

Model 10090

Heated Air Monitor Inlet Tube

Heated Inlet tube Subassembly Low Flow Particulate Monitors & Particle Counters

The Alaric Electromechanics Model 10090 Heated Inlet Assembly is designed to meet the RH control inlet heater requirements for low flow particulate matter (PM) sensors or portable dust monitors operating at up to 5 L/min flow rate. The heater assembly is insulated, weatherproof, and designed to be installed on top of a user-supplied outdoor instrument enclosure. Model 10090 is designed for use as an OEM subassembly module, and is currently in use by several PM monitor equipment manufacturers and systems integrators.

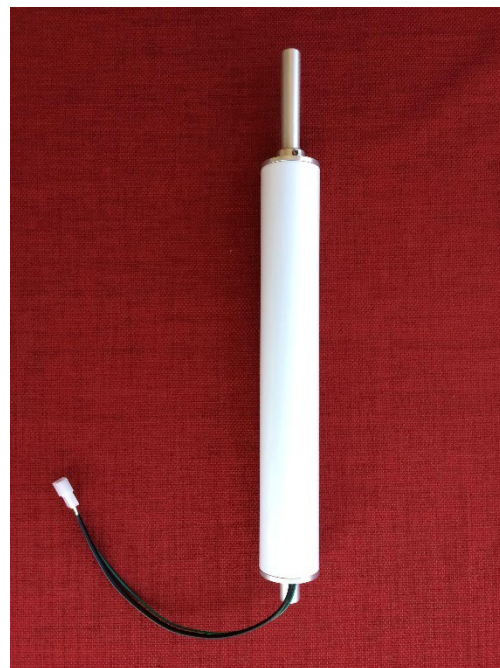
The top of the ½ inch diameter inlet tube is compatible with Alaric's 2 L/min mini cyclones, as well as cyclones from other manufacturers. Alaric Model 10085 Mini TSP Inlet can be used directly on top of the inlet tube to exclude water and debris when no particulate cut point is required.

The bottom of the inlet tube is compatible with standard ½ inch compression or Swagelok-type fittings. The integrator can optionally supply their own socket to adapt to the tube. The inlet tube has up to 1.4 inches (35mm) of vertical adjustment range within the outer insulated housing. This allows a range of mounting locations and removal options for your internal connections. A set screw secures the tube at the desired height. The wire harness has a 3-pin Molex connector, and a mating connector and pins are included.

The heater is self-regulating and can be simply powered by 12V whenever the instrument vacuum pump is running. More sophisticated RH control schemes can be implemented by the instrument integrator using proportional or PWM control, or by adding a thermostat or downstream RH or temperature sensors. Testing must be done at the desired instrument flow rate and expected ambient conditions to ensure that proper RH control is achieved.

Model 10090-1 Mounts to the enclosure with two 8-32 screws and an o-ring seal. This only requires one 0.75 inch diameter hole and two screw holes in the enclosure roof.

Model 10090-2 Has a M30x2 metric male threaded boss on the bottom which can be threaded into a socket for easier inlet installation and removal. An o-ring seals the joint. This version requires the instrument manufacturer to supply a suitable M30 threaded socket on the top of the enclosure, or we can supply a custom adapter separately.



APPLICATIONS

Remote Dust Monitors

2 LPM Nephelometers

Particle Counters

Low Flow Particulate
Matter (PM) Sensors

Heater Voltage:	12 Volts DC.
Heater Wattage:	10 Watts typical. 12W max.
Heater Current:	0.85 Amps typical
Element Resistance:	12-15 Ohms typical at room temperature.
Operating Temperature:	150-160°F (65-71 C) Typical, measured at internal tube without air flow.
Inlet Tube Dimensions:	14 Inches (35.5 cm) long. 0.499 Inch (12.68 mm) OD. 0.26 Inch (6.6 mm) ID.
Housing Dimensions:	1.5 Inch (38 mm) Diameter. 10.5 inches (27 cm) tall.
Heater Control:	Self-regulating resistive heater element. No thermostat is included or required, but can be optionally added by the user. See instruction sheet.

