

DEW POINT MONITOR KIT

MODEL: DPM8073K

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DIAGRAMS

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MODEL DPM8073K

The Dew Point Monitor is an on line instrument for checking the operation of a desiccant dryer. The monitor samples process air from the dryer into an internal manifold containing a HYGROSENSOR which varies in resistance proportional to the dew point of the sampled air.

SPECIFICATIONS

| | |
|-----------------------------------|------------------------------------------------------------------------------------------------------------|
| Dew Point Range | -40°F to +15°F (-40°C to -9°C) |
| Sensor Part # | 1205DM |
| Maximum Sensor Temperature | 140°F |
| Accuracy | ±3°F |
| Alarm Set Point | -10°F (-23°C) (Adjustable, see Electronic Test Procedure) |
| Remote Alarm Relay | Normally open and normally closed contacts, Rating: 5 amps at 115VAC |
| Recorder Output | 4-20mA or 0-5V Linear Output |
| Indicator Lights | <u>GREEN</u> indicating acceptable "dry" condition <u>RED</u> indicating unacceptable "moist" condition |
| Power Requirements | 115VAC 50/60Hz, (230VAC available) |
| Power Consumption | 5 Watts |
| Dimensions | 9-1/2" x 7-1/2" x 4" Deep |
| Weight | 8 lbs. shipping |

PRINCIPLE OF OPERATION

The HYGROSENSOR™ is excited by an internal circuit which drives the LED display and illuminates either the red or green light. The unit also displays the dew point within the range of -40°F to +15°F.

A green light indicates a properly functioning desiccant dryer. High dew point will cause the relay to actuate and close the COM and NO (normally open) terminals.

When the Dew Point Monitor displays a High Alarm, the following conditions should be considered:

1. There is a leak in the dryer system or sampling line.
2. The dryer is overloaded by excessively wet material.
3. The dryer has mechanical or electrical failure.
4. The Dew Point Monitor has failed (see calibration and maintenance instructions).

INSTALLATION

NOTE

This model is shipped with the sensor not installed. Refer to the "Sensor Replacement Procedure" for sensor installation details.

The Dew Point Monitor is normally used to sample air that is at a slight static pressure to enable process air to flow through the sensor manifold. Faster response may be obtained by using a vacuum pump at the manifold outlet.

1. Chose an appropriate location and panel cutout for your application.
2. Mount components and wire voltage to the terminals labeled HOT and NEUT.
3. Connect sample airline to SAMPLE AIR INLET as labeled on drawing.
4. Attach a length of tubing to the sample air exhaust to prevent ambient air from migrating into manifold.
5. Unit is now ready for operation.

The terminals labeled NC, COM, and NO are for alarm indication. The NC and COM terminals are closed when there is no alarm. The NO and COM terminals close when alarm occurs.

Under normal operating conditions, the Dew Point Monitor will respond to changes in dew point within a minute. However, when first starting up the system it may take 10-15 minutes for the reading to stabilize. This is the time required to purge residual moisture from the sample lines and sensor manifold. Progressively slowing response time is normal with sensor age.

CALIBRATION & MAINTENANCE

Sensor Replacement Procedure

Replacement of the sensor is recommended on a **yearly** basis.

**** Remove power to the Dew Point Monitor before servicing.**

1. Disconnect the sensor cable from the manifold.
2. Remove the hex nut and slide the sensor and socket out of the manifold. Remove old desiccant capsule from manifold if present.
3. If your new sensor is packaged with a desiccant capsule, drop it into the manifold.
4. Remove old sensor from socket and press the new sensor into the socket. Then slide the sensor and socket into the manifold.
5. Replace and hand-tighten the hex nut.

Alarm Set Point Adjustment

Set S1 to SET1 mode by turning position 2 ON and all others OFF. Turn SET1 of Pot P2 until display reads -10°F . Set S1 to OPER by turning position 1 ON and all others OFF.

Display Units Selection

The Dew Point Monitor is factory set to display dew point in $^{\circ}\text{F}$. To change the display to $^{\circ}\text{C}$, use needle nose pliers and move J6 and J7 to the C position.

Recorder Output Selection – TB3

The 6392N provides both outputs, 0-5VDC at terminal 1 and 4-20mA at terminal 3, which represent -40°F to $+70^{\circ}\text{F}$. Terminal 2 is signal ground.

Electronic Test Procedure

This procedure checks the operation of the circuit. Perform this procedure if the electronics are suspect.

WARNING

THE FOLLOWING PROCEDURE IS PERFORMED WITH POWER APPLIED. TO PREVENT SHOCK, DO NOT TOUCH ANY TERMINALS INSIDE THE DEW POINT MONITOR.

1. Disconnect the brown sensor cable from the sensor manifold.
2. Connect the dew point monitor to power and turn it on. With sensor cable disconnected, the dew point monitor should read $-40^{\circ}\text{F} \pm 1^{\circ}\text{F}$.
3. Place a jumper across the sensor cable. The dew point monitor should read $+15^{\circ}\text{F} \pm 1^{\circ}\text{F}$.

If display fails to read these values, contact Plastic Process Equipment for factory service.

SPARE PARTS

1205DM.....Hygrosensor

