

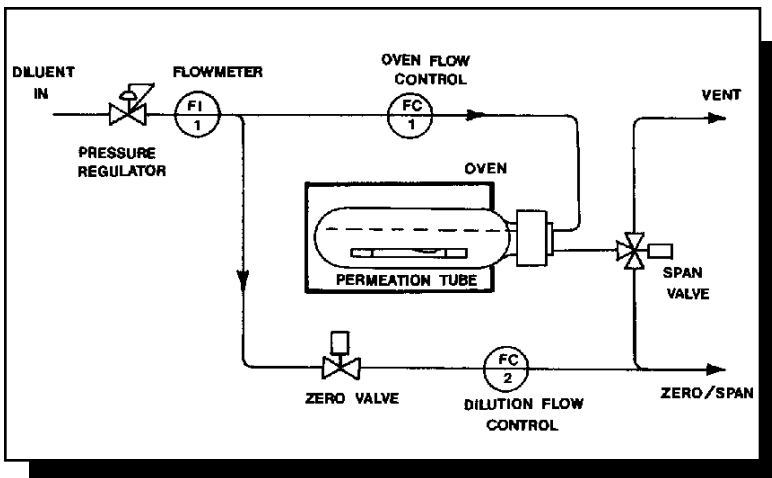
## SPAN PAC™ I Industrial Standards Generator

### DESCRIPTION

The **Span Pac™ I Gas Standards Generator** blends gas standards for on-line calibration of process analyzers and continuous emissions monitors. **Span Pac™ I** units are capable of generating concentrations from sub-ppb to over 1,000 ppm. These units have an output signal for switching the analyzer input from sample to calibration gas. They can be operated manually or by remote station. **Span Pac™ I Gas Standards Generators** are available in single or multi-oven configurations, which give these units the capability of multi-component mixture and multi-point span calibration.



All **Span Pac™ I** units are housed in NEMA 4 specification cabinets and are designed to satisfy the safety requirements for operation in N.E.C. Class 1, Group C or D, Div. II hazardous atmospheres. These units can also be adapted to Div. I service by adding the X-purge option. The Z-purge option meets revision of NFPA 494. The **Span Pac™ I** cabinets can hold up to three permeation ovens.



Flow Diagram  
SPAN PAC™ I

The Span Pac I has three operating modes: Zero, Span and Standby. In all three modes, the dilution gas flows through the pressure regulator and the flow meter (FI 1); then splits into two flows, the Oven Flow and the Main Dilution Flow.

In the Zero Mode, the zero valve sends the Main Dilution Flow through the Dilution Flow controller (F.C. 2) and out the Zero/Span to the analyzer. The Oven Flow flows through the Oven Flow controller (F.C. 1); over the permeation tube and is sent to Vent by the Span Valve.

In the Span Mode, the Zero Valve is open, sending the Main Dilution Flow through the Dilution Flow controller (F.C. 1). The Oven Flow flows through the Oven Flow controller (F.C.1); over the permeation tube and is added back into the Main Dilution Flow by the Span Valve to form the span mixture.

In the Standby Mode, the Zero Valve is closed to conserve dilution gas, and the Oven Flow flows over the permeation tube and is sent to Vent by the Span Valve.

### APPLICATIONS

- Process Control
- Custody Transfer Analysis
- On-Line Quality Assurance
- Stationary Source Monitors
- Industrial Hygiene Monitoring

## BENEFITS

- ❖ Economical - Replaces expensive, unreliable gas cylinder mixtures
- ❖ Safe - Limits possibility of exposure to hazardous materials
- ❖ Reliable - Continuous service -- accuracy can be verified by user
- ❖ Automated - Can be operated by the analyzer or computerized process control system
- ❖ Traceable Accuracy - Permeation tube output measured by weight loss
- ❖ Rugged Construction - NEMA 4 housing withstands industrial environment

## SPECIFICATIONS:

**Oven Capacity:** Up to six 1/4" dia. x 6" long disposable permeation tubes, one LFH, one 57S, one 57H or one ULED.

**Temperature Control:** High mass oven, solid state, zero switching, on-off control. Set point values from 30° to 150° C. (value chosen to suit the application)  
Control sensitivity:  $\pm 0.03^{\circ}\text{C}$

**Flow Range:** 0.5 to 5 liters per minute. (2 to 20 l/min. optional)

**Output Pressure:** 0-40 psig

**Typical Concentration Range:** 1,000 ppm to ppb

**Dimensions:** 20" x 20" x 9 1/4"

**Electrical Classification:** General purpose (Class I, Gr. D, Div. II option)

**Weight:** Approximately 60 lbs.

## Models Available in One, Two, or Three Oven Configurations

**Span Pac™ 61 I:** Single oven unit

**Span Pac™ 261 I:** Two oven unit

**Span Pac™ 361 I:** Three oven unit

**Span Pac™ 71 I:** Single oven unit for 57 Series Perm Tubes

**Span Pac™ 61/71 I:** Two oven unit, one 61 oven & one 57 Series oven

**Span Pac™ 271 I:** Two oven unit for 57 Series Perm Tubes

**Span Pac™ 261/71 I:** Two 61 ovens & one 57 Series oven