

# Gas Sampling Probes

- True NEMA 4X design
- External filter can be cleaned rapidly and simply
- Heated sample gas line is mounted directly on the probe
- Heater can operate on either 110 VAC or 240 VAC
- Stainless Steel 316L sampling tube for gas temperatures up to 1850°F (1010°C)
- Optional backpurge capability minimizes on-stack maintenance
- Available for Class 1, Div. 2 Group C and D Hazardous Area



## INTRODUCTION

The Rosemount Analytical Model SP 110 Gas Sampling Probe from Emerson extracts a representative sample from a gas stream for analysis. The probe's external filter reduces particulate in the sample, virtually eliminating blockage of the heated sample line. An optional backpurge feature is designed to rapidly and simply clean the filter, reducing on-stack maintenance.

Sample probe problems are typically caused by corrosive condensate. Even corrosion-resistant stainless steel will eventually be attacked by low pH condensate. The SP 110 probe and associated sample line are heated, maintaining an elevated sample temperature to prevent condensation.

The SP 110 Gas Sampling Probe can extract a representative sample in temperatures up to 1850°F (1010°C).

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## COMPONENTS

The following components make up the extractive probe:

### PROTECTIVE TUBE

The protective tube is required for thick walls (such as brick stacks) if the gas temperature is below 900°F (482°C). This tube prevents cooling of the probe below the dew point of the sample gas. The protective tube is not required for thin walls. It should not be used for temperatures above 900°F (482°C).

**Material:** Stainless Steel 316L

**Insulation:** Ceramic Fiber

**Weight:** 4 lbs. (1,8 kg)

**Length:** 12.06 in. (30,6 cm)

### NEMA 4X WEATHER ENCLOSURE

The weather enclosure covers the probe and is used for weather protection. It is mounted directly on the flange of the probe.

**Dimensions:** 18 in. (H) x 12 in. (W) x 8 in. (D)  
[45.7cm (H) x 30.5cm (W) x 20.3 (D)]

**Material:** Stainless Steel 316L

### HEATING JACKET

The heating jacket is used to heat the filter body of the SP 110 probe above the dew point in order to avoid condensation on the 316SS filter.

The heating jacket contains two heater windings with separate connection, allowing either 240 VAC or 110 VAC to be utilized.

**Power Supply:** 110/240 VAC, 50/60 Hz, 450 W

**Electrical Connection:** Terminal screws with ceramic caps (use heat resistant cable)

**Weight:** 1 lb. (0.45 kg)

### MOUNTING FLANGE (OPTIONAL)

A tubular sleeve with matching flange is supplied for SP 110 installation. The sleeve can take the probe with or without the protective tube.

**Materials:** Stainless Steel 316L

**Flange:** 4 in. (10.2 cm) 150 lbs. (68.6 kg) ANSI

**Sleeve:** 3 in. (7.6 cm) schedule 80

**Weight:** 14 lbs. (6.3 kg)

**Length:** 8 in. (20.3 cm)

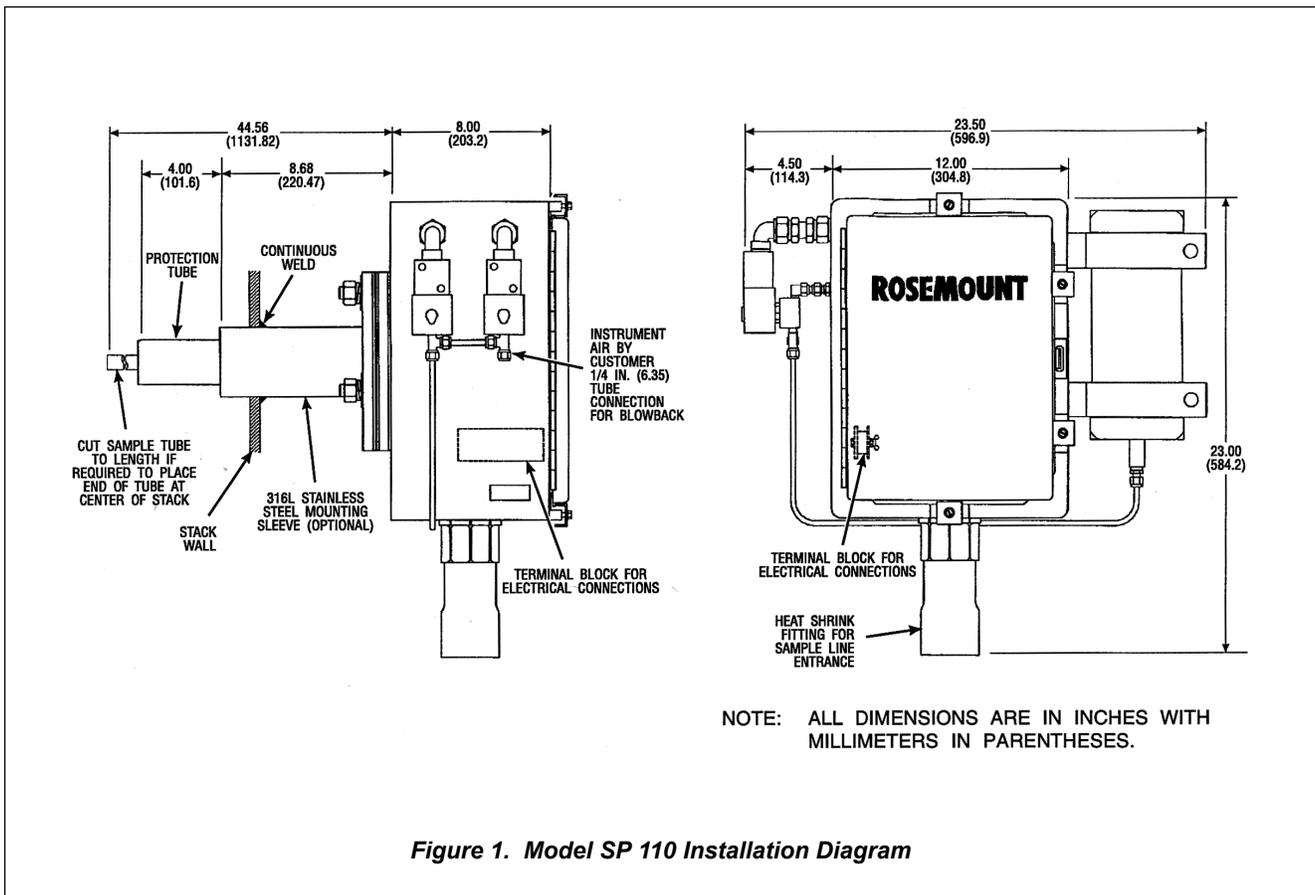


Figure 1. Model SP 110 Installation Diagram

# SPECIFICATIONS

## SP 110

**Maximum Gas Temperature:** 1850°F (1010°C) vertical  
1400°F (760°C) horizontal

**Max. Gas Flow:** 5 L/Min.

### Filter

**Material:** Stainless Steel 316L

**Mean Pore Diameter:** 0.5 micron

**Filter Surface (Outside):** 160 cm<sup>2</sup>

**Installation Depth (From Flange to Sampling Probe):** 44 in. (111.8 cm)

**Sampling Tube:** 3/4 in. (1.9 cm) OD tube

**Material (Standard):** Stainless Steel 316L

**Material (Optional):** Hastelloy

### Other Materials in Contact

**With Gas Installation Tube:**

**Flange:** Stainless Steel 316L

**Gas Lines, Case, Etc.:** 1/4 in. (0.6 cm) compression Stainless Steel tube connectors

**Weight:** 46 lbs. (20.9 kg)

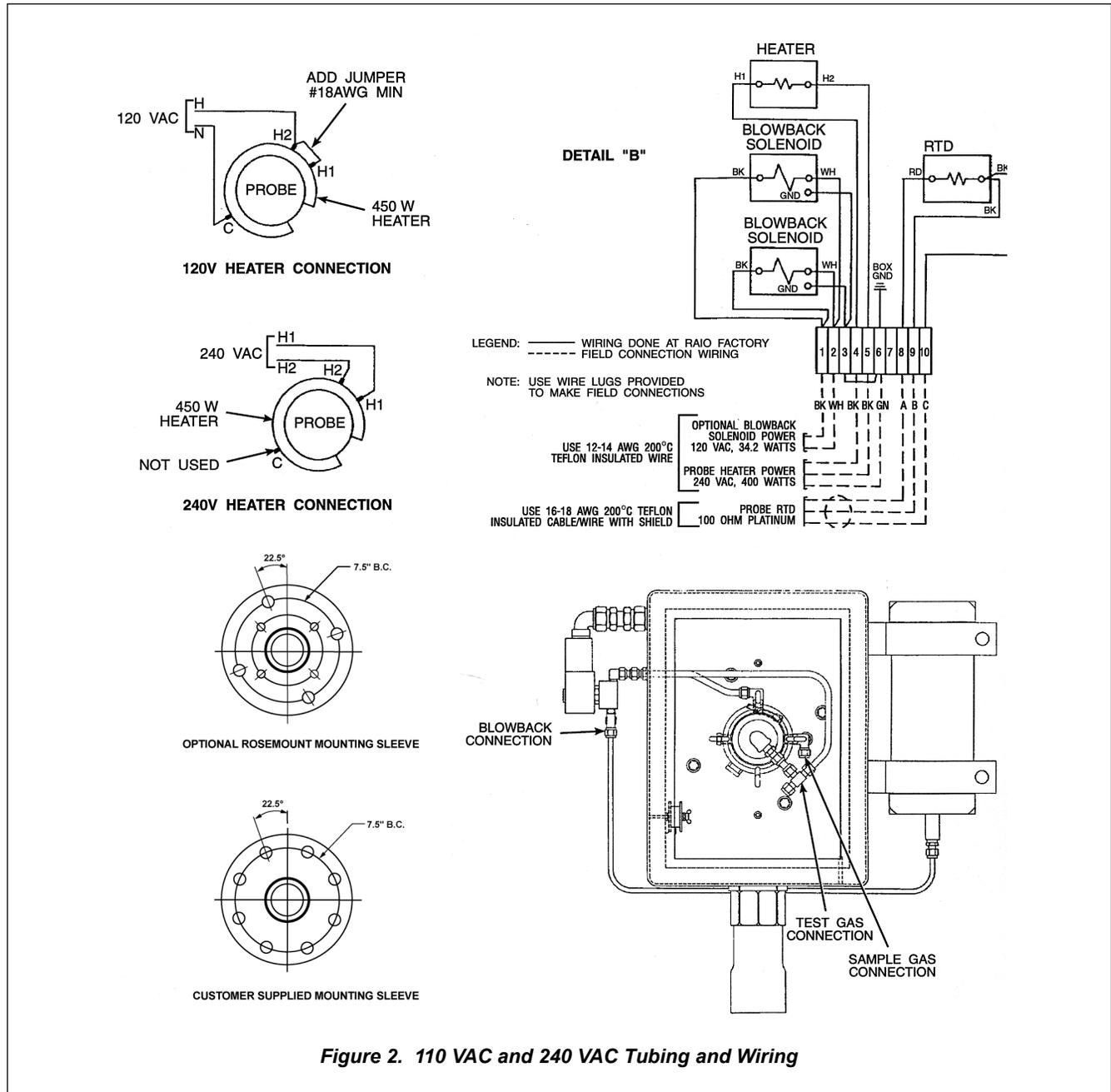


Figure 2. 110 VAC and 240 VAC Tubing and Wiring

## ORDERING INFORMATION

To order, specify one of the following part numbers:

Part Number	Description
3D40506G01	Standard SP110; with blowback and with weldment mounting sleeve.

## SPARE PARTS

1. 1A68507H02 Filter
2. 4843B30H03 Filter gaskets (fronts)
3. 4843B30H02 Filter gaskets (back)

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