

**Additional Notes Re Thermo-Wells and Thermocouples:**

The Cast-X 2000 has one thermowell, the CAST-X 2500 has 2 thermo-wells. These are a long skinny tube that is cast into the heater body – and into these little tubes the thermocouples (or RTDs) are installed.

On a CAST-X 2000 with single thermowell a duplex TC can be fitted, 1 probe two sets of wires, in effect giving two separate outputs for process & overtemperature if required.

The thermo-wells on a CAST-X are anywhere from 5-12 inches long.... on the CAST-X 2500 the thermowells are approx. 9 inches long (22 cm)

The TC (or RTD) has a long shaft (sheath) on it, and at the end of that shaft is the sensor, while the lead wires come out the top of it.

The TC, when installed in that thermowell, senses the core operating temp of the heater. You should always use 2 TCs (or RTDs) to control the heater, but both of those sensors do not necessarily need to be on-board the heater.

If you have TC “in the flow path” of the fluid being heated, you can wire that TC to control the heater’s process temp. and then, on board the heater, you just need 1 TC which would be wired for over-temp cutoff.

If you do not have a TC “in the flow path” then you can use a TC on-board the heater to control its Process Temp. You can use a Snap Action High Limit Switch for over-temp. cutoff.

For an onboard Process Temp TC, there might be a small difference between the heater’s operating temp and the actual temp of the gas / liquid media as it exits the heater. The higher your flow rate, the larger that delta T will be.

For example, if you’re flowing your media relatively slow and you have your heater set at 200°C, the fluid will exit the heater at 200 or maybe 199°C. But if you’re flowing relatively fast (higher flow rate), and the heater is set at 200°C the fluid might exit the heater at 190°C.

If you want the fluid to be 200°C, you might have to simply increase the heater’s operating temp to 210°C. What that delta T is can be tricky to calculate...usually it’s a matter of trial and error. But once you figure out what the ratio is, most control panels will allow you to program-in that delta T difference....so the control switching can easily compensate for that difference, and set the heater’s operating temp at the proper temp.

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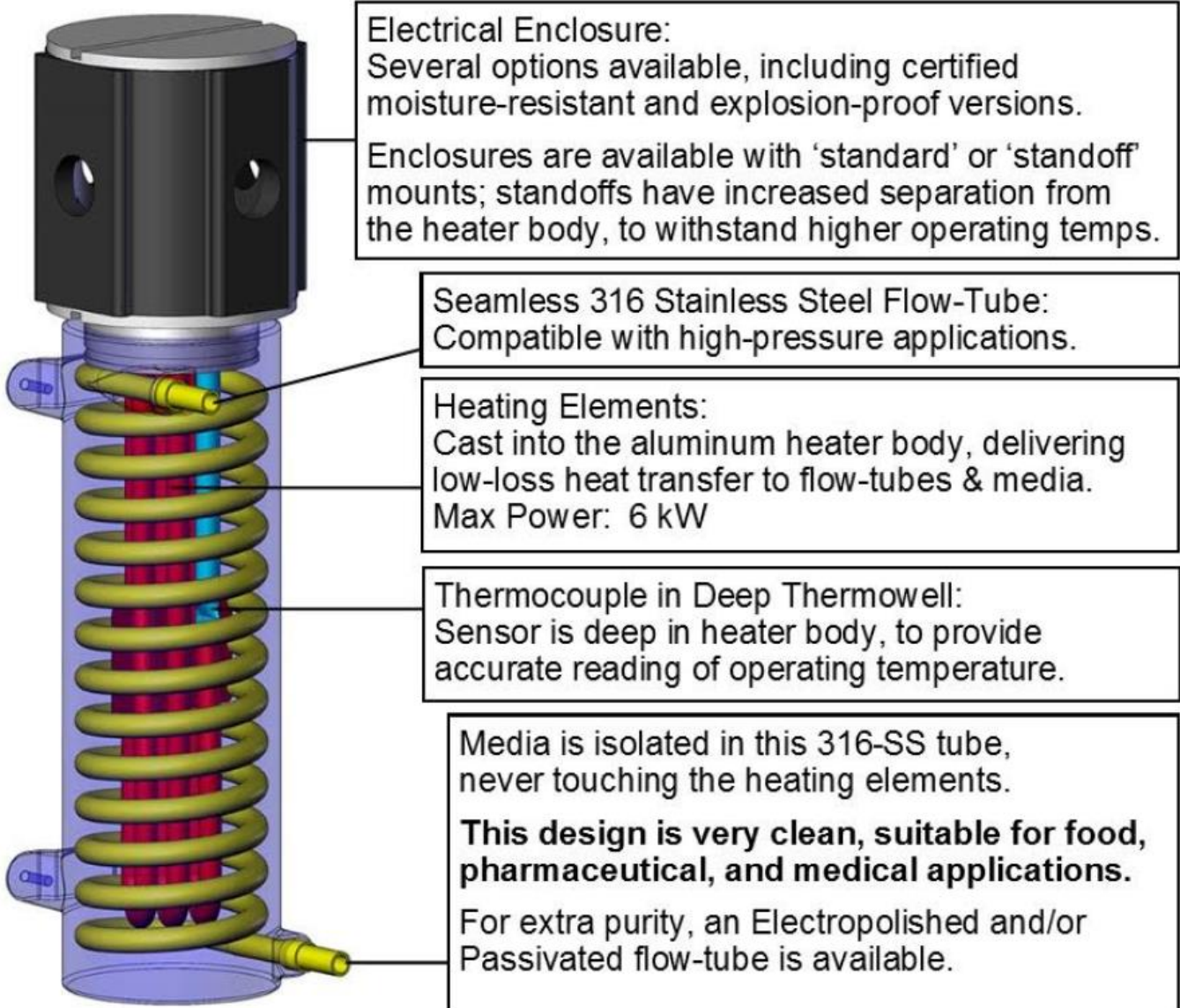


SENSEMASTER LTD

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CAST-X 2000



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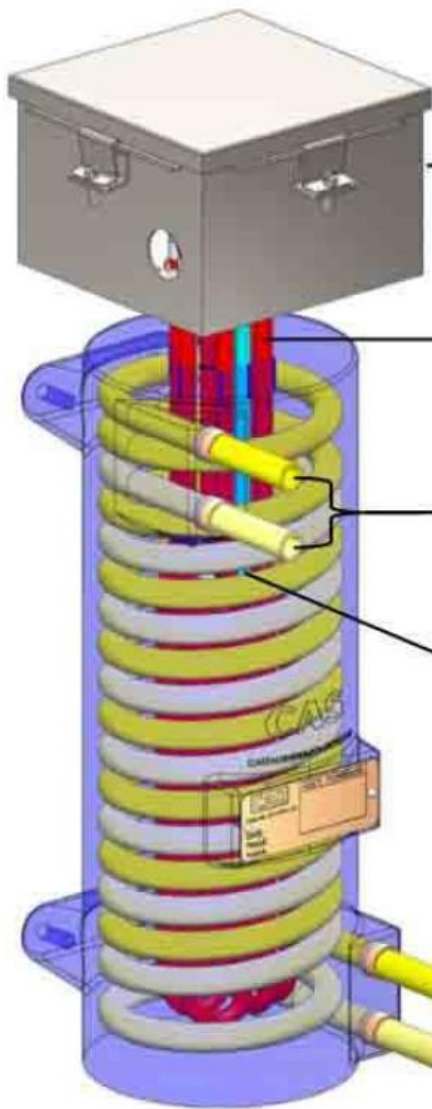


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CAST-X 2500



Electrical Enclosure:
Several options available, including certified moisture-resistant and explosion-proof versions.

Heating Elements:
Cast into the aluminum heater body, delivering low-loss heat transfer to flow-tubes & media.

Seamless 316 Stainless Steel Flow-Tubes:
Compatible with high-pressure applications. Media may be circulated in Single Tube, Dual Tube Parallel, or Dual Tube Series setup.

Thermocouples in Deep Thermowells:
Embedded deep in the heater body, to provide accurate reading of operating temperature.

Safely heat flammable gases & liquids.
(natural gas, aerospace, cryogenic uses)

**Media is isolated in these flow-tubes,
never touching the heating elements.**

This design also prevents contamination.
(food, medical, semiconductor applications)

Please liaise with Sensemater technical mail@sensemater.co.uk 01291 422022 for further assistance

Further product information can be found on our website link <https://sensemater.co.uk/cast-x-2/>