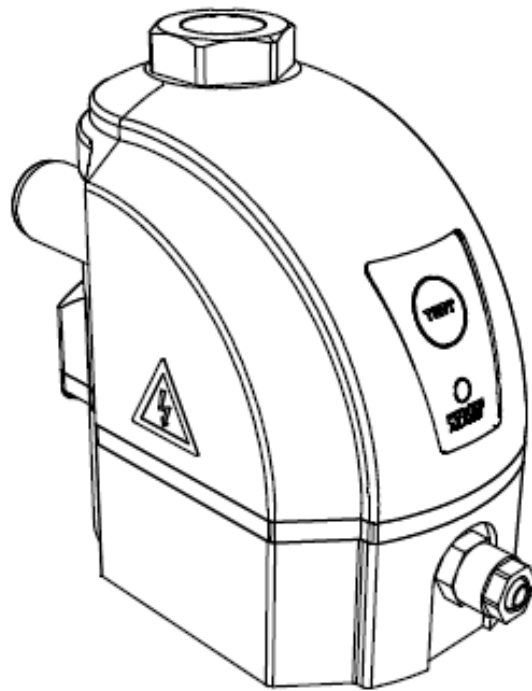




Installation and operating manual

ECD 15B / ECD 40B / ECD 90B / ECD 150B



Please read the following instructions carefully before installing electronic drain unit into service. Trouble free and safe operating of the unit can only be guaranteed if recommendations and conditions stated in this manual are respected.



Technical data

Type		ECD 15B	ECD 40B	ECD 90B	ECD 150B
Voltage	115 VAC	115 V +/-10%			
	230 VAC	230 V +/-10%			
Power	115 VAC	24 VA			
	230 VAC	24 VA			
Frequency		50 – 60 Hz			
Operation pressure range		0 – 16 bar / 0 – 232 psi			
Drain capacity (7 bar / 101 psi)		15 l/h 0,0088 scfm	40 l/h 0,0235 scfm	90 l/h 0,0529 scfm	150 l/h 0,0882 scfm
Operating temperature range		1,5 – 65°C	1,5 – 65°C	1,5 – 65°C	1,5 – 65°C
Inlet connection		G 1/2"	G 1/2"	G 1/2"	G 1/2"
Outlet connection		G 1/8"	G 1/8"	G 1/8"	G 1/8"
Power interface		3 x 0,75mm ²	3 x 0,75mm ²	3 x 0,75mm ²	3 x 0,75mm ²
Protection class		IP54	IP54	IP54	IP54
Volume		0,15 l	0,15 l	0,2 l	0,28 l
Mass		0,9 kg	0,9 kg	1,05 kg	1,15
Dimensions A x B x C [mm]		120 x 82 x 125	120 x 82 x 125	120 x 82 x 135	120 x 82 x 150
Peak Compressor Performance [m ³ /min]		11,6	29,4	60,6	111,6
		9,3	23,5	48,5	89,3
		5,8	14,7	30,3	55,8
Peak Dryer Performance [m ³ /min]		23,2	58,8	121,2	223,2
		18,6	47,0	97,0	178,6
		11,6	29,4	60,6	111,6
Peak Filter Performance [m ³ /min]		116	294	606	1116
		93	235	485	893
		58	147	303	558
Compressor power [kW]		Up to 30	Up to 75	Up to 160	Up to 315

Please take the relevant climate zone into account when dimensioning yours specific ECD series application.

Northern Europe, Canada, Northern USA, Central Asia

Central and Southern Europe, Central America

South East Asian coastal regions, Oceania, Amazon and Congo regions

Safety instructions

- ❑ Depressurize the system before carrying out any work on the piping.
- ❑ Installation and maintenance work may only be carried out when the device is not under pressure.
- ❑ Installation and maintenance work may only be carried out by trained and experienced staff.
- ❑ Disconnect power supply before installation or any maintenance work.
- ❑ Electrical work must always be carried out by qualified electrician.
- ❑ Do not exceed max. operating pressure or operating temperature range (see data label).
- ❑ Do not use the device in hazardous areas with potentially explosive atmospheres.
- ❑ Use original spare parts only.
- ❑ Use the device for the appropriate purpose only.



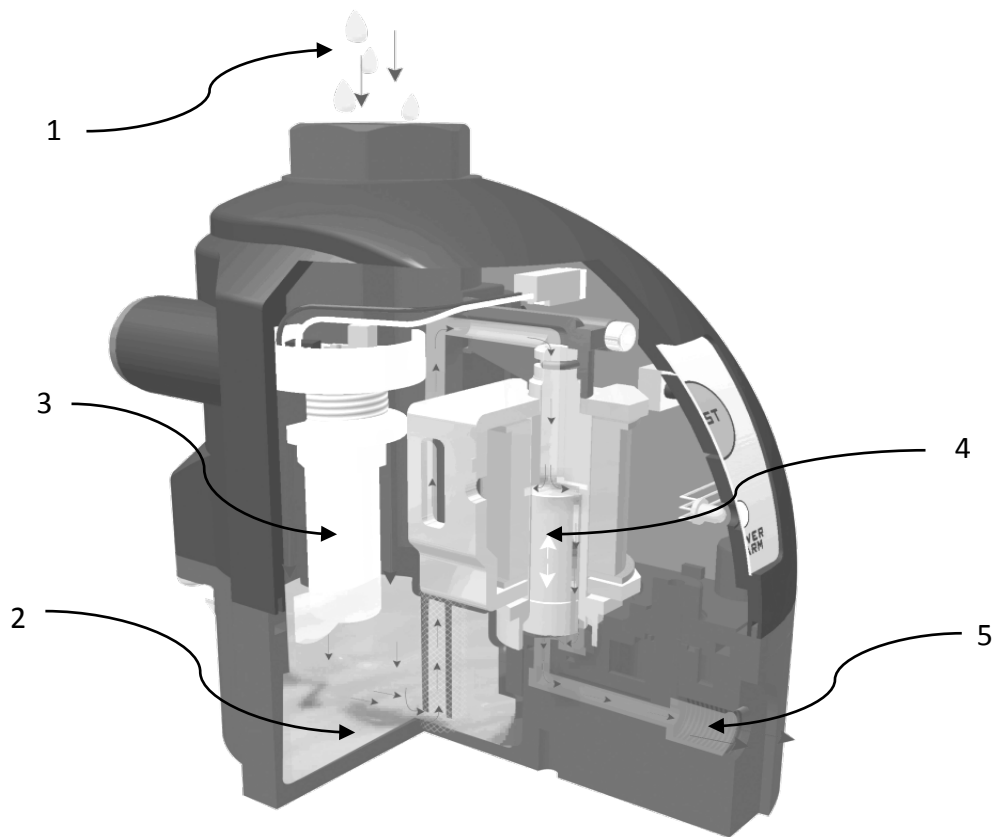
Appropriate use

ECD series electronic condensate drain is intended exclusively for the following purpose:

- ❑ Draining condensate from compressed air system (air compressors, air receivers/pressure vessels, air dryers and air filters).

Any other form of use or one going beyond this shall be considered as inappropriate. We shall have no liability whatsoever for any damage incurred as a result.

Operating

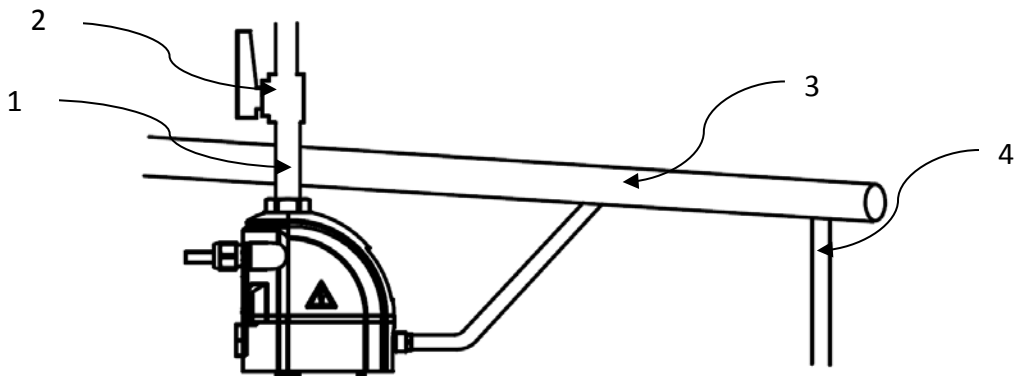


Condensate flows through inlet connection (1) and accumulates in the reservoir (2). Sensor (3) is measuring condensate level. When reservoir (2) is detected full sensor (3) sends signal to electronic board. Electromagnetic valve (4) is then opened to discharge accumulated condensate through outlet connection (5). When reservoir (2) has been emptied, the valve (4) closes back without any losses of compressed air.

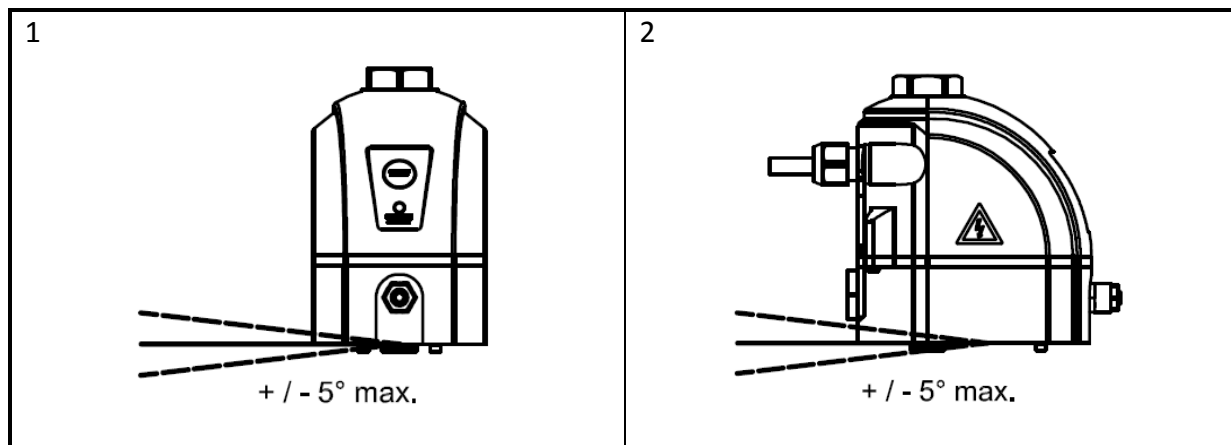
Led signal is indicating status of the device (**see Functions**).

If microcontroller registers faulty operation, device goes to alarm mode. At the same time signal is sent through voltage free contact (**see Functions**).

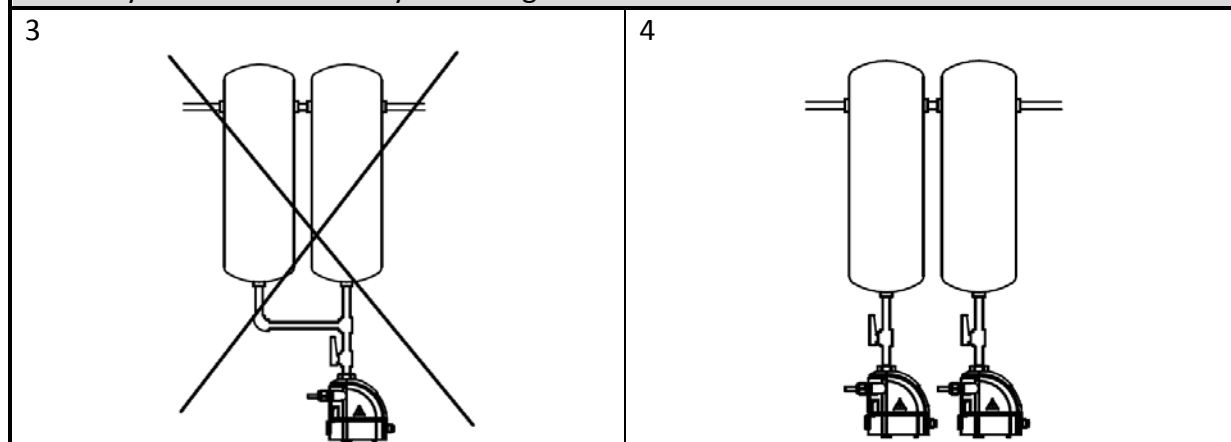
Installation



- ❑ Inlet pipe (1) size at least ½" (inner diameter > 13mm).
- ❑ Collecting condensate line (3) size at least ¾ ".
- ❑ At least 1% inlet pipe slope recommended.
- ❑ Install ball valves (2) only.
- ❑ Recommended connection (4) to water/oil separator.

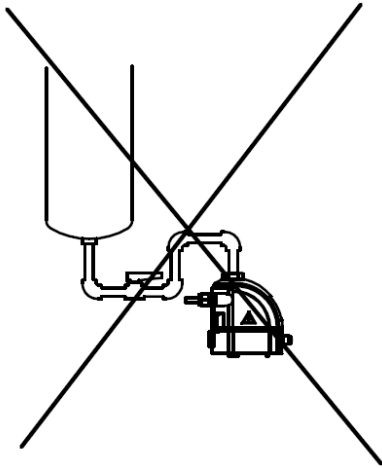


The inclination of the unit must not exceed + / - 5° in both axes. If device is not installed correctly it could cause faulty detecting of condensate level.

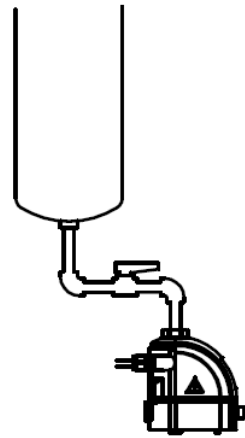


Connecting several condensate sources to one drain device causes operating problems (3). Make sure that each drain source has its own drain device (4).

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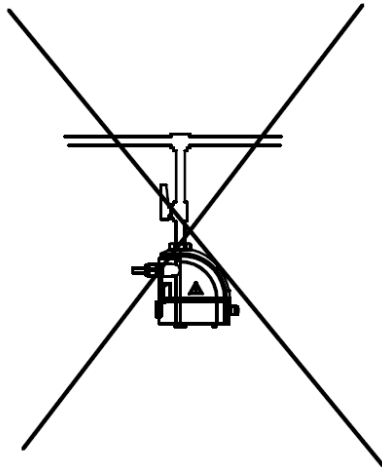


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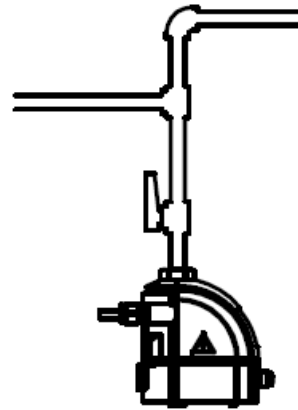


Trapped air prevents the condensate being purged from drain (5). During installation ensure that no water pockets are formed in the piping (6).

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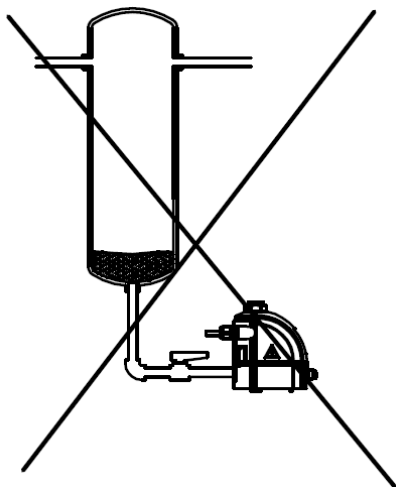


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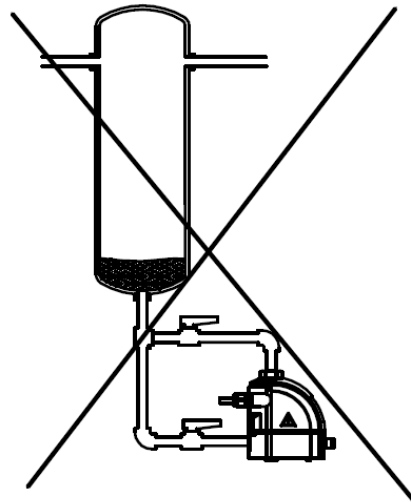


When drainage is to take place directly from a pipeline it is recommended to arrange the piping so that air flow is diverted (8).

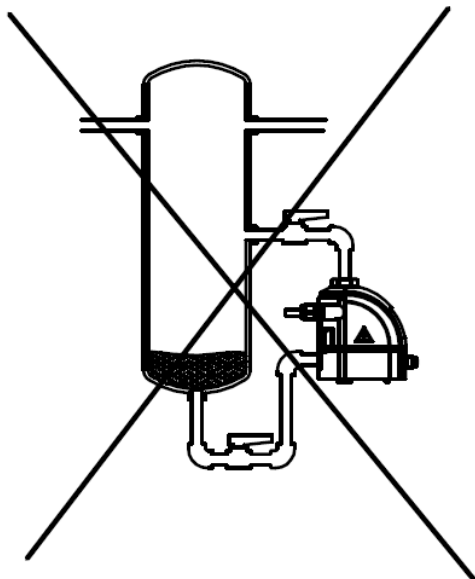
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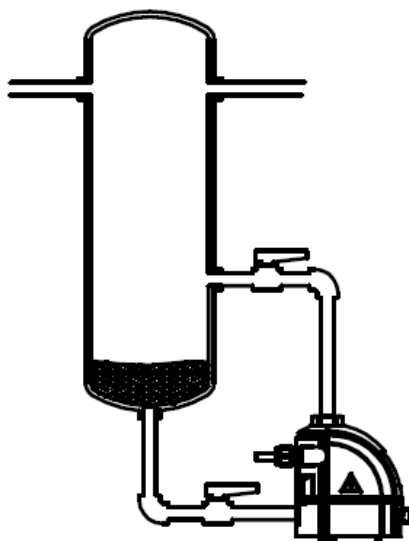
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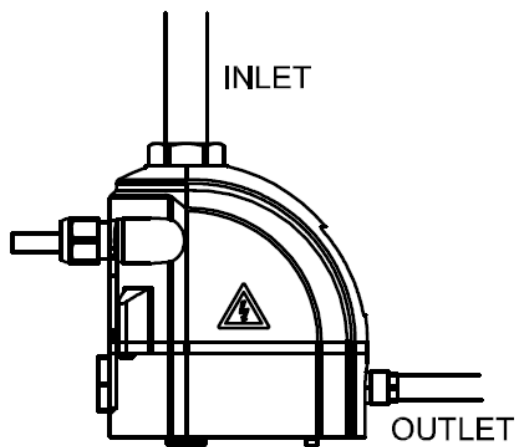
12



In case there are problems with inflow, it is necessary to install a venting line (12). In this case back connection is used as inlet and upper connection is used as air ventilation. Venting line must never be installed as it is on pictures 9, 10 and 11.

Warning: Upper and back connections cannot be used as condensate inlet at the same time.

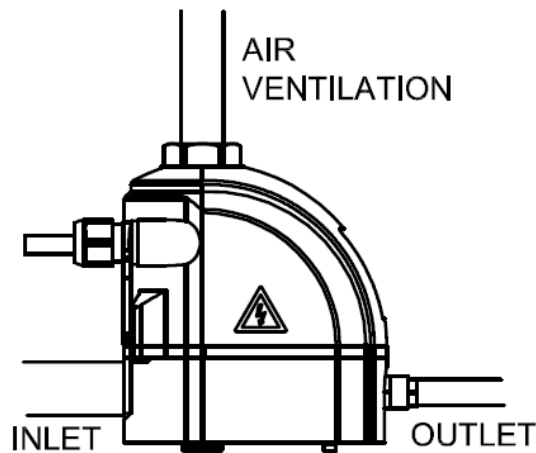
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STANDARD INSTALLATION

Upper connection = Inlet
Back connection = Closed

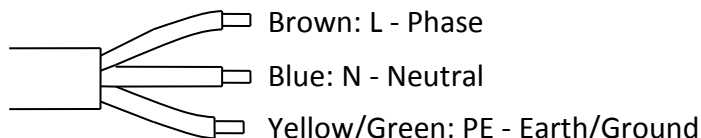
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VENTING LINE INSTALLATION

Upper connection = Air ventilation
Back connection = Inlet

15



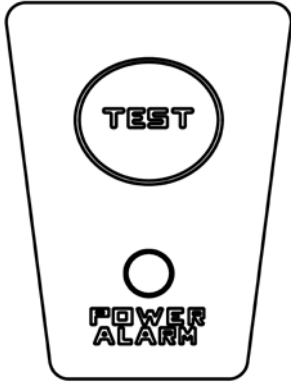
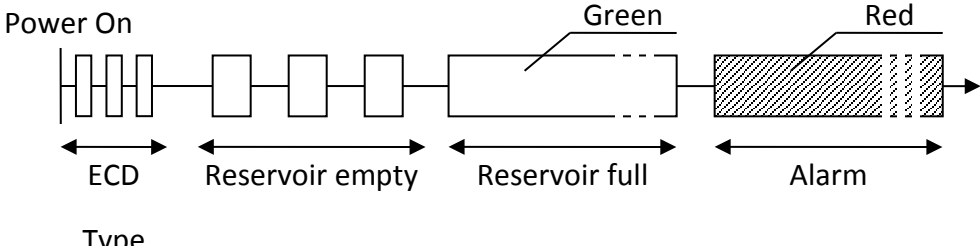
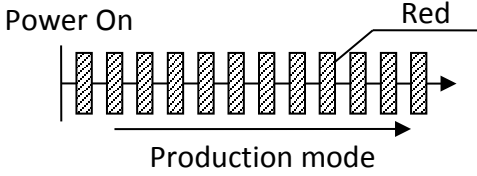
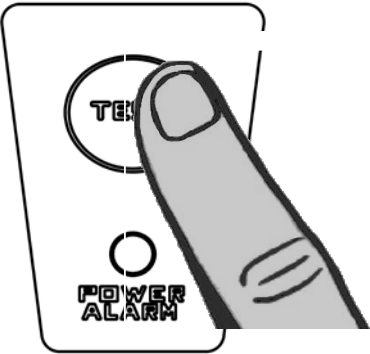
Electrical wiring

Please ensure that the installation is carried out according to the valid regulations

After installation or maintenance, the test button should be pressed to empty condensate that has been collected while the ball valve has been closed.

Functions

LED indicator / TEST button

	<p>Power on At power on there are few short green flashes. These tell us ECD type.</p> <ol style="list-style-type: none"> 1. One flash: ECD 15B 2. Two flashes: ECD 40B 3. Three flashes: ECD 90B 4. Four flashes: ECD 150B <p>Operating LED indicates a condensate sensor output.</p> <ol style="list-style-type: none"> 1. Green FLASHES: Sensor detects no water 2. Green ON: Condensate is detected 3. Red ON: Alarm mode
 <p>Power On</p> <p>ECD Reservoir empty Reservoir full Alarm</p> <p>Green Red</p> <p>Type</p>	
 <p>Power On</p> <p>Red</p> <p>Production mode</p>	<p>Short flashes of red light indicate a production mode. In this case, you should contact producer.</p>
	<p>By pressing TEST button valve opens.</p>

Operating modes

NORMAL

When sensor detects condensate the valve opens up to one second to discharge. The exact period depends on type of a drain. Minimal time between two discharges is 5 seconds.

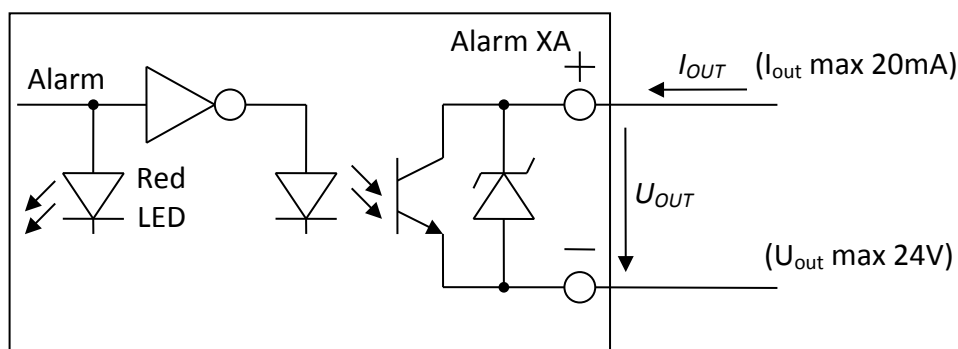
OVERLOAD

If sensor detects condensed water continuously for 90 seconds, drain enters overload mode. In this mode, the valve is opened longer and the time between discharges is shorter. Therefore, the amount of discharged condensate is doubled. This mode lasts for five minutes. In case the reservoir empties during overload mode, the drain enters normal mode again. Otherwise, it goes into alarm mode.

ALARM

If drain was still not able to discharge all condensate it enters alarm mode. In this mode, the valve is opened for five seconds every half minute. In case the reservoir empties during alarm mode, drain enters normal mode again.

Alarm output



The ECD comprises an alarm output that is voltage free. The output is connected to the red signal logically. The output is in high impedance state when the red LED is on or when ECD electric supply is off.

Maintenance

Service:

It is recommended to clean/change internal strainer and clean reservoir at least once a year. Sealing elements are subject to wear, which depends on various operating parameters such as pressure, temperature, dirt content, etc. It is also recommended to change sealings.



Attention

Before beginning maintenance work take the drain out of operation, cut off the power supply and depressurize the unit.

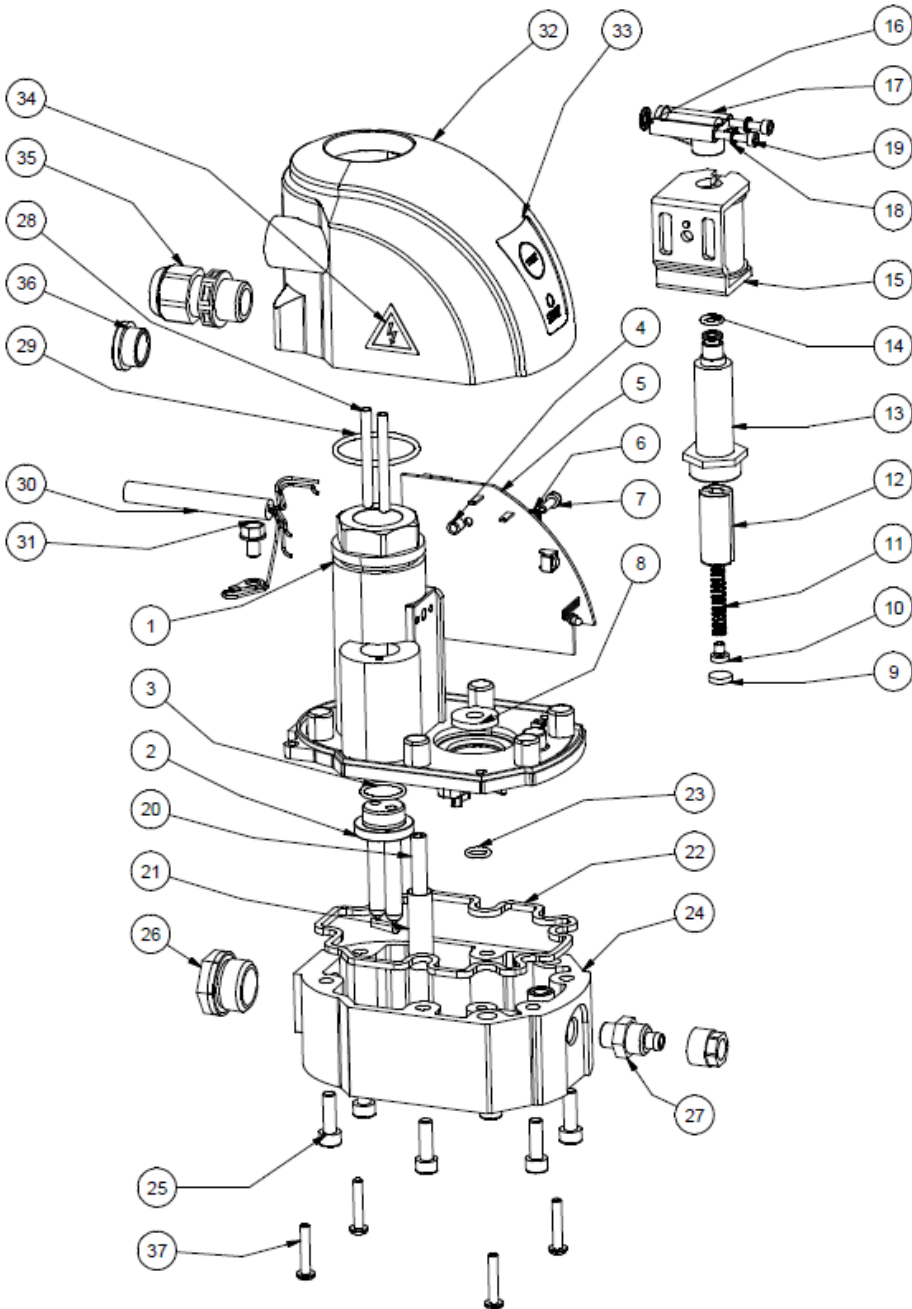
Service kits

Service Kit type	Order number	Description
Service kit 1 – ECD 15B,40B	3400330	Servis kit
Service kit 1 – ECD 90B	3400331	Servis kit
Service kit 1 – ECD 150B	3400332	Servis kit

Operating data download

Electronic condensate drain ECD series stores operating data into EEPROM. Operating data can be downloaded to determine condition of the device. For data reader please contact supplier.

Components



Poz.	Part
1	Housing
2	Sensor husing
3	O-ring 15x1,5
4	Spacer 5x5
5	PCB
6	Washer M3 DIN6798A
7	Screw M3x10 DIN912
8	Damper
9	Plunger sealing
10	Spring base
11	Spring
12	Plunger
13	Valve housing
14	O-ring 5,8x1,5
15	Coil
16	O-ring 5,8x1,5
17	Valve connector
18	Screw M3 DIN912
19	Screw M3x30
20	Extension hose
21	Internal strainer
22	Sealing
23	O-ring 7x2
24	Bottom
25	Screw M5x16 DIN912
26	Screw plug 1/2"
27	Hose connector 6mm
28	Sensor
29	O-ring 30x2
30	Cable
31	Screw M5x8 DIN7500
32	Cover
33	Front panel label
34	High voltage label
35	Cable glant M16
36	Cap M16
37	Screw PT KA35x16 WN1411

Trouble shooting

Problem	Possible cause	Solution
No LED signal	<input type="checkbox"/> Faulty or no power supply <input type="checkbox"/> PCB defective	<input type="checkbox"/> Check power supply <input type="checkbox"/> Replace PCB
Pressing TEST button has no effect	<input type="checkbox"/> Blocked valve <input type="checkbox"/> System pressure above 16bar / 232psi	<input type="checkbox"/> Clean the valve <input type="checkbox"/> Check system pressure
Condensate discharge only when TEST button is being pressed	<input type="checkbox"/> Faulty installation <input type="checkbox"/> Condensate inlet line with insufficient slope <input type="checkbox"/> Sensor extremely dirty	<input type="checkbox"/> Check if device is installed in accordance with installation recommendations <input type="checkbox"/> Install venting line <input type="checkbox"/> Clean sensor housing
Air keeps blowing out	<input type="checkbox"/> Blocked valve <input type="checkbox"/> Wear	<input type="checkbox"/> Clean the valve <input type="checkbox"/> Replace worn parts <input type="checkbox"/> Check if intense corrosion is present in the system
Permanent red LED flashes	<input type="checkbox"/> Device is in one of production modes	<input type="checkbox"/> Contact supplier

Warranty exclusion

The guarantee shall be void if:

- The installation and operating manual was not followed with respect to installation, initial commissioning and maintenance.
- The unit was not operated properly and appropriately.
- The unit was operated when it was clearly defective.
- Non-original spare parts or replacement parts were used.
- The unit was not operated within the permissible technical parameters.
- Unauthorized constructional changes were made to the unit or if the unit has been opened/disassembled by an unauthorized person.

OMEGA AIR d.o.o. Ljubljana

Cesta Dolomitskega odreda 10
 SI-1000 Ljubljana, Slovenia
 Tel.: +386 (0)1 200 68 00
 Fax.: +386 (0)1 200 68 50
 E-mail: info@omega-air.si
www.omega-air.si

