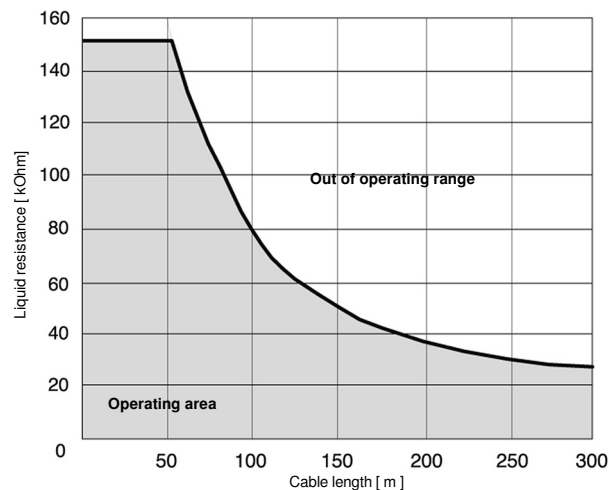
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DIMENSIONS



WORKING LIMITS

The capacitance of the cable on the detection loop, may reduce the sensitivity resulting of total cable length.
A standard cable, PVC, 3-wire, has a capacitance of 100 pF/m
Working limits are against the liquid resistance and detection loop capacitance (diagram below).



(This diagram concerns a relay with alternative current supply)

CONNECTIONS OF DETECTION LOOP

- Use a multi-conductor cable of 0.5 mm²
- This cable must be away from power cables.
- Over 25 meters, it is necessary to use a shielded cable (Max. 300 m).

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CODE NUMBERS AND REFERENCES

Code	Reference	Description
530 200	ES 2001 / 230 V AC	Resistive level relay, power 230 V AC - 50/60 Hz
530 210	ES 2001 / 115 V AC	Resistive level relay, power 115 V AC - 50/60 Hz
530 220	ES 2001 / 48 V AC	Resistive level relay, power 48 V AC - 50/60 Hz
530 230	ES 2001 / 24 V AC	Resistive level relay, power 24 V AC - 50/60 Hz
530 252	ES 2001 / 12 V DC	Resistive level relay, power 12 V DC
530 254	ES 2001 / 24 V DC	Resistive level relay, power 24 V DC

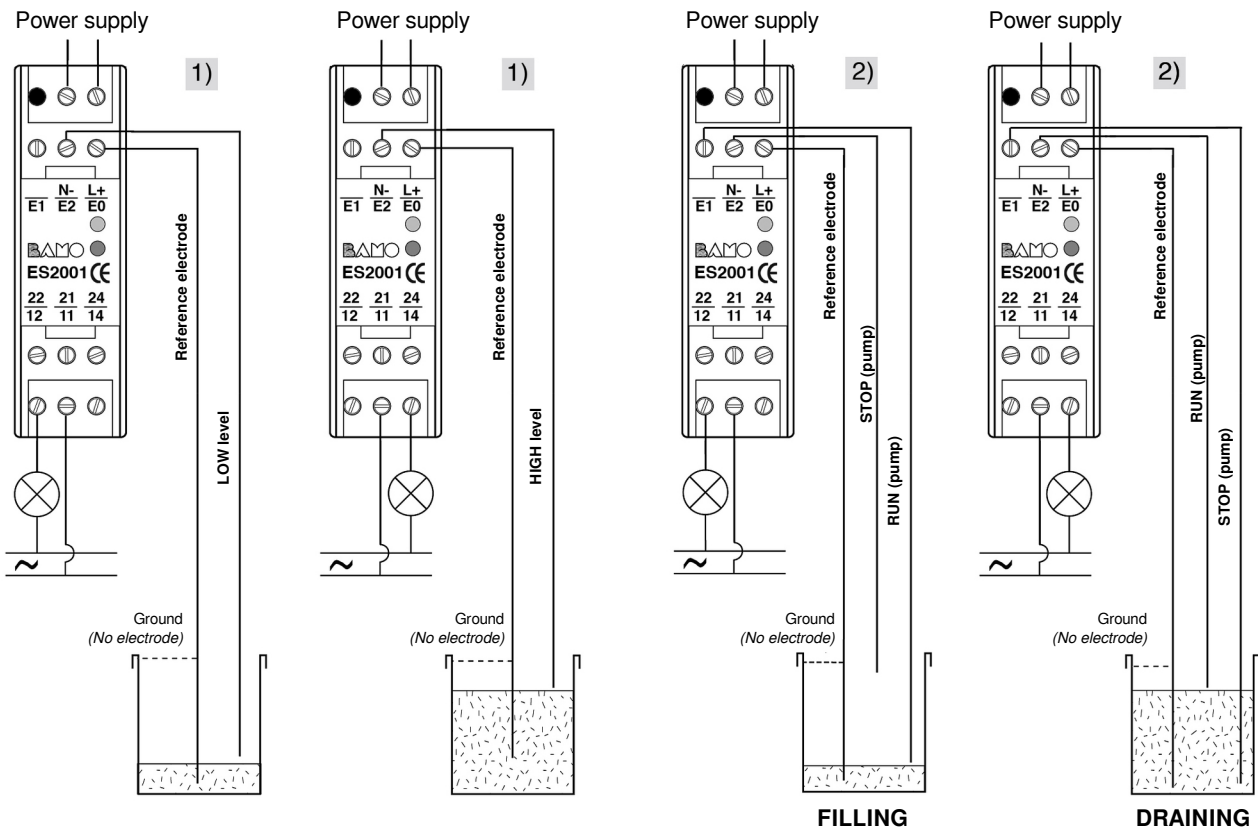
OPERATING FUNCTIONS

1) LEVEL DETECTION: 2 electrodes

The output relay is actuated when the liquid creates an electrical bridge between the metal tank body or a reference electrode and the level electrode.

2) FILL OR DRAIN AUTOMATION: 3 electrodes

The third electrode allows an automation between high and low level. A LED on the front shows the status of the relay. This one is lit when the relay is energized.



To test the relay:

- Disconnect the electrodes
- Shunt between E0 & E2: relay is actuated (alarm function)
- Shunt between E0, E2 & E1. Disconnect E2, then E1 (pump automation)

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