

Ultramat plus-pneumo UFM-P

Installation- and Maintenance Manual

US



Pneumatic level-controlled drain

Important Indications

- The condensate drain is under pressure. Maintenance and reparation works can take place under pressure-free and potential-free conditions. The mentioned operation gauge pressure must not be exceeded.
- The condensate drain must not be applied in areas which are exposed to frost. Please request information about alternative products.

Function

(Fig. 1)

Condensate drips through the intake port (1) and is collected in vessel (2). The control valve (4) is closed and the surge chamber (5) is vented. The Operation pressure in vessel (2) presses the diaphragm (8) at its seat and thus separates the condensate channel at the pressure side from the other one at the exit side (10).

(Fig. 2)

If much condensate has been collected in the vessel, the float is lifted and compressed air can get into the surge chamber (5) over the control valve (4). The diaphragm (6) is pressed to the right hand side and opens the diaphragm (8) by means of the piston (7). Now the condensate can drain to the exit (11) over channel (9) and (10). If the float (3) moves down with the condensate level so far that the control valve closes again, the surge chamber is vented over nozzle (12). The diaphragm (6) as well as the diaphragm (8) over the piston (7) come back to their starting position, so that the drainage is closed again. A testing of the function of the outlet valve can be done by means of the hand valve (13).

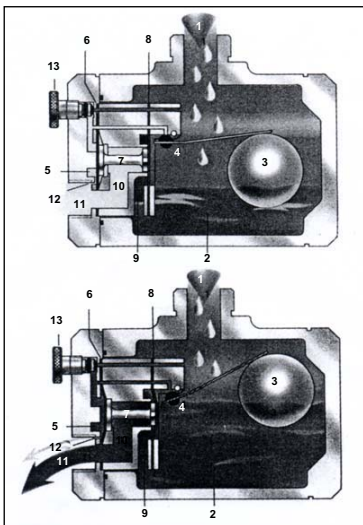
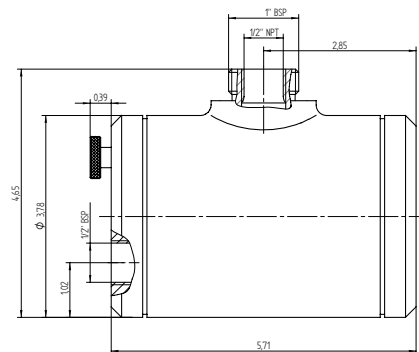


Fig. 1

Fig. 2

Features/ Advantages

- reliable drainage of large amounts of condensate,
- problem-free drainage of pure oil by means of hydrostatic level measuring,
- almost maintenance free,
- a minimum of installation work,
- great function safety due to large drain bores,
- pneumatic double membrane servo valve with long service life,
- a minimum of space needed due to small height of unit,
- manual override,
- operation without electricity, therefore applicable in hazardous areas.



Installation

Condensate inlet

The condensate enters the vessel through an R1" nozzle at the highest point of the drain. Generally, only ball crocks are to be used for the cut-off. The condensate must flow with the gradient, and the air must be able to escape the condensate drain freely.

Condensate outflow

A R1/2" internal thread is made available for the condensate outflow. If the condensate is not led directly into the vessel a drain pipe with a calliper of 15 mm has to be installed **solidly**. Up to a length of several meters the pipe can be installed in a gradient Position.

We suggest you install an oil-water-separator with build-in pressure release chamber for the purification of oily condensate.

Installation Instructions

- Only ball valves are to applied as shutoff valves in front of the condensate drain. Other valves would hinder the ventilation of the drain housing and thus would lead to disruptions of drainage process.
- Every condensate collection point needs its own drain. Connecting a few drainage points would cause a bypass-within the drain off pipe line due to the pressure differential between various equipment's (i.e., filters and dryers, or two filters connected in series).
- The condensate drain must always be installed at the lowest level of the wire system during drainage. Most suitable is a y-pipe.
- Under normal conditions the condensate drain functions securely and almost maintenance free without having to install a dirt trap before-hand. However, very dirt condensate needs to be drained (i.e., under the vessel, rust particles and others within the wire system). The maintenance intervals can be prolonged extensively by installing a dirt trap in front of the drain. Ideally, the dirt trap is installed directly in front of the condensate drain. In case the installation of the pipe is on a horizontal level, the sieve has to point downwards and the ventilation of the drain must not be disrupted.

Maintenance/ Operation Test

The construction of the pneumatic controlled drain allows for an almost maintenance-free application. Depending on the properties and contamination's of the condensate it is advisable to clean the vessel and the diaphragm at regular intervals. We recommend a cleaning once a year. If a dirt trap is installed, the sieve has to be cleaned early enough, so that there will be no disturbances in the condensate supply or in the housing ventilation.

Parts subject to wear such as diaphragms and sealings can easily be replaced if necessary. Therefore a set of wearing parts is available.

During routine inspection the following checks should be carried out once a while: Opening of the hand valve (knurled-head screw) until the condensate has drained. If the drain has functions properly, no more of condensate should accumulate.

Trouble Shooting

Trouble	Reason
Condensate will not drain.	<p>Carry out the following checks:</p> <p>Turn the hand valve (knurled-head screw) around 1,5 to 2 times. In case that the condensate still does not drain, the fault can either be a clogged pre-control valve or a clogged air bore to the pre-control chamber. If the condensate will drain now, either the float hangs or the air bore between the float valve and pre-control chamber is clogged.</p> <p>Solution: Exchange of diaphragm or bore/ float has to be cleaned.</p>
Valve does not close (blows off constantly).	<p>There are two possibilities:</p> <p>a) Main diaphragm is defect.</p> <p>b) Pressure release bore for the pre-control chamber is clogged.</p> <p>Solution: Renewal diaphragm ore bore has been cleaned.</p> <p>Hint: It is advisable to renew both diaphragms at the same time.</p>

Technical Data

Material:

Sea water resistant aluminium chill casting.
Blue polyester resign coating on the outside.
Float made of stainless steel.

Operation pressure:

P = 12-230 psi g

Temperature range:

40°F - 140°F

higher temperatures are possible if demanded.

Condensate amount:

120 gallons/ hour at 100 psi g and 65°F

Technical alternations reserved!

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