

## Using the DewMaster Deluxe Dew Point/ Humidity Hygrometer

The Model DewMaster is a versatile, multi-function, optical chilled mirror hygrometer designed to continuously measure the moisture content in gases. Available in benchtop, NEMA 4, or 19 inch panel mount configurations, the DewMaster readily adapts to a wide range of applications. It offers Users a wide range of sensor choices and interface options. It has been field proven in laboratories, industrial environments, and many customized applications.

The DewMaster uses the chilled mirror (CM) dew point temperature condensation principle to determine the water vapor concentration in gas mixtures, and a precision platinum resistance thermometer to measure the mirror temperature. The CM uses a thermo-electric device to control the temperature of the mirror in determining dew point. Since it is a direct measurement of dew point and thus a Primary Standard Measurement Technique. The DewMaster is highly regarded by laboratories and manufacturing facilities for its accuracy, quick dry down, fast response in detecting upset conditions and long life characteristics.

The DewMaster may be fitted with a precision air temperature sensor (needed to determine RH), pressure transducer, and a wide range of either local or remote chilled mirror sensors.

Two main types of chilled mirror sensors are available for the Dewmaster: the remote mounted D-Probe featuring a two stage air cooled chilled mirror or the S-Series sensor- available in both local and remote mount configurations.

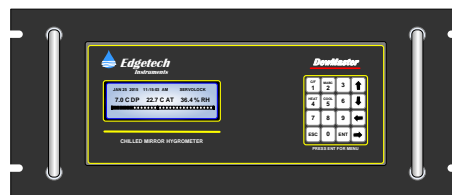
Depending on the desired measurement range, the S-Series sensor is available in Two or Three stage chilled mirror configurations. To accommodate different cooling thresholds, the S-Series sensor may be air cooled, fan cooled or liquid cooled.

In contrast, the D-Probe is only available as a Two-Stage chilled mirror. But since it is configured as a probe, it may be used in a wide array of applications including ambient air monitoring, insertion into glove boxes, HVAC ducts, environmental test chambers, circulation pipes, refrigerated storage rooms, engine test filter rooms,...

Table Top



19 inch Rack Mount



NEMA 4 with Optional Chiller

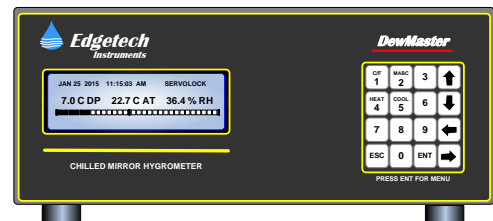


## The DewMaster offers many standard features including:

- PRIMARY STANDARD MEASUREMENT: Chilled Mirror measurement technique
- NIST Traceable calibration certificate
- Automatic Balance Cycle (ABC) automatically re-standardizes and corrects for contaminants
- Programmable Balance Cycle: ABC at programmed intervals or MABC (Manual ABC)
- Real Time Clock with date
- Two selectable Analog Outputs (4-20 mA , 0-20 mA, 0-5 VDC, 0-10 VDC scaleable)
- RS-232 Serial Interface
- Two programmable electrically isolated alarm relays
- Pressure Transducer input for psychometric variable
- Universal VAC Power Input

## Environmental Configuration Options

- Table Top standard
- NEMA 4
- 19 inch panel mount



## APPLICATIONS

*Metrology Labs*

*Environmental Chambers*

*Quality Assurance Labs*

*HVAC systems & Test Labs*

*Laser Lab Air Make-up*

*Clean Rooms*

*Diffusion Furnaces*

*Product Drying Chambers*

*Environmental Testing*

*Food Packaging*

*Medical Packaging*

*Data Center Air Makeup*

*RH exposure testing*

*Fuel Cell Testing*

*Furnace Applications*

*Pharmaceutical Powder Drying*

*Materials Testing*

*Plastics/ Molding Process*

*Chemical Reactors*

*Heat Treat/ Annealing Ovens*

*Engine testing*

*Calibration of other humidity sensors*

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Chilled Mirror Compatibility Chart

Applications CM Configuration	General Purpose Gases	Acids	Caustics	Salts	Organics	Nuclear Application	High Temperature
Chrome Plated Copper	A	D	D	C	C	D	C
316 Stainless Steel	A	B	B	B	B	C	B
Platinum	A	A	A	A	A	A	A
Teflon Coated Chamber	A	A	A	A	A	D	D
High Pressure Chamber	A	NR	NR	NR	NR	NR	A

- A**      Excellent
- B**      Very Good
- C**      Good
- D**      Not recommended
- NR**     Not Rated

**BENEFITS of the Edgetech Instruments Chilled Mirror Sensor:**

- Direct measurement method: recognized as a Primary Standard Technique
- **Improve** your quality control: Excellent Precision and Stability
- **Reduce Maintenance Costs:** Robust, Long Life, No moving parts, No consumables
- Rapid dry-down time in comparison to other technologies
- S series chilled mirror sensors come with auxiliary heat exchanger ports (1/4" tube) for connection to chilled liquid for measuring extremely low dew points.
- **Eliminate Scrap or Lost Time:** Fast response in responding to upset process conditions.

**Sensor Notes/ Sampling Configuration Options**

- The D-probe is mounted (*remote*) tethered on a signal cable.
- The S-series sensor can be mounted either local at the DewMaster or remote tethered.
- The standard D-Probe is configured for diffusion sampling.
- To measure an extracted flow of sample gas with the D-Probe, the optional flow through cover (SC) or the Sample Chamber (SC1) may be installed (includes fittings).
- A precision air temperature probe is optional. Temperature can be used to calculate and display Relative Humidity.
- The SMU vacuum pump module may be used to extract a gas sample from the measurement point and direct it through the sensor. Ideal flow is 1-2 SCFH
- An optional chiller may be used to obtain temperature depressions greater than 95C when using the S-series sensors. Chiller liquid ports are provided on all S3 sensors.
- Optional Pressure transducers may be specified to determine sample pressure and Psychometric calculations.

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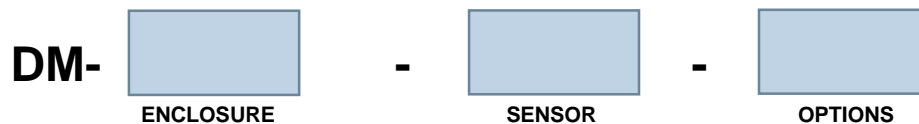
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## TO ORDER:

1. Determine type of measurement: DewPoint, Relative Humidity, Pressure, Temperature. If you need to measure RH, then you also need to include the temperature probe.
2. Determine the range of measurement and type of sensor: D-Probe or S-Series.
3. Your application determines whether to select local mounted sensor(s) or remote.
4. **Select type enclosure** based on the application: Table Top (standard), NEMA 4, or Rack.
5. **Select Sensor Type**
6. **Select Options** such as temperature sensor, Pressure Transducer, PPMv measurement,...
7. **List as separate line items additional choices such as Accessories, Calibration Packages, and Extended Warranty.**

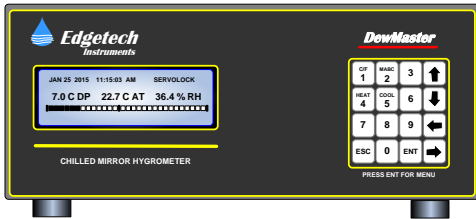


For Example: **DM-S3-ATDM** would be a DewMaster Table Top with S3 fan cooled CM sensor and air temperature probe.

**Configurations Available:**

**Enclosure:**

- DM-** standard is Table Top
- N** NEMA 4 Wall mount
- RMDM** 19 inch Rack Mount Kit
- PMDM** 19 inch Rack Mount Kit

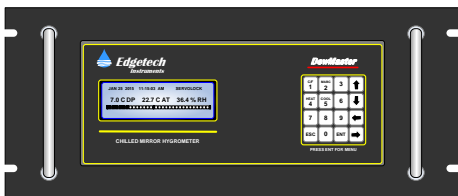


**STANDARD (DM): TABLE TOP**



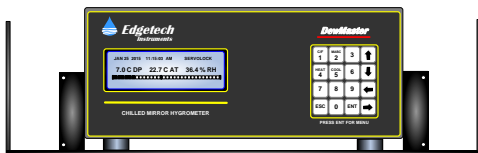
**NEMA 4 WALL MOUNT (DM-N):**

\* Shown with optional sampling and chiller



**RACK MOUNT (DM-RMDM):**

\* INCLUDES RACK SUPPORT TRAY & RACK FRONT PANEL



**PANEL MOUNTING KIT (DM-PMDM)**

\* INCLUDES SUPPORT TRAY & MOUNTING BRACKETS

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Chilled Mirror Sensors are available in the following configurations:

CM Sensors	Description	Stages TEC	TEC Cooling	Notes	Depression
DS2	Probe Style	2	Air Cooled	Chrome Pltd Mirror	60C
DS2SS	Probe Style	2	Air Cooled	316 SS Mirror	60C
DS2PT	Probe Style	2	Air Cooled	Platinum mirror	60C
S2	Flow-thru (upto 300 psig)	2	Air Cooled	Chrome Pltd Mirror	60C
S2P	FT- Hi Press(upto 900 psig)	2	Air Cooled	Chrome Pltd Mirror	60C
S2PT	Flow-thru (upto 300 psig)	2	Air Cooled	Platinum mirror	60C
S2SS	Flow Thru (upto 300 psig)	2	Air Cooled	316 SS Mirror	60C
S2T	Flow-thru (upto 300 psig)	2	Air Cooled	TF coated chamber	60T
S2SC	Flow-thru (upto 300 psig)	2	Fan Cooled	Chrome Pltd Mirror	65C
S2SCP	Flow-thru (upto 900 psig)	2	Fan Cooled	Chrome Pltd Mirror	65C
S2SCPT	Flow-thru (upto 300 psig)	2	Fan Cooled	Platinum mirror	65C
S2SCSS	Flow-thru (upto 300 psig)	2	Fan Cooled	316 SS Mirror	65c
S2SCT	Flow-thru (upto 300 psig)	2	Fan Cooled	TF coated chamber	65C
S3	Flow-thru (upto 300 psig)	3	Fan Cooled	Chrome Pltd Mirror	95C
S3T	Flow-thru (upto 300 psig)	3	Fan Cooled	TF coated chamber	95C
S3P	Flow-thru (upto 900 psig)	3	Fan Cooled	Chrome Pltd Mirror	95C
S3SS	Flow-thru (upto 300 psig)	2	Fan Cooled	316 SS Mirror	65c
S3PT	Flow-thru (upto 300 psig)	3	Fan Cooled	Platinum mirror	95C

### Options:

- ATDM Air temperature probe, stainless steel sheath with 10ft cable and connector
- PTDM Pressure Transducer, 0 to 25PSIA or 0-150PSIA, or 0-300PSIA
- PPM PPMv measurement @ fixed pressure
- SA/.1 0.1°C Special accuracy, traceable to NIST (Certified)
- SA/.15 0.15°C Special accuracy, traceable to NIST (Certified)

### Accessories/ Special Services:

- FIL Filter kit: includes fittings and additional elements; rated for .1 micron particulate
- SMU Sample Module Universal, 115/230 VAC operation
- SC Sample Cover: Flow Through Cover for D-Probe (near ambient pressure sample gas)
- SC1 Sample Chamber: Flow Through Chamber for D-Probe (up to 100 PSIG sample gas)
- CAB 3 channel cabinet holds up to 3 rack mounted Dewmaster modules
- CHL Self-Contained Chiller for use with S-Series sensors to measure lower dew points
- 3YEW 3 Year Service Contract

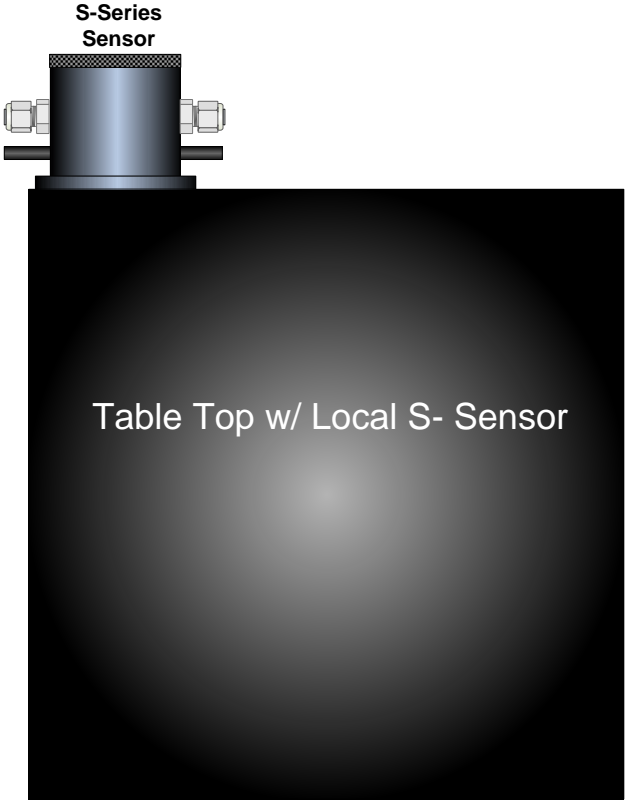
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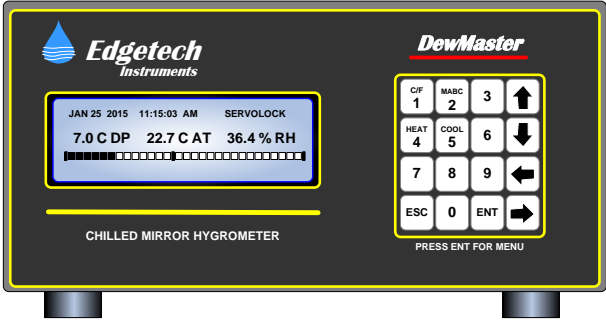
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# DewMaster Sensor Configurations:



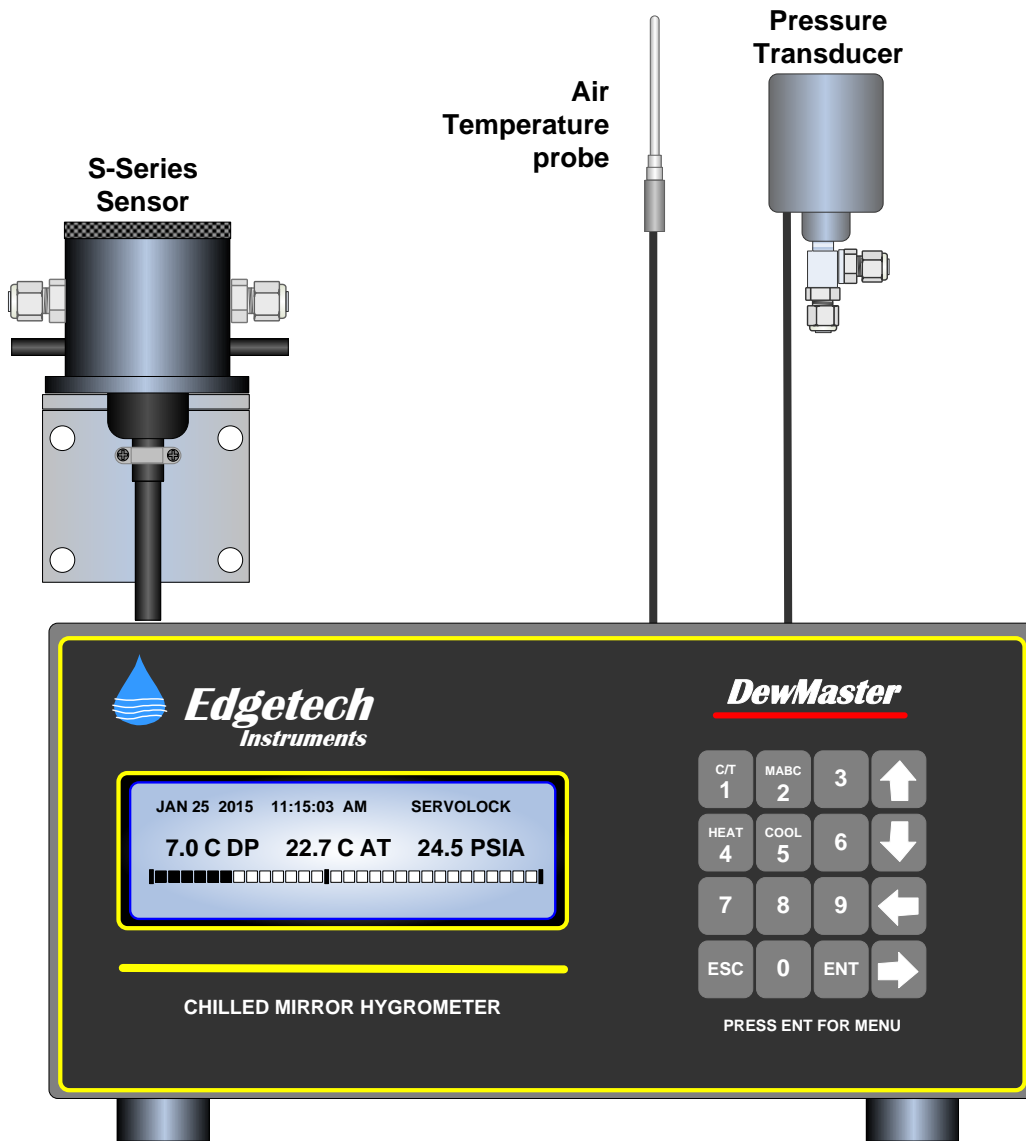
Top View of DewMaster



Front View of DewMaster

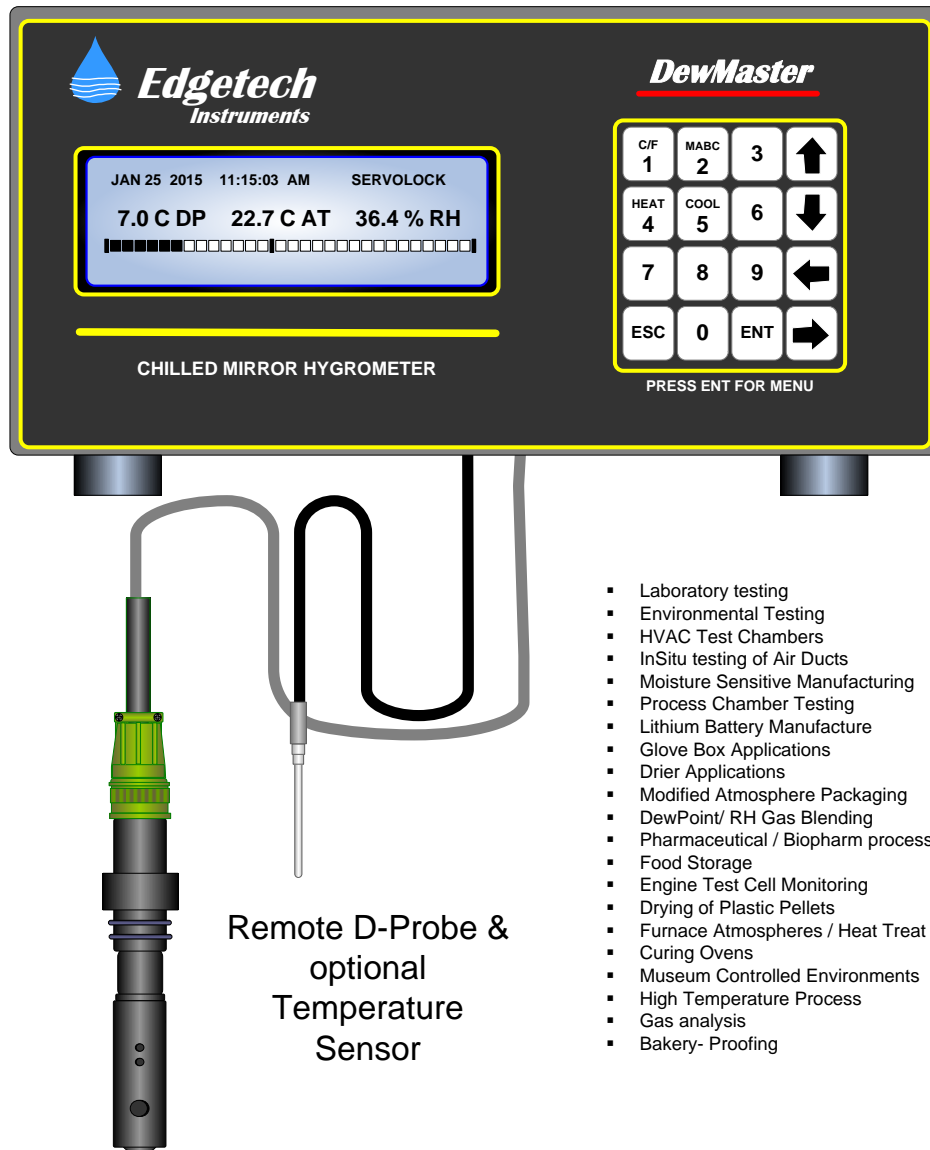
**S- Series Chilled Mirror Sensor mounted locally on the back panel of DewMaster**

**S- Series Chilled Mirror Sensor mounted remote from the DewMaster  
(Temperature and pressure probes also shown)**





## D- Series Chilled Mirror Sensor probe mounted remote from DewMaster



- Laboratory testing
- Environmental Testing
- HVAC Test Chambers
- InSitu testing of Air Ducts
- Moisture Sensitive Manufacturing
- Process Chamber Testing
- Lithium Battery Manufacture
- Glove Box Applications
- Drier Applications
- Modified Atmosphere Packaging
- DewPoint/ RH Gas Blending
- Pharmaceutical / Biopharm process
- Food Storage
- Engine Test Cell Monitoring
- Drying of Plastic Pellets
- Furnace Atmospheres / Heat Treat
- Curing Ovens
- Museum Controlled Environments
- High Temperature Process
- Gas analysis
- Bakery- Proofing

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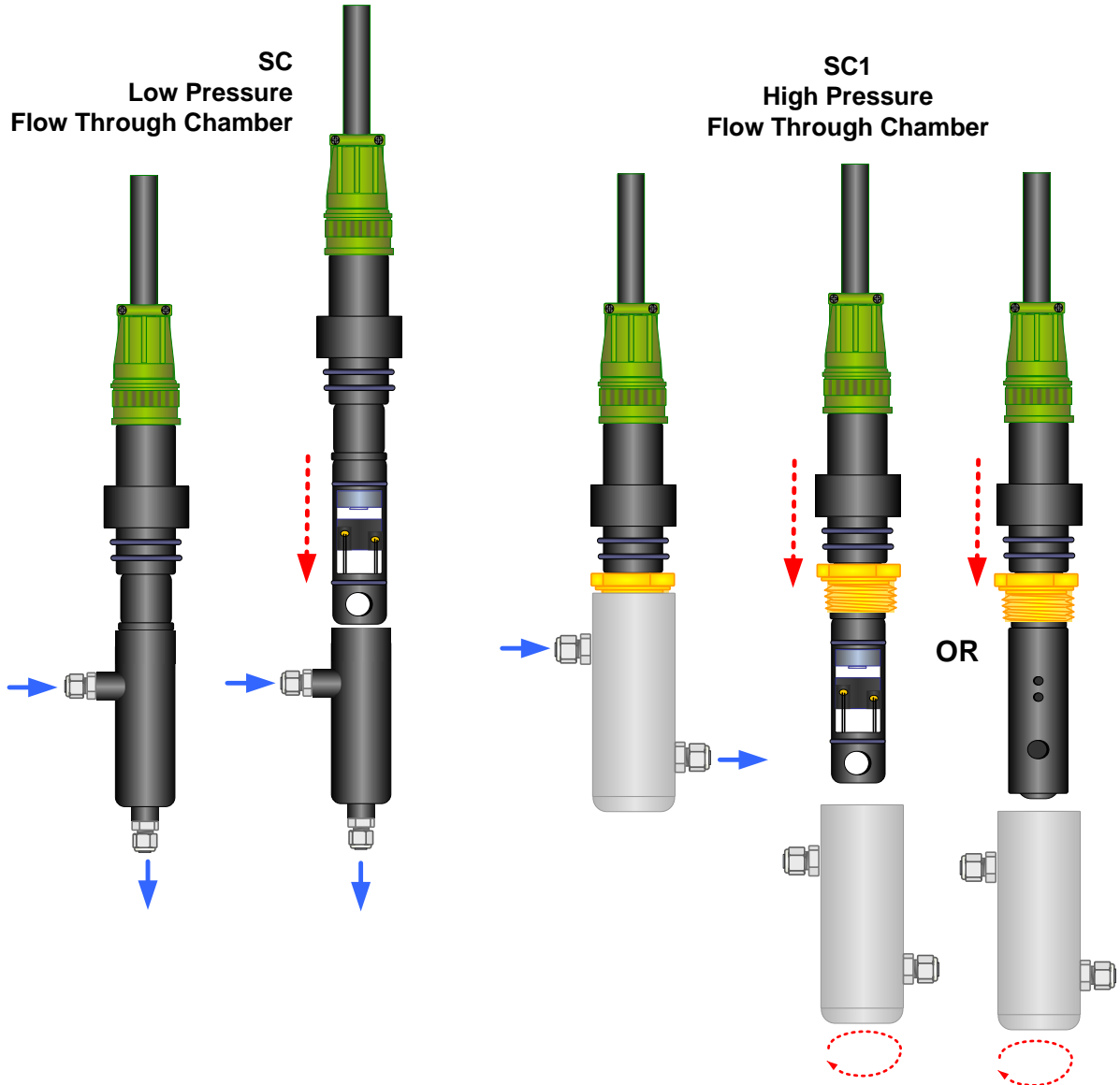
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## Flow Through D-Probe

### Flow Through Sampling with D-Probe and SC or SC1



**Insert the Probes close to the measuring point  
and monitor remotely!**

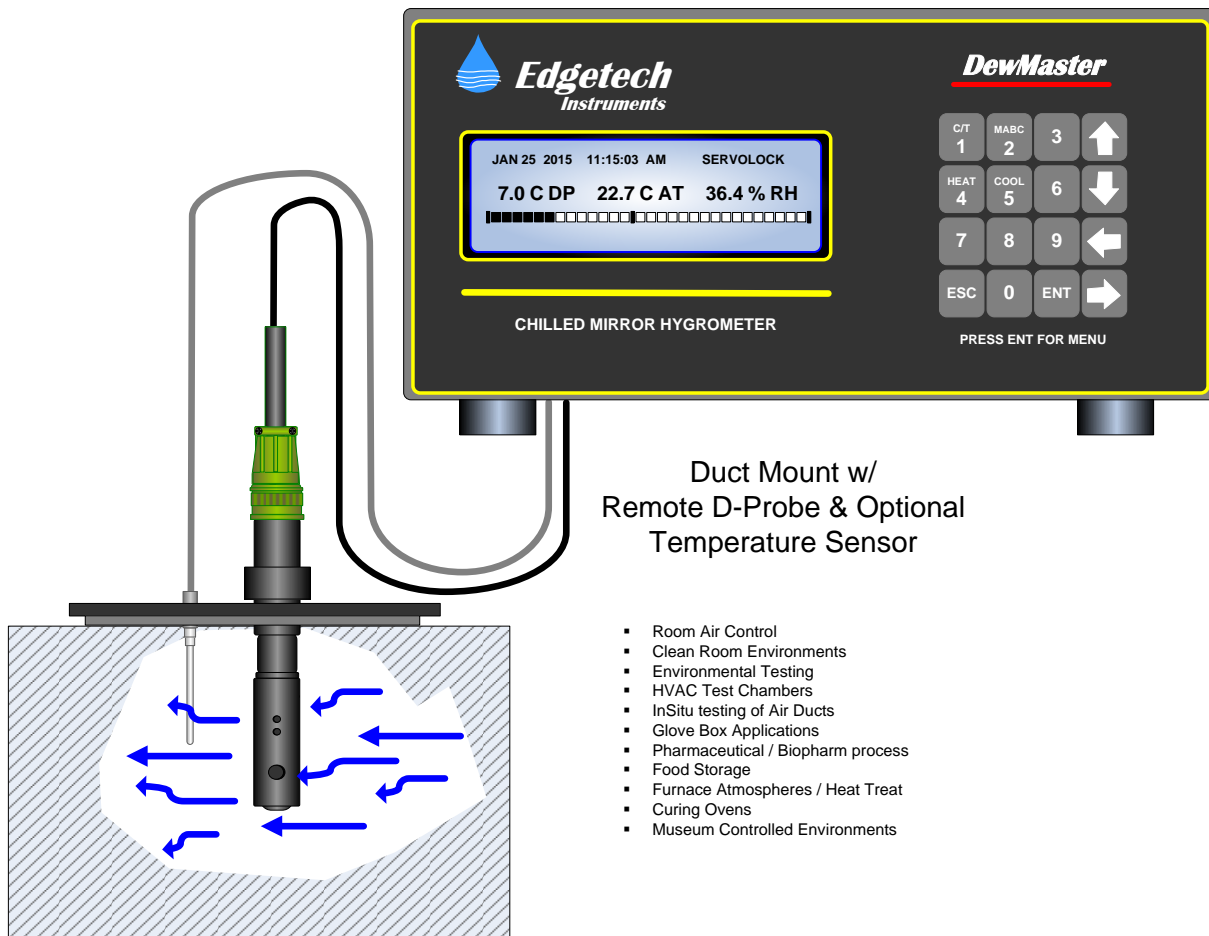
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## Other variations of the D-Series remote sensor probe



**Convenient Gasket Sealed Mounting Plate for use with the D-Probe!**

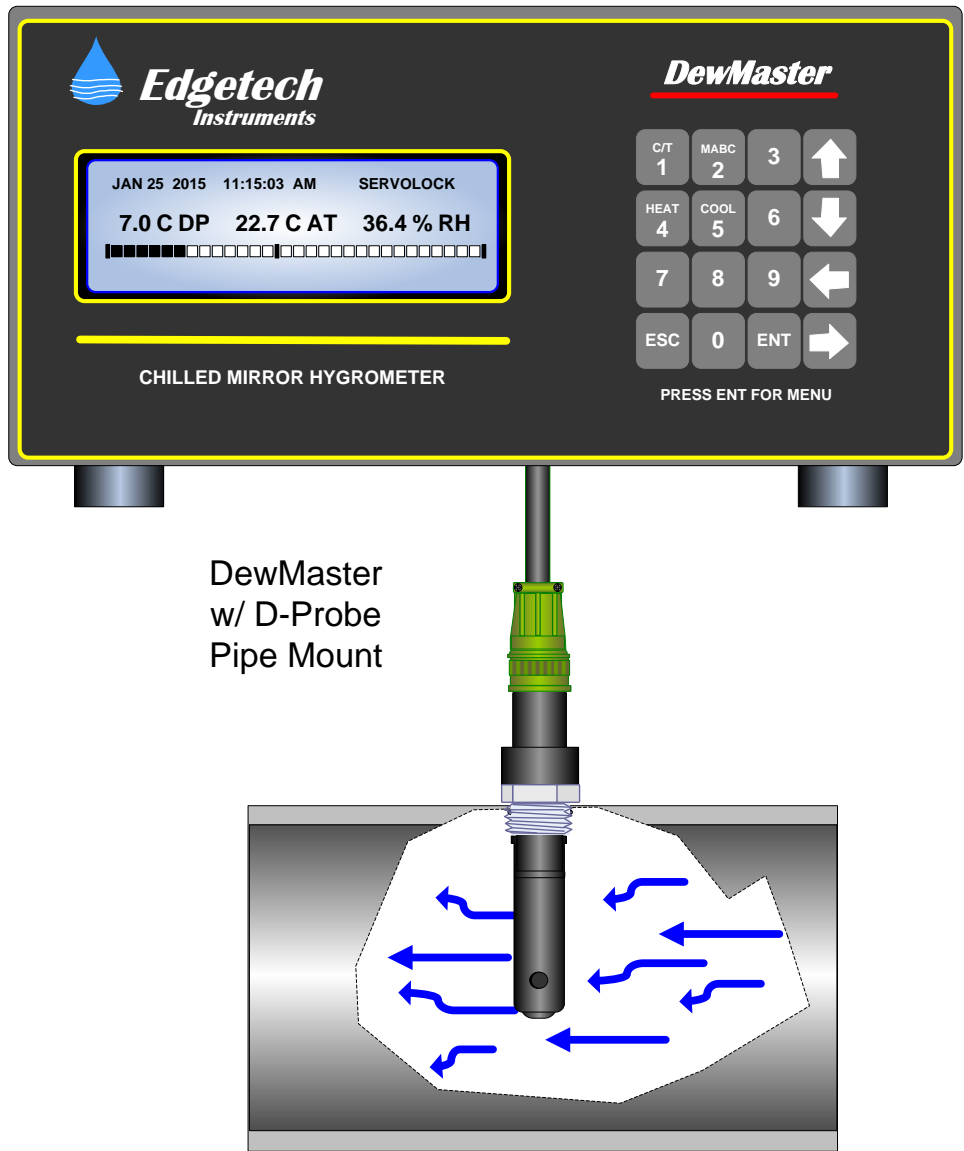
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**Other variations of the D-Series remote sensor probe (cont)**



**Standard Configuration of D-Probe Pipe mount rated to 100 psig Max.**

**In High Pressure applications, pressure may also have to be measured for accurate Dew Point measurements. (1.25 inch male NPT threaded penetration)**

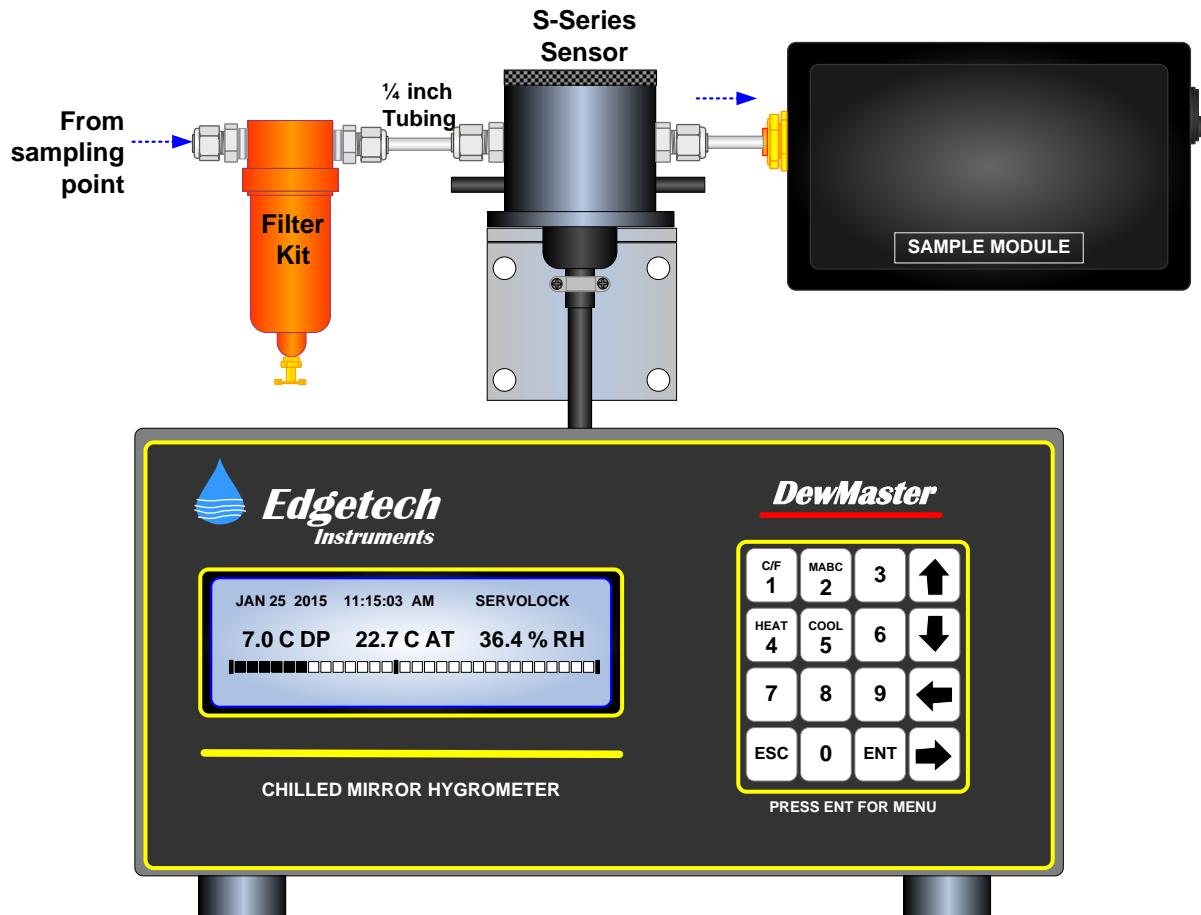
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## Using the SMU Vacuum Pump Module with the S-Series Chilled Mirror Sensor



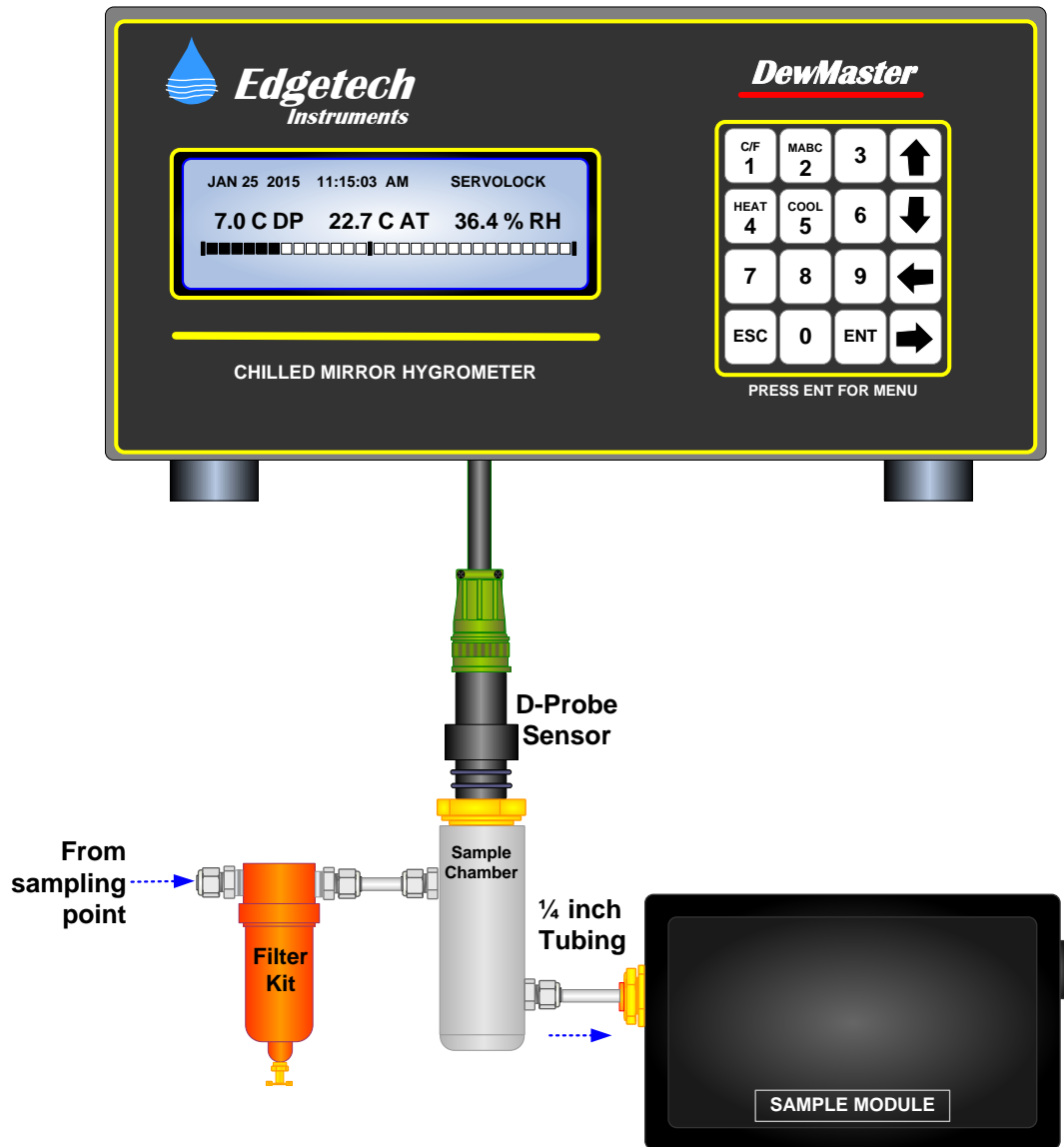
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## Using the SMU Vacuum Pump Module with the D-Probe



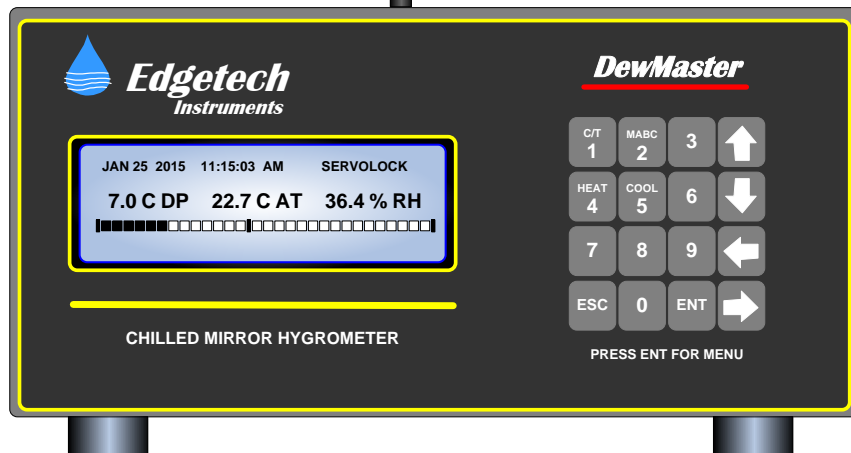
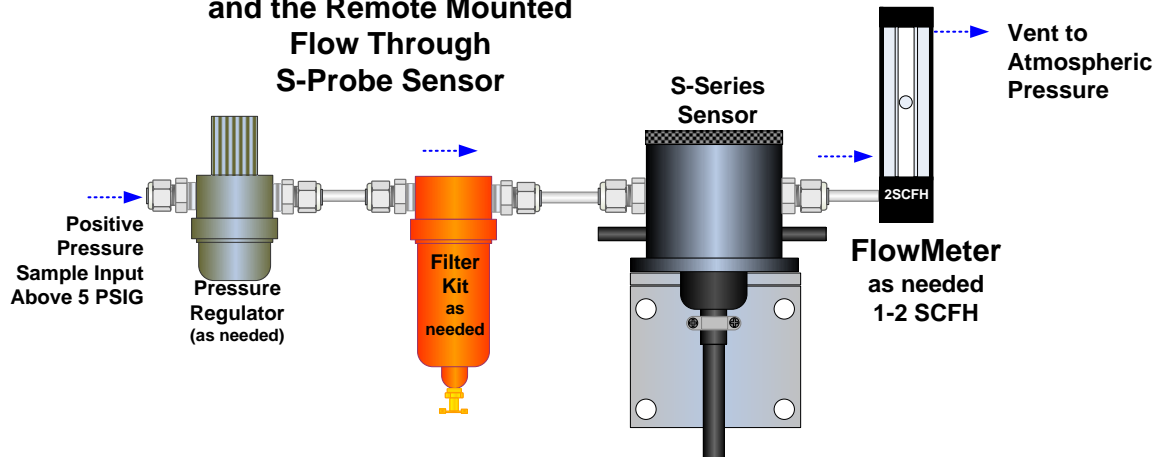
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**Working with High  
Positive Pressure Sample Gas  
and the Remote Mounted  
Flow Through  
S-Probe Sensor**



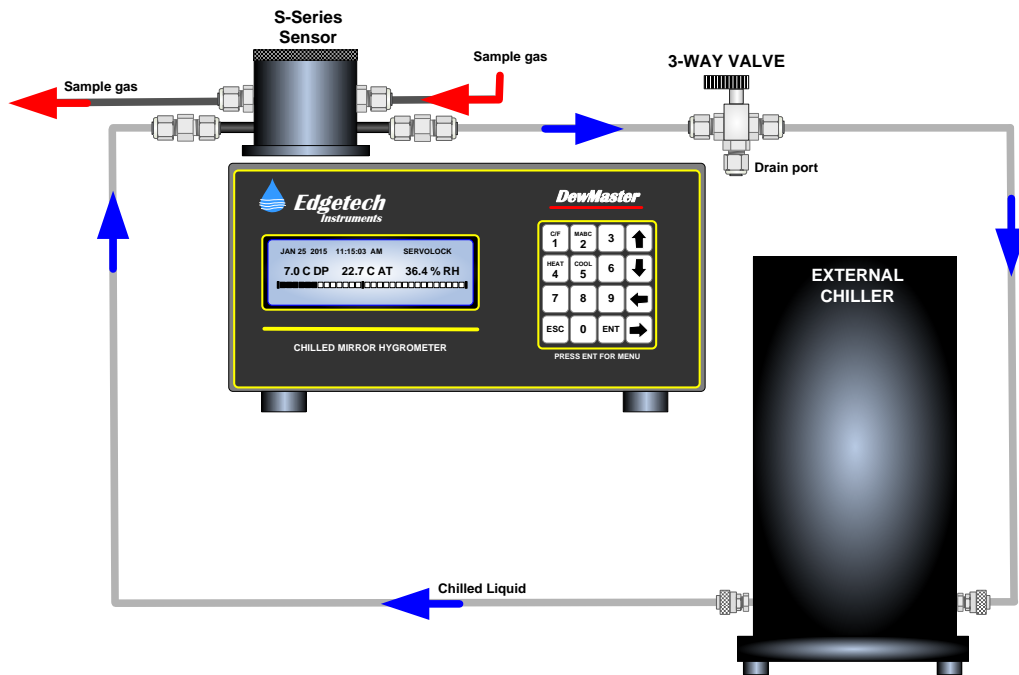
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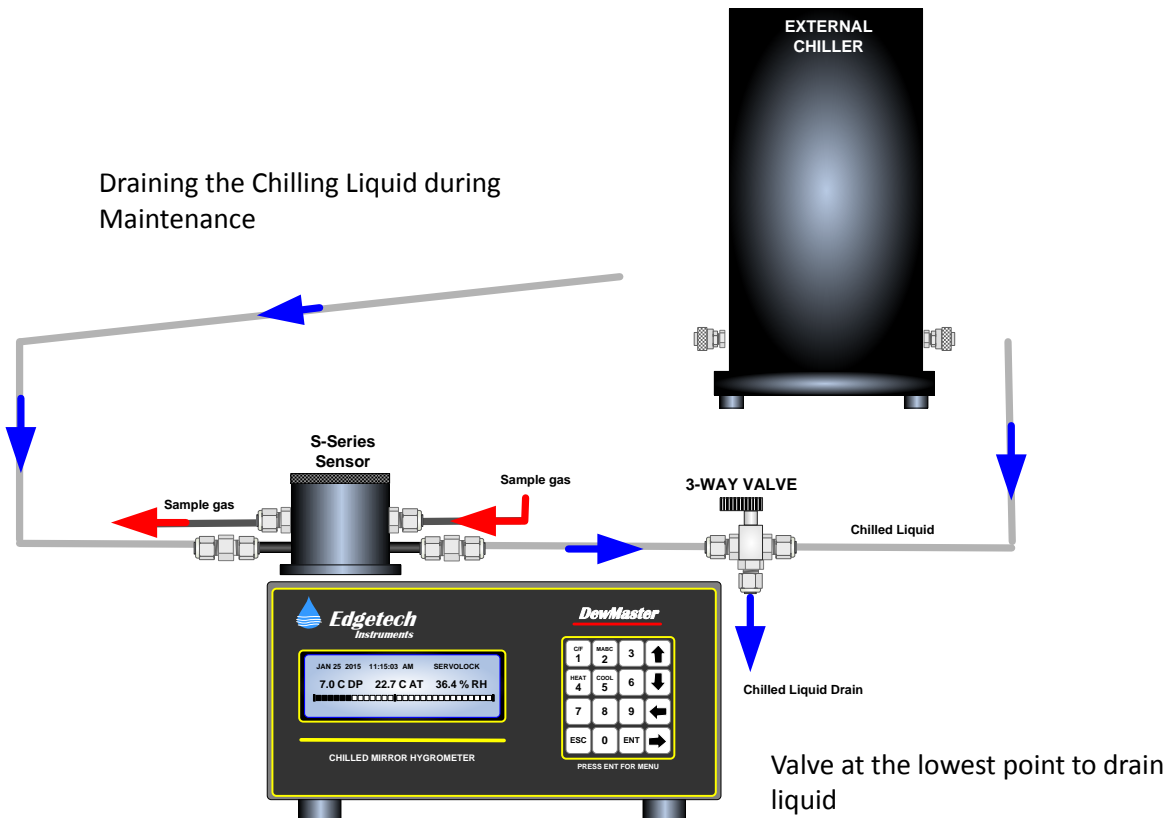
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## Using an external Chiller to acquire lower dew point measurements



Draining the Chilling Liquid during Maintenance



Valve at the lowest point to drain liquid

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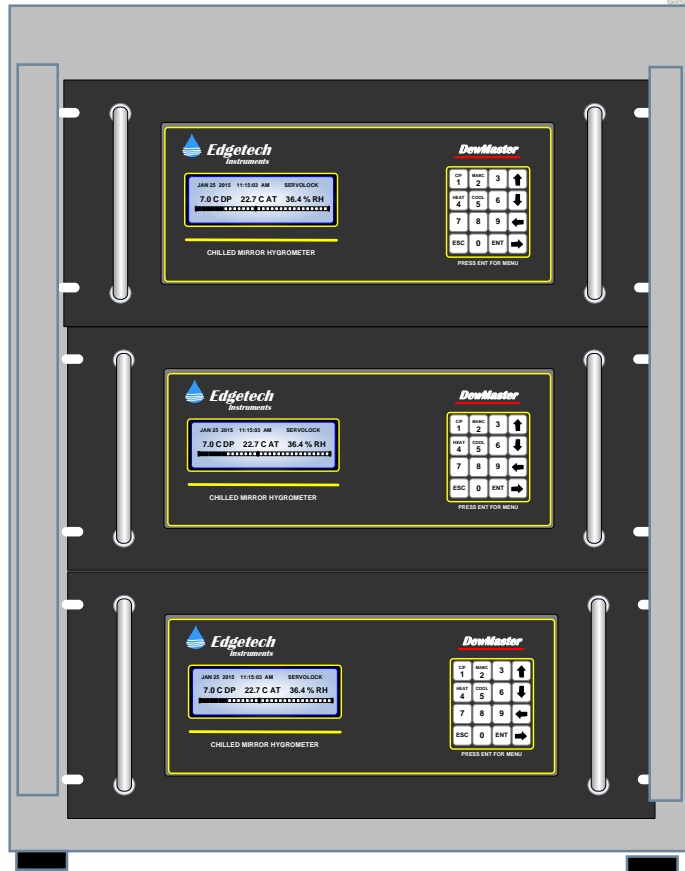


## 3 Channel Cabinet for Rack Mounted DewMaster

### DESIGN FEATURES

- Accommodates up to 3 x DewMaster Rack Mount Modules
- Highly styled and versatile steel cabinet
- Common Power Strip.
- Supplied w/ See-Thru front door with tempered glass window.
- Solid steel removable side panels.
- Equipped with 110V AC, 65 CFM exhaust fan for cooling.
- Cable access holes on top and bottom.
- Supplied with steel wall mounting bracket.
- Four mar resistant feet on bottom surface.
- Finish: Smooth Black Powder Coating

25in H x 23.62 W x 17.72 D



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