

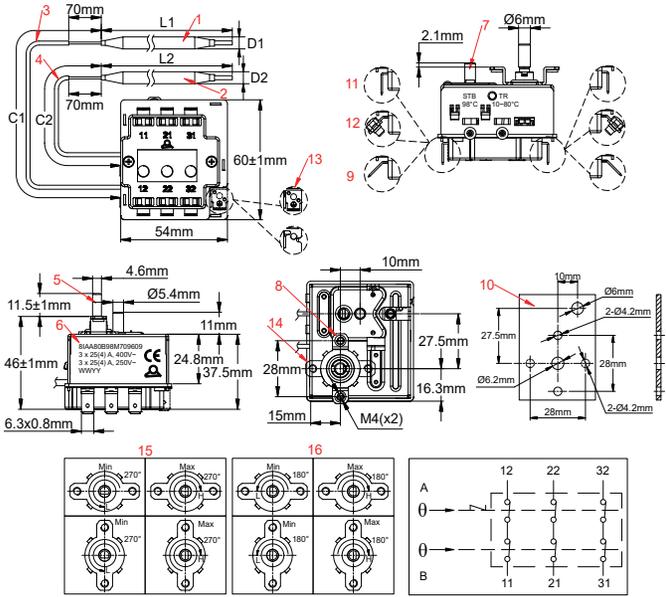


# Temperature control thermostat & manual reset thermal cutout

## Three poles combination control thermostats, 25(4)A 250VAC, 25(4)A 400VAC with 3 poles fail safe manual reset limiter

### Type 81

### Dimensions

<p>1: Manual reset bulb and capillary;          2: Control bulb and capillary;          3: Manual reset capillary sleeve (green);          4: Control capillary sleeve (transparent);          5: Control adjustment shaft;          6: Main body;          7: Manual reset button;          8: Mounting bracket angled 0° (standard);          9: 6.35 × 0.8 terminals angled 45° (standard);          10: Mounting board drilling.</p>	<p><b>Options</b>          11: 6.35 × 0.8 terminals angled 90°          12: Screw terminals          13: 6.35 × 0.8 ground terminal          14: Mounting bracket angled 90°          15: 270° shaft angulation          16: 180° shaft angulation</p>
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### Applications

3 pole temperature control and 3 pole cut off on hot water tanks, including flat tanks, electric radiators, electro-thermal heating equipment and immersion heaters.

### Main technical features

**Housing dimensions:** 60 × 54 × 46mm (Without adjusting shaft, terminals, bulbs and capillaries).

**Bulb and capillary:** Stainless steel, capillary length 250, 750, or 870mm, full length PVC sleeve on capillary up to 70mm of the bulb. PVC sleeve is transparent on the temperature control diastat and green on fail-safe safety diastat.

The bulb diameter of the safety diastat is usually 1mm smaller than that of the temperature control diastat to allow them to be mounted one behind the other in the same pocket. For the same reason, the capillary of the safety diastat is shorter than that of the temperature control diastat.

Contact us for different dimensions.

Capillary minimum bending radius: 5mm.

**Temperature sensing element:** Liquid filled bulbs and capillaries.

**Terminals:** 6.35 × 0.8 quick connect terminals. M4 screws also available on request.

**Adjustment of temperature control set point:** Dia. 6mm shaft with 4.6mm flat, shaft length 11.5mm. Other lengths or fixed setting available on request.

The temperature control shaft is available with 180 or 270° mechanical angulation.

**Manual reset:** Fail-safe, sealed fixed setting, front access reset button. Set point value of manual reset is usually 25°C above the maximum adjustment value of the temperature control set point. Other values are possible, **provided that tolerances between both set point don't allow over crossing.**

To know more about standard tolerances on manual reset set point, see 85 thermostat catalogue pages.

**Mounting:** Bracket with 2 M4 holes at 28mm distance, centered around the adjustment shaft. Exists in 2 positions, at 0° and 90°

**Rating:** 3 × 25(4)A 400VAC, 3 × 25(4)A 250VAC.

**Contacts:** 3 normally closed contacts, snap action, with simultaneous opening and closing.

**Max ambient temperature on body:** 85°C (185°F).

**Acceptable degree of pollution for use in 250V:** 3

**Acceptable degree of pollution for use in 400V:** 2

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Main references with 45° bended QC terminals, 270° angulation, 11.5mm shaft length, mounting bracket angled at 0° \*

References with 6 × 6.35 terminals bended at 45°	References with six M4 screw terminals	Manual reset Calibration temperature (°C/°F)	Control temperature range (°C/°F)	Capillaries length (C1, C2, mm) **	Bulb diameters (D1, D2, mm)	Bulb length (L1, L2, mm)	Max temperature on bulbs L1 and L2 °C (°F)
8IAA70B90M009E04	8IAA70B90M009E0S	90+0/-8°C (194+0/-14.4°F)	10-70°C (50-158°F)	900	∅5, ∅6	80, 85	L1: 140°C (284°F) L2: 170°C (338°F)
8IAA70B90M005E04	8IAA70B90M005E0S			500			
8IAA70B90M002E04	8IAA70B90M002E0S			250			
8IAC70B90M009E04	8IAC70B90M009E0S	90+0/-8°C (194+0/-14.4°F)	30-70°C (86-158°F)	900	∅5, ∅6	80, 140	L1: 120°C (248°F) L2: 130°C (266°F)
8IAC70B90M005E04	8IAC70B90M005E0S			500			
8IAC70B90M002E04	8IAC70B90M002E0S			250			
8IA075B98M009E04	8IA075B98M009E0S	98+0/-8°C (208+0/-14.4°F)	0-75°C (32-167°F)	900	∅5, ∅6	80, 130	L1: 140°C (284°F) L2: 170°C (338°F)
8IA075B98M005E04	8IA075B98M005E0S			500			
8IA075B98M002E04	8IA075B98M002E0S			250			
8IAA80BK0M009E04	8IAA80BK0M009E0S	110+0/-8°C (230+0/-14.4°F)	10-80°C (50-176°F)	900	∅5, ∅6	80, 120	L1: 140°C (284°F) L2: 170°C (338°F)
8IAA80BK0M005E04	8IAA80BK0M005E0S			500			
8IAA80BK0M002E04	8IAA80BK0M002E0S			250			
8IAC85BK0M009E04	8IAC85BK0M009E0S	110+0/-10°C (230+0/-18°F)	30-85°C (86-185°F)	900	∅5, ∅6	80, 80	L1: 140°C (284°F) L2: 170°C (338°F)
8IAC85BK0M005E04	8IAC85BK0M005E0S			500			
8IAC85BK0M002E04	8IAC85BK0M002E0S			250			

\* Ask to get specific data sheet for products with different bending of 6.35 terminals, 180° angulation, a mounting bracket angled at 90° or different length of adjustment shaft.

\*\* In standard, manual reset capillary is shorter than temperature control. Ask specific data sheet if 2 identical lengths are requested. Temperature control maximum set point is 450°C and maximum manual reset set point is 500°C. Ask for specific data sheets. Some high temperature ranges are not available with fail safe action.

## Standard knobs printing\*

10 - 70°C on 270°	10 - 70°C on 180°	10 - 80°C on 270°	10 - 80°C on 180°	30 - 85°C on 270°	30 - 85°C on 180°	30 - 70°C on 210°
66MZ0060100702FB	66MZ006010070AFB	66MZ0060100802FB	66MZ006010080AFB	66MZ0060300852FB	66MZ006030085AFB	66MZ0060300701FW
50 - 158°F on 270°	50 - 158°F on 180°	50 - 176°F on 270°	50 - 176°F on 180°	86 - 185°C on 270°	86 - 185°C on 180°	33.8 - 158°F on 210°
66MZ0060501582FY	66MZ006050158AFY	66MZ0060501762FY	66MZ006050176AFY	66MZ0060861852FY	66MZ006086185AFY	66MZ0060351551FX

\* Be careful in selecting knob model in accessories, the knob diameter and bezel must let free access to the reset button (see the 27.5mm dimension on drawing)

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