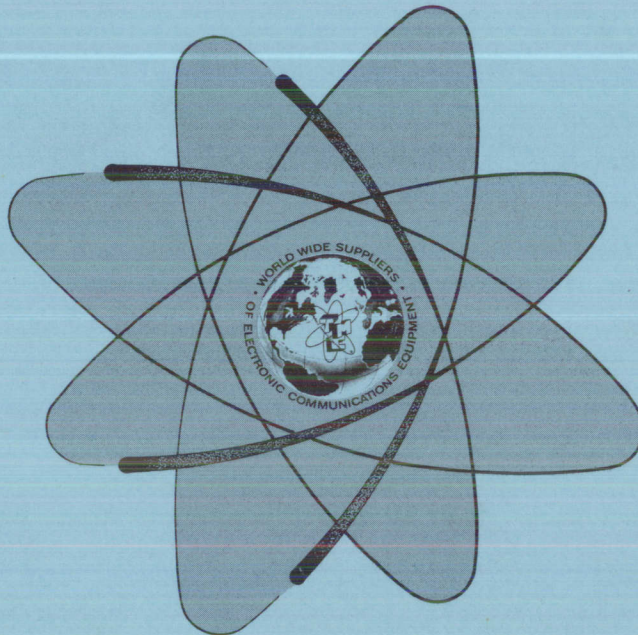


MASTER  
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TECHNICAL INFORMATION  
for  
TRANSMITTING ANTENNA COUPLER  
MODEL TRC-100

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THE TECHNICAL MATERIEL CORPORATION  
MAMARONECK, N.Y. OTTAWA, ONTARIO



# 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.

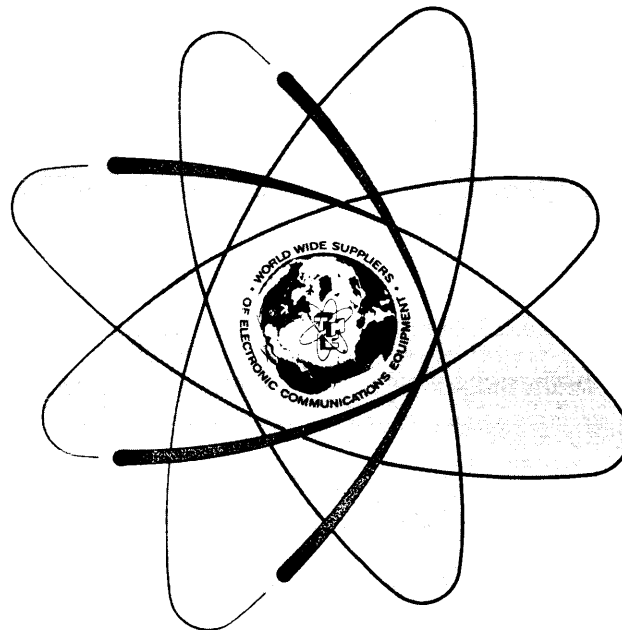
### *PROCEDURE IN THE EVENT OF DAMAGE INCURRED IN SHIPMENT*

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

TECHNICAL INFORMATION  
for  
TRANSMITTING ANTENNA COUPLER  
MODEL TRC-100

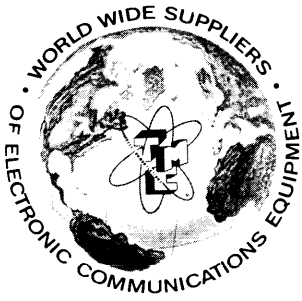


THE TECHNICAL MATERIEL CORPORATION  
MAMARONECK, N. Y. OTTAWA, ONTARIO

### NOTICE

THE CONTENTS AND INFORMATION CONTAINED  
IN THIS INSTRUCTION MANUAL IS PROPRIETARY  
TO THE TECHNICAL MATERIEL CORPORATION  
TO BE USED AS A GUIDE TO THE OPERATION  
AND MAINTENANCE OF THE EQUIPMENT FOR  
WHICH THE MANUAL IS ISSUED AND MAY NOT  
BE DUPLICATED EITHER IN WHOLE OR IN  
PART BY ANY MEANS WHATSOEVER WITHOUT  
THE WRITTEN CONSENT OF THE TECHNICAL  
MATERIEL CORPORATION.





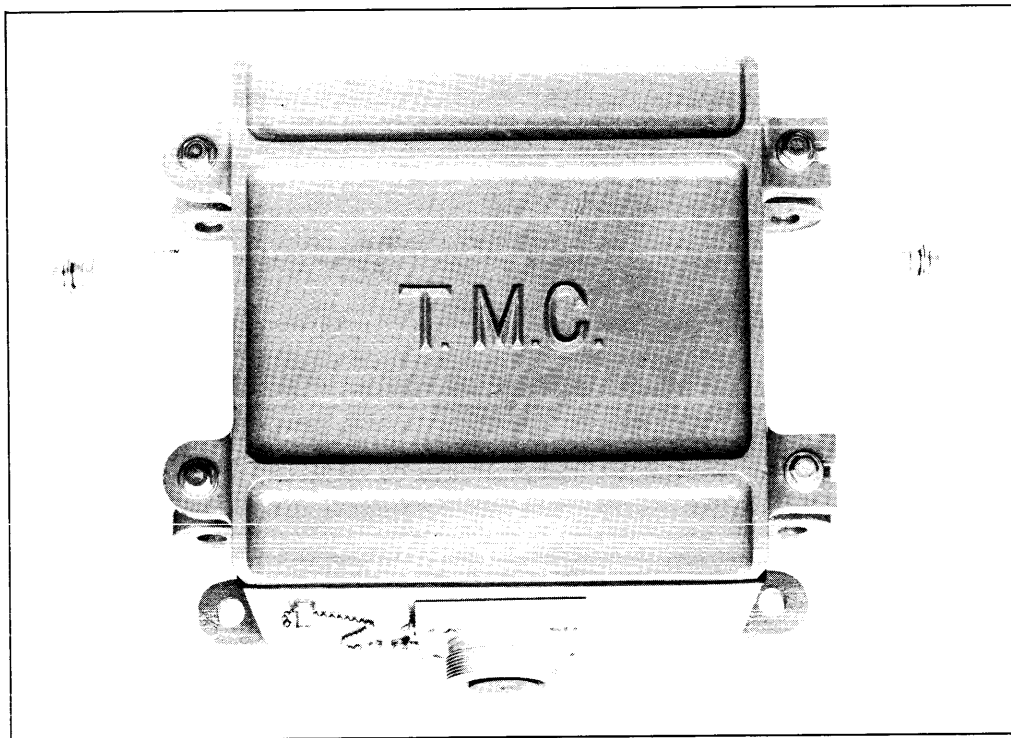
## TECHNICAL BULLETIN NUMBER 8015A

Transmitter Antenna Coupler Series

TMC Models TRC

CU-729/URT

CU-1076/URT



TMC Models TRC series of Broadband RF transformers provide matching between 50 or 70 ohms unbalanced and 600 ohm balanced impedances, with power capabilities from 250 watts to 40 kw PEP.

Models TRC provide efficient coupling of RF energies from unbalanced to balanced or balanced to unbalanced over the frequency range of 2-30 megacycles, dependent on the model used.

With Model TRC Broadband coupling transformers, it is possible to match 50 or 70 ohm transmitter outputs to any antenna requiring a 600 ohm coupling; thus allowing the flexibility of RF coaxial switching at the transmitting site.

Model TRC transformers are hermetically sealed and potted in a special compound. All of the units in the series are passive devices requiring no power supplies or tuning adjustments at any time. The rugged weatherproof casings differ in construction depending on the power handling requirements of each model. No maintenance is required for these units.

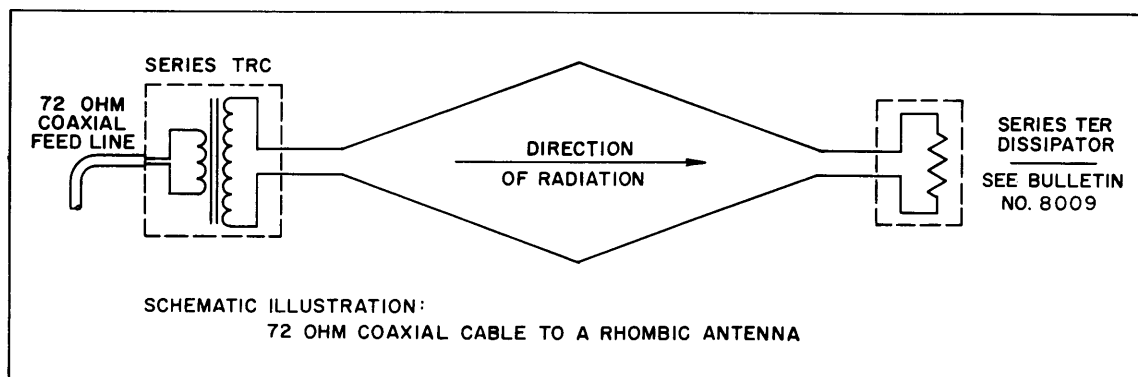
## Transmitting Antenna Coupler Series

All Model TRCs are provided with either Mykroy or porcelain bowls for balanced operation. All Model TRC-20Ks are furnished with a 3 $\frac{1}{8}$ " EIA flange as standard fittings, and all Model TRC-5000s are furnished with a 1 $\frac{5}{8}$ " EIA flange. All other TRCs are furnished with an AX-274 to mate with an ES-85/U coaxial connector. If other than the standard fitting is desired, please indicate by using the appropriate AX number from the chart. As an example, to order a TRC to match a 50 ohm RG-17/U cable with a QDL connector for 1000 watts PEP, order TRC-500-50U/600B/AX-273 ( ).†

† For mating RF cable fittings, refer to TMC Connector Products Catalog.

### TECHNICAL SPECIFICATIONS FOR TMC Models TRC

FREQUENCY RANGE:	2-30 megacycles (except as noted on chart).
POWER RATING:	See Chart.
INSERTION LOSS:	Less than 1 db.
IMPEDANCES:	50 or 70 ohms unbalanced to 600 balanced. (Units may be used unbalanced to balanced or vice versa.)
RF FITTINGS:	See Chart.
MOUNTING:	See mounting diagrams.
SAFETY FEATURES:	Spark gap for protection against static charge or lightning.
DIMENSIONS:	See Chart.
WEIGHT:	See Chart.
OPERATING TEMPERATURE:	-40° C. to +75° C. Ambient.
COMPONENTS AND CONSTRUCTION:	Equipment manufactured in accordance with JAN/MIL specifications wherever practicable.



TMC MODEL NUMBER	MILITARY NOMENCLATURE	FREQUENCY RANGE (MC)	AVERAGE POWER (IN WATTS)	PEAK POWER (IN WATTS)	REFER TO NOTES	INSTALLATION DATA					MOUNTING PLATE CONNECTOR ASSEMBLIES*												SHIPPING DATA		BOWL ASSEMBLIES		LOGISTICS DATA		TMC MODEL NUMBER			
						HEIGHT (in.)	WIDTH (in.)	DEPTH (in.)	WEIGHT (lbs.)	VOLUME (cu. ft.)	WEIGHT (lbs.)	AX-274 (for RG 85/U coax)	AX-272 (500) 1 1/8" EIA Flange	AX-271 (700) 1 1/8" EIA Flange	(500) 3/8" EIA Flange	(700) 3/8" EIA Flange	AX-278 (500) 3/8" to 1 1/8" Adapter	AX-279 (700) 3/8" to 1 1/8" Adapter	AK-273 QDL	AK-281 UHF	AK-282 UHF (T)	AK-283 BN	AK-284 BNC	AK-285 HN	AK-286 C	AK-287 LC	AK-289 QDS	AK-259 N		(1/2" bolts on 12" cent.)	(1/4" bolts on 12" cent.)	A-FSN w/spares
TRC-100-70U/600B		2-32	100	200	1, 5	9	9	5	15	1.8	28																X		A		TRC-100-70U/600B	
TRC-500-50U/600B		2-30	500	1000	1, 6	9	9	5	15	1.8	28																X		A		TRC-500-50U/600B	
TRC-500-70U/600B		2-30	500	1000	1, 5	9	9	5	15	1.8	28																X		A		TRC-500-70U/600B	
TRC-3500-50U/600B	CU-1076/URT	2-30	1800	3600	1	14	9	5	32	2.4	45			X													X		A		TRC-3500-50U/600B	
TRC-3500-70U/600B	CU-729/URT	2-30	1800	3600	1	14	9	5	32	2.4	45			X													X		A		TRC-3500-70U/600B	
TRC-5000-50U/600B		2-28	5000	10,000	2, 3	14	8	5	20	2.4	45																X		A		TRC-5000-50U/600B	
TRC-5000-70U/600B		2-28	5000	10,000	2, 3	14	8	5	20	2.4	45																X		A		TRC-5000-70U/600B	
TRC-20K-50U/600B		4-30	20,000	40,000	2, 4	20 1/2	20	14	80	14	120		X															X	A		TRC-20K-50U/600B	
TRC-20K-70U/600B		4-30	20,000	40,000	2, 4	20 1/2	20	14	80	14	120																		X	A		TRC-20K-70U/600B

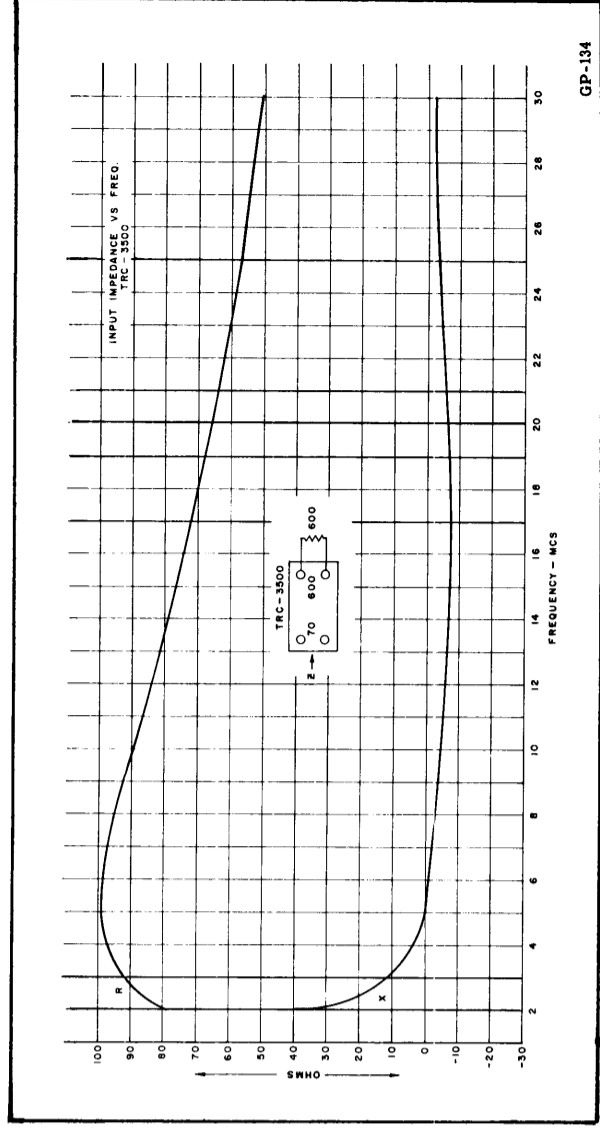
Indicates standard mounting plate connector assembly provided.  
When other fittings are desired, please use appropriate AX number.  
Sample: TRC-3500-50U/600B/AX-273.\*

NOTES

1. Stress relieved cast Aluminum case.
2. Fiberglass reinforced plastic case.
3. Under conditions of a 64 tone voice frequency modulation, this TRC will operate at 50 kw PEP on a 10% duty cycle.
4. Under conditions of a 64 tone voice frequency modulation, this TRC will operate at 100 kw PEP on a 20% duty cycle.
5. Also tapped for 150 and 300 ohm balance.
6. Also tapped for 100 and 200 ohm balance.

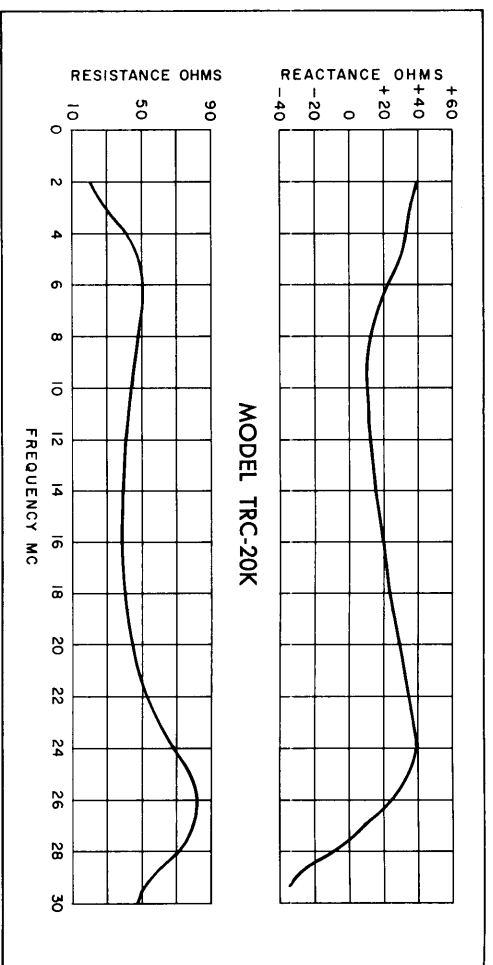
\* All mounting plate connector assemblies, other than those indicated as being provided, are sold separately.

For companion RF antenna trimmers/dissipators and dummy loads, refer to TB #8009.

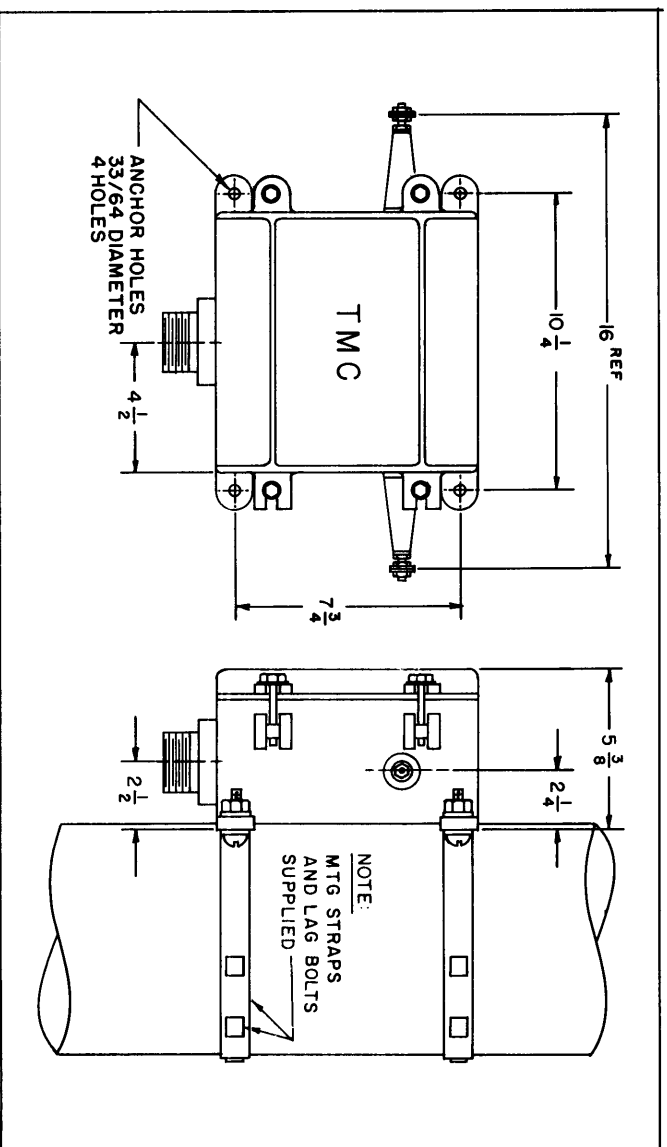


TYPICAL INPUT IMPEDANCE VS FREQUENCY CURVES, MODEL TRC-3500

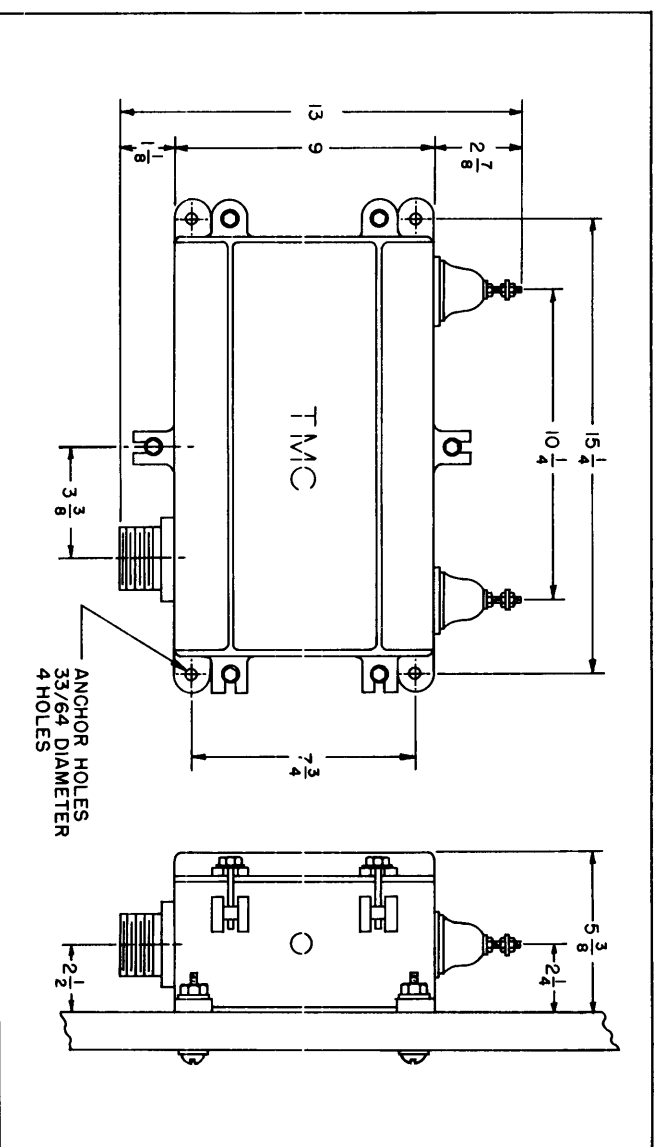




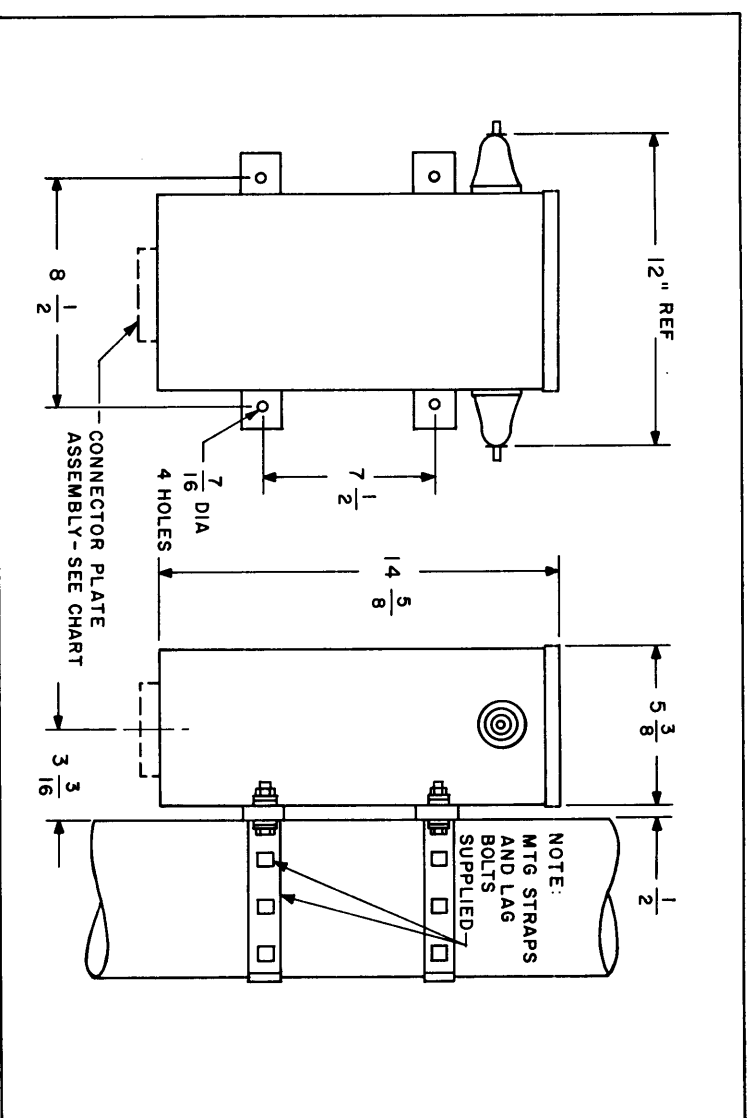
TYPICAL INPUT IMPEDANCE CHARACTERISTICS WHEN TRANSFORMER IS PROPERLY TERMINATED, IN A RESISTIVE LOAD.



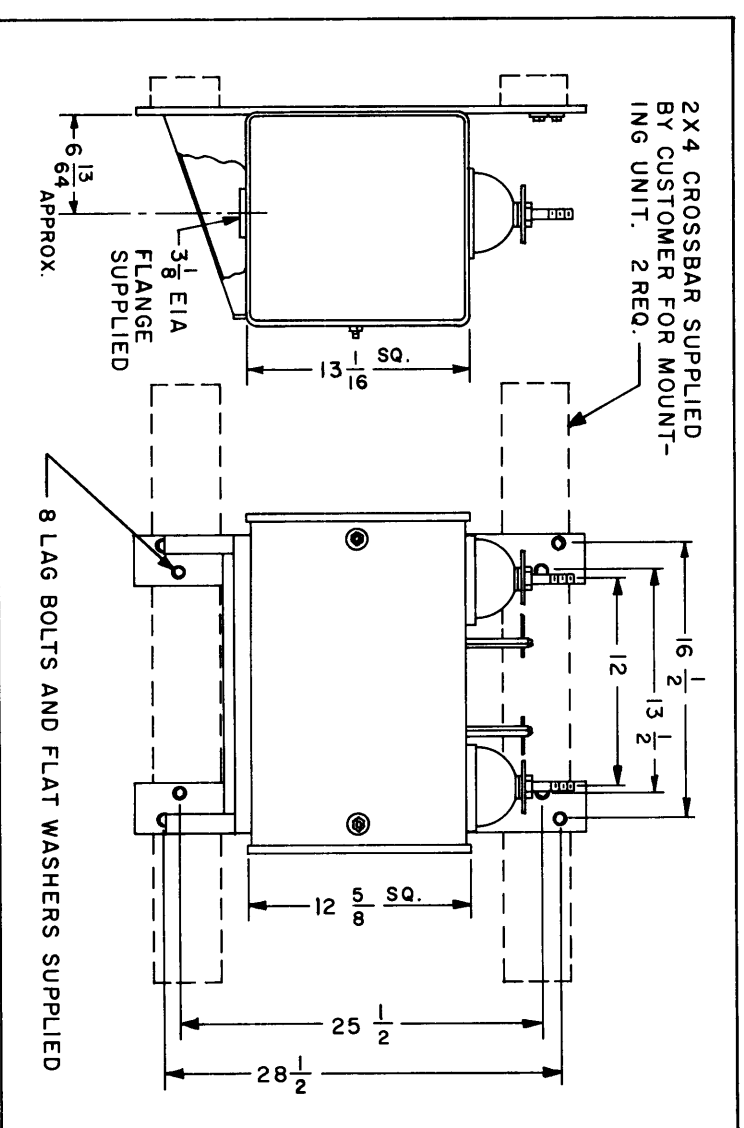
DIMENSIONAL OUTLINE AND MOUNTING, MODELS TRC-100, 500



DIMENSIONAL OUTLINE AND MOUNTING, MODEL TRC-3500



DIMENSIONAL OUTLINE AND MOUNTING, MODEL TRC-5K



DIMENSIONAL OUTLINE AND MOUNTING, MODEL TRC-20K



CORPORATE OFFICE  
THE TECHNICAL MATERIEL CORP.

# THE TECHNICAL MATERIEL CORPORATION

MAMARONECK, N. Y.

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TMC Systems, (Texas), Inc., Garland, Texas

TMC Systems, (Calif.), Inc., Oxnard, Calif.  
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TMC Systems, A. G., Luzern, Switzerland  
TMC Research Inc., San Luis Obispo, Calif.

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