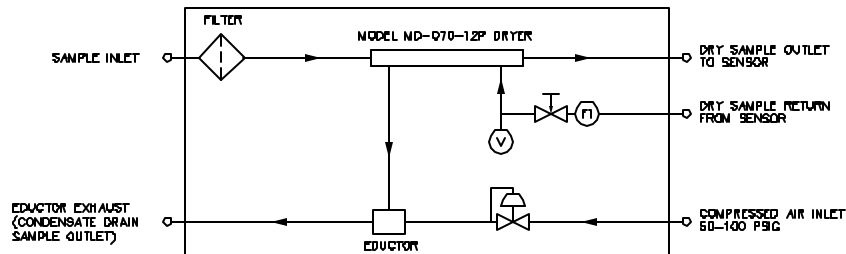


PRINCIPLE OF OPERATION

The ACES system incorporates a Perma Pure Nafion® membrane dryer, disposable 0.1 micron pre-filter and eductor to supply a clean sample to an electrochemical sensor. The dryer is sized to supply a 20-80% RH sample from ambient air at a flowrate up to 2 L/min.

After the ACES provides clean sample to the analyzer, it flows back to the conditioning system where it is expanded by a vacuum pump and used as purge air for the dryer (refer to flow schematic below).



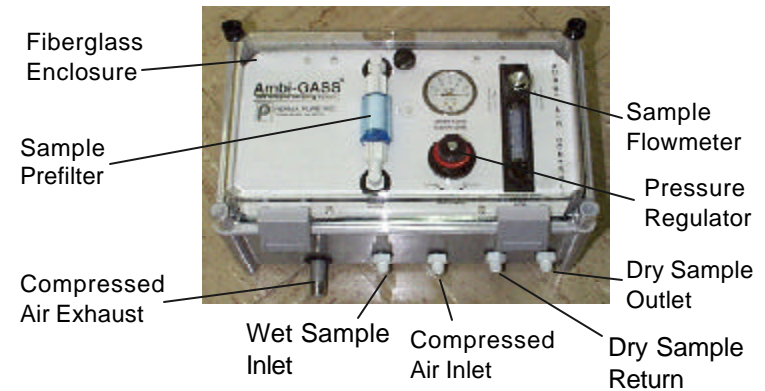
SPECIFICATIONS

Description	Specification
Dimensions	12"W x 7"H x 6"D
Air Supply Pressure	Minimum of 40 psig
Air Usage	1.5 - 2.5CFM
Sample Flow	0.1 - 2.0 L/min
Disposable Filter	95% of 0.1 micron
Inlet Humidity Range	0-99%RH
Outlet Humidity	0-80%RH
Piping Connection	1/4" O.D. tube, polypropylene compression fitting

INSTALLATION

Mount system close as possible to probe and analyzer to reduce response time and flow restriction. Enclosure is NEMA 4X rated. Since unit is not heated, dewpoint of sample entering system can be no higher than ambient.

1. Mount system to wall.
2. Connect sample tube to fitting (labeled Wet Sample Inlet).
3. Connect tubing from Dry Sample Outlet fitting to analyzer.
4. Connect sample return from analyzer to fitting (labeled Dry Sample Return).
5. Connect compressed air to fitting (labeled Compressed Air Inlet).



OPERATION

1. Turn compressed air on. Eductor will draw sample through the system.
2. Adjust regulator to 10-15" Hg of vacuum. Higher vacuum will provide dryer sample.
3. Adjust valve on top of flowmeter to set desired sample flow rate. Optimal operating range is 0.5 to 1.5 liters per minute.

MAINTENANCE

Filter Replacement:

To determine if filter needs to be replaced, monitor pressure drop and flow output of pump. If output begins to drop, it indicates clogged filter element.

1. Take notice to orientation of filter for replacement.
2. Pull lock ring on black elbow fitting away from filter to release internal gripper.
3. Pull tube stubs from fittings.
4. Replace with new filter (part number: AG-DIF-N70).

ACES™

Ambient Air Conditioning

User Manual



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