

# PORTABLE DEW POINT MONITOR

MODEL 8072, 8072-230VAC  
(units made after 2002)

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ADDENDUM	
Wiring Diagram Drawing No. 6392NWD	
Assembly Drawing No. 8072ASSY	

## PLASTIC PROCESS EQUIPMENT, INC.

8303 CORPORATE PARK DRIVE  
MACEDONIA, OHIO 44056

PHONE: (800) 362-0706

FAX: (800) 223-8305

MANUAL/8072PPE\_E

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## INTRODUCTION

The 8072 Dew Point Monitor is ideal for checking the operation of a dryer or confirming the dryness of plastic resin in a hopper. The monitor draws process air from the dryer or hopper into an internal manifold containing a sensor which provides dew point measurement.

## SPECIFICATIONS:

<b>Dew Point Range</b>	-40°F to +15° F (-40°C to -9°C)
<b>Sensor Part #</b>	1205DM
<b>Accuracy</b>	±3°F
<b>Alarm Set Point</b>	-10°F (-23 °C) Adjustable
<b>Recorder Output</b>	4-20mA scaled as -40°F to +70°F (0-5V optional) $\text{mA} = \frac{\text{DP} + 67.5}{6.875} \quad \text{or} \quad \text{V} = \frac{\text{DP} + 40}{22}$ -40°F = 4mA or 0V 70°F = 20mA or 5V
<b>Indicators</b>	GREEN LIGHT during "dry" condition RED LIGHT and BEEPER during high dew point
<b>Power Requirements</b>	115VAC +10% (230VAC optional) 50/60Hz
<b>Power Consumption</b>	5 Watts
<b>Pump Specifications</b>	Flow: 2.5 L/min (0.08 SCFM) Vacuum: 6.8" of Hg Pressure: 3.2 psi (All pump specifications are nominal)
<b>Dimensions</b>	8072 Carrying Case - 9" x 12-1/2" x 5" Deep
<b>Weight</b>	8 lbs. shipping

## **OPERATION**

The 8072 is designed to sample process air at a pressure between -1 psig and +7psig. This range of air pressure is typical of that found in a plastics drying system. If you are sampling compressed air, consult factory for other model options. The plastic tubing supplied with this monitor can withstand temperatures up to 275°F. Higher temperature air can be cooled to a safe level by sampling through a short length of copper tubing.

Older models with built-in copper cooling coils are supplied with clear PVC tubing. This tubing should be limited to 180°F.

**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.**

Some units have a brass selector valve on the side panel. This valve should remain closed during any operation to prevent ambient air from leaking into the sensor manifold.

The 8072 is packaged for convenient spot checking of dryers or hopper systems, but it can be used continuously to monitor process conditions, with the beeper indicating excessive moisture.

### **Dryer Output Sampling**

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

1. Connect the 8072 sample tubing to a point in the drier's output. Make sure not to exceed the supplied tubing temperature rating.
2. Turn on the 8072 and allow the reading to stabilize. It can take 10 minutes or more for the unit to stabilize when first used. You can silence the beeper with the switch on the side of the panel.

A constant high reading on the 8072 may indicate a malfunctioning dryer or one that is overloaded by damp material in the hopper.

### **Hopper Output Sampling**

Dryness of material in a hopper can be checked by measuring the dew point of air exiting the hopper. When a hopper is initially loaded with material, high dew points at the hopper air return are normal while moisture is removed. It can take significant time to dry material in some systems.

1. Connect the 8072 sample tubing to a point in the hopper's air output. Make sure not to exceed the supplied tubing temperature rating.
2. Turn on the 8072 and allow the reading to stabilize. Plastics processing can proceed when the dew point reading is low enough for your material.

## **Recorder Output Connection**

The 4-20mA output jack on the front panel allows continuous monitoring of dew point over a period of time. The supplied mating connector can be wired as needed.

Pin 1: 4-20mA signal  
Pin 2: ground

## **CALIBRATION & MAINTENANCE**

### **Dry-Down Test**

Verify the Dew Point Monitor's ability to read dry air by performing the following steps:

Note: the supplied desiccant cartridge should be blue in color. After repeated use the desiccant will turn pink. The desiccant can be recharged by removing one end cap, emptying the contents into a Pyrex glass container, and baking at 350°F or microwaving until blue.

1. Make sure the supplied desiccant cartridge is dry (contents should be blue in color).
2. Connect one end of the desiccant cartridge to the sample air inlet tubing and the other end to the pump vent tubing.
3. Turn the power on and allow 5 - 10 minutes for the reading to stabilize. A dry desiccant cartridge will produce a dew point of -20°F to -40°F. If Dew Point Monitor reading doesn't respond by indicating a low dew point, contact Plastic Process Equipment for factory service.

### **Replacement Parts**

6245.....Desiccant Tube  
1205DM.....Hygrosensor™  
3305005.....In-Line Air Filter

## Alarm Set Point Adjustment

The dew point at which an alarm occurs can be changed. The unit must be opened for this procedure so **remove power before proceeding**.

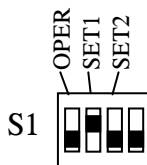
Remove the four nuts and screws that hold the panel in the case. Remove the panel and look at the PC board.

### WARNING

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

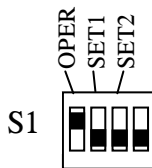
Apply power to the unit and turn it on with care, making sure not to touch any electrical components inside. Locate the display function switch (S1) near the upper left corner of the PC board. Note that only one position of this switch should be ON at a time.

Switch the OPER position of S1 to OFF and the SET1 position to ON. Adjust SET1 potentiometer to the desired alarm set-point as shown on the LED display.



### S1 setting for alarm set-point view and adjustment

When finished adjusting the alarm set-point, return S1 to the default operating mode by switching OPER position ON and all others OFF as shown below:



### S1 setting for normal operation

Remove power to the unit before assembling the panel back in its case.

## **°F to °C Display Change**

The unit must be opened for this procedure so **remove power before proceeding**.

Remove the four nuts and screws that hold the panel in the case. Remove the panel and look at the PC board.

To change the digital display to °C, move jumpers J6, J7, and J8 (if present) to the C position.

## **Sensor Replacement Procedure**

Replacement of the sensor is recommended on a yearly basis.

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

1. Remove the panel from instrument case.
2. Disconnect the sensor cable from the manifold.
3. Remove the hex nut and slide the sensor and socket out of 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.
6. Install panel in instrument case.

## **Electronic Test Procedure**

This procedure checks the operation of the circuit. Perform this procedure if display does not respond to the Dry-Down Test described earlier and if the electronics are suspect.

### **WARNING**

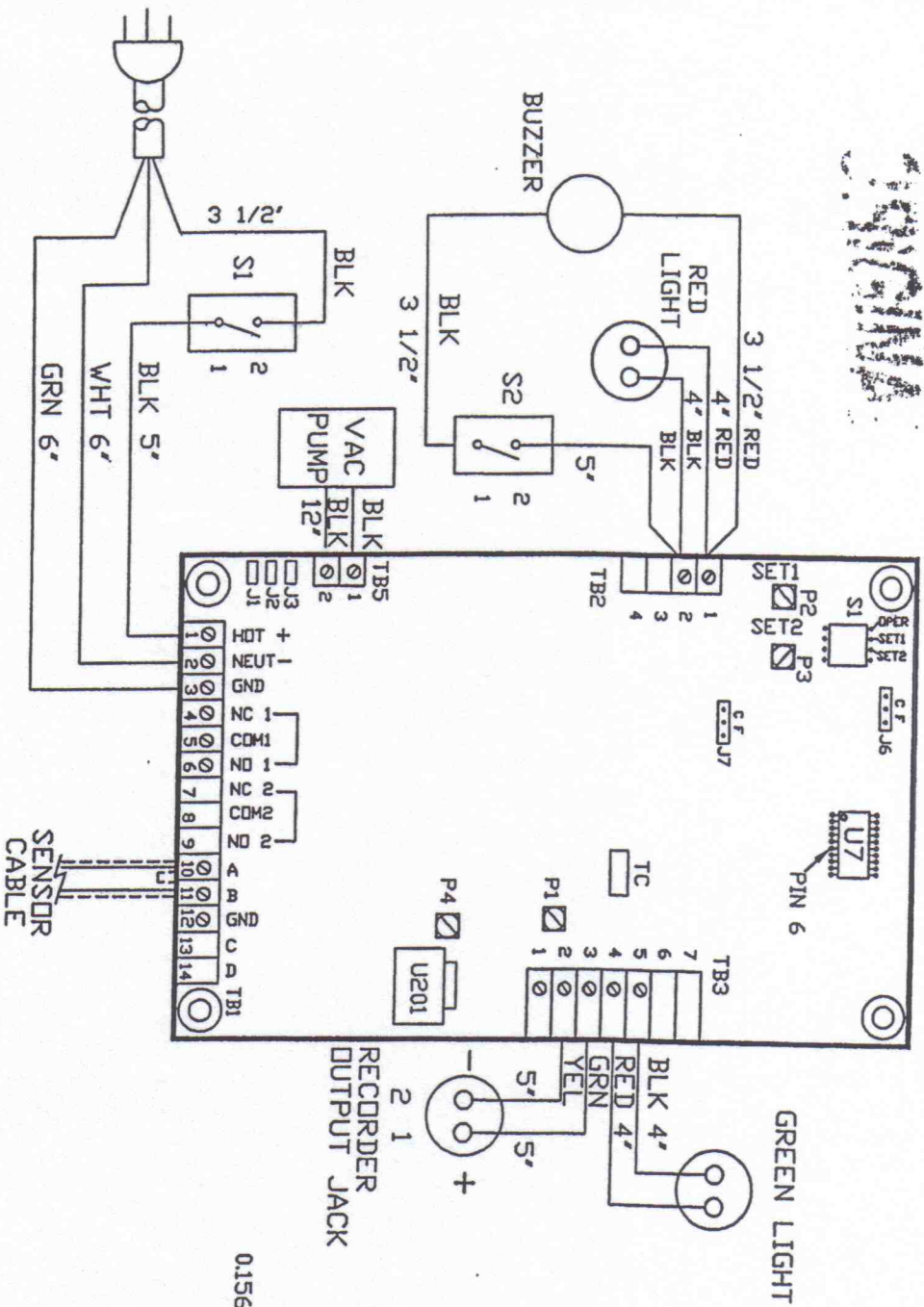
**THE FOLLOWING PROCEDURE IS PERFORMED WITH POWER APPLIED. TO PREVENT SHOCK, DO NOT TOUCH ANY TERMINALS INSIDE THE DEW POINT MONITOR.**

1. Remove the panel from its case and disconnect the 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  $-40^{\circ}\text{F} \pm 2^{\circ}\text{F}$ .
3. Place a jumper across the sensor cable. The dew point monitor should read  $+15^{\circ}\text{F} \pm 2^{\circ}\text{F}$ .

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

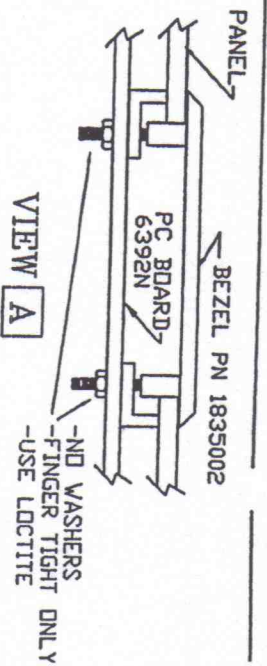
REV	DATE	CHANGES
A	2001	INITIAL RELEASE
B	2/16/2007	J6 AND J7 RECONFIGURE

UNITS PRE-2007 J6 AND J7 ORIENTED AS SHOWN



NOTES:

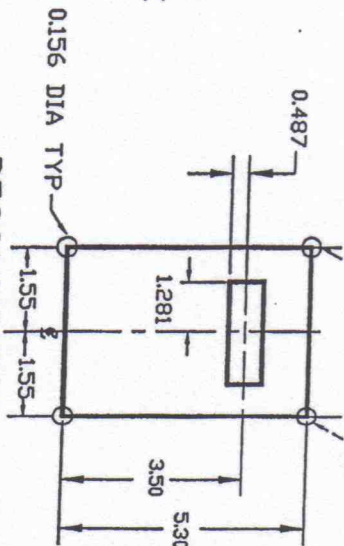
1. WIRE LENGTHS TYP FOR 8072



VIEW B

THESE 2 HOLES NOT REQ'D \* IF BEZEL 1835002 IS USED

RECOMMENDED PANEL CUT-OUT



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONS ± DECIMALS ± ANGLES ± REMOVE ALL BURRS AND SHARP EDGES DO NOT SCALE THIS DRAWING

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BY	NAME	DATE	FINISH:
PREPARED			
CHECKED			
DESIGNED			
APPROVED			
MATERIAL			

FOR 6392N & 6392N2 D/P BOARD

CODE REPT. NO. 59505

SIZE

PART NO. 6392NWD

DRAWING NO. 6392NWD

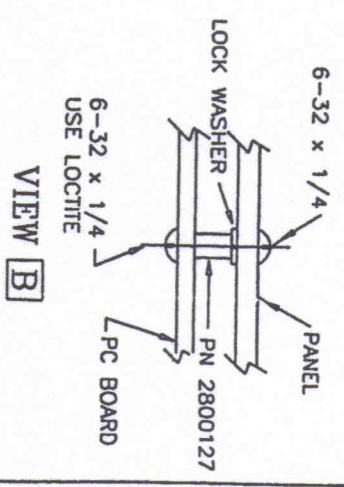
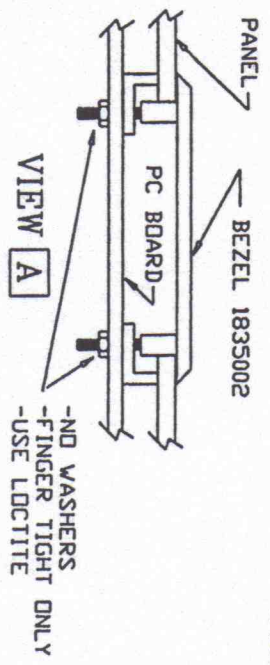
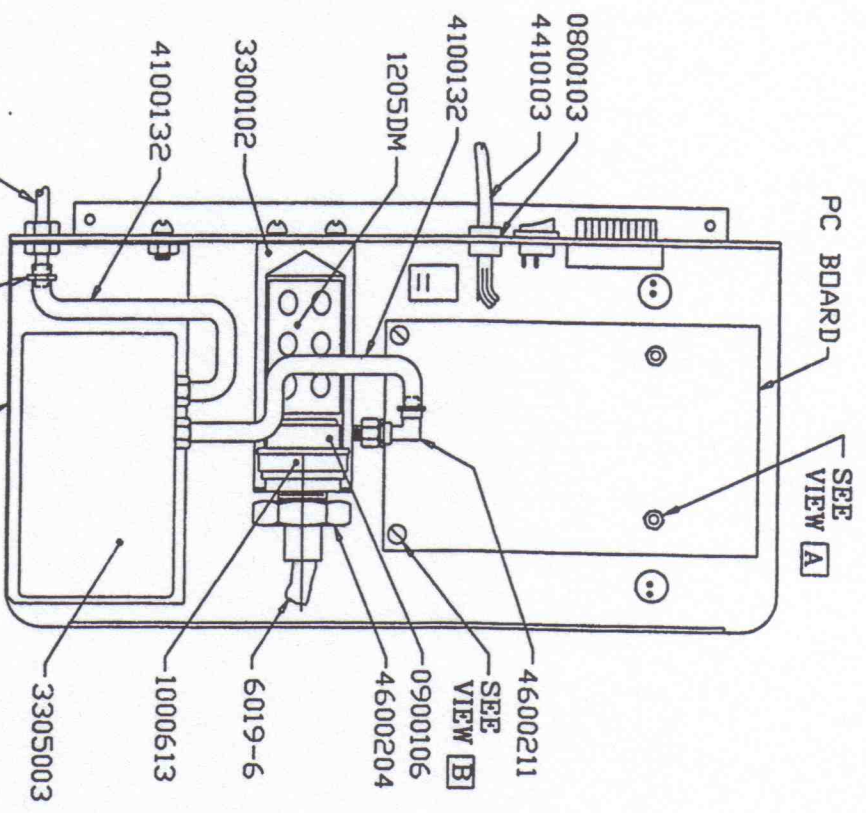
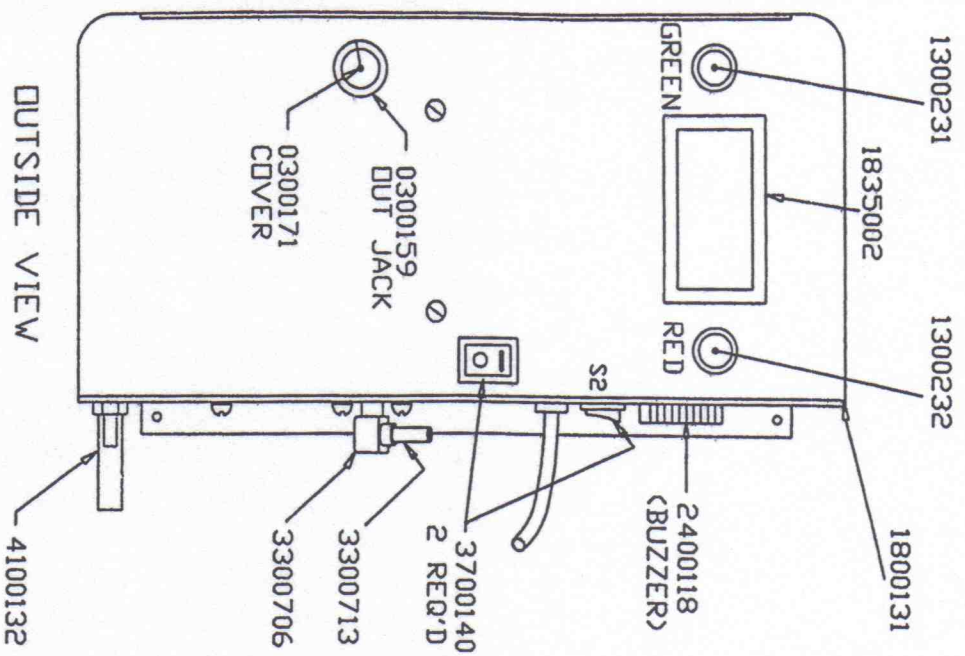
SCALE

WEIGHT

SHEET



REV	DESCRIPTION	DATE	APPROVED
A	REMOVED PART NO. 3300712 VALVE, 3300716 NUT, 3300710 BARBED FITTING	10/22/08	P. ZIEG
B	CHANGED TEE 4600212 TO AN ELBOW 4620011 REMOVED COOLING COIL, ADDED ELBOW AND BARBED FITG	3/21/11	EJD



NOTE: PART NUMBERS ARE TYPICAL  
SOME ASSEMBLIES HAVE PART VARIATIONS

**ORIGINAL**

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FRACTIONS ± DECIMALS ± ANGLES ±		
DO NOT SCALE THIS DRAWING REMOVE ALL DIMS AND SHAP DIMS		
BY	NAME	FINISH:
CHECKED	EJD	DATE
DATE	1/21/11	
APPROVED		
DATE		
CODE QDPT. NO.		PART NO.
59505		8072
SHEET		DRAWING NO.
NONE		8072ASSY
W/CDT		SHEET 1 of 1