JS Humidifiers plc

Condair Esco

Live Steam Humidifier

Features

- Condensation-free steam
- Close control
- 0-100% modulation
- High operating pressure (4bar)
- Low maintenance
- Short absorption distances

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Condensation-free live steam humidification

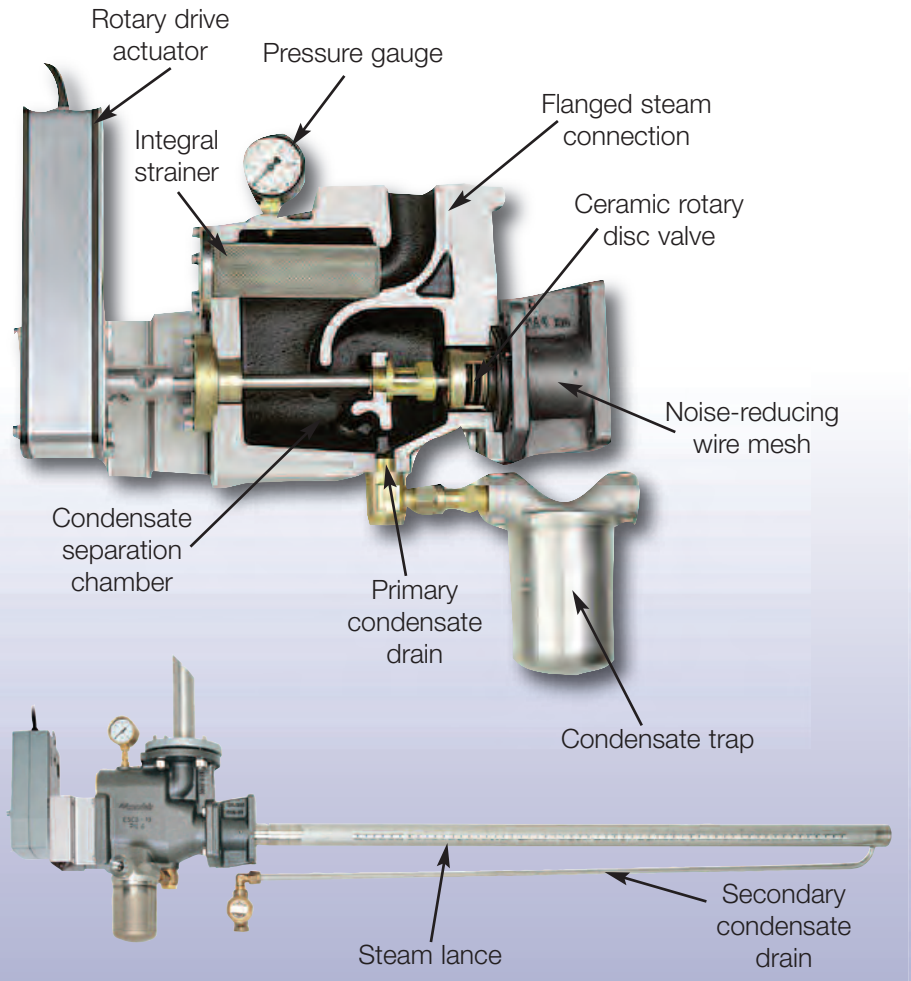
The Condair Esco can deliver up to 1,000kg/hr of pure, dry steam to an air handling system using a building's existing steam network. It is ideal for use in hospitals, laboratories and manufacturing facilities where there is a ready supply of steam.

The humidifier's ceramic rotary valve provides linear 0-100% modulation of steam output. It offers very close humidity control and prevents steam leakage and condensation during periods of low demand.

The Condair Esco's patented steam lance is fitted with tiny inner nozzles that collect only dry steam from the centre of the steam lance. These nozzles ensure that condensation isn't introduced to the duct and eliminates the need for pre-heating the steam lance.

Other innovative features include an integral particle strainer that is easy to remove and clean, noise reduction mesh that provides quieter operation, dual condensate traps and a tight flanged steam connection unit.

Features	Benefits
Rotary ceramic disc valve →	Unrivalled control & performance
High operating pressure ≤4bar →	High output ≤1,000kg/h
Inner nozzles on steam lance →	Condensation-free dry steam injection
No steam lance pre-heating →	Energy savings & less heat transfer to duct
Instant steam on start-up →	Responsive control



Operation

Steam enters the Condair Esco from the top via a standard flange connection. It passes through an integral strainer at 90° to the steam inlet to filter particulate matter. The steam then enters the condensation separation chamber where it encounters baffles to slow its speed. The condensation that precipitates out is sent to the primary condensate drain, leaving behind just dry steam.

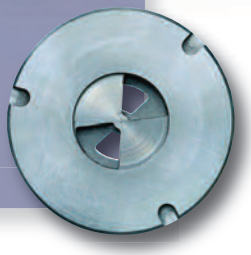
On demand for humidification, the rotary actuator opens the ceramic rotary disc valve to the required output. As steam passes through the valve it escapes to atmospheric pressure inside a chamber filled with wire mesh. This mesh softens the noise of the escaping steam.

The steam then enters the steam lance where only the driest and hottest steam is taken from the centre of the pipe. Condensation that forms inside the steam lance is sent to drain via the secondary condensate drain.

Ceramic rotary valve

The Condair Esco's ceramic rotary disc valve provides 0-100% modulation and does away with the problems associated with vertical stroke valves. Due to the design, the valve is capable of accurately delivering a linear output throughout the entire regulating range.

When closed, the valve is absolutely steam tight and prevents any steam from penetrating into the steam lance when the unit is switched off. This avoids unwanted condensation from occurring after steam leakage.



Condensation-free steam

Dry steam delivery is guaranteed by the tiny nozzles that are located inside the Condair Esco's steam lance. The steam is taken only from the centre of the lance, where it is at its hottest and driest. As condensation only gathers around the internal walls of the steam lance, these tiny nozzles prevent condensation from being introduced to the duct.

The condensation that does form inside the lance is safely channelled away by the secondary condensate drain.

This innovative system eliminates the need to pre-heat the lance with an exterior steam jacket to avoid condensation. Heated steam lances

can add up to 4°C to a duct and by removing this element, the Condair Esco saves energy. Also, live steam humidifiers with jacketed steam lances need to reach temperature before steam can be released into the lance. The Condair Esco will start to release condensation-free dry steam on start-up saving time and offering excellent control.

Reliable actuator

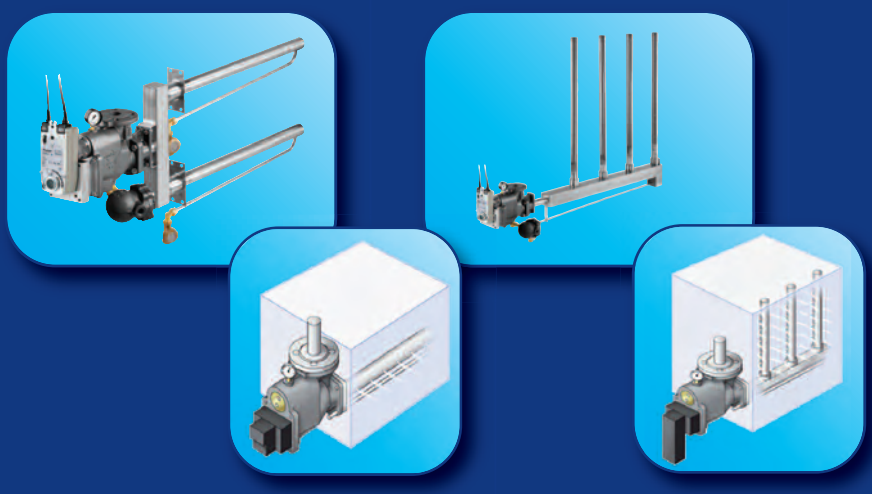
The electric rotary drive actuator requires minimal torque to turn the valve and direct power transmission. The design is energy efficient as it does not need to push against steam pressure to operate. This guarantees optimum reliability and allows the actuator to be compact. The actuator also has a manual override facility.

As an option, the Condair Esco can be supplied with a pneumatic drive actuator.

Flexible steam pipe formats

A variety of steam distribution pipes is available depending on the required absorption distance and duct dimensions.

A single horizontal steam distribution pipe is suitable for applications with small ducts. Double or triple pipes provide a shorter evaporation distance. Vertical systems are also available for high ducts and provide very rapid evaporation of steam.



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Easy installation

Standardised flange connections enable simple and safe connection of the Condair Esco to a steam network. On-site pipe work and sealing tasks are dispensed with saving time and money. Installation on to a duct is also straight forward, resulting in minimum downtime to an air handling system.

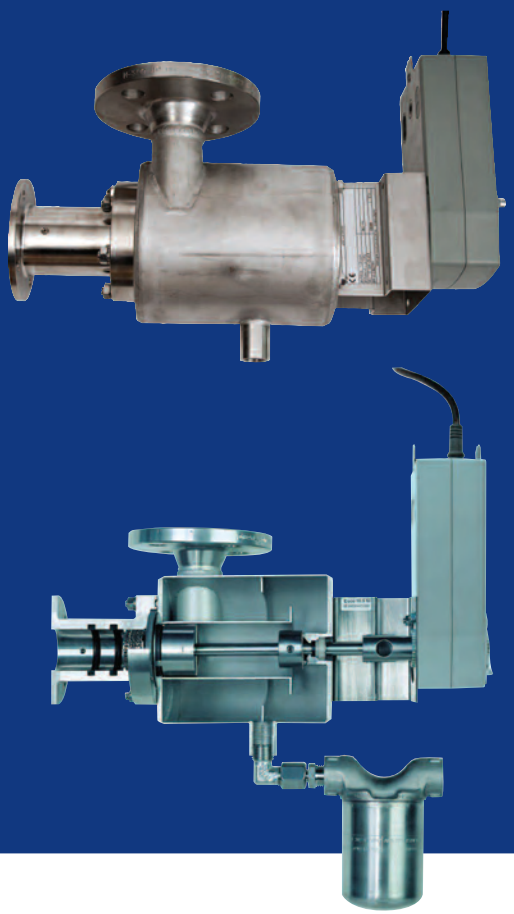
A complete service

As well as supplying the widest range of humidifiers available, JS Humidifiers provides a complete service of system design, installation, project management, commissioning, maintenance and spares supply.

JS' customers have the reassurance that they are supported by the largest specialist humidifier engineering team in Europe.

Stainless steel version available

As well as the standard cast iron version, the Esco is available in a non-corrosive stainless steel (AISI 304 quality).



Condair Esco technical data

Steam connection unit	Esco 5	Esco 10	Esco 20	Esco 30
Output	<127kg/hr	<250kg/hr	<500kg/hr	<1,000kg/hr
Stainless steel option		●	●	
Primary steam pressure	0.2-4.0 bar			
Primary steam temp	104-152°C			
Max ambient temp	50°C			
Max ambient humidity	98%rH			
Leak rate of control valve	0.0001%			
Condensation traps	Float ball, float ball ss, inverted bucket, thermostatic, thermostatic ss			

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JS has a policy of continually improving products and performance. Actual specifications might vary from those shown.

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