

# Rotronic Instrument Corp

## The New Low Dew Point Probe

Highly Accurate Measurement of Dew Point  
and Trace Moisture at Low Limits.



## **Webinar Presenters & Humidity Experts**



Bruce  
McDuffee



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# Agenda

- What is Dew Point, and Low Dew Point?
- Why measure Low Dew Point?
- The New Low Dew Point Probe from Rotronic?

# What is Dew Point?

- Dew point temperature is the temperature at which water vapor will begin to condense.
- The temperature at which a moist gas is saturated over a plane surface of pure liquid water.



# What is Pressure Dew Point?

Measuring the dew point temperature of gases at pressures higher than atmospheric pressure.

It refers to the dew point temperature of a gas under pressure. This is important because changing the pressure of a gas changes the dew point temperature of the gas.



# Pressure Effects on Dew Point

Rule of thumb:

- As pressure increases, dew point temperature rises and approaches saturation.
- As pressure decreases, dew point temperature goes lower and the air becomes dryer (relatively speaking)



# What is Low Dew Point?

- Relative humidity between 0 ... 10%rH @ app. 23°C
- Another name is Trace Moisture





# Applications

- Compressed Air Systems
- Nitrogen Supply e. g. for SMD Soldering
- Laboratory Environments, Glove Boxes
- Semi-Conductor Manufacturing
- Natural Gas Monitoring



# Why Measure for Low Dew Point ?

- Moisture is damaging
- Corrosion
- Contamination
- Malfunctioning of Controls
- Microbial contamination

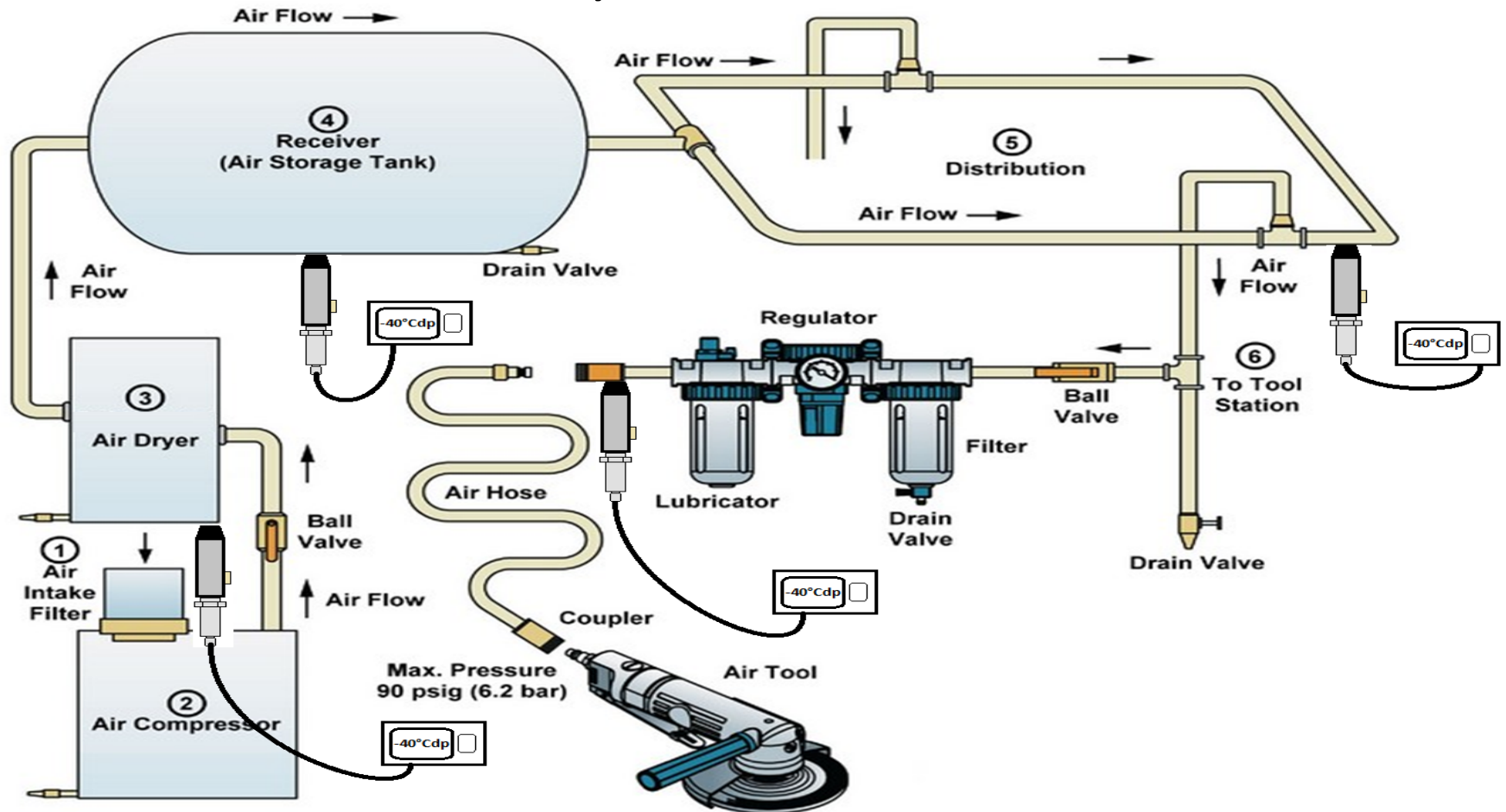


# Compressed Air The Fourth Utility

- 10% of all electrical use in US manufacturing
- Only 10% to 20% of electric energy input reaches the point of end use
- Among other contaminates WATER or ICE, deposited on inner surfaces of pipes and fittings can cause pressure drop. A loss in pressure is a loss in Energy.



# Where Should you Measure Dew Point?



# Comments & Questions



If we don't get to your question today, we'll respond via email after the webinar.

# Rotronic New Low Dew Point Probe

- Latest AirChip4000 technology.
- New HYGROMER LDP-1 Sensor



# General Specifications

- Dew Point accuracy
- Temp Sensor = PT1000 Class B 1/3
- Application Range = -60...85CTd / -40...85C
- Drift = 1 C Td/per year
- IP65 Housing



# Measurement Chambers

Measurement Chamber Specifications	
Air flow	1 liter/min. @ 8 bar (LDP-FC)
Measurement range	-40...85 °C / -50...100 °C (stainless steel)
Pressure resistance	16 bar / 100 bar (only LDP-MCS)
Dimensions	40 x 106 mm
Connections	G1/2" thread Compressed air fitting DN 7.2 (only LDP-FC) 2 x G 1/4" thread (only LDP-MC)
Housing material	Base unit: POM / Stainless steel 1.4301 Brass (fixed valve / quick connector)





# Rotronic Handhelds, Transmitters, & OEM

- HP22 & HP23 Handhelds
  - Portable and Easy to use
- HF5 and HF8 Transmitters
  - Fixed applications
- OEM Applications



# Comments & Questions



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# Next Webinar

- **Educational Webinar – Carbon dioxide Measurement Technology**
- Thursday, April 14, 1:00PM EDT
  
- **Product Webinar – Clean Room Panel Monitor (CRP5)**
- Tuesday, April 19, 1:00PM EDT
- Register at [www.rotronic-usa.com/product-webinars](http://www.rotronic-usa.com/product-webinars)

## More Resources

### **Rotronic Humidity Academy**

[www.rotronic-usa.com/humidity-academy](http://www.rotronic-usa.com/humidity-academy)

Check out the eNewsletters: Fun Facts, Mapping Matters and T<sup>3</sup>

[content.rotronic-usa.com/subscription-center](http://content.rotronic-usa.com/subscription-center)

## Helping you make a better humidity measurement – and more.

- Transmitters, portable meters and loggers for:
  - Humidity
  - Carbon Dioxide
  - Low Dew Point
  - Water Activity
  - Differential Pressure
  - Monitoring systems for cGMP
  - ISO 17025 calibrations (humidity and temperature)



# Post webinar survey

# Thank you!

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