



air humidification systems
isothermal humidification



ultimateSAM
high efficiency
steam distribution system



Steam distributor for short absorption distances

Energy saving thanks to maximum reduction in condensate formation and minimum heat loss in the AHU/duct.

Suitable for steam from both pressurised distribution networks and humidifiers.

- precise and aseptic humidification;
- minimum absorption distance (even less than 0.4 m);
- suitable for steam flow-rates from 20 to 1110 kg/h and pressure from 0.01 to 4 barg.



Short absorption distance

Holes set out along the entire height of the upright pipes deliver steam uniformly, ensuring a very short absorption distance. The new design of the nozzle insulation increases absorption efficiency and further reduces condensate formation, even in high-speed air flows (> 4 m/s).

Hygiene and materials

ultimateSAM is made from AISI 304 steel, with some components made from PPS (Ryton), a material with a continuous operating temperature of 220 °C / 428 °F, plus high temperature silicone gaskets (max 150 °C / 300 °F) not in contact with steam, and EPDM gaskets when in contact with steam.

Adaptability

- ultimateSAM can be made to measure:
- multi-pipe versions (SAB*/SAT*) from 450x600 mm to 3000x3100 mm in 152 mm steps (from 18"x24" to 120"x120" in 6" steps);
 - single horizontal pipe versions (SA0*) from 503 mm to 2175 mm (total length) in 152 mm steps / from 19" to 86" in 6" steps

Precision

ultimateSAM can be purchased with valves featuring electric actuators for precise modulation of the steam delivered into the AHU/duct.



Energy efficiency

ultimateSAM maximises energy. Insulated models minimise heat gain and condensate formation.



Precision

ultimateSAM is suitable for precision humidification, guaranteed by uniform steam distribution in the AHU/duct and modulating valves.

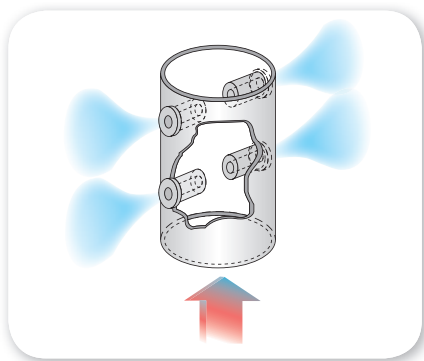


Short absorption distance

ultimateSAM minimises the distance needed to absorb the steam through uniform distribution across the entire height.

Anti-condensation nozzles

To achieve a very short absorption distance and ensure only dry steam is delivered into the AHU/duct, the uprights and pipes (AISI 304) have nozzles (Ryton - PPS) that take steam from the inside of the pipe, away from the wall where condensate may form.



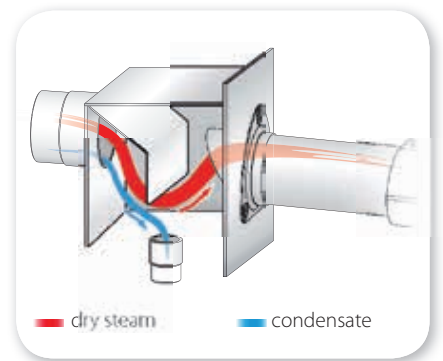
Pipe insulation

The uprights and pipes can be ordered with air-cushion insulation. An AISI 304 steel structure isolates the steam pipe from direct contact with the air in the AHU/duct, thus achieving a 30% reduction in condensate formation.

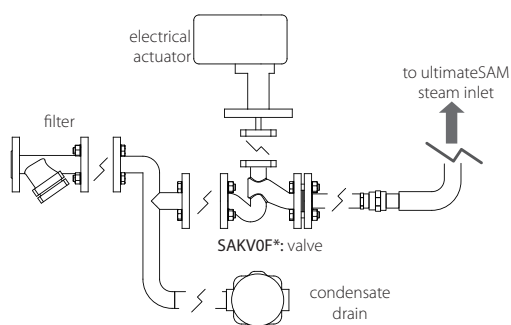
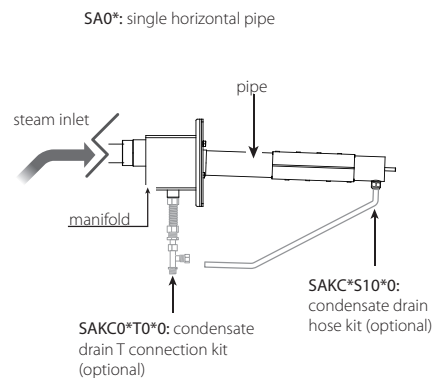
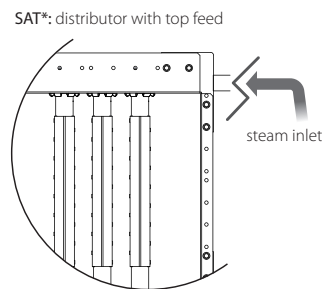
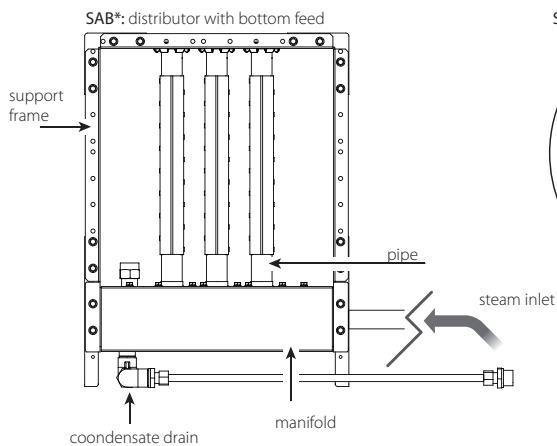


Condensate separator manifold for SA0* single pipe models

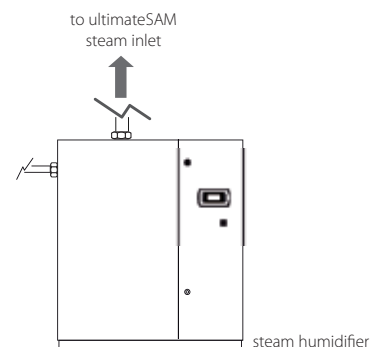
On single pipe versions the manifold also acts as a condensate separator. The louver ensures that the steam follows a specific path, separate from any condensate, which is drained through the discharge terminal. Only dry steam enters the distribution pipes.



OVERVIEW DRAWING ultimateSAM

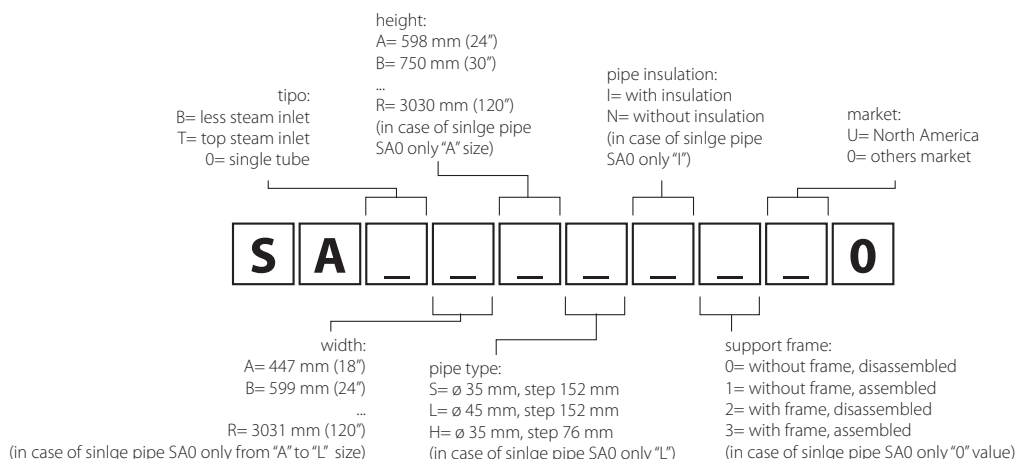


application with steam under pressure



application with steam at atmospheric pressure

Unit code



Technical specifications

Model	Description	Steam flow-rate 0 to 4 bar g / 0 to 58 PSIG (kg/h / lbs/hr)	Dimensions W x H[mm/inch]
SA0*	Single pipe version	Atmospheric pressure (humidifier): 20-50 / 44-110 Pressurised steam: 20-140 / 44-309	From 503 mm to 2175 mm (total length) in 152 mm steps / from 19" to 86" in 6" steps
SAB*	Multi-pipe version with bottom steam feed	20-370 / 44-814	From 447 x 598 mm to 3031 x 3030 mm in 152 mm steps (18" x 24" to 120" x 120" in 6" steps)
SAT*	Multi-pipe version with top steam feed	60-1100 / 132-2440	From 447 x 749 mm to 3031 x 3181 mm in 152 mm steps (18" x 30" to 120" x 125" in 6" steps)

ultimateSAM single-pipe can be ordered with insulated uprights, featuring a cushion of air that reduces both heat gain (around 1-2 °C / 2-4 °F) and condensate formation (at most around 5% of rated capacity). Insulated models have nozzles inserted in the uprights to ensure only dry steam is delivered into the air. Single-pipe non-insulated models are also available at a more competitive cost.

The single pipe models are insulated, with the nozzles inserted directly into the pipes; the inlet manifold also acts as a condensate separator and is fitted with discharge terminal.

Accessories

- modulating valves with electric actuators and automatic safety closing in the event of power failures
- stainless steel steam inlet connections
- Y filters on steam line
- condensate separators and drains
- condensate drain hose (for all models)
- "T" connection for condensate drain out of the AHU/duct (for single pipe models (SA0*))
- double-pipe connections (for single pipe models (SA0*))
- wall cover kit for the AHU (for single pipe models (SA0*))

Spare parts:

- steam distribution pipes for both multi-pipe and single pipe models
- horizontal distribution manifolds for multi-pipe models and condensate separator manifold for the single pipe models.
- parts of the metal support structure: top and bottom support, side shoulders, corners, gaskets

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