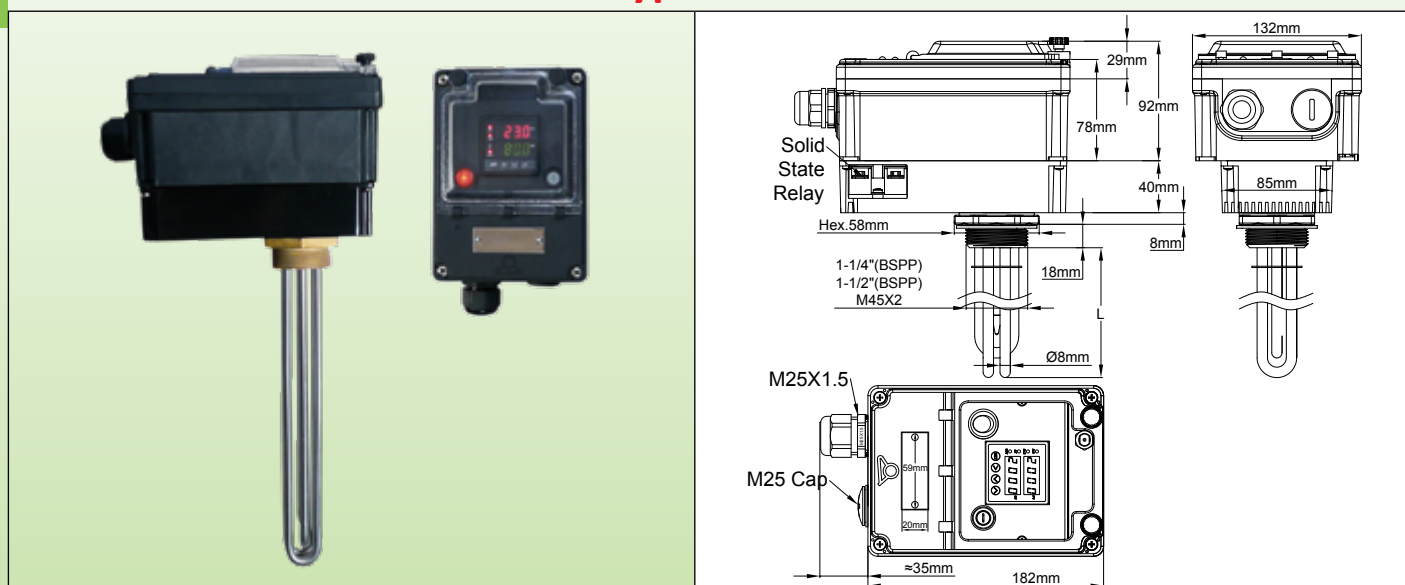# Immersion heaters with plastic connection box

Immersion heaters with 182mm × 130mm × 132mm plastic enclosure. Fittings 1"1/4, 1"1/2, M45x2. With electronic PID temperature control, with or without manual reset thermostat. Built-in cooled SSR.

Type 9STQ

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

These products have been engineered for precision liquid heating. The initial setting of the PID controller, however, is intended for a professional. The best results are obtained in stirred tanks.

They exist in:
- 5 standard power levels: 1kW; 1,5kW; 2kW; 3kW; 4kW
- 2 types of standard fittings: 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 or 1 1/2" BSPP (ISO 228). Metric thread M45x2 available on request.

Temperature control:
- Electronic temperature controller with double digital display of temperature set point and measured value. This microprocessor controller uses Fuzzy Logic technology. It reaches a predetermined set point more quickly, with minimal overshoot during the disturbances related to the rise or external load. It regulates with PID action, whose setting is simplified by the auto-tune function that automatically adjusts the parameters P, I and D (A clear User Manual is supplied). If the temperature sensor is broken, the output power is cut off and the error is displayed.
- Temperature display Accuracy: 0.2% of full scale.
- Temperature sensor: Pt100
- Display is configurable in degree or tenth of a degree.
- The two high or low alarm outputs can be set over the entire range of adjustment and have an adjustable differential.

Enclosure: Extremely robust, in thick PA66, designed for outdoor installation, IP65 and IK10. It also includes:
- A fuse to protect internal circuits.
- An illuminated on- off switch
- 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
- On the rear side is located an aluminum housing with cooling fins for a built in 25A SSR.

In models with failsafe manual reset limiter, reset can be accessed after opening the window.

Cable glands: Located on a removable mounting board, providing easier access for connections, fitted with one M25, PA66, and one more hole for M25, closed by a plastic cap.

Thermowell: In standard, one thermowell in AISI304, dia. 10mm, 135mm length.

Electric connections:
- Built-in terminal block, with 5 terminals 6mm² and 5 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.
- Auxiliary high alarm and low alarm contacts (3A 250V max.)

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

Not heating immersed zone: 50mm.
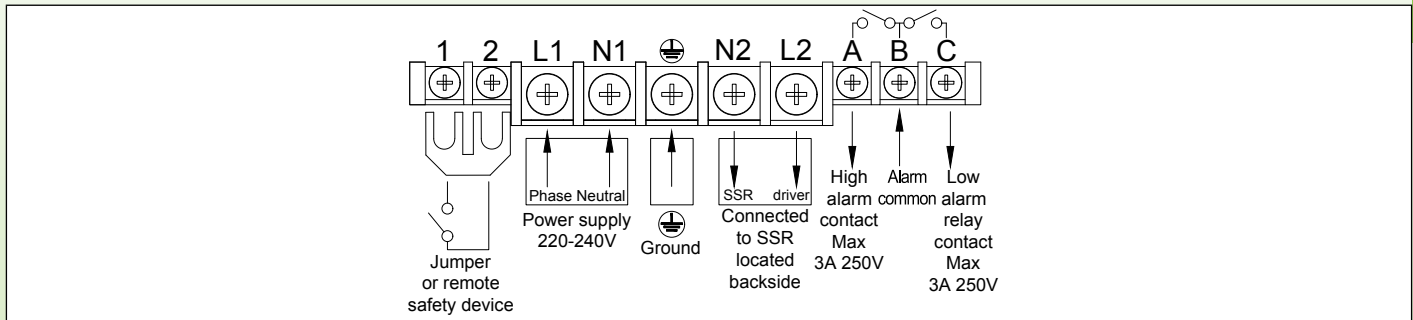
Immersion heaters with plastic connection box

Surface load: standard 5W/cm² or 10W/cm², other values on request.
Voltage: 220-240V single phase only.
Standard options:
Manual reset limiter, preset at: 60°C, 80°C, 100°C, 110°C, 130°C. (140°F, 176°F, 212°F, 230°F, 266°F).

Wiring diagram

	1	2	L1	N1	⏚	N2	L2	A	B	C

Phase Neutral / Power supply 220-240V
Ground
SSR driver / Connected to SSR located backside
High alarm contact Max 3A 250V
Alarm common
Low alarm relay contact Max 3A 250V
Jumper or remote safety device

Main references

55W/cm²; 1"1/2** brass fitting, without manual reset thermostat.

Power	1kW	1.5kW	2kW	3kW	4kW
Length (mm)	170	240	300	440	570
AISI 304 Reference	9STQA5QZ010V8170	9STQA5QZ015V8240	9STQA5QZ020V8300	9STQA5QZ030V8440	9STQA5QZ040V8570
Incolloy 800 reference	9STQA5QZ010VK170	9STQA5QZ015VK240	9STQA5QZ020VK300	9STQA5QZ030VK440	9STQA5QZ040VK570

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

Power	1kW**	1.5kW	2kW	3kW	4kW
Length (mm)	135	135	170	240	300
AISI 304 Reference	9STQA5QZ010B8130	9STQA5QZ015V8130	9STQA5QZ020V8170	9STQA5QZ030V8240	9STQA5QZ040V8300
Incolloy 800 reference	9STQA5QZ010BK130	9STQA5QZ015VK130	9STQA5QZ020VK170	9STQA5QZ030VK240	9STQA5QZ040VK300

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

Power	1kW	1.5kW	2kW	3kW	4kW
Length (mm)	170	240	300	440	570
AISI 304 Reference	9STQA5QZ010V817N	9STQA5QZ015V824N	9STQA5QZ020V830N	9STQA5QZ030V844N	9STQA5QZ040V857N
Incolloy 800 reference	9STQA5QZ010VK17N	9STQA5QZ015VK24N	9STQA5QZ015VK30N	9STQA5QZ030VK44N	9STQA5QZ040VK57N

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

Power	1kW	1.5kW	2kW	3kW	4kW
Length (mm)	135	135	170	240	300
AISI 304 Reference	9STQA5QZ010B813N	9STQA5QZ015V813N	9STQA5QZ020V817N	9STQA5QZ030V824N	9STQA5QZ040V830N
Incolloy 800 reference	9STQA5QZ010BK13N	9STQA5QZ015VK13N	9STQA5QZ020VK17N	9STQA5QZ030VK24N	9STQA5QZ040VK30N

* M45x2 brass fitting instead of 1"1/2, replace A5 by A9 in the reference.
** 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	1"1/2	M45x200
Brass	9BRRA3000ELH303A	9BRRA3000ELH305A
AISI304	9BRRA3000ELH006A	9BRRA3000ELH049A
AISI316	9BRRA3000ELH203A	9BRRA3000ELH205A

Gaskets

Thread	1"1/2 - M45x200
NBR	9BRJ03000ELH205A
Fiber	9BRJ03000ELH007A
PTFE	9BRJ03000ELH033A

Other accessories and drawings: see last section of this catalogue