

Section 7

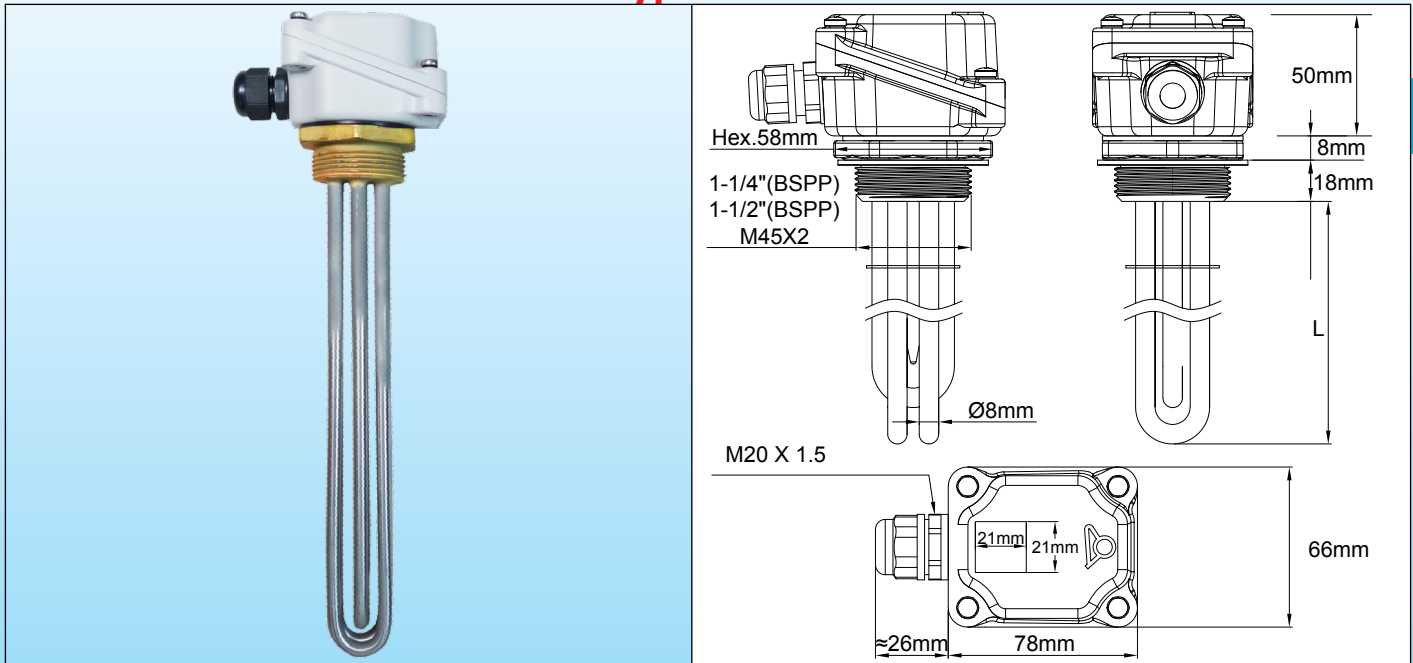
Immersion heaters with aluminum connection box





Immersion heaters with aluminum connection box

Immersion heater with 78mm × 66mm × 50mm aluminum enclosure.
 1"1/4, 1"1/2, M45x2 fittings.
Type 9ST3



Main applications: liquid heating, hot water circuits, containers and buffer tanks.

These immersions heaters are the smallest with 3 heating elements and aluminum enclosure. There is not enough room inside for thermostat.

They do not have a built-in connection block.

They exist in:

- 6 standard power levels: 1kW – 1.5kW - 2kW - 3kW - 4kW - 6kW.
- 3 types of standard fittings: 1"1/4, 1"1/2 and M45x2
- 2 types of surface load density: 5W/cm² and 10W/cm². See technical introduction to optimize the surface load.

Heater tube material: 8mm dia. AISI 304 or Incolloy 800 (AISI 316; AISI 321; Incolloy 825 on request).

Fitting material: brass, swiveling on housing, brazed on tubes. (AISI 304 or AISI 316, TIG welded, or brazed, models are available on request). Supplied without gasket and without nut. See accessories below.

Thread: 1"1/4, 1"1/2 BSPP (ISO 228) and metric thread M45x2.

Enclosure: 78 × 66 × 50mm, die-cast aluminum, 3mm wall thickness. Silicone foam gasket. Stainless steel cover screws with locking nuts, 2 inner earth terminals M4; Gray epoxy paint RAL7035. Protected against galvanic corrosion.

Ingress protection class: Water and dust: IP65; shock resistance: IK 10 (with metal cable gland).

Cable glands: M20, PA66. Nickel-plated brass on request.

Thermowell: On request.

Heating elements connections: terminals with stainless steel screw, nut and stainless steel washer. Switching straps on 3 phases models.

Support grid: 1 grid AISI 304 for lengths from 400 to 600mm, 2 grids above.

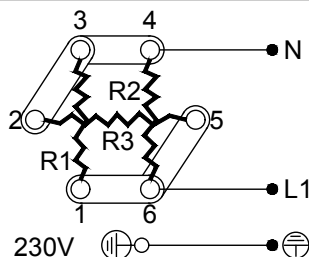
Not heating immersed zone: 50mm.

Surface load: standard 5W/cm² or 10W/cm², others values on request.

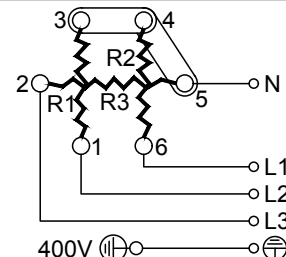
Voltage: 220-240V single phase or three phases 380-400V (Star connection with neutral).

Variants on request: TCO inside dia. 10mm pocket, at center of heating elements. (MOQ apply).

Electric Wiring



Straps position in 220-240V single phase



Straps position in 380-400V 3 phases



Contact us

Web: www.ultimheat.co.th

Cat22-4-7-3

Immersion heaters with aluminum connection box

Main references

5W/cm², 1"1/2* brass fitting.

| Power | 1kW | 1.5kW | 2kW | 3kW | 4kW | 6kW |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Length (mm) | 170 | 240 | 300 | 440 | 570 | 840 |
| AISI 304 Reference | 9ST3G5E0010U8170 | 9ST3G5E0015U8240 | 9ST3G5E0020U8300 | 9ST3G5E0030U8440 | 9ST3G5E0040U8570 | 9ST3G5E0060U8840 |
| Incolloy 800 reference | 9ST3G5E0010UK170 | 9ST3G5E0015UK240 | 9ST3G5E0020UK300 | 9ST3G5E0030UK440 | 9ST3G5E0040UK570 | 9ST3G5E0060UK840 |

10W/cm², 1"1/2* brass fitting.


| Power | 1kW** | 1.5kW | 2kW | 3kW | 4kW | 6kW |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Length (mm) | 135 | 135 | 170 | 240 | 300 | 440 |
| AISI 304 Reference | 9ST3G5E0010B8130 | 9ST3G5E0015U8130 | 9ST3G5E0020U8170 | 9ST3G5E0030U8240 | 9ST3G5E0040U8300 | 9ST3G5E0060U8440 |
| Incolloy 800 reference | 9ST3G5E0010BK130 | 9ST3G5E0015UK130 | 9ST3G5E0020UK170 | 9ST3G5E0030UK240 | 9ST3G5E0040UK300 | 9ST3G5E0060UK440 |

* 1"1/4 brass fitting instead of 1"1/2, replace G5 by G4 in the reference. M45x2 brass fitting instead of 1"1/2, replace G5 by G9 in the reference.


** This model has only 2 heating elements.

References of accessories in option (not included in the product, must be ordered separately):

Nuts

|  | Thread | 1"1/4 | 1"1/2 | M45x200 |
|---|---------|------------------|------------------|------------------|
| | Brass | 9BRRA3000ELH302A | 9BRRA3000ELH303A | 9BRRA3000ELH305A |
| | AISI304 | 9BRRA3000ELH032A | 9BRRA3000ELH006A | 9BRRA3000ELH049A |
| | AISI316 | 9BRRA3000ELH202A | 9BRRA3000ELH203A | 9BRRA3000ELH205A |

Gaskets

|  | Thread | 1"1/4 | 1"1/2 - M45x200 |
|---|--------|------------------|------------------|
| | NBR | 9BRJ03000ELH206A | 9BRJ03000ELH205A |
| | Fiber | 9BRJ03000ELH052A | 9BRJ03000ELH007A |
| | PTFE | 9BRJ03000ELH032A | 9BRJ03000ELH033A |

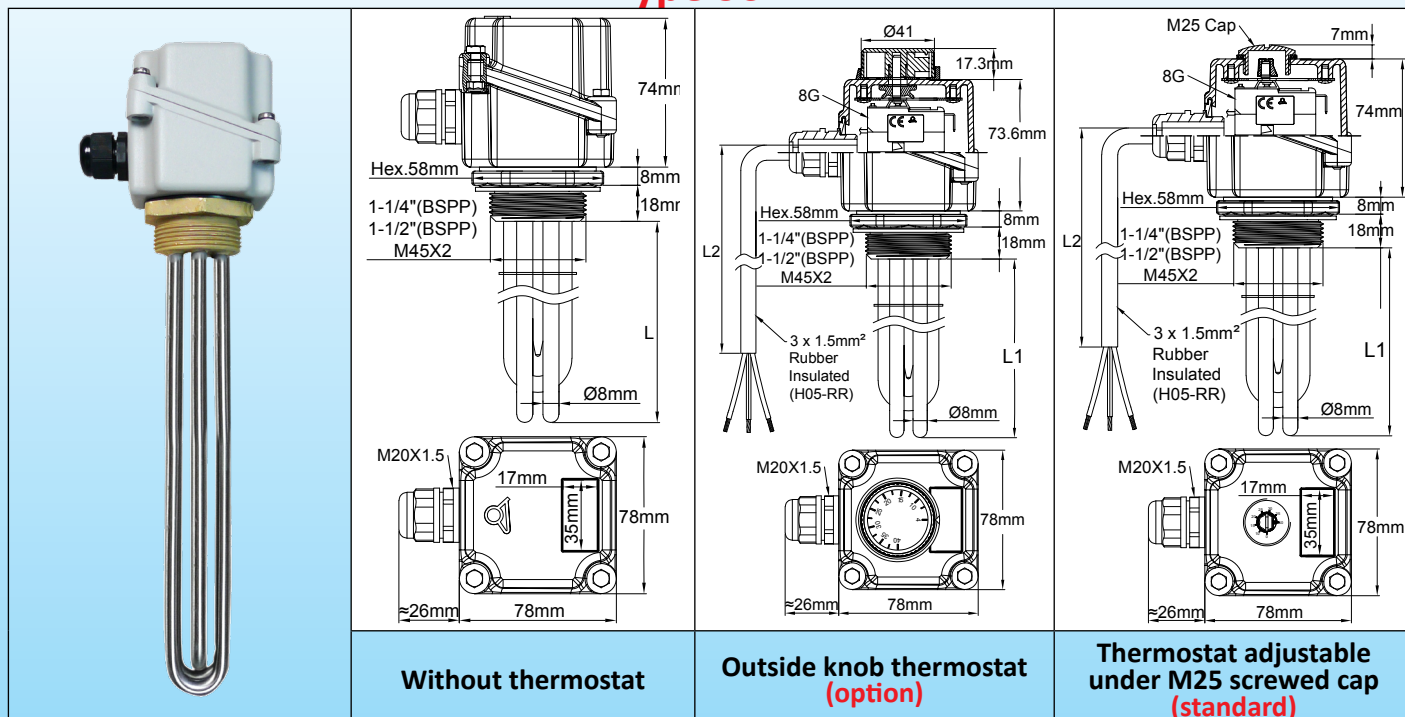
Other accessories and drawings: see last section of this catalogue

Immersion heaters with aluminum connection box

Immersion heater with 78mm × 78mm × 74mm aluminum enclosure.

1"1/4, 1"1/2, M45x2 fittings. **With or without thermostat.**

Type 9ST4



Main applications: liquid heating, hot water circuits, containers and buffer tanks.

These heaters are the smallest size with aluminum enclosure that can receive an adjustable thermostat. But there is not enough room inside to add a connection block. Therefore, models with thermostats are supplied wired with a 2 meters long rubber insulated cable, 3 × 1.5mm².

They exist in:

- 6 standard power levels: 1kW – 1.5kW - 2kW - 3kW - 4kW - 6kW.

(4 and 6kW version does not exist with thermostat).

- 3 types of standard fittings: 1"1/4, 1"1/2 and M45x2.

- 2 types of surface load density: 5W/cm² and 10W/cm². See technical introduction to optimize the surface load.

Heater tube material: 8mm dia. AISI 304 or Incolloy 800 (AISI 316; AISI 321; Incolloy 825 on request).

Fitting material: Brass, swiveling on housing, brazed on tubes. (AISI 304 or AISI 316, TIG welded, or brazed, models are available on request). Supplied without gasket and without nut. See accessories below.

Thread: 1"1/4, 1"1/2 BSPP (ISO 228) and metric thread M45x2 available on request.

Enclosure: 78 × 78 × 74mm, die-cast aluminum, 3mm wall thickness. Silicone foam gasket. Stainless steel cover screws with locking nuts, 2 inner earth terminals M4; Gray epoxy paint RAL7035. Protected against galvanic corrosion.

Ingress protection class: Water and dust: IP65; shock resistance: IK 10 (with metal cable glands and M25 metal plug).

Cable glands: M20, PA66. Nickel-plated brass on request.

Thermowell: They are supplied in standard with one thermowell in AISI304, dia.8 × 7mm, 135mm length, also included on heaters. Supplied without thermostat.

Heating element connections: Terminals with stainless steel screw, nut and stainless steel washer. Switching straps on 3 phases models.

Models with thermostats are made with a wired-in power cord, length 2m.

Temperature control: Models with thermostats can be set from 30 to 90°C (85-195°F). Thermostat knob access is

under a M25 cap. External knob on request. Other temperature ranges on request. Models with thermostat are made only in single phase and for power up to 3kW only.

Support grid: 1 grid AISI 304 for lengths from 400 to 600mm, 2 grids above.

Not heating immersed zone: 50mm.

Surface load: standard 5W/cm² or 10W/cm², other values on request.

Voltage: 220-240V single phase or three phases 380-400V (Star connection with neutral). 3 phases version cannot be made with a thermostat.

Variants on request:

- One or 2 heating elements only.

- 4-40°C (40-105°F), 0-60°C (32-140°F), or 30-110°C (86-230°F) thermostat.

- Manual reset thermostat.

- One or two pilot lights.



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Cat22-4-7-5

Immersion heaters with aluminum connection box

Electric Wiring

| | | |
|---|--|---|
| | | |
| Straps position in 220-240V single phase (Without thermostat) | Straps position in 220-240V single phase (With single pole thermostat) | Straps position in 380-400V 3 phases (without thermostat) |

Main references

5W/cm², 1"1/2* brass fitting, **without thermostat.**

| Power | 1kW | 1.5kW | 2kW | 3kW | 4kW | 6kW |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Length (mm) | 170 | 240 | 300 | 440 | 570 | 840 |
| AISI 304 Reference | 9ST4G5E1010U8170 | 9ST4G5E1015U8240 | 9ST4G5E1020U8300 | 9ST4G5E1030U8440 | 9ST4G5E1040U8570 | 9ST4G5E1060U8840 |
| Incolloy 800 reference | 9ST4G5E1010UK170 | 9ST4G5E1015UK240 | 9ST4G5E1020UK300 | 9ST4G5E1030UK440 | 9ST4G5E1040UK570 | 9ST4G5E1060UK840 |

10W/cm², 1"1/2* brass fitting, **without thermostat.**

| Power | 1kW*** | 1.5kW | 2kW | 3kW | 4kW | 6kW |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Length (mm) | 135 | 135 | 170 | 240 | 300 | 440 |
| AISI 304 Reference | 9ST4G5E1010B8130 | 9ST4G5E1015U8130 | 9ST4G5E1020U8170 | 9ST4G5E1030U8240 | 9ST4G5E1040U8300 | 9ST4G5E1060U8440 |
| Incolloy 800 reference | 9ST4G5E1010BK130 | 9ST4G5E1015UK130 | 9ST4G5E1020UK170 | 9ST4G5E1030UK240 | 9ST4G5E1040UK300 | 9ST4G5E1060UK440 |

5W/cm², 1"1/2* brass fitting, **with 30-90°C (85-195°F) thermostat, adjustment under M25 cap**

| Power | 1kW | 1.5kW | 2kW | 3kW | 4kW | 6kW |
|------------------------|------------------|------------------|------------------|------------------|-------------------------------|-----|
| Length (mm) | 170 | 240 | 300 | 440 | Not available with thermostat | |
| AISI 304 Reference | 9ST4G5NS010V8170 | 9ST4G5NS015V8240 | 9ST4G5NS020V8300 | 9ST4G5NS030V8440 | | |
| Incolloy 800 reference | 9ST4G5NS010VK170 | 9ST4G5NS015VK240 | 9ST4G5NS020VK300 | 9ST4G5NS030VK440 | | |

10W/cm², 1"1/2* brass fitting, **with 30-90°C (85-195°F) thermostat, adjustment under M25 cap**

| Power | 1kW** | 1.5kW | 2kW | 3kW | 4kW | 6kW |
|------------------------|------------------|------------------|------------------|------------------|-------------------------------|-----|
| Length (mm) | 135 | 135 | 170 | 240 | Not available with thermostat | |
| AISI 304 Reference | 9ST4G5NS010B8130 | 9ST4G5NS015V8130 | 9ST4G5NS020V8170 | 9ST4G5NS030V8240 | | |
| Incolloy 800 reference | 9ST4G5NS010BK130 | 9ST4G5NS015VK130 | 9ST4G5NS020VK170 | 9ST4G5NS030VK240 | | |

* 1"1/4 brass fitting instead of 1"1/2, replace G5 by G4 in the reference. M45x2 brass fitting instead of 1"1/2, replace G5 by G9 in the reference.

** This model has only 2 heating elements.

References of accessories in option (not included in the product, must be ordered separately):

Nuts

| | Thread | 1"1/4 | 1"1/2 | M45x200 |
|--|---------|------------------|------------------|------------------|
| | Brass | 9BRRA3000ELH302A | 9BRRA3000ELH303A | 9BRRA3000ELH305A |
| | AISI304 | 9BRRA3000ELH032A | 9BRRA3000ELH006A | 9BRRA3000ELH049A |
| | AISI316 | 9BRRA3000ELH202A | 9BRRA3000ELH203A | 9BRRA3000ELH205A |

Gaskets

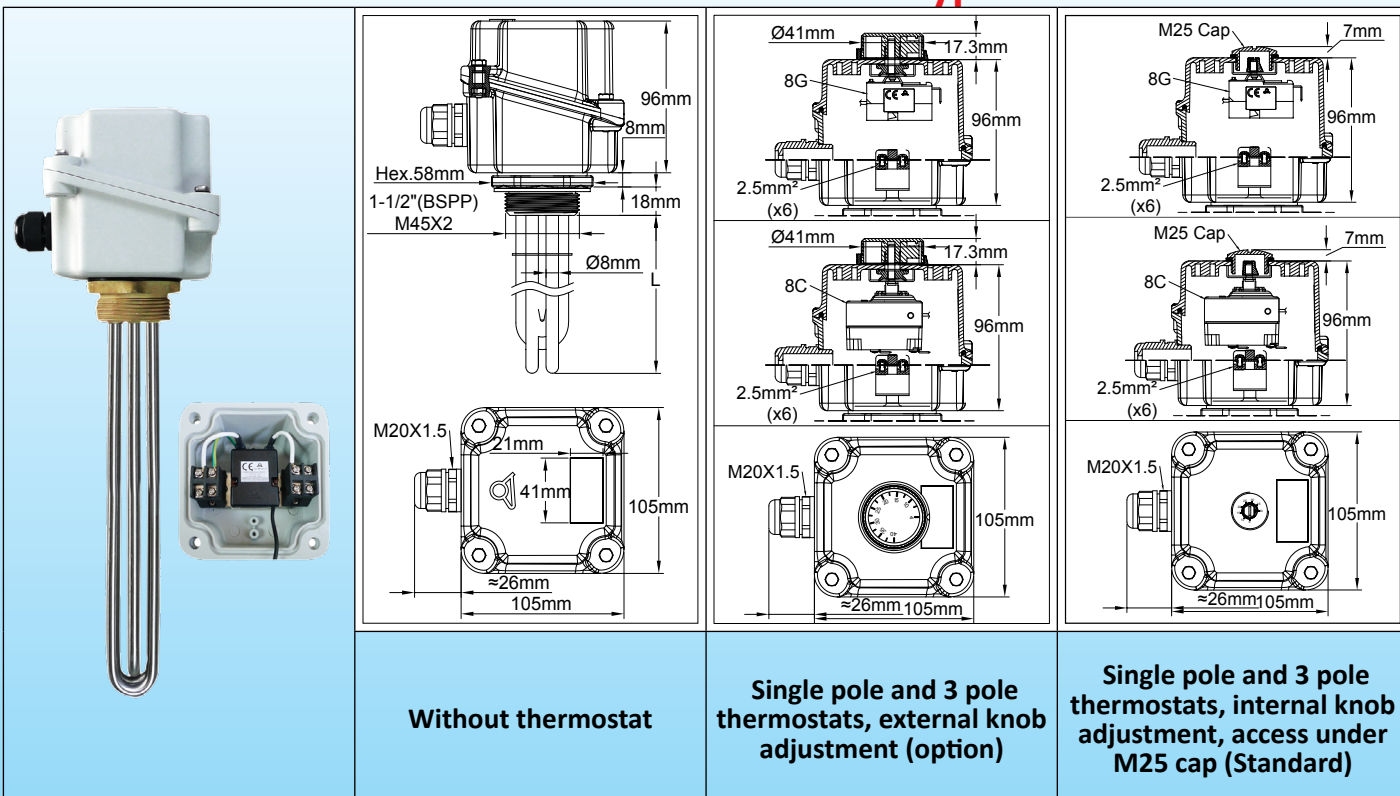
| | Thread | 1"1/4 | 1"1/2 - M45x200 |
|--|--------|------------------|------------------|
| | NBR | 9BRJ03000ELH206A | 9BRJ03000ELH205A |
| | Fiber | 9BRJ03000ELH052A | 9BRJ03000ELH007A |
| | PTFE | 9BRJ03000ELH032A | 9BRJ03000ELH033A |

Other accessories and drawings: see last section of this catalogue.



Immersion heaters with aluminum connection box

Standard immersion heater with aluminum enclosure, 105 × 105 × 96mm, with and without thermostat. Type 9ST5



Main applications: liquid heating, hot water circuits, containers and buffer tanks.

These heaters with that box size are the most used because they can receive many accessories such as thermostats, limiters, pilot lights etc., with a relatively small footprint.

They exist in:

- 6 standard power levels: 1kW – 1.5kW - 2kW - 3kW - 4kW - 6kW.

- 3 types of standard fittings: 1"1/4; 1"1/2; M45x2.

- 2 types of surface load density: 5W/cm² and 10W/cm². See technical introduction to optimize the surface load.

Heater tube material: 8mm dia. AISI 304 or Incolloy 800 (AISI 316; AISI 321; Incolloy 825 on request).

Fitting material: brass, swiveling on housing, brazed on tubes. (AISI 304 or AISI 316, TIG welded, or brazed, models are available on request). Supplied without gasket and without nut. See accessories below.

Thread: 1"1/4; 1"1/2BSPP (ISO 228); M45x2.

Temperature control: single pole or 3 pole thermostat, 30-90°C (85-195°F). Other temperature ranges in option.

Enclosure: 105 × 105 × 96mm, die-cast aluminum, 3mm wall thickness. Silicone foam gasket. Stainless steel cover screws with locking nuts, 2 inner earth terminals M4; Gray epoxy paint RAL7035. Protected against galvanic corrosion.

Ingress protection class: Water and dust: IP65; shock resistance: IK 10 (with metal cable glands and M25 metal plug).

Cable glands: M20, PA66. Nickel-plated brass on request.

Thermowell: in standard on thermowell in AISI304, dia.8 × 7mm, also for models supplied without thermostat.

Electrical connections: tubular heater terminals with stainless steel screw, nut and stainless steel washer. Switching straps on 3 phases models.

Models with thermostats have a built-in connection block, 3 × 2.5mm² for single phase units and 5 × 2.5mm² for 3 phases units. One more M4 grounding terminal available.

Support grid: 1 grid AISI 304 for lengths from 400 to 600mm, 2 grids above.

Not heating immersed zone: 50mm.

Surface load: standard 5W/cm² or 10W/cm², other values on request.

Voltage: 220-240V single phase or three phases 380-400V (Star connection with neutral).

Standard options:

- 230V single phase thermostat for power up to 3kW. 3 phases thermostat for 4kW and 6kW models.

Variants on request:

- External thermostat knob, with waterproof shaft gasket.

- 4-40°C (40-105°F), 0-60°C (32-140°F), or 30-110°C (86-230°F) thermostat.

- Additional cable gland output for electronic control sensor.

- It is possible to deliver these devices with one or two pilot lights and a power cord.

- These heaters can be assembled with fittings having threads up to 2"1/2 or M77x200, and 10mm dia. heating tubes. Contact us for feasibility.



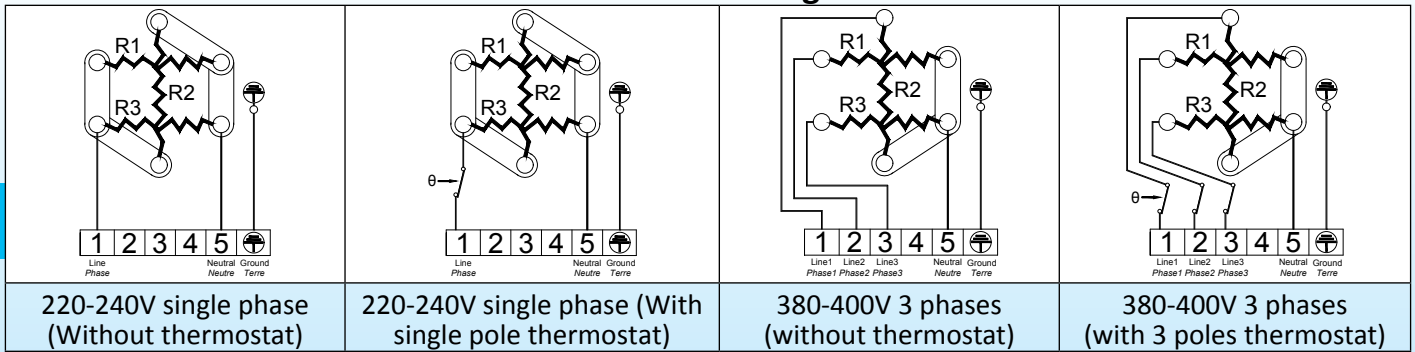
Contact us

Web: www.ultimheat.co.th

Cat22-4-7-7

Immersion heaters with aluminum connection box

Electric Wiring



Main references

5W/cm²; 1"1/2** brass fitting, without thermostat.

| Power | 1kW | 1.5kW | 2kW | 3kW | 4kW | 6kW |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Length (mm) | 170 | 240 | 300 | 440 | 570 | 840 |
| AISI 304 Reference | 9ST5G5E1010U8170 | 9ST5G5E1015U8240 | 9ST5G5E1020U8300 | 9ST5G5E1030U8440 | 9ST5G5E1040U8570 | 9ST5G5E1060U8840 |
| Incolloy 800 reference | 9ST5G5E1010UK170 | 9ST5G5E1015UK240 | 9ST5G5E1020UK300 | 9ST5G5E1030UK440 | 9ST5G5E1040UK570 | 9ST5G5E1060UK840 |

10W/cm², 1"1/2* brass fitting, without thermostat.

| Power | 1kW** | 1.5kW | 2kW | 3kW | 4kW | 6kW |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Length (mm) | 135 | 135 | 170 | 240 | 300 | 440 |
| AISI 304 Reference | 9ST5G5E1010B8130 | 9ST5G5E1015U8130 | 9ST5G5E1020U8170 | 9ST5G5E1030U8240 | 9ST5G5E1040U8300 | 9ST5G5E1060U8440 |
| Incolloy 800 reference | 9ST5G5E1010BK130 | 9ST5G5E1015UK130 | 9ST5G5E1020UK170 | 9ST5G5E1030UK240 | 9ST5G5E1040UK300 | 9ST5G5E1060UK440 |

5W/cm², 1"1/2* brass fitting, with 30-90°C (85-195°F) thermostat, adjustment under M25 cap (single phase up to 3kW, 3 phases for 4kW and 6kW models)

| Power | 1kW | 1.5kW | 2kW | 3kW | 4kW | 6kW |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Length (mm) | 170 | 240 | 300 | 440 | 570 | 840 |
| AISI 304 Reference | 9ST5G5ES010V8170 | 9ST5G5ES015V8240 | 9ST5G5ES020V8300 | 9ST5G5ES030V8440 | 9ST5G5ES040U8570 | 9ST5G5ES060U8840 |
| Incolloy 800 reference | 9ST5G5ES010VK170 | 9ST5G5ES015VK240 | 9ST5G5ES015VK300 | 9ST5G5ES030VK440 | 9ST5G5ES040UK570 | 9ST5G5ES060UK840 |


10W/cm², 1"1/2* brass fitting, with 30-90°C(89-194°F) thermostat, adjustment under M25 cap (single phase up to 3kW, 3 phases for 4kW and 6kW models)

| Power | 1kW** | 1.5kW | 2kW | 3kW | 4kW | 6kW |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Length (mm) | 135 | 135 | 170 | 240 | 300 | 440 |
| AISI 304 Reference | 9ST5G5ES010B8130 | 9ST5G5ES015V8130 | 9ST5G5ES020V8170 | 9ST5G5ES030V8240 | 9ST5G5ES040U8300 | 9ST5G5ES060U8440 |
| Incolloy 800 reference | 9ST5G5ES010BK130 | 9ST5G5ES015VK130 | 9ST5G5ES020VK170 | 9ST5G5ES030VK240 | 9ST5G5ES040UK300 | 9ST5G5ES060UK440 |


* 1"1/4 brass fitting instead of 1"1/2, replace G5 by G4 in the reference. M45x2 brass fitting instead of 1"1/2, replace G5 by G9 in the reference.
 ** This model has only 2 heating elements.

References of accessories in option (not included in the product, must be ordered separately):

Nuts

|  | Thread | 1"1/4 | 1"1/2 | M45x200 |
|---|---------|------------------|------------------|------------------|
| | Brass | 9BRRA3000ELH302A | 9BRRA3000ELH303A | 9BRRA3000ELH305A |
| | AISI304 | 9BRRA3000ELH032A | 9BRRA3000ELH006A | 9BRRA3000ELH049A |
| | AISI316 | 9BRRA3000ELH202A | 9BRRA3000ELH203A | 9BRRA3000ELH205A |

Gaskets

|  | Thread | 1"1/4 | 1"1/2 - M45x200 |
|---|--------|------------------|------------------|
| | NBR | 9BRJ03000ELH206A | 9BRJ03000ELH205A |
| | Fiber | 9BRJ03000ELH052A | 9BRJ03000ELH007A |
| | PTFE | 9BRJ03000ELH032A | 9BRJ03000ELH033A |

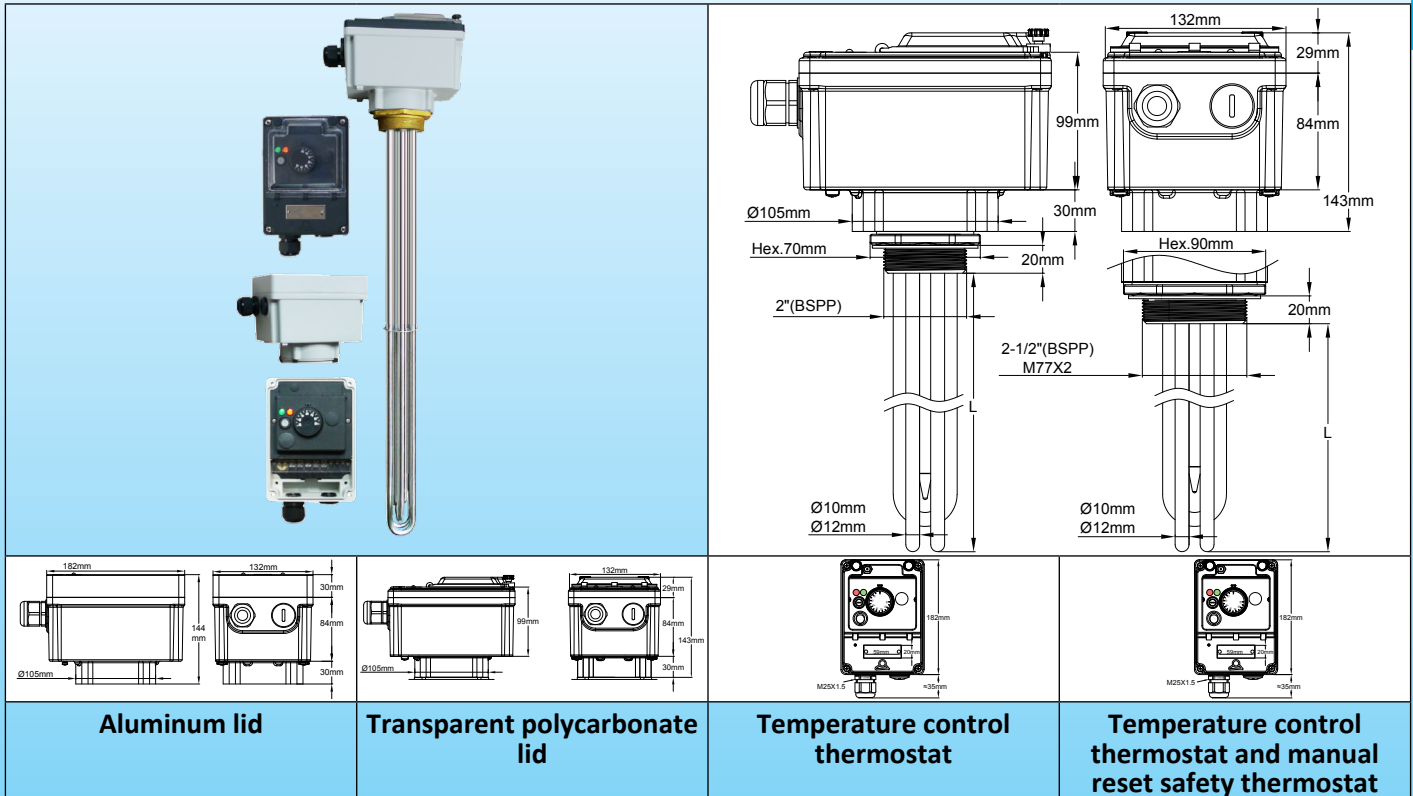
Other accessories and drawings: see last section of this catalogue.



Immersion heaters with aluminum connection box

Immersion heaters with 182mm × 130mm × 144mm aluminum and plastic enclosure. Fittings from 2" to M77x2. With mechanical thermostat. With or without manual reset thermostat. Power up to 21kW with built-in power relay. Heating elements dia. 10 and 12mm.

Type 9STP



Main applications: Industrial liquid heating, hot water circuits, containers and buffer tanks.

These heaters with aluminum enclosure are designed for industrial applications of medium power in three-phase, which require the use of contactors. They can receive one power relay, 3 poles 32A resistive. They exist only with thermostat temperature control. The enclosure lid may be transparent polycarbonate or aluminum.

They are equipped with a device that allows adjusting the enclosure position after tightening of the fitting.

They can be made in:

- 6 standard power levels: 6kW; 9kW; 12kW; 15kW; 18kW; 21kW.
- 3 types of standard fittings with dia. 10mm heating elements: : 2", 2"1/2 and M77x2
- 2 types of standard fittings with dia. 12mm heating elements: 2"1/2; M77x2
- 2 types of surface load density: 5W/cm² and 10W/cm². See technical introduction to optimize the surface load.

Heater tube material: 3 heating elements, dia.10mm or 12mm, AISI 304 or Incolloy 800 (AISI 316; AISI 321; Incolloy 825 on request).

Fitting material: brass, swiveling on housing, brazed on tubes. Supplied without gasket and without nut. See accessories below.

Thread:

- Dia. 10mm heating elements: 2", 2"1/2 and M77x2
- Dia. 12mm heating elements: 2"1/2; M77x2

Temperature control:

Mechanical thermostat, temperature range 30-90°C (85-195°F). Other ranges available.

Enclosure: Extremely robust, die-cast aluminum, 3mm wall thickness. Silicone foam gasket. Stainless steel cover screws with locking nuts. Gray epoxy paint RAL7035. Protected against galvanic corrosion. Designed for outdoor installation, IP65 and IK10. It also includes:

- A fuse to protect internal circuits
- An illuminated on- off switch
- A pilot light for power supply and a pilot light for power output.

There are 2 models of covers:

- **PA66 lid**, with a polycarbonate transparent window allowing access to the settings. This window can be secured with seals. This case also includes a separate lid, with independent seals, providing access to electrical connections. In models with failsafe manual reset limiter, reset can be accessed after opening the window.



Contact us

Web: www.ultimheat.co.th

Cat22-4-7-9

Immersion heaters with aluminum connection box

- Aluminum lid. This model provides access to settings only after removing the cover. It is convenient for industrial applications that do not request frequent changes in settings.

Cable glands: One M25, PA66, and one more hole for M25, closed by a plastic cap.

Thermowell: in standard two thermowells in AISI304, dia.8 × 7mm.

Electric connections:

Made on a built-in terminal block, with 6 terminals 10mm² and 2 terminals 2.5mm².

This terminal block is provided with a strap between terminals 1 and 2. By removing this strap, it is possible to connect an additional safety device, a remote control, or a timer.

Support grid: 1 grid AISI 304 for lengths from 400 to 600mm, 2 grids above.

Not heating immersed zone: 50mm.

Surface load: standard 5W/cm² or 10W/cm², other values on request.

Voltage: 380-400V, three phases with neutral only.

Standard options:

Plastic cover with transparent polycarbonate window.

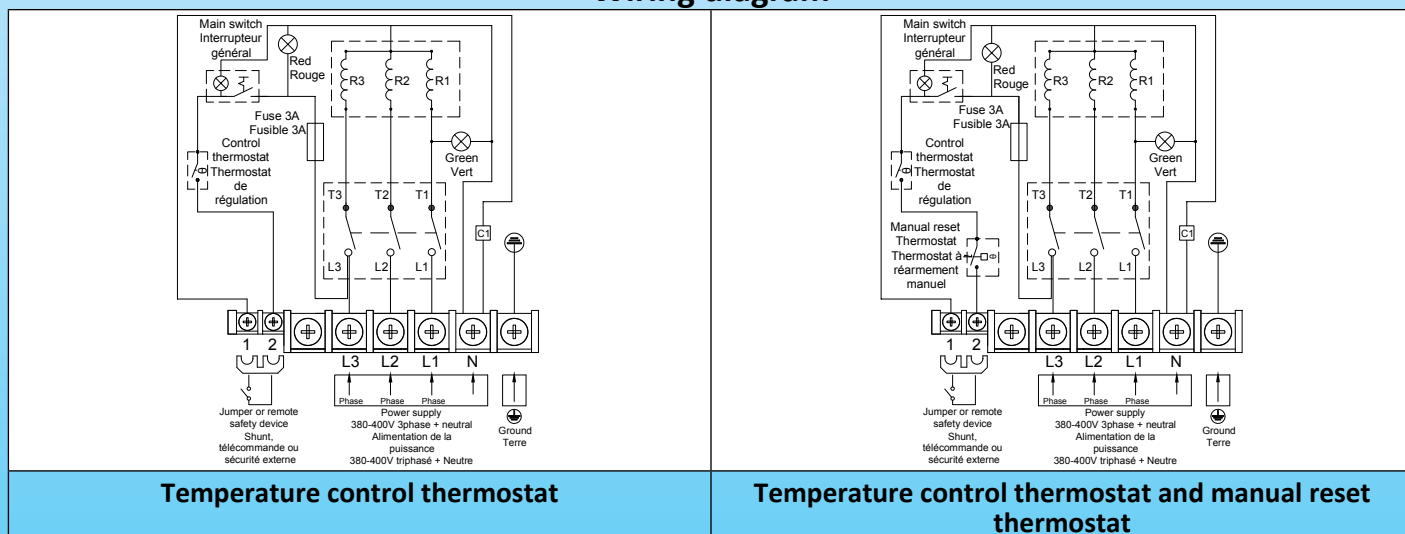
Aluminum cover.

Variants on request:

- 4-40°C (40-105°F) adjustable thermostat, manual reset at 60°C (140°F).
- 0-60°C (32-140°F), adjustable thermostat, manual reset at 80°C (176°F).
- 30-110°C (85-230°F) adjustable thermostat, manual reset at 130°C (266°F).
- Thermal cut out inside a thermowell.

It is also possible to produce models with digital electronic control. Ask our commercial department.

Wiring diagram



Main references with transparent polycarbonate window*

5W/cm²; 2"1/2** brass fitting, without manual reset thermostat.

| Heating element diameter | Dia. 10mm heating elements | | Dia. 12mm heating elements | | |
|--------------------------|----------------------------|------------------|----------------------------|------------------|------------------|
| | Power | 6kW | 9kW | 12kW | 15kW |
| Length (mm) | | 660 | 980 | 1100 | 1350 |
| AISI 304 Reference | | 9STPD7QV060C1660 | 9STPD7QV090C1980 | 9STPD7QV120C2K00 | 9STPD7QV150C2O50 |
| Incolloy 800 reference | | 9STPD7QV060C1660 | 9STPD7QV090C1980 | 9STPD7QV120CMK00 | 9STPD7QV150CMO50 |

10W/cm², 2"1/2** brass fitting, without manual reset thermostat.

| Heating element diameter | Dia. 10mm heating elements | | | Dia. 12mm heating elements | | | |
|--------------------------|----------------------------|------------------|------------------|----------------------------|------------------|------------------|------------------|
| | Power | 6kW | 9kW | 12kW | 15kW | 18kW | 21kW |
| Length (mm) | | 350 | 500 | 650 | 680 | 810 | 950 |
| AISI 304 Reference | | 9STPD7QV060C1350 | 9STPD7QV090C1500 | 9STPD7QV120C1650 | 9STPD7QV150C2680 | 9STPD7QV180C2810 | 9STPD7QV210C2950 |
| Incolloy 800 reference | | 9STPD7QV060C1350 | 9STPD7QV090C1500 | 9STPD7QV120C1650 | 9STPD7QV150CM680 | 9STPD7QV180CM810 | 9STPD7QV210CM950 |

5W/cm², 2"1/2* brass fitting, with manual reset thermostat set at 100°C (212°F)**

| Heating element diameter | Dia. 10mm heating elements | | Dia. 12mm heating elements | | |
|--------------------------|----------------------------|------------------|----------------------------|------------------|------------------|
| | Power | 6kW | 9kW | 12kW | 15kW |
| Length (mm) | | 660 | 980 | 1100 | 1350 |
| AISI 304 Reference | | 9STPD7QV060C166N | 9STPD7QV090C198N | 9STPD7QV120C2K0N | 9STPD7QV150C2O5N |
| Incolloy 800 reference | | 9STPD7QV060C166N | 9STPD7QV090C198N | 9STPD7QV120CMK00 | 9STPD7QV150CMO5N |



Immersion heaters with aluminum connection box

10W/cm², 2"1/2* brass fitting, with manual reset thermostat set at 100°C (212°F)**

| Heating element diameter | Dia. 10mm heating elements | | | Dia. 12mm heating elements | | |
|--------------------------|----------------------------|------------------|------------------|----------------------------|------------------|------------------|
| | Power | 6kW | 9kW | 12kW | 15kW | 18kW |
| Length (mm) | 350 | 500 | 650 | 680 | 810 | 950 |
| AISI 304 Reference | 9STPD7QV060C135N | 9STPD7QV090C150N | 9STPD7QV120C165N | 9STPD7QV150C268N | 9STPD7QV180C281N | 9STPD7QV210C295N |
| Incolloy 800 reference | 9STPD7QV060CL35N | 9STPD7QV090CL50N | 9STPD7QV120CL65N | 9STPD7QV150CM68N | 9STPD7QV180CM81N | 9STPD7QV210CM95N |


* For plain aluminum cover, replace T9D by T9G in the reference.

** 2" brass fitting instead of 2"1/2, replace D7 by D6 in the reference. (Only possible on dia. 10mm heating elements) M77x2 brass fitting instead of 2"1/2, replace D7 by D8 in the reference. (Possible on dia. 10mm and dia. 12mm heating elements).


*** Manual reset thermostat set at 60°C, 80°C, 110°C, 130°C. (140°F, 176°F, 230°F, 266°F), replace the last character N by E, J, Q, U.

References of accessories in option (not included in the product, must be ordered separately):

Nuts

|  | Thread | 2" | 2"1/2 | M77x2 |
|---|--------|------------------|------------------|------------------|
| | Brass | | 9BRRA3000ELH304A | 9BRRA3000ELH314A |
| AISI304 | | 9BRRA3000ELH348A | 9BRRA3000ELH142A | 9BRRA3000ELH150A |
| AISI316 | | 9BRRA3000ELH204A | 9BRRA3000ELH214A | 9BRRA3000ELH206A |

Gaskets

|  | Thread | 2" | 2"1/2- M77x2 |
|---|--------|------------------|------------------|
| | NBR | | 9BRJ03000ELH203A |
| Fiber | | 9BRJ03000ELH028A | 9BRJ03000ELH030A |
| PTFE | | 9BRJ03000ELH034A | 9BRJ03000ELH036A |

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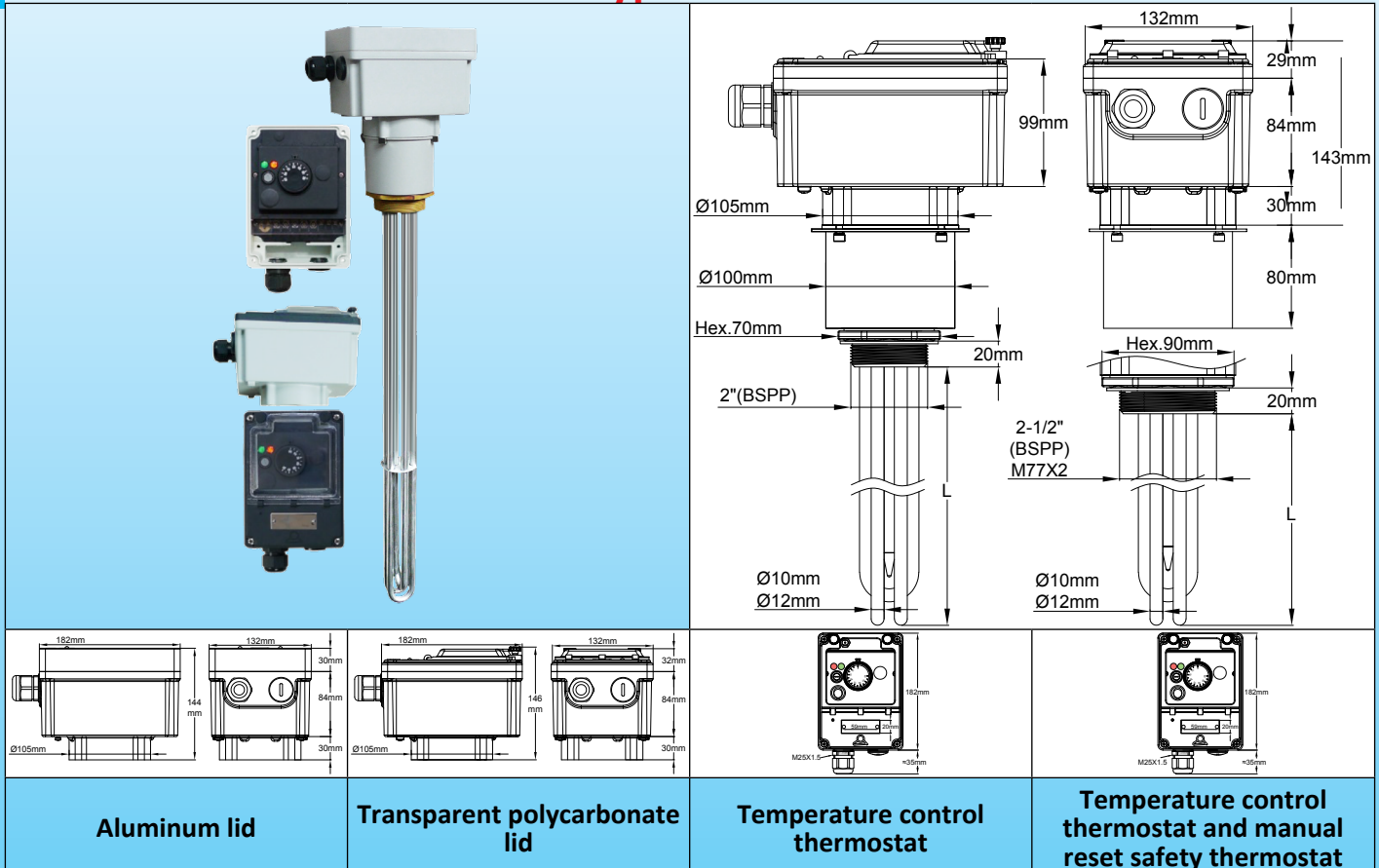
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Cat22-4-7-11

Immersion heaters with aluminum connection box

Immersion heaters with 182mm × 130mm × 224mm aluminum and plastic enclosure, or full aluminum enclosure, with 80mm offset. Fittings from 2" to M77x2. With mechanical thermostat. With or without manual reset thermostat. Power up to 21kW with built-in power relay. Heating elements dia. 10 and 12mm.

Type 9STN



Main applications: Industrial liquid heating, hot water circuits, containers and buffer tanks.

These heaters with aluminum enclosure are designed for industrial applications of medium power in three-phase, which require the use of contactors. They can receive one power relay, 3 poles 32A resistive. They exist only with thermostat temperature control. The enclosure lid may be transparent polycarbonate or aluminum. They are equipped with a device that allows adjusting the enclosure position after tightening of the fitting.

The enclosure has a 80mm offset to go through thick thermal insulation.

They can be made in:

- 6 standard power levels: 6kW; 9kW; 12kW; 15kW; 18kW; 21kW.
- 3 types of standard fittings with dia. 10mm heating elements: 2", 2"1/2 and M77x2
- 2 types of standard fittings with dia. 12mm heating elements: 2"1/2; M77x2

- 2 types of surface load density: 5W/cm² and 10W/cm². See technical introduction to optimize the surface load.

Heater tube material: 3 heating elements, dia.10mm or 12mm, AISI 304 or Incolloy 800 (AISI 316; AISI 321; Incolloy 825 on request).

Fitting material: brass, swiveling on housing, brazed on tubes. Supplied without gasket and without nut. See accessories below.

Thread:

- Dia. 10mm heating elements: 2", 2"1/2 and M77x2
- Dia. 12mm heating elements: 2"1/2; M77x2

Temperature control:

Mechanical thermostat, temperature range 30-90°C (85-195°F). Other ranges available.

Enclosure: Extremely robust, die-cast aluminum, 3mm wall thickness. Silicone foam gasket. Stainless steel cover screws with locking nuts. Gray epoxy paint RAL7035. Protected against galvanic corrosion. Designed for outdoor installation, IP65 and IK10. It also includes:

- A fuse to protect internal circuits

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Immersion heaters with aluminum connection box

- An illuminated on- off switch
- A pilot light for power supply and a pilot light for power output.

There are 2 models of covers:

- **A PA66 cover** with a polycarbonate transparent window allowing access to the settings. This window can be secured with seals. This case also includes a separate lid, with independent seals, providing access to electrical connections. In models with failsafe manual reset limiter, reset can be accessed after opening the window.

- **An aluminum cover.** This model provides access to settings only after removing the cover. It is convenient for industrial applications that do not request frequent changes in settings.

Cable glands: One M25, PA66, and one more hole for M25, closed by a plastic cap.

Thermowell: in standard two thermowells in AISI304, dia.8 × 7mm.

Electric connections:

Built-in terminal block, with 6 terminals 10mm² and 2 terminals 2.5mm².

This terminal block is provided with a strap between terminals 1 and 2. By removing this strap, it is possible to connect an additional safety device, a remote control, or a timer.

Support grid: 1 grid AISI 304 for lengths from 400 to 600mm, 2 grids above.

Not heating immersed zone: 50mm.

Surface load: Standard 5W/cm² or 10W/cm², other values on request.

Voltage: 380-400V, three phases with neutral only.

Standard options:

Plastic cover with transparent polycarbonate window.

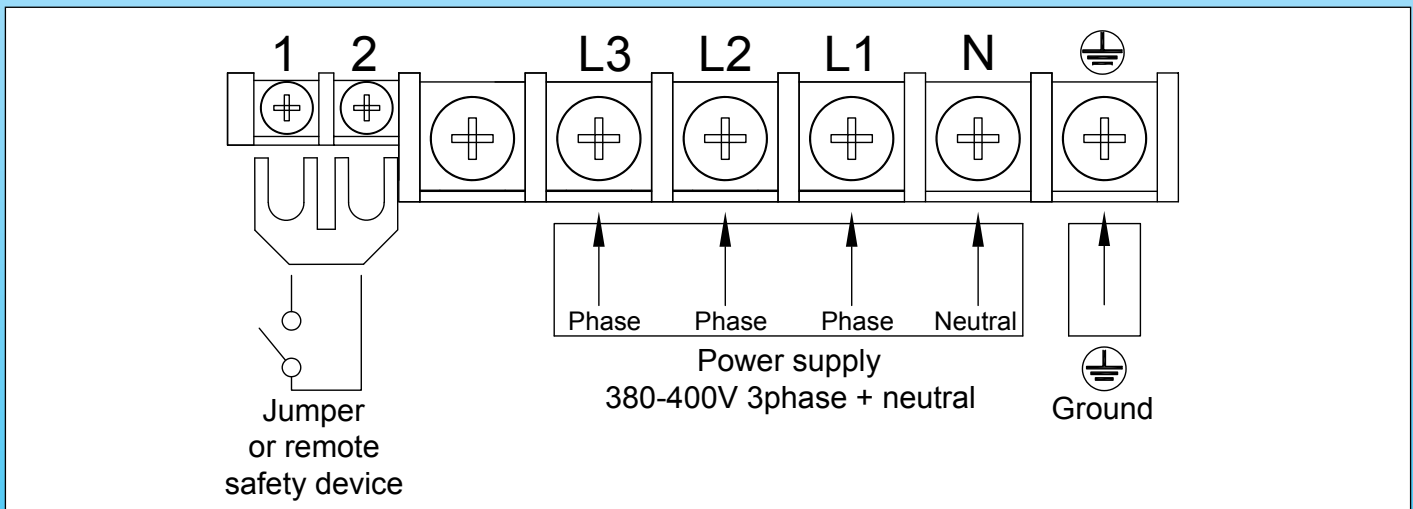
Aluminum cover.

Variants on request:

- 4-40°C (40-105°F) adjustable thermostat, manual reset at 60°C (140°F).
- 0-60°C (32-140°F), adjustable thermostat, manual reset at 80°C (176°F).
- 30-110°C (85-230°F) adjustable thermostat, manual reset at 130°C (266°F).
- Thermal cut out inside a thermowell.

It is also possible to produce models with digital electronic control. Ask our commercial department.

Wiring diagram



Main references with transparent polycarbonate window*

5W/cm²; 2"1/2** brass fitting, without manual reset thermostat.

| Heating element diameter | Dia. 10mm heating elements | | Dia. 12mm heating elements | |
|--------------------------|----------------------------|------------------|----------------------------|------------------|
| | 6kW | 9kW | 12kW | 15kW |
| Length (mm) | 660 | 980 | 1100 | 1350 |
| AISI 304 Reference | 9STND7QV060C1660 | 9STND7QV090C1980 | 9STND7QV120C2K00 | 9STND7QV150C2O50 |
| Incolloy 800 reference | 9STND7QV060CL660 | 9STND7QV090CL980 | 9STND7QV120CMK00 | 9STND7QV150CMO50 |

10W/cm², 2"1/2** brass fitting, without manual reset thermostat.

| Heating element diameter | Dia. 10mm heating elements | | | Dia. 12mm heating elements | | |
|--------------------------|----------------------------|------------------|------------------|----------------------------|------------------|------------------|
| | 6kW | 9kW | 12kW | 15kW | 18kW | 21kW |
| Length (mm) | 350 | 500 | 650 | 680 | 810 | 950 |
| AISI 304 Reference | 9STND7QV060C1350 | 9STND7QV090C1500 | 9STND7QV120C1650 | 9STND7QV150C2680 | 9STND7QV180C2810 | 9STND7QV210C2950 |
| Incolloy 800 reference | 9STND7QV060CL350 | 9STND7QV090CL500 | 9STND7QV120CL650 | 9STND7QV150CM680 | 9STND7QV180CM810 | 9STND7QV210CM950 |



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Cat22-4-7-13

Immersion heaters with aluminum connection box

5W/cm², 2"1/2" brass fitting, with manual reset thermostat set at 100°C (212°F)**

| Heating element diameter | Dia. 10mm heating elements | | Dia. 12mm heating elements | |
|--------------------------|----------------------------|------------------|----------------------------|------------------|
| | 6kW | 9kW | 12kW | 15kW |
| Length (mm) | 660 | 980 | 1100 | 1350 |
| AISI 304 Reference | 9STND7QV060C166N | 9STND7QV090C198N | 9STND7QV120C2K0N | 9STND7QV150C2O5N |
| Incolloy 800 reference | 9STND7QV060CL66N | 9STND7QV090CL98N | 9STND7QV120CMK00 | 9STND7QV150CMO5N |

10W/cm², 2"1/2" brass fitting, with manual reset thermostat set at 100°C (212°F)**

| Heating element diameter | Dia. 10mm heating elements | | | Dia. 12mm heating elements | | |
|--------------------------|----------------------------|------------------|------------------|----------------------------|------------------|------------------|
| | 6kW | 9kW | 12kW | 15kW | 18kW | 21kW |
| Length (mm) | 350 | 500 | 650 | 680 | 810 | 950 |
| AISI 304 Reference | 9STND7QV060C135N | 9STND7QV090C150N | 9STND7QV120C165N | 9STND7QV150C268N | 9STND7QV180C281N | 9STND7QV210C295N |
| Incolloy 800 reference | 9STND7QV060CL35N | 9STND7QV090CL50N | 9STND7QV120CL65N | 9STND7QV150CM68N | 9STND7QV180CM81N | 9STND7QV210CM95N |

* For plain aluminum cover, replace T9D by T9G in the reference.


** 2" brass fitting instead of 2"1/2, replace D7 by D6 in the reference. (Only possible on dia. 10mm heating elements)

M77x2 brass fitting instead of 2"1/2, replace D7 by D8 in the reference. (Possible on dia. 10mm and dia. 12mm heating elements).


*** Manual reset thermostat set at 60°C, 80°C, 110°C, 130°C. (140°F, 176°F, 230°F, 266°F), replace the last character N by E, J, Q, U.

References of accessories in option (not included in the product, must be ordered separately):

Nuts

|  | Thread | 2" | 2"1/2 | M77x2 |
|---|---------|------------------|------------------|------------------|
| | Brass | 9BRRA3000ELH304A | 9BRRA3000ELH314A | 9BRRA3000ELH306A |
| | AISI304 | 9BRRA3000ELH348A | 9BRRA3000ELH142A | 9BRRA3000ELH150A |
| | AISI316 | 9BRRA3000ELH204A | 9BRRA3000ELH214A | 9BRRA3000ELH206A |

Gaskets

|  | Thread | 2" | 2"1/2- M77x2 |
|---|--------|------------------|------------------|
| | NBR | 9BRJ03000ELH203A | 9BRJ03000ELH201A |
| | Fiber | 9BRJ03000ELH028A | 9BRJ03000ELH030A |
| | PTFE | 9BRJ03000ELH034A | 9BRJ03000ELH036A |

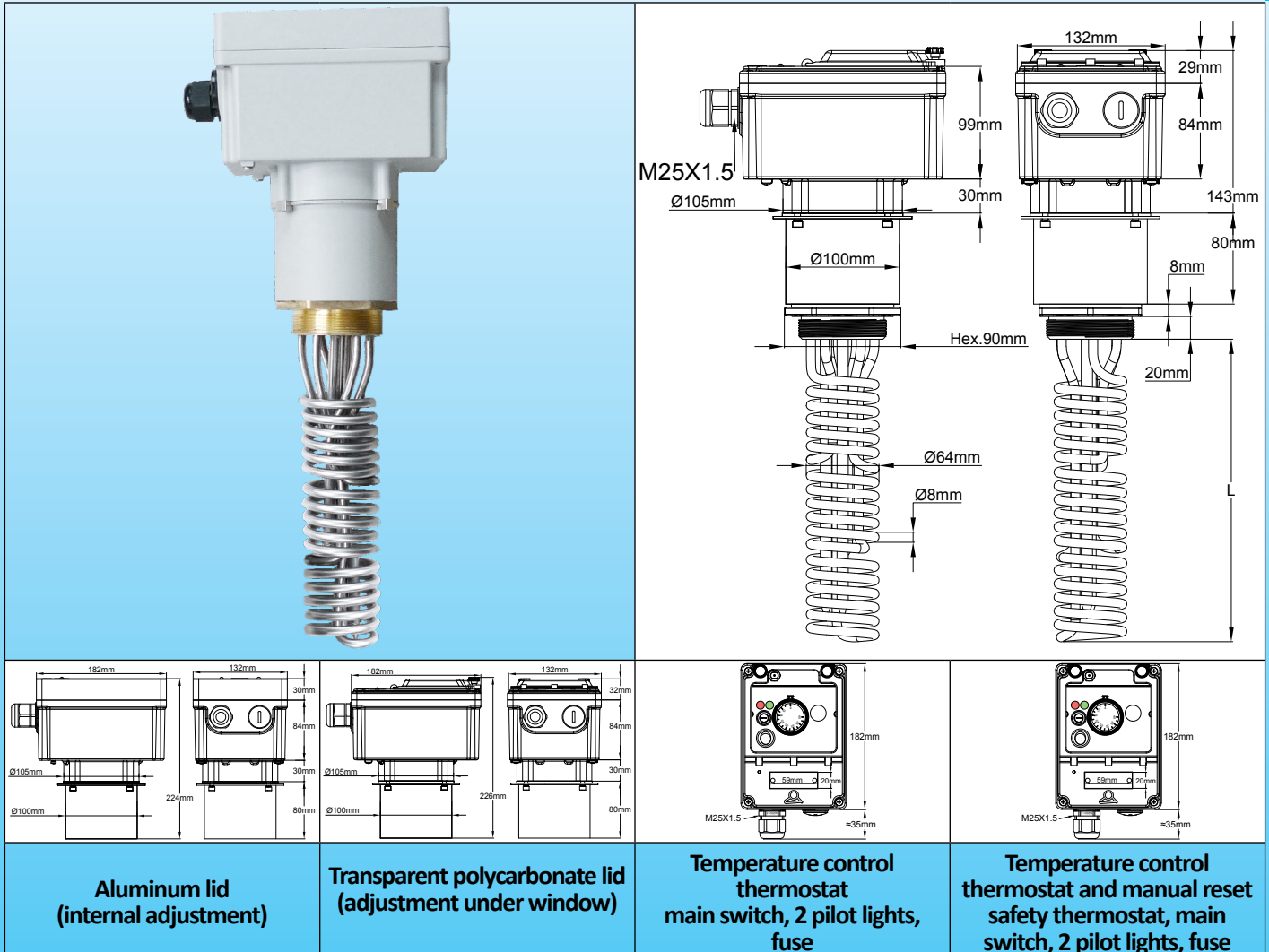
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Immersion heaters with aluminum connection box

Extra short immersion heaters with 182mm × 130mm × 224mm aluminum-plastic of full aluminum enclosure, with 80mm offset. 2"1/2 and M77x2 fittings. With mechanical thermostat. With or without manual reset thermostat. Power up to 9kw with built-in power relay. Coiled heating elements dia. 8mm.

Types 9SWN



Main applications: Industrial liquid heating, hot water circuits, containers and buffer tanks, in applications where the heating elements immersed length must be as short as possible.

These heaters with aluminum enclosure are designed for industrial applications of medium power in three-phase, which require the use of contactor. They can receive one power relay, 3 poles 32A resistive. They exist only with thermostat temperature control. The enclosure lid may be transparent polycarbonate or aluminum. They are equipped with a device that allows adjusting the enclosure position after tightening of the fitting.

The enclosure has a 80mm offset to go through thick thermal insulation.

- 5 standard power levels: 1.5kW; 3kW; 4.5kW; 6kW; 9kW. On request, it is possible to reach 21kW by increasing the L length)

- 2 types of standard fittings: 2"1/2; M77x2.

- 2 types of surface load density: 5W/cm² and 10W/cm². See technical introduction to optimize the surface load.

Heater tube material: 3 heating elements, dia.10mm or 12mm, AISI 304 or Incolloy 800 (AISI 316; AISI 321; Incolloy 825 on request).

Fitting material: brass, swiveling on housing, brazed on tubes. Supplied without gasket and without nut. See accessories below.

Thread: 2"1/2, or M77x2.

Temperature control: Mechanical thermostat, temperature range 30-90°C (85-195°F). Other ranges available.

Enclosure: Extremely robust, die-cast aluminum, 3mm wall thickness. Silicone foam gasket. Stainless steel cover screws with locking nuts. Gray epoxy paint RAL7035. Protected against galvanic corrosion. Designed for outdoor

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Cat22-4-7-15

Immersion heaters with aluminum connection box

installation, IP65 and IK10. It also includes:

- A fuse to protect internal circuits.
- An illuminated on- off switch.
- A pilot light for power supply and a pilot light for power output.

There are 2 models of covers:

- **A PA66 cover** with a polycarbonate transparent window allowing access to the settings. This window can be secured with seals. This case also includes a separate lid, with independent seals, providing access to electrical connections. In models with failsafe manual reset limiter, reset can be accessed after opening the window.

- **An aluminum cover.** This model provides access to settings only after removing the cover. It is convenient for industrial applications that do not request frequent changes in settings.

Cable glands: One M25, PA66, and one more hole for M25, closed by a plastic cap.

Thermowell: two thermowells in AISI304, dia.10mm × 8.4mm.

Heating elements connections: terminals with stainless steel screw, nut and stainless steel washer.

Three-phase models are equipped with straps for switching to single-phase supply. This change must be made by the professional technical staff able to calculate and observe the maximum permissible rating on power relay.

Power supply connection: on built-in connection block, 6 × 10mm² for power connection and 2 × 2.5mm² for remote safety device or remote control.

Not heating immersed zone: 50mm.

Surface load: Standard 5W/cm² or 10W/cm², other values on request.

Voltage: Single pole 230V or three phases 380-400V (Star connection with neutral).

Standard equipment:

- Thermostat with knob access under the lid.
- Main power switch, with access under the lid.
- Green and red pilot lights, with access under the lid.
- On models with manual reset: preset at 100°C (212°F). Reset access under the lid.

Standard options:

Plastic cover with transparent polycarbonate window.

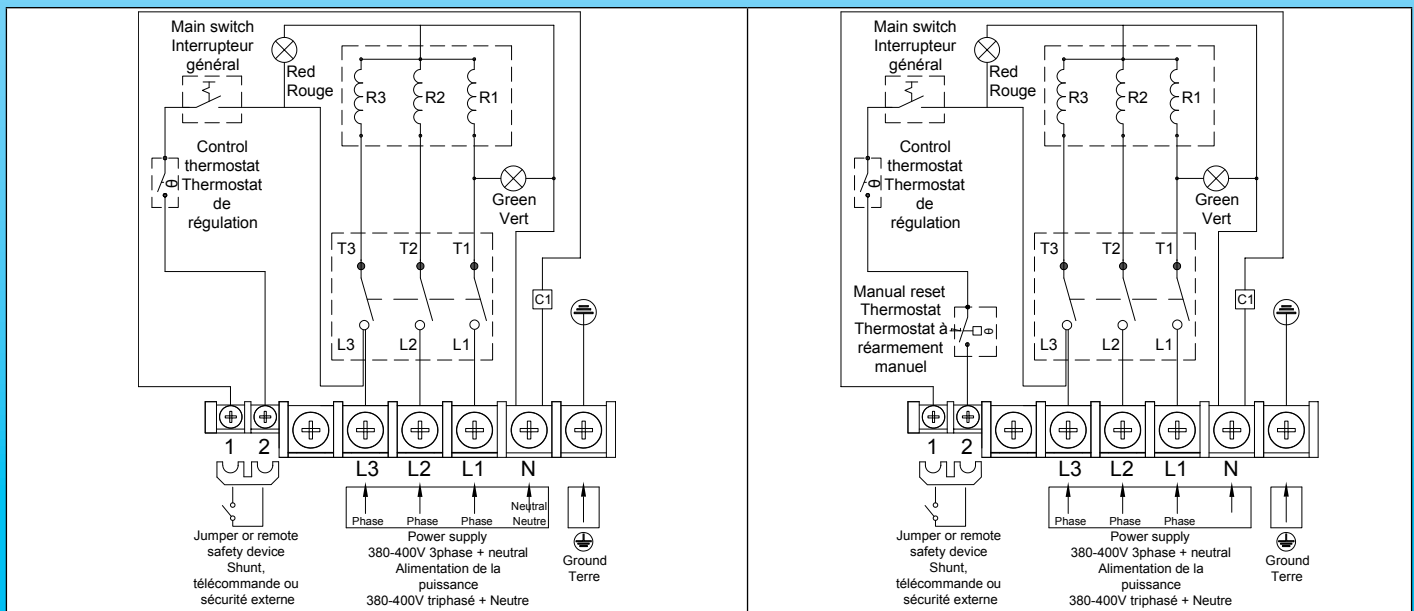
Aluminum cover.

Variants on request:

- Thermostat without limiter, ranges 4-40°C (40-105°F), 0-60°C (30-140°F) or 30-110°C (85-230°F) Higher range on request.
- 4-40°C (40-105°F) adjustable thermostat, manual reset at 60°C (140°F).
- 0-60°C (32-140°F), adjustable thermostat, manual reset at 80°C (176°F).
- 30-110°C (85-230°F) adjustable thermostat, manual reset at 130°C (266°F).
- Thermal cut out (TCO) inside a thermowell.

It is also possible to produce models with digital electronic control or/and without the 70mm extension. Ask our commercial department.

Wiring diagram



Temperature control thermostat

(Types with one heater: phases L1 and L2 are removed, and power supply is single phase 230V.)

Types with two heaters: phase L1 is removed, terminals L2 and L3 are connected together, and power supply is single phase 230V.)

Temperature control thermostat and manual reset thermostat

(Types with one heater: phases L1 and L2 are removed, and power supply is single phase 230V.)

Types with two heaters: phase L1 is removed, terminals L2 and L3 are connected together, and power supply is single phase 230V.)



Immersion heaters with aluminum connection box

Main references with transparent polycarbonate window*

With 30-90°C (85-195°F) thermostat, without manual reset. M77x2 fitting**

| | 5W/cm ² | | | 10W/cm ² | | |
|---------------------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|
| | 1 heating element | 2 heating elements | 3 heating elements | 1 heating element | 2 heating elements | 3 heating elements |
| L (mm) | 110 | 188 | 265 | 110 | 188 | 265 |
| Power (Watt) | 1500 | 3000 | 4500 | 3000 | 6000 | 9000 |
| References, AISI 304 | 9SWND8QR01525110 | 9SWND8QR030B5190 | 9SWND8QR045U5270 | 9SWND8QR03025110 | 9SWND8QR060B5190 | 9SWND8QR090U5270 |
| References, Incolloy 800 | 9SWND8QR01527110 | 9SWND8QR030B7190 | 9SWND8QR045U7270 | 9SWND8QR03027110 | 9SWND8QR060B7190 | 9SWND8QR090U7270 |

With 30-90°C (85-195°F) adjustable thermostat. Manual reset at 100°C (212°F), M77 × 2 fitting**.


| | 5W/cm ² | | | 10W/cm ² | | |
|---------------------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|
| | 1 heating element | 2 heating elements | 3 heating elements | 1 heating element | 2 heating elements | 3 heating elements |
| L (mm) | 110 | 188 | 265 | 110 | 188 | 265 |
| Power (Watt) | 1500 | 3000 | 4500 | 3000 | 6000 | 9000 |
| References, AISI 304 | 9SWND8QR0152511N | 9SWND8QR030B519N | 9SWND8QR045U527N | 9SWND8QR0302511N | 9SWND8QR060B519N | 9SWND8QR090U527N |
| References, Incolloy 800 | 9SWND8QR0152711N | 9SWND8QR030B719N | 9SWND8QR045U727N | 9SWND8QR0302711N | 9SWND8QR060B719N | 9SWND8QR090U727N |

* For plain aluminum cover, replace 9SWND by 9SWNG in the reference.


** 2"1/2 brass fitting instead of M77x2, replace A8 by A7 in the reference.

References of accessories in option (Not included in the product, must be ordered separately):

Nuts

|  | Thread | 2"1/2 | M77x2 |
|---|---------|------------------|------------------|
| | Brass | 9BRRA3000ELH314A | 9BRRA3000ELH306A |
| | AISI304 | 9BRRA3000ELH142A | 9BRRA3000ELH150A |
| | AISI316 | 9BRRA3000ELH214A | 9BRRA3000ELH206A |

Gaskets

|  | Thread | 2"1/2- M77x2 |
|---|--------|------------------|
| | NBR | 9BRJ03000ELH201A |
| | Fiber | 9BRJ03000ELH030A |
| | PTFE | 9BRJ03000ELH036A |

Other accessories and drawings: see last section of this catalogue.

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