# Elettrosonda Q

## *Electroprobe at high, low and variable sensitivity for DIN rail*

The electroprobes of the Q, series, produced by MAC 3, are regulators of conductive fluid suitable for the minumum and maximum level control of deep well, tanks, cisterns etc. The operating principle is based on the detection, on the part of the control box, of the fluid resistance the level being controlled by means of special probes immersed in the liquid with the longest acting as a common element. When the level of the liquid inside the container or the well wets all three probes a relay is activated and subsequently deactivated only when the level descends, uncovering the lower probe.

**Models NS (the best for waters)**

In the case of wells with a diameter max of 100 mm the NS model probes should be positioned in such a way that there is not more than mt 2,0 between the lowest and the highest (sufficient to protect the pump). For wells with a larger diameter, the probes can be set at a greater distance, there are no limits for tanks. To conclude, liquids with a total resistance of 5,6 Kohm max can be well controlled. The control box can be placed at a distance of up to 1,000 mt, from the probes.

**Models AS**

To control liquids with low conductivity, rainwater for example the AS type is particurarly suitable. These models permit liquids with a very high total resistance up to 70 Kohm, to be controlled.

**Models SR**

For the control of conductive liquids with unknown conductivity this model is essential which controls up to 100Ω.

| Type | Vac single-voltage |
|---|---|
| Supply voltage | 24 - 117 - 230 - 380-415V~ 50 ÷ 60 Hz |
| Inter-electrode voltages | 10V~ |
| Power consumption | 3VA |
| **Type** | **Vdc double-voltage** |
| Supply voltage | 12/24V- |
| Inter-electrode voltages | 1,5V pp |
| Power consumption | Max 2 Watt |
| **General features** | |
| Operating resistance | 5,6 KΩ (NS) 68 KΩ (AS) 0 ÷ 100 KΩ (SR) |
| Contact rating<br>AC1 resistive load<br>AC ind. load Cos φ 0.4<br>DC inductive load | <br>5A to 250V~<br>2A to 250V~<br>5A to 30V~ |
| Dielectric strength | 2000V |
| Response time | 100 ms |
| Operating temperature | - 10° ÷ + 50 °C |
| Storage temperature | - 20° ÷ + 80 °C |
| Dimensions | mm 90x54x59 |
| Weight | gr. 200 |
| Housing | Noryl (PPO) UL 94V0 |
| Accessories included | n° 3 probes code TSOND00000 |
| Note<br>Max cable length of probes | <br>m 70 ÷ 80 (AS-SR) m 1000 (NS) |

**Single-voltage models:**

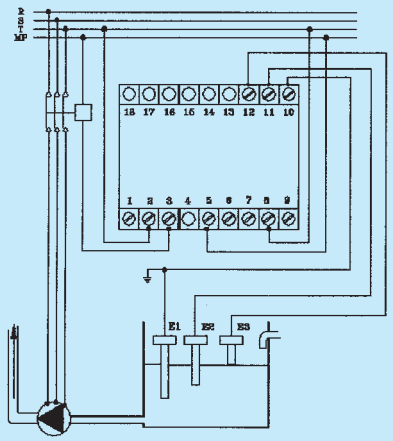
| | | |
|---|---|---|
| Elettrosonda Q NS with 3 probes | 24V ~ | Code EQ02400003 |
| Elettrosonda Q NS with 3 probes | 117V ~ | Code EQ11000003 |
| Elettrosonda Q NS with 3 probes | 230V ~ | Code EQ22000003 |
| Elettrosonda Q NS with 3 probes | 380V ~ | Code EQ38000003 |
| Elettrosonda Q NS with 3 probes | 415V ~ | Code EQ41500003 |
| Elettrosonda Q AS with 3 probes | 24V ~ | Code EQ024H0003 |
| Elettrosonda Q AS with 3 probes | 117V ~ | Code EQ110H0003 |
| Elettrosonda Q AS with 3 probes | 230V ~ | Code EQ220H0003 |
| Elettrosonda Q AS with 3 probes | 380V ~ | Code EQ380H0003 |
| Elettrosonda Q AS with 3 probes | 415V ~ | Code EQ415H0003 |
| Elettrosonda Q SR with 3 probes | 24V ~ | Code EQ024R0003 |
| Elettrosonda Q SR with 3 probes | 117 V ~ | Code EQ110R0003 |
| Elettrosonda Q SR with 3 probes | 230V ~ | Code EQ220R0003 |
| Elettrosonda Q SR with 3 probes | 380V ~ | Code EQ380R0003 |
| Elettrosonda Q SR with 3 probes | 415V ~ | Code EQ415R0003 |

**Dual-voltage models:**

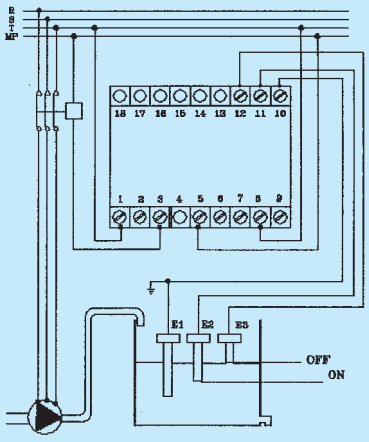
| | | |
|---|---|---|
| Elettrosonda Q NS with 3 probes | 12/24V ~ | Code EC00C00003 |
| Elettrosonda Q AS with 3 probes | 12/24V ~ | Code EC00CH0003 |
| Elettrosonda Q SR with 3 probes | 12/24V ~ | Code EC00CR0003 |

All models are also available without probe


Wiring diagram 1



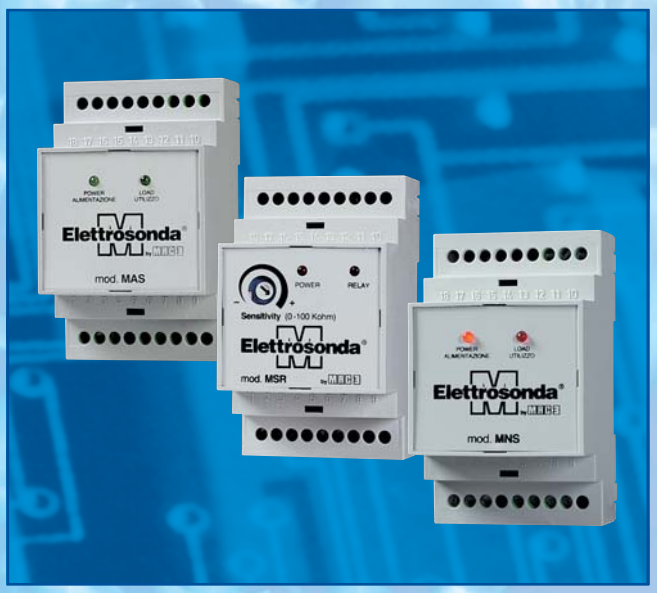

Wiring diagram 2



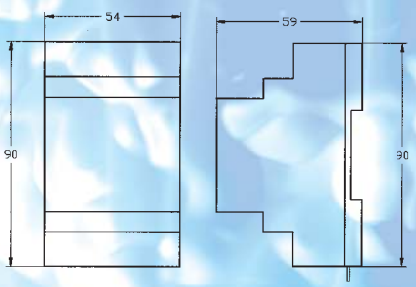
# Elettrosonda M

## *Multi-voltage electroprobe for DIN rail with high, low or variable sensitivity*

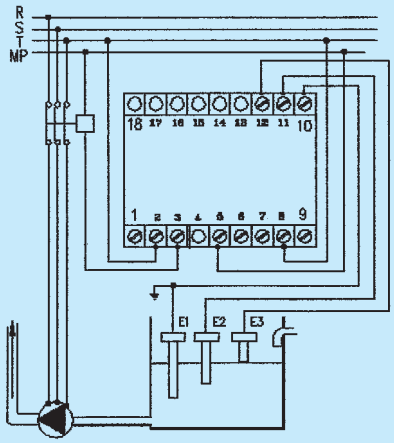
The electroprobes of the M, series, produced by MAC 3, are regulators of conductive fluid suitable for the minumum and maximum level control of deep well, tanks, cisterns etc.
The operating principle is based on the detection, on the part of the control box, of the fluid resistance, the level being controlled by means of special probes immersed in the liquid with the longest acting as a common element. When the level of the liquid inside the container or the well wets all three probes a relay is activated which is subsequently deactivated only when the level descends, uncovering the lower probe.
The principal feature of this model is that it offers the possibility of connection to three different voltage values.
For sensitivity characteristics refer to type Q.



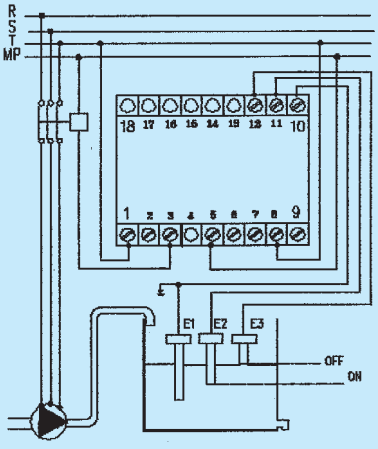

| Type | Elettrosonda M |
|---|---|
| Supply voltage | 24 - 117 - 230V~ 50 ÷ 60 Hz |
| Operate resistance | 5,6 KΩ (NS) 68KΩ (AS) 0÷100KΩ (SR) |
| Inter-electrode voltages | 10V~ |
| Power consumption | 5VA |
| Contact rating | AC1 resistive load 5A a 250V~<br>AC ind. load Cos φ 2A a 250V~<br>DC inductive load 5A a 30V ~ |
| Dielectric strength | 2000V |
| Response time | 100 ms |
| Operating temperature | - 10° ÷ + 50 °C |
| Storage temperature | - 20° ÷ + 80 °C |
| Dimensions | mm 90x54x59 |
| Weight | gr. 200 |
| Housing | Noryl (PPO) UL 94V0 |
| Accessories included | n° 3 electrode code TSOND00000 |
| Note<br>Max cable length of probes | m 1000 |
| Connections | Supply |
| Supply voltage 24V~ | Pin 5<br>Pin 6 |
| Supply voltage 117V~ | Pin 5<br>Pin 7 |
| Supply voltage 230V~ | Pin 5<br>Pin 8 |
| Models<br>Elettrosonda MNS with 3 probes<br>Elettrosonda MAS with 3 probes<br>Elettrosonda MSR with 3 probes | <br>code EM00000003<br>code EM000H0003<br>code EM000R0003 |




Wiring diagram 1




Wiring diagram 2



# Elettrosonde Z8-Z11

***Electro-probes with high, low and variable sensitivity for base mounting. DC and AC power supply, single and dual supply voltage***

The electroprobes of the Z series are particularly interesting for their reduced size. The Z11 model has a double voltage supply. Both the Z8 and Z11 models are available in the three versions: normal sensitivity (NS), high sensitivity (AS) and adjustable sensitivity (SR).
The operating principle is based on the detection, on the part of the control box, of the fluid resistance, the level being controlled by means of special probes immersed in the liquid with the longest acting as a common element. When the level of the liquid inside the container or the well wets all three probes, a relay is activated which is subsequently deactivated only when the level descends, uncovering the lower probe.


| General features | |
|---|---|
| Supply voltage | 24V - ,48V - / 117V~, 230V~ |
| Operate resistance | 5,6 KΩ (NS) 70 KΩ (AS) 0÷100KΩ (SR) |
| Inter-electrode voltages | 10V~ |
| Power consumption | 5VA |
| Contact rating<br>AC1 resistive<br>AC ind. load Cos φ 0,4<br>DC inductive load | <br>5A to 250V~<br>2A to 250V~<br>5A to 30V - |
| Dielectric strength | 2000V |
| Response time | 100 ms |
| Operating temperature | - 10° ÷ + 50 °C |
| Storage temperature | - 20° ÷ + 80 °C |
| Dimensions | mm 79x35x88 |
| Weight | gr. 200 |
| Housing | Noryl (PPO) UL 94V0 |
| Accessories included | n° 3 electrode code TP00000000 |
| Note<br>Max cable length of probes | <br>m 70 ÷ 80 (AS-SR) m 1000 (NS) |

Voltage available:

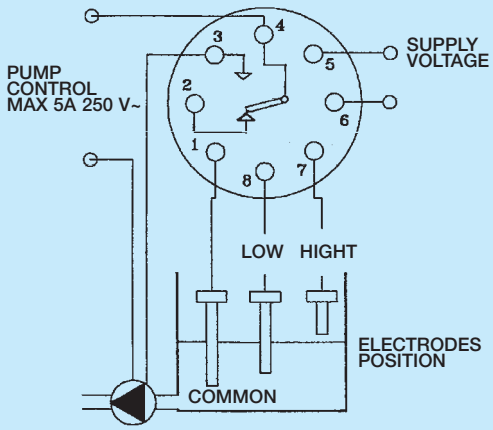
**Z8 single supply voltage**

| | | |
|---|---|---|
| Elettrosonda Z8 NS with 3 probes | 24V - | code EZ08D000Z3 |
| Elettrosonda Z8 NS with 3 probes | 48V - | code EZ08E000Z3 |
| Elettrosonda Z8 NS with 3 probes | 117V~ | code EZ08X000Z3 |
| Elettrosonda Z8 NS with 3 probes | 230V~ | code EZ08Y000Z3 |
| Elettrosonda Z8 AS with 3 probes | 24V - | code EZ08DH00Z3 |
| Elettrosonda Z8 AS with 3 probes | 48V - | code EZ08EH00Z3 |
| Elettrosonda Z8 AS with 3 probes | 117V~ | code EZ08XH00Z3 |
| Elettrosonda Z8 AS with 3 probes | 230V~ | code EZ08YH00Z3 |
| Elettrosonda Z8 SR with 3 probes | 24V - | code EZ08DR00Z3 |
| Elettrosonda Z8 SR with 3 probes | 48V - | code EZ08ER00Z3 |
| Elettrosonda Z8 SR with 3 probes | 117V~ | code EZ08XR00Z3 |
| Elettrosonda Z8 SR with 3 probes | 230V~ | code EZ08YR00Z3 |

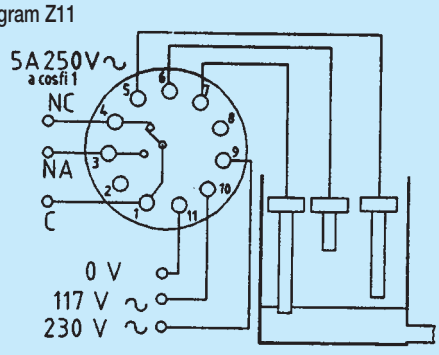
**Z11 dual supply voltage**

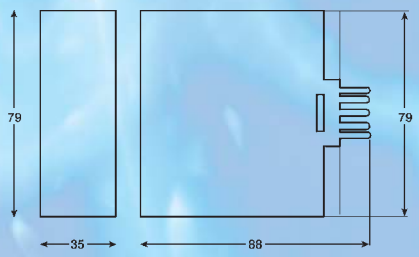
| | | |
|---|---|---|
| Elettrosonda Z11 NS with 3 probes | 24/48V - | code EZ11B000Z3 |
| Elettrosonda Z11 NS with 3 probes | 117/230V~ | code EZ11A000Z3 |
| Elettrosonda Z11 AS with 3 probes | 24/48V - | code EZ11BH00Z3 |
| Elettrosonda Z11 AS with 3 probes | 117/230V~ | code EZ11AH00Z3 |
| Elettrosonda Z11 SR with 3 probes | 24/48V - | code EZ11BR00Z3 |
| Elettrosonda Z11 SR with 3 probes | 117/230V~ | code EZ11AR00Z3 |

Wiring diagram Z8




Wiring diagram Z11



# Elettrosonda DB

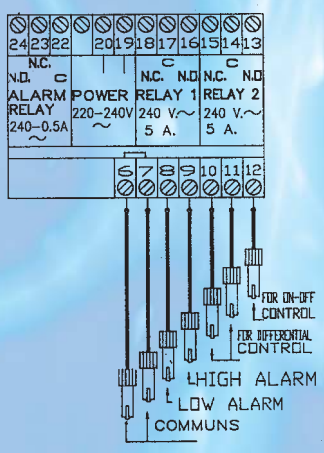
## *Electro-probe with 5 control points*

The DB Electroprobe intended for use in the sector of level control instruments, open up a whole new field of multifunctional equipment. MAC 3 once again offers an extremely innovative product which unites a series of functions in a very small space (4 DIN modules).
List of functions:
ON-OFF electroprobe (operating in one single point).
Acts on relay 2 - Use probes 6 and 12.
Differential electroprobe (operates between two probes positioned by installer). Acts on relay 1. Use probes 10 and 11, always together with 6 and/or 7.
High alarm - use probes 9 and 6.
Low alarm - use probes 8 and 7.
Internal Buzzer - For high and low alarms.
Control for external alarm (buzzer or light).
Possibility of activating or deactivating controls by means of dip-switch. The installation of 4 electroprobes would be necessary to obtain the same functions.

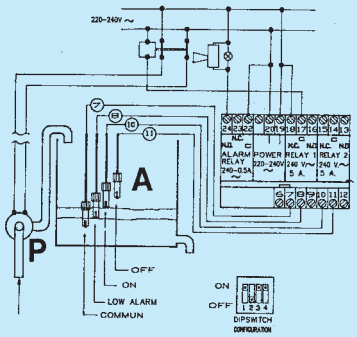

| Type | Elettrosonda DB |
|---|---|
| Code | ED22000000 |
| Supply voltage | 230V~ 50÷60 Hz |
| Inter-electrode voltages | 24V~ |
| Power consumption | 10VA max |
| Operate resistance | 0 ÷ 20 KΩ |
| Release resistance | > 20 KΩ |
| Contact rating Relays 1 and 2 | AC1 resistive load 5A a 250V~ AC ind. load Cos φ = 0.4 2A a 250V~ DC 5A to 30V~ |
| Contact rating Alarm relay | AC1 resistive load 0,5A 250V~ |
| Response time | 100 ms |
| Operating temperature | - 10 ÷ + 55 °C |
| Storage temperature | - 20 ÷ + 85 °C |
| Housing | Noryl (PPO UL 94V0) |
| Dimensions | mm 90x72x60 |
| Weight | gr. 320 |

Installation
When making the installation as per examples given, particular attention should be paid to certain details: Together with the probes for level control of for activating the alarms it is essential to always have a (common) probe, connected to terminal 6 or 7 (terminals 6 and 7 are joined to each other internally). This " common' probe must always be lower than any other probe.
The low and high alarm are not interchangeable, that is: the low alarm activates the relay when the probe situated at the bottom is no longer wet be the liquid.
The high alarm activates the relay as soon as the liquid touches the probe.

Note: Supply voltage:
24 V~ code ED02400000 117 V~ code ED11000000
Version powered by external power supply code ED0A000000
Power supply: code TA01000000

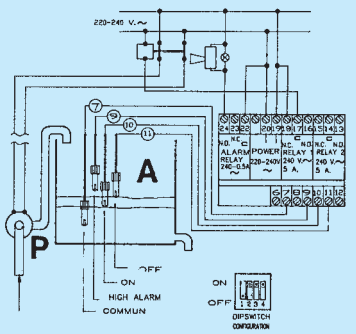



1



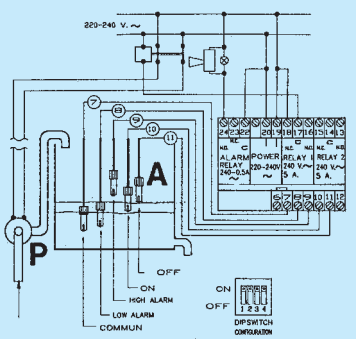

In **A** maintains the level between the on and off probes and activates the alarm when the liquid falls below the "low alarm" probe.

2




In A maintains the level between the on and off probes and activates the alarm in the liquid exceeds the "high alarm" probe.

3




In A maintains the level between the on and off probes and activates the alarm in the liquid exceeds the "high alarm" probe.

# Electro-probe accessories

The accessories manufactured by MAC 3 are to complete its range of level regulation devices.

| Type | Socktes 8 pin |
|---|---|
| Code | TZ08000000 |
| Mounting | DIN rail or surface mounting |
| Material | ABS |
| Weight | gr. 45 |
| Dimensions | mm 60x40x23 |
| Operating room temperature | 80 °C max |

| Type | Socktes 11 pin |
|---|---|
| Code | TZ11000000 |
| Mounting | DIN rail or surface mounting |
| Material | Noryl UL 94 V1 |
| Weight | gr. 55 |
| Dimensions | mm 60x40x31 |
| Operating room temperature | 80 °C max |

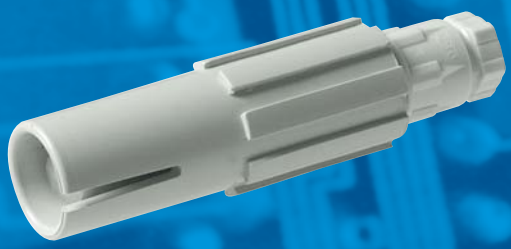
| Type | Probe |
|---|---|
| Code | TS0ND00000 |
| Mounting | Directly in the liquid |
| Material | ABS |
| Weight | gr. 45 |
| Dimensions | Ø mm 22x85 |
| Operating room temperature | 80 °C max |

| Type | Triple probe holder |
|---|---|
| Code | Tp00000000 |
| Mounting | Hole Ø mm 65 |
| Material | Thermosetting resin |
| Weight | gr. 190 |
| Dimensions | Ø mm 80x72 |
| Operating room temperature | 80 °C max |
| Note | Elettrodes mm Ø 5 not included.<br>Protective terminal cover. |

Socktes 8 pin


Socktes 11 pin


Probe



Triple probe holder