



# DEW POINT METER

## Model 8072A

Item #165910

# INSTRUCTION MANUAL



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# Contents

Specifications.....	3
Product Overview .....	4
Operation .....	6
Sample Tubing Connection.....	6
Power Connection .....	7
Dryer Performance Testing .....	7
Remote Monitoring/Datalogging .....	8
Maintenance and Adjustments .....	9
Monitor Disassembly and Assembly .....	9
Sensor Replacement.....	10
Display Units & Alarm Set Point Adjust .....	10
Troubleshooting .....	13
Dry-Down Test .....	13
Troubleshooting Hints .....	14
Spare Parts.....	16
Warranty	

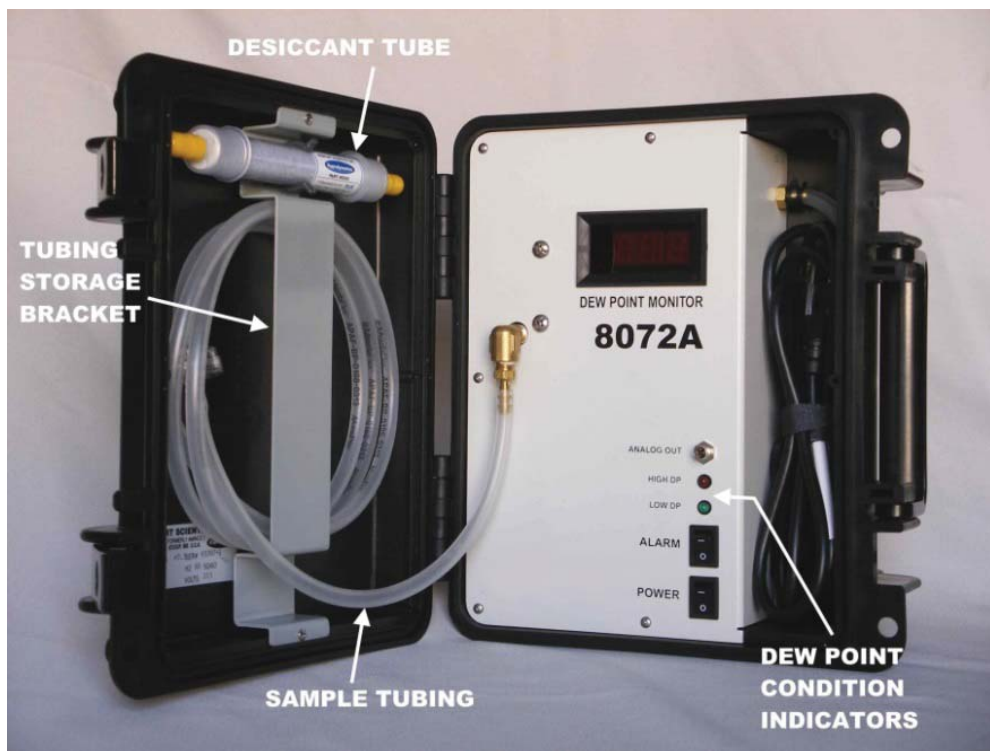
# Specifications

<b>DEW POINT RANGE</b>	-40°F to +15°F (-40°C to -9°C)
<b>TYPICAL ACCURACY</b>	±3°F (±1.7°C)
<b>ALARM SET POINT</b>	-10°F (-23°C)
<b>SENSOR PART NUMBER</b>	112254
<b>ANALOG OUTPUT SCALING</b>	-40°F to +70°F (-40°C to -9°C)
<b>ANALOG OUTPUT PORT</b>	3 pin M8 male jack
<b>POWER REQUIREMENTS</b>	115VAC 50/60HZ 0.15A max (230VAC optional)
<b>DIMENSIONS</b>	10.75" X 9.75" x 4.75"
<b>WEIGHT</b>	7.0lbs

# Product Overview

The 8072A dew point monitor is used to check the output dew point of a desiccant dryer. The monitor has a built-in vacuum pump which draws sample air to be measured and provides real-time indication of dew point on an LED display. Visual and audible alarm indicators warn when high dew points are detected.

The dew point monitor and its accessories are housed in a portable carrying case. Before using the monitor, familiarize yourself with the features shown below:



<b>POWER SWITCH</b>	Turns monitor ON and OFF.
<b>ALARM SWITCH</b>	Enables local audible alarm when dew point exceeds the alarm set point.
<b>LINE CORD</b>	Provides connection to power.
<b>BEEPER (not shown)</b>	Gives audible signal when the measured dew point is above the alarm set point.
<b>DEW POINT CONDITION INDICATORS</b>	Green light is on when dry air is detected, red light is on when measured dew point is above the alarm set point.
<b>SAMPLE TUBING</b>	Six feet of heat resistant tubing draws in process air to be measured.
<b>AIR FILTER</b>	Installed in-line with sample tubing, removes fine particulates from sample air.
<b>DESICCANT TUBE</b>	Provides dry air for testing the monitor's response.
<b>TUBING STORAGE BRACKET</b>	Allows storage for sample tubing and desiccant tube when not in use.
<b>ANALOG OUT</b>	4-20mA and 0-5V output for remote monitoring or data logging. Mates with standard 3 pin M8 female cable.

**NOTE: The 8072A is shipped with a desiccant pack which can be discarded when the unit is unpacked. The desiccant pack is different than the Desiccant Tube.**

## Operation

The 8072A is designed to sample process air that is near atmospheric pressure, *NOT* compressed air. If you are attempting to monitor compressed air, consult IMS Company for other model options.

**NOTE: For best sensor life and response time, avoid sampling ambient air of high humidity. Leave unit off when not monitoring a dryer or hopper.**

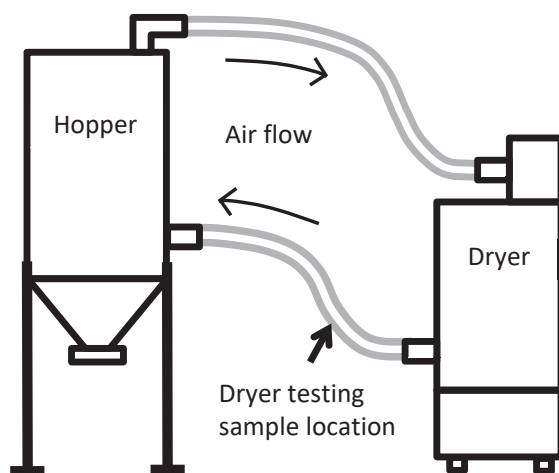
**CAUTION: The carrying case is not heat resistant. It may melt or distort if left resting on the hot parts of a heated dryer. If a surface is too hot to touch, it is too hot for the 8072A!**

## Sample Tubing Connection

To enable testing of your process air, you must provide fittings in your drying system that will accept the 8072A's 3/16" ID sample tubing. This can be a barbed hose fitting or a piece of 1/4" copper tube that penetrates your dryer's air hoses. This point of attachment must be secure and leak-free. Some dryer manufacturers provide a port for sampling. Check your dryers owner's manual for its location if available.

The sampling tubing supplied with the monitor can tolerate temperatures up to 275°F (135°C). Higher process air temperatures can be cooled to a safe level by sampling through a few feet of 1/4" copper tubing.

Select the sample locations based on your testing needs (refer to diagram below). It is suggested that you have a permanently accessible sample point. A barbed fitting with valve at the output of the dryer is best.



**NOTE: When storing the 8072A, carefully coil the sample tubing and tuck it behind the tubing storage bracket. This will prevent kinks from forming in the tubing when the lid is closed.**

## Power Connection

The 8072A is supplied with a 6 foot line cord for connection to power. Always connect the monitor to the correct supply voltage. Do not attempt to replace the line cord with a different plug type to accommodate other supply voltages. The 8072A will be damaged if connected to incorrect supply voltage.

## Dryer Performance Testing

The performance of a dryer can be evaluated by measuring the dew point of its output air.

Connect the 8072A sample tubing to a point on the dryer's output line, before the hopper. Make sure not to exceed the sample tubing temperature rating.

Turn on the 8072A and allow the reading to stabilize. The initial reading will be +15°F (-9°C) until all the ambient air is purged



from the monitor's tubing and internal fittings. After a few minutes, the reading should start to drop until a stable reading is obtained. It can take 30 minutes or more for the unit to stabilize when first turned on.

**NOTE: Not all dryers produce a -40° dew point. Check with your dryer manufacturer for expected dew point levels.**

Leave the 8072A connected and turned on during material drying and processing. The built in red light and audible beeper will indicate dryer trouble within moments of a dew point rise.

A constantly high reading on the 8072A may indicate a malfunctioning dryer or one that is overloaded by damp material in the hopper. If you suspect that the 8072A is giving an incorrect high reading, perform the Dry-Down Test described in the Troubleshooting section of this manual.

## Remote Monitoring/Data logging

The 8072A analog output jack can be used to monitor or log dew point over a period of time.

The output jack is a 3 pin male M8 type connector. This connector accepts standard threaded or snap fit female M8 cables.

PIN 1	0-5V signal
PIN 3	Ground
PIN 4	4-20mA self-powered signal (current sourcing)

Note that the output scaling is -40°F to +70°F.

# Maintenance and Adjustments

IMS Company offers a maintenance and calibration service for the 8072A. This service should be performed annually, especially if you are an quality certified company. During the calibration service most common parts are checked. Alternatively, most wearable parts can be replaced by the user if you are not taking advantage of the calibration service.

To access the serviceable parts inside the monitor, the 8072A panel must be removed from the carrying case.

## Monitor Disassembly and Assembly

**WARNING: Unplug the 8072A from power before disassembly. Even with the power switch off, voltages are present inside the unit.**

Slide the sample tubing off of the front panel elbow.

Use a screwdriver to remove the 5 screws along the perimeter of the panel holding it in the case. Use the sample tubing elbow to help lift the panel straight up and out of the case.

When re-assembling the panel into the case, make sure sensor cable wires are tucked in and not binding under the panel as you lower it into the case.

Install the 5 mounting screws, taking care not to cross thread the screws as you proceed. The screws only need to be snug to the panel, do not overtighten!

## Sensor Replacement

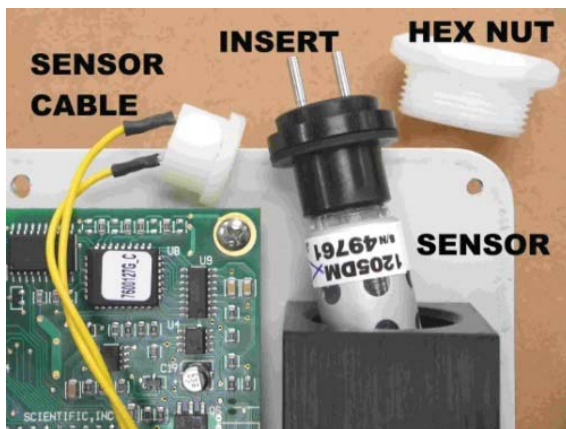
The internal sensor should be replaced on a yearly basis. It is difficult to verify the accuracy of the sensor in the field. For



most users, an annual sensor replacement can assure good operation of the monitor. It is recommended to replace the sample tubing and air filter whenever the sensor is replaced.

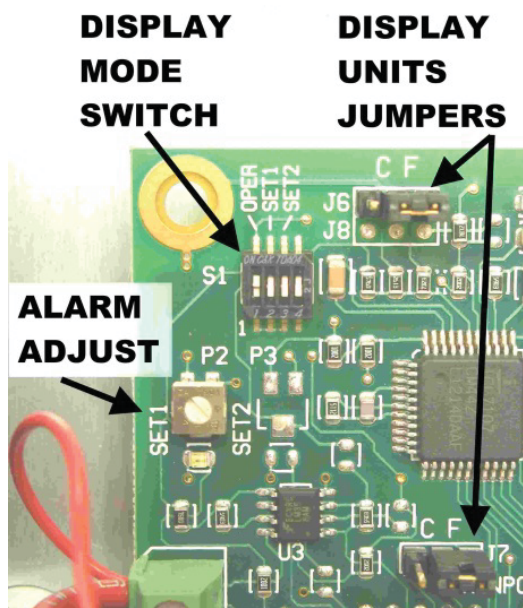
With the panel removed from the case, locate the sensor housing and pull the sensor cable connector from the housing. The cable will unplug straight out.

Unscrew the hex nut from the top of the sensor housing. With the hex nut unscrewed, remove the sensor and insert along



with gasket. The sensor will then unplug from the insert. Replace sensor and inspect gasket for damage. Reassemble all parts, hand tighten the hex nut, and plug in the cable connector.

## Display Units & Alarm Set Point Adjust

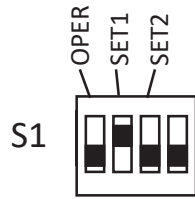


The 8072A is factory set to display dew point in °F. The display can be changed to °C by jumper configuration. With the 8072A panel removed from the carrying case, locate the configurable parts near the upper left corner of the PC board. Move J6 and J7 jumpers to the C position to display dew point in °C.

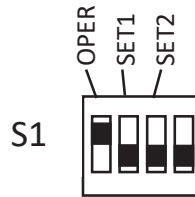
To change the dew point at which the monitor indicates an alarm (high dew point indication), use the DISPLAY MODE SWITCH labeled S1 and the ALARM ADJUST potentiometer labeled SET1.

**WARNING: The alarm set point adjustment is performed with the 8072A powered on. Avoid touching live electrical parts during this procedure as hazardous voltages are present!**

Apply power to the unit and turn it on with care, making sure not to touch any electrical terminals inside.



Configure the S1 switch as shown here, with SET1 position ON and all others OFF. In this configuration, the front panel display will indicate the current alarm set point. Adjust the SET1 (Alarm Adjust) potentiometer located on the circuit board to the desired set point.



When the front panel display indicates your desired set point, return the S1 switches to the normal operating configuration. The front panel display will now show the actual measured dew point (note that most ambient air will cause the monitor to read +15°F).

Disconnect power and reinstall the 8072 panel into the carrying case.

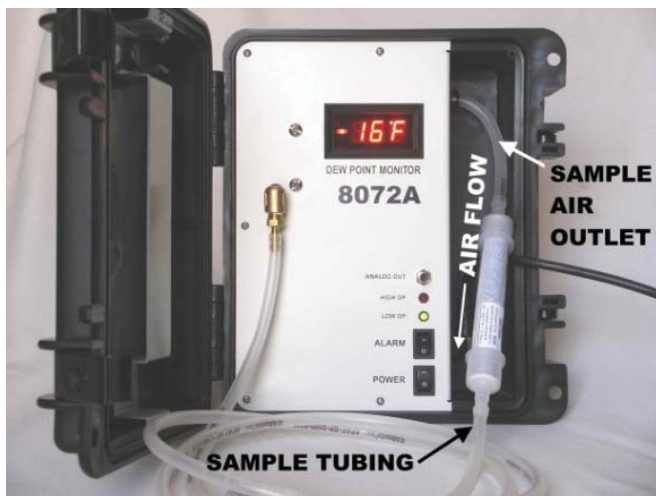
# Troubleshooting

## Dry-Down Test

The desiccant tube is used to provide a reliable source of dry air for field testing the monitor's response. Follow this procedure if the monitor indicates a constant high dew point but you suspect that your process air is dry.

**NOTE: The desiccant in the tube should turn blue. If the color has faded, the desiccant should be regenerated by pouring the desiccant into a suitable container and then heated in a 350° F oven for one hour. This can also be done in a microwave oven for 10 minutes set on high. Allow desiccant to cool and replace back in tube.**

Remove the yellow caps from the ends of the desiccant tube-



save them for re-use. Connect the sample tubing to one end of the desiccant tube, and the sample air outlet to the other end. This will create a closed loop of dry air flow

through the monitor and desiccant tube. Turn on the dew point monitor. In a few minutes, the reading should start to drop from +15°F (-9°C). Allow up to an hour for a -40° reading. If the monitor doesn't respond, refer to the troubleshooting hints for more information. Replace the desiccant tube caps when done.

## Troubleshooting Hints

### Monitor display is stuck at +15°F (-9°C)

<b>Possible Cause</b>	<b>Corrective Action</b>
Room air getting into monitor	Make sure the fitting at your sample point is air tight. Also, check for a cracked air filter and replace if needed.
Inadequate sampling suction	With monitor on, use finger to block sample tubing. If you don't feel suction, the vacuum pump may be worn or damaged, or the 2 pin insert holding the sensor may be cracked and leaking. Monitor should be serviced.
Sensor worn or contaminated	Using a fresh desiccant tube, perform the Dry Down test. If response is slow, replace sensor.
Sampled air is not dry	Sampled air must have a dew point of +15°F or lower for monitor to respond. Check the Operation section for proper use of the monitor.

## Monitor reads -40° when turned on and doesn't change

Possible Cause	Corrective Action
Sensor cable disconnected	Disassemble the monitor and make sure sensor cable is plugged into the 2 pin insert.
Sensor broken or missing	Unplug the sensor cable and short the cable pins together with a jumper wire. Turn monitor on and check for +15°F on display. If so, the sensor needs replaced.
Circuit board defective.	Unplug the sensor cable and short the cable pins together with a jumper wire. Turn monitor on and check for +15°F on display. If display stays at -40°, the monitor needs factory service.



## Monitor is slow to respond

Possible Cause	Corrective Action
Inadequate sampling suction	With monitor on, use finger to block sample tubing. If you don't feel suction, the vacuum pump may be worn or damaged, or the 2 pin insert holding the sensor may be cracked and leaking. Monitor should be serviced.
Sensor worn or contaminated	Using a fresh desiccant tube, perform the Dry Down test. If response is slow, replace sensor.
Sample tubing or air filter is dirty	Inspect sample tubing and air filter and replace if loaded with resin dust.

## Spare Parts

Item	Part No.
Sensor	112254
Air filter	103808
High temp sample tubing (per ft)	4100133
2 pin insert	0900106
Gasket for insert	1000613G
Desiccant tube	103796
Field wire-able analog out connector	0300201