

AN-6150

Display Unit

Operation Manual

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CAUTION

READ CAREFULLY BEFORE INSTALLATION

CAUTION: EQUIPMENT CONTAINED IN THIS MANUAL MAY BE CONNECTED TO HIGH VOLTAGE. IT IS EXTREMELY IMPORTANT THAT THESE INSTRUCTIONS ARE STRICTLY ADHERED TO.

1. When installing non-isolated instrumentation, ensure that applicable Signal & Power Commons are at EQUAL POTENTIAL.
2. When installing isolated instrumentation, ensure that the potential between applicable Signal & Power Commons does not exceed the Specified Isolation Voltage Rating.
3. It is recommended that to prevent damage, switch power off before plug-in cards are removed or replaced.

FAILURE TO ADHERE TO THE GUIDELINES LISTED ABOVE MAY DAMAGE THE EQUIPMENT.

We also recommend the following:

1. Only entrust the work to properly trained personnel.
2. Cross check the serial number tag with this instruction manual to ensure that the correct documentation is being used.
3. Study the instruction manual and any warning notices on the equipment.
4. Check by visual inspection whether the equipment is connected to an electrical supply. If it is, take appropriate precautions to ensure safe conditions and at all times avoid accidental contact.
5. Check by visual inspection whether the equipment is connected to the process. If it is, take appropriate precautions to ensure safe conditions.
6. Unauthorized modification or repair of equipment may invalidate the warranty. We strongly recommend that they are returned to the manufacturer.

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1 General Information

Display Unit

Modular interlocking Matrix Configuration of Multiples up to 4 modules high by 4 modules wide.

Each module is a multi-purpose cell molding divided into four sections, each section corresponding to a medium sized window. The moldings can be interlocked with fasteners to provide the required matrix. By inserting a divider into a section, two small size windows are created.

Snap-off sections of the horizontal wall of the molding enables a large size window to be created, The extra large window is achieved by illuminating the two large windows together.

Lens Assembly

A push-on lens molding is located on the front of each cell. Retained within the lens is a printed film legend sheet, color filters, diffuser and retainer. The configured matrix of cells are clamped together on all sides by a combined fixing bracket and bezel.

Fitted to the rear of the molding is a printed circuit board which accommodates the lamp holders and connectors.

Pushbutton Control Assembly

This is an optional module that has a membrane switch panel included to provide Test, Acknowledge, Reset and Silence Pushbuttons for remote logic systems.

This module (when installed) is located in the bottom right hand position in the matrix, or it can be supplied as a single remote unit.

The pushbutton module accommodates one large, two medium or four small windows, an 80dB audible device and an LED illuminated 'Power On' indicator.

Display Appearance

Selected color filters in Red, White, Amber, Yellow, Green and Blue, together with the non-reflective lens, provide a clear view of the customized legend.

Alternate Appearances

A	Visible Windows	- Legend on film or engraved on filters.
B	Secret Windows	- Legend on film or engraved on filters but with a smoke tinted film inserted. (Not available with LED option).
C	Visible Legends	- Legend engraved on legend plate.
D	Secret Legends	- Legend engraved on legend plate, but with a smoke tinted film inserted.

The smoke tinted film mentioned above provides a secret (hidden) window / legend effect until illuminated.

2 Window Size Options

Small	25 x 29 mm
Medium	25 x 61 mm
Large	54 x 61 mm
Extra Large	54 x 126 mm

3 Legends

The Legends are computer generated and laser printed on a clear film. This process can be completed by the user. A 3½" diskette (Part No: 2890-021) complete with instructions is available from Rochester Instrument Systems which contains templates for making your own legends. You will also need access to an Autocad Drafting System (Version 10 or higher), together with a Laser Printer.

Alternately, legends can be engraved directly onto the color filters.

Secret legends / windows can only be achieved by engraving onto the laminated legend plate.

Legend Characters Per Window

Size 7
Size 6
SIZE 5
SIZE 4
SIZE 3
SIZE 2

WINDOW		*SIZE 2		SIZE 3		SIZE 4		SIZE 5		SIZE 6		SIZE 7	
SIZE	CODE	NO OF LINES	CHARS PER LINE	NO OF LINES	CHARS PER LINE	NO OF LINES	CHARS PER LINE	NO OF LINES	CHARS PER LINE	NO OF LINES	CHARS PER LINE	NO OF LINES	CHARS PER LINE
25 X 29MM	S	6	14	4	10	3	7	2	6	2	5	2	4
25 X 61MM	M	6	30	4	20	3	15	2	12	2	10	2	9
54 X 61MM	L	14	30	9	20	7	15	5	12	5	10	4	9
54 X 126MM	EL	14	62	9	22	7	31	5	24	5	21	4	19

* SIZE 2 ONLY AVAILABLE FOR LASER PRINTED FILM

4 Window Color Options

Red, Amber, Green, Blue*, White

* Not available with LED illumination.

5 Illumination

By 10 mm Wedge type, long life 28 Volt 0.06 Amp filament lamps. Lamp redundancy in all window sizes except the 25mm x 29mm size (See option C).

Options

- A) 48 - 60 Volt, 2 Watt, Lamps
- B) LED Assemblies, each 24 Volt, 0.04 Amp, but with limited colors. (See window colors) Redundancy in all window sizes.
- C) Dual 6mm Bi-pin Longlife 28 Volt 0.04 Amp filament lamp plug-in adapter available to produce redundancy in 25mm x 29mm size window.

6 Mounting

Flush panel or 19" rack mounting (3 modules wide)

7 Connections

Ribbon cable or PCB Mounted Terminal Blocks.

8 Ambient Temperature

14 to 122 Deg. F
-10 to +50 Deg C

9 Humidity

85% RH (Non-condensing)

10 Recommended Working Voltage

24 DC nominal \pm 10%
48 DC option available

11 Power Requirements

Lamp Configuration

Each module has a total of 8 plug-in filament lamps or LED assemblies.

Burden per Module

24/28 Volt 10mm wedge Lamps	-	0.50 Amps maximum
48/60 Volt 10mm Wedge Lamps	-	0.35 Amps maximum
24 Volt LED Assemblies	-	0.32 Amps maximum
24/28 Volt Dual Bi-pin Adapter	-	0.64 Amps maximum

12 Weight

0.48 lbs. (0.22 Kg) per module maximum.

13 Installation

See Drawing No. 2701-276 for Bezel, Overall size, and panel cut-out details.

Since all lamps generate a certain amount of heat, it is essential that ventilation be provided for cooling. Make sure that air flow through the ventilation slots at the top and bottom of the display unit is not restricted.

14 MAINTENANCE - Cell and Pushbutton Control Assembly

To gain access to the push fit lamps, you must remove the lens. To remove the lens assembly, insert a small screwdriver into the slots provided at the top and bottom edges of the lens, and *gently* pry to release. To gain access to the legend film and colored filters, remove the diffuser and clear plastic retaining plate held in place by four edge clips.

15 Recommended Spares

Lamps	24/28 Volt 10mm Wedge	RiS Pn 5804-123
	48/60 Volt 10mm Wedge	RiS Pn 5804-124
	24/28 Volt Dual Bi-Pin Adapter	RiS Pn 2800-061

LED Assemblies	Red	RiS Pn 2702-234
	Amber (Yellow)	RiS Pn 2702-235
	Green	RiS Pn 2702-236

Legend / Windows etc Refer to Drawing No's B2702-279 and B2702-280.

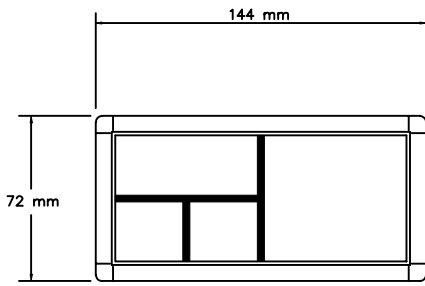
16 Customer Connection Diagrams

For Terminal Block Version, see Drawing No B2702-285

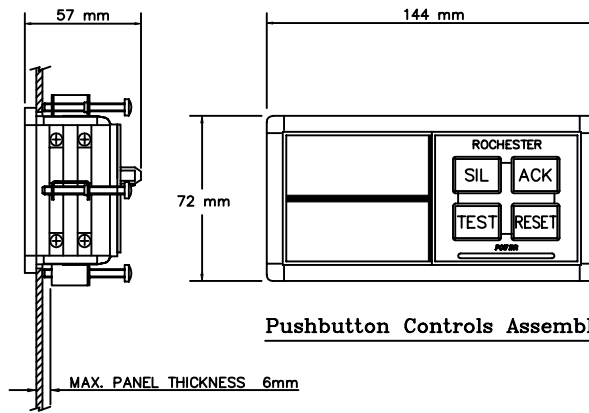
For Ribbon Cable Version, see separate customer specific drawings in System Manual.

17 Reference Drawings

Drawing No B2702-276	General Details and 19" Rack Mounting Plates
Drawing No B2702-279	Display Unit - Lens Assembly Details
Drawing No B2702-280	Pushbutton Control Assembly Details
Drawing No B2702-285	Terminal Connection Details
Drawing No B2702-237	Illumination Options and LED Orientation



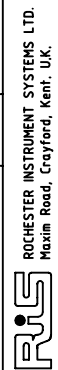
Display Unit



Pushbutton Controls Assembly

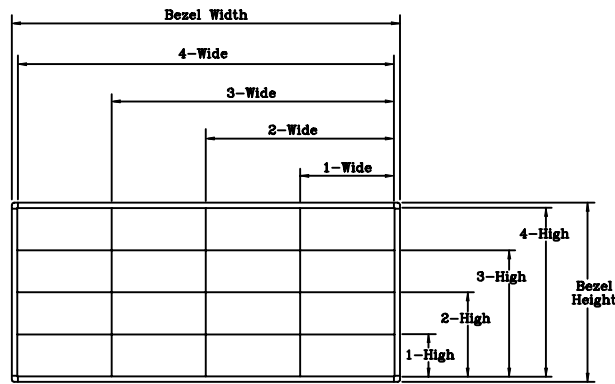
General Details

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CHKD		B 2702-276	REV 2
D/APP			
SCALE	—		



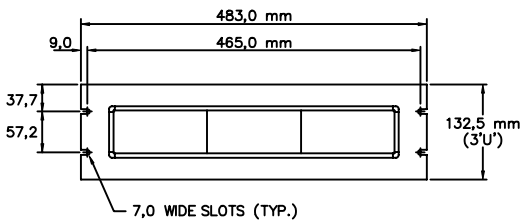
	Number of Cells Wide			
	1	2	3	4
Bezel Width	144,0	275,0	405,0	536,0
Cutout Width	138,0	269,0	399,0	530,0

	Number of Cells High			
	1	2	3	4
Bezel Height	72,0	131,0	189,0	247,0
Cutout Height	66,0	125,0	183,0	241,0

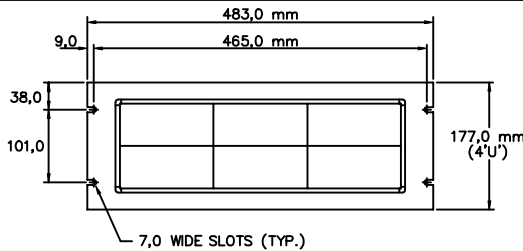


Overall and Panel Cutout Details

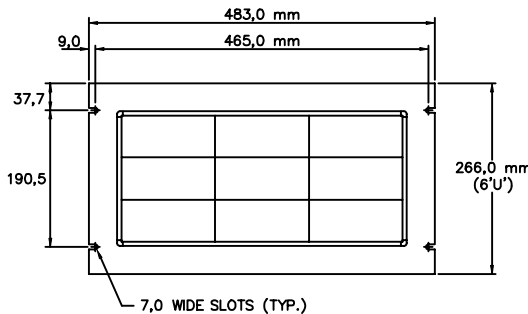
AN 6150
General Details
and
19" Rack Mounting Plates



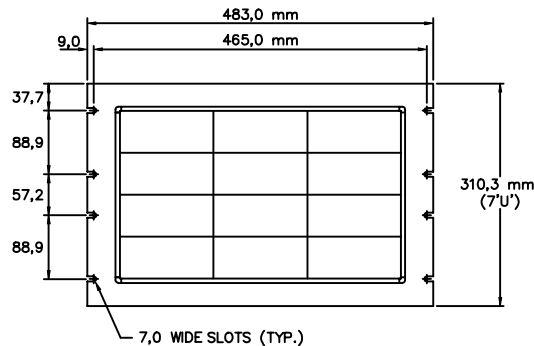
1-Module High x 3-Modules Wide



2-Modules High x 3-Modules Wide



3-Modules High x 3-Modules Wide



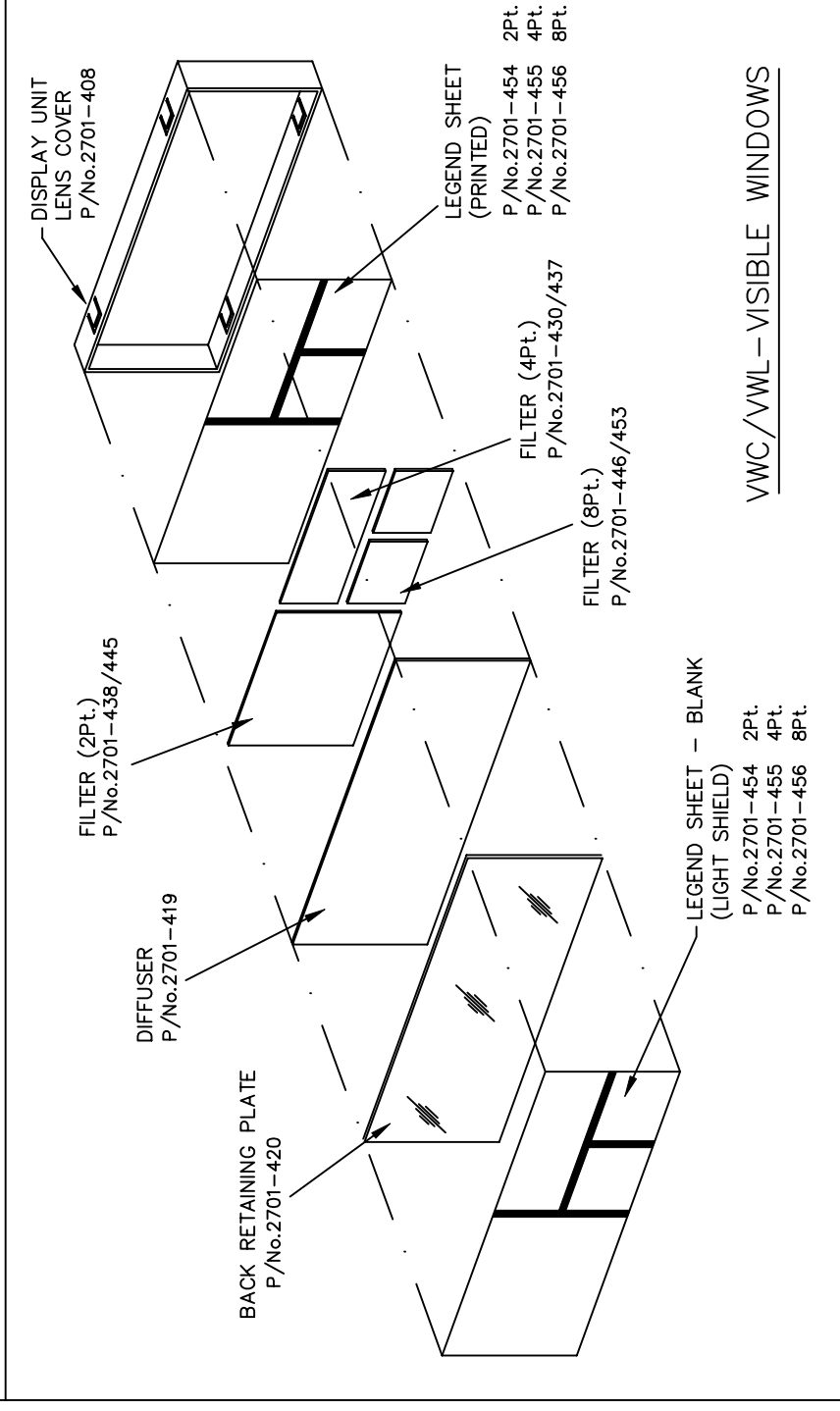
4-Modules High x 3-Modules Wide

MATERIAL: ALUMINIUM 3,0mm THICK.
FINISHED COLOUR: BLACK.

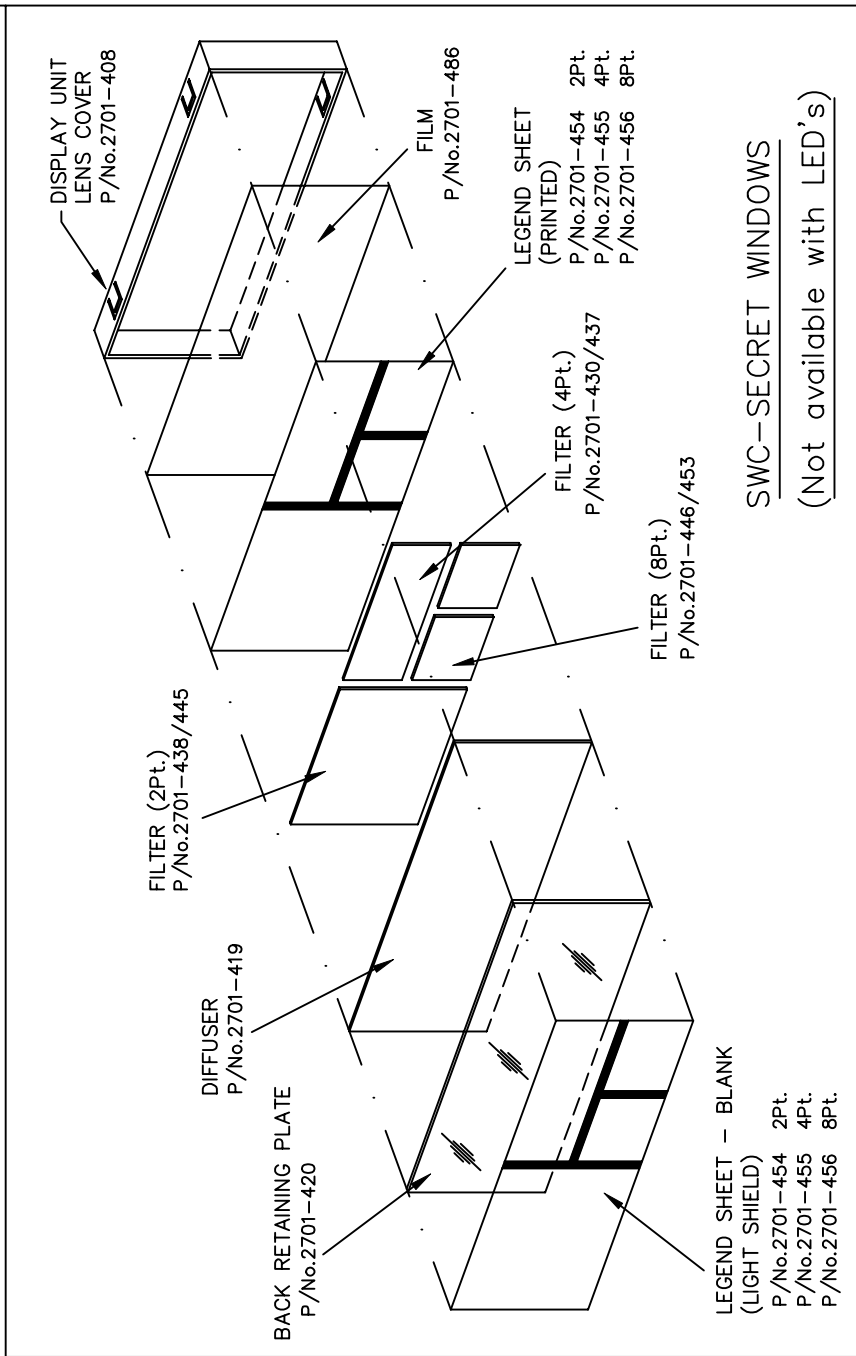
19" Rack Mounting Adaptor Plates

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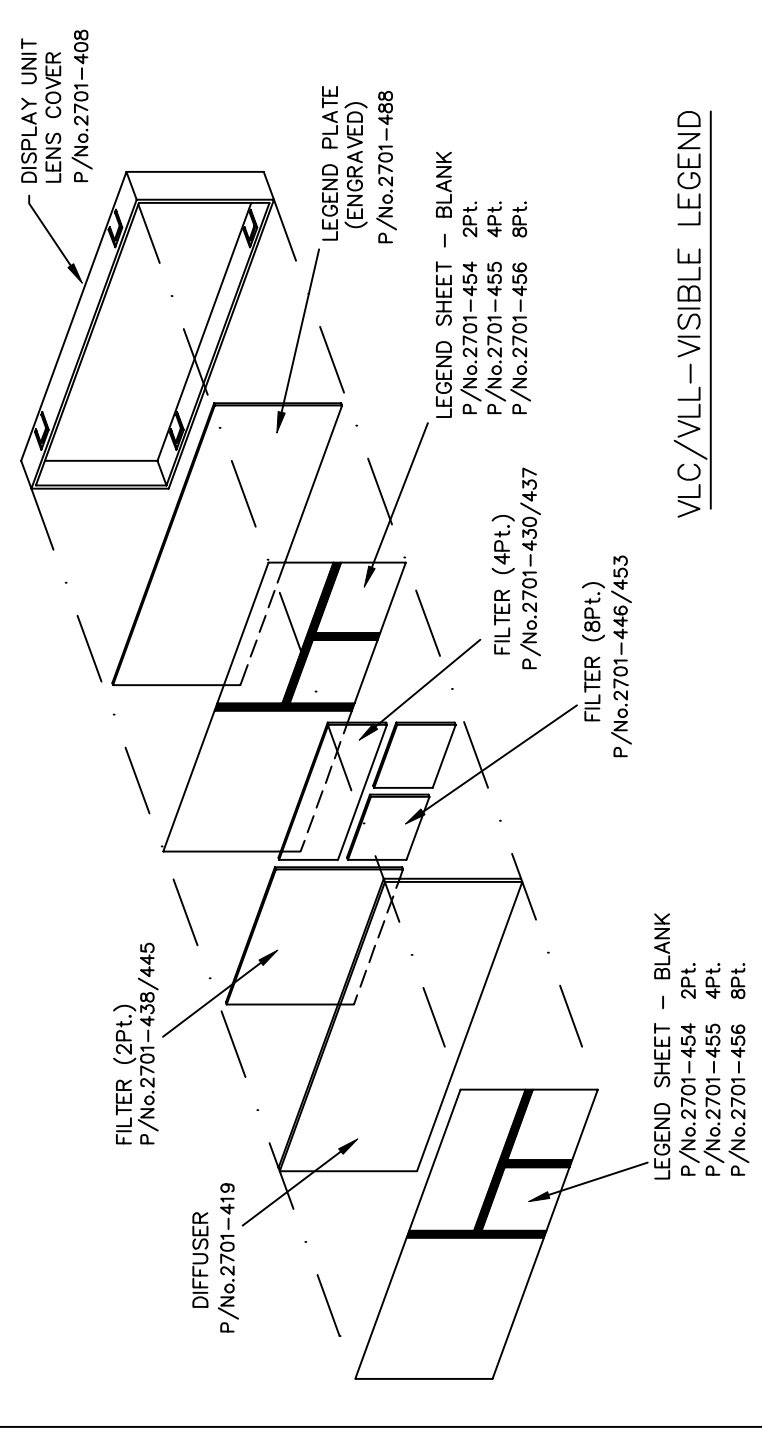


VWC/VWL-VISIBLE WINDOWS

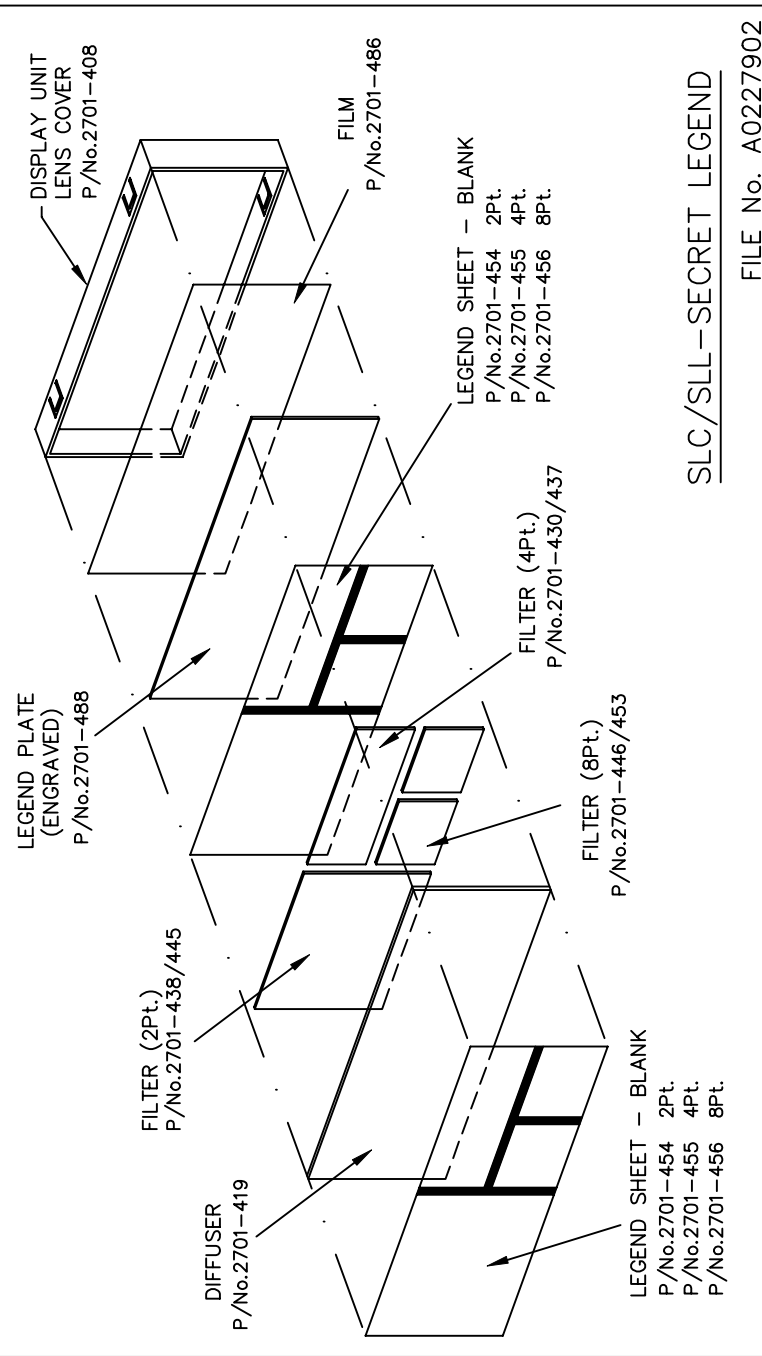


SWC-SECRET WINDOWS

(Not available with LED's)



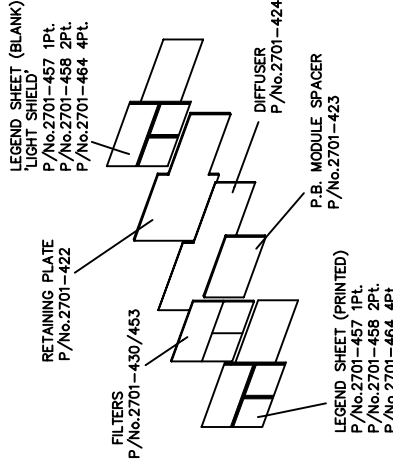
VLC/VLL-VISIBLE LEGEND



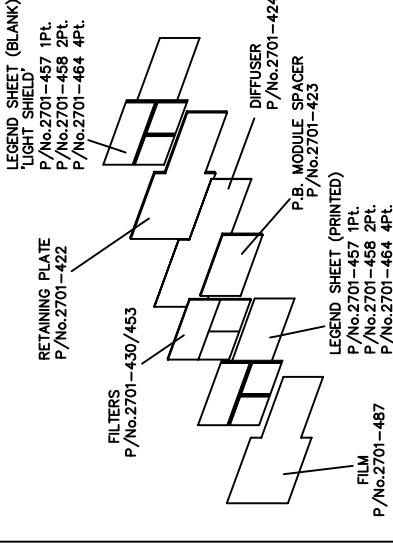
SLC/SLL-SECRET LEGEND

FILE No. A0227902

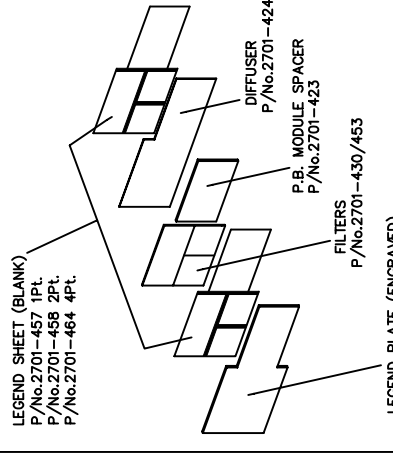
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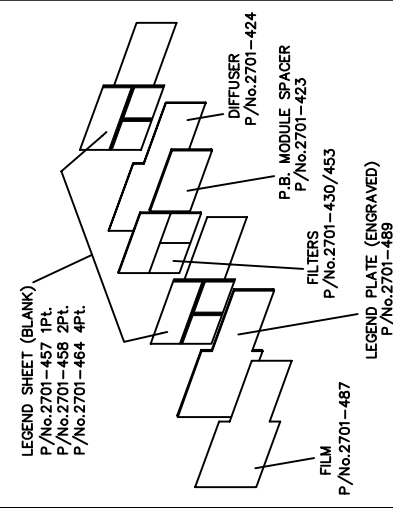
VWC/VWL-VISIBLE WINDOWS



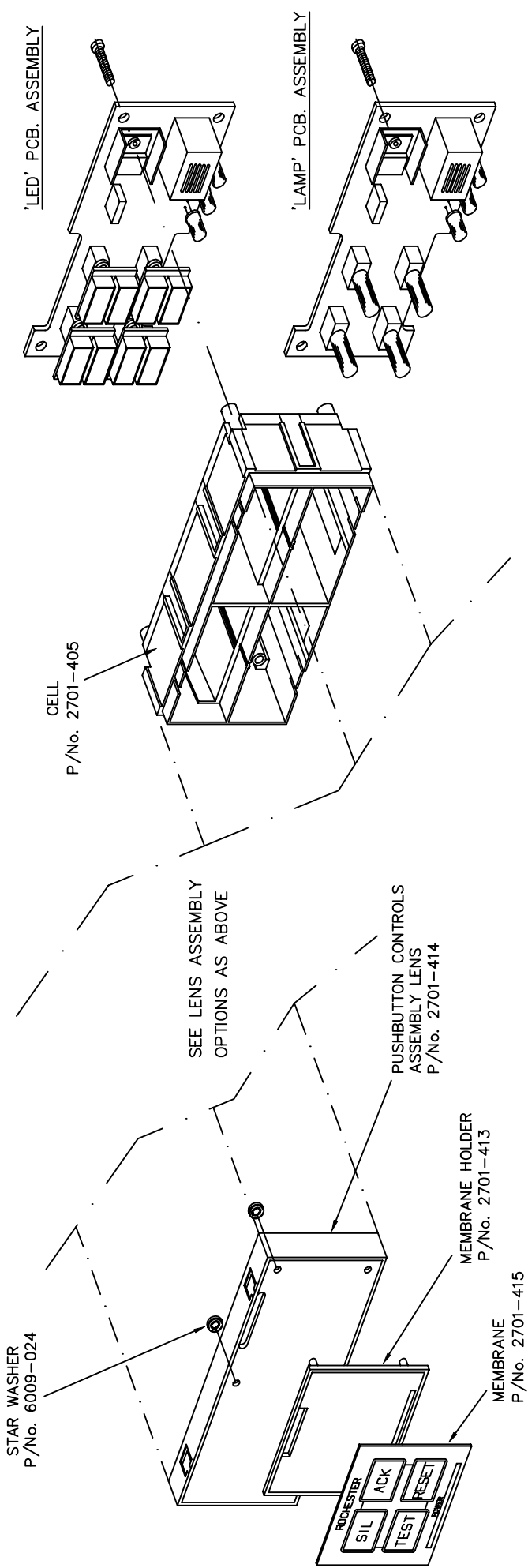
SWC-SECRET WINDOWS
(Not available with LED's)



VLC/VLL-VISIBLE LEGENDS



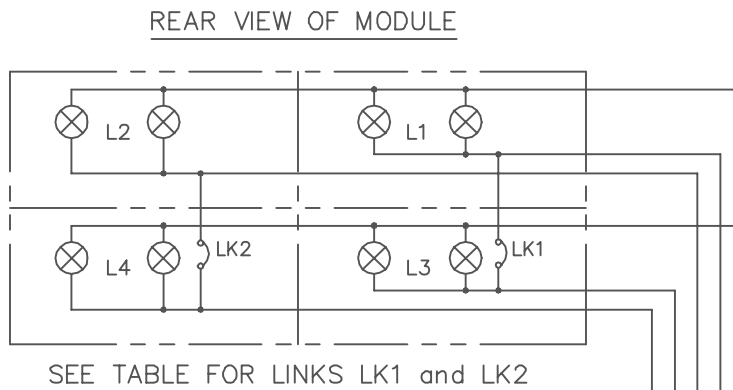
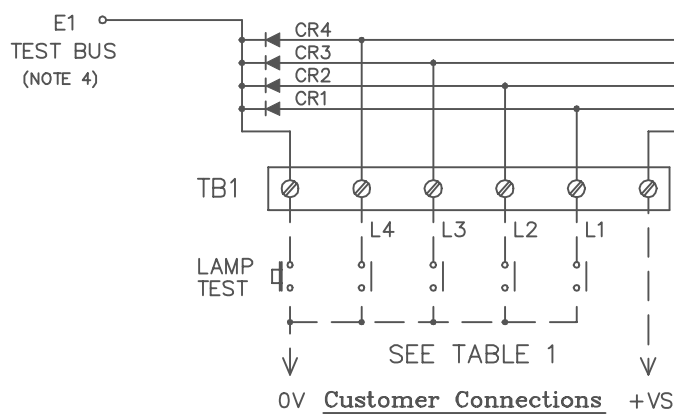
SLC/SLL-SECRET LEGENDS



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		D/APP		2	
		SCALE			
AN 6150					
Pushbutton Controls Assembly					
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TABLE 1 – Customer Connections

WINDOW SIZE	POINTS PER CELL	CUSTOMER TB1 CONNECTIONS		FACTORY LINKS ON P.C.B.
		INPUTS	LINK	
EXTRA LARGE	1	L1	L2 to L3	LK1, LK2
LARGE	2	L1, L2	NONE	LK1, LK2
MEDIUM	4	L1, L2, L3, L4	NONE	NONE



Medium, Large & Extra Large Windows
1/2/4 – Points per Cell

FILE No. A0228505

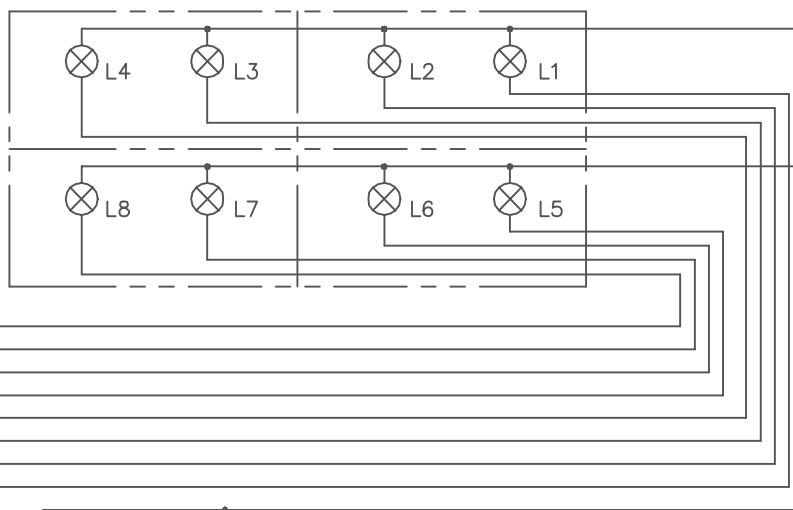
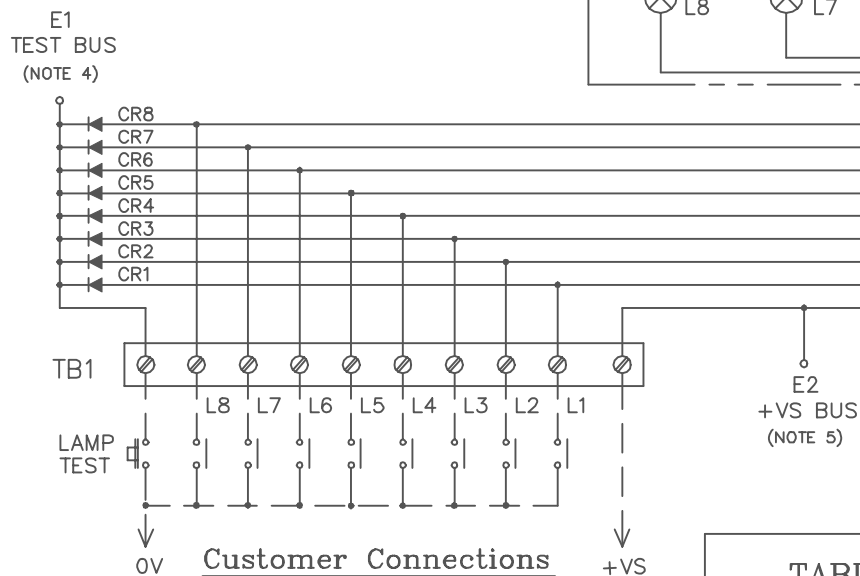
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CHKD	B.D.S	REV	5	PART No
D/APP	BTS	BTS	—	SCALE



AN 6150

CUSTOMER CONNECTIONS

REAR VIEW OF MODULE



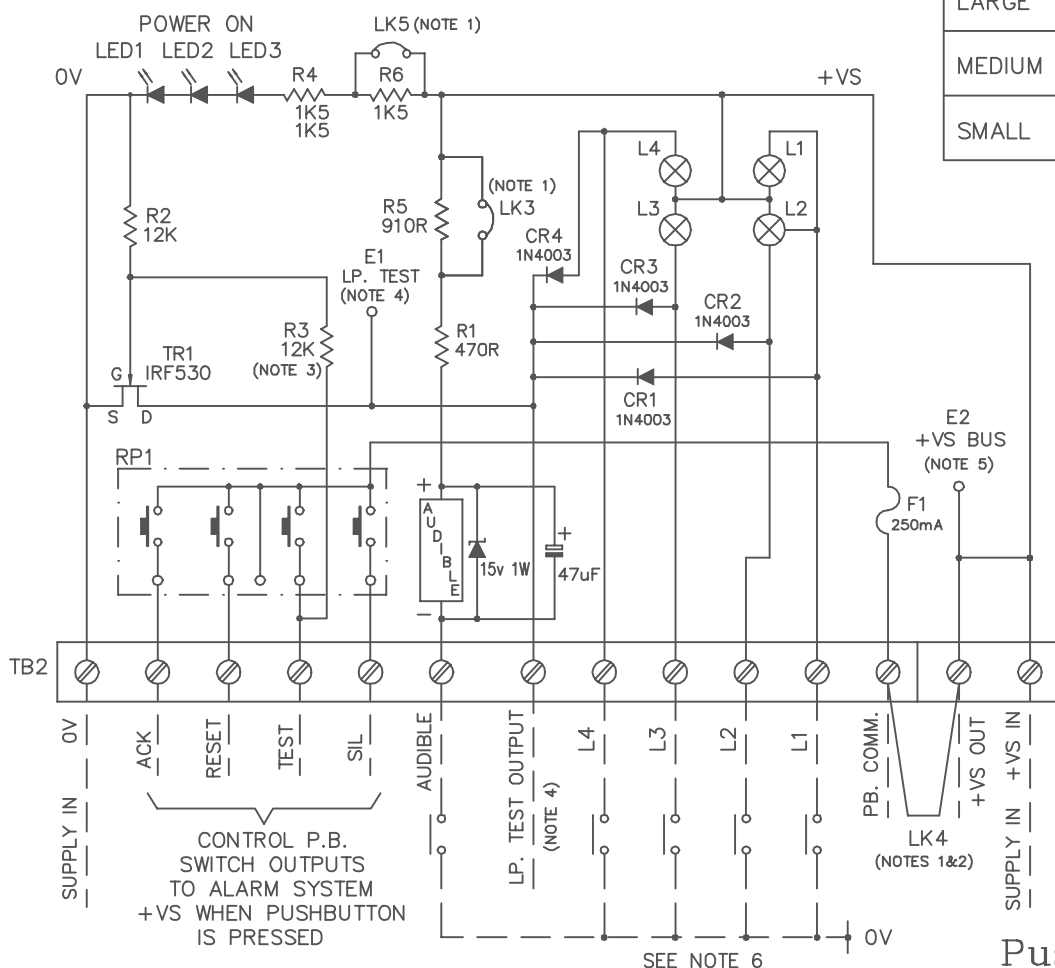
Small Windows
8 – Points per Cell

TABLE 2 – Customer Connections

WINDOW SIZE	POINTS PER CELL	CUSTOMER TB2 CONNECTIONS		FACTORY LINKS ON P.C.B.
		INPUTS	LINK	
LARGE	1	L1	L1 to L2, L3 to L4	NONE
MEDIUM	2	L1, L3	L1 to L2, L3 to L4	NONE
SMALL	4	L1, L2, L3, L4	NONE	NONE

NOTE:

- FOR STANDARD SYSTEM POWERED FROM SMOOTHED 24/50V DC – WIRE AS DRAWN. REMOVE LINKS LK3 & LK5 FOR 50V LAMP SUPPLY.
- FOR MPAS 90 SYSTEMS POWERED FROM RECTIFIED UNSMOOTHED 24V DC. DELETE LINK 'LK4' FROM +VS TO PB. COMM. WIRE PB. COMM. DIRECT TO MPAS 90 COMMON PB. TERMINAL (+24V DC).
- REMOVE R3 TO DISABLE LAMP TEST IF SYSTEM IS CONFIGURED FOR CIRCUIT TEST.
- LINK LP. TEST OUTPUT TERMINAL TO ALL OTHER LAMP MODULES IN ARRAY IF LOCAL LAMP TEST FACILITY IS REQUIRED. (ALTERNATIVELY – BUS TURRET LUGS E1 ON ALL P.C.B's).
- E2 TURRET LUG IS PROVIDED ON CONTROL AND LAMP ARRAY P.C.B's TO BUS POWER TO ALL MODULES WITHIN THE ARRAY.
- ONLY SMALL, MEDIUM AND LARGE WINDOW SIZE OPTIONS ARE AVAILABLE ON PUSHBUTTON CONTROL MODULE. SEE TABLE 2 FOR CUSTOMER TB2 CONNECTIONS – NO FACTORY LINKS REQUIRED.

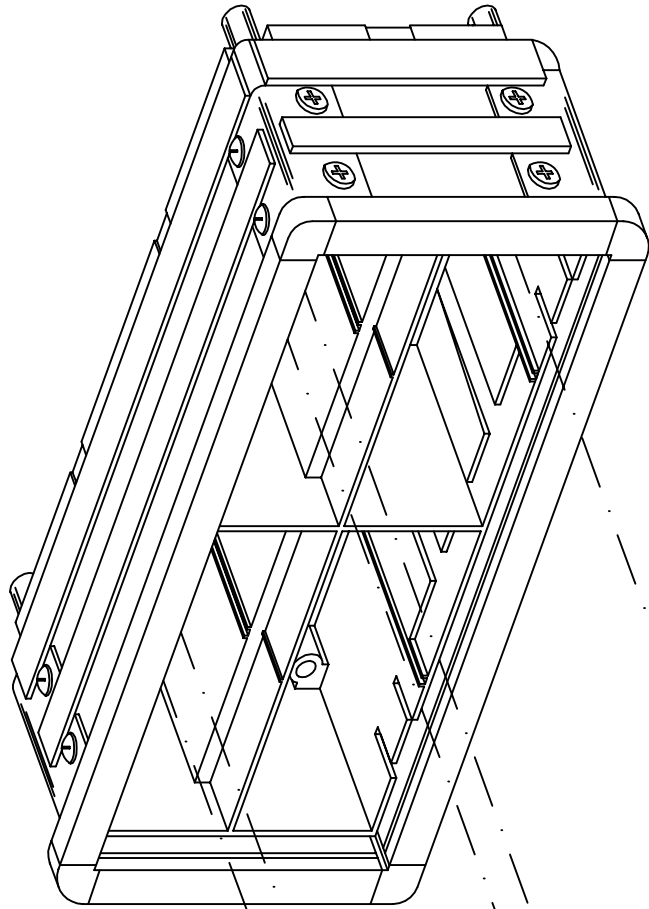


Pushbutton Controls Assembly

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DUAL BI-PIN LAMP ADAPTOR
PART No. 2800-061



NOTE:
CROPPED CORNER OF
LED. P.C.B. MUST ALWAYS
BE IN THIS POSITION.

LAMP - PART No. 5804-123 [24V DC]
LAMP - PART No. 5804-124 [48V DC]

RED - PART No. 2702-234
AMBER - PART No. 2702-235
YELLOW - PART No. 2702-236

LED

REV. 1	DATE	4-2-93	F.U.C.M	FILE No. A0223701
RELEASED ON E.C.O. No. L.D.	DRN	L.D.	DRG.No. B 2702-237	A3
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	SCALE			
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		<p>RIIS ROCHESTER INSTRUMENT SYSTEMS LTD. Maxlin Road, Crayford, Kent. U.K.</p>		

WARRANTY

Rochester Instrument Systems warrants equipment of its own manufacture to be free from defects in material and workmanship, under normal conditions of use and service, and will replace any component found to be defective, on its return to Rochester, transportation charges prepaid, within one year of its original purchase. Rochester will extend the same warranty protection on accessories which is extended or implied, beyond its obligation to replace any component involved. Such warranty is in lieu of all other warranties expressed or implied.

SPARE PARTS

Spare parts can be ordered through the Rochester Sales Office by calling 1-800-950-6686. Please provide the Model Number and Serial Number shown on the equipment tag.

REPAIRS AND RETURNS

When equipment is being returned for repair, whether in or out of warranty, it should be accompanied with the following information:

1. Model and Serial Number of the equipment.
2. Failure symptom(s).
3. Name and telephone number to contact if questions arise.
4. Return Materials Authorization (RMA) number, obtained by calling Rochester Repair Department at 1-888-222-6282.

Enclose the above information with the equipment and pack in a commercially accepted container with sufficient packing material to ensure that no shipping damage will occur.

Ship to:

ROCHESTER INSTRUMENT SYSTEMS INC.
255 North Union Street
Rochester, New York 14605
U.S.A.

Attention: REPAIR DEPARTMENT