INSTALLATION, OPERATION, & MAINTENANCE MANUAL
FOR
DEW POINT METER
P/N 46-2529

WARNING

BEFORE STARTING INSTALLATION AND/OR MAINTENANCE PROCEDURES, TURN OFF POWER AND DEPRESSURIZE UNIT BEFORE SERVICING TO PREVENT SERIOUS INJURY. SERIOUS PERSONAL INJURY MAY RESULT IF THESE SAFETY RULES ARE NOT FOLLOWED.

DO NOT REMOVE, REPAIR, OR REPLACE ANY ITEM ON THIS UNIT WHILE IT IS ENERGIZED OR UNDER PRESSURE. TURN OFF MAIN POWER TO THE UNIT AND DEPRESSURIZE THE SAMPLE CELL BY CLOSING THE ISOLATION VALVE COMPLETELY BEFORE STARTING ANY INSTALLATION OR MAINTENANCE PROCEDURES.

WHEN MAKING ANY ELECTRICAL CONNECTIONS TO THE METER, COMPLY WITH ALL LOCAL, STATE, AND FEDERAL CODES I.E. THE NATIONAL ELECTRICAL CODE. ALWAYS USE COMPONENTS AND WIRING RATED FOR THIS INSTALLATION.

INTRODUCTION — SECTION 1

1.1 SPECIFICATIONS

Dew Point Range ..... -40°F to +15°F (-40°C to -9°C)

Accuracy ..... ±2°F

Alarm Set Point ..... -10°F (-23°C) (Adjustable)

Remote Alarm Output
Normally open and closed contacts
5A @ 115V rated

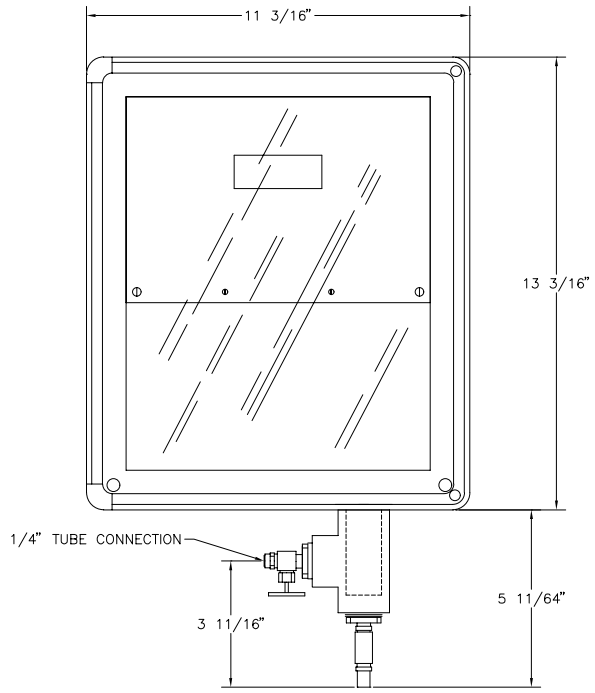
Recorder Output ..... 4-20 mA or 0-5V (jumper selectable)

Power Requirement ..... 115VAC (±10%) 50/60Hz

Power Consumption ... 4 Watts

Enclosure ..... Nema 4, Fiberglass w/window

1.2 DIMENSIONS



INSTALLATION — SECTION 2

2.1 INSTALLATION

The meter can be mounted on any flat vertical surface. The enclosure has threaded inserts on the back for mounting.

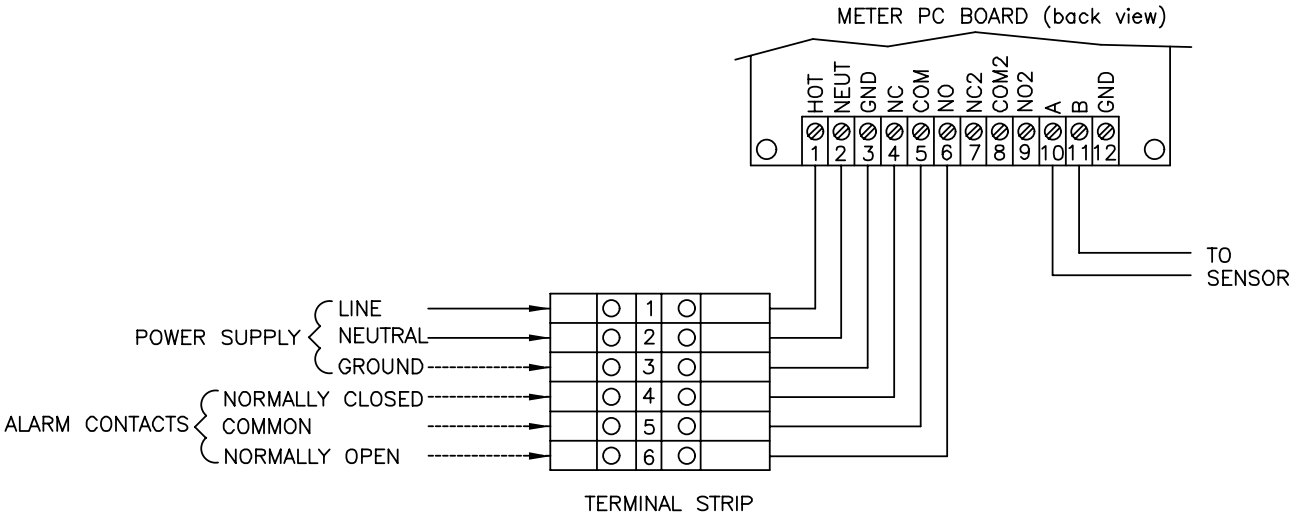
Once the unit has been mounted, the sample line can be connected to the sample cell isolation needle valve. The sample line should be 1/4" copper tubing. The pressure of the sample line should not exceed 150 PSIG.

The unit will require 115 volts for operation. Run the necessary conduit and wiring to the enclosure.

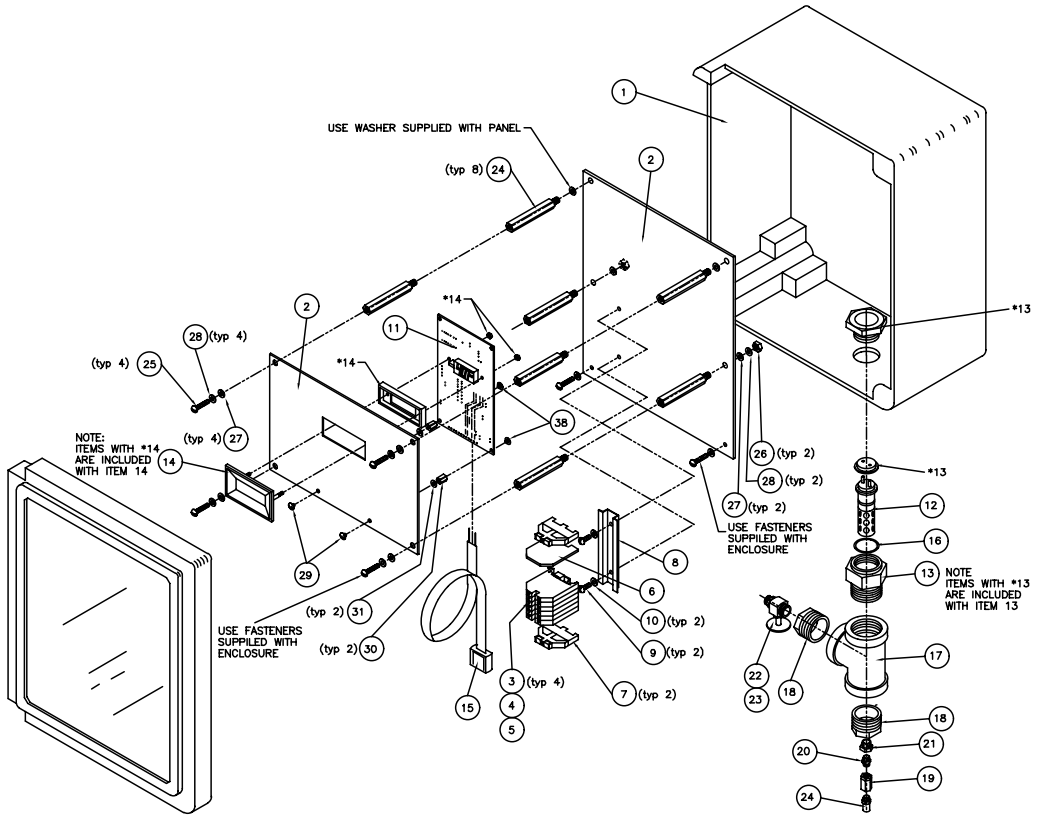
If the alarm relays and the recorder output are to be used, they will require several procedures for installation. Otherwise, no additional installation steps are required to use the meter.

NOTE:
See Model 6392N and 6392N2 instructions for operation, maintenance, printed circuit board details, and calibration of equipment.

WIRING DIAGRAM — SECTION 3



REPLACEMENT PARTS — SECTION 4



ITEM	QTY	DESCRIPTION	PART NO.
1	1	Enclosure	27-1114
2	2	Panel	27-1082
3	4	Terminal, Grey	26-0380
4	1	Terminal, Blue	26-1391
5	1	Terminal, Ground	26-1392
6	1	End piece	26-2053
7	2	End clamp	26-0388
8	.5'	Channel	26-0389
9	2	Screw, 8-32UNF x 1/2"lg	28-0204
10	2	Lockwasher, #8 nom	28-0314
11	1	Meter, (humistat)	26-5977
12	1	Sensor	26-5978
13	1	Sensor mount	26-0816
14	1	Meter bezel	26-5979
15	1	Cable	46-2185
16	1	O-Ring	18-0249

ITEM	QTY	DESCRIPTION	PART NO.
17	1	Tee 1" NPT	14-1807
18	2	Bushing 1" x 1/4" NPT	14-1808
19	1	Choke fitting	26-0490
20	1	Short coupling 10-32	26-0657
21	1	Reducing fitting 1/4" x 10-32	26-0296
22	1	Needle valve	14-1306
23	1	Fitting nut & sleeve assy	26-3043
24	1	Sintered filter	26-0623
33	4	Standoff	26-6805
34	4	Screw, 10-32UNF x 1/2"lg	28-0203
35	2	Nut, 10-32UNF	28-1062
36	6	Washer flat, #10 nom	28-0323
37	6	Lockwasher, #10UNF nom	28-0312
38	4	Screw, 6-32UNF x 1/4"lg	28-1321
39	2	Standoff	26-6006
40	2	Lockwasher, #6 nom	28-0324

HYGRODYNAMICS

DIGITAL DEW POINT MONITOR
PC BOARD

MODEL 6392N & 6392N2

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DIAGRAMS

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INTRODUCTION

The 6392N is a Digital Dew Point Monitor PC Board with relay setpoint, digital display and linear transmitter. This product is ideal for OEM applications on desiccant dryers. A complete monitoring system includes the 6392N (or 6392N2), a 1205DM Hygrosensor, and a variety of supporting accessories.

SPECIFICATIONS

Dew Point Range -40 F to +15 F (-40 C to -9 C)

Sensor Part # 1205DM

Accuracy $\pm$2 F

Alarm Set Point -10 F (-23 C) (Adjustable, see Calibration Section.)

Remote Alarm Output Normally open and normally closed contacts, 5A @ 115V rated

Recorder Output 4-20 mA and 0-5V

NOTE: Use one (1) of the following equations when determining the corresponding dewpoint for milliamp (mA) or voltage (V) outputs.

$$MA = \frac{DP + 67.5}{6.875} \quad \text{or} \quad V = \frac{DP + 40}{22}$$

(-40 = 4 mA or 0 V; 70 = 20 mA or 5 V)

Power Requirements 115 VAC $\pm$10% (230 VAC Available) 50/60Hz
Or 18VDC to 28VDC (-24V versions)

Power Consumption 4 Watts max

Dimensions 3.5"W x 5.75"H

INSTALLATION

1. The 6392N is designed to be mounted behind a panel with the built-in display showing through.

2. Drill and punch holes in your panel as shown on 6392N Mounting Drawing.

   NOTE: If Newport Scientific bezel # 1835002 is used, the two (2) top mounting holes aren't required.

3. Connect power to terminals HOT+ and NEUT- and ground to terminal GND of TB1 as shown on drawing.

4. Connect Sensor Cable to terminals A and B of TB1.

5. Recorder output signal is on TB3. Terminal 1 of TB3 is 0-5V output , Terminal 3 is 4-20mA output and Terminal 2 is signal ground.

Wiring Summary

Terminal No.TB1	Labeled	Function
1	HOT+	Line Hot (or positive if 24V version board)
2	NEUT-	Line Neutral (or negative if 24V version board)
3	GND	Power and signal ground
4	NC1	Normally closed for relay #1
5	COM1	Common for relay #1
6	NO1	Normally open for relay #1
7	NC2	Normally closed for relay #2 (applies only to 6392N2)
8	COM2	Common for relay #2 (applies only to 6392N2)
9	NO2	Normally open for relay #2 (applies only to 6392N2)
10	A	Sensor lead
11	B	Sensor lead
12	GND	Power and signal ground
13	C	(not used)
14	D	(not used)

Terminal No. TB2	Function
1	Aux alarm +12VDC source
2	Aux alarm open collector output relay #1
3	Aux alarm +12VDC source (applies only to 6392N2)
4	Aux alarm open collector output relay #2 (applies only to 6392N2)

Terminal No. TB3	Function
1	Recorder output 0-5VDC
2	Power and signal ground
3	Recorder output 4-20mA
4	Aux no alarm +12VDC source
5	Aux no alarm open collector output relay #1
6	Aux no alarm +12VDC source (applies only to 6392N2)
7	Aux no alarm open collector output relay #2 (applies only to 6392N2)

Terminal No. TB5	Function (Terminal TB5 is not available on 24V versions)
1	Pump power Hot (115VAC)
2	Pump power Neutral (115VAC)

OPERATION & MAINTENANCE

Field calibration of the Hygrosensor is impractical. To ensure continued accuracy, it is recommended that the sensor be replaced annually.

Circuit Calibration

NOTE: 6392N is supplied fully factory calibrated. This procedure is only necessary if circuit is thought to be malfunctioning.

1. Apply power and measure **TAB** of U201 (Voltage Regulator near side of PC Board). Adjust P4 for 5.00V.

2. With no sensor connected to terminals A and B, measure PIN 6 of U7. Check for 0.0V$\pm$0.05V. Check terminal 3 of TB3 for 4.0mA$\pm$0.1mA.

3. Place a jumper across sensor terminals A and B and adjust P1 for 5.00V at PIN 6 of U7. Check terminal 3 of TB3 for 12.0mA$\pm$0.1mA.

4. If these parameters cannot be met, contact Newport Scientific about factory service on PC board.

Alarm Set Point Adjustment

Locate the display function switch (S1). **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. **If board is a dual relay version**, relay #2 can be adjusted similarly by turning SET1 position OFF and SET2 position ON. Now adjust the SET2 of potentiometer P3.

3. When finished adjusting the setpoints, return S1 to the default operating mode by turning OPER position ON and all others OFF.

   A small red LED near the potentiometer P2 or P3 indicates when an alarm is occuring.

Remote Alarm Connection (TB1)

The terminals labeled NC, COM, and NO are for alarm indication. The NC and COM are closed when there is no alarm. The NO and COM terminals close when alarm occurs. Connect wires to terminal block on PC Board. For Relay #1, 4 & 5 are normally closed. They make continuity when the dew point is below set point (green light). 5 & 6 are normally open. They make continuity when the dew point is above set point (red light). For Relay #2, 7 & 8 are normally closed and 8 & 9 are normally open.

Auxiliary Alarm Indication (TB2)

An open collector output on TB2 can be used to access alarm status. TB2 terminal 2 normally floats, and is pulled low when SET1 is exceeded. Terminal 4 is the output for SET2 if the board is a dual. Terminals 1 and 3 are 12VDC sources for these outputs. The maximum load through each output is 20mA.

Auxiliary Non-Alarm Indication (TB3)

An open collector output on TB3 can be used to access alarm status. TB3 terminal 5 normally is pulled low, and floats when SET1 is exceeded. Therefore, these outputs are active when no alarm is present. These can be used to light a green pilot lamp, for example. Terminal 7 is the output for SET2 if the board is a dual. Terminals 4 and 6 are 12VDC sources for these outputs. The maximum load through each output is 20mA.

Recorder Output (TB3)

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

-40°F=0V or 4mA; +15°F=2.5v or 12mA

Auxiliary Pump Power (TB5)

115VAC is available on TB5. If the board is set for 230VAC, the voltage at TB5 is stepped down to 115VAC so only one pump type is needed for both applications.

F. TO C. Display Change

To change the digital display to C, use needle nose pliers and more jumpers J6 and J7 to the C position.

115 TO 230V Change

Remove Jumper J1 and J3 and add Jumper to J2.

HYGRODYNAMICS

LIMITED WARRANTY

NEWPORT SCIENTIFIC, INC. warrants that all equipment manufactured by NSI shall be free from defects in material and workmanship which might impair its usefulness. SELLER DOES NOT WARRANT THAT THE EQUIPMENT IS FIT FOR ANY PARTICULAR USE. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF; the obligation under this warranty is limited to repairing or replacing, at Seller's factory, any defective parts which, when returned by the buyer, **TRANSPORTATION PREPAID,** examination discloses to have been factory defective. The time limit of this warranty is ONE YEAR from date of shipment of new equipment, SIX MONTHS from date of shipment of Hygrodynamics Wide-Range Sensors and THREE MONTHS from date of shipment of Hygrodynamics Narrow-Range Sensors and repaired equipment. THIS WARRANTY IS EXPRESSLY IN LIEU OF OTHER WARRANTIES. Seller shall not be held liable for any special, indirect, consequential damages arising out of this warranty or any breach thereof, of any defect in or failure or malfunction of the equipment and materials are further subject to tolerances and variations consistent with usages of trade. This warranty shall run in favor only of the purchaser from Seller and may not be passed on or represented on behalf of Seller to any subsequent purchaser.

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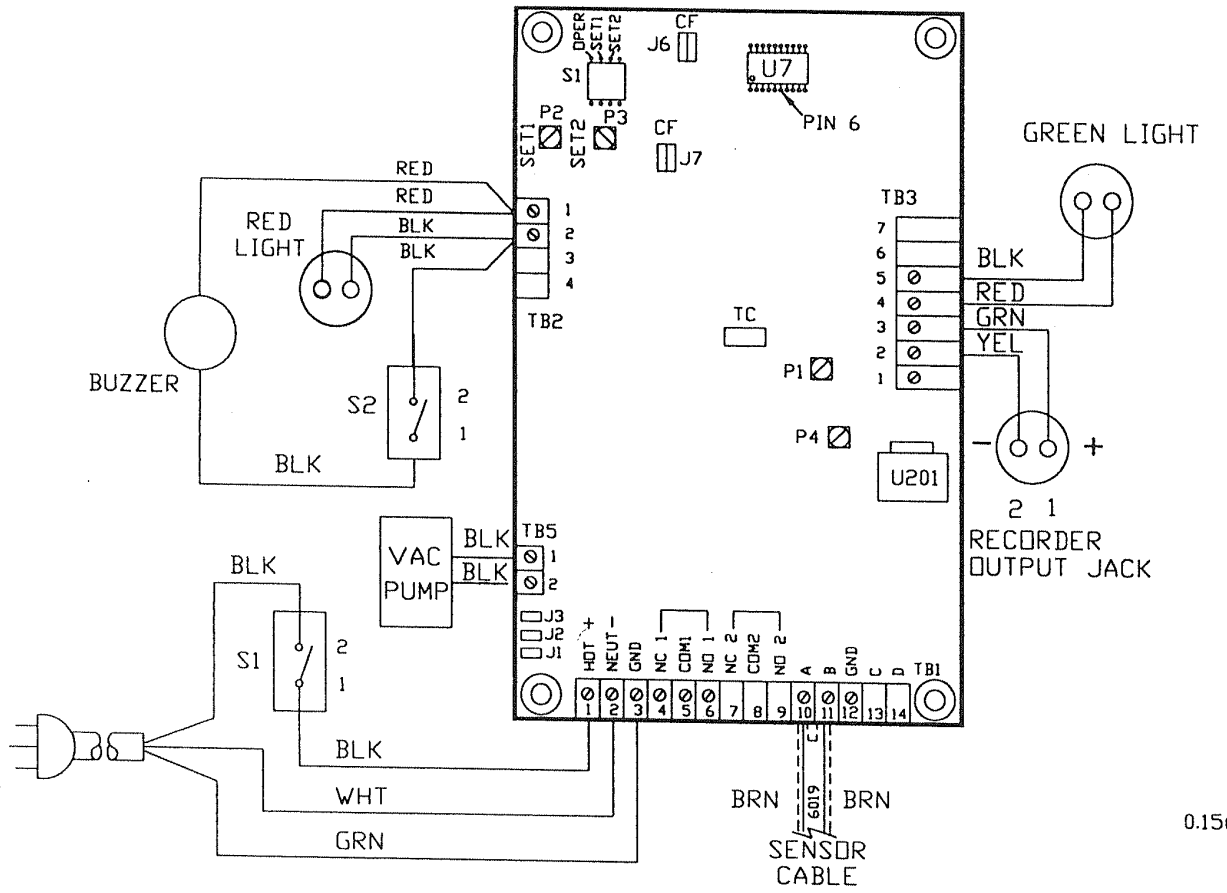
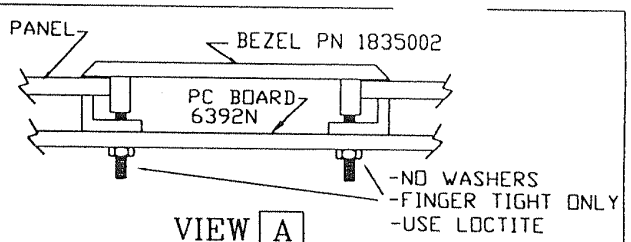
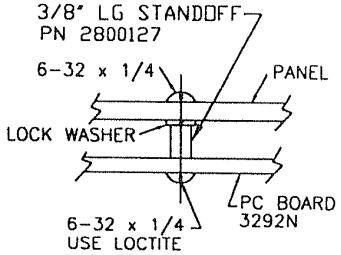
NEWPORT SCIENTIFIC, INC. makes no express or implied warranty as to items, which are the products of other manufacturers. Seller shall use its best efforts to obtain from the manufacturer, in accordance with its customary practice, the repair or replacement of such products may prove defective in workmanship or material. The foregoing states the entire liability in respect to such products, except as an authorized executive of the corporation may otherwise agree in writing.

In the case of special equipment or modifications to standard equipment manufactured at the request of the buyer, under buyer-approved specifications, buyer will indemnify Seller against the risk damages due to patent infringement.

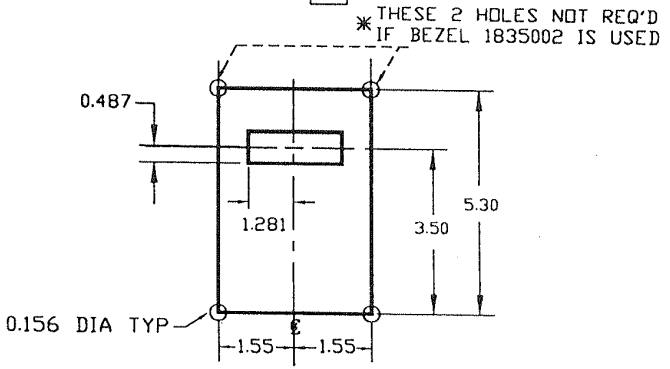




VIEW A



VIEW B



RECOMMENDED PANEL CUT-OUT

NOTE: RED & GREEN LIGHTS ARE OPTIONAL.

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BY / NAME / DATE: PREPARED, CHECKED, ENGR/DSGN, APPROVED	FINISH:	MOUNTING & WIRING FOR 6392N & 6392N2 D/P BOARD
MATERIAL	CODE IDENT. NO. 59505 / SIZE	PART NO. 6392NWD / DRAWING NO. 6392NWD
	SCALE / WEIGHT	SHEET OF