

# Sentinel 5850

## INDUSTRIAL HUMIDIFICATION SYSTEM

The Sentinel™ 5850 delivers effective humidification with Fogmaster's "cold fogging" technology. It offers economical performance without the maintenance costs of high pressure pumps and tiny orifices, or the energy costs of steam generators. And in most cases, it doesn't require extra water conditioning or filtration.

The Sentinel 5850 system has three components:

- One or more **nozzles** to atomize water into tiny droplets for evaporation. The unique Fogmaster vortex nozzle uses highly turbulent, low pressure air (3 psi) to do the "slicing and dicing." The nozzle has no tiny orifices, and is tolerant of poor quality water.

Even in hard water installations, a buildup of minerals will reduce atomization efficiency, but not plug the nozzle. Therefore, you can continue operating the system until it is convenient to change nozzles – a 5 minute task. Often the old nozzle can be reclaimed by storing it in a bucket of descaling liquid.

- A low maintenance **regenerative blower** supplies air for atomization. Blower operation is governed by a low voltage signal from the control unit. The blower also monitors the pressure drop across the intake air filter and reports a dirty filter condition to the controller.

The blower is powered by a direct-drive TEFC (totally enclosed fan cooled) motor. Power options are 110/115V and 220/230V, 50/60Hz, 1Ø, and 200-240V and 400-480V, 50/60Hz, 3Ø.

- A **control unit** monitors relative humidity and regulates fog emission. Water for humidification can be supplied by a hose bib on the domestic water system, an elevated tank (gravity feed), or a feed pump. The control unit includes a pressure regulator to drop the supply pressure to 4-10 psi, and a precision needle valve and rotameter to control liquid flow and fog droplet size. Pressure, flow and humidity setpoint are independently adjustable.

The humidity module updates the RH readout continuously and starts fogging when moisture is needed. The target humidity is displayed at the push of a button, and adjusted by turning a knob. The deadband is field-adjustable (factory setting is 4% RH). Sensor accuracy is  $\pm 3\%$  RH; for greater precision the sensor can be field calibrated against a reference salt solution.

The blower and controller can be placed wherever convenient. The best location for the nozzle is near the ceiling to maximize droplet hang time for evaporation. Fog discharge may be aimed 90° axially and 360° radially at the nozzle mounting (2-inch PVC slip union).

The Sentinel 5850 is designed for "do-it-yourself" installation. It ships with all fittings and components required for installation: hose bib connection with 100 mesh screen filter; water tubing (hose bib to control module, and control module to nozzle); humidity sensor and cable; blower control cable; liquid fittings; blower



*Continued over...*

intake and discharge fittings; intake air filter; and one Fogmaster vortex nozzle with 2" slip union. Air piping (typ. 2" PVC) from the blower to the nozzle is not included. The standard length of cables (blower control; humidity sensor) is 50 ft; longer cables are available on special order.

The system requires little maintenance: remove dirt from water screens and blower cooling fan as necessary; clean the intake air filter (a light on the control module illuminates when the filter is dirty); and descale the nozzle if required.

The Sentinel 5850 can also be used for other atomization tasks, such as sanitization, disinfection or odor control, by installing the appropriate control module (see specifications). It can also be controlled by an external process controller, building automation system or environmental management system.



Control module displays current humidity. Press button and turn knob to adjust setpoint.

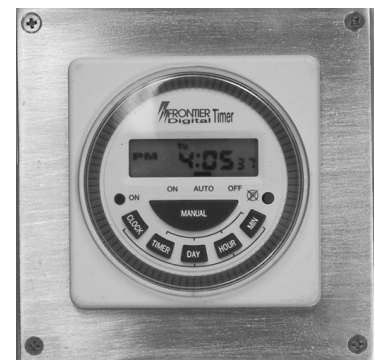
### GENERAL SPECIFICATIONS (Model 5850xx)

Components	Control unit, blower, blower control cable (50 ft std), Fogmaster® nozzle with 2" PVC slip union, hose bib connector, water supply screen (100#), 50 ft water supply line, air filter, blower fittings to adapt to 2" PVC pipe. (Air piping not included.)
Nozzle	Counter-rotating vortex design. High turbulence in nozzle shears feed liquid into fog-sized droplets. Non-clogging design (no small orifices).
Fogging Liquids	Unit can dispense both oil- and water-based liquids. Single nozzle system handles up to 5 gal/hr [315 ml/min], adjustable. <b>When applying chemicals, follow label instructions.</b>
Droplet Size	VMD of output is adjustable (typical range: 2-50 μ) with flow rate. Liquid viscosity and surface tension also affect droplet size.
Blower	Single stage cast aluminum ring compressor with direct drive squirrel cage TEFC motor and pilot duty thermal cutoff. 1 Hp, 120V, 50/60 Hz, 1φ, 9.8A (585010x) or 240V, 1φ, 4.9A (585020x). Maximum output 90 cfm. Noise: 64 dBC (1000 Hz); 57 dBC (2000 Hz). 230/460V, 3φ configurations by special order. Larger blowers available for multiple nozzle installations.
Control Unit	Power and Auto/Manual switches. Liquid pressure and flow controls. Blower status lights (start, run, service filter alert).
Controller Options	<ul style="list-style-type: none"> <li>• <b>H</b> Humidistat: 10-90%RH, LED readout, adjustable set point and deadband. Sensor accuracy ±3% RH. 50 ft sensor cable.</li> <li>• <b>T</b> Day/week event controller: up to 6 timed on-off "events" per day. LCD display. Can function as a countdown timer: Set single event with Day/week event controller</li> <li>• <b>C</b> Repeat cycle timer: Independently adjustable ON /OFF cycles (1-165 min each), set with dip switches.</li> <li>• <b>E</b> External relay (customer control system)</li> <li>• Analog (4-20 mA or 0-5VDC). Consult factory.</li> </ul>
Control Enclosure	Weathertight (NEMA 4X), corrosion resistant fiberglass with stainless steel hardware.
Materials	Nozzle housing - vinyl w/ stainless clamps; Tubing - nylon, vinyl; Fittings - stainless steel, brass, nylon, acetal; Nozzle - Celcon® acetal copolymer.
Dimensions (HWD)	Control module: 16.5 x 14 x 9 in [42 x 35 x 23 cm] Blower: 14 x 15 x 14 in [35 x 38 x 35 cm]
Shipping Weight	2 cartons: 36, 55 lbs [16, 25 kg]
Warranty	One year limited warranty on materials and workmanship.

*NOTE: Specifications subject to change without notice.*



Control module features rainproof NEMA 4X enclosure, see-thru cover with lockable catches, environmental cable connectors.



The 5850 offers many control options, including timers, analog input, external relay, and PLC. This day of week timer provides six event cycles per day, plus Manual/Off. An event may include repeat cycle operation.