

# SAM Compact Sampling System

## Stainless-Steel Sampling System

The SAM Compact Sampling System is designed to measure dew point or moisture content reliably and accurately in a wide variety of industrial gas applications up to 5000 PSIG. This sampling system is an economical and high-quality solution with a short lead time.



### Highlights

- Process connection via 1/4" tube fittings
- Dew point, moisture content, flow, contamination and pressure control
- Sample inlet pressure up to 5000 PSIG
- Modular design
- Stainless-steel tubing and fittings
- Flexible filtration options
- High-quality components
- Designed for challenging process environments
- Optional displays

### Applications

- Compressed air dryers
- Pneumatics
- Plastic molding
- Instrument air
- Hydrogen coolants
- Breathing air
- Pure feed gases
- Heat treatment gases
- Inert gases

# SAM Compact Sampling System

## A Reliable Sampler for Moisture

Process Sensing Technologies designs and manufactures a broad range of sampling systems for a wide spectrum of industries and processes from the economical compressed air market to the demanding oil and gas process market.

The SAM sampling system is a standard modular, high-quality product designed to address the needs for filtration, pressure, and flow control.

## High-Quality Materials

To ensure continuous and reliable dew-point or moisture measurement, it is important that the dew-point transmitter is exposed to stable conditions of the gas being monitored.

The SAM sampling system utilizes high-quality materials (gas-wetted parts) which provide the optimum response to moisture changes in the process.

## Filtration Flexibility

If the gas contains impurities, it is crucial to remove the contaminants before they reach the sensing device. The SAM is supplied with a filter housing, into which recyclable particulate or coalescing filter cartridges can be inserted.

Filtration methods:

- Particulate filter (solid contaminants)
- Coalescing filter with adjustable drain (solid and liquid aerosol contaminants)
- HDPE guard (filter) for sensing element (standard)
- Air filter with optional vacuum pump

## Pressure Control and Measurement

Pressure has a direct effect on dew point. The SAM utilizes a set of configurable components for atmospheric or process system line pressure dew-point measurement.

Pressure control features:

- Pressure gauge (dual scale: psi and bar) (optional)
- Metering valves (needle valve type)
- Self-regulating vacuum pump (optional)

## Flow Control

The flow rate of a gas can affect the transmitter's response time. Every sampling system contains a set of components which help maintain optimum flow (2 to 10 SCFH).

Flow control:

- Flowmeter
- Metering valves (needle valve type)
- Flowmeter with needle valve (with vacuum pump only)

## Mounting Variants

Depending on the application, the sampling system can be supplied in three variations:

- Mounted on base plate
- Mounted on a base plate inside an enclosure
- Mounted on base plate inside a windowed GRP enclosure
- Mounted on base plate inside a windowed SS enclosure (316 stainless steel)

## System Designs

Process Sensing Technologies has over 40 years' experience providing dew-point and moisture measurement solutions.

Our sampling system designs ensure that dew-point and moisture measurements can be performed in the most suitable conditions.

The SAM compact sampling system can be supplied in various configurations and can be used in conjunction with other PST products, as follows:

- Easidew Transmitter
- Easidew I.S. Transmitter
- Easidew PRO I.S. Transmitter
- Easidew PRO XP Transmitter
- Easidew Online Hygrometer
- Easidew Advanced Online Hygrometer
- SenzTX Oxygen Sensor

## Documentation Package

Every SAM is supplied with the following supplementary files for your sampling system:

- Manual
- Datasheet
- Flow diagrams

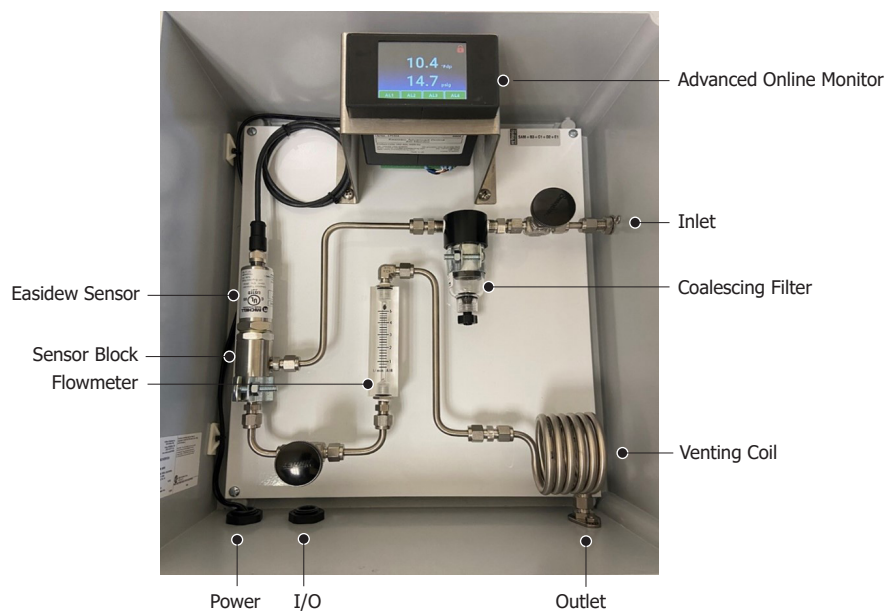
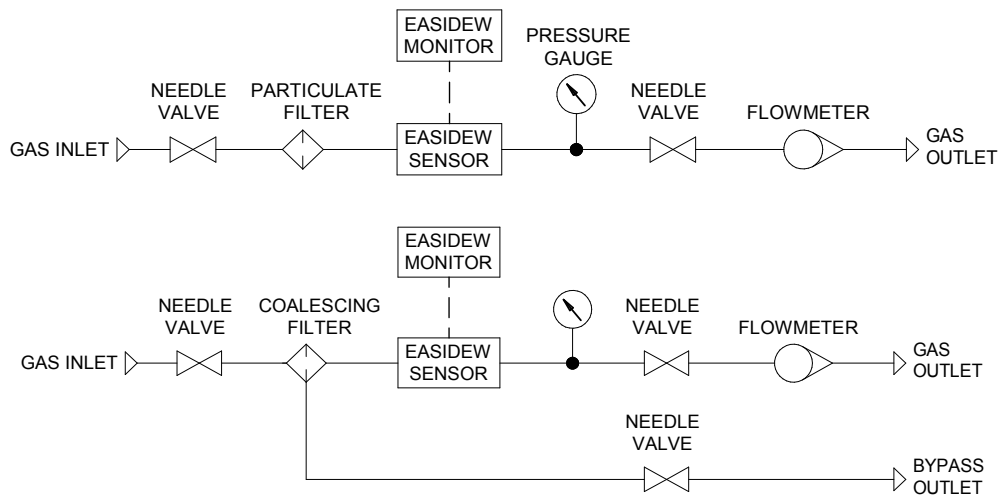
For add-on products such as transmitters or hygrometers (as mentioned above), a printed manual of the specific product is included with documentation.

## System Customization

If your application requires a customized solution, we have a specialized design and manufacturing facility to cover your requirements. Please contact us for more information.

# SAM System Configurations

GAS FLOW DIAGRAM



## Technical Specifications

Electrical Specifications	
Supply Voltage (vacuum pump only)	110 V AC**
Supply Voltage	24 V DC
Operating Specifications	
<b>Operating Temperature</b>	
<b>SAM fitted with:</b>	
Particulate or coalescing filter without monitor	+5...+140 °F (-15...+60 °C)
Particulate or coalescing filter with monitor	+32...+122 °F (0...+50 °C)
Vacuum pump with or without monitor	+32...+104 °F** (0...+40 °C**)
<b>Operating Inlet Pressure</b>	Pressures up to 5000 psig (350 barg) available upon request. Pressure tested to 2000 psig (135 barg)
<b>Flow Rate</b>	2...10 SCFH (1...5 NI/min)
Mechanical Specifications	
<b>Process Connections and Material</b>	Inlet/outlet process connections via 1/4" tube fittings, 316 stainless steel
<b>Gas-Wetted Parts</b>	Stainless-steel tube, filter housing and fittings (316 stainless steel), Filter element, Transmitter sample block (316 stainless steel), Flowmeter (borosilicate glass) with Viton® seals, Pump (Teflon®)
<b>Ingress Protection</b>	
<b>No enclosure</b>	No protection (base plate only)
<b>GRP &amp; SS enclosures</b>	IP66, NEMA 4X
<b>Housing Material</b>	
<b>Base Plate</b>	316 stainless steel
<b>GRP Enclosure</b>	Glass fiber reinforced polyester and 4mm safety glass
<b>SS Enclosure</b>	316 stainless steel and 4mm safety glass
<b>Dimensions</b>	
<b>Base Plate</b>	12" x 12" x 0.07" (304mm x 304mm x 2mm) (h x w x d)
<b>GRP Enclosure</b>	16" x 14" x 8" (406mm x 356mm x 203mm) (h x w x d)
<b>SS Enclosure</b>	20" x 16" x 8" (500mm x 400mm x 200mm) (h x w x d)
<b>Pressure and Flow Control</b>	
<b>Atmospheric or Process Pressure</b>	Via metering valves, pressure gauge and flowmeter
<b>Vacuum Pressure</b>	Metering valve, pressure gauge, flowmeter with valve and self-regulating vacuum pump**
<b>Gas Filtration</b>	
Particulate filter: Borosilicate glass microfibers (99.5+% removal of 0.1 micron particles) Coalescing filter: Borosilicate glass microfibers (99.5+% removal of 0.1 micron particles and aerosols)	
<b>Electrical Connections</b>	
<b>Base Plate</b>	Via terminal rail
<b>GPR and SS Enclosure</b>	Via M20 plastic cable glands
<b>Interchangeability</b>	
Fully interchangeable components	
<b>Sample Block Process Connection</b>	
Compatible with various dew-point transmitters with 5/8" and 3/4" UNF process connection	
Dew-Point Measurement Specifications (Optional)*	
<b>Measurement Range (dp)</b>	-148...+68 °F (-100...+20 °C) dew point, -166...+68 °F (-110...+20 °C) dew point
<b>Accuracy (dp)</b>	Up to ±1.8 °F (±1 °C) dew point Up to ±3.6 °F (±2 °C) dew point

\*For all other specifications refer to the Easidew and Easidew Online datasheets, available from your local PST representative. \*\*Not available for the SAM Easidew PRO XP version.

## Related Products



**Easidew Tx**  
Industrial Dew-Point Transmitter



**Easidew PRO I.S.**  
I.S. Dew-Point Transmitter



**Easidew Online**  
Dew-Point Hygrometer



**Easidew Advanced Online**  
Versatile Dew-Point Hygrometer



**Senz-TX**  
Oxygen Transmitter

Michell Instruments adopts a continuous development programme which sometimes necessitates specification changes without notice.  
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