

Tender specifications

## High-pressure humidification system **humiFog direct**

**humiFog direct** is a system for direct adiabatic room humidification with deionised water (residual conductivity 5..80  $\mu\text{S} / \text{cm}$ ). It consists of a compact high-pressure pump station and one or more blower heads, which release the water into the room as a fine aerosol by means of an air stream. The electrical consumption is only 4 watts per liter/hour of atomised water. A constant water pressure of 70 bar is generated in the pump station and the humidification output is regulated. This constantly high water pressure ensures particularly efficient atomisation across the entire performance range of the system.

**humiFog direct** works without separate compressed air, in contrast to the classic air/water atomisation systems.

### Hygiene

**humiFog direct** guarantees hygienic safety because it only atomises fresh, pure demineralised water. In addition, automatic cleaning of the lines is ensured by the line routing and control.

### Pump station

Designed as a complete, ready-to-connect unit. The pump station is standardised and of high quality, it is fully assembled, wired and factory tested under standard conditions. The housing is galvanised and powder coated. The water and control components are separated from one another.

The water pressure is kept constant at 70 bar. The unique combination of special SSR valves and the bypass maintains a constant pressure of 70 bar to ensure the best possible atomisation.

The pump station encloses:

- Pump
- Conductivity measuring sensor in the inlet
- Pressure reducing valve with pressure indicator
- Low pressure switch
- Pressure monitoring of the pump (before and behind the pump)
- Maximum pressure limiter
- Latest c.pHC microprocessor controller technology

### Microprocessor controller and user interface

The multilingual control and the graphic display with keyboard are integrated in the pump station. The following basic controls are possible:

- External control signal
  - 0 ... 1 VDC
  - 0 ... 10 VDC
  - 2 ... 10 VDC
  - 0 ... 20 mA
  - 4 ... 20 mA
- External control signal and connection of an active humidity sensor for limiting the maximum humidity via internal control
- Up to two humidity or temperature sensors using the internal controller function for humidity and temperature control
- Wireless sensors (up to 100m in the open field)
- On/off contact

The system can be updated by using a USB stick. Program developments can be imported very easily.

### **Fan blower**

The new fan blower brings the moisture into the ambient air as a fine aerosol mist, where it needs to be moistened. The fastest possible absorption of the droplets under all temperature and humidity conditions is effectively supported by the powerful airflow of the integrated fans.

The various fan blowers can be freely combined and, depending on the version, they can spray in one or in two opposite directions. They are available with 2 to 8 nozzles in different performance sizes (1.45, 2.8 or 4 l/h per nozzle). The anti-drip system prevents dripping when the system is switched off.

**Easy to install:** The fan blowers are delivered already assembled and tested. The fastening systems are quick and easy to install. Since the power is regulated in the pump station, there are no control lines to the fan blower, which minimises the installation effort.

**Flexible positioning:** You can use both for precise humidification, ceiling as well as wall mounting.

### **Connectivity:**

The integrated c.pHC control includes the following features ex works:

- **Protocols:** The standard communication protocols are Modbus, Bacnet and Carel for the serial BMS connection. Modbus and BACnet are also for Ethernet connection.

- **USB port:** The integrated USB connection gives immediate access to a wide variety of functions: e.g. saving the alarm log, copying & pasting the configuration parameters for quick installation in multiple devices and software updates on site.

- **Webserver:** Direct access to the device display from any PC or tablet in the local humidifier network. Every configuration - including the regulations, settings or device status displays - can be carried out on site as well as directly on the device.

- **tERA ready:** After activating the service via the Ethernet connection, the system can be observed and operated remotely.

- **Wireless sensors: humiFog direct** supports the wireless sensors from CAREL. Each zone can work with up to 4 sensors. In this way, the humidity or temperature is controlled more precisely in large or complex environments. A modulating limit sensor prevents the specified humidity values from being exceeded in certain areas in order to avoid localised condensation and damage to the devices.

**Zone control:** Up to two zones (rooms) can be controlled separately from the setpoint.

**Easy commissioning:** The commissioning wizard ensures simple, fast and assisted configuration of the basic parameters for the first commissioning of the device.