

GENERAL DESCRIPTION:

The Model 280 portable heated filter is made for stack testers, equipment rental, and short term sampling applications. The probe can mount to NPT or flanged process connections. The “universal” flange is a single flange which allows mounting to 2”, 3” or 4” 150 lb. flanges, making the probe useful for most process connections. The filter heaters have a positive thermal coefficient of resistance where the resistivity of the heaters increases exponentially with increasing temperature to provide stable control with either 115 VAC or 230 VAC power. The heaters maintain the filter at 340°F (171°C) to filter debris while keeping the sample in the vapor phase. The filter is easy to service with a cap that is hand-tightened. When the cap is removed, the filter comes out with the cap. The sealing O-rings are also part of the cap assembly, making servicing simple. The filter chamber includes a calibration port located *before* the filter to ensure the requirements of 40 CFR 60 are satisfied and the user can, “*introduce the calibration gases at the probe as near to the sample location as possible.*” The Model 280 portable heated filter will provide a heated, filtered sample gas while maintaining sample integrity.



Shown without blowback

Options include:

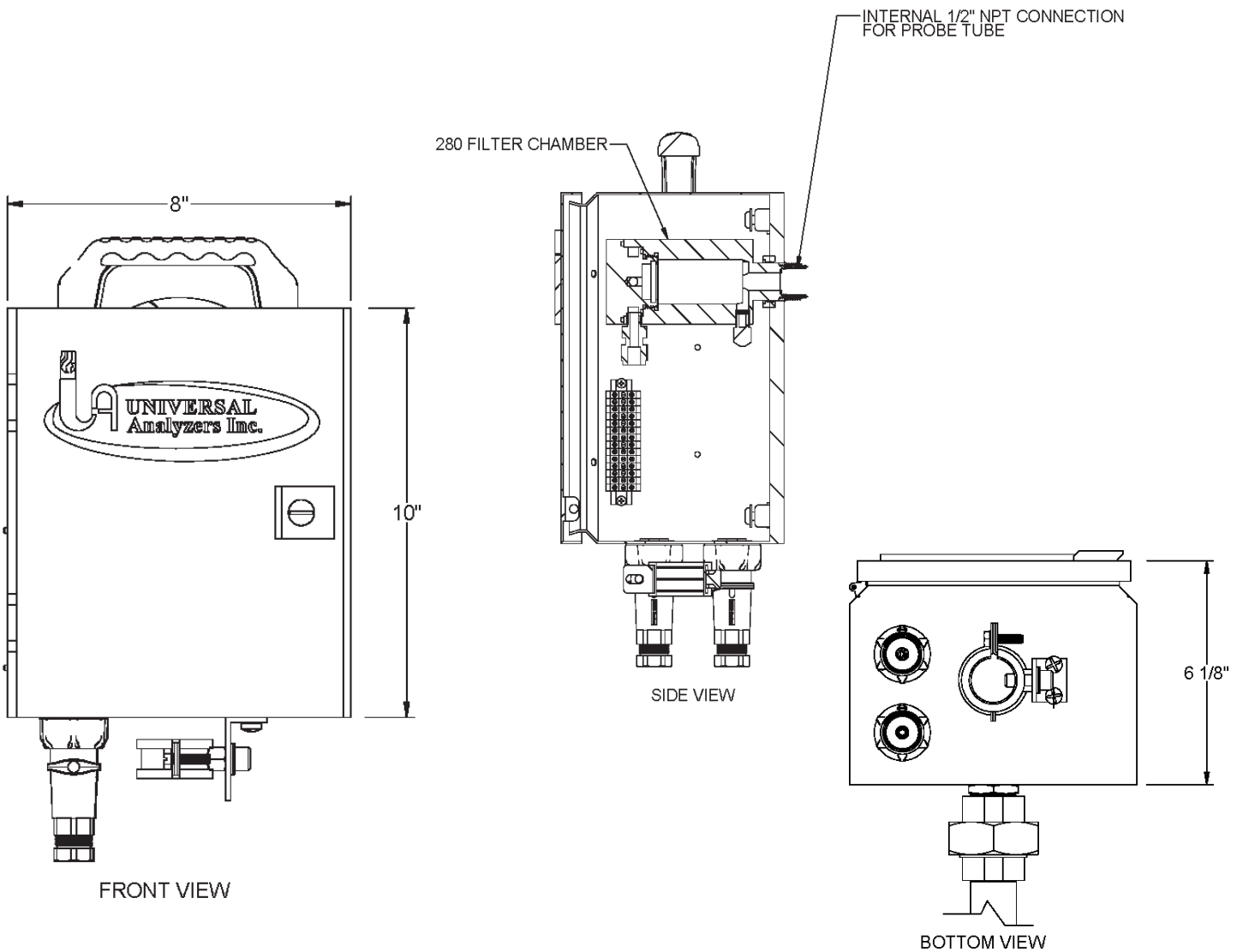
- Choice of Mounting
- Choice of probe tube lengths and materials
- Filter chamber blow back with integrated solenoid valve

OPERATION:

To avoid condensation, a self regulating heater is used to keep the filter chamber and tubing connections hot and above the sample dew-point. Temperature is controlled at 340°F (171°C) and includes a low temperature contact alarm output and RTD for remote monitoring. The standard filter element is constructed of a non-reactive 2 µm ceramic material with Viton seals. For continuous, low-maintenance operation, it is recommended to provide blow back for periodic cleaning of the filter chamber and probe tube. If blowback is purchased, high-pressure plant air is stored in an accumulator vessel and then released through a high-flow solenoid valve that also isolates the sample path from blowback. Easy access to the filter is allowed with a no tool cap which allows removal of the filter tube while leaving the enclosure attached to the stack/duct. The filter and o-rings are all integrated into the cap for easy maintenance. For ease of installation, the model 280 comes complete with IP68 electrical connections and terminal blocks within the enclosure.

FEATURES:

- Easy “no-tool” filter element replacement
- Self-Controlled Cartridge heaters, no controller needed
- All electrical and pneumatic connections within enclosure
- True System Calibration Injection Port
- Corrosion Resistant Wetted Materials
- Heated Filter Chambe with Insulation Wrap
- Self-limiting temperature control
- Rugged construction
- Efficient blow back



Technical Information:

Sample Flow Rate:	0 to 20 LPM
Calibration Gas Flow Requirement:	Sample flow rate plus 10%
Operating Pressure Drop at 10 LPM:	12" water column
Filter Chamber Temperature:	340°F (171°C)
Enclosure Dimensions:	10" x 8" x 6.125" (254 mm x 203.2 mm x 155.58 mm) HxWxD
Weight:	25 lb (12 kg) (plus probe tube)
Input Power Requirement:	100 W
Input Voltage Requirement:	115 or 230 VAC at 50/60 Hz (<i>External fuse required of 20 A or less</i>)
Ambient Temperature Operating:	200°F (Maximum 93°C)
Blowback Tank Volume:	0.7 SCF (19.8 L) when at 100 psig (7.4 barg)
Blowback Duration:	0.5 sec to empty accumulator
Enclosure:	NEMA 4 Painted Steel
Sample Line Connection:	2" Heat Shrink Boot (optional)
Available Filter Chamber Materials:	316 stainless steel (standard) 316 SS, SilcoNert™ 2000 coated (optional) Hastelloy C-276 (optional)
Available Filter Element Types:	2 µm ceramic (standard)