PERMA PURE
PROTECT LIFE

Readi-GASS™ SI

A Nafion™-Based Solution Developed for System Integrators

The Readi-GASS™ SI system is designed to remove moisture, particulate, and coalescing liquid from the sample gas while retaining the water soluble acid gases such as SO_2 and NOx. By utilizing the Nafion™ dryer, Readi-GASS™ SI can enable low level measurement of SO_2, such as after the FGD at coal-based thermal power plants. The Readi-GASS™ SI system is specifically designed with the sophisticated system integrator in mind to match their CEMS requirements.

Features of Readi-GASS™ SI system include:

- Nafion™ drying technology achieves low sample dew points < 4°C
- Superior to condensing coolers in preserving water-soluble acid analytes
- Can handle 20% of moisture v/v at up to 3 lpm of sample gas flow
- Suitable for ambient temperatures up to 50°C
- Eliminates the need for a downstream high-temperature heated sample line
- Suited for both high and low levels of SO_2 and NOx
- Easy installation and low maintenance

Principle of Operation

The system contains two zones mounted in an environmentally sealed, NEMA-4X housing.

First Zone: High-Temperature Area
The sample first passes through a filtration process to remove particles as small as 0.1 micron. Acid mists, if present, are coalesced and then removed by an auto drain. The sample then passes through a Nafion™ dryer, which removes the moisture in the vapor phase. The initial portion of the dryer is heated above the sample dew point to prevent condensation and make drying more efficient. The high-temperature zone can be controlled up to 80°C.

Second Zone: Ambient-Temperature Area
In the second zone, the sample passes through the remainder of the dryer, further reducing the dew point to 0°C or below. A second Perma Pure PD series dryer is used to dry the incoming compressed air that is used to purge itself and the sample gas dryer thereby avoiding the requirement for instrument air (it is highly recommended to filter compressed air for particulates, oil and water).

Readi-GASS™ SI Solves Common CEMS Challenges

- Unique Nafion™ technology eliminates problems stemming from condensing water anywhere in the downstream sample path
- 0.1 um coalescing particulate filter eliminates acid mist and particulate matter
- Unique Nafion™ dryers retain SO_2/NOx to overcome soluble gas loss in the condensed water
- Installation near the sample extraction point overcomes the challenges associated with long heated lines

Specifications

Physical

System Mount Connection	Wall Mounted
Enclosure Nominal Dimensions (H x W X D)	24" x 10" x 5" 600 mm x 250 mm x 120 mm
Enclosure Ratings	NEMA 4, 4X / C UL & UL Listed / File #E65324 and IP65 Rated
Sample Gas Tubing Connections	1/4" Tube Compression, Kynar® (PVDF)
Umbilical Line Seal	Heat Shrink Style, 5" Length, 2" Min Expanded I.D. Nose
Weight	24 lbs. / 11 Kg

Utility Requirements

Compressed Air Requirement	60 psig / 4.6 scfm, 4 bar / 130 slpm
Drain / Exhaust Requirement	.25 scfm / 7 slpm Air with Entrained Acidic Mist

Environmental

Temperature Range	0-50°C
Humidity Range	0-100% RH

Control and Electrical

Temperature Control	PID Type with Low Temperature Alarm
Heater Type	(1) Cartridge Style, 1/8" x 1.25", 35 Watts each (2) Silicone Pad Style, 40 Watts each
System Electrical Power	220 VAC, 1 A, 50/60 Hz, Push Terminal Connection
Alarm Output	Low Temperature

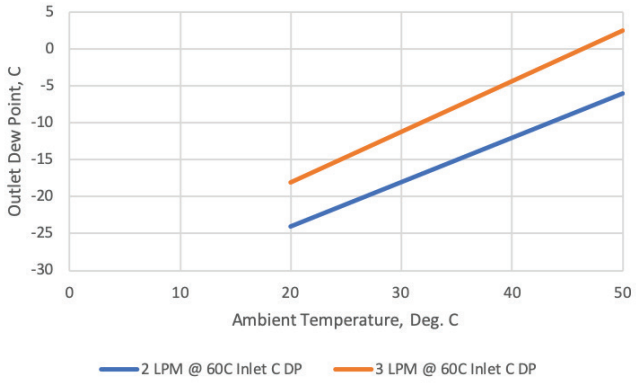
Materials

System Enclosure	Fiberglass Reinforced Polyester
Insulation	Rubber Foam
O-Ring Seals	Viton™
Filter Housing	Kynar® (PVDF) / Glass
Sample Gas Filter Coalescing Element	Glass Fiber, 0.1 um, 95% Efficiency, Coalescing
Sample Gas Path Fittings	Kynar® / FEP Teflon®

Performance

Readi-GASS™ SI Drying Performance

Outlet Dew Point Vs. Ambient Temperature



Complete Family of Sample Gas Conditioning Solutions

Filters, Scrubbers & More

- Particulate/Coalescing Filters
- Inertial Bypass Filters
- Ammonia Scrubbers
- Acid Scrubbers
- Heatless Air Dryer

Coolers

- Digital Thermo-Electric Coolers
- SO_3 Aerosol Removal Coolers
- eCool™
- Complete Sample Conditioners
- Heated Filter Probes
- Flow Control Drawers
- Portable Products for Stack Testers
- SDS Supplemental Drying System (Nafion™-Based)

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