condensate pumps

For air conditioning and refrigeration technology

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Condensate pumps in air conditioning technology

Condensation is the change of state of the physical state of matter from gas phase into liquid phase and is the reverse of vaporisation. It can also be defined as the change in state of water vapour to liquid (water) when in contact with any surface (evaporator coil). Condensation occurs under certain conditions relating to temperature and pressure.

When gravity drainage is not possible or is impractical, condensate removal pumps are necessary to evacuate water to a drain point above the collection tray. Eckerle pumps are fully-automated and are controlled using internal or external sensor technology.

swiss drive inside

Micro-Condensate Pump

Usage

This float type pump is mainly used in air conditioners with a limited space inside, e. g. wall mounted mini split and ceiling units. The small sensor can easily be adapted to the air conditioner's condensate drain hose.

Description

The EE600 system consists of a pump unit and a separate 2-level float switch sensor. It comes with mounting accessories like pads of double-sided Scotch Tape to fix the float switch and an anti-shock mount for the pump unit.

For air conditioners up to 7.5 kW

Technical Data

Pump unit (L × W × H)	77 × 32 × 50 mm
Electrical spec.	230 V, 50/60 Hz
Power Consumption	Operation 13 W Standby 1 W
Sensor unit (L × W × H)	82 × 39 × 39 mm
Max. flow rate	6 l/h
Max. delivery height	6 m
Max. suction height	1.5 m
Impervious to blockage or contamination due to unique valve design and large piston bore	

swiss drive inside

Mini-Condensate Pump

Usage

This float type pump is mainly used in air conditioners with a limited space inside, e. g. wall mounted mini split and ceiling units.The small sensor can easily be adapted to the air conditioner's condensate drain hose.

Description

The EE1000/EE2000 system consists of a pump unit and a separate 3-level float switch sensor. Beside the on/off function the system offers a high level, potential free NO/NC alarm switch (230 V, 8 A ohmic load).

It comes with mounting accessories like pads of double-sided Scotch Tape to fix the float switch and an anti-shock mount for the pump unit.

EE2000: Version with safety transformer for Germany and Austria

For air conditioners up to 10 kW

Technical Data

Pump unit (L × W × H)	77 × 37.5 × 62 mm
Electrical spec.	230 V, 50/60 Hz
Power Consumption	Operation 8 W Standby 1 W
Sensor unit (L × W × H)	82 × 39 × 39 mm
Max. flow rate	10 l/h
Max. delivery height	10 m
Max. suction height	1.5 m
Alarm switch	max. 230 V, 8 A (ohmic load) NO/NC (normally open/normally closed)
Float switch operating points	see rear of accessories "Float detector"
Impervious to blockage or contamination due to unique valve design and large piston bore	

swiss drive inside

Mini-Condensate Pump

Usage

This float type pump is mainly used in air conditioners with a limited space inside, e. g. wall mounted mini split and ceiling units. The small sensor can easily be adapted to the air conditioner's condensate drain hose. Having the same dimensions as EE1000/EE2000 models, the EE1800 can offer a higher flow rate – due to its optimised drive inside. The pump is capable for air conditioners up to 20 kW.

Description

The EE1800 system consists of a pump unit and a separate 3-level float switch sensor. Beside the on/off function the system offers a high level, potential free NO/NC alarm switch (230 V, 8 A ohmic load).

The system comes with mounting accessories like pads of double-sided Scotch Tape to fix the float switch and an anti-shock mount for the pump unit.

For air conditioners up to 20 kW

Technical Data

Pump unit (L × W × H)	77 × 37.5 × 62 mm
Electrical spec.	230 V, 50/60 Hz
Power Consumption	Operation 14 W Standby 1 W
Sensor unit (L × W × H)	82 × 39 × 39 mm
Max. flow rate	18 l/h
Max. delivery height	10 m
Max. suction height	2.5 m
Alarm switch	max. 230 V, 8 A (ohmic load) NO/NC (normally open/normally closed)
Float switch operating points	see rear of accessories "Float detector"
Impervious to blockage or contamination due to unique valve design and large piston bore	

swiss drive inside

Mini-Condensate pump with duct

Usage

The EE1200^{K} has been specifically designed for direct installation into the Eckerle-duct-system. The EE1200^{K} is fitted with a high quality Swiss made piston pump, as are all Eckerle volumetric systems. These pumps were specially developed to deliver condensate water. They offer wide opening duck-bill-valves (non-sensitive against water borne contaminants) and further-more they run remarkably quiet. These design and component features ensure a pump system with a long life expectancy. They provide a higher-than-average performance even at great delivery heights.

Description

The EE1200^{K} comes in a set with a duct, an elbow, a ceiling seal and installation accessories in actual RAL 9016 colour "traffic white".

For air conditioners up to 7.5 kW

Technical Data

Electrical spec.	230 V, 50/60 Hz, 8 W
Max. flow rate	8 l/h
Max. delivery height	6 m
Cable duct dimensions (L × W × H)	800 × 80 × 60 mm
Alarm switch	max. 230 V, 8 A (ohmic load) NO/NC (normally open/normally closed)
Duct colour	RAL9016 (traffic white)
Impervious to blockage or contamination due to unique valve design	

swiss drive inside

Maxi-Condensate Pump

Usage

This float type pump is used in conjunction with air conditioners which have condensate collection tanks with an outlet on the drainage pipework: Cassette, ceiling unit, split, fan convectors.

Description

The EE1750^{M} comprises a pump unit and a 3-level float switch sensor. The float switch controls On, Off and Alarm conditions.

The float switch unit is fixed to the tank outlet or to a pipe end, it is connected to the pump unit by a 1.5 m/5 ft long pipe and cable (an optional extension is available).

The system comes with mounting accessories like pads of double-sided Scotch Tape to fix the float switch and an anti-shock mount for the pump unit.

For air conditioners up to 30 kW

Technical Data

Pump unit (L × W × H)	100 × 81.5 × 67 mm
Electrical spec.	230 V, 50/60 Hz, 40 V
Sensor unit (L × W × H)	82 × 39 × 39 mm
Max. flow rate	32 l/h
Max. delivery height	15 m
Max. suction height	3 m
Alarm switch	max. 230 V, 8 A (ohmic load) NO/NC (normally open/normally closed)
Float switch operating points	see rear of accessories "Float detector"

Design Condensate Pump

with cable connection

Application

Design meets functionality. Due to the softer plastic that is in the “tribals design” integrated in the housing, oscillations from the drive and the pulsation of the water column transferred to the housing are reduced.

Active noise reduction through modern design and innovative technology.

Description

The Tattoo 10 and 16 consist of a single pump and float module. The three-stage float switch controls the pump. If the maximum permissible condensate level is exceeded, the float alarm is triggered.

The float module is attached directly to the outflow pipe of the condensate container or to the end of the outflow line. An integrated non-return valve prevents the return flow of condensate into the container (“Jo-jo effect”).

Plug and play through pre-monitored connecting cable.

The scope of supply contains pump, sensor, vibration suppressor and mounting material.

For air conditioners up to 10 kW

Technical Data

Pump unit (L × W × H)	150.2 × 28.4 × 53.6 mm
Electrical spec.	230 V, 50/60 Hz
Power Consumption	Operation 8 W Standby 1 W
Sensor unit (L × W × H)	82 × 39 × 39 mm
Max. flow rate	10 l/h
Max. delivery height	10 m
Max. suction height	1.5 m
Alarm switch	max. 230 V, 8 A (ohmic load) NO/NC (normally open/normally closed)
Impervious to blockage or contamination due to unique valve design	

For air conditioners up to 16 kW

Technical Data

Pump unit (L × W × H)	150.2 × 28.4 × 53.6 mm
Electrical spec.	230 V, 50/60 Hz
Power Consumption	Operation 14 W Standby 1 W
Sensor unit (L × W × H)	82 × 39 × 39 mm
Max. flow rate	16 l/h
Max. delivery height	10 m
Max. suction height	2.5 m
Alarm switch	max. 230 V, 8 A (ohmic load) NO/NC (normally open/normally closed)
Impervious to blockage or contamination due to unique valve design	

Super silent Condensate Pump

Usage

The all new, patented and whisper-quiet EE900M, is designed to deliver condensate in noise sensitive surroundings, e. g. in hotel rooms, meeting/boardrooms and bedrooms.

In contrast to conventional peristaltic pumps, the new EE900M works on the same principle as a reciprocating piston pump i.e. no peristaltic tube, resulting in a maintenance free pump with no wear and tear and no costly tube replacement. The ultra slow motion sequence of the piston ensures hyper silent sound pressure.

The pump delivers a constant flow rate, depending on the delivery height.

Description

A world first innovation, the EE900M is configured to run with 2 sensing options on a single standard pump:

- Temperature differential sensor
- Float switch

Float switch or sensor with 3 m cable are available as options – to be ordered separately.

For air conditioners up to 10 kW

Technical Data

Pump unit (L × W × H)	152 × 85 × 114 mm
Electrical spec.	230 V, 50/60 Hz, 10 VA
Sensor unit (L × W × H)	82 × 39 × 39 mm
Alarm switch	48 V, 8 A (ohmic load) NO normally open (by usage of a floater only)
Max. flow rate	6 l/h
Max. delivery height	7 m
Alarm switch	2 m (4 m on demand)

swiss drive inside

Tank pump

for high flow rates

Usage

This compact unit with integrated float switch is designed to be used inside devices equipped only with a condensate collecting tank such as fan convectors, cabinet models, built-in units, water collection consoles etc. Steps must be taken to ensure that no fluid runs over the pump!

Description

The delivery system is equipped with 2 separately operating float switches. The working float switch turns the pump on and off depending on the filling level (with run-on time).

The function of the alarm float switch is to isolate the break contact element.

For air conditioners up to 30 kW

Technical Data

Pump unit (L × W × H)	244 × 174 × 144 mm
Electrical spec.	230 V, 50/60 Hz, 40 VA
Alarm switch	230 V, 8 A (ohmic load) NO/NC (normally open/ normally closed)
Max. flow rate	32 l/h
Max. delivery height	15 m
Tank capacity	2 l
Operating points*	Alarm: max. 53 mm Start: 40 ±2 mm Stop: 30 ±2 mm

*Measurements from mounting surface.

Tank Pumps

Usage

The Eckerle condensate pumps EE150, EE300, EE400^{M} and EE400^{M} Premium are designed to remove condensate water out of air conditioners, evaporator coils and high efficiency gas furnaces automatically. The pump housing is made from an impact-resistant plastic body against corrosion.

Description

EE150 & EE300

- Silent running centrifugal with 1.5 m power cord
- Check valve to prevent back-flow of liquid into the unit
- Compact size
- Attractive design
- Cover with well-designed panel (only EE150)
- Overflow safety alarm switch (only EE300)

For air conditioners up to 10 kW

Technical Data

EE150	
Pump unit (L × W × H)	165 × 65 × 85 mm
Electrical spec.	230 V, 50/60 Hz, 48 VA
Max. flow rate	120 l/h
Max. delivery height	1.5 m
Tank capacity	max. 0,2 l
Pressure hose – Ø	8 × 2 mm

For air conditioners up to 50 kW

Technical Data

EE300	
Pump unit (L × W × H)	200 × 105 × 160 mm
Electrical spec.	230 V, 50/60 Hz, 65 VA
Max. flow rate	200 l/h
Max. delivery height	4 m
Tank capacity	max. 1 l
Pressure hose – Ø	8 × 2 mm

EE400^{M}/EE400^{M} P	
Pump unit (L × W × H)	185 × 85 × 100 mm
Electrical spec.	230 V, 50/60 Hz, 65 VA
Alarm switch	230 V/8 A (ohmic load) NO/NC (normally open/ normally closed)
Max. flow rate	350 l/h
Max. delivery height	4 m
Tank capacity	max. 0.5 l
Pressure hose – Ø	8 × 2 mm
Operating points*	Alarm: max. 55 mm Start: 52 ±1 mm Stop: 24 ±1 mm
EE400^{M} Premium	Safety device visual and acoustical alarm

*Measurements from mounting surface

with tank

EE400^{M}/EE400^{M} P

- Extremely quiet running and vibration-free
- Pump encapsulated and liquid cooled
- Protection class IP 55
- Max. medium temperature: 70 °C
- Most compact design
- Pump housing made of glass-reinforced plastic material, including wall mounting accessory
- Separate alarm contact
- Integrated check valve
- **EE400^{M} Premium:** Version with additional alarm detector (special plug with integrated LED and buzzer), incl. 6 m PVC-tube

Pump unit can be used in an external pan as well.
Pan height: min. 62 mm, max. 70 mm

Fan Controller

Usage:

The EFC Fan Controller is suitable for all air cooled condensing units in air conditioning and refrigeration units with fan motor max. currents up to 2 A resp. 4 A (ohmic load).

Description:

The controller provides not only the correct speed for the outdoor fan, it also determines whether the fan should stop and for how long, to give an optimum control to the system. Furthermore the control prevents over condensing even with outdoor temperatures down to –20 °C and no iced-up Indoor coils. Due to decreased compressor running time, a higher efficiency will be achieved.

Intelligent control

Technical Data:

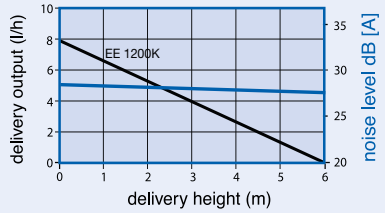
EFC2A (L × W × H)	104 × 69 × 39 mm
EFC4A (L × W × H)	123 × 29 × 33 mm
Electrical spec.	230 V, 50 Hz
Electrical load	Fan Motor max. current 2 A/4 A (ohmic load)
Regulation	Phase modulation according sensor temperature and set point 0% or 40% to 100% • at 0%, the fan is off • at 40%, the fan speed is minimum • at 100%, the fan speed is maximum
Sensor	Fixation with mounted releasable tie cable length approx. 1 m ends with caps

Performance Diagrams

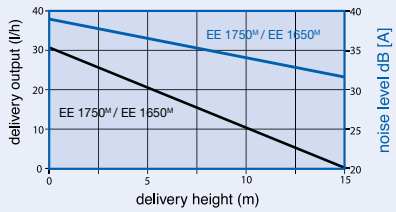
EE600/EE1800

EE1000/EE2000

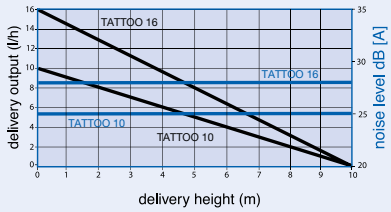
EE1200K



EE1750M/EE1650M

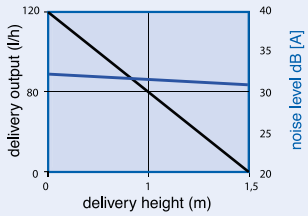


TATTOO 10/16

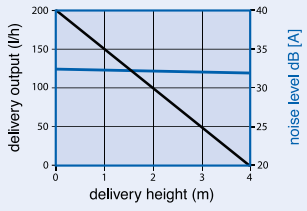


EE900M

EE150



EE300



EE400M

Noise level determined by realistic sound pressure measurement (1 m axial)

	Accessories	Order no.
	Extension cable 3 m for EE600, EE1800, EE1000, EE2000, EE1750^{M}, Tattoo	22003
	Extension cable 5 m for EE600, EE1800, EE1000, EE2000, EE1750^{M}, Tattoo	22005
	Extension cable 10 m for EE600, EE1800, EE1000, EE2000, EE1750^{M}, Tattoo	22010
	PVC hose for EE600, EE1800, EE1000, EE2000, EE1750^{M}, EE1650^{M}, Tattoo, EE900^{M}, 50 m roll, inner-Ø 6 × 1,5 mm	22150
	PVC hose for EE150, EE300, EE400^{M}, 50 m roll, inner-Ø 8 × 2 mm	0505050024
	Inline filter for EE600, EE1800, EE1000, EE2000, EE1750^{M}, Tatto	21757
	Check valve for EE600, EE1800, EE1000, EE2000, EE1750^{M}, EE1650^{M}, Tattoo	22011
	Float detector for EE2000 und EE1750^{M}	9001301002
	Float detector for EE600, EE1800, EE1000, Tattoo, EE900^{M}	9001301008
	Operating points*: Alarm: max. 23 mm Start: 20 ±1 mm Stop: 15 ±1 mm	
	Sensor with 3 m cable for EE900M	9704010011
	Hose connector (straight), Ø 6 mm	1948050002
	Hose connector (straight), Ø 8 mm	1948050010
	Hose connector 90° PVC, 15 × 2 mm	112547

*Measurements from mounting surface

Eckerle offers you three different pump systems

1. Electromagnetic pump

Usually found in two-part systems or split-systems such as the EE600, EE1800, EE1000/EE2000, EE1200K, EE1750^{M} and Tattoo, but also used in certain tank pumps such as the EE1650 in order to achieve higher lifting heights. Most Eckerle electromagnetic pumps have non return “duckbill valves”, whose large bore ensure that they are significantly less sensitive to dirt.

2. Centrifugal pump

Almost all tank pumps are equipped with this robust technology, for example the EE150, EE300 und EE400^{M}/EE400^{M} P. The main features of this volumetrically wide-open displacement device are its high displacement volumes and insensitivity to dirt. Special encapsulated versions with a higher protection rating – like the EE400^{M}/EE400 – can be operated in tough environments with high humidity levels and with media that is far from the PH neutral range.

3. Rotating piston pumps

Slow motors with a greatly reduced speed and large piston area guarantee extremely quiet operating noise with acceptable displacement volumes. As with hose pumps, the performance of which decreases as operating time increases and therefore necessitates the regular replacement of hoses, the displacement volume remains approximately the same as delivery height increases. The EE900^{M} combines into one single pump the control unit working via two sensors, the float switch and temperature sensors.

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