

Product Training

02 Products

Condensate

UFM-D



Product Line - Industrial Filtration Technology

Status: July 2014

Content

- UFM-D Condensate Drain Portfolio and Technical Data
- Update on Ultramat® UFM-D 03, 05, 10
- Design and Features
- Function
- Accessories

Ultramat® UFM-D Portfolio

UFM-D03



UFM-D05

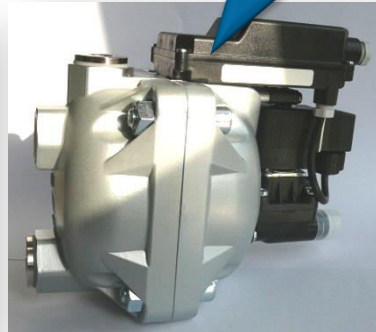
UFM-D10



UFM-D30



UFM-D130



UFM-D30 HP



Ultramat® UFM-D Technical Data

Drain Type	Capacity		
	Compressor	Dryer	Filter
	m ³ /min *)	m ³ /min *)	m ³ /min *)
UFM-D03	2,5	5	25
UFM-D05	5	10	50
UFM-D10	10	20	100
UFM-D30 / 30HP	30	60	300
UFM-D130	130	260	1300

*) Related to ambient conditions 1bar, 20°C, 50%RH

Ultramat® UFM-D Technical Data

Drain Type	Recommended max. amount of condensate per service interval **)	Max. condensate peak load **)
	l *)	l/h *)
UFM-D03	5.500	5.5
UFM-D05	10.000	10
UFM-D10	33.350	60
UFM-D30	66.700	120
UFM-D130	292.000	350

*) Related to ambient conditions 1bar, 20°C, 50%RH and **7bar** operating pressure

**) If amount of condensate per hour is known, UFM-D size and service interval can be calculated with these data

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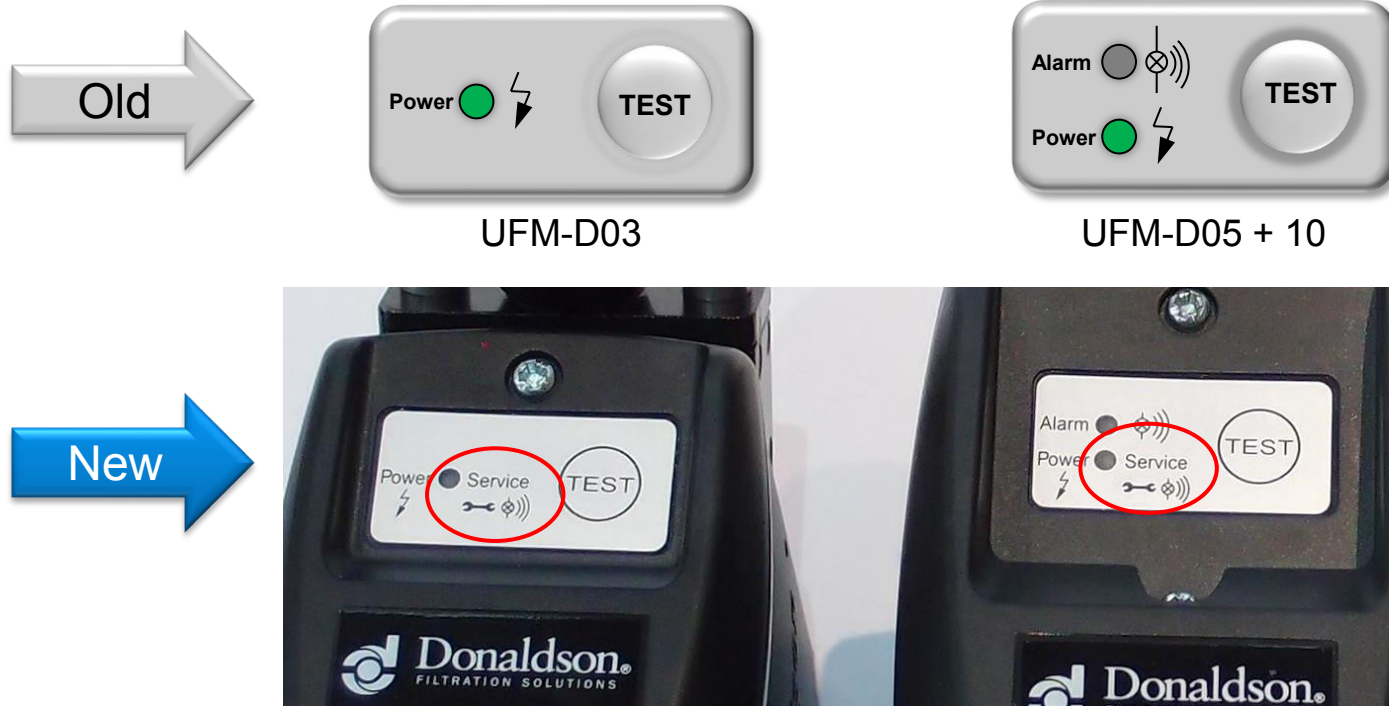
Update on Ultramat® UFM-D 03, 05, 10



- New item number for drains
- New Item number for service units
- Item numbers for service kits (filters) will remain

Update on Ultramat® UFM-D 03, 05, 10

Change of Display – Integration of Service Message



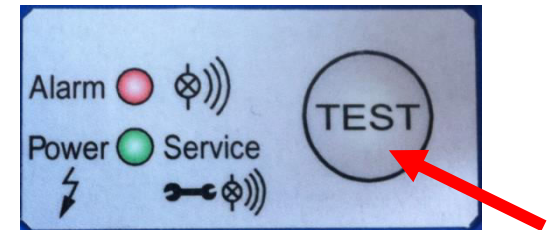
Power/ Service LED starts blinking after 1 Mio. drain operations (service interval dependend on application) or 2 x 8760 operating hours (2 years or depending on operating hours)

Benefit: Generation of AM business by early reminder for change of service unit

Update on Ultramat® UFM-D 03, 05, 10

Reset of Service Message

1. Press locking clip so that control box is unlocked
2. Press TEST button and hold for minimum 5 seconds



Easy reset procedure
No special field device needed for reset

Update on Ultramat® UFM-D 03, 05, 10

IP67 protection

6 = Dust tight

- ✓ Resistant in applications with high dust loads in ambient

7 = Water tight

- ✓ Resistant in applications with frequent water cleaning
- ✓ protection against condensation in fridge dryer applications

Temperature resistant
up to 70°C

Ready for operation in
heavy duty applications



Update on Ultramat® UFM-D 03, 05, 10

Multi-voltage controller

2 Voltage Options

- 100-125 VDC / 95-240 VAC
- 18-72 VDC / 24-48 VAC (low voltage)

Enlarged area of application



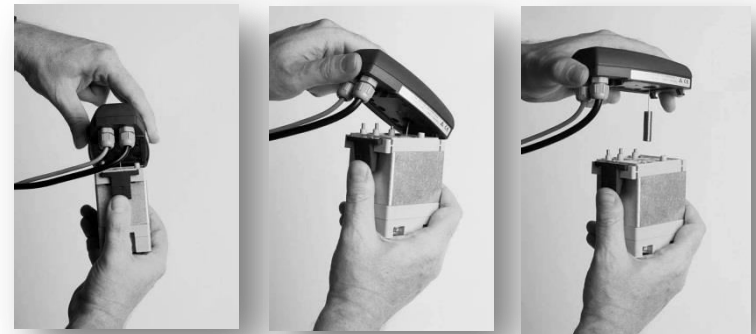
US version (115VAC) still in portfolio with NPT pipe connections

Update on Ultramat® UFM-D 03, 05, 10

New Service Units

New service unit does fit into old drains (downward compatible)

Old service unit does **not** fit into **new** drains



UFM-D Feature comparison

Feature	UFM-D 03, 05, 10 (Old)	UFM-D 03, 05, 10 (New)
Service Message	Not available	Service LED starts blinking after 1 Mio. operations or 2x8760h
Electrical Power Supply	3 variants 230VAC or 24VDC or 115VAC	2 variants: 100-125 VDC /95-240 VAC 18-72 VDC / 24-48 VAC
Protection Class	IP54	IP67 (dust tight + water proof)
Operating Temperature	60°C	70°C
Service Unit	Not compatible to new version	Compatible to old version



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Ultramat® UFM-D Condensate Drain Design + Features (UFM-D03, UFM-D05, UFM-D10)

Control Box

- Black color
- Donaldson specific labels

Donaldson Design Cover

- Black colour
- “Donaldson Ultrafilter” and
“Made in Germany” logo



Ultramat® UFM-D Condensate Drain Design + Features (UFM-D03, UFM-D05, UFM-D10)

Service Unit

- With Donaldson specific locking clip (Aftermarket Protection)
- V05 = Donaldson Code



Donaldson service units can only be used for Donaldson drains
– do **not** fit on original BEKO or on any BEKO OEM drains!

Ultramat® UFM-D Condensate Drain Design + Features (UFM-D03, UFM-D05, UFM-D10)

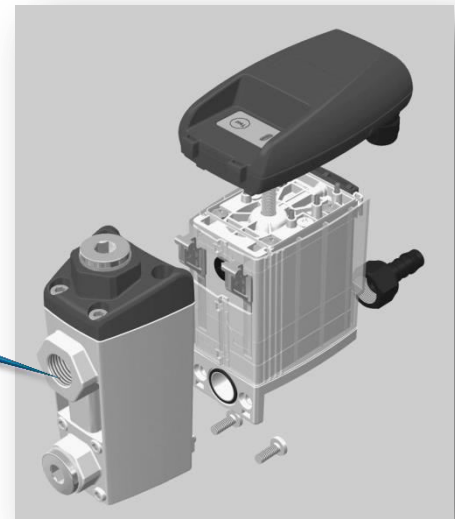
Turnable inlet connector

- for vertical or horizontal inlet
- flexible installation possible



2 inlet ports available

- for vertical or horizontal inlet
- flexible installation possible



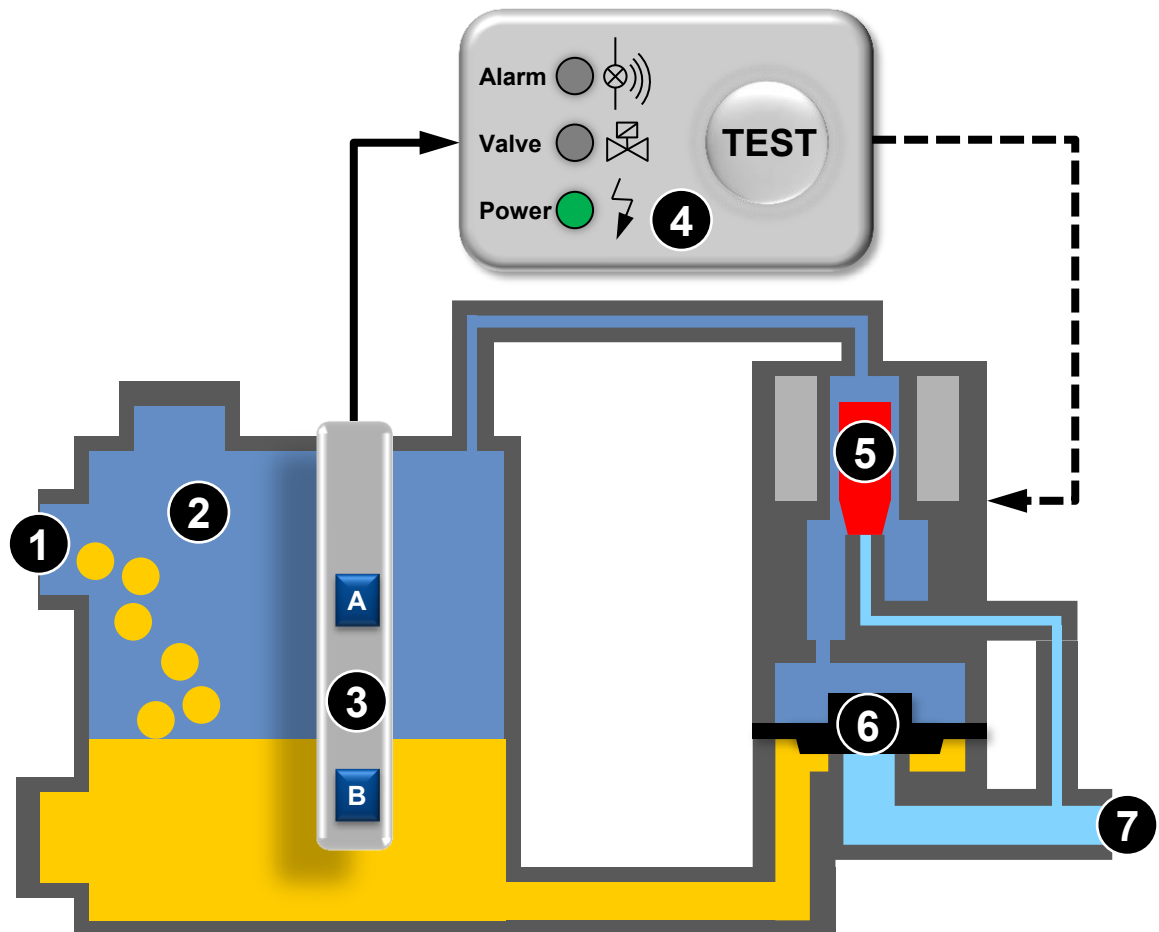
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Function Principle UFM-D

- ❶ Condensate inlet
- ❷ Collecting container
- ❸ Condensate Sensor
- ❹ Controller
- ❺ Pilot valve
- ❻ Membrane
- ❼ Discharge pipe

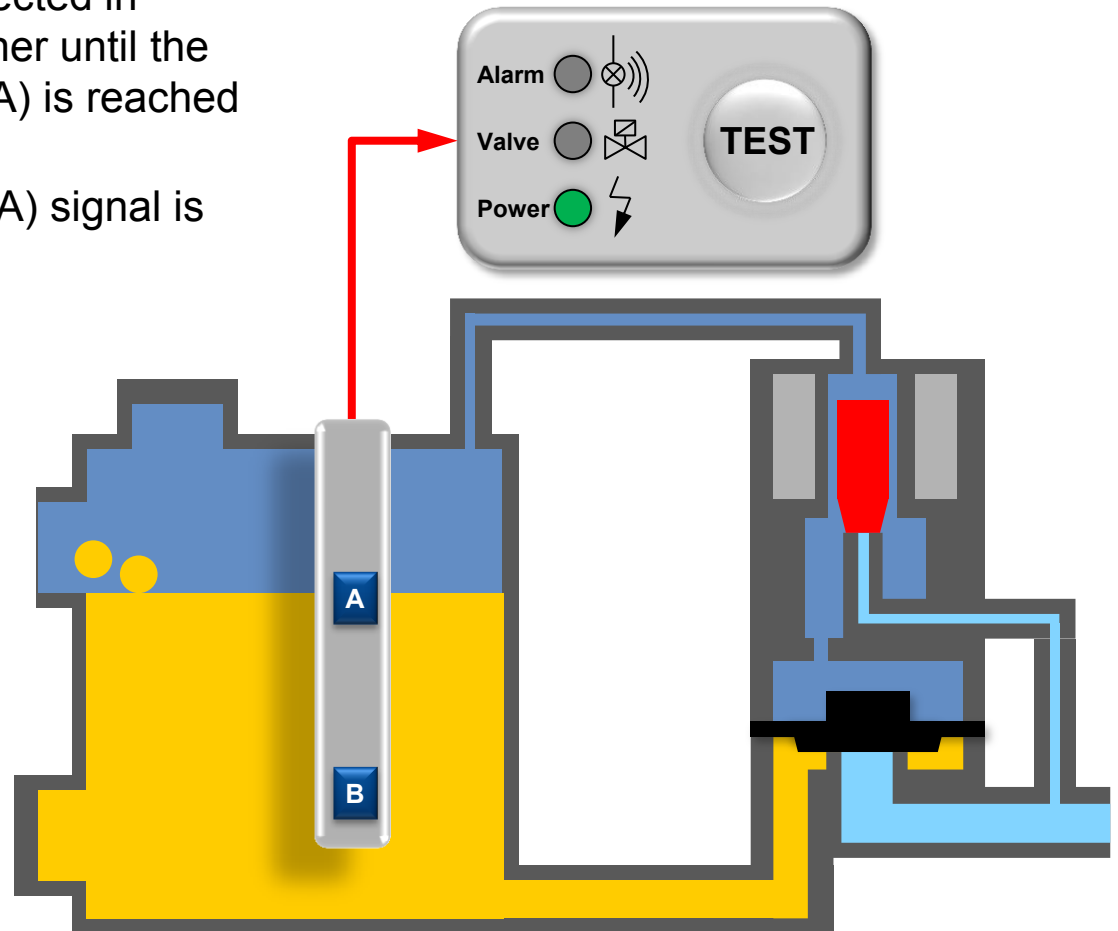
-  Condensate
-  Compressed air
-  Discharge line



Function Principle UFM-D

Condensate is collected in condensate container until the high-level sensor (A) is reached

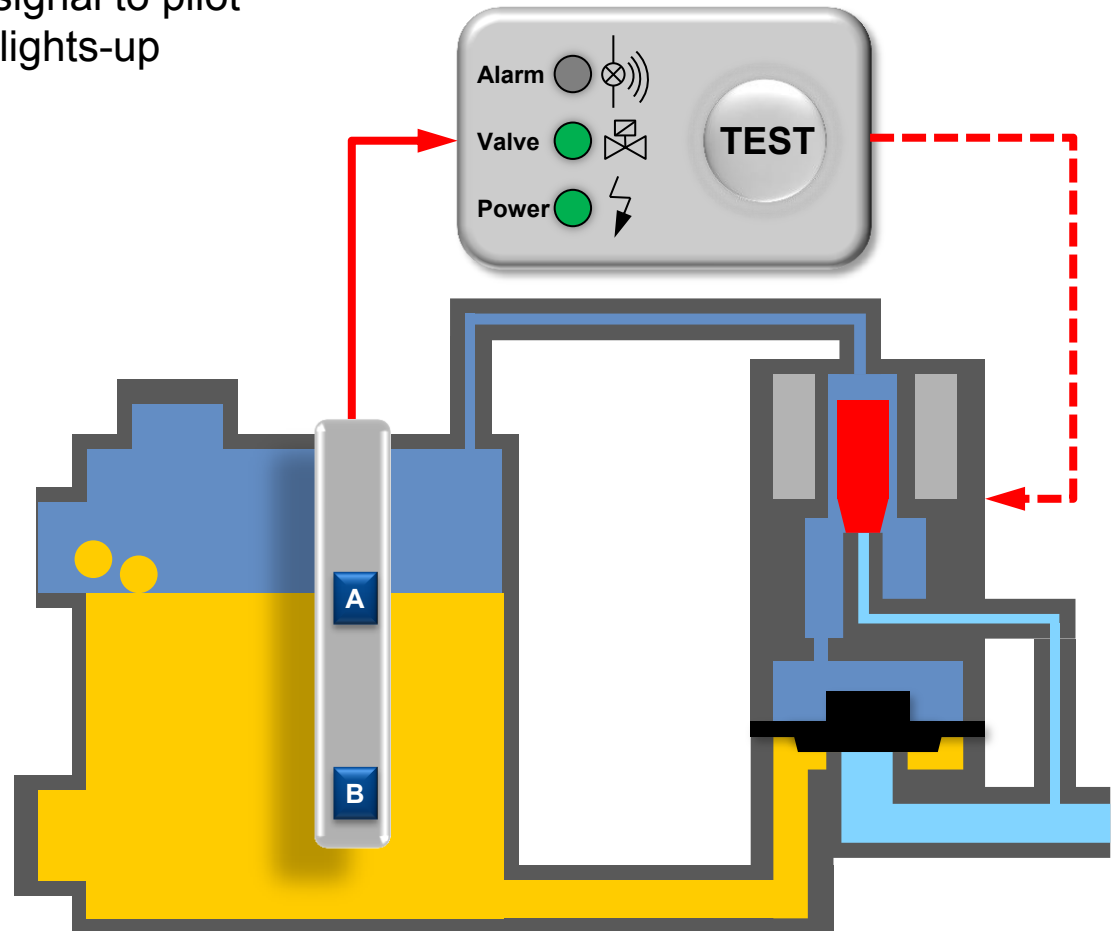
High-level sensor (A) signal is given to controller



Function Principle UFM-D

Controller triggers signal to pilot valve – Valve-LED lights-up

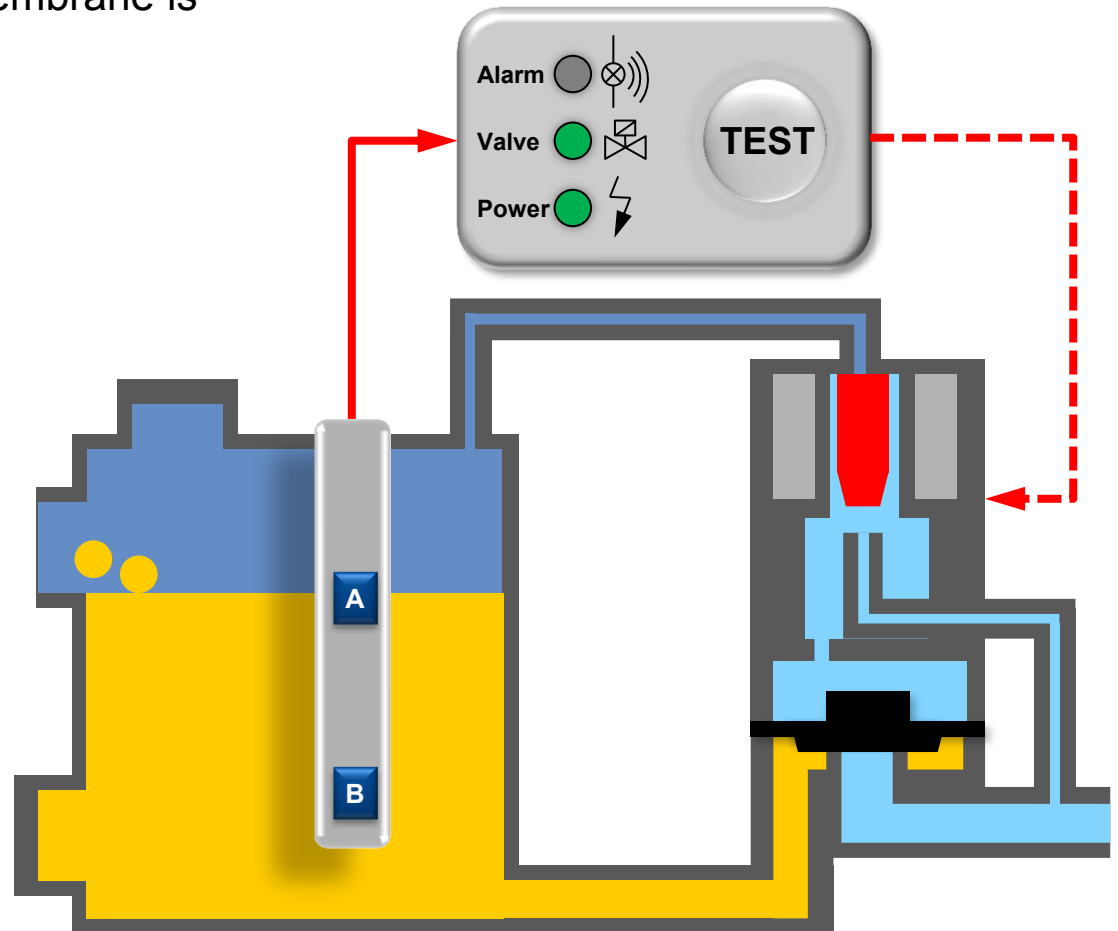
Pilot valve is lifted



Function Principle UFM-D

Pressure above membrane is released

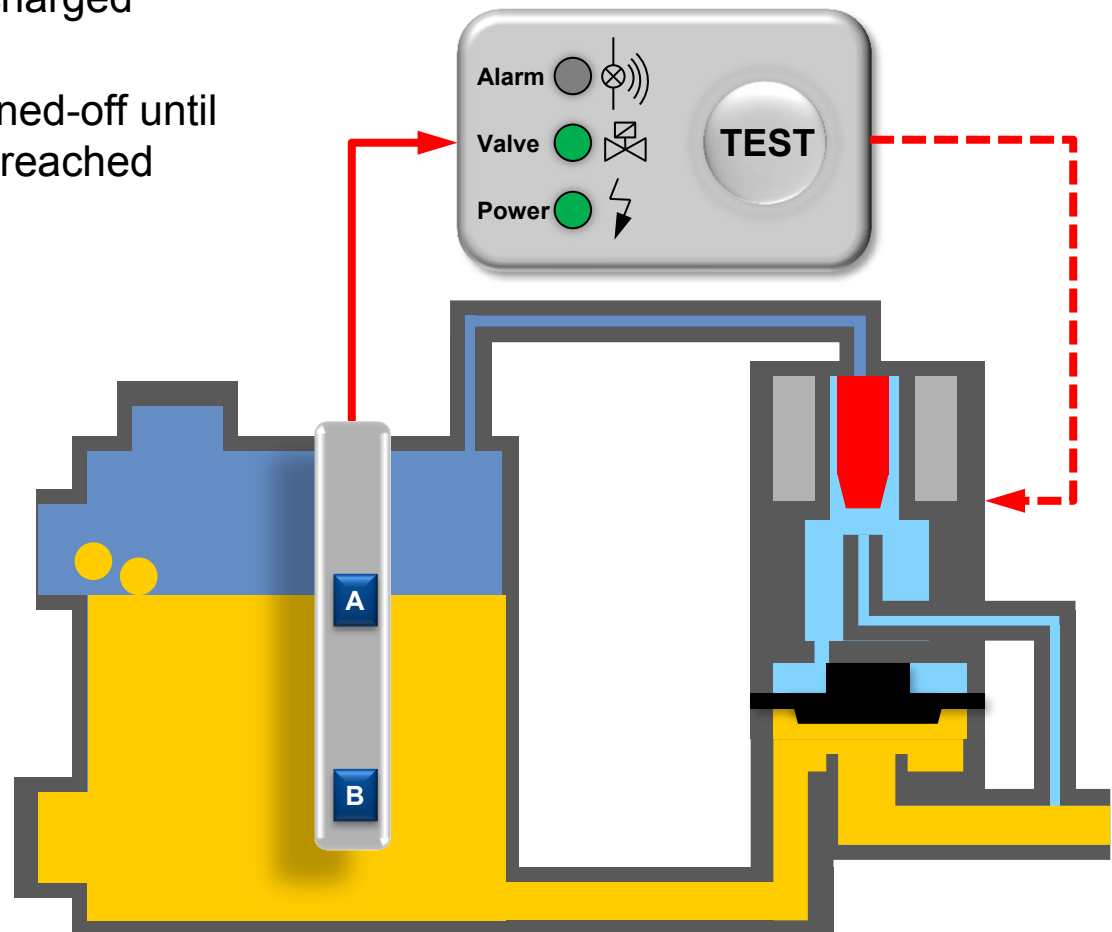
Membrane is lifted



Function Principle UFM-D

Condensate is discharged

Condensate is drained-off until
low-level sensor is reached

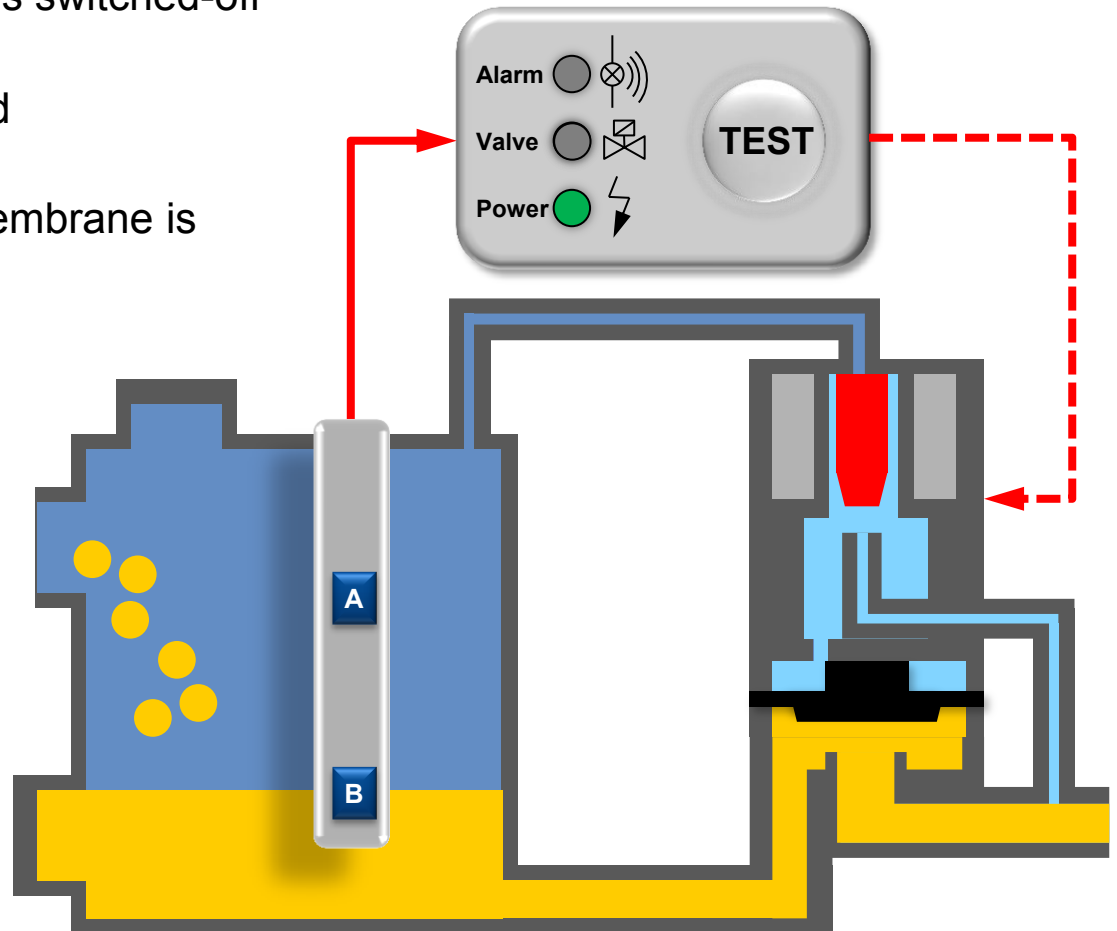


Function Principle UFM-D

Condensate valve is switched-off

Pilot valve is closed

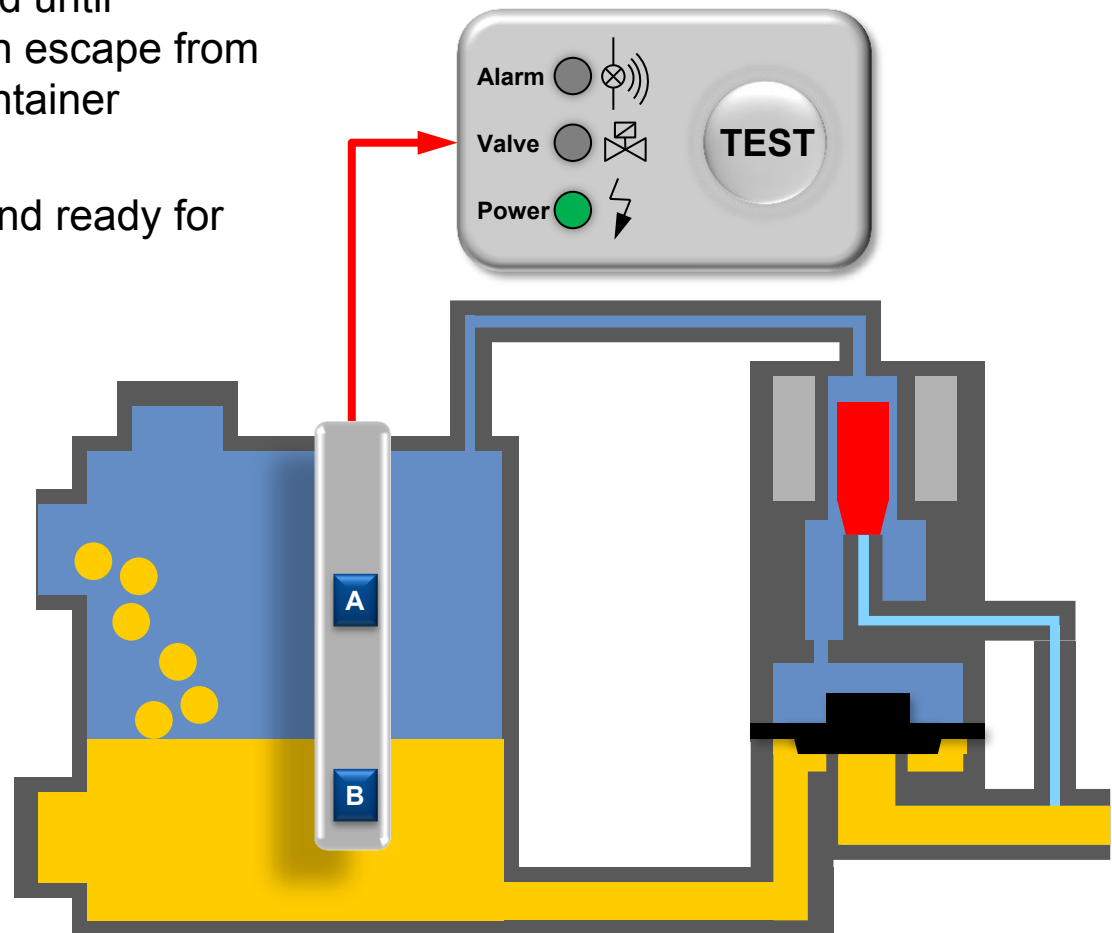
Pressure above membrane is built-up



Function Principle UFM-D

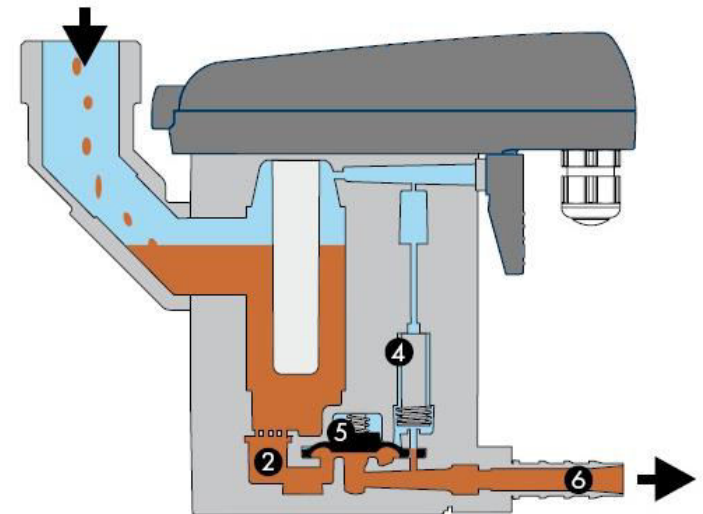
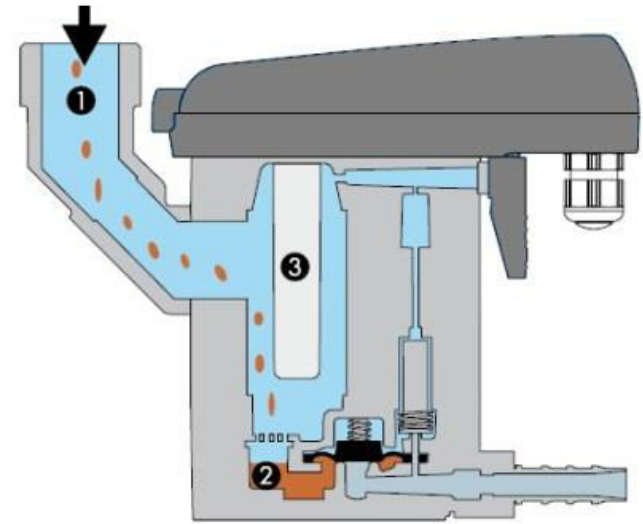
Membrane is closed until
compressed air can escape from
the condensate container

System is closed and ready for
next drain cycle



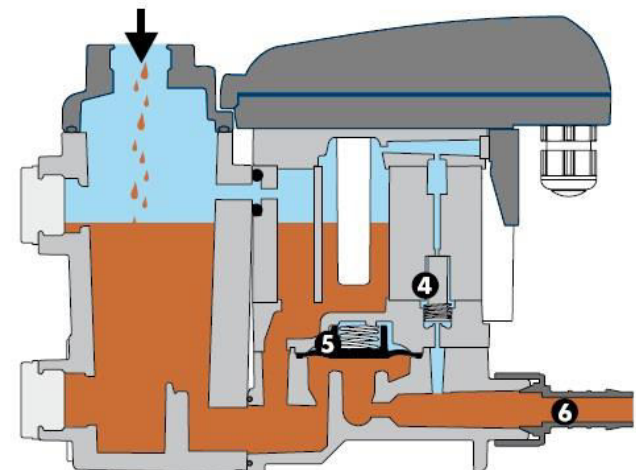
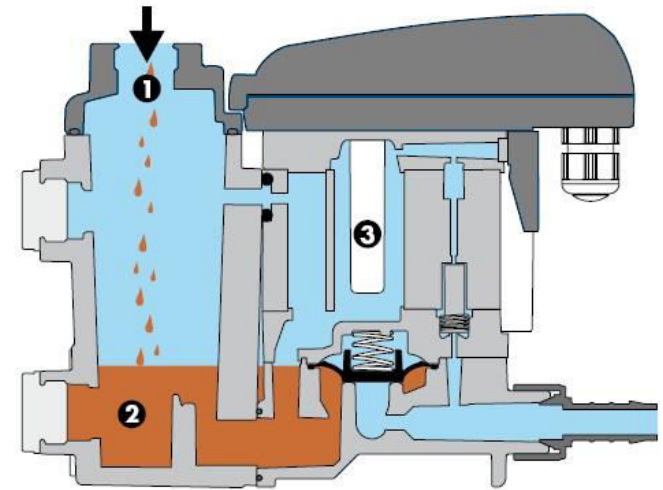
Function UFM-D 03 + 05

- 1 Condensate flows into the condensate drain via the inlet connector...
- 2 ...and is collected at the bottom of the housing.
- 3 A capacitive sensor detects continuously the filling level of the housing.
- 4 When the drain is filled to a certain level, a pilot valve is activated...
- 5 ...and the membrane opens...
- 6 ...the outlet line to discharge the condensate. The outlet line is re-closed tightly in time before compressed air can escape from the system.



Function UFM-D 10

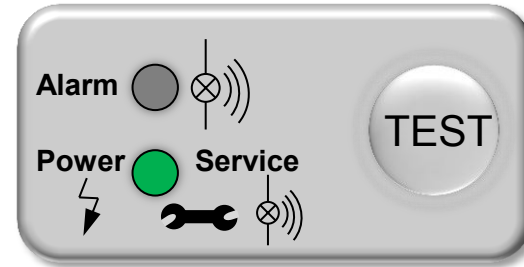
- 1 Condensate flows into the condensate drain via the inlet connector...
- 2 ...and is collected at the bottom of the housing.
- 3 A capacitive sensor detects continuously the filling level of the housing.
- 4 When the drain is filled to a certain level, a pilot valve is activated...
- 5 ...and the membrane opens...
- 6 ...the outlet line to discharge the condensate. The outlet line is re-closed tightly in time before compressed air can escape from the system.



Function UFM-D03, 05, 10 - Display

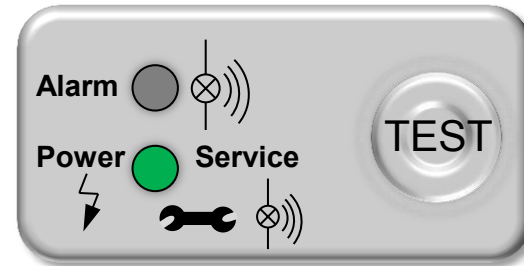
Power / Service – LED

- Voltage is supplied
- Ready to operate
- Service LED starts blinking after 1 Mio operations or 2x8760h



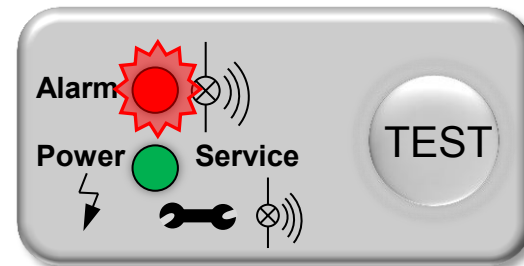
TEST - Button

- Press button for 2 sec. = Test of valve function + Manual drainage
- Press button for 60 sec. = Test of alarm function
- Reset of Service message – unlock locking clip, press button for 5 sec.



ALARM – LED

- Alarm mode is activated



Function UFM-D30, 30HP, 130 Display

POWER – LED

- Voltage is supplied
- Ready to operate

Valve – LED

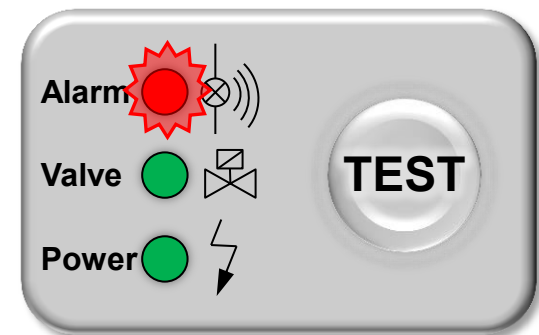
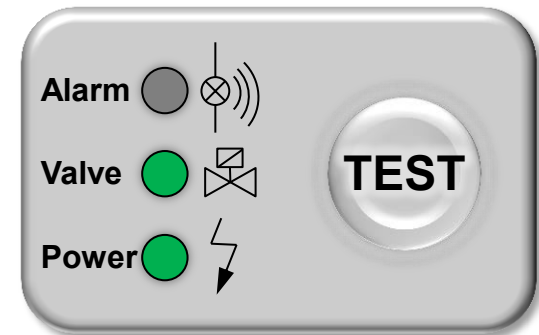
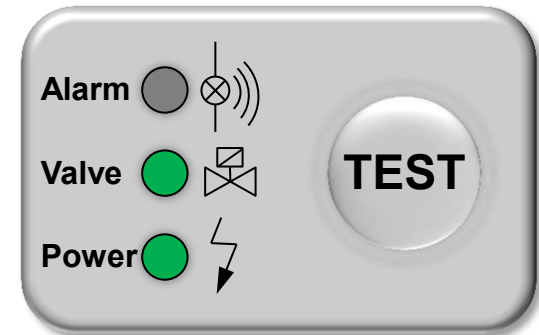
- Drain operation – drain valve is open

TEST - Button

- Press button for 2 sec. = Test of valve function + Manual drainage
- Press button for 60 sec. = Test of alarm function

ALARM – LED

- Alarm mode is activated

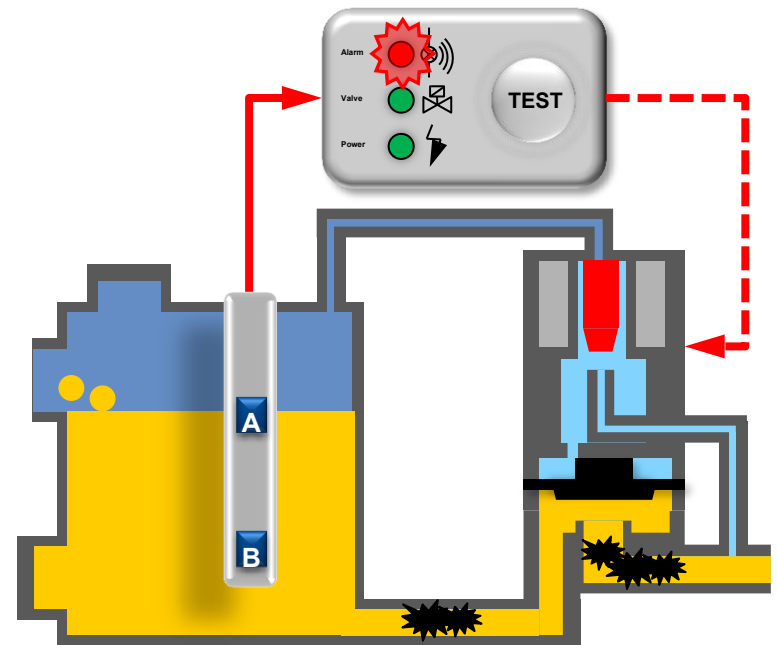


Function UFM-D – Alarm Mode

When does an alarm occur?

Discharge pipeline or internal flow channels are blocked

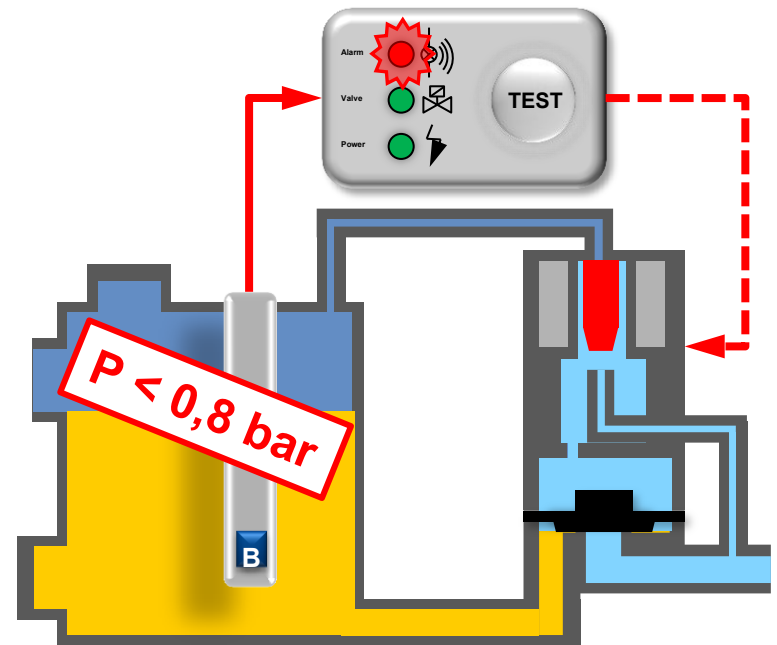
Condensate cannot be discharged from the system



Function UFM-D – Alarm Mode

When does an alarm occur?

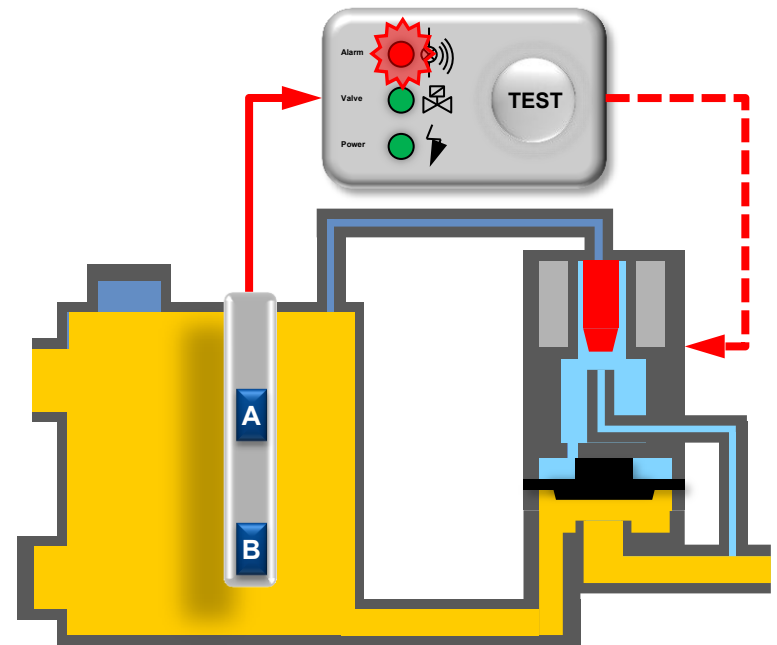
Operating pressure < 0,8 bar



Function UFM-D – Alarm Mode

When does an alarm occur?

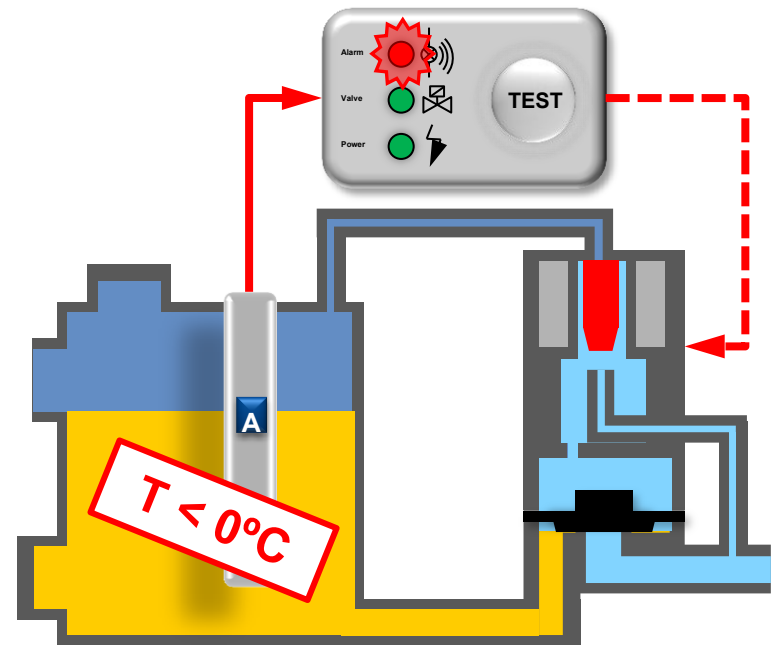
Too much condensate – drain
is overflown



Function UFM-D – Alarm Mode

When does an alarm occur?

Ambient temperature $< 0^{\circ}\text{C}$ –
condensate or discharge line
is frozen

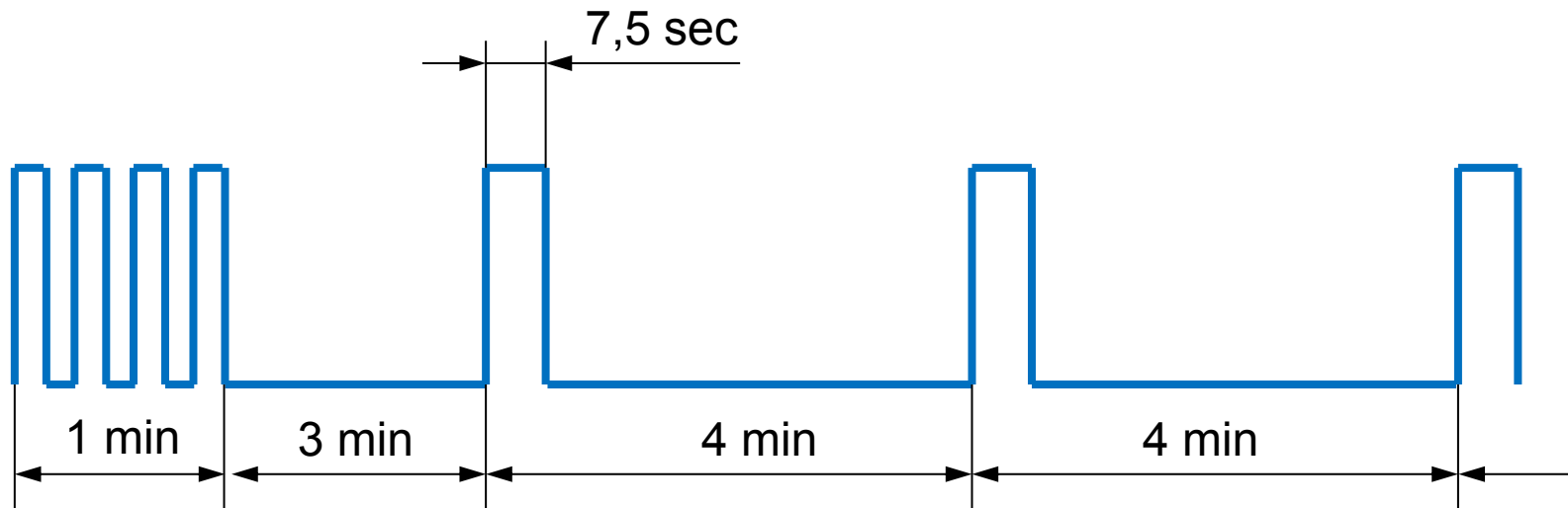
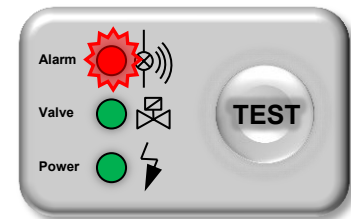
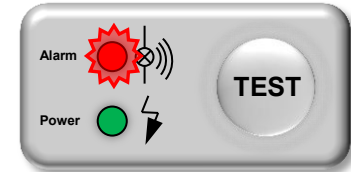


Function UFM-D – Alarm Mode

Alarm mode starts open/close operation of drain valve for 1 minute. Alarm LED is blinking.

If alarm is still active after 1 minute, drain valve opens every 4 minutes for 7,5 seconds. Alarm contact is activated.

Alarm mode is reset automatically when root cause for alarm has disappeared.



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Options and Accessories

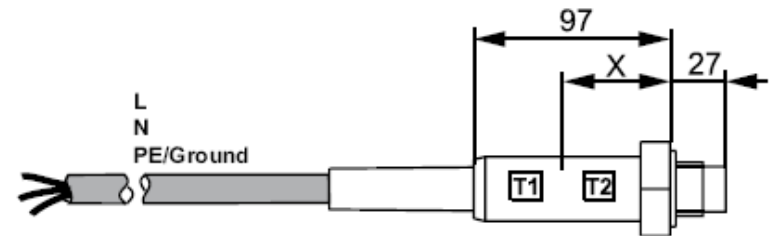
Wall Brackets

- Available for all models



Frost protection heater

- Available for UFM-D30 + UFM-D130
- Down to -25°C ambient temperature
- Voltage 230V AC
- Power consumption 125 W
- ON: $t < 6^{\circ}\text{C}$ / Off: $t > 15^{\circ}\text{C}$



Insulation cover

- Available for UFM-D30 + UFM-D130
- Required when frost protection heater is used

