

PORTABLE DEW POINT MONITOR

MODEL: DPM 8074
DPM 8074-230V

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PLASTIC PROCESS EQUIPMENT, INC.
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MACEDONIA, OHIO 44056

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DEWPOINT MONITOR MODEL 8074

SPECIFICATIONS

Dew Point Range:	+10°F to +70°F (at +73°F sample air temp) 0°F to +50°F (at +50°F sample air temp) +35°F to +90°F (at +100°F sample air temp)
Ambient Air Temp.:	+50°F to +100°F (sample air temp is approximately equal to ambient air temp)
Accuracy:	±2°F
Pressure Range:	-1 to +7 psig
Alarm Indication:	Red Light and Audible Alarm With Silencer Switch
Alarm Set Point:	+50°F (10°C) Adjustable
Recorder Output:	4-20mA Scaled as -40°F to +70°F. Jumper Selectable 0-5V.
Sensor Part No.:	1826-2
Dimensions:	8074 Carrying Case – 9" X 12-1/2" X 5" Deep
Net Weight:	8 lbs.
Power Requirements:	115VAC ±10% 50/60Hz 0.1 AMPS (230V available)
Pump Specifications:	Flow: 2.5L/min. (0.08 SCFM) Vacuum: 6" Hg Pressure: 3.2 psi (All pump specifications are nominal.)

PRINCIPLE OF OPERATION

The 8074 Dew Point Monitor has a vacuum pump that pulls sample air into a sensor manifold. The sensor manifold contains a 3-element moisture sensor and a temperature transducer. With humidity and temperature signals the circuitry can provide temperature compensated dew point measurement.

OPERATION

The Dew Point Monitor is normally used to sample air that is at a pressure between -1 and +7psig. Air up to 500°F (drybulb) can be sampled if appropriate tubing is used. The plastic Tygon tubing supplied can withstand temperatures up to 180°F.

INSTALLATION

Choosing a Sampling Location

The best sampling location is usually the main distribution line of the air system. Follow these guidelines when selecting a sampling location:

1. Sample air should be free of oil, particulates, and condensation.
2. Be aware of ambient and sample air temperature limitations listed in SPECIFICATIONS section.

Normal Sampling

Normal sampling implies that the sampled air pressure is between -1 and +7 psig. This condition is typical of plastic hopper drying systems.

1. Turn the selector valve clockwise until fully closed. The valve must be fully closed to prevent ambient air from leaking in.
2. Connect the sample inlet tubing with filter to a convenient sampling location. To check a dryer's performance, sample from the dryer's output hose. To check your process material for dryness, sample from the hopper's return hose.

CAUTION

DO NOT BYPASS THE COOLING COIL OR COVER IT WITH INSULATING MATERIAL. TO DO SO WILL EXPOSE THE SENSOR TO ELEVATED TEMPERATURE AND MAY CAUSE DAMAGE.

3. Turn the power on and allow the reading to stabilize. It may take as much as 5 – 15 minutes for the dew point to drop and 10 – 25 minutes for a reading to stabilize. You can silence the beeper with the switch on the side of the panel. When operation is done, turn power off then disconnect sample tubing.

Positive Pressure Sampling (ABOVE 7PSIG)

Call Plastic Process Equipment, Inc. about Model DPM 8076.

Test Results

A green light indicates a properly functioning refrigerant dryer. Very dry air will cause the Dew Point Monitor to indicate below 10°F. If the unit is sampling process air after it leaves a drying hopper filled with material, initially high dew points may be encountered. As the moisture is purged out of the material, the dew point decreases.

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 TROUBLESHOOTING GUIDE and MAINTENANCE instructions).

NOTE: The built in audible alarm can be silenced with the ALARM switch on the side of panel.

MAINTENANCE

The Dew Point Monitor normally does not require calibration, and in most applications the sensor will provide years of service. However, the easiest and most reliable way to insure consistent accuracy is to replace the sensor annually.

Sensor Replacement Procedure

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

- 1) Remove front cover and locate black sensor manifold.
- 2) Loosen hex nut on manifold and slide nut along wires away from manifold.
- 3) Lift 4 pin insert out of manifold to reveal sensor assembly.
- 4) Use a blunt object to pry sensor assembly out of 4 pin insert.
- 5) Observe the pin pattern on the new sensor assembly and match to the 4 pin insert. Use moderate finger pressure to press in the new sensor assembly. The sensor does not need to seat fully into the 4 pin insert.
- 6) Replace sensor assembly and 4 pin insert into manifold and hand tighten the hex nut.

Alarm Set Point Adjustment

Locate the display function switch (S1) on PC Board. **Note that only one position of this switch should be ON at a time.**

1. To view and adjust relay #1 setpoint, turn the #1 position of SI OFF and the SET1 position #2 ON. Turn the SET1 of P2 near the switch to the desired setpoint.
2. When finished adjusting the setpoint, return S1 to the default operating mode by turning OPER position ON and all others OFF.
3. A small red LED near the potentiometer P2 indicates when an alarm is occurring.

Recorder Output Selection (TB3)

For 4-20mA connect wires to terminals 2 & 3 of TB3 of the PC Board. Terminals 1 & 2 for 0-5V.

-40°F=0V or 4mA; +70°F=5V or 20mA.

°F. TO °C. Display Change

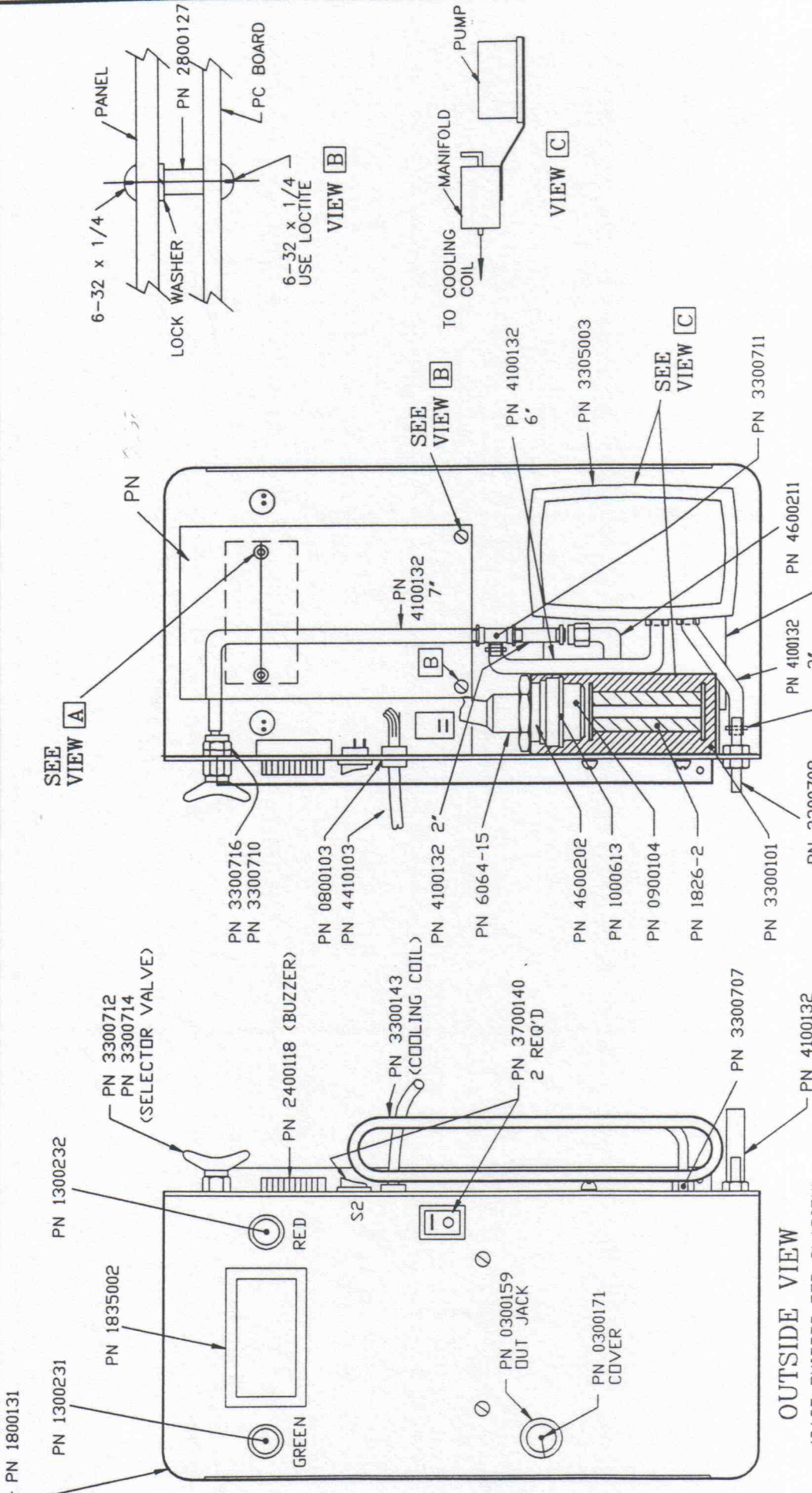
To change the digital display to °C, use needle nose pliers and move jumpers J6 and J7 to the C position on PC Board.

Electronic Test Procedure

This procedure is only necessary if circuit is thought to be malfunctioning.

1. Locate jumper J5 on the board and move it away from the 'TC' position. This disables temperature compensation.
2. Disconnect the sensor wires at terminals A and B. Check display for $-1^{\circ}\text{F} \pm 1^{\circ}\text{F}$.
3. Place a jumper across sensor terminals A and B. Check display for $70^{\circ}\text{F} \pm 1^{\circ}\text{F}$.
4. Remove power and return jumper J5 to the 'TC' position.
5. If these parameters cannot be met, contact Plastic Process Equipment, Inc.

If the circuit does not function properly, the Dew Point Monitor should be returned to the factory for repair. Please contact Plastic Process Equipment Inc. for instructions or for returning equipment for repair.



PROPRIETARY
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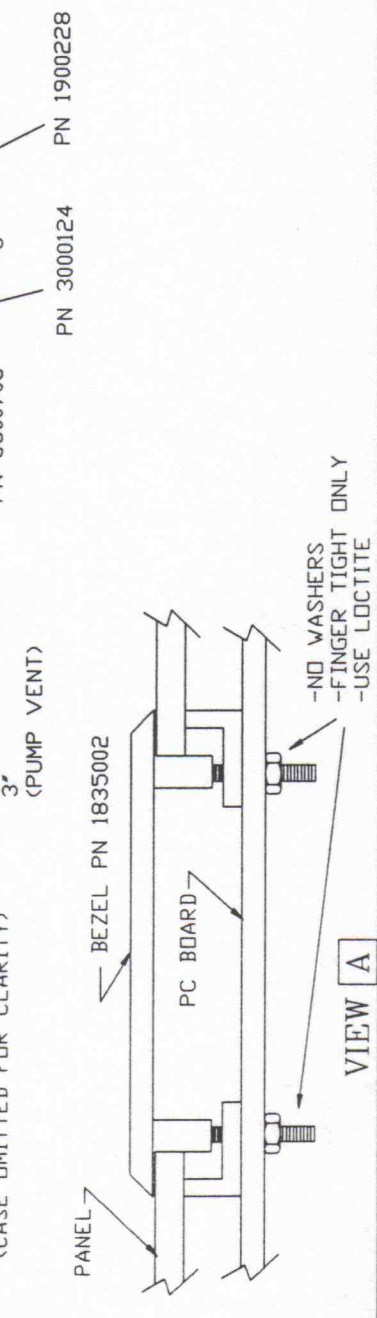
HYDRODYNAMICS SCIENTIFIC INC.

8074 ASSEMBLY

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

BY	NAME	DATE	FINISH:
PREPARED			
CHECKED	gjp	9/95	
ENGR/DSGN			
APPROVED			
MATERIAL			

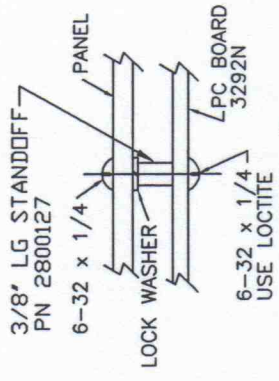
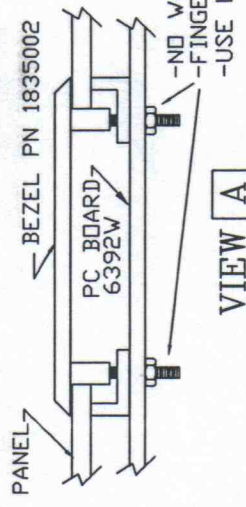
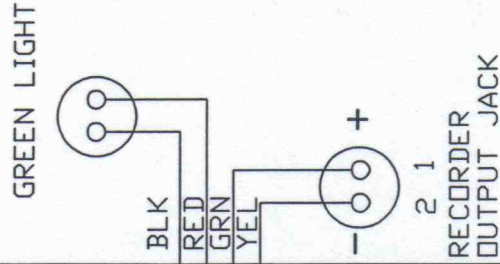
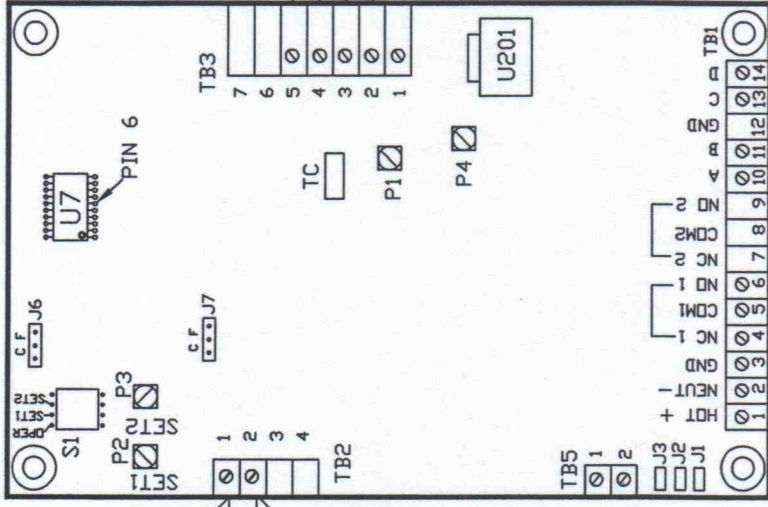
SCALE NONE WEIGHT SHEET 1 OF 1



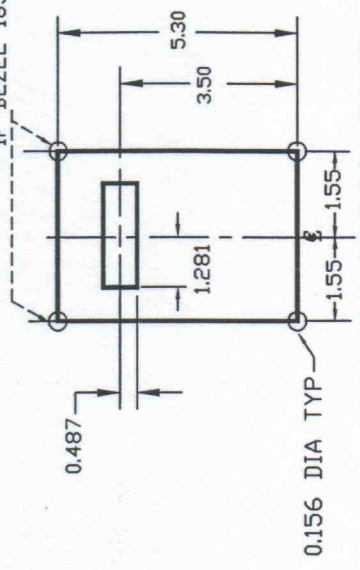
DISK 244

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

UNITS PRE-2007 J6 AND J7 ORIENTED AS SHOWN



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

BY	NAME	DATE	FINISH:
PREPARED			
CHECKED			
ENGR/DSGN			
APPROVED			
MATERIAL			

SCALE: 59505

WEIGHT: 6392WWD

SHEET: 6392WWD

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HYDRODYNAMICS
NEPORT SCIENTIFIC INC.

MOUNTING & WIRING FOR 6392W & 6392W2 D/P BOARD

ORIGINAL

NOTE: RED & GREEN LIGHTS ARE OPTIONAL.