GasSens

Modular Gas Detector

C21 Dri-Gas Sampling System

OVERVIEW

Monitoring combustible or toxic gases in areas with condensing levels of moisture often results in premature sensor failure. Water condensing on sensor surfaces or within the sensor flame arrestor can be difficult to avoid due to widely variable ambient conditions.

Badger Meter provides a solution to this problem with a gas sampling system that also conditions the sample by removing water vapor. The Dri-Gas sampling system draws gas samples from high humidity vent stacks, ducts, wet wells or other humid locations. The system removes water vapor from the gas sample by contact with a cold plate that condenses moisture and delivers a dehumidified gas sample suitable for toxic and combustible gas monitoring equipment. Excess condensate is pumped to a drain fitting on the bottom of the enclosure and can be collected, if necessary.

Dri-Gas systems contain a diaphragm sampling pump with brushless DC motor providing operational life in excess of 10,000 hours. The pump is capable of pulling inlet line vacuum of up to 10 inHg making it suitable for sampling duct systems with negative pressures. The outlet of the pump is controlled by an adjustable rotameter, allowing system sample flow to be set to the normal rate of 500 cc/min.

A differential pressure switch across the pump provides an alarm should the inlet line or outlet lines become blocked. An alarm lamp on the door provides local alarm indication, and an SPDT alarm contact is available for remote alarm indication.

An optional inlet filter assembly is available for applications where gas streams may contain dust or debris that might cause problems in the air pump. A replaceable filter element on the end of the inlet assembly can be easily changed when necessary. A plugged inlet filter is indicated by a fault indication. A package of filter elements are supplied with the inlet assembly.

INSTALLATION

The gas sampling system is suitable for either indoor or outdoor installation, but outdoor installations must be protected from wind driven rain. It is also best to protect it from direct sunlight to minimize solar heating of the interior. Outlet tubing containing the dried air sample should be connected directly to gas sensor flow cells and distances should be kept as short as possible.

Teflon lined PVC sample inlet and outlet tubing is recommended to minimize loss of reactive gases. The diagram in *Figure 1* shows a typical installation with output to an F12 transmitter. This is an example only.

The dried gas sample can be fed to a variety of gas sensors including our A11, A12, B12, D12, D12IR, F12D and F12is systems.



FEATURES

- Condensing water vapor removed continuously
- Samples from ducts under vacuum
- Gas sensor "Blinding" eliminated
- Virtually maintenance free
- Options for 120V AC or 230V AC operation

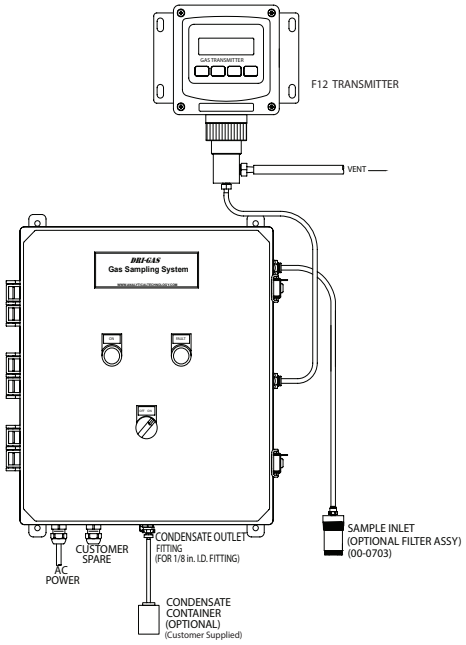


Figure 1: Typical installation

Badger Meter

ATI-DS-05282-EN-01 (June 2026)

Product Data Sheet

SPECIFICATIONS

Power	120V AC, 50/60 Hz, 230V AC optional, 35VA max.
Pump	6V DC powered diaphragm type, brushless motor rated 10,000 hours
Flow Rate	Adjustable, 300–800 cc/minute, 500 cc/minute recommended
Inlet	Push to connect fitting for 1/4 in. (6.35 mm) O.D. tubing
Outlet	Push to connect fitting for 1/4 in. (6.35 mm) O.D. tubing
Sample Pump Rating	10 inHg max. vacuum on inlet. 4 psig max. pressure on outlet.
Alarms	Low flow alarm lamp on front door. SPDT alarm relay for low flow remote indication.

Enclosure	NEMA 12 / IP-52 Polycarbonate Flammability V-0
Operating Temperature	36 to 113 °F (2 to 45 °C)
Storage	–13 to 131 °F (–25 to 55 °C)
Size	15 W × 17 H × 9 D in. (381 × 432 × 229 mm)
Weight	18 lb (8.2 Kg)
Accessories	2 replacement peristaltic pump tubes 2 replacement fan/inlet grill filters
Options	Inlet filter assembly with package of 10 replacement inlet filters

CE

ORDERING INFORMATION

Model C21-A-B Dri-Gas Sampling System

Suffix A - Power	
1	120V AC, 50/60 Hz
2	240V AC, 50/60 Hz

Suffix B - Inlet Assembly	
1	Without Inlet Filter
2	With Inlet Filter option

NOTE: Gas condition systems do not include inlet and outlet tubing as every application requires different lengths. Order the total length of tubing needed for both inlet and outlet lines. **44-0124 Tygon/FEP Lined Tubing, 1/4 in.** (6.35 mm) **O.D., 1/8 in.** (3.18 mm) **I.D.**

Accessories

23-0002	Fuse, 2A Slo-Blow
36-0063	Replacement fan/inlet grill filters, pkg. of 6
05-0116	Peristaltic pump tubing kit, pkg. of 10

Trademarks appearing in this document are the property of their respective entities. Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists. © 2026 Badger Meter, Inc. All rights reserved.