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TECHNICAL MANUAL

for

STANDING WAVE RATIO INDICATOR

MODEL SWRA-1K



THE TECHNICAL MATERIEL CORPORATION
MAMARONECK, N.Y.

OTTAWA, ONTARIO

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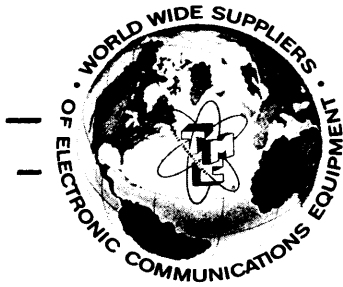
OTTAWA, ONTARIO

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THE TECHNICAL MATERIEL CORPORATION

C O M M U N I C A T I O N S E N G I N E E R S

700 FENIMORE ROAD

MAMARONECK, N. Y.

W a r r a n t y

The Technical Materiel Corporation, hereinafter referred to as TMC, warrants the equipment (except electron tubes,*fuses, lamps, batteries and articles made of glass or other fragile or other expendable materials) purchased hereunder to be free from defect in materials and workmanship under normal use and service, when used for the purposes for which the same is designed, for a period of one year from the date of delivery F.O.B. factory. TMC further warrants that the equipment will perform in a manner equal to or better than published technical specifications as amended by any additions or corrections thereto accompanying the formal equipment offer.

TMC will replace or repair any such defective items, F.O.B. factory, which may fail within the stated warranty period, PROVIDED:

1. That any claim of defect under this warranty is made within sixty (60) days after discovery thereof and that inspection by TMC, if required, indicates the validity of such claim to TMC's satisfaction.
2. That the defect is not the result of damage incurred in shipment from or to the factory.
3. That the equipment has not been altered in any way either as to design or use whether by replacement parts not supplied or approved by TMC, or otherwise.
4. That any equipment or accessories furnished but not manufactured by TMC, or not of TMC design shall be subject only to such adjustments as TMC may obtain from the supplier thereof.

Electron tubes*furnished by TMC, but manufactured by others, bear only the warranty given by such other manufacturers. Electron tube warranty claims should be made directly to the manufacturer of such tubes.

TMC's obligation under this warranty is limited to the repair or replacement of defective parts with the exceptions noted above.

At TMC's option any defective part or equipment which fails within the warranty period shall be returned to TMC's factory for inspection, properly packed with shipping charges prepaid. No parts or equipment shall be returned to TMC, unless a return authorization is issued by TMC.

No warranties, express or implied, other than those specifically set forth herein shall be applicable to any equipment manufactured or furnished by TMC and the foregoing warranty shall constitute the Buyers sole right and remedy. In no event does TMC assume any liability for consequential damages, or for loss, damage or expense directly or indirectly arising from the use of TMC Products, or any inability to use them either separately or in combination with other equipment or materials or from any other cause.

*Electron tubes also include semi-conductor devices.

PROCEDURE FOR RETURN OF MATERIAL OR EQUIPMENT

Should it be necessary to return equipment or material for repair or replacement, whether within warranty or otherwise, a return authorization must be obtained from TMC prior to shipment. The request for return authorization should include the following information:

1. Model Number of Equipment.
2. Serial Number of Equipment.
3. TMC Part Number.
4. Nature of defect or cause of failure.
5. The contract or purchase order under which equipment was delivered.

PROCEDURE FOR ORDERING REPLACEMENT PARTS

When ordering replacement parts, the following information must be included in the order as applicable:

1. Quantity Required.
2. TMC Part Number.
3. Equipment in which used by TMC or Military Model Number.
4. Brief Description of the Item.
5. The *Crystal Frequency* if the order includes crystals.

PROCEDURE IN THE EVENT OF DAMAGE INCURRED IN SHIPMENT

TMC's Warranty specifically excludes damage incurred in shipment to or from the factory. In the event equipment is received in damaged condition, the carrier should be notified immediately. Claims for such damage should be filed with the carrier involved and not with TMC.

All correspondence pertaining to Warranty Claims, return, repair, or replacement and all material or equipment returned for repair or replacement, within Warranty or otherwise, should be addressed as follows:

THE TECHNICAL MATERIEL CORPORATION
Engineering Services Department
700 Fenimore Road
Mamaroneck, New York

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1. FUNCTIONAL DESCRIPTION

Standing Wave Ratio Indicator, Model SWRA-1K (figure 1) is a directional coupler assembly with an associated panel mounted r-f output meter. The SWRA output meter may be switched to monitor either forward or reflected r-f output.

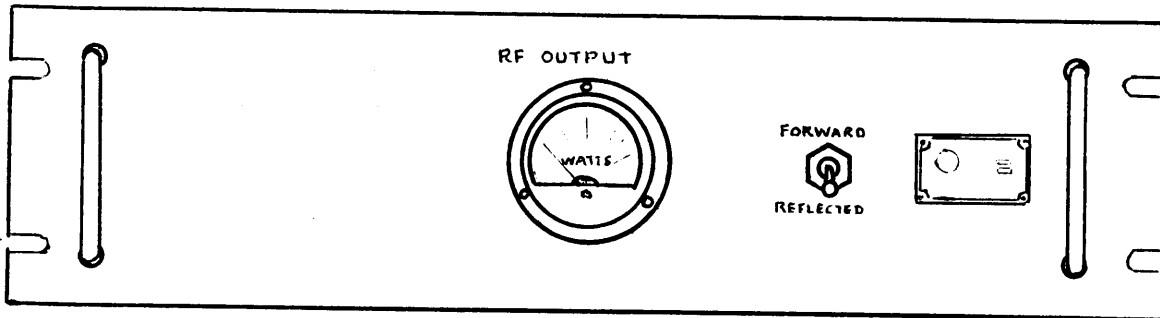


Figure 1. Standing Wave Ratio Indicator,
Model SWRA-1K, Front Panel View.

2. PHYSICAL DESCRIPTION

The SWRA consists of a 19-inches wide by 5-1/4-inches high panel; the panel displays an RF OUTPUT meter and an associated FORWARD/REFLECTED toggle switch.

The rear panel contains two connectors for input and output connections.

3. INSTALLATION

The SWRA may be mounted into any standard width equipment cabinet or rack. The front panel is to be mounted to the rack frame and secured by means of four screws and washers.

Interconnections are made at the rear mounted J101 and J102 connectors.

Refer to the applicable system manual for interconnecting details.

4. OPERATION

The SWRA contains one operating control, front panel mounted. This control, FORWARD/REFLECTED toggle switch, is used in conjunction with the panel mounted RF OUTPUT power meter.

Setting the toggle switch at FORWARD will enable the RF OUTPUT meter to indicate the forward power output of the associated transmitter system.

Setting the toggle switch at REFLECTED will enable the RF OUTPUT meter to indicate the reflected power output of the associated transmitter system.

See figure 2 for a functional block diagram of the SWRA in a typical transmitter system configuration.

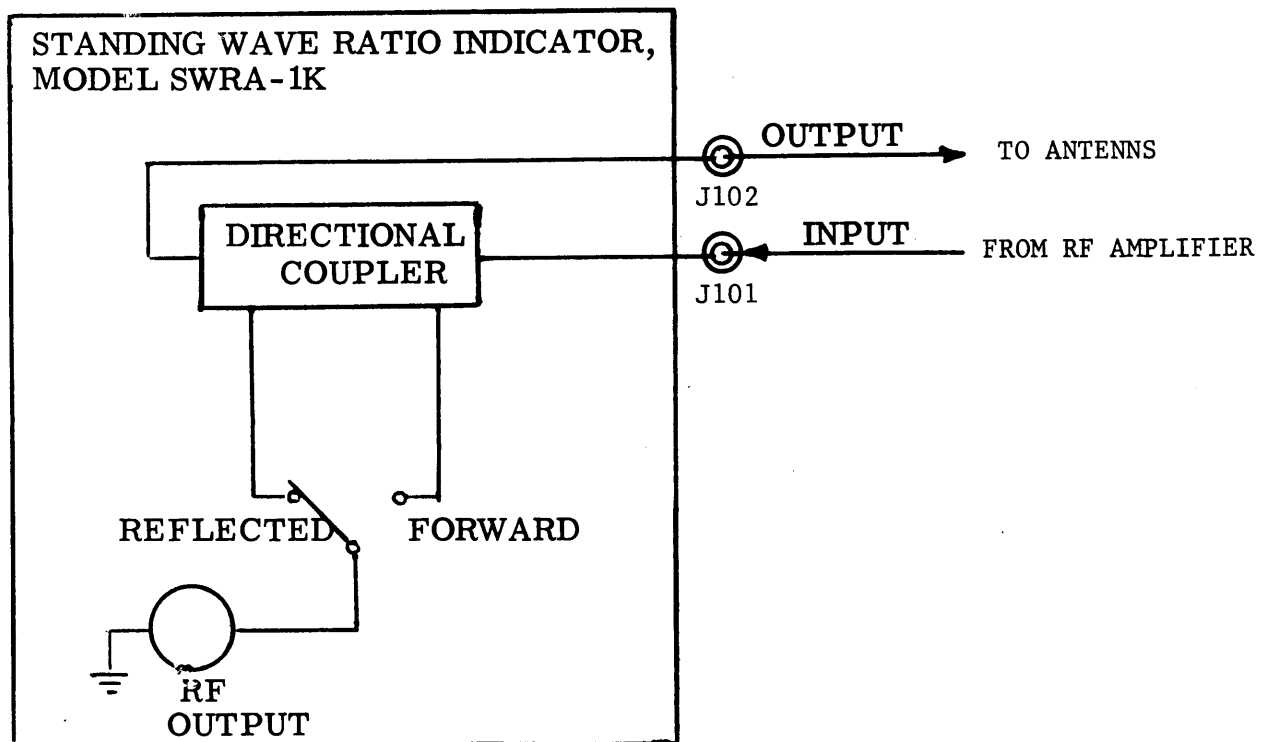
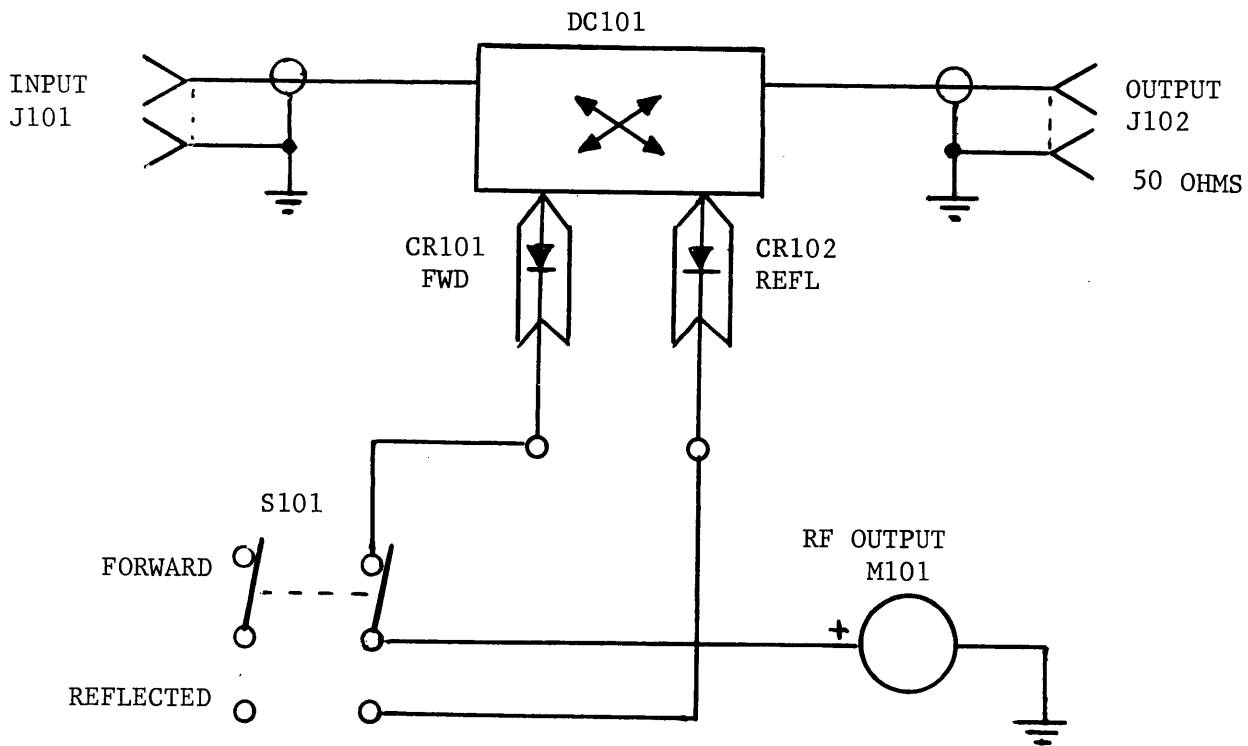


Figure 2. Functional Block Diagram

5. MAINTENANCE

Maintenance will consist mainly of observing for unit cleanliness, secure and accurate interconnections, and normal component checks and replacements.

See figure 3, schematic diagram for component circuitry and connection.



CK1280-Ø

Figure 3. Schematic Diagram

PARTS LIST
for
STANDING WAVE RATIO INDICATOR, SWRA-1K/50

REF SYMBOL	DESCRIPTION	TMC PART NUMBER
CP601 thru CP608	NOT USED	
CP609	ADAPTER, CONNECTOR, ELECTRICAL: series N.	UG27*/U
CP610	Same as CP609.	
CR101	Non-replaceable item. Part of DC101.	
CR102	Non-replaceable item. Part of DC101.	
DC101	DIRECTIONAL COUPLER: frequency range 2-30 Mc; power range 1,000 watts forward, 250 watts reflected.	DC107
M101	METER, DC: pivot and jewel movement; 30 microamps; 3-1/2" dia. bakelite case.	MR197
S101	SWITCH, TOGGLE: DPDT; current rating 3 amps at 250 VAC or 6 amps at 125 VAC; molded phenolic base; bat type handle.	ST105