

### [Centralised steam distributor for ducts/AHUs: ultimateSAM]

#### 1. GENERAL

##### a. DESCRIPTION

- i. Pressurised or atmospheric-pressure steam distributor for ducts/AHU.

##### b. WORK REQUIRED

- i. Installation according to the manufacturer's specifications, performed by technical personnel validated by the manufacturer [selected by the customer]
- ii. System commissioning performed by [manufacturer's technical personnel, or technical personnel authorised by the manufacturer, chosen by the customer]

##### c. DOCUMENTATION

- i. Technical manual for installation with instructions on safety, configuration and operation, complete with dimensions, technical specifications, operating principles and performance, water circuit and wiring diagrams, standards and specifications for safe installation, guide for commissioning and operation, diagnostics, list and identification of spare parts.

##### d. QUALITY:

- i. UL998

#### 2. PRODUCT

##### a. [Definition of the apparatus, technology]

- i. Pressurised or atmospheric-pressure steam distributor for ducts/AHUs, available in single-pipe and multiple-pipe versions.

##### b. [General features and construction]

- i. Steam pressure upstream of the steam valve (for both single- and multi-pipe models): from 0.01 bars to 4 bars.
- ii. Multi-pipe system:
  - The distributor shall be made with 35 mm diameter vertical distribution pipes, spaced 76 mm, 152 mm and 304 mm apart, or 45 mm in diameter spaced 102 mm, 152 mm and 304 mm apart.
  - It shall have AISI 304 steel distribution pipes that can be ordered with or without air gap thermal insulation to reduce heat loss and steam condensation.
  - The thermally-insulated pipes shall have PPS nozzles (max. continuous operating temperature 220°C/428°F), distributed along the entire height of the pipes. Only dry steam enters the nozzles from the pipes.
  - The gaskets in contact with the steam are made from EPDM
  - It shall be able to be supplied with or without AISI 304 supporting frame
  - Available unassembled or fully assembled.
- iii. Single-pipe system
  - ultimateSAM single-pipe is available with 45 mm diameter distribution pipes.
  - AISI 304 steel distribution pipes with air gap thermal insulation to reduce heat loss and steam condensation.
  - PPS nozzles (max. continuous operating temperature 220°C/428°F), distributed along the entire length; only dry steam enters the nozzles from the pipes.
  - The gaskets in contact with the steam are made from EPDM

##### c. [accessories]

- i. For the multi-pipe system:

## TEXT FOR CONTRACT SPECIFICATIONS

- AISI 304 fittings, both threaded and non-threaded, are available on request:
  - a. 150 mm (6") extension, OD 80 mm
  - b. Adapter for 8 steam hoses, ID 40 mm
  - c. Adapter for 4 steam hoses, ID 40 mm
  - d. Adapter for 2 steam hoses, ID 40 mm
  - e. Threaded elbow fittings: 1" NPT, 2" NPT, 1" GAS, 1 ½" GAS, 2" GAS
  - f. Threaded straight fittings: 1" NPT, 2" NPT, 1" GAS, 1 ½" GAS, 2" GAS
  - g. Adapter for 1 steam hose, ID 40 mm
  - h. Adapter for 1 steam hose, ID 80 mm
- Spare parts for each of the components listed above are available on request
- ii. For the single-pipe system:
  - the following fittings and connectors are available on request:
    - a. steam inlet kit for atmospheric pressure applications (material: AISI 304)
    - b. condensate drain kit (material: AISI 304)
    - c. "T" connection kit for condensate drain (material: AISI 304)
    - d. steam inlet kit for double-pipe
    - e. AHU inside wall covering kit (material: AISI 304)
    - f. thermostatic steam trap (material: brass)
- iii. Steam inlet accessories for pressurised lines:
  - the following components are available for the steam lines: modulating valve with or without electric actuator, "Y" filter, steam trap, F&T steam trap, inverted bucket steam trap
- iv. on request, 40 mm and 80 mm inside diameter pipes are available for atmospheric-pressure steam
- d. The type of apparatus shall be the CAREL ultimateSAM**
- e. Approved manufacturers: Carel Industries SpA**

### 3. EXECUTION

- a. Installation in compliance with the manufacturer's specifications**
- b. Installation in compliance with applicable local laws and regulations**
- c. Water quality as per manufacturer's specifications, under the responsibility of the user**