Jac. de Vries GESTA
PARTNER IN VERWARMINGSELEMENTEN

TECHNICAL INFORMATION FLOW-THROUGH DEVICES

Global description and options for flow-through devices:

We usually supply the flow-through devices according to specification.
Some models from our basic program available.
Flow-through devices are generally designed for heating liquids based on the maximum surface load of the medium, such as water, water-glycol or oil. We can make these from 1 to approximately 500kW, connection voltage 230V or 3F to 3x690V. Larger powers are usually controlled in several steps so that the entire power does not switch on and off at once, but in steps. If desired, we can supply the units including (separate) control and optionally in a painted version.
All flow devices are tested for high voltage, insulation value and a pressure test before delivery.

Connections:

Water-side connections can be placed on the tanks according to specification.
Welding sockets, flat welding flanges, pipe pieces, butterfly valves, etc. are possible.
All tanks are equipped with a vent, possibly a quick vent on the top and a drain at the bottom.

Screw-in elements:

All flow-through devices are equipped with one or more screw-in elements so that the elements can be optionally changed could be.
Elements generally have a screw-in plug made of brass G1½" BSP with crimped connections.

Temperature control and security:

We always place a maximum or limit thermostat in the tank (at the top) to monitor the maximum temperature and to switch off the heating if the control is not working properly or is overshooting. Usually a manual reset capillary thermostat and an auto reset thermostat for the control circuit, based on the desired temperature of the medium.
Thermostats can be 1 pole or 3 pole, and are usually in the control circuit.

Arrangements can be implemented in various ways;

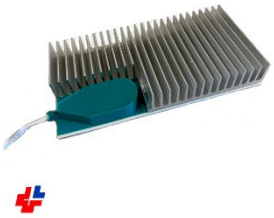
- Simple using thermostats with relays or magnetic switches
Regulation with approximately 5°C delta T at the set value.
We have a 4-stage thermostat that allows us to adjust the control in steps using a relay (delta T approximately 1.5°C between the steps)

- Through thyristor control, with Solid State Relay and electronic control including all necessary components
- Through step-by-step arrangement; 6 stage regulation. When the unit is almost at temperature, it can be finely regulated in a final step with an SSR, so that the temperature remains more constant.
- Optional with sensor and digital readout on the input and/or output.
- By controlling external 0-10V or 4-20mA signal
- For temperature controls above 75°C medium temperature, we place the connection box remotely.

For higher capacities with oil, water or water-glycol, multiple steps are often used (± 3-20 steps), so that not the full power is switched on/off.

Cabinet heating/ anti condensation heating:

We can install cabinet heating in the connection boxagainst condensation. We have the model shown here adjusted to approximately 15°C with cast-in klixon. Assets 100W-230V, can be provided with continuous power supply! We recommend using this for chillers and systems used for cooling and heating.



Overpressure protection:

We often use overpressure protection for large capacities above approximately 100 kW.
This will release pressure above approximately 4-6 Bar if the pressure in the system becomes too high.

Flow monitoring:

Optionally, we can equip the units with flow protection in the control circuit.
This only switches the heating on when there is flow.

Flowbewaking:

- Mechanical flow protection
- Electronic flow protection

Level monitoring:

We can also equip the units with level protection,so that the heating can only be switched on when sufficient level in the tank.
We continue to place these in the exit tank, so we can be sure that all the elements are in it medium.

Please note:
If the elements are turned on and the elements are not in the medium, they may become permanently defective and will need to be replaced**.**

Insulation:

All units can be provided with an insulation package. Specify this when requesting/ordering. The tanks can be insulated with 50 mm insulation and aluminum shell parts or stainless steel shell parts.
At high process temperatures you must protect the tanks against touch!
In the context of energy saving, it is always good to high temperature to insulate the tanks.

Placement:

The flow devices must always be placed horizontally. If you deviate from this, you run the risk of air in the system with possibly major consequential damage! (see stickers on the units)

Service and maintenance package:

We have a service package in our delivery program (simple or extensive package) so that you can change an element or thermostat yourself.
Package 1; (article 115932) is a simple package consisting of: 2x screw-in element with crimped connections, 1x element key, Loctite, cleaner and a manual.
Package 2; (article 115600) is an extensive package consisting of: 2x screw-in element with shrunk connections, 1x element key, 1x element key rod, Loctite, cleaner, activator, wire brush, hot air gun, micro fiber cloth, thermostat manual reset, thermostat auto reset and a manual.

Pumps:

Pumps are usually arranged by the customer himself.
We can optionally provide small units with a pump and check valve.

Painting/Spraying:

All units can be supplied in colour.
We always make the units at least in stainless steel 304, and can have them sprayed at a local spraying company. Prices depend on quantity, size, etc.

Manual:

See the manual for the correct use of the flow-through devices.
Always bleed first, fill with medium and then switch on!

Important:

We recommend that you have the electrical connection carried out by a certified installer or a competent person. When supplied with a (built-in) thermostat or control, you must connect it according to the supplied connection diagram.

The following points must be taken into account in advance:

1. Check whether the local mains voltage corresponds to the specified connection voltage. This is stated on the rating plate or engraved in the heating element.

2. With liquid heating, the heating element may only be used in the medium for which it is suitable and the heated part must always be in the liquid.

3. When installing flow-through devices, they must always be placed horizontally.
   If you use the supplied electric flow device, you must check whether the correct amount of liquid is present. Always bleed the tank before switching it on electrically! (this can cause major damage) Tank must always be completely full!

4. The electrical power cable(s) must be connected to the connection facilities indicated for this purpose. This may not be changed unless in consultation with our technical advisors. The electrical connections must be shielded at all times and safety standards must be observed.

5. When using thermostats with an adjustable temperature range, a check beforehand to ensure the correct setting is necessary. The adjustment knob or screw can be located inside or outside the connection box.

6. When using thermostats with a manual reset protection, you must carry out an inspection to determine the cause, if this has been addressed.

7. We advise you to regularly check heating elements and related equipment for function, limescale and/or other contamination and to clean them if necessary. This extends the lifespan.

8. Storage: when storing a flow device and control, they must be stored dry and at room temperature! This is to guarantee the insulation value.

It is the responsibility of the user to assemble and use the supplied components in accordance with the standards. All products from Jac. de Vries Gesta have been selected and manufactured with the greatest care to guarantee the quality of our products. All heating elements are supplied in accordance with the EN 60335-1 standard and the general Metaalunie conditions. If there are any defects despite our quality checks, you can count on our good warranty scheme.