



Span Pac™ Industrial Gas Standard Generator

Span Pac™ I

The Span Pac™ I Gas Standard Generator is an industrial permeation system that dynamically creates trace gas standards for on-line calibration of process analyzers and continuous emissions monitors (CEMs). Span Pac™ I units are capable of generating NIST traceable gas standard concentrations from sub-ppb to over 1,000 ppm (depending on the permeation tube selection) and can be operated manually or by remote station. These units have an output signal for switching the analyzer input from sample to calibration gas, or can be integrated with existing sample systems. The Span Pac™ I Gas Standard Generators are available in single or multi-oven configurations to provide multi-component mixtures such as multiple sulfur species (Hydrogen sulfide, Carbonyl sulfide, Methyl mercaptan, etc), BTEX (Benzene, Toluene, Ethylbenzene, Xylenes) and many others.

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

Operation

The Span Pac™ I has three operating modes: Zero, Span and Standby. In all three modes, the dilution gas flows through a preset pressure regulator and through a mass flow meter before splitting into two flows, the Oven flow and the Main Dilution flow, both are manually adjusted. Oven flow is always circulating through the oven to carry permeation tube gas to the analyzer or to the vent, depending on the operating mode.

In Zero Mode, the zero solenoid valve allows clean dilution gas to exit the instrument to provide a baseline “zero” reading to the analyzer. Oven flow that may contain permeation tube gas is diverted to the vent.

In Span Mode, oven flow (permeation tube gas) and main dilution flow is combined and exits the Span Gas Out port to provide calibration gas to the analyzer. Adjustment of the main dilution flow creates variable concentrations for generating a calibration curve. No flow goes to the vent while in Span Mode.

In Standby Mode, the zero solenoid valve closes to conserve dilution gas and the oven flow carrying the permeation tube gas is diverted to the vent. This operation mode is used between calibrations to keep permeation tubes equilibrated and ready for the next calibration.

The Span Pac™ I provides a convenient solution for calibrating online analyzers and replaces multiple gas cylinders.

Applications

- Calibration of Process Gas Chromatographs
- Continuous Emissions Monitoring
- On-line QA/QC
- Industrial Hygiene Monitoring

Specifications

- Oven Capacity: Up to 1/4" dia. X 6" long disposable permeation tubes, one LFH, one 57S or one 57H.
- Temperature Control: High mass oven, solid state, zero switching, on-off control. Set point values from 30°C to 150°C. (Value chosen to suit the application)
Control sensitivity: $\pm 0.03^{\circ}\text{C}$
- Flow Range: 0.25 to 5.0 slpm standard;
Optional: 0.10 to 1.0 slpm or 0.5 to 10.0 slpm
- Output Pressure: 0-40 psig
- Typical Concentration Range: 1,000 ppm to ppb
- Dimensions: 24" W x 24" H x 12" D
- Electrical Classification: General purpose (Class I, GR, D, Div. II option)
- Weight approximately 60 lbs.

Benefits

TECHNICAL

- 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 measure by weight loss
- Rugged Construction – NEMA 4 housing withstands industrial environment

MODELS AVAILABLE

(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 Permeation Tubes

Span Pac™ 61/ 71-I: Two oven unit, one 61 oven and one 57 Series oven

Span Pac™ 271-I: Two oven unit for 57 Series Permeation Tubes

Span Pac™ 261/ 71-I: Two 61 ovens and one 57 Series oven

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