

Alfa Laval PoU cooler module for pharmaceutical water system

Point of Use

Introduction

Alfa Laval PoU is a compact point of use cooler module for cooling of pharmaceutical water. The heat exchanger has a unique design with no internal welds to avoid any cross contamination between product and utility. Alfa Laval PoU meets the stringent hygienic standard imposed by both authorities and industry.

Alfa Laval PoU is supplied as a complete module including heat exchanger, pitot tube, valves and cabinet. Alfa Laval PoU is designed to remain sanitized - when not in use (standby mode)

Application

For quick and easy installation, Alfa Laval PoU is supplied as a complete module with a pitot tube arrangement for installation in the distribution loop. Installed Alfa Laval PoU can be regarded as a sub-loop of the main distribution loop.

Alfa Laval PoU is suitable for cooling Water For Injection (WFI) and Purified Water (PW).

If needed, Alfa Laval PoU can be steam sterilized.

Benefits

- Designed and manufactured in line with ASME BPE
- Easy to install, Plug-and-Play module
- Low pressure drop in distribution loop
- No internal welds
- Quick response and minimized waste of WFI/PW
- Comprehensive documentation as a standard



Technical data (standard)	
Heat transfer area:	0.3 – 0,7m² (3.2–7.5 US sqft)
Max. Flow rate:	Cold sampling 1000 l/h (264 US gph)
	Hot sampling 1800 l/h (475 US gph)
Design temperature:	150°C (302°F)
Design pressure:	Pneumatic user point valve (PTFE diaphragm): FV/6 barg (FV/87 psig)
	Pneumatic user point valve (EPDM diaphragm): FV/10 barg (FV/145 psig)
	Manual user point valve (PTFE/EPDM diaphragm): FV/10 barg (FV/145 psig)
Weight of module:	22-46 kg
Material data	
Product wetted parts:	stainless steel 316L, seamless tubes
PoU module:	Insulation: Armaflex
	Cabinet: Stainless steel 304L
Surface finish product wetted parts:	Electropolished with Ra<0.5µm

Standard design and configuration

Alfa Laval PoU is a compact tube-in-tube design. It is designed with focus on high hygienic standards in line with ASME BPE. The design features full drainability, no internal welds, no dead legs, no crevices and all product wetted parts are electropolished.

Alfa Laval PoU pitot tube arrangement ensures that throttling valves are not needed for the sub-loop, significantly reducing the total pressure drop in the distribution loop.

Alfa Laval PoU is available in three different sizes; PoU200, PoU300, and PoU400.

These are supplied as complete modules with a manual or pneumatic user point valve. Alfa Laval PoU is supplied as a complete module including heat exchanger, pitot tube, valves and cabinet.

Within the standard configurations there are many different options to select among, as example pneumatic or manual point of use valve, and different sizes of pitot tubes with ASME BPE, ISO2037, ISO1127 standards. The pitot tubes have option with isolation valves and return bend.

Documentation

Alfa Laval PoU is delivered along with Q-doc, a standard documentation including drawings, material certificates, instruction manual, pressure test report, WPS, WPQ, weldlog etc..

Working principles**Stand-by mode**

With continuous circulation in the module/subloop it is possible to avoid draining and thereby keeping the main distribution loop closed towards the environment. The module/subloop is kept sanitized.

The design of pitot tube arrangement [1] ensures that the product is kept circulating in the point of use cooler even in stand-by mode. With continuous circulation in the heat exchanger it is possible to avoid draining and thereby keeping the water loop closed towards the environment. The sub loop is kept sanitized. The design of pitot tube arrangement [1] ensures that the WFI/PW is kept circulating in the module in stand-by mode. Figure 1

Cooling mode

In cooling mode the recirculation is stopped, cooling media is turned on and when the user point is opened WFI/PW is available within seconds. For cooling of water for injection in manual module (the module with manual point of use valve the following steps should be done:

- Turn the air switch on [2] from stand-by mode to cooling mode. The cooling water valve [4] will automatically will be open and the recirculation valve close [3].
- Open the point of use valve [5] carefully and cold water for injection is available within seconds. Figure 2



Figure 1. Stand-by mode

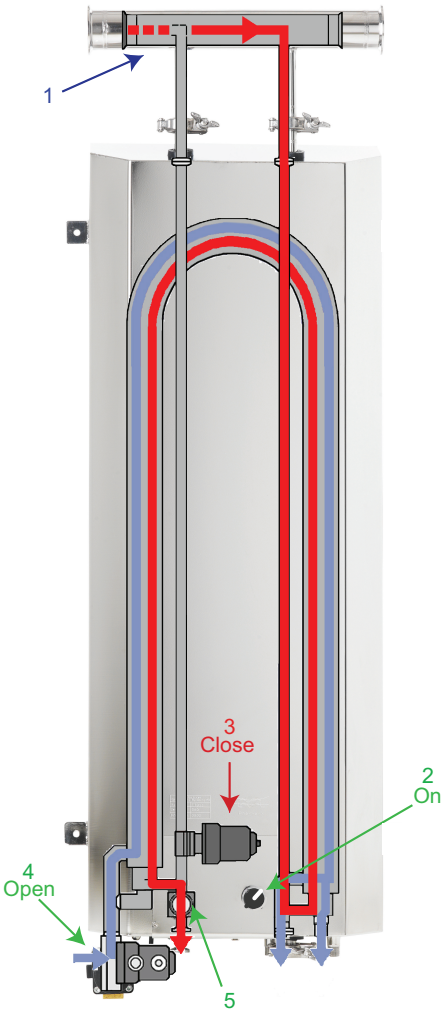


Figure 2. Cooling mode