Alfa Laval AQ4
Alfa™ AHRI-certified plate heat exchanger

Applications
General heating and cooling duties. Heating by means of steam.

Standard design
The plate heat exchanger consists of a pack of corrugated metal plates with portholes for the passage of the two fluids between which heat transfer will take place.

The plate pack is assembled between a fix frame plate and a movable pressure plate and compressed by tightening bolts. The plates are fitted with a gasket which seals the interplate channel and directs the fluids into alternate channels. The number of plates is determined by the flow rate, physical properties of the fluids, pressure drop and temperature program. The plate corrugations promote fluid turbulence and support the plates against differential pressure.

The plate and the pressure plate are suspended from an upper carrying bar and located by a lower guiding bar, both of which are fixed to a support column.

Connections are located in the frame plate or, if either or both fluids make more than a single pass within the unit, in the frame and pressure plates.

Typical capacities
Liquid flow rate
Up to 50 kg/s (800 gpm), depending on media, permitted pressure drop and temperature program.

Water heating by steam
0.7 to 3.0 MW

Plate types
AQ4, AQ4-M and AQ4-D, double wall plates.

Frame types
FM, FG and FD

Working principle
Channels are formed between the plates and the corner ports are arranged so that the two media flow through alternate channels. The heat is transferred through the plate between the channels, and complete counter-current flow is created for highest possible efficiency. The corrugation of the plates provides the passage between the plates, supports each plate against the adjacent one and enhances the turbulence, resulting in efficient heat transfer.
### STANDARD MATERIALS

**Frame plate**  
Mild steel, Epoxy painted

**Nozzles**  
Carbon steel  
Metal lined: Stainless steel, Titanium  
Rubber lined: Nitrile, EPDM

**Plates**  
Stainless steel Alloy 316/Alloy 304, Titanium, Alloy 254 SMO, Alloy C276

**Gaskets (Clip-on, glued)**  
Nitrile, EPDM, Viton®  
Other grades and material available on request.

### TECHNICAL DATA

#### Pressure vessel codes, PED, ASME, pvcALS™

**Mechanical design pressure (g) / temperature**

<table>
<thead>
<tr>
<th>Code</th>
<th>Design Pressure</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL</td>
<td>0.6 MPa / 130°C</td>
<td></td>
</tr>
<tr>
<td>FM</td>
<td>1.0 MPa / 180°C</td>
<td></td>
</tr>
<tr>
<td>FG</td>
<td>1.6 MPa / 180°C</td>
<td></td>
</tr>
<tr>
<td>FG PED</td>
<td>1.6 MPa / 180°C</td>
<td>*</td>
</tr>
<tr>
<td>FG ASME</td>
<td>2.5 MPa / 180°C</td>
<td></td>
</tr>
<tr>
<td>FD PED</td>
<td>398 psig / 482°F</td>
<td></td>
</tr>
</tbody>
</table>

*Frame FG also approved for 1.2 MPa / 200°C to allow use in steam systems without safety valves.

#### Connections

**Size:** DN100 / NPS 4 / 100A

- **FL pvcALS™**  
  EN 1092-1 PN10, JIS B2220 10K
- **FM pvcALS™**  
  EN 1092-1 PN10, ASME B16.5 Class 150
- **FM PED**  
  EN 1092-1 PN10, ASME B16.5 Class 150
- **FG pvcALS™**  
  EN 1092-1 PN16, ASME B16.5 Class 150
- **FG PED**  
  EN 1092-1 PN16, ASME B16.5 Class 150
- **FG ASME**  
  ASME B16.5 Class 150
- **FD PED**  
  EN 1092-1 PN25, ASME B16.5 Class 300
- **FD ASME**  
  ASME B16.5 Class 300

Standard EN 1092-1 corresponds to GOST 12815-80 and GB/T 9115.

#### Dimensions

- **Type**  
  AQ4-FM 1084 (42.7") 470 (18.5") 215 (8.5")
  AQ4-FG 1084 (42.7") 470 (18.5") 215 (8.5")
  AQ4-FD 981 (38.6") 470 (18.5") 131 (5.2")
  AQ4-FD ASME 1084 (42.7") 470 (18.5") 215 (8.5")

The number of tightening bolts may vary depending on pressure rating.

#### Maximum heat transfer surface

- AQ4-B 90 m² (970 sq. ft)
- AQ4 60 m² (650 sq. ft)

#### Particulars required for quotation

- Flow rates or heat load
- Temperature program
- Physical properties of liquids in question (if not water)
- Desired working pressure
- Maximum permitted pressure drop
- Available steam pressure

The thermal performance is third party certified through the AHRI Liquid to Liquid Heat Exchangers certification program.

![AHRI Certified](https://www.ahri.org)

ECF00367EN 1506  
Alfa Laval reserves the right to change specifications without prior notification.

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**How to contact Alfa Laval**  
Up-to-date AlfaLaval contact details for all countries are always available on our website on www.alfalaval.com