

**STANDARD DRAWING**

IF IT IS FOUND DESIRABLE TO CHANGE ANY TOLERANCE OR OTHER DETAIL SPECIFIED ON THIS DRAWING NOTIFY THE PURCHASER PROMPTLY.

MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES

MR...A

TYPE DESIGNATION					
COMPONENT	STYLE	COLOR SCHEME	FULL-SCALE	CURRENT	UNITS
MR	35	W	300	DC	VV

**STYLE**  
 FIRST DIGIT  
 2-2 1/2 INCH ROUND.  
 3-3 1/2 INCH ROUND.  
 SECOND DIGIT (CASE)  
 4-MOULDED, FOR STEEL PANEL, UNSEALED.  
 5-MOULDED, NONMAGNETIC PANEL, UNSEALED.  
 6-MOULDED, NONMAGNETIC OR STEEL, SEALED.

**KIND OF CURRENT.**  
 AC-25 TO 125 CPS., 60 CPS NOMINAL  
 AE-800 CPS. NOMINAL.  
 AF-400 CPS. NOMINAL.  
 DC-DIRECT CURRENT.  
 RF-R.F., CONVENTIONAL SCALE.  
 RL-R.F., LINEAR EXPANDED "

**COLOR SCHEME**  
 B - WHITE MARKINGS AND POINTER, BLACK BACKGROUND.  
 F - YELLOW FLOURESCENT MARKINGS AND POINTER, BLACK BACKGROUND.  
 S - SELF-LUMINOUS MARKINGS AND POINTER, BLACK BACKGROUND  
 W - BLACK MARKING AND POINTER, WHITE BACKGROUND.

**ELECTRICAL UNITS**  
 UA-MICROAMPERES  
 MA-MILLIAMPERES  
 AA- AMPERES  
 KA-KILOAMPERES  
 VV-VOLTS  
 KV-KILOVOLTS  
 MV-MILLIVOLTS

**DC VOLTMETERS 2 1/2" & 3 1/2"**

V. (FULL SCALE)	KV.	#
2	1	
10	2	
20	5	
50*	10	
100*	20	
200*	20	
500#		
800#		

\* ALSO WITH ZERO CENTER.  
 # REQUIRES EXTERNAL RESISTOR.

**AC AMMETERS & VOLTMETERS FULL SCALE**

ma.	a.	v. 1.5 **
10	1	3
20	2	5*
50	5	8
100	10	10*
200	20	15
500#	30*	30
800#	50#	80
	80#	150
	100#	300
	200#	800#
	500#	
	800#	

**DC AMMETERS 2 1/2" & 3 1/2" FULL SCALE**

ua.	ma.	a.	ka.
20	1*	1	1#
50*	5*	2	1.2#
100*	10*	5*	
200	50*	10* 30*	
500*	100*	20*	
	200	50#	
	500*	100#	
		200#	
		500#	

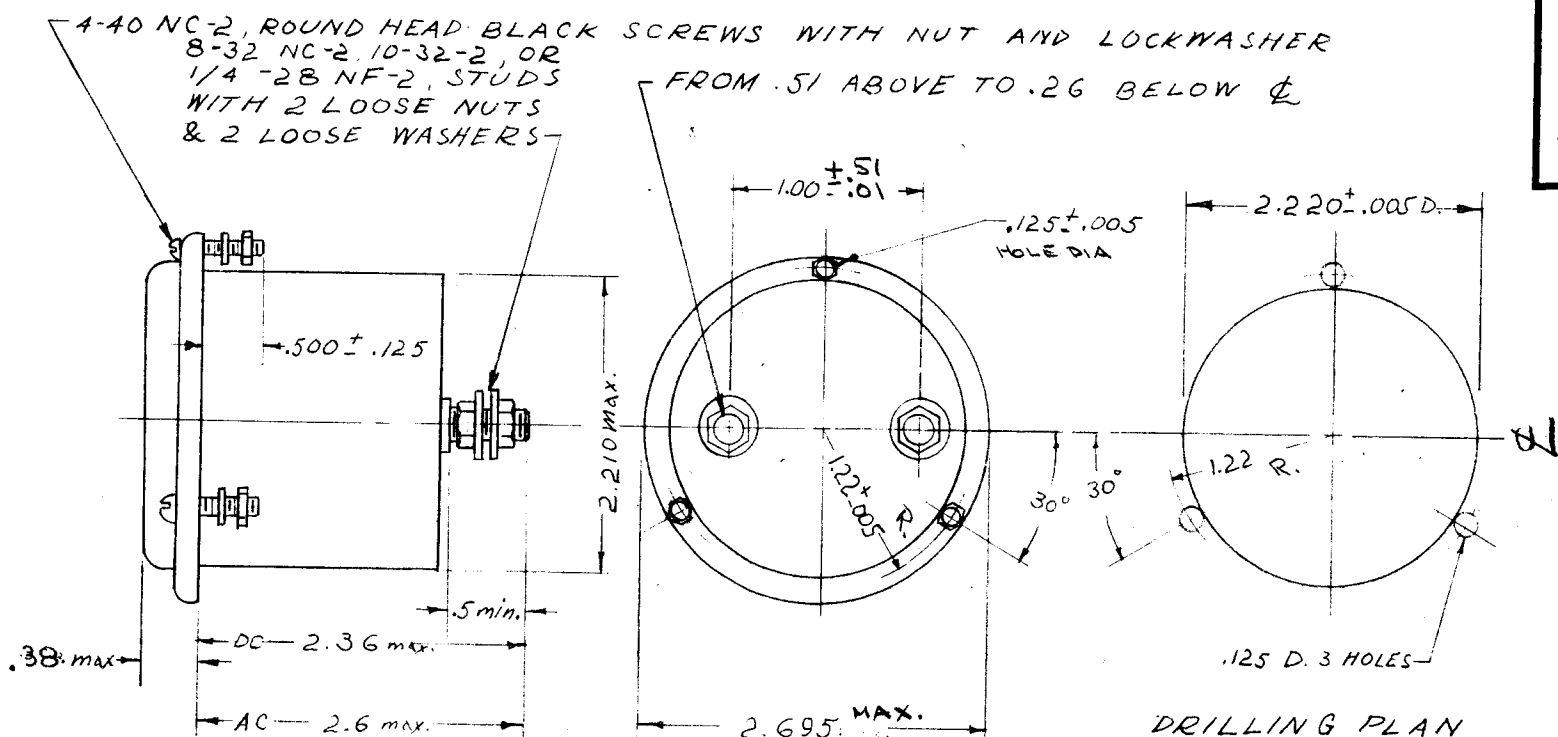
\* ALSO WITH ZERO CENTER.  
 # REQUIRES EXTERNAL SHUNT.

**FULL-SCALE DEFLECTION.**  
 USE THREE FIGURE, R FOR DECIMAL POINT. USE 0 FOR LEFT FIGURE IS LESS THAN THREE FIGURES REQUIRED.  
**ZERO-CENTER DEFLECTION**  
 USE TWO FIGURES, WITH LETTER IN CENTER TO DESIGNATE VALUE OF NUMBERS.  
 D-TENTHS. (EXAMPLE: 272 REPRESENTS 20-0-20)  
 U-UNITS.  
 T-TENS.  
 H-HUNDRED.

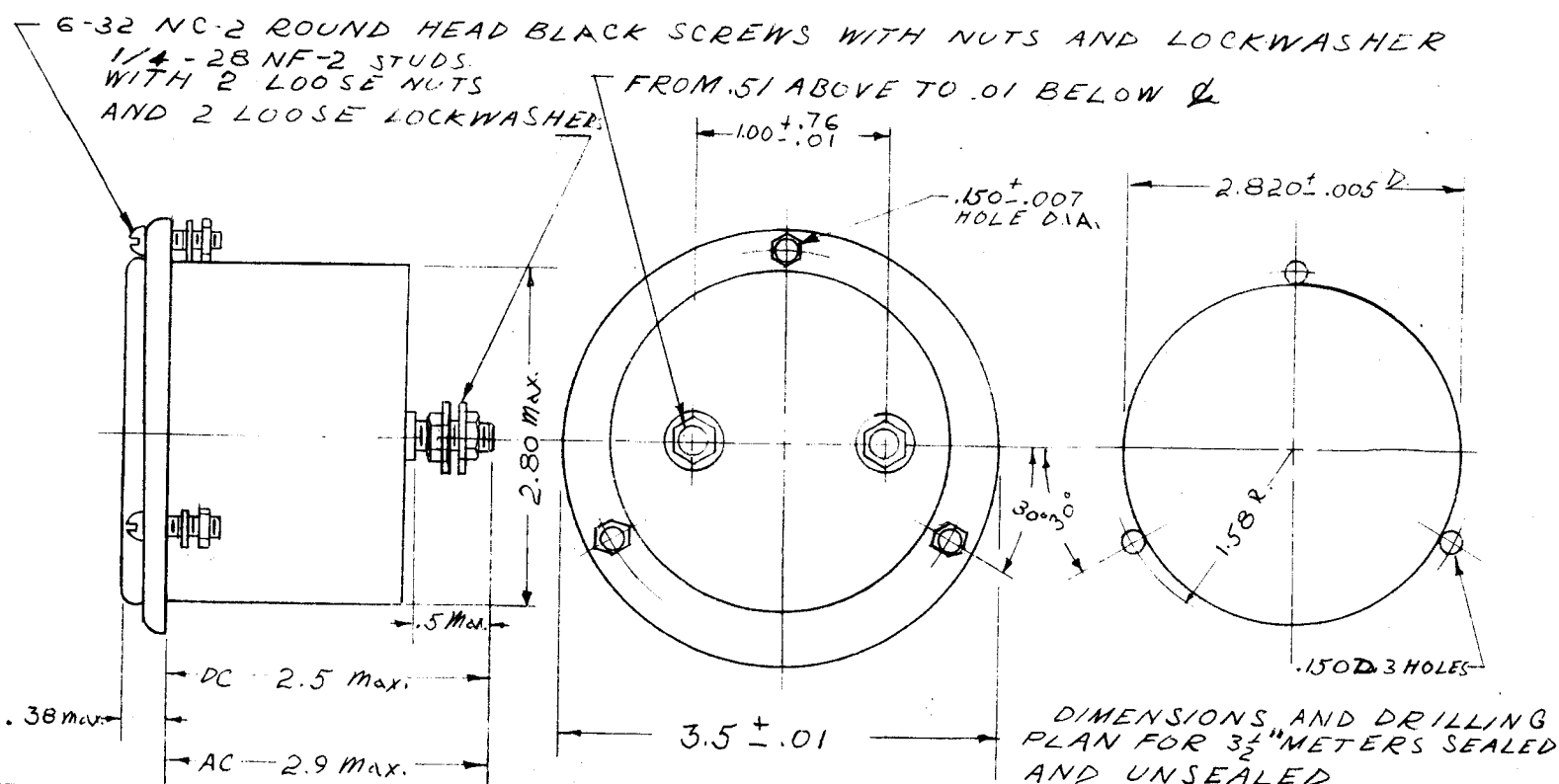
**RF. AMMETERS 2 1/2" FULL SCALE & 3 1/2"**

ma.	a.
100	1
200	2
500	5
	10
	20

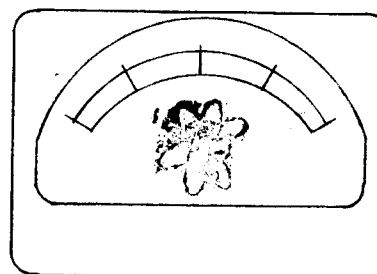
**NOTE #1.** SOLDER-LUG TERMINALS ARE PERMITTED ON SEALED METERS.  
**NOTE #2.** FOR OTHER RANGES & SPECIAL METERS, SEE MIL SPEC. METERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SPECIFICATION MIL-M-6A



DIMENSIONS AND DRILLING PLAN FOR 2 1/2" METERS, SEALED AND UNSEALED.



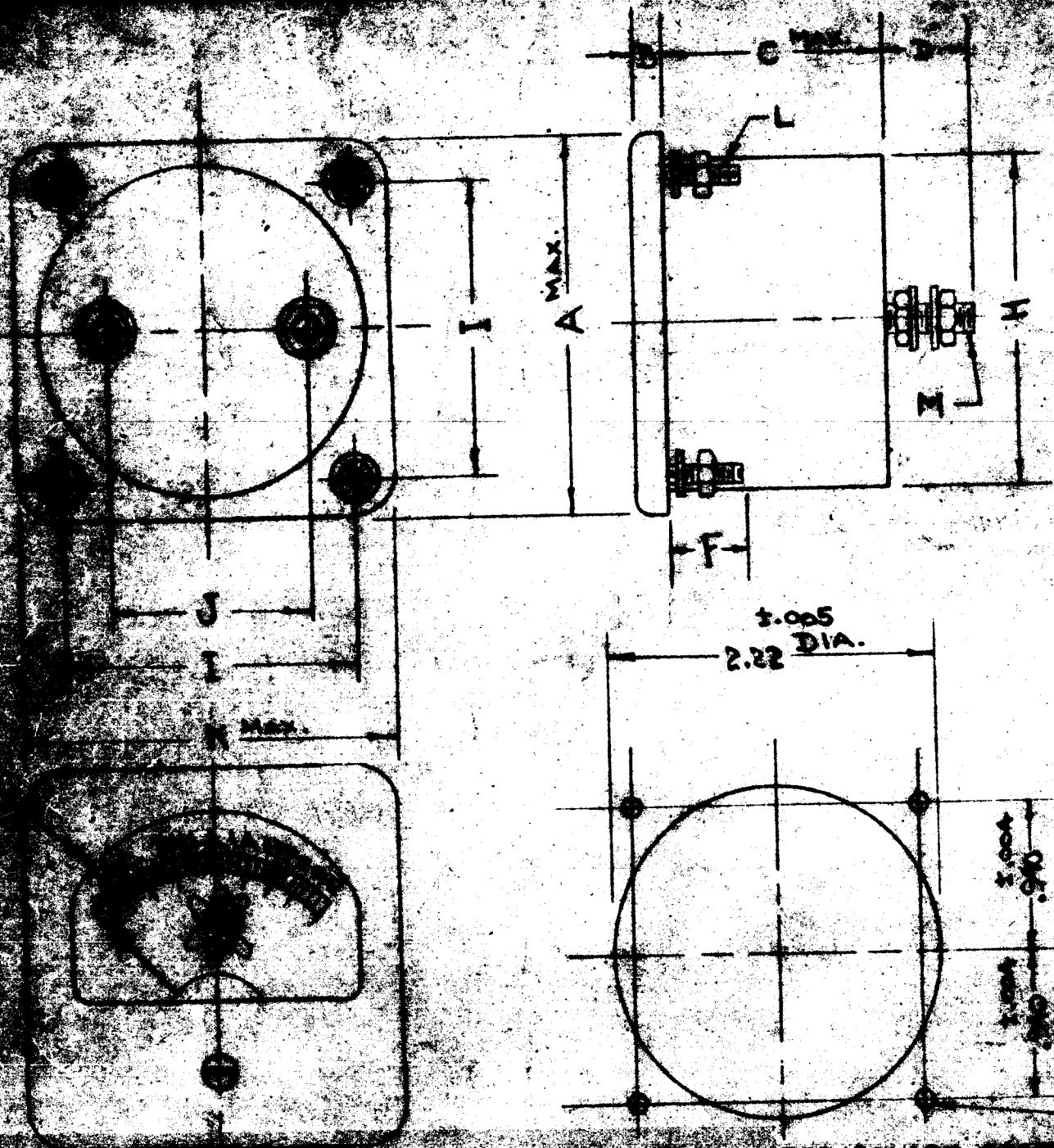
DIMENSIONS AND DRILLING PLAN FOR 3 1/2" METERS SEALED AND UNSEALED.



**NOTE:** TMC INSIGNIA TO BE PRINTED ON FACE OF METERS (REF. NP-117)

REQ.	ITEM	PART NO.	DESCRIPTION	SYMBOL
			<b>THE TECHNICAL MATERIEL CORP.</b>	
			MAMARONECK, NEW YORK	
			<b>METERS, PANEL TYPE</b>	
			DATE: PB-9-19-54	
			DRAWN: [Signature]	ELEC. DES. APP. [Signature]
			CHECKED: [Signature]	MECH. DES. APP. [Signature]
			FINAL APPROVAL	
			MR...	A

ND CHANGE READRAWN	9-21-54	P.K. GOS	1002				
ISSUE	ITEM	CHANGED FROM	DATE	CN. NO.	DRAFTS	CHECKER	ENG. APP.
<b>TOLERANCES</b>		<b>SCALE:</b>					
ALL OTHERS	DEC. DIM. ±	DRILL, PUNCH, COMMERCIAL STOCK SIZES AND MANUFACTURERS TOLERANCES ARE NOT INCLUDED.					
	FRAC. DIM. ±						
	AN ULAR DIM. ±						
		MODEL	PROJECT NO.	ASSY. NO.	DATE		



M-2 STUDS - 4 PLACES

PART NO.	RESISTANCE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
MR-100-1	75Ω ±50%	2.57	1.45	.73																							
MR-100-2	CRITICAL	"	"	.73																							
MR-100-3	260Ω ±10%	"	"	.73																							
MR-100-4	CRITICAL	"	"	.73																							
MR-100-5	CRITICAL	"	"	.73																							
MR-100-6	CRITICAL	"	"	.73																							
MR-100-7	200-1200 Ω	2.57	1.45	.73	.52																						
MR-100-8	1000Ω ±15%	2.57	1.45	.73																							
MR-100-9	200Ω ±10%	2.57	1.45	.73																							

- NOTE:
1. NO Insights To Be Printed On This Chart
  2. NO Part No. Shown In Parentheses On This Chart
  3. NO Dimensions Shown In Parentheses On This Chart

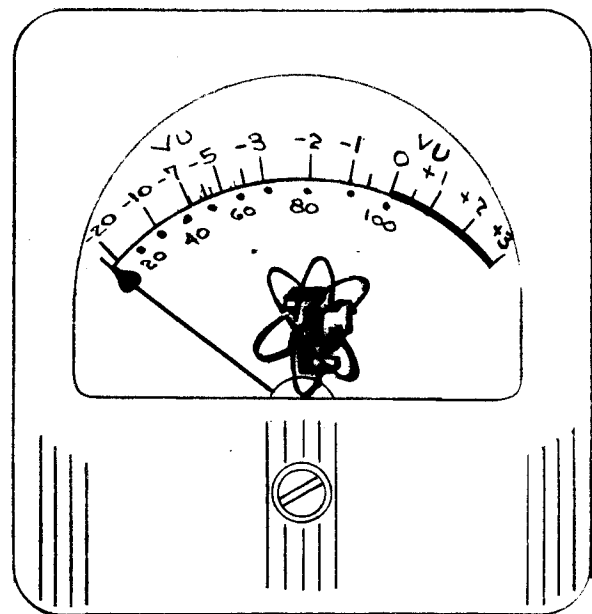
V	"J" Dim. Was 1.31	7-3-67	18370	ALL	EH
U	1 ADDED MR100-9 TO CHART	8-11-66	16746	RME	EH
T	1 ON CHART, COLUMN "D" DIMS .73 WERE .68	11-4-63	10372	MP	EH
S	3 NOTES (4, 5 & 6) ADDED	1-16-63	9560	MP	EH
	2 MFG CODE ADDED				
	1 MR-100-7, DIM "F" WAS .52				

IF IT IS FOUND DESIRABLE TO CHANGE ANY TOLERANCE OR OTHER DETAIL SPECIFIED ON THIS DRAWING NOTIFY THE PURCHASER PROMPTLY.

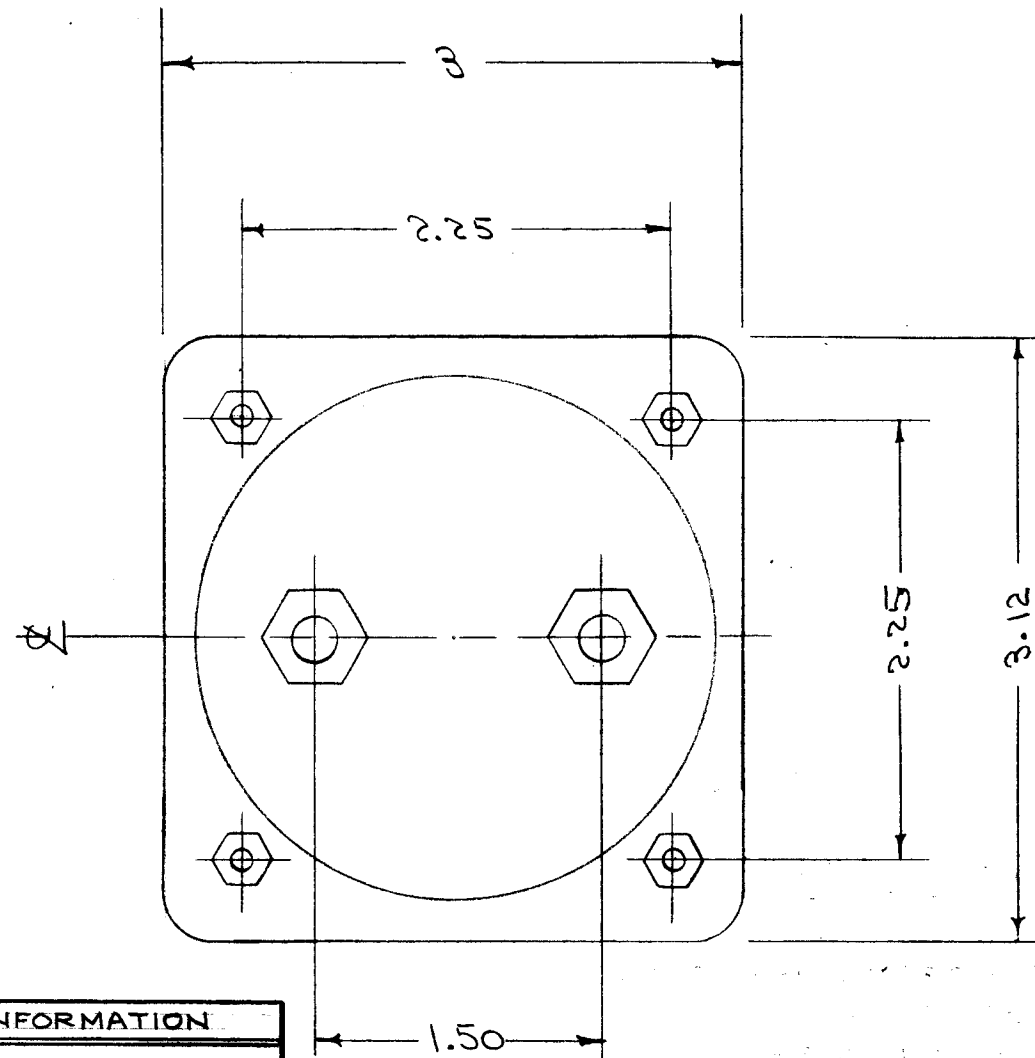
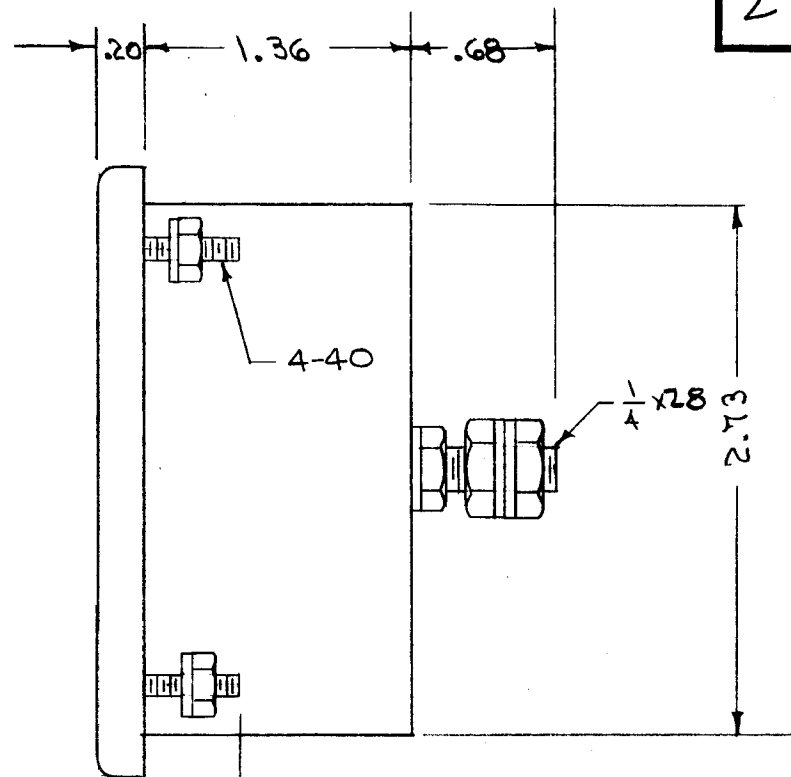
MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES

**STANDARD DRAWING**

MR-101 I



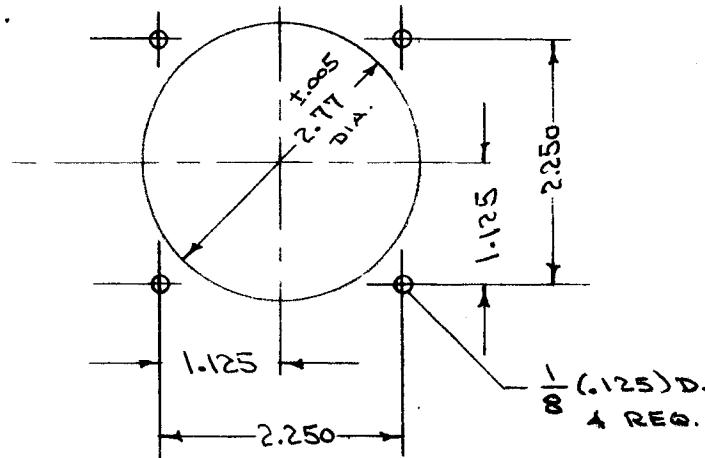
T.M.C. INSIGNIA TO BE PRINTED ON FACE OF METER (REF: NP-117).



PURCHASING INFORMATION	
MR-101-1	SIMPSON MODEL 47, (-20 TO +3VUMETER)
MR-101-2	SAME AS ABOVE BUT SUPPLIED WITH LD-200
MR-101-3	SAME AS ABOVE BUT SUPPLIED WITH LD-199

NOTE: CASE SIZE AS SHOWN. SCALE LENGTH 2.6". INTERNAL IMPEDANCE 3900Ω. STANDARD DAMPING CHARACTERISTIC. CALIBRATED TO READ .0 dbm WITH 1.228 V. APPLIED TO THE METER WITH 3600Ω SERIES RESISTANCE.

REF: SIMPSON ELEC. CO. / WESTON ELEC. INST. CO.



T.M.C. No.	SIMPSON No.	WESTON No.	SCALE	REF. DWG.	FIRST USED
MR-101-1	A7 "A" SCALE	301-30A	-20 TO +3 VU	AS SHOWN	DCU
MR-101-2	A7 MODIFIED	301 MODIFIED	-20 TO +3 dbm	LD-200	RSM-2
MR-101-3	A7 MODIFIED	301 MODIFIED	-20 TO +3, -30 TO -7 dbm	LD-199	RSA-2

ISSUE	ITEM	CHANGED FROM	DATE	CN. NO.	DRAFTS	CHECKER	ENG. APP.
H	1	MTG STUDS WERE 4-36 THD	6/2/59	9243	JMY		
G	2	1/4-28 WAS 1/4-20 THDS	4/3/61	4538	JDM		
	1	4-36 WAS 4-40 THDS					
F	1	Note added	2/3/59	726	JCB		
E	1	REVISION LETTER ADDED MR-101-2 & 3 ADDED	11/8/59	1	JAL		

TOLERANCES		SCALE:
ALL OTHERS	DEC. DIM. ± FRAC. DIM. ± ANGULAR DIM. ±	DRILL, PUNCH, COMMERCIAL STOCK SIZES AND MANUFACTURERS TOLERANCES ARE NOT INCLUDED.

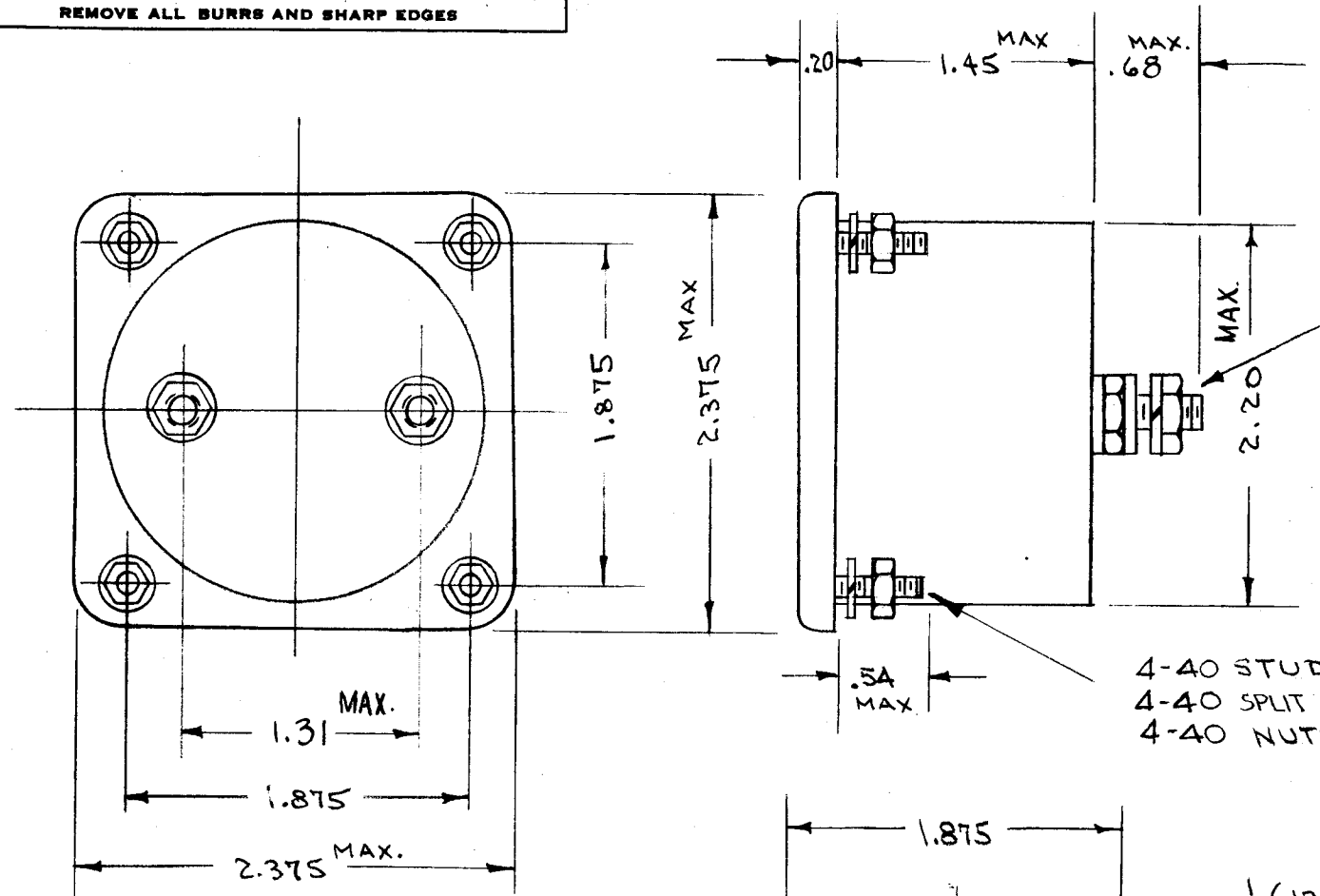
MODEL	PROJECT NO.	ASSY. NO.	DATE

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
STOCK SIZE		METER, LEVEL INDICATING	
MATERIAL		WEIGHT PER PC.	
TYPE & TEMPER		C.D.D. 9-29-54	A. J. J.
HEAT TREAT. SPEC.		DRAWN	ELEC. DES. APP. MECH. DES. APP.
		CHECKED	FINAL APPROVAL
FINISH & SPEC. N.		MR-101 I	

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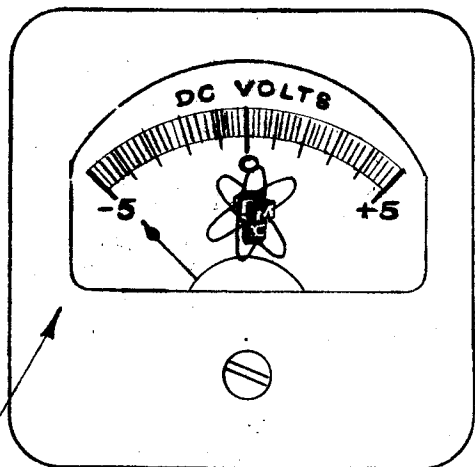
MR-102 D



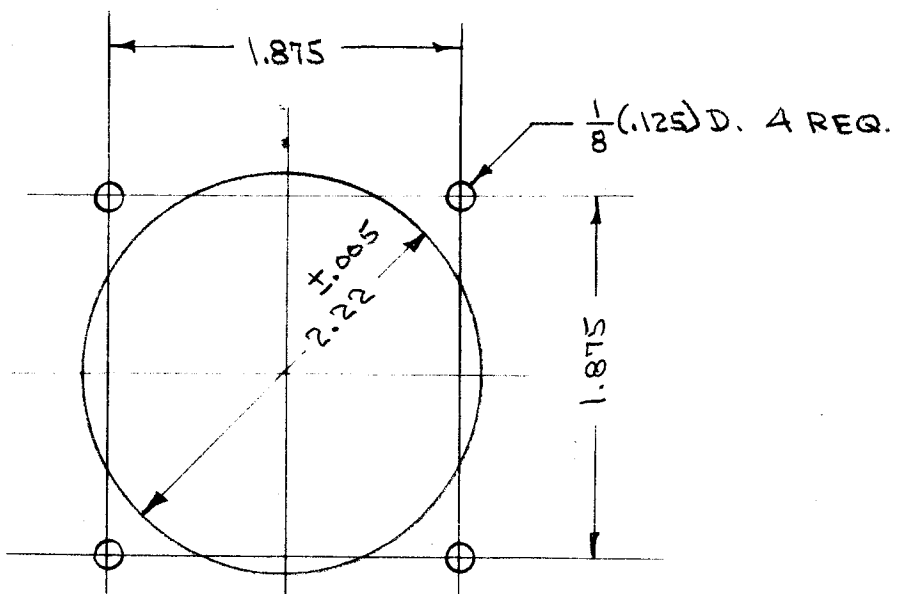
- 1/4-28 STUDS 2 REQ.
- 1/4 SPLIT LOCKWASHERS 2 REQ.
- 1/4-28 NUTS 4 REQ.
- 1/4 FLAT WASHERS 2 REQ.

0-200μA. D.C.  
 FULL SCALE DEFLECTION TYPE  
 METER TO BE CALIBRATED -5 0 +5  
 ZERO CURRENT READING SHALL BE -5  
 COIL RESISTANCE 360Ω ± 10%

- 4-40 STUDS 4 REQ.
- 4-40 SPLIT LOCKWASHERS 4 REQ.
- 4-40 NUTS 4 REQ.



WHITE BACKGROUND- BLACK NUMBERS AND POINTER



DRILLING PLAN

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Property of:  
 THE TECHNICAL MATERIEL CORPORATION  
 MAMARONECK, NEW YORK

D	CHG'D. 1/4-28 LK. WASH. 4 REQ. ADDED 1/4 FLT. WASH. 2 REQ. & FLT. WASH. TO SIDEVIEW, CHG'D 4-40 LK. WASH.	7-22-66	16625	RME	<i>[Signature]</i>	<i>[Signature]</i>	
ISSUE	ITEM	CHAN ED FROM	DATE	CN. NO.	DRAFTS	CHECKER	ENG. APP.
TOLERANCES		SCALE: 5/401-44					
ALL OTHERS	DEC. DIM. ±	DRILL, PUNCH, COMMERCIAL STOCK SIZES AND MANUFACTURERS TOLERANCES ARE NOT INCLUDED.					
	FRAC. DIM. ±						
	ANGULAR DIM. ±						

RSD-1	170		8-26-53
MODEL	PR JECT NO.	ASS'Y. NO.	DATE
USED ON			

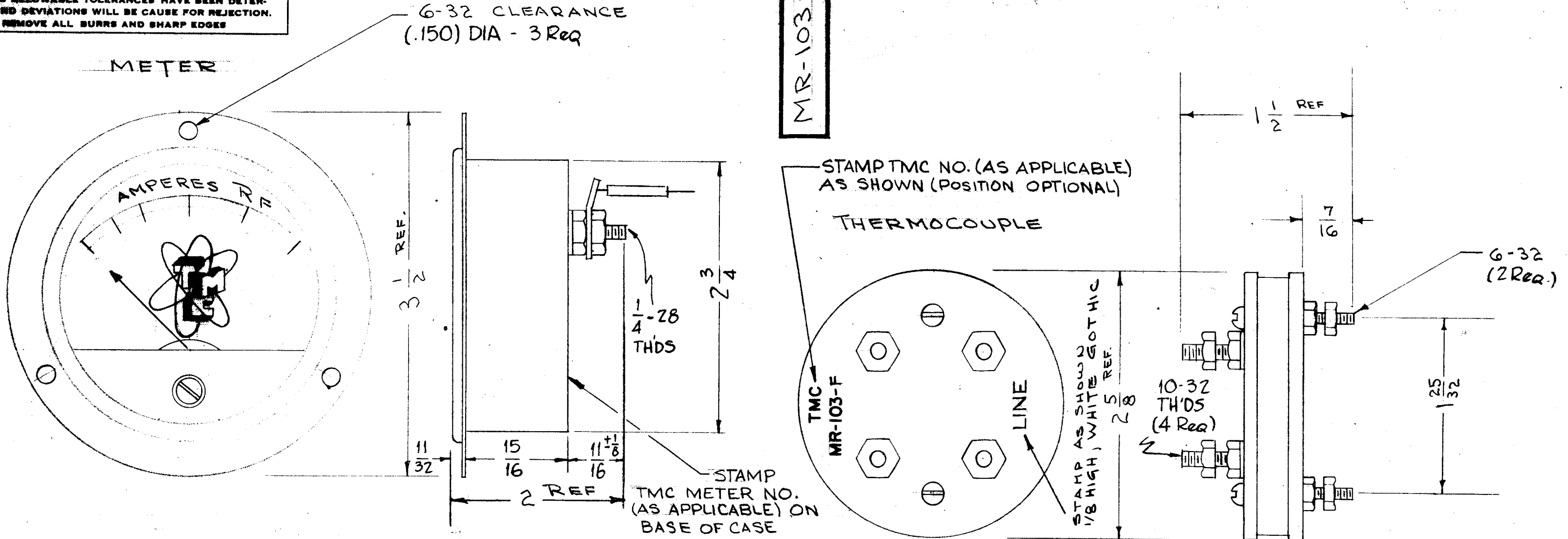
REQ.	ITEM	PART NO.	DESCRIPTION	SYMBOL
	#		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
		STOCK SIZE		
	#	#	METER, PANEL	
		MATERIAL	SQUARE 2 1/2"	
		WEIGHT PER PC.		
		TYPE & TEMPER	C.D.D. 8-26-53	A. J. J.
			DRAWN	ELEC. DES. APP.
		HEAT TREAT. SPEC.	W.D.	W.D.
			CHECKED	FINAL APPROVAL
			Supersedes	
			ENG - 1-226	MR-102 D
			FINISH & SPEC. NO.	



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MR-103 F



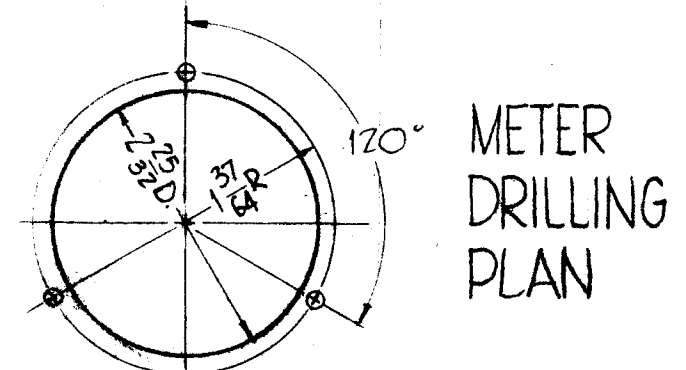
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 MAMARONECK, NEW YORK

METER	USE THERMOCOUPLE (SEE NOTE)	METER SCALE RF AMPERE	METER MOVEMENT
MR-103-1	MR-103-2	0-3	14 MILLIVOLTS 5.5 MILLIAMPS
MR-103-3	MR-103-4	0-5	" " "

**NOTE:**  
 MOUNTING HARDWARE & 2 LEADS (ONE BLACK, ONE RED/BLACK) FURNISHED BY MANUFACTURER.  
 LENGTH OF LEADS (END OF LUG TO END OF LUG) IN INCHES INDICATED BY NUMBER AFFIXED TO PART NUMBER OF THERMOCOUPLE E.G. MR-103-4-30.00 = 30" LEADS  
 MR-103-4-7.75 = 7 3/4" LEADS



ISSUE	ITEM	CHANGED FROM	DATE	CN. NO.	DRAFTS	CHECKER	ENG. APP.
	1	MTG. NOTE DELETED, TMC PART NO. ADDED, NOTE REVISED	8-20-53	9816	AK	YAB	WAB
	3	1/8" dia. hole added to thermocouple	3-31-51	4543	RU	QCB	9PM
	7	.150 DIA. added to screw holes					
	2	Dimensions added to meter	10/1/59	1356	DM		
	1	Added line stamping on couple	7/23/51	3	JAB		
	1	Lead length - 30" added	7/11/56	2	JAB		
	1	CHART ADDED	7-29-54	1	S.D.D.		
	1	AMPERES R.F. WAS RF AMPERES					
	1	LEAD NOTE ADDED					

TOLERANCES		SCALE: 5/16" = 1" (3/4" T)	
ALL OTHERS	DEC. DIM. ± FRAC. DIM. ± ANGULAR DIM. ±	DRILL PUNCH, COMMERCIAL STOCK SIZES AND MANUFACTURERS TOLERANCES ARE NOT INCLUDED.	

2	TAC-1	132	A-715	1-20-54
REQ PER UNIT	MODEL	PROJECT NO.	ASSY. NO.	DATE

REQ.	ITEM	PART NO.	DESCRIPTION	SYMBOL
			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
			METER, R.F.	
			W/EXTERNAL THERMOCOUPLE	
			C.D.D. 10-29-53	
			DRAWN	
			CHECKED	
			FINAL APPROVAL	

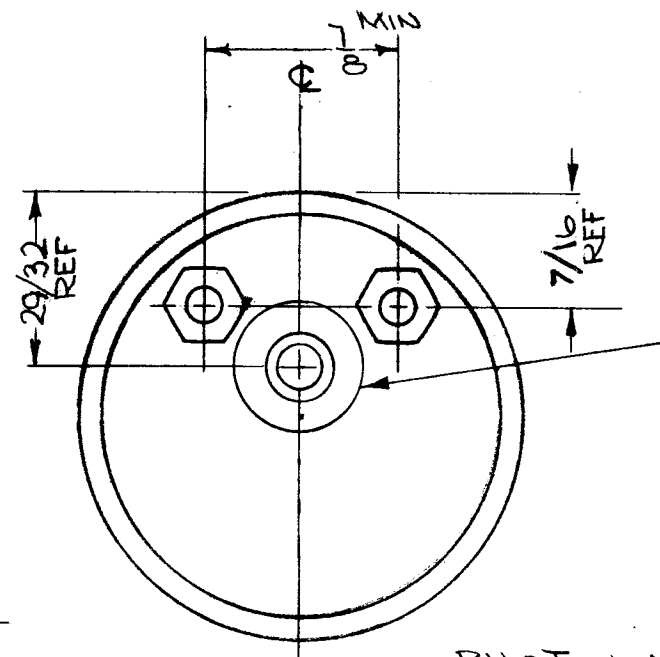
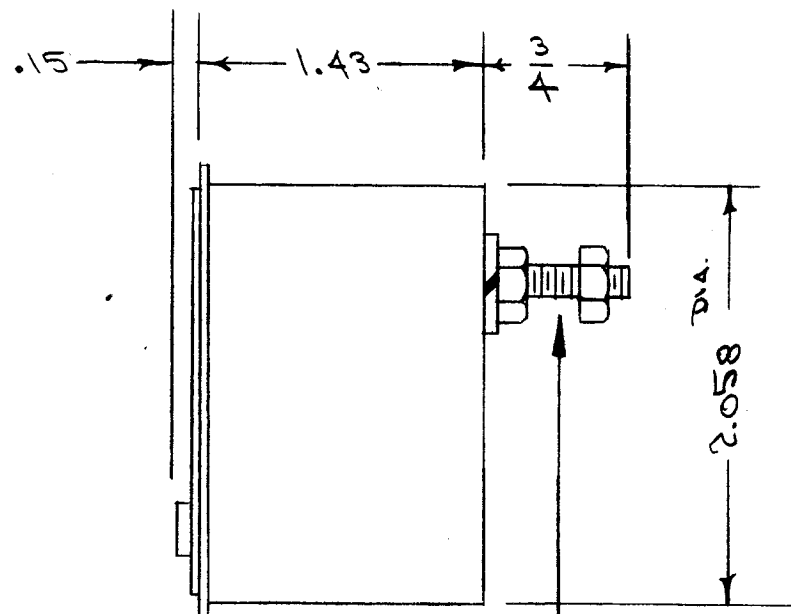
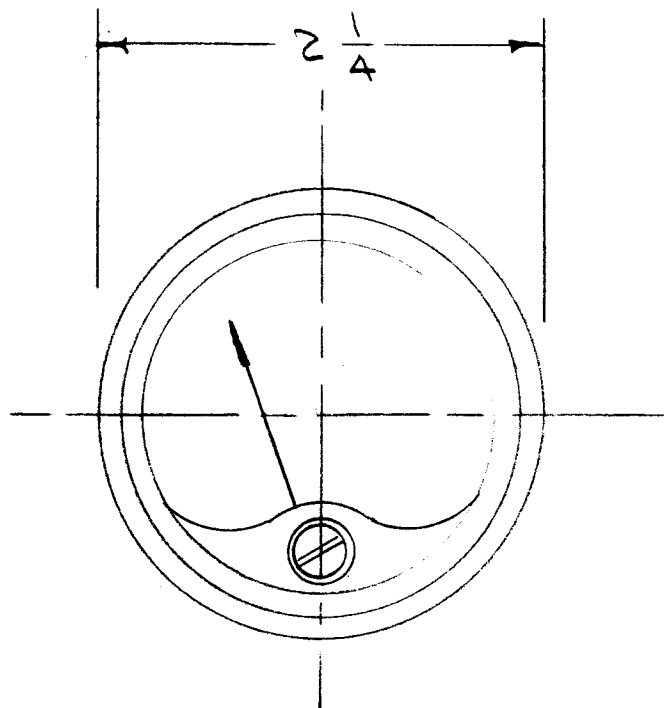
MR-103 F

# STANDARD DRAWING

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MR-107 H



POINTER - WHITE

ELECTRICAL SPECS  
 CURRENT - 1 MA ± 2% FULL SCALE  
 RESISTANCE - 125 Ω ± 10%  
 RESPONSE TIME - 2 SEC.  
 DAMPING FACTOR - 2.5

PLUG BUTTON

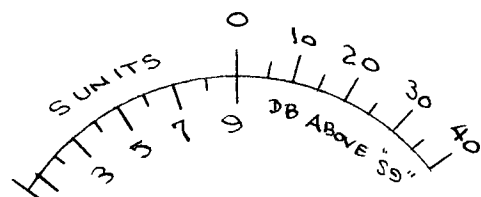
PILOT LAMP SOCKET ASSEMBLY  
 NOT TO BE SUPPLIED BY METER MANUFACTURER  
 (USE TMC SOCKET TS-127).

- 10-32 THD STUD - 2 REQ
- 10-32 HEX NUT, 5/16 x 1/8 - 4 REQ
- SPLIT LOCKWASHER - 2 REQ

TMC No'S  
 NTH1032BN10 - NUT, HEX  
 LWS10MRN - LOCKWASHER, SPLIT

THIS SECTION  
 WHITE  
 ILLUMINATED

THIS SECTION  
 ILLUMINATED



BLACK BACKGROUND

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Property of:

THE TECHNICAL MATERIEL CORPORATION  
 MAMARONECK, NEW YORK

REF: 5401-54  
 TYPE 52 RM (DIAL FACE 52 RMS)

H	ELEC SPECS ADDED DIM. CLARIFIED, ELEC SPEC. ADDED, DIAL ADDED 2001-54 WAS MARIAN ELEC INST	4-12-66	16078	WAW	OK	X	
G	STUDS & HDWR CLARIFIED DIMS. 4/31 & .903 ADDED	5-22-63	9063	YNY	OK	OK	
ISSUE	ITEM	CHANGED FROM	DATE	CN. NO.	DRAFTS	CHECKER	ENG. APP.

TOLERANCES		SCALE:	
ALL THERS	DEC. DIM. ± FRAC. DIM. ± AN ULAR DIM. ±	DRILL, PUNCH, COMMERCIAL STOCK SIZES AND MANUFACTURERS TOLERANCES ARE NOT INCLUDED.	

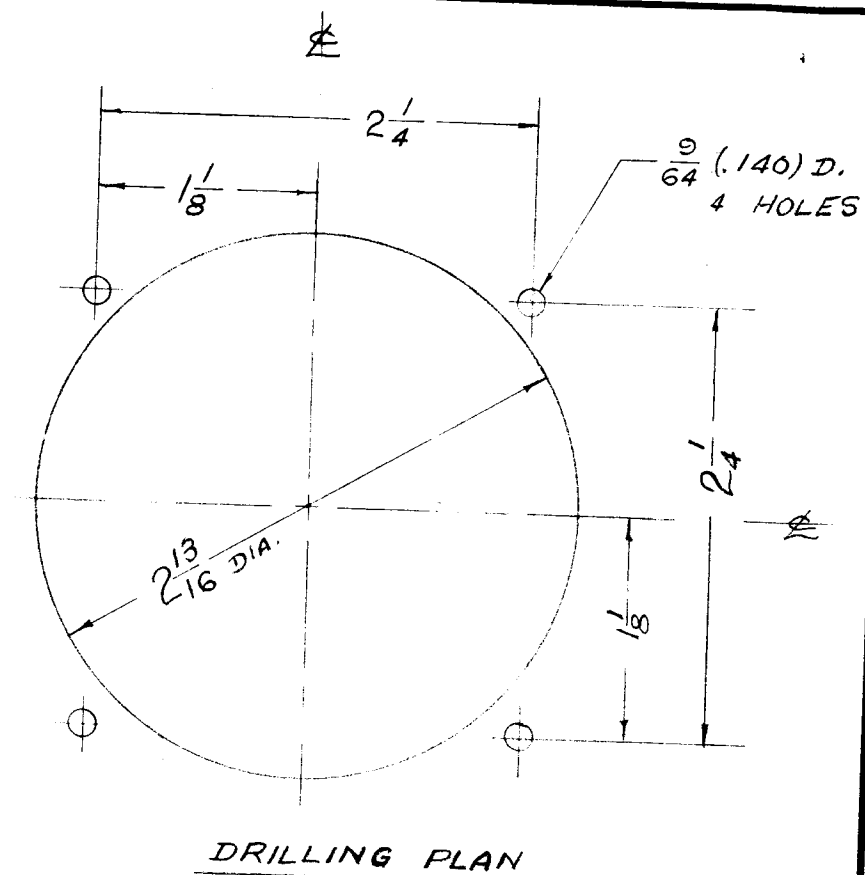
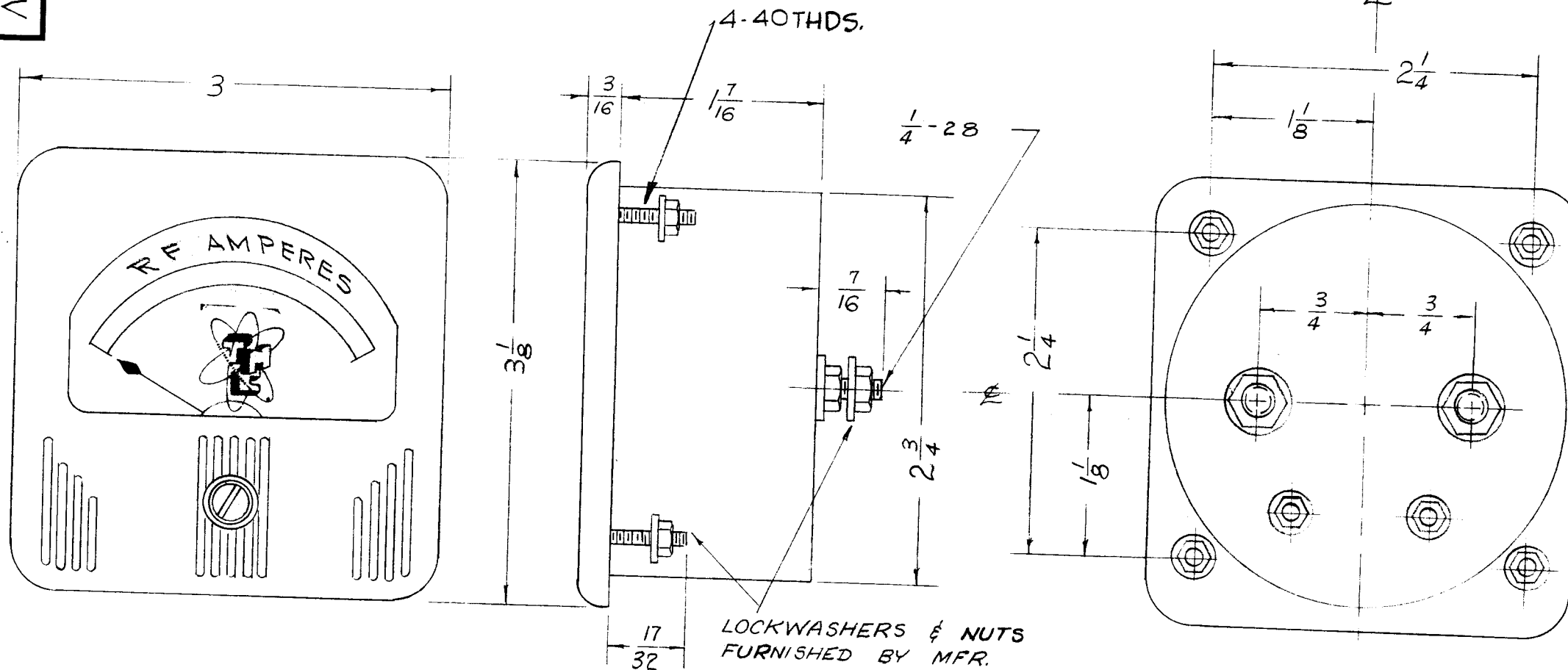
1	GPR	297		4-7-55
REQ. PER UNIT	MODEL	PROJECT NO.	ASSY. NO.	DATE

REQ.	ITEM	PART NO.	DESCRIPTION	SYMBOL
	#		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
	#		METER, "S" TYPE	
	#		G.P.R.	
	#		CD. 4-7-55	HH
	#		DRAWN	ELEC. DES. APP.
	#		CHECKED	MECH. DES. APP.
	#		HEAT TREAT. SPEC.	
	#		FINISH & SPEC. NO.	
			FINAL APPROVAL	
			MR-107	H.



MR-109 C

# STANDARD DRAWING



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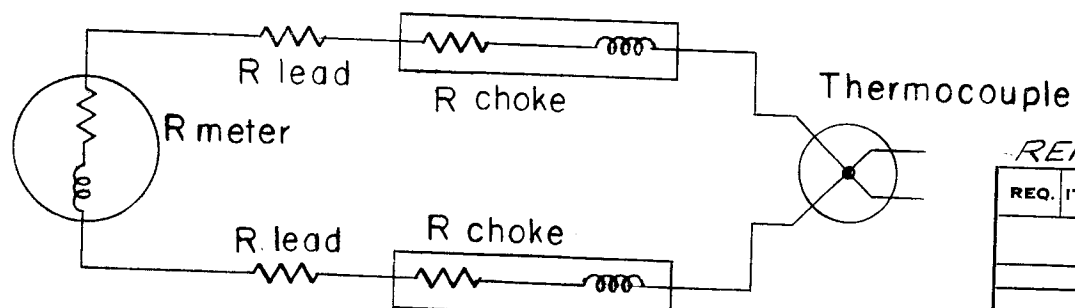
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MAMARONECK, NEW YORK

### ELECTRICAL SPECIFICATIONS

MOVEMENT 0-8 AMPS. DESIGNED FOR USE WITH EXTERNAL THERMOCOUPLE (TH-100-8). INTERNAL METER RESISTANCE MUST BE ALTERED TO ACCOMMODATE EXTERNAL CIRCUIT AS SHOWN BELOW.



$$2(R \text{ lead}) + 2(R \text{ choke}) = .61 \Omega$$

REF: SIMPSON

MODEL 37 RF AMMETER

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
STOCK SIZE		RF AMMETER	
MATERIAL			
TYPE & TEMPER	HEAT TREAT. SPEC.	DRAWN	CHECKED
		11-1-55	A.J.I.
FINISH & SPEC. NO.		ELEC. DES. APP.	MECH. DES. APP.
			MR-109 C

ISSUE ITEM	CHANGED FROM	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
C	1 MTG STUDS WERE 4-36THD	6/12-63	9243			
B	2 1/4-28 WBS 1/4-20	4/3/61	4538	DM	JCS	
A	1 4-36 THDS. added	5/16/56	1	JAO		
TOLERANCES		SCALE:				
DEC. DIM. ±		MAXIMUM ALL WABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.				
FRAC. DIM. ±		REMOVE ALL BURRS AND SHARP EDGES				
ANGULAR DIM. ±						
REQ. PER UNIT	MODEL	PROJECT NO.	ASS'Y. NO.	DATE		
USED ON						

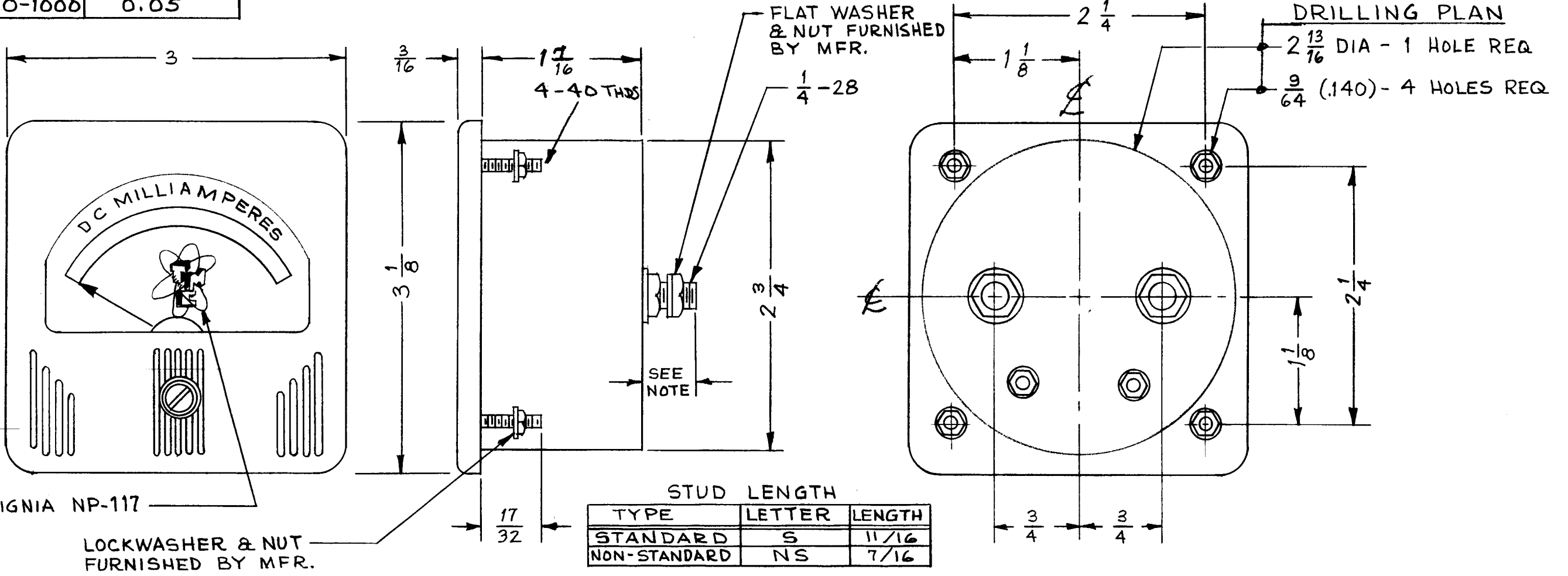


RANGE	APPROX. RES. $\Omega$	RANGE	APPROX. RES. $\Omega$
0-1	46	0-75	2.0
0-1.5	46	0-100	1.5
0-3	46	0-150	1.0
0-5	23	0-200	0.75
0-10	2.2	0-250	0.60
0-15	2.2	0-300	0.50
0-20	2.2	0-500	0.30
0-25	6.0	0-750	0.20
0-50	3.0	0-1000	0.05

D  
MR-110

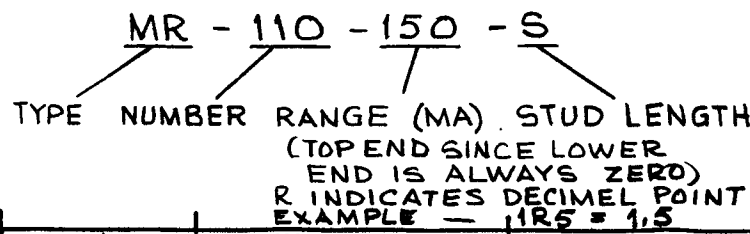
REVISIONS					
SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD APPD
D	REF CODE & INSIGNIA ADDED	7-17-63	9559		J.P. HJB
D	RES. CHART ADDED & SPECS				J.P. HJB
D	REDRAWN W/O CHANGE LAST REV. WAS D	11-28-65			J.P. HJB

- SPECS:**
- 1- CASE:- MOLDED BLACK PHENOLIC METER FRONT MATTE FINISH
  - 2- ACCURACY AT FULL SCALE  $\pm 2\%$
  - 3- CALIBRATED FOR NON-MAGNETIC PANEL. SPADE TYPE POINTER



**NOTE:**  
INDICATE POSITIVE POLE NEAR THE APPROPRIATE TERMINAL.

TYPE DESIGNATION TO BE IN FOLLOWING FORM



Q'TY./UNIT	MODEL USED ON	ASS'Y. NO.
SCALE	CODE	S401-44

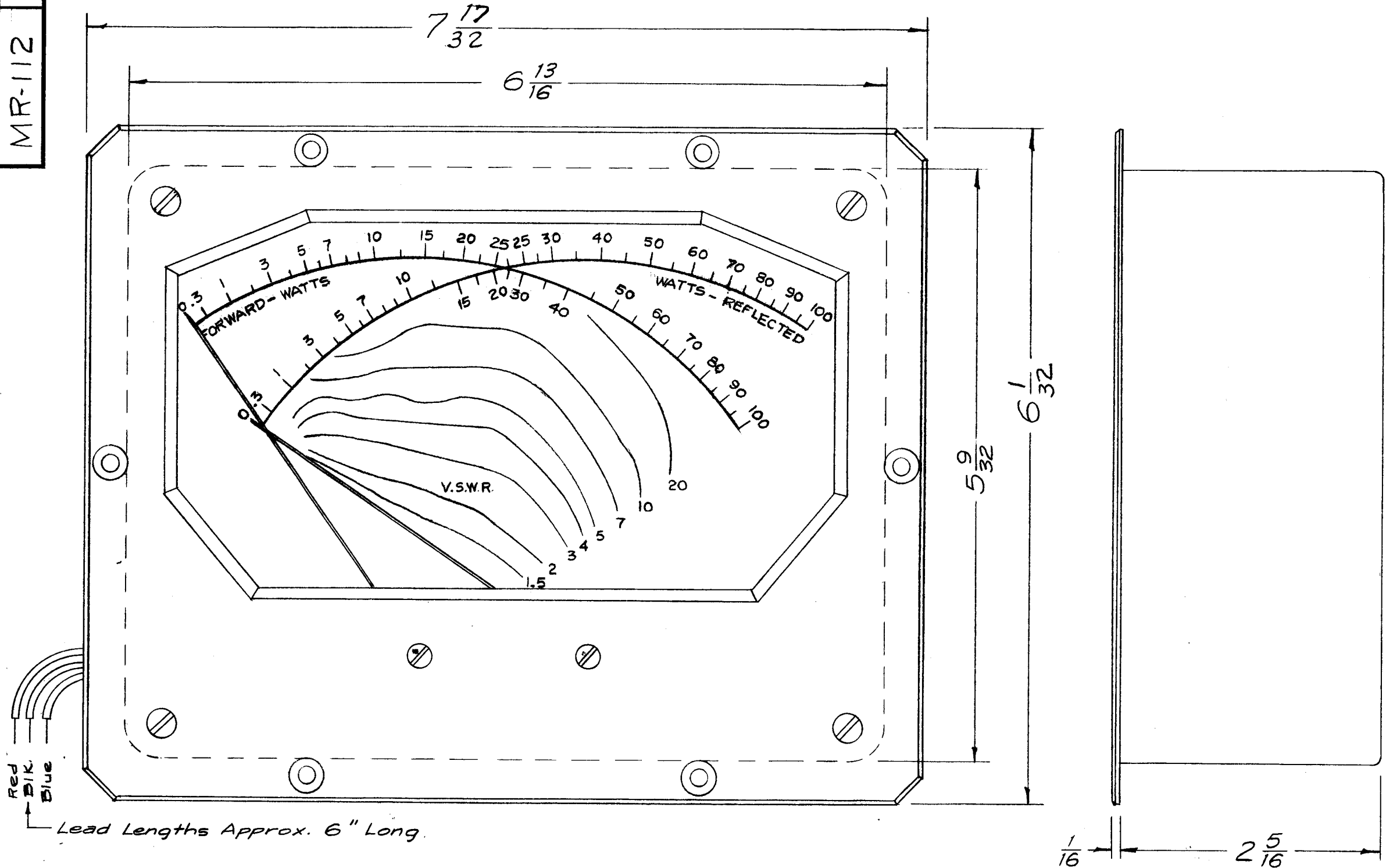
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REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
<b>LIST OF MATERIAL</b>				
MATERIAL		<b>THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK</b>		
FINISH		TITLE <b>DC MILLIAMMETER</b>		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		DRAWN PB 9-12-55	DATE	FINAL APPROVAL A.J.J. [Signature]
DECIMALS .X $\pm$ .05 .XX $\pm$ .01 .XXX $\pm$ .005		CHECKED GOS 9/12/55	DATE	DATE 11/24/65
FRACTIONS $\pm 1/64$ ANGLES $\pm 0^\circ 30'$		ELECT. DES. O.J.P.	DATE	DATE
TOLERANCES		MECH. DES.	DATE	DATE
SHEET				REV. LTR.

NOTES



MR-112 B



**MECHANICAL DATA**  
 Case ————— Black Bakelite  
 Front Plate ——— Aluminum, Black Gloss Enamel Finish  
 Scale Colors —  
 Forward Watts      Black  
 Reflected Watts    Red  
 V.S.W.R.            Blue

**ELECTRICAL DATA**  
 Resistance —  
 Leads Blk./Blue - 1700Ω ± 20%  
 Leads Blk./Red - 1700Ω ± 20%  
 METER MOVEMENT 0-100 μAMPS ± 20%  
 FULL SCALE DEFLECTION 90 μAMPS ± 20%

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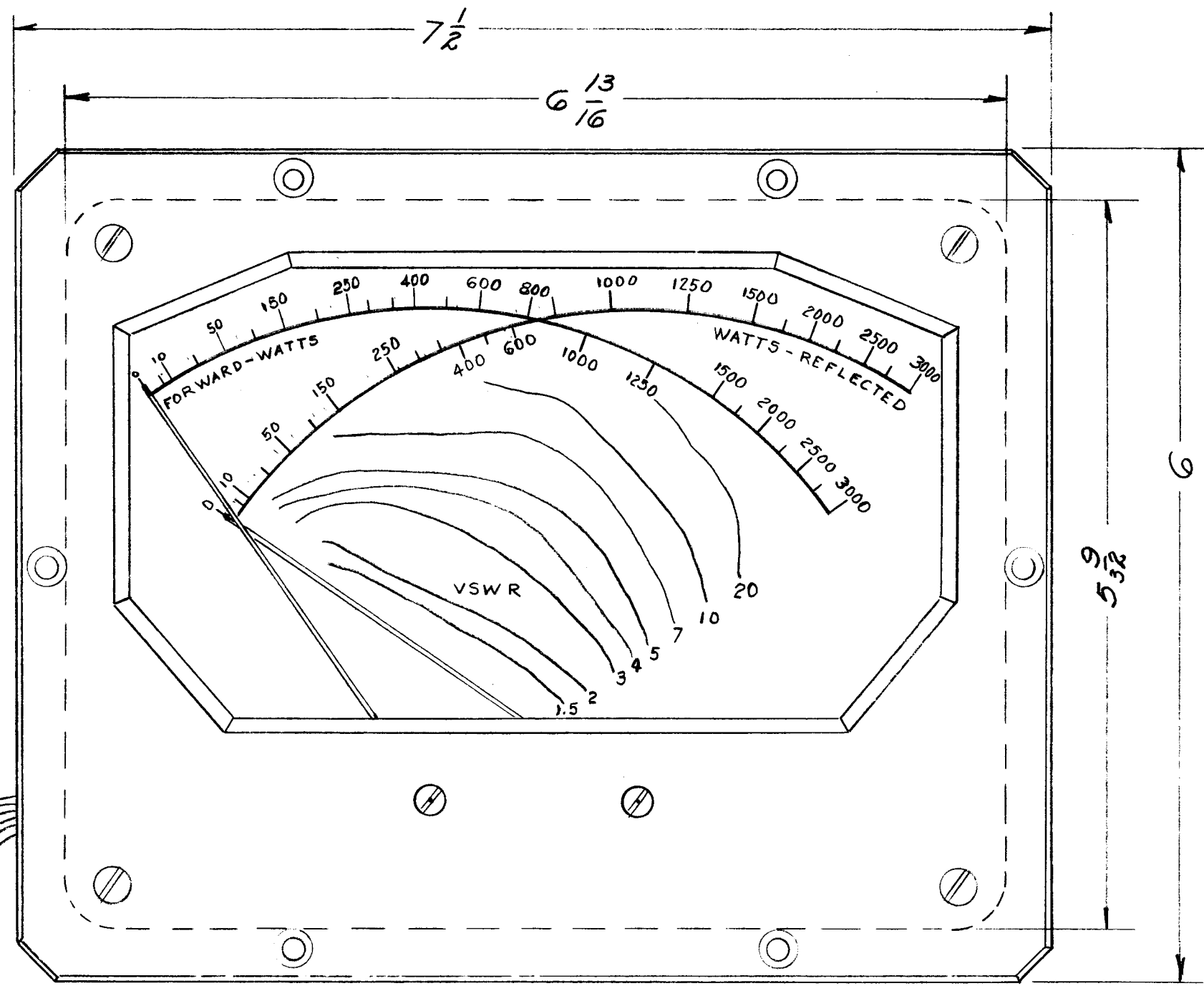
Property of:  
**THE TECHNICAL MATERIEL CORPORATION**  
 MAMARONECK, NEW YORK

B	DIM 7 17/32 WAS 7 1/2 - DIM. 6 1/32 WAS 6 - ATS-MCU-2A ADD.	2-23-67	17846	G.D.L.	[Signature]		
A	METER MOVEMENT WAS "RANGE" ADD "FULL SCALE DEF." ETC.	10-25-66	1719	R.M.E.	[Signature]		
ISSUE	ITEM	CHANGED FROM	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
		TOLERANCES	SCALE: FULL			BA-1509	
		DEC. DIM. ±	MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.				
		FRAC. DIM. ±	REM VE ALL BURRS AND SHARP EDGES				
		ANGULAR DIM. ±					

1	ATS-MCU-2A			2-23-67
1	ATS-MCU-2			7-8-59
1	ATS-MCU			2-27-68
REQ. PER UNIT	MODEL	PROJECT NO.	ASS'Y. NO.	DATE

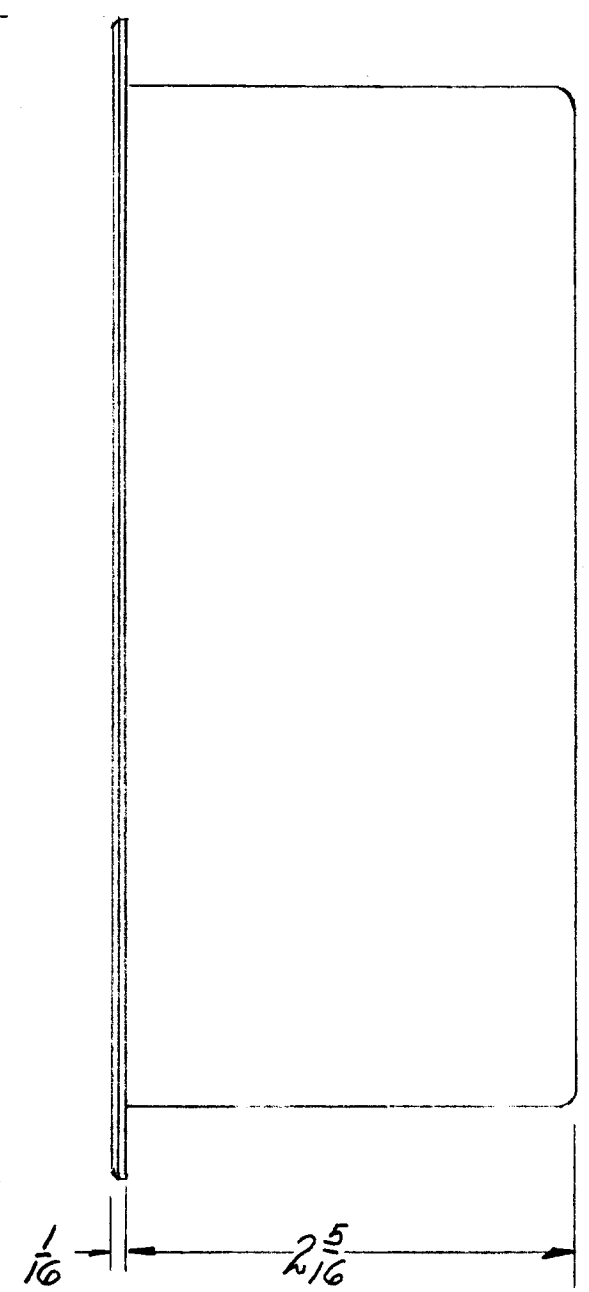
REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
	//	THE TECHNICAL MATERIEL CORP. MAMARONECK. NEW YORK	
		STOCK SIZE	
	//	METER, STANDING WAVE RATIO (0-100)	
		MATERIAL	
	//	TYPE & TEMPER	
	//	HEAT TREAT. SPEC.	
		DRAWN	16 2/27/58
		CHECKED	[Signature]
		FINAL APPROVAL	[Signature]
		FINISH & SPEC. NO.	
		ELEC. DES. APP.	
		MECH. DES. APP.	
			MR-112 B

MR-113



RED  
BLK  
BLUE

LEAD LENGTHS APPROX 6" LONG



**MECHANICAL DATA**

CASE — BLACK BAKELITE  
 FRONT PLATE — ALUMINUM, BLACK GLOSS ENAMEL FINISH  
 SCALE COLORS —  
 FORWARD WATTS — BLACK  
 REFLECTED WATTS — RED  
 V.S.W.R. — BLUE

**ELECTRICAL DATA**

RESISTANCE —  
 LEADS BLK/BLUE - 1700 Ω ± 20%  
 LEADS BLK/RED - 1700 Ω ± 20%  
 RANGE - 0 - 90 μAMPS ± 2%

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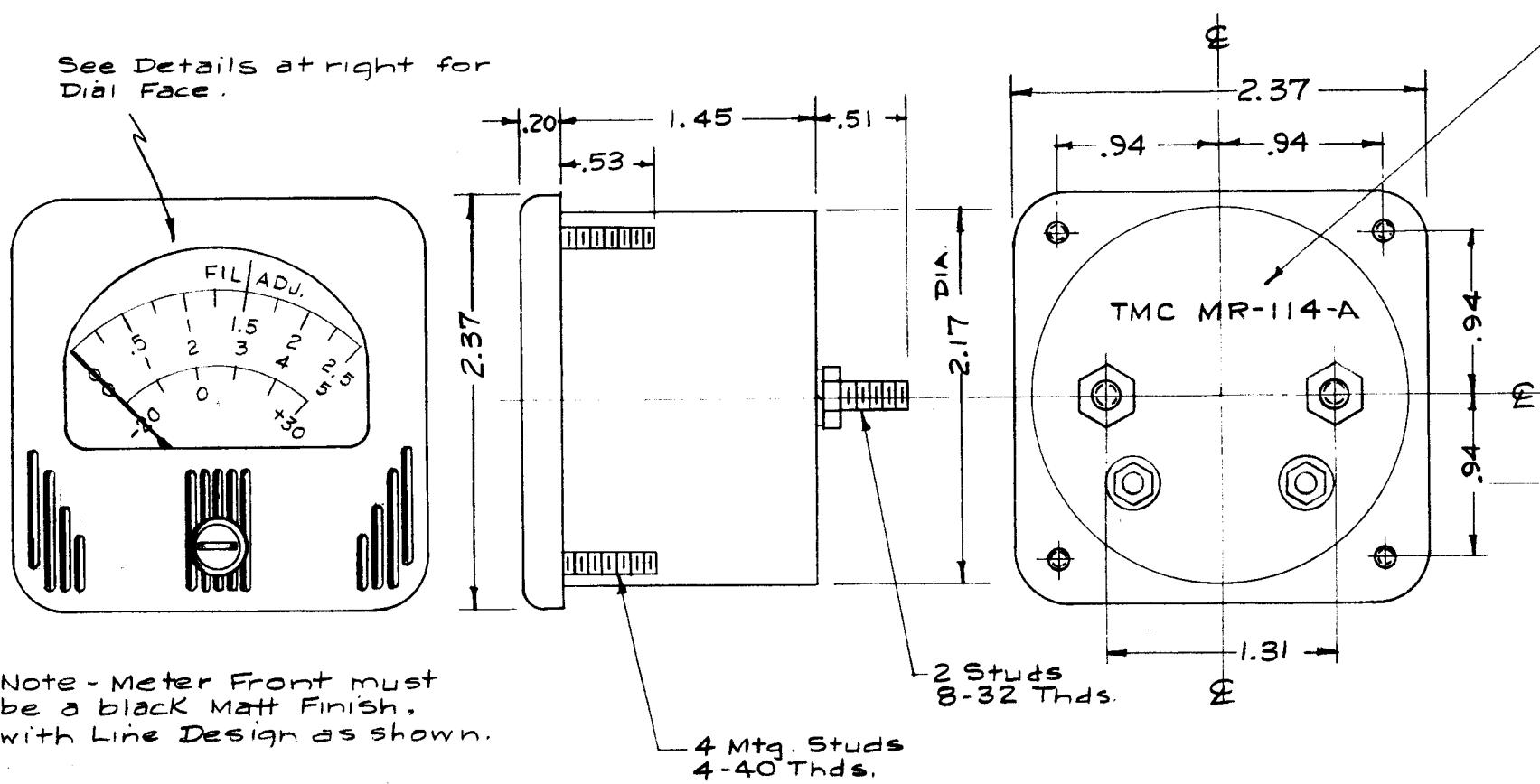
ISSUE	ITEM	CHANGED FROM	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
TOLERANCES		SCALE: BA-1509					
DEC. DIM. ±		MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES					
FRAC. DIM. ±							
ANGULAR DIM. ±							

1	SWR-3000 RH			5-21-58
REQ. PER UNIT	MODEL	PR JECT NO.	ASS'Y. N.	DATE
USED ON				

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
	STOCK SIZE	METER, STANDING WAVE RATIO (0-3000)	
	MATERIAL		
	TYPE & TEMPER	HEAT TREAT. SPEC.	
	FINISH & SPEC. NO.	ELEC. DES. APP.	MECH. DES. APP.

CUST DWG

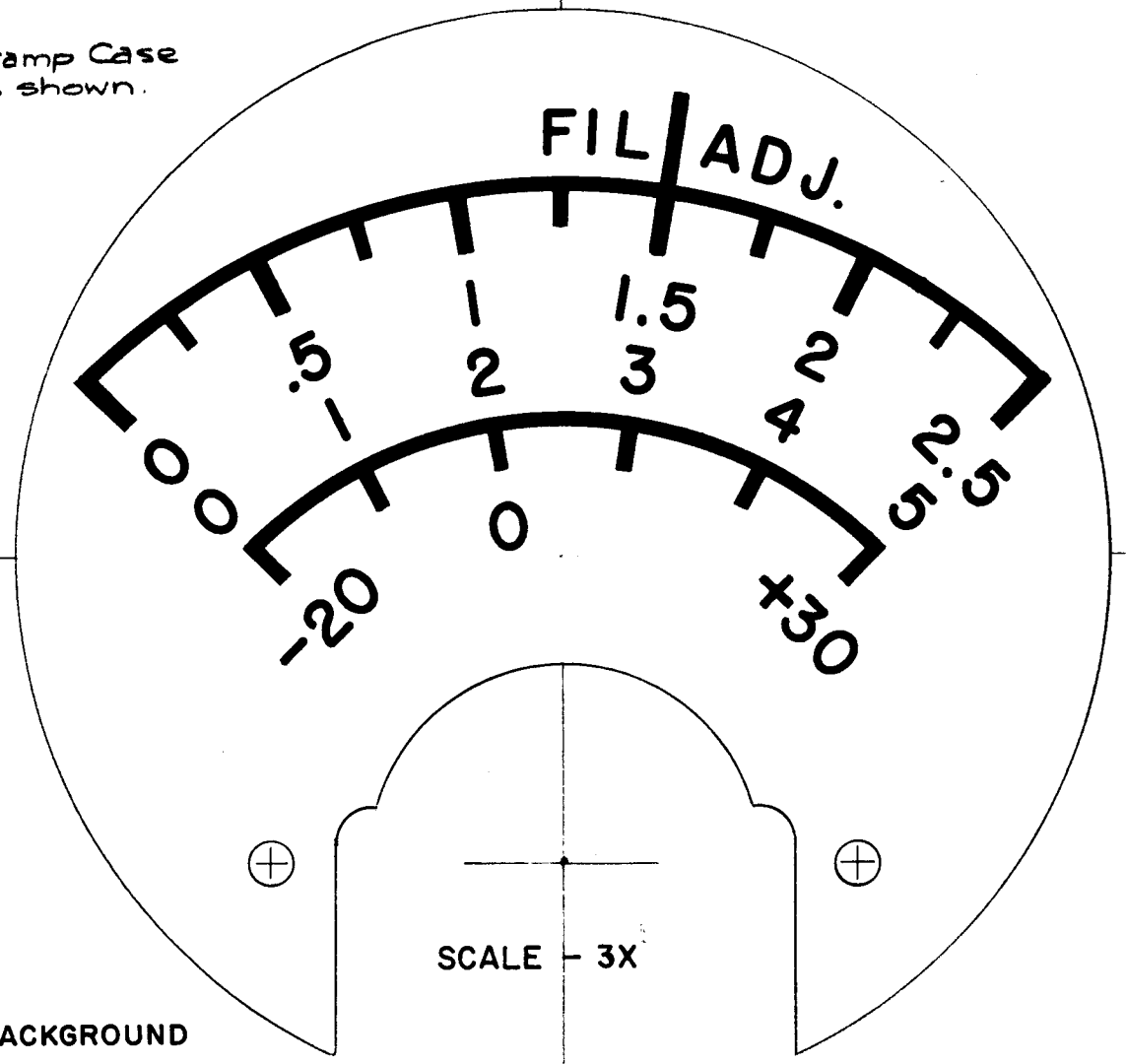




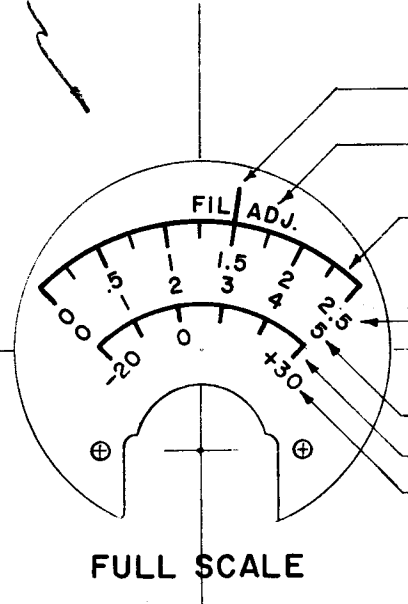
Note - Meter Front must be a black Matt Finish, with Line Design as shown.

Specifications:  
 Case - Standard Simpson No. 127  
 Movement - 0-50 Micro-Amp.  
 Approx. Resistance - 2000 ohms.  
 Pointer Type - Knife Edge  
 All necessary Mounting & Terminal Hardware Supplied by Mfg.

All letters & numerals to be the fine line type.



- WHITE BACKGROUND
- "FIL ADJ" LINE - RED (TO TOP OF SCALE DIRECTLY BELOW)
- FIL ADJ. - BLACK
- SCALE - BLACK
- NUMBERS "0 TO 2.5" - BLACK
- NUMBERS "0 TO 5" - BLACK
- SCALE - RED
- NUMBERS "-20, 0, +30" - RED



REF: SIMPSON METER NO.

ISSUE	ITEM	CHANGED FROM	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
A	1	MTG STUDS WERE 4-36 THD	6-12-63	9243		<i>Jay</i>	<i>WFB</i>
TOLERANCES			SCALE:				
DEC. DIM. ±			MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.				
FRAC. DIM. ±			REMOVE ALL BURRS AND SHARP EDGES				
ANGULAR DIM. ±							

REQ. PER UNIT	1	MODEL	RFA-1	PROJECT NO.	PAL-350	DATE	7-16-58
USED ON							

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
STOCK SIZE		MULTI-METER, DC MICROAMP (M201 RFA-1)	
MATERIAL		LG 7-16-58	<i>file</i>
TYPE & TEMPER	HEAT TREAT. SPEC.	DRAWN	CHECKED
FINISH & SPEC. NO.		ELEC. DEV. APP.	MECH. DES. APP.
			MR-114 A

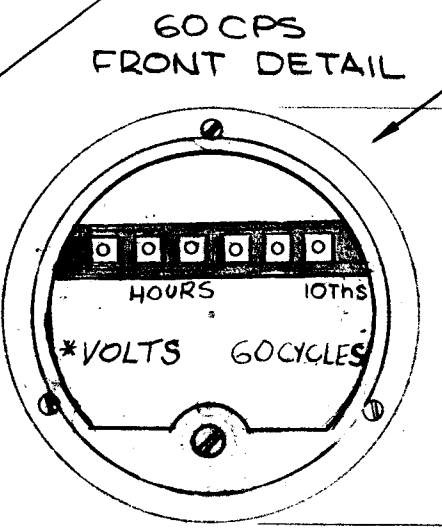
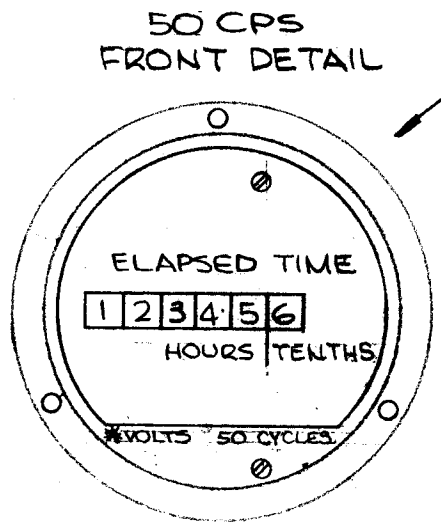
MR 125 F

TMC PART NO. (SEE NOTE)	OPERATING VOLT. 50 OR 60 CYCLES AC
MR 125-1	110-125 (120)
MR 125-2	220-250 (240)

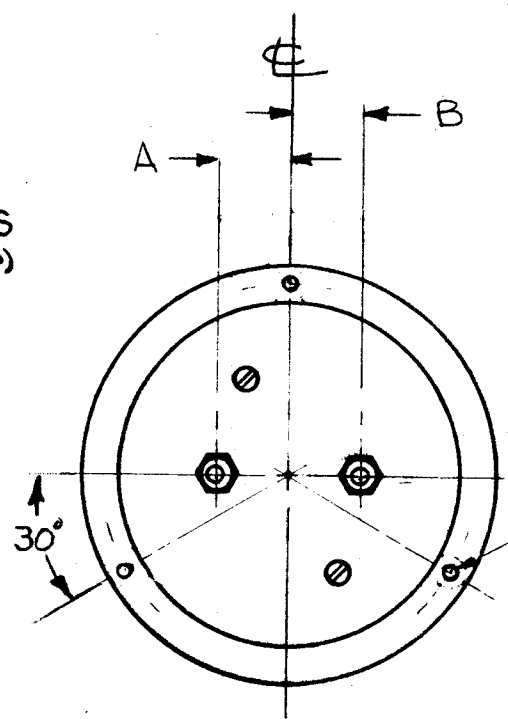
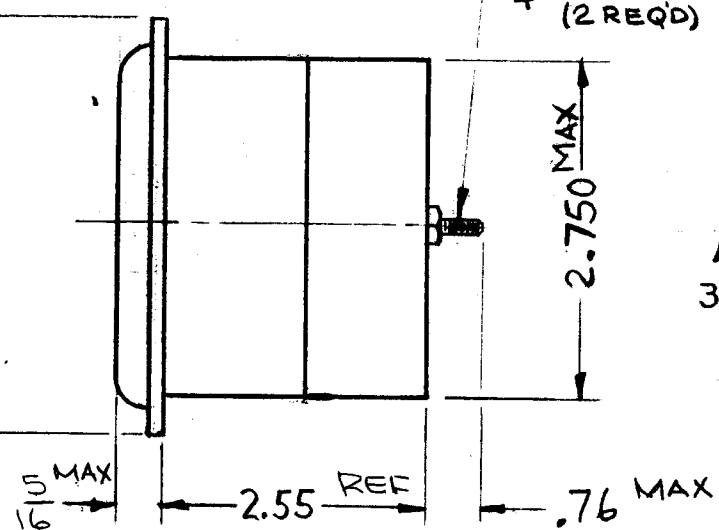
	A	B
50 CPS	.50	.50
60 CPS	.75	.75

HRS WHITE NUMERALS  
ON BLACK BKGRD, TENTHS  
RED DIGIT ON WHITE BKGRD

BLACK NUMERALS  
ON WHITE BKGRD



BEZEL DESIGN  
SHOWN AS REF. ONLY



\*-INSERT NOMINAL OPERATING VOLTAGE

SPECIFICATIONS

REGISTERS: 1/10 HOUR STEPS TO 99999.9

CASE TYPE: MOLDED BAKELITE

OPERATING TEMP: -55°C TO +85°C.

OPERATING VOLTAGE: SEE CHART ABOVE.

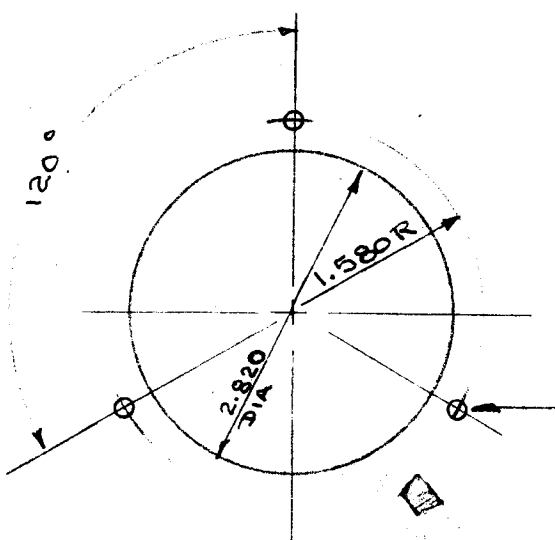
NOTE: IF 50CPS METERS ARE REQ, ADD SUFFIX -50 TO P/N. IE MR125-2-50

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MOUNTING DETAIL

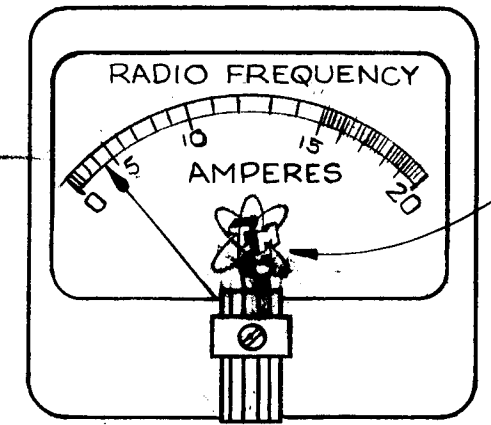
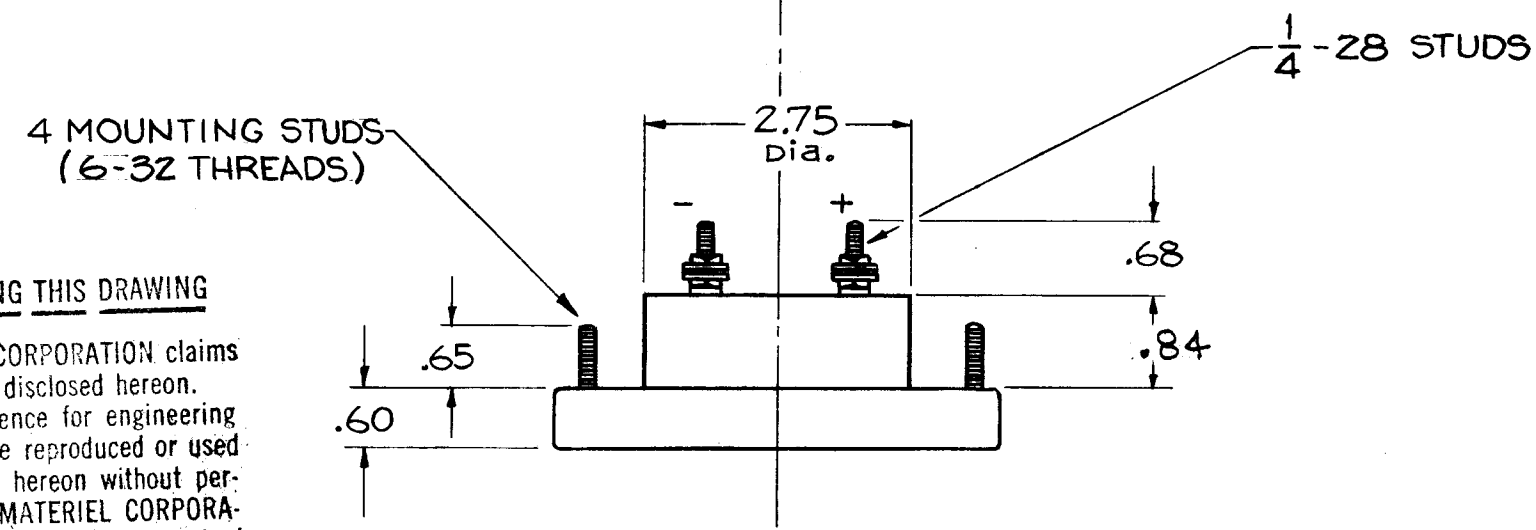
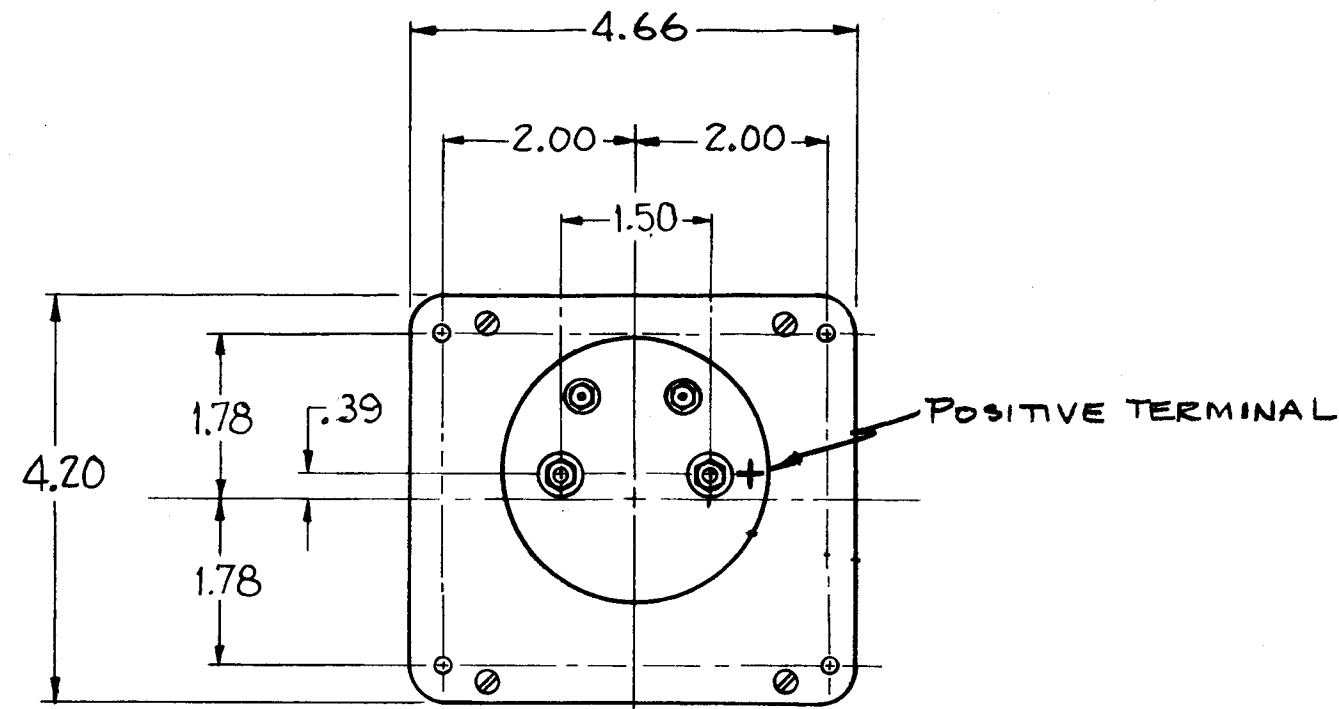
REVISED AND UPDATED	12-8-66	17421	WHS	<i>[Signature]</i>		
ISSUE ITEM	CHANGED FROM	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
TOLERANCES		SCALE:				
DEC. DIM. ± .015		MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.				
FRAC. DIM. ±		REMOVE ALL BURRS AND SHARP EDGES				
ANGULAR DIM. ±						

60CPS S401-44 (5SET)  
50CPS S401-444 (31EXW)

RE PER UNIT	MODEL	PROJECT NO.	ASSY. NO.	DATE
	GPT-10K		MR 125-2	
USED ON				

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
STOCK SIZE		METER, TIME TOTALIZING	
MATERIAL			
TYPE & TEMPER	HEAT TREAT. SPEC.	DRAWN	CHECKED
		<i>[Signature]</i>	<i>[Signature]</i>
FINISH & SPEC. N.		MR 125 F	

MR-126 F



TMC INSIGNIA  
REF. TMC DWG. NP-117

NOTE: DIAL FACE TO BE CALIBRATED BY MANUFACTURER FOR USE W/TH-100-20

NOTES:

- 0-20 R.F. Ammeter with external thermocouple.
- Thermocouple to withstand maximum current of 55 amps for 15 seconds.
- Calibrated for coil and 1 ads .6 ohm/leg ACCURACY AT FULL SCALE  $\pm 3\%$
- Designed for use with thermocouple TH-100-20.
- CALIBRATED FOR NON-MAGNETIC PANEL.

SPECIFICATIONS:

- Case-standard commercial rectangular 4-1/2
- Finish - Glossy black.
- Movement - 3.00 ma.
- Approximate Resistance - 11 ohms.
- Pointer - Spade type.
- Hardware - Two flat washers and two 1/4-28 hex nuts for terminals. Four lockwashers and four 6-32 hex nuts for mounting, supplied by mfg.
- Dial Face - ~~TYPE~~ 0-20 R.F. ~~AMP~~ Expanded scale. with TMC Insignia as shown.
- Meter Resistance - 3.8 ohms

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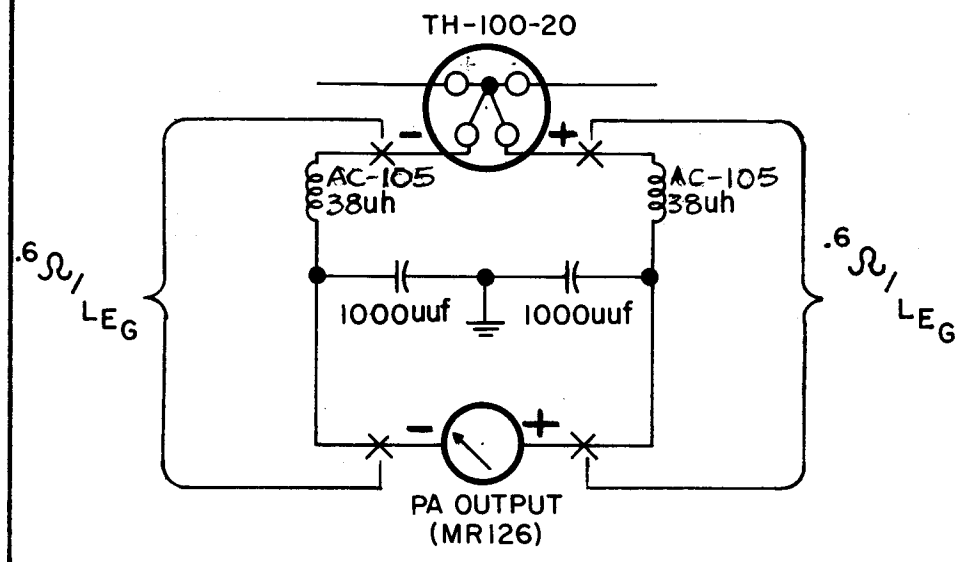
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ISSUE	ITEM	CHANGED FROM	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
F	2	ADDED REF DWG. NP-117	7-12-63	9562	A.K.	<i>W.P.</i>	<i>[Signature]</i>
E	1	ADDED NOTE: DIAL FACE TO BE CALIBRATED BY MFR FOR USE W/TH-100-20	6-28-62	6793	V.R.R.	<i>[Signature]</i>	<i>[Signature]</i>
D	1	Added '+' to Terminal on Rear. (Reversed schem - #+)	11/1/59	1545	K	<i>[Signature]</i>	<i>[Signature]</i>
C	1	Mod. was 38C 84 was 1.00, .35 was 24	9/21/59	1305	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
B	1	In Schem. - AC-105, 38uh was CL-158-204h. Added Note 3. Chgd Note 3 - was 1.00	9/7/59	1244	K	<i>[Signature]</i>	<i>[Signature]</i>
A	3	Note No. 2 was. Calibrated for 8-Leads & max. line res 1.0	6/1/59	1075	J.C.B.	<i>[Signature]</i>	<i>[Signature]</i>
A	2	.6Ω/LEG on Schematic was 8					
A	1	Radio Frequency added					

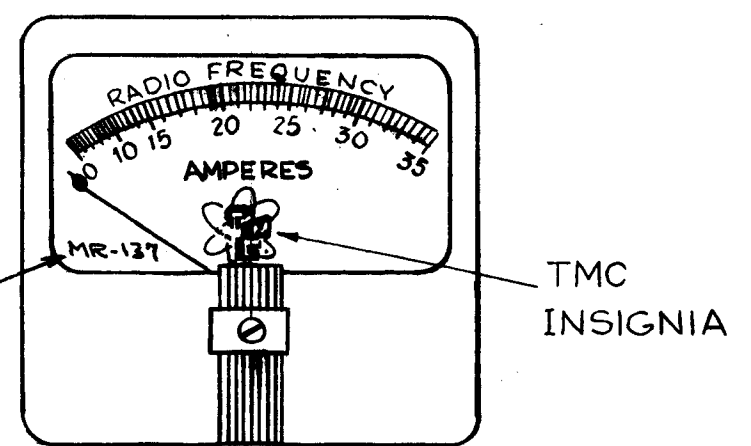
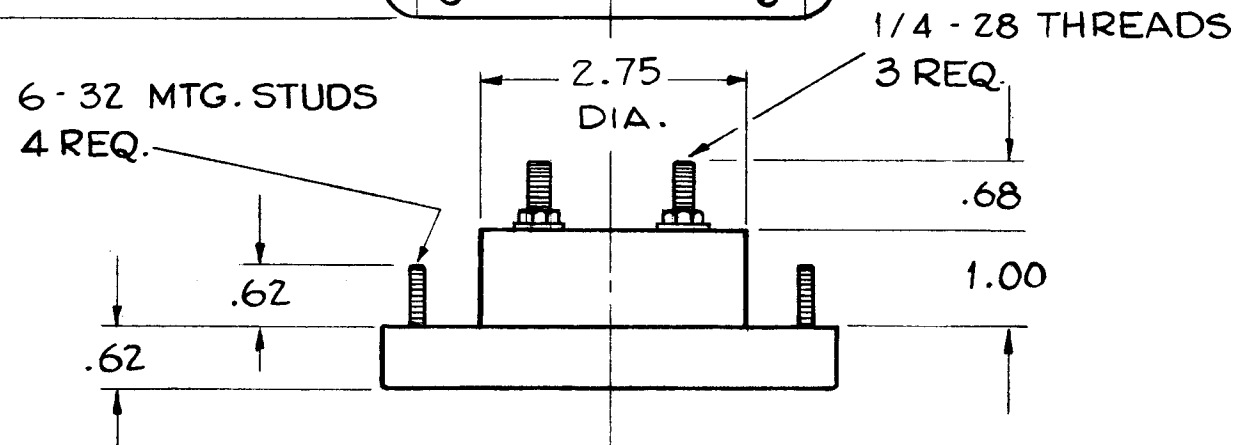
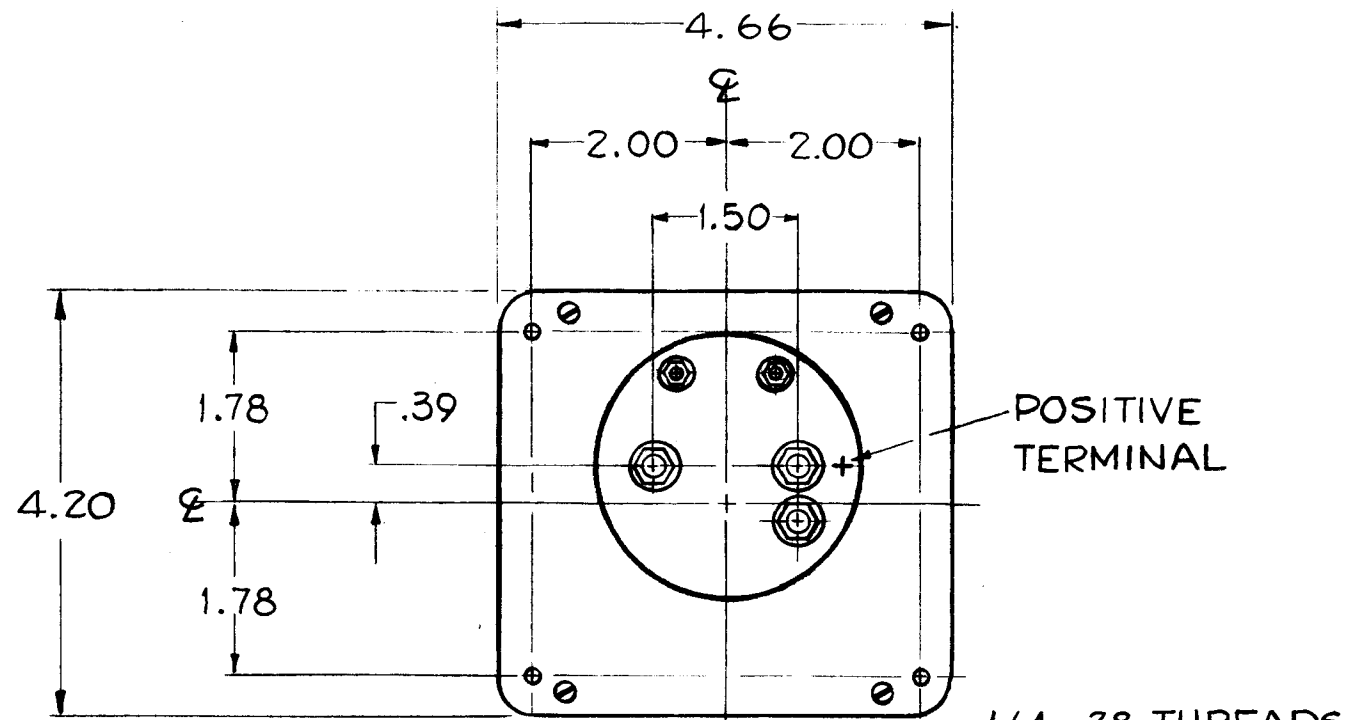
TOLERANCES		SCALE: S401-44 (#17, MOD. 39)
DEC. DIM. $\pm$		MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES
FRAC. DIM. $\pm$		
ANGULAR DIM. $\pm$		

REQ. PER UNIT	MODEL	PROJECT NO.	ASS'Y. NO.	DATE
1	GPT10K			5-1-59



REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
AMMETER, R.F. (PA OUTPUT)			
MATERIAL		J.C. BIELE	<i>[Signature]</i>
TYPE & TEMPER		<i>[Signature]</i>	<i>[Signature]</i>
HEAT TREAT. SPEC.		86	MR-126 F
FINISH & SPEC. NO.		ELEC. DES. APP.	MECH. DES. APP.

MR-137 A



NOTES:

- 0-35 R.F. Ammeter with external thermocouple.
- Thermocouple to withstand maximum current of 100 amps for 15 seconds.
- Calibrated for coil and leads .6 ohm/leg
- Designed for use with thermocouple TMC #TH-101.

SPECIFICATIONS:

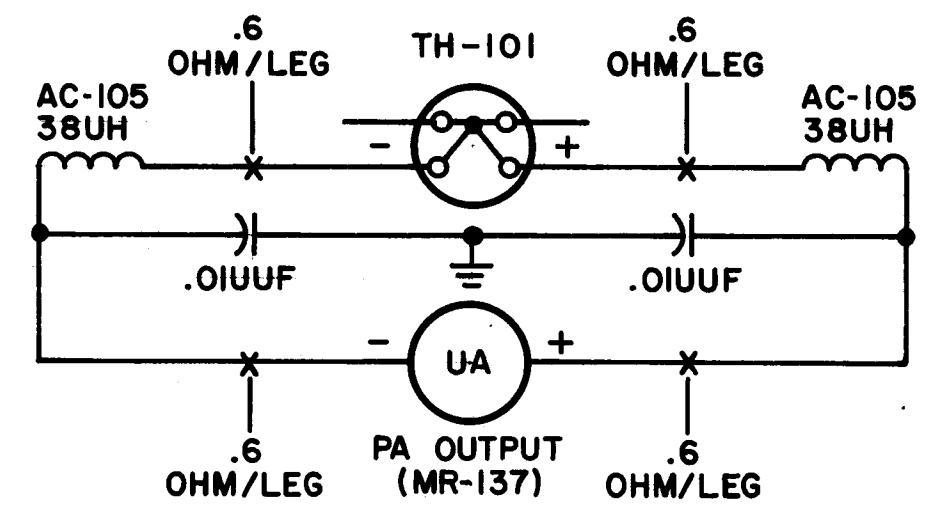
- Case-standard commercial rectangular 4-1/2
- Finish - Glossy black.
- Movement - 3.00 ma.
- Approximate Resistance - 11 ohms.
- Pointer - Spade type.
- Hardware - three flat washers and three 1/4-28 hex nuts for terminals. Four lockwashers and four 6-32 hex nuts for mounting, supplied by mfg.
- Dial Face - M39 E 0 - 35 R.F. AMP Expanded scale. with TMC Insignia, and TMC part number as shown.

THIS METER WILL BE USED FOR SPARE PARTS ONLY  
ALL NEW GPT-40K'S WILL USE MR-147.

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ISSUE	ITEM	CHANGED FROM	DATE	CH. N.	DRAFTS	CHECKER	ENG. APP.
A	1	SPARE PARTS NOTE ADDED.	11/28/60	3593		JCB	JCB

TOLERANCES: DEC. DIM. ±, FRAC. DIM. ±, ANGULAR DIM. ±

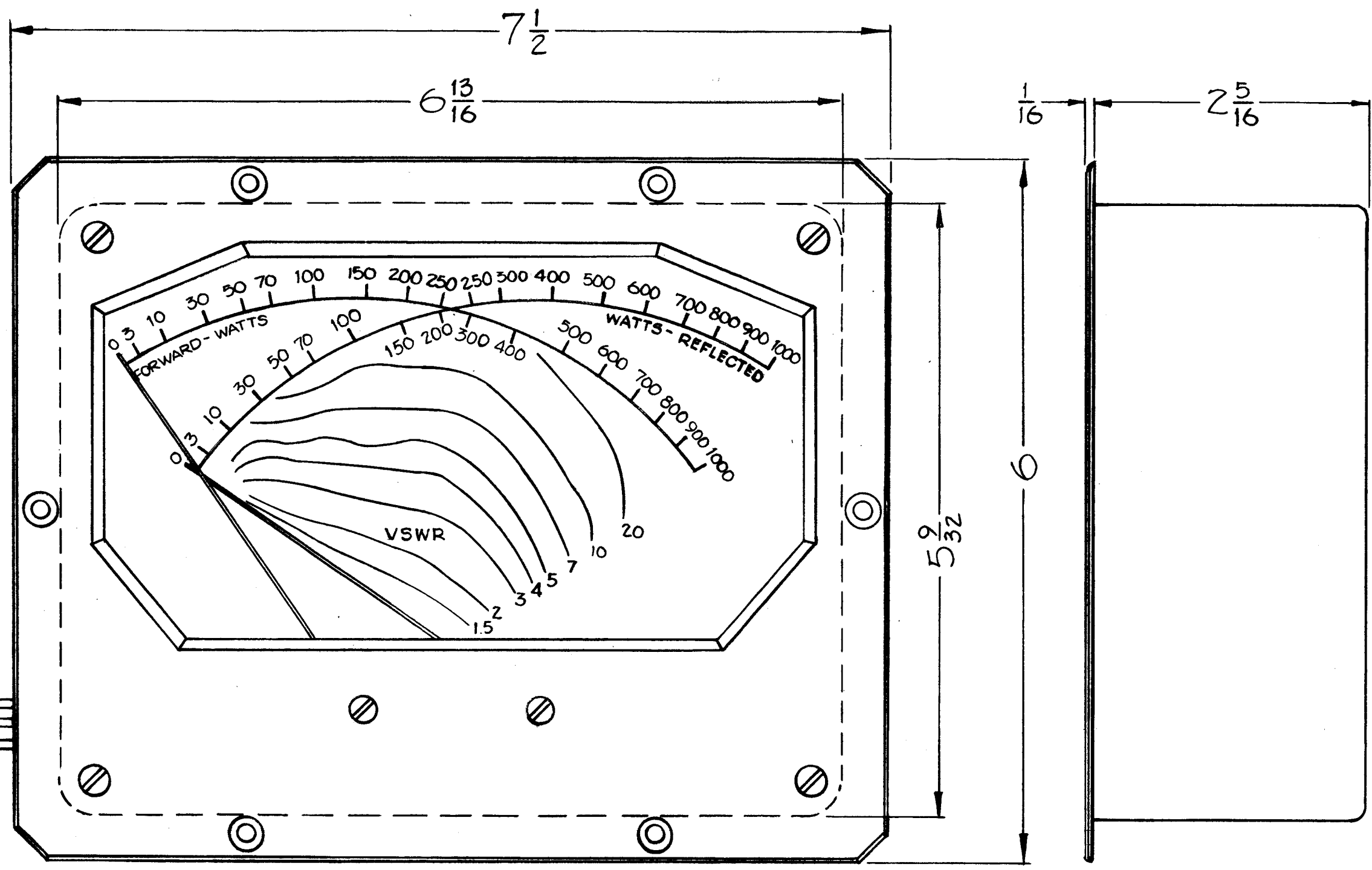
SCALE: MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES

REQ. PER UNIT	1	MODEL	GPT 40K	PROJECT NO.		ASS'Y. NO.		DATE	3-16-60
USED ON									

REQ. ITEM	PART NO.	DESCRIPTION	SYMB. L.
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
AMMETER, R.F.			
MATERIAL		J.C. Biele	JCB
TYPE & TEMPER		DRAWN	CHECKED
HEAT TREAT. SPEC.		FINAL APPROVAL	
FINISH & SPEC. NO.		MR-137 A	



MR-138



LEADS APPROXIMATELY 16" LONG

Red  
Blk.  
Blue

MECHANICAL DATA

CASE ~ BLACK BAKELITE  
FRONT PLATE ~ ALUMINUM, BLACK GLOSS ENAMEL FINISH  
SCALE COLORS ~  
 FORWARD WATTS ~ BLACK  
 REFLECTED WATTS ~ RED  
 V.S.W.R. ~ BLUE

ELECTRICAL DATA

RESISTANCE ~  
 BLK/BLUE LEADS ~ 1700 Ω ± 20%  
 BLK/RED LEADS ~ 1700 Ω ± 20%  
RANGE ~ 0-100 μAMPS ± 2%

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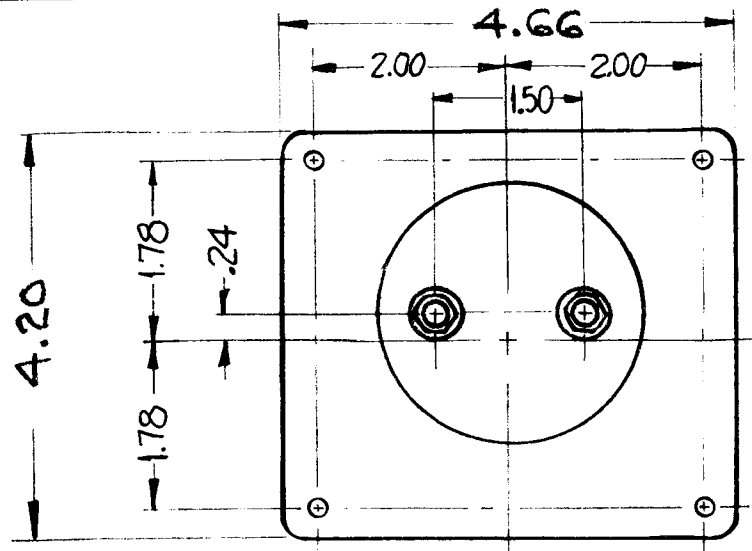
Property of:  
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 MAMARONECK, NEW YORK

ISSUE	ITEM	CHANGED FROM	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
TOLERANCES			SCALE: BA-1509				
DEC. DIM. ±			MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES				
FRAC. DIM. ±							
AN ULAR DIM. ±							

REQ. PER UNIT	1	MODEL	SWR 1000 SBTIK, A & C	PROJECT NO.		ASSY. NO.		DATE	1-4-60
USED ON									

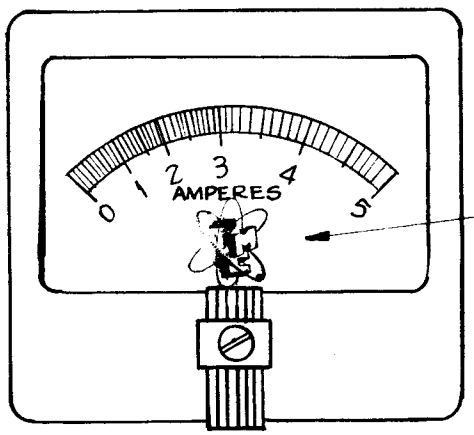
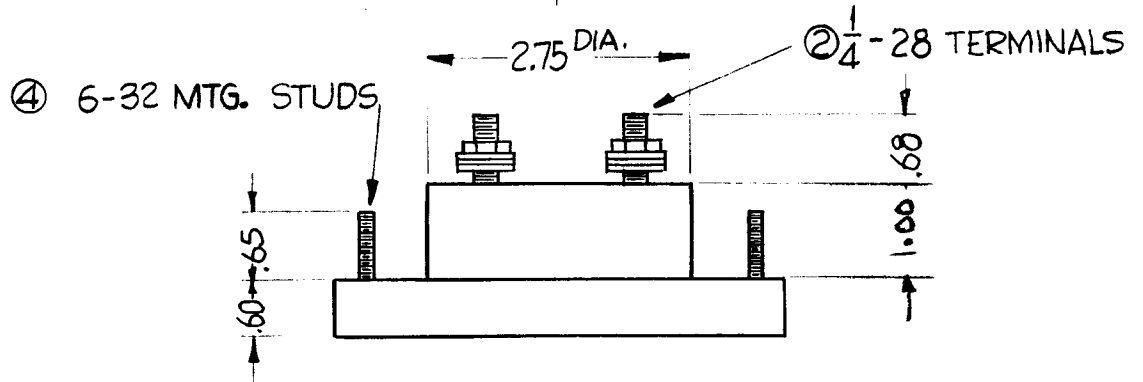
REQ. ITEM	PART NO.	DESCRIPTION	SYMB L
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
		METER, STANDING WAVE RATIO (0-1000)	
		J.C. Biela	
TYPE & TEMPER	HEAT TREAT. SPEC.	DRAWN	CHECKED
		FINAL APPROVAL	
		MR-138	
FINISH & SPEC. N.		ELEC. DES. APP	MECH. DES. APP

MR-139



NOTES -

- CASE - STANDARD COMMERCIAL RECTANGULAR 4 1/2"
- CASE SIZE #39 w/INTERNAL THERMOCOUPLE.
- FINISH - GLOSSY BLACK
- RANGE - 0-5A RF
- MATCHED WITHIN 2%
- POINTER - SPADE TYPE
- HARDWARE - (2) FLAT WASHERS, (2) 1/4-28 HEXAGON NUTS FOR TERMINALS,
- (4) LOCKWASHER, (4) 6-32 HEXAGON NUTS FOR MOUNTING, SUPPLIED BY MANUFACTURER.



INSERT TMC  
INSIGNIA (NP-117)  
(BLACK) IMMEDIATELY  
BELOW WORD "AMPERES"

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Property of:  
THE TECHNICAL MATERIEL CORPORATION  
MAMARONECK, NEW YORK

SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
A	(2) 1/4-28 TERMINALS w/ (2) 1/4-28 MTG. STUDS	4-3-61	4538	Dmm	JCB	DR

UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN INCHES  
TOLERANCES IN FRACTIONS ± 1/64 DECIMALS ± .05 ANGLES ± 1/2°

SCALE:  
MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.  
REMOVE ALL BURRS AND SHARP EDGES

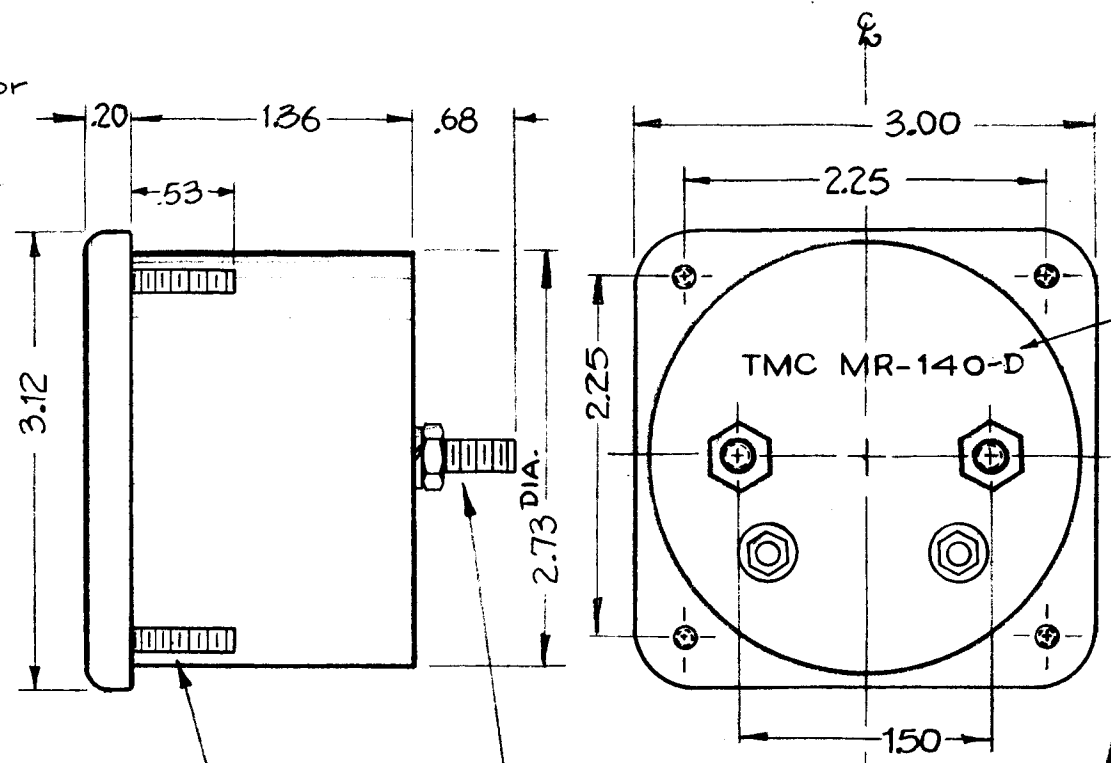
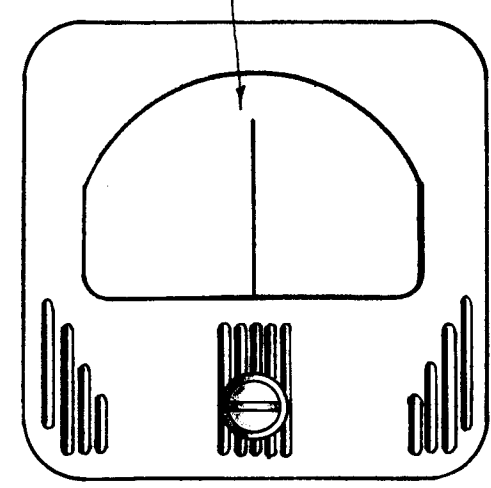
REQ. PER UNIT	MODEL	SECTION	ASS'Y. NO.	DATE
1	TMA	AX-192		1-4-61

USED ON

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
STOCK SIZE		METER, RF	
MATERIAL			
TYPE & TEMPER		HEAT TREAT. SPEC.	
FINISH & SPEC. NO.		ELEC. DES. APP.	MECH. DES. APP.
		DRAWN: <i>D.J. Man</i>	CHECKER: <i>JCB</i>
		FINAL APPROVAL: <i>DR</i>	
		MR-139	A

MR-140 D

See Details at right for Dial Face.

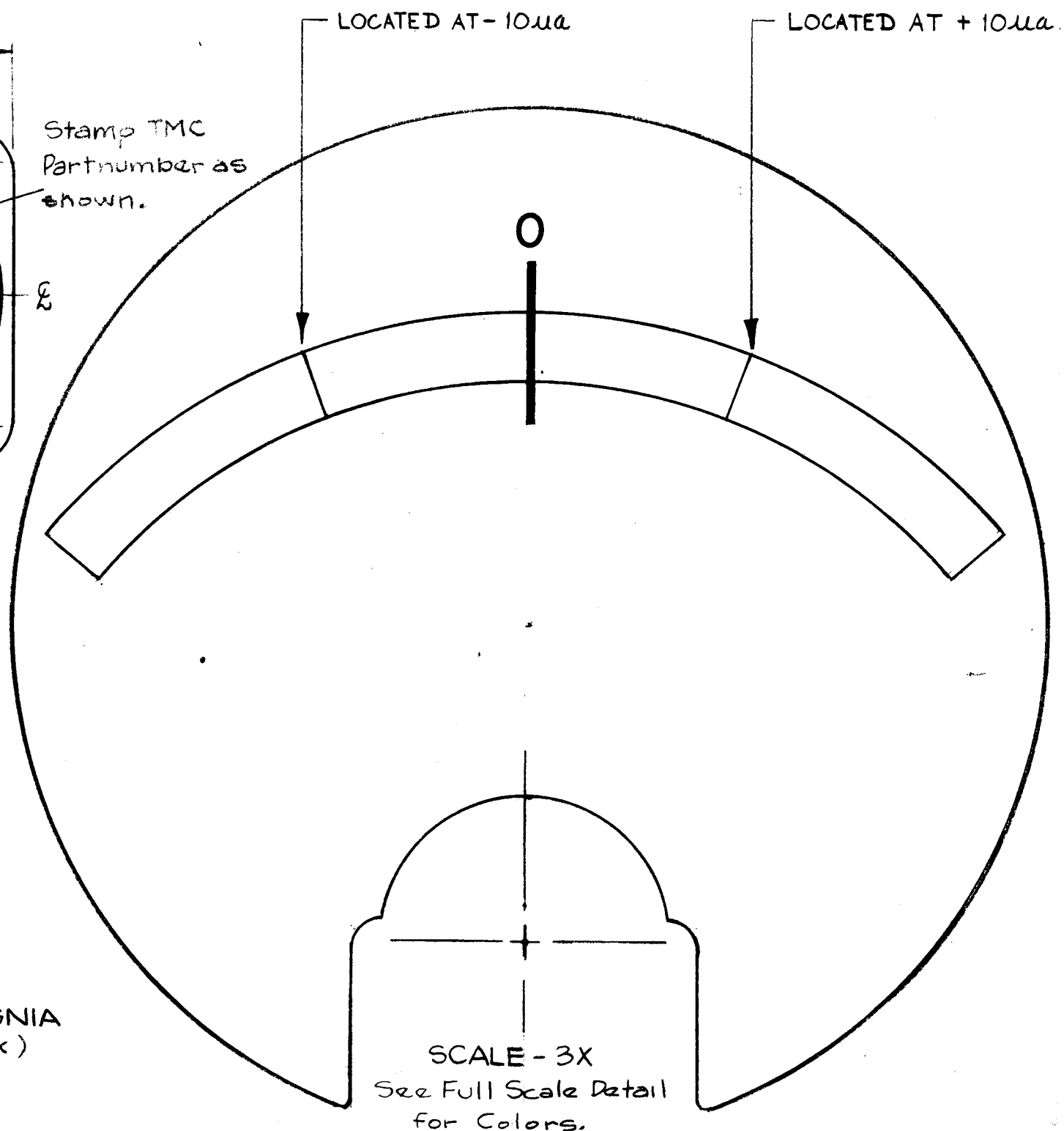
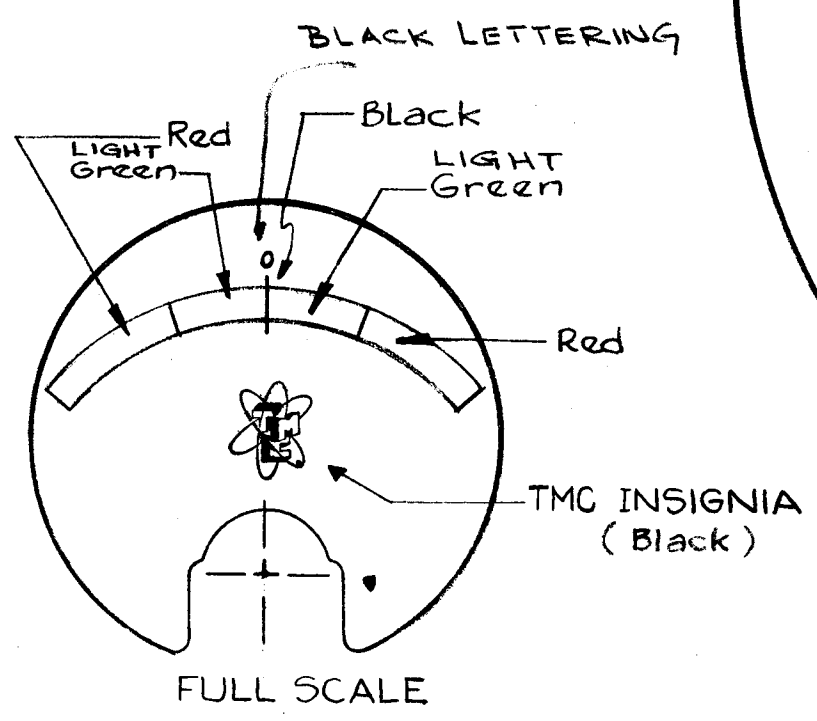


Stamp TMC Partnumber as shown.

Note ~ Meter Front must be a black Matt Finish, with Line Design as shown.

**SPECIFICATIONS:**

Case - Standard Simpson No 27.  
 Movement - 25-0-25 Micro-Amp.  
 Approx. Resistance - 2000 ohms.  
 Pointer Type - Knife Edge.  
 All necessary Mounting & Terminal Hardware Supplied by Mfg.



D	1	POINTER POSITION CHANGED	7-26-63	9653	AP		
C	1	MFG STUDS WERE 4-36 THD	6-12-63	9243	ES		
B	2	2 TERMS 1/4-28 THD WAS 2 STUDS 8-32 THD ON SCALE - 5X LOCATED AT -10ua & +10ua ADDED	4-4-61	4556	M.A.F.		
A	1	"0" ADDED TO DIAL LIGHT GREEN WAS GREEN	6/8/60	-H	DM		
ISSUE	ITEM	CHANGED FROM	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.

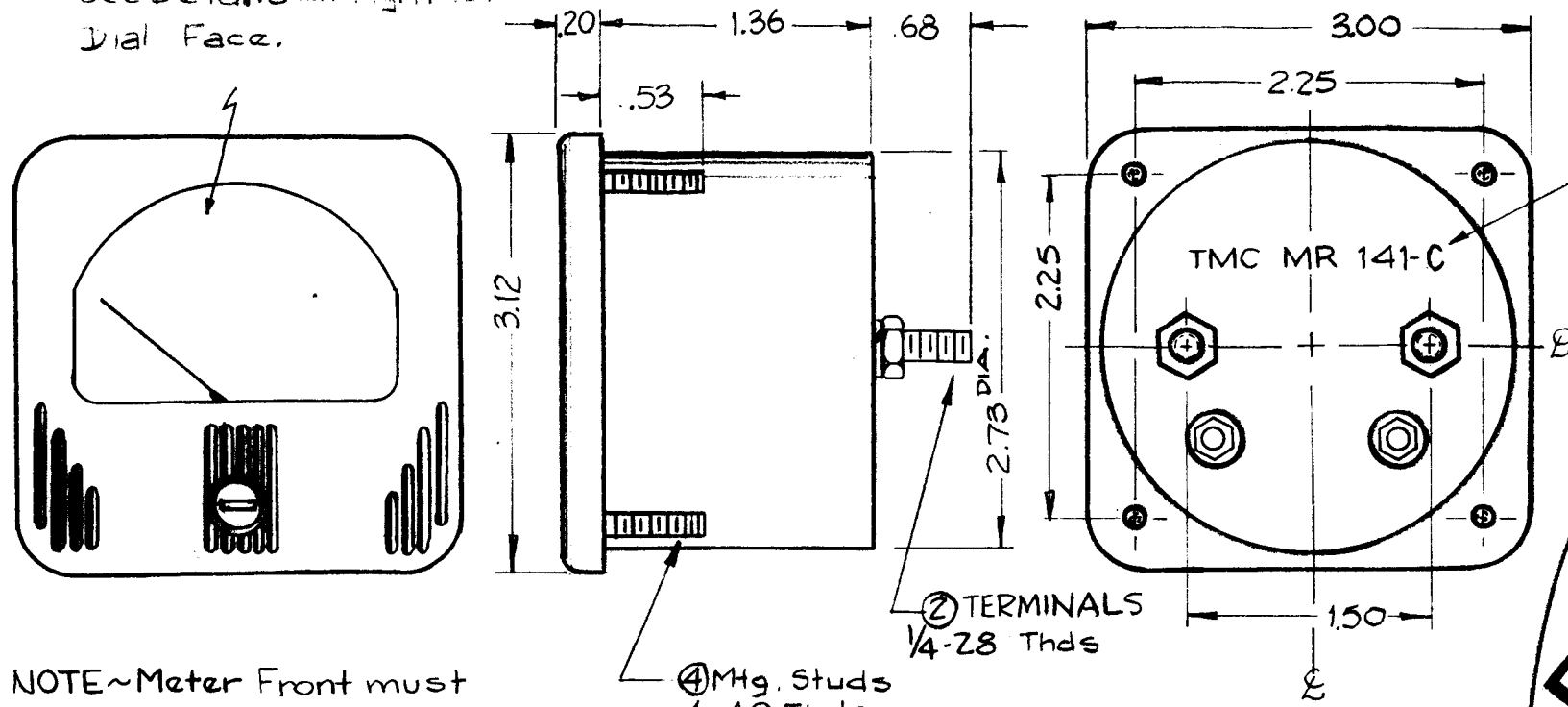
TOLERANCES		SCALE:
DEC. DIM. ±		MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.
FRAC. DIM. ±		REMOVE ALL BURRS AND SHARP EDGES
ANGULAR DIM. ±		

1	CMO-2			4-7-60
1	CMO-1			4-7-60
REQ. PER UNIT	MODEL	PROJECT NO.	ASS'Y. N.	DATE
USED ON				

<b>THE TECHNICAL MATERIEL CORP.</b> MAMARONECK, NEW YORK			
METER, SYNTHESIZER, DC MICRO AMPS			
STOCK SIZE			
MATERIAL			
TYPE & TEMPER	HEAT TREAT. SPEC.	DRAWN	CHECKED
FINISH & SPEC. NO.		ELEC. DES. APP.	MECH. DES. APP.
			MR-140 D

MR 141 C

See Details at right for Dial Face.



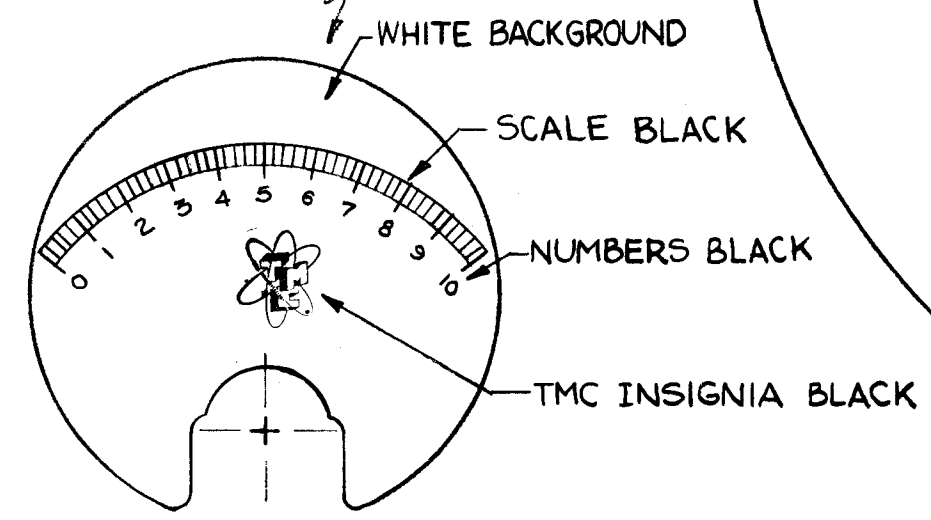
Stamp Case as shown.

NOTE~Meter Front must be a black Matt Finish, with Line Design as shown.

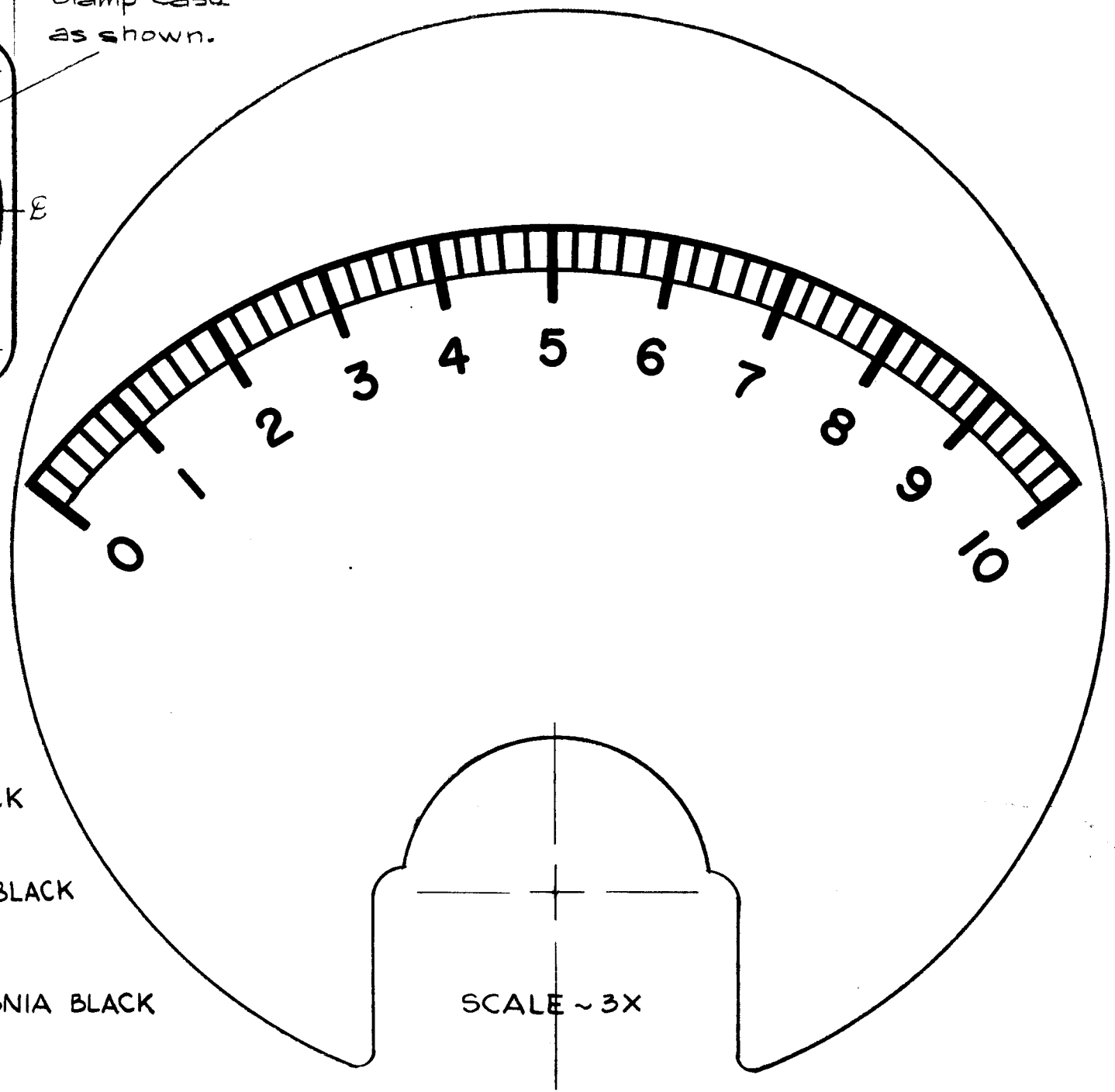
**SPECIFICATIONS:**

Case~Standard Simpson No 27  
 Movement- 0-50 Micro-Amps.  
 Approx. Resistance~ 2000 ohms.  
 Pointer Type~ Knife Edge  
 All necessary Mounting & Terminal Hardware Supplied by Mfg.

All numerals to be the fine line type.



FULL SCALE



ISSUE	ITEM	CHANGED FROM	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
C	1	STANDARD TOL. ADDED	2-16-66	15798			
B	1	MFG STUDS WERE 4-32 THD	6-12-63	9243			
A	1	2 TERMINALS 1/4-28 THDS. WAS 2 STUDS 8-32 THDS.	4/3/61	4538			

TOLERANCES	SCALE:
DEC. DIM. ± .010	1 CMO-2
FRAC. DIM. ± 1/64	1 CMO-1
ANGULAR DIM. ± 1/2°	REQ. PER UNIT

MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES

REQ. PER UNIT	MODEL	PROJECT NO.	ASS'Y. NO.	DATE
1	CMO-2			4-8-60
1	CMO-1			4-8-60

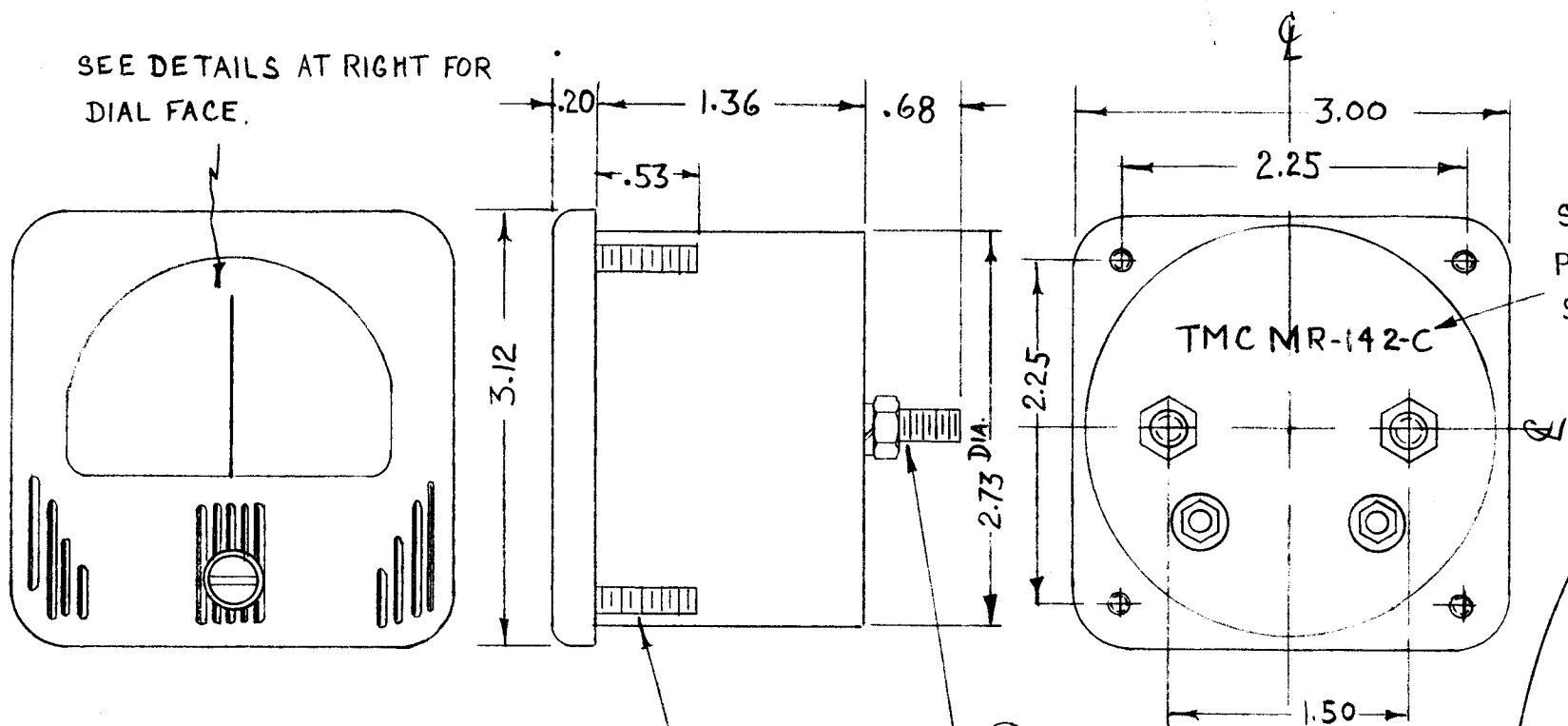
REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
		METER, TUNE	
		DC MICRO AMP	
		DRAWN	CHECKED
		FINAL APPROVAL	
		ELEC. DES. APP.	MECH. DES. APP.

MR 141 C



MR-142 C

SEE DETAILS AT RIGHT FOR DIAL FACE.



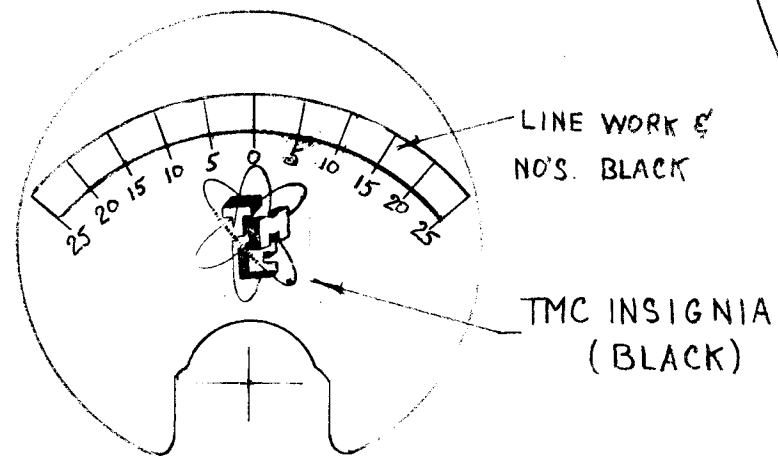
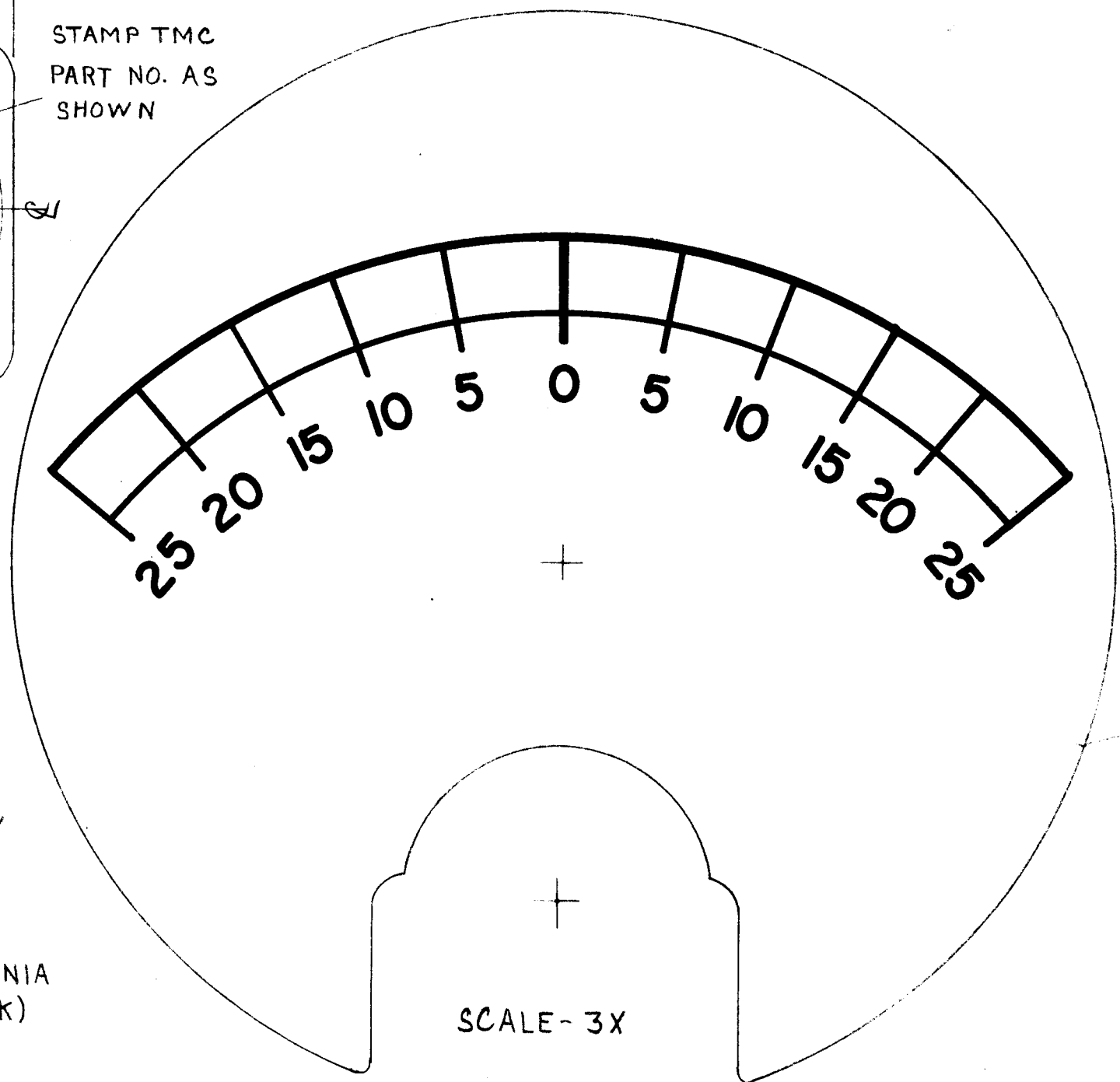
STAMP TMC PART NO. AS SHOWN

NOTE - METER FRONT MUST BE A BLACK MATT FINISH, WITH LINE DESIGN AS SHOWN

SPECIFICATIONS:

- CASE - STANDARD SIMPSON No 27
- MOVEMENT - 25-0-25 MICRO-AMP.
- APPROX. RESISTANCE - 2000 Ohms.
- POINTER TYPE - SPADE EDGE.
- ALL NECESSARY MOUNTING & TERMINAL HARDWARE SUPPLIED BY MFG.

④ MTG STUDS 4-40 THDS.  
② TERMINALS 1/4-28 THDS.



FULL SCALE

SCALE - 3X

ISSUE	ITEM	CHANGED FROM	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
C	1	ON DIAL FACE, POSITION OF POINTER, CHANGED	7-26-63	9653	AC.	JMG	[Signature]
B	1	MTG STUDS WERE 4-36 THD	6-18-63	9243	[Signature]	JMG	[Signature]
A	1	2 Terminals 1/4-28 was 2 STUDS 8-32 THDS.	4/3/61	4538	DJM	JCS	[Signature]

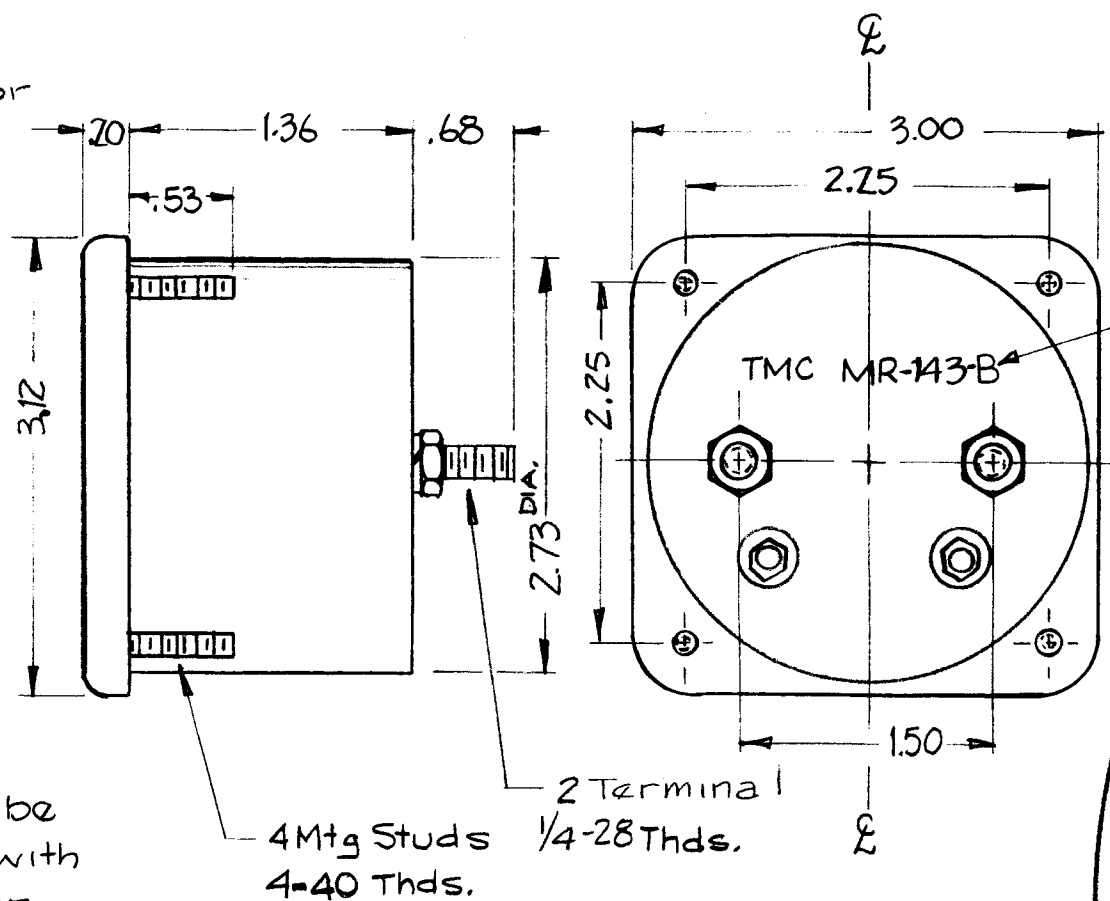
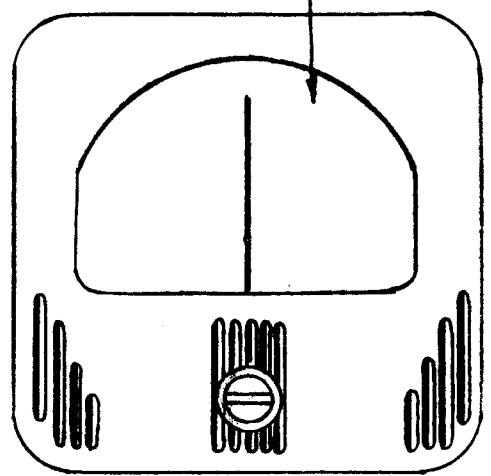
TOLERANCES		SCALE:
DEC. DIM. ±		MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES
FRAC. DIM. ±		
ANGULAR DIM. ±		

REQ. PER UNIT	CSS	PROJECT NO.	ASS'Y. NO.	DATE
				4-18-60
USED ON				

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
		METER, PHASE, COMPARATOR	
		DC. MICRO AMPS	
		TYPE & TEMPER	HEAT TREAT. SPEC.
		DRAWN	CHECKED
		FINAL APPROVAL	
		ELEC. DES. APP.	MECH. DES. APP.
		MR-142	C

MR143 B

See Details at right for Dial Face.

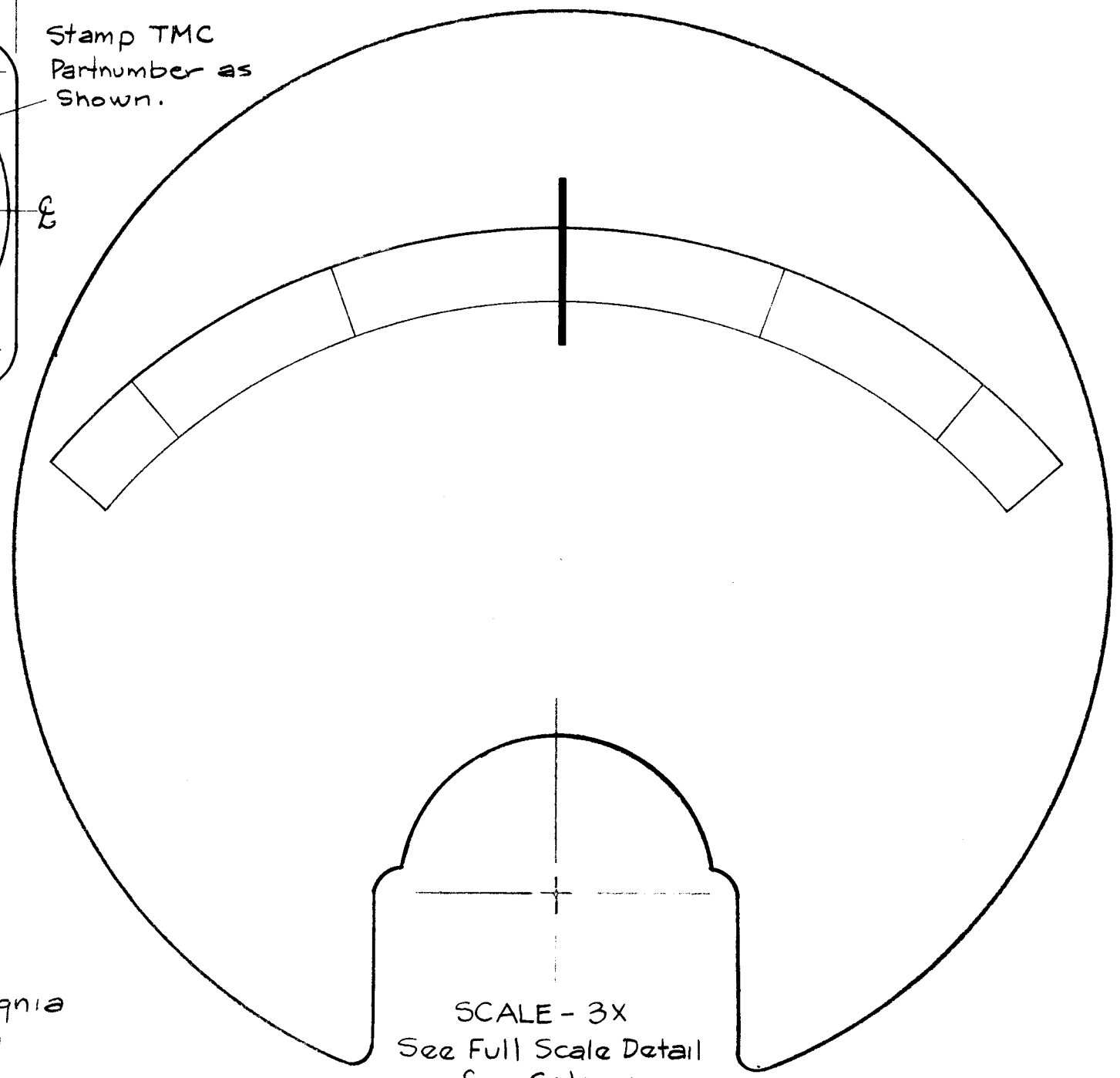
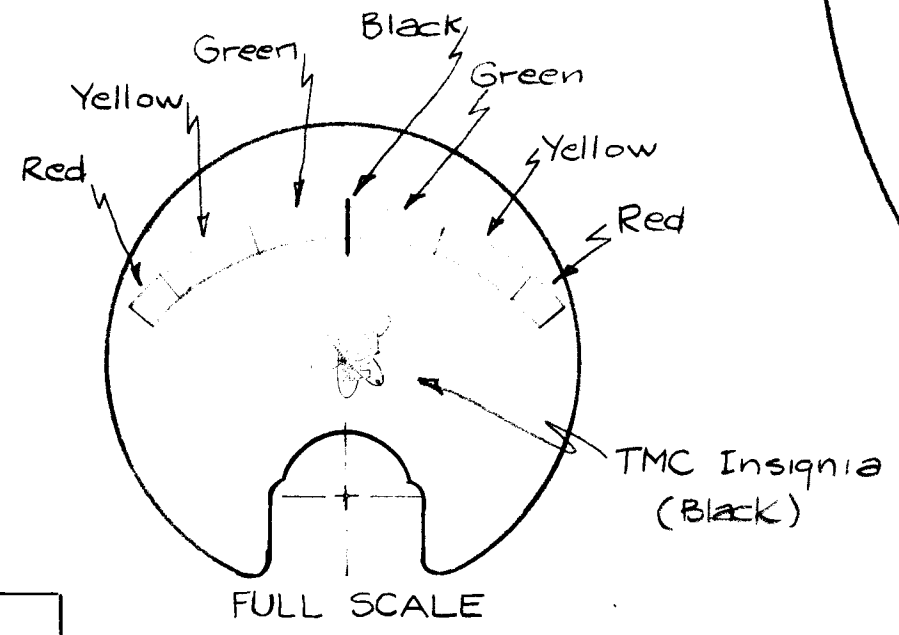


Stamp TMC Partnumber as Shown.

NOTE ~ Meter Front must be a black Matt Finish, with Line Design as shown.

SPECIFICATIONS

Case - Standard Simpson No 27  
 Movement - 25-0-25 Micro-Amps.  
 Approx. Resistance - 2000 ohms.  
 Pointer Type - Knife Edge.  
 All Necessary Mounting & Terminal Hardware Supplied by Mfg.



SCALE - 3X  
 See Full Scale Detail for Colors

ISSUE	ITEM	CHANGED FROM	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
B	1	MTG STUDS WERE 4-36 THD	6/2/63	9243			
A	1	2 Terminal 1/4-28 THDS. WAS 2 STUDS - 8-32 THDS.	4/3/61	4538			

TOLERANCES: DEC. DIM. ±, FRAC. DIM. ±, ANGULAR DIM. ±

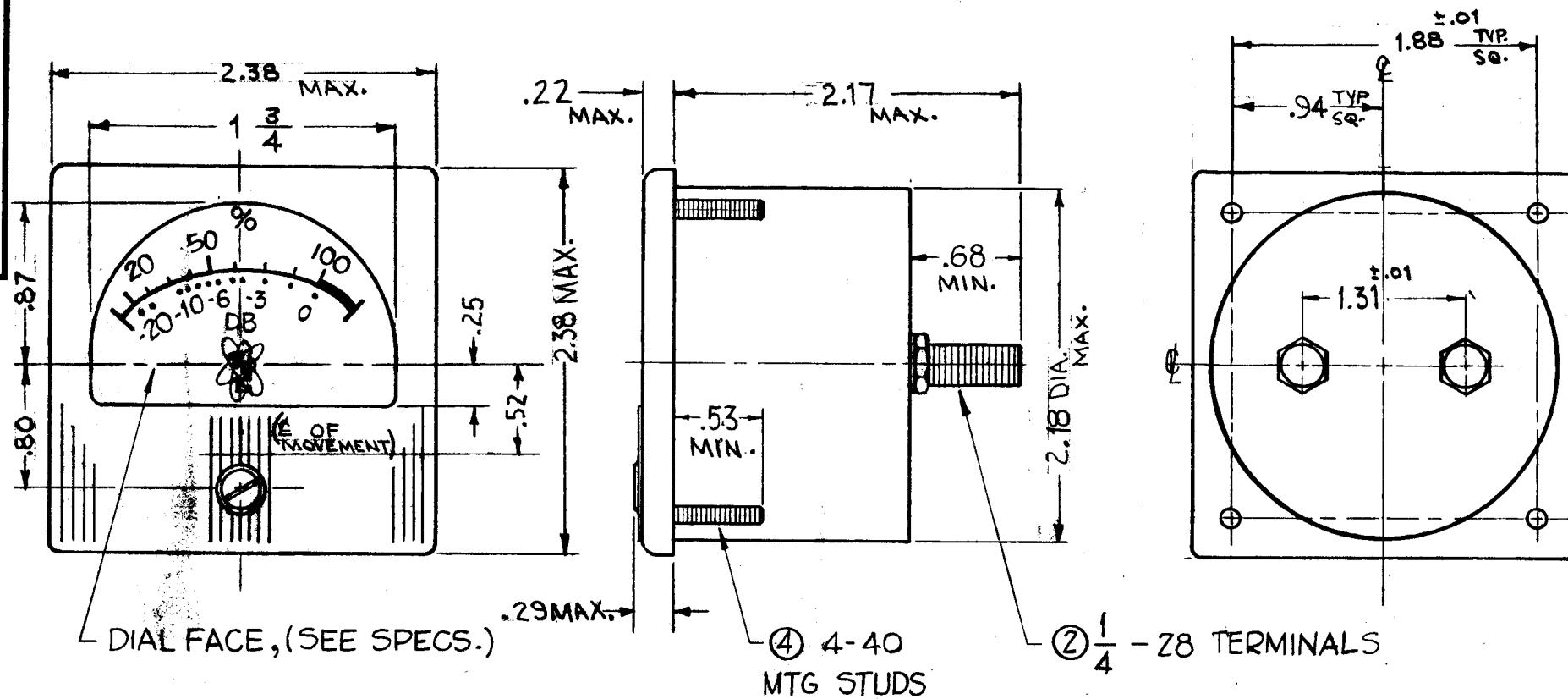
SCALE: MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES

1	AFC-1	E-1064-P	5-27-60
REQ. PER UNIT	MODEL	PROJECT NO.	ASS'Y. NO.
USED ON			

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
STOCK SIZE		METER, A.F.C.	
MATERIAL			
TYPE & TEMPER		HEAT TREAT. SPEC.	
FINISH & SPEC. NO.		ELEC. DES. APP.	MECH. DES. APP.

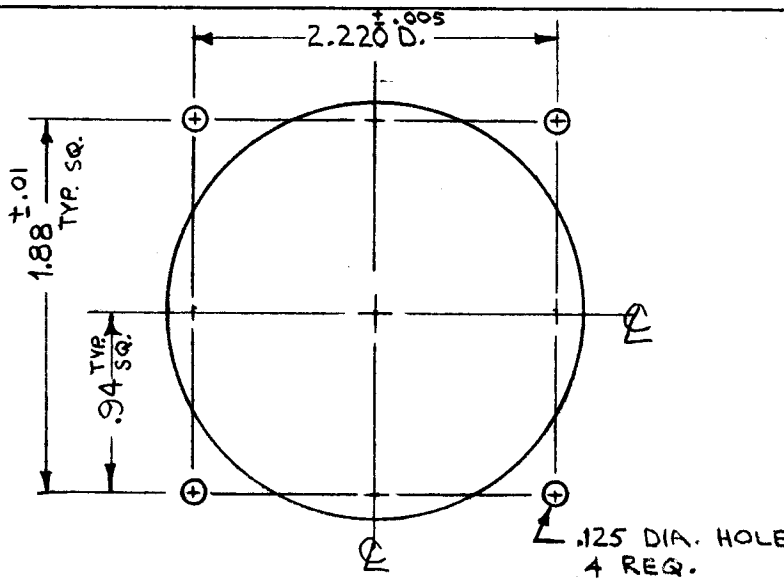
MR-143 B

MR-144 D



**SPECIFICATIONS:**

- CASE - STANDARD COMMERCIAL RECTANGULAR 2 3/8"
- FINISH - MATTE BLACK.
- MOVEMENT - O-50UA.
- APPROXIMATE RESISTANCE - 2000 OHMS
- POINTER - SPADE TYPE
- HARDWARE - ② 1/4 - 28 HEXAGON NUTS AND ② LOCK-WASHERS FOR TERMINALS.
- DIAL FACE - SUPPLIED BY MANUFACTURER, REF TMC DWG NO. LD-364.



DRILLING PLAN

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MAMARONECK, NEW YORK

SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
D	COMPLETELY REVISED AS PER MFR'S DRAWING.	11/16/66	17267	RME	<i>[Signature]</i>	
C	ON SPECS.: FINISH WAS GLOSSY BLACK	10-24-64	12754	WSB	<i>[Signature]</i>	
B	MTG STUDS WERE 4-36 THD	6-12-63	9243	<i>[Signature]</i>	<i>[Signature]</i>	
A	1/4-28 Terminals was 1/4-28 MTG. STUDS	4-3-61	4538	Dmm	<i>[Signature]</i>	

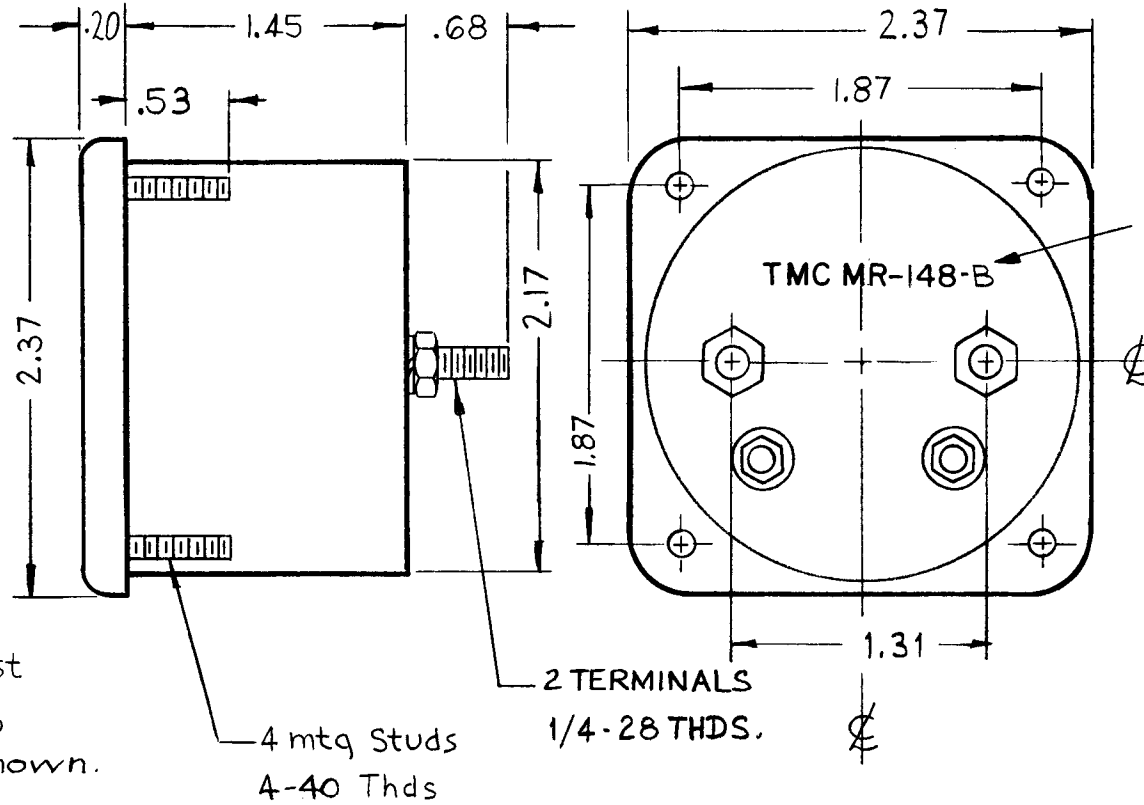
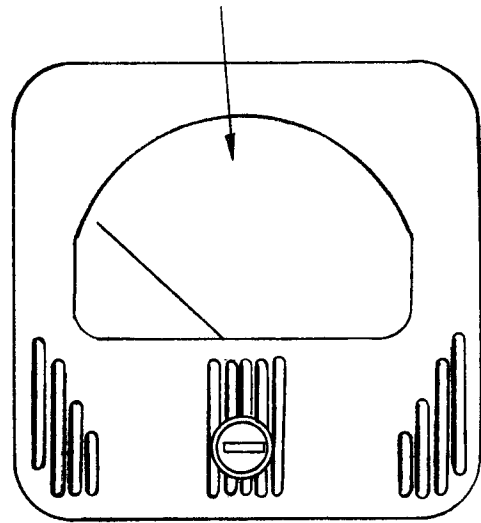
UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN INCHES  
TOLERANCES ON FRACTIONS ± 1/64 DECIMALS .015 ANGLES ± 1/2°  
SCALE: FULL, Do Not SCALE  
MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.  
REMOVE ALL BURRS AND SHARP EDGES

REQ. PER UNIT	MODEL	SECTION	ASS'Y. NO.	DATE
1	TIS-3			11-15-60
USED ON				

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
METER, LEVEL INDICATING			
O-50 MICROAMPS			
MATERIAL		J.C. Biele <i>[Signature]</i>	<i>[Signature]</i>
TYPE & TEMPER	HEAT TREAT. SPEC.	DRAWN	CHECKER
		<i>[Signature]</i>	<i>[Signature]</i>
FINISH & SPEC. N.		ELEC. DES. APP.	MECH. DES. APP.
			MR-144 D

MR-148 B

See details at right for Dial Face

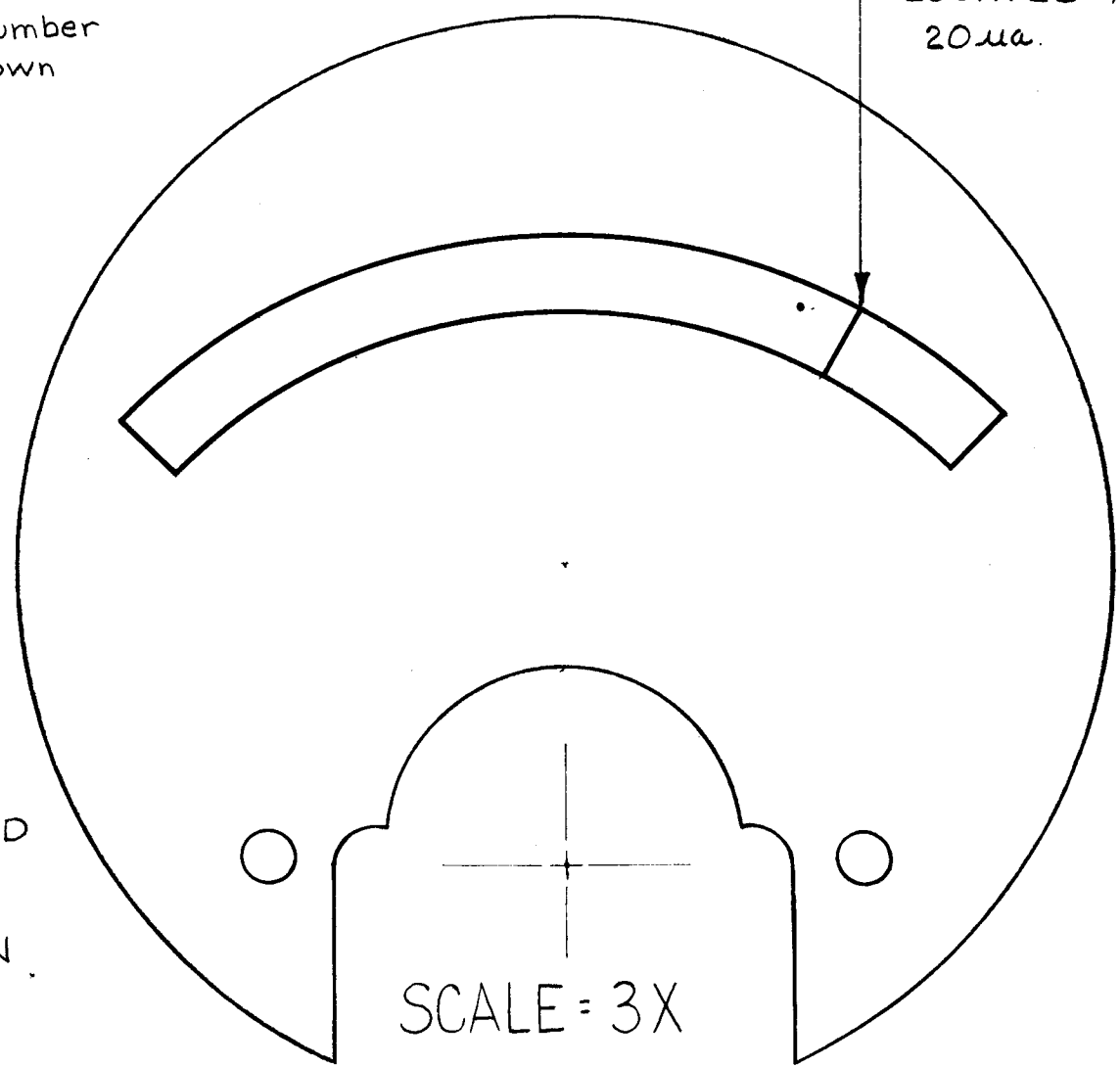


Stamp TMC Partnumber as shown

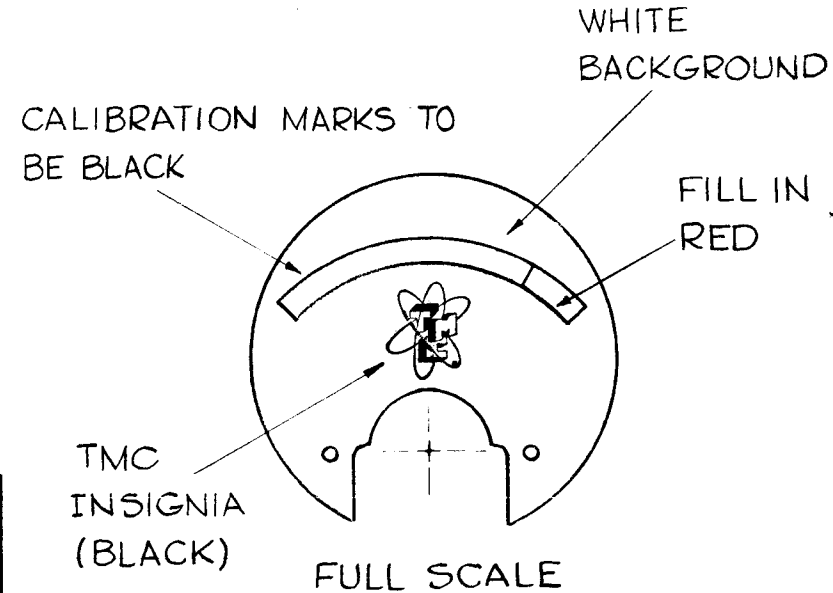
LOCATED AT 20 $\mu$ a.

NOTE ~ Meter Front must be a black Matt Finish, with Line Design as shown.

SPECIFICATIONS ~  
 Case ~ standard Simpson No 127  
 Movement ~ 0-25  $\mu$ A  
 Approx ~ resistance-2200 ohms  
 Pointer Type ~ Knife edge.  
 All necessary mounting & terminal hardware supplied by mfg.



SEE FULL SCALE DETAIL FOR COLORS.



B	MTG STUDS WERE 4-36 THD	6-12-63	9243			
A	DIM. 1.31 WAS 1.00 DIM. .53 WAS .54 2 TERMS. 1/4-28 THD. WAS 2 STUDS 8-32 THD. ON SCALE: 3X ADDED LOCATED AT 20 $\mu$ a	A-4-61	A556			
SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.

UNLESS OTHERWISE SPECIFIED:  
 DIMENSIONS ARE IN INCHES  
 TOLERANCES ON FRACTIONS  $\pm 1/64$  DECIMALS  $\pm .005$  ANGLES  $\pm 1/2^\circ$

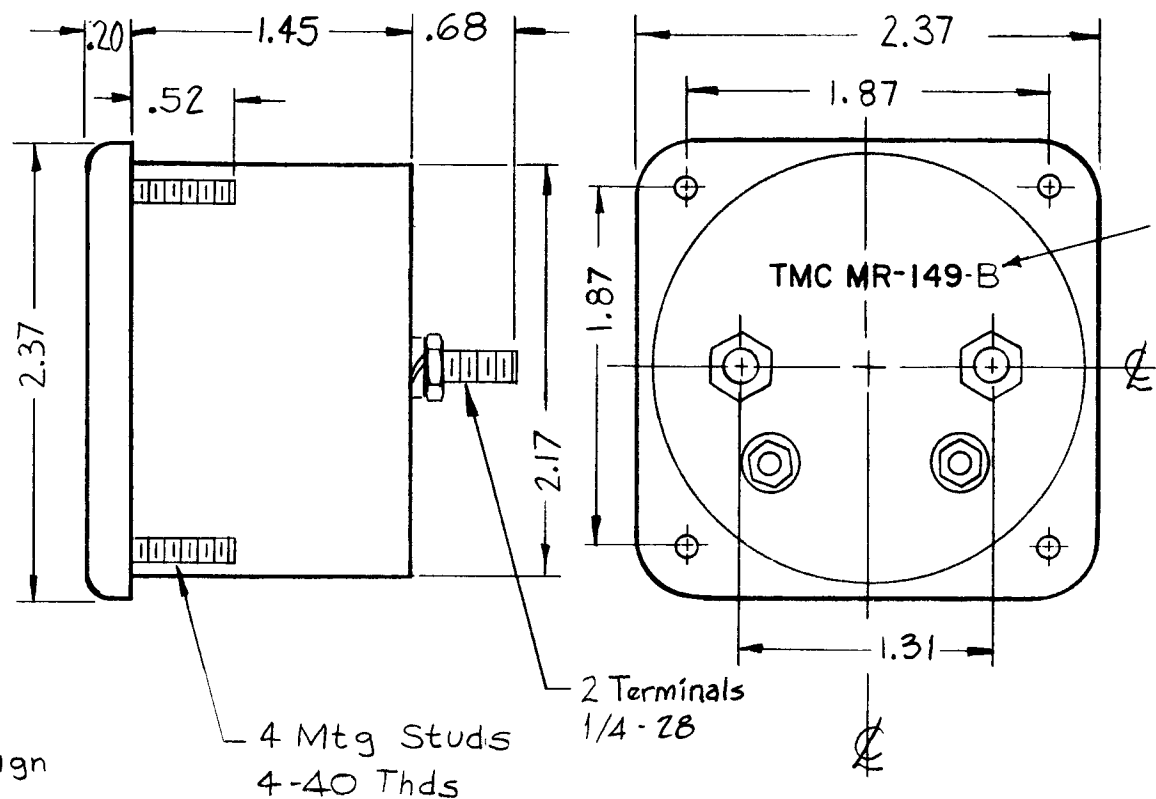
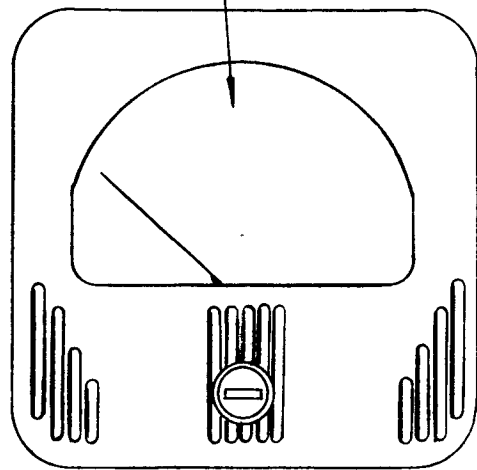
SCALE:  
 MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.  
 REMOVE ALL BURRS AND SHARP EDGES

1	CHG			11-19-60
REQ. PER UNIT	MODEL	SECTION	ASS'Y. NO.	DATE
				USED ON

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
		METER, MF TUNING	
		MATERIAL	
		TYPE & TEMPER	
		HEAT TREAT. SPEC.	
		DRAWN	
		CHECKER	
		FINAL APPROVAL	
		ELEC. DES. APP.	
		MECH. DES. APP.	
		MR-148	B

MR-149 B

see detail at right for dial face.

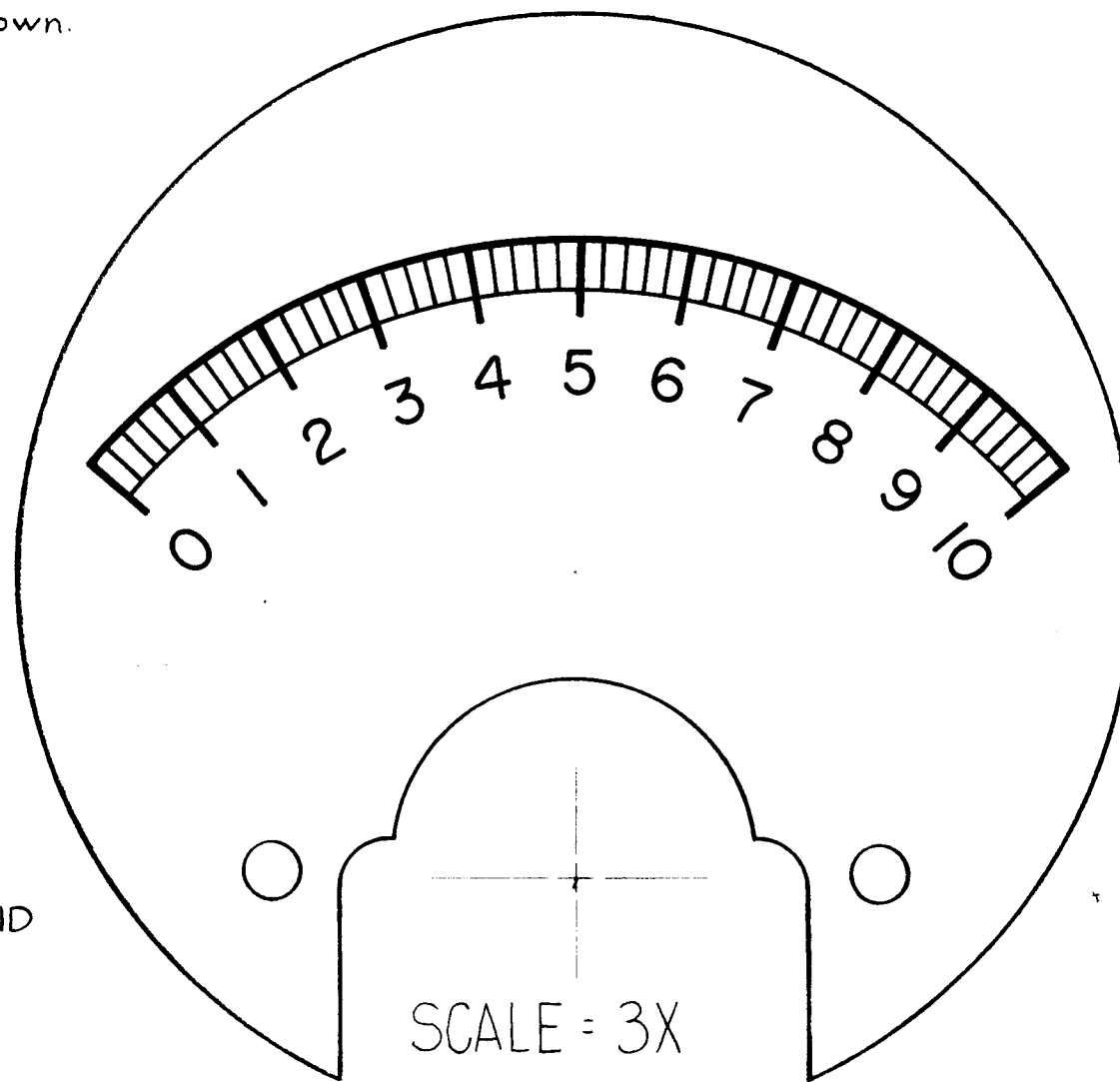


Stamp case as shown.

NOTE ~ Meter Front must be a black Matt Finish, with Line Design as shown.

SPECIFICATIONS:

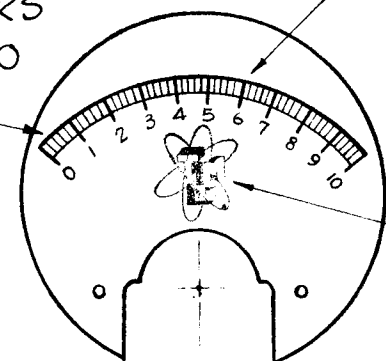
Case ~ standard Simpson No 127  
 Movement ~ 0-25  $\mu$ A.  
 Approx ~ resistance ~ 2200 ohms  
 Pointer Type ~ knife edge. All necessary mounting & terminal hardware supplied by mfg.



CALIBRATION MARKS AND NUMERALS TO BE IN BLACK.

WHITE BACKGROUND

TMC INSIGNIA (BLACK)



FULL SCALE

SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
B	MTG STUDS WERE 4-36 THD	6/2/63	9243		JAB	
A	(2) Terminals were 8-32 Thds 1.31 dim was 1.00 .52 dim was .54	3/30/61	4541	N.F.	JCB	

UNLESS OTHERWISE SPECIFIED:  
 DIMENSIONS ARE IN INCHES  
 TOLERANCES ON FRACTIONS  $\pm 1/64$  DECIMALS  $\pm .005$  ANGLES  $\pm 1/2^\circ$

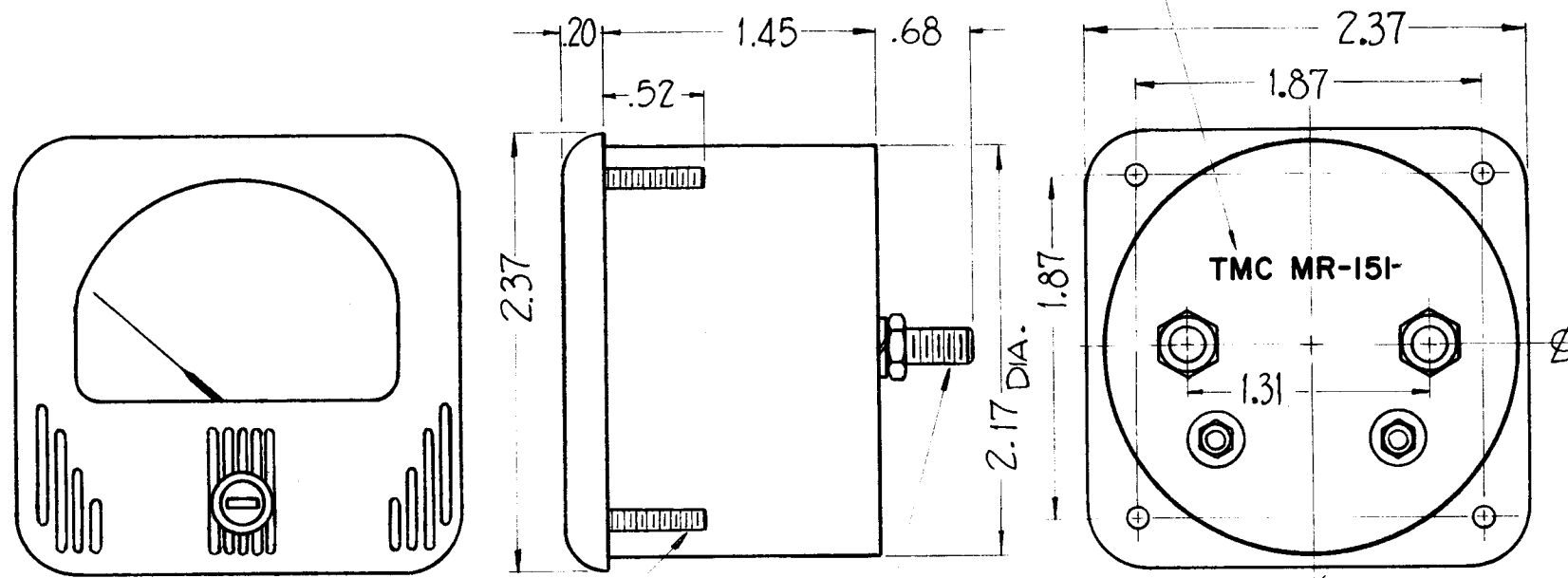
SCALE:  
 MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.  
 REMOVE ALL BURRS AND SHARP EDGES

1	CHG			11-19-60
REQ. PER UNIT	MODEL	SECTION	ASS'Y. NO.	DATE
	USED ON			

REQ.	ITEM	PART NO.	DESCRIPTION	SYMBOL
			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
			METER, OUTPUT	
			MATERIAL	
			TYPE & TEMPER	
			HEAT TREAT. SPEC.	
			FINISH & SPEC. NO.	
			ELEC. DES. APP.	
			MECH. DES. APP.	
			FINAL APPROVAL	MR-149 B

MR-151 B

STAMP TMC PART NO. AS SHOWN.



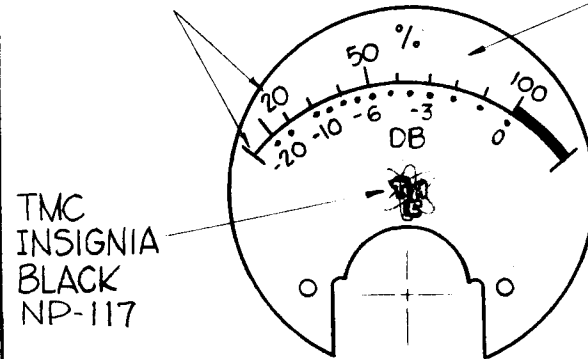
NOTE: METER FRONT MUST BE A BLACK MATT FINISH, WITH LINE DESIGN AS SHOWN.

(4) MTG. STUDS 4-40 THREADS  
 (2) TERMINALS, 1/4 - 28 THREADS.

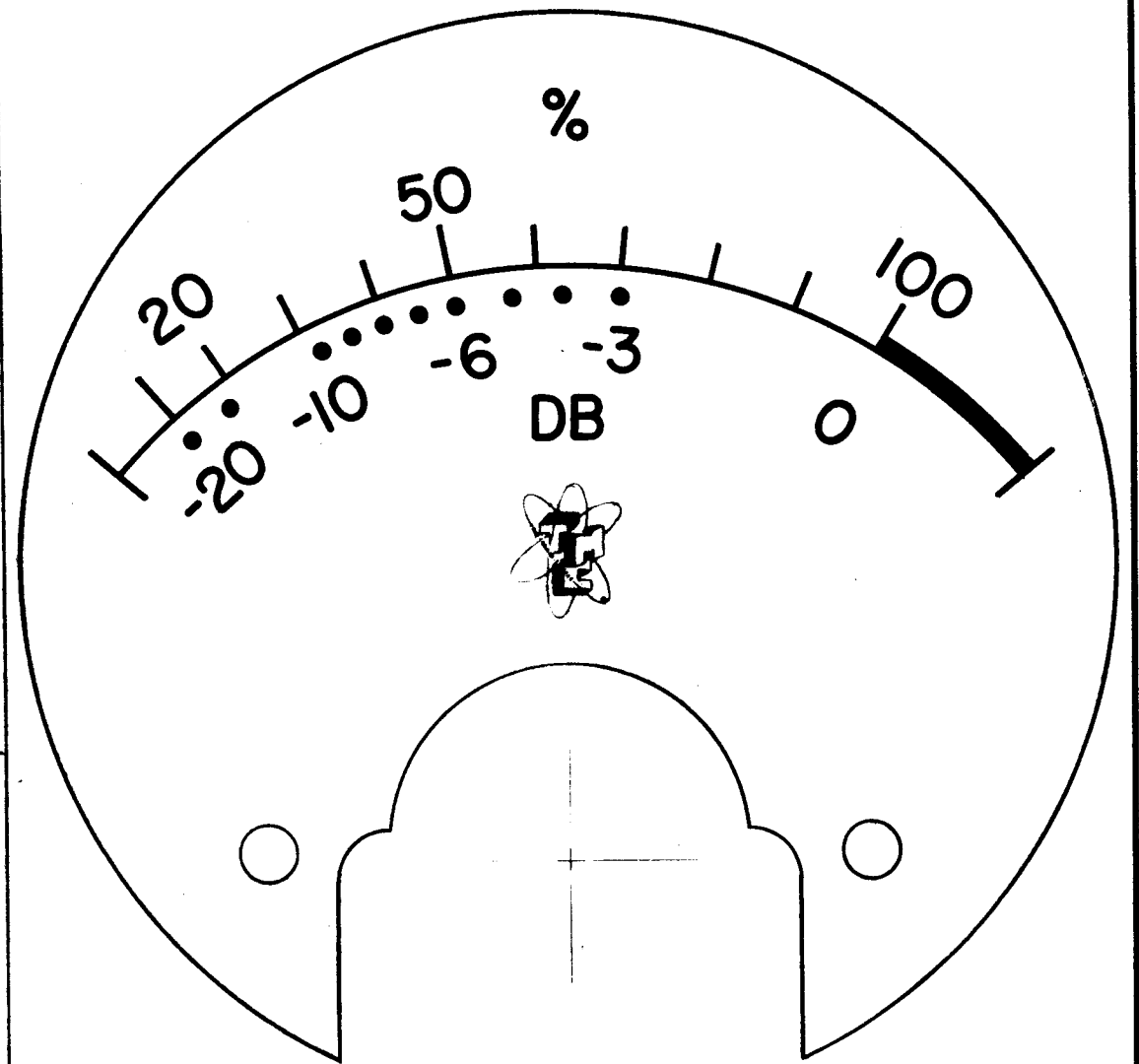
**SPECIFICATIONS**

CASE - BLACK PHENOLIC, METER FRONT WITH MATTE FINISH.  
 MOVEMENT - 0-25UA. ACCURACY AT FULL SCALE ± 2%  
 APPROX. RESISTANCE - 2200 OHMS.  
 POINTER TYPE - KNIFE EDGE  
 ALL NECESSARY MOUNTING AND TERMINAL HARDWARE SUPPLIED BY MFG.  
 CALIBRATED FOR NON-MAGNETIC PANEL.

CALIBRATION MARKS AND NUMERALS TO BE IN BLACK.  
 WHITE BACKGROUND



FULL SCALE



SCALE = 3X

SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
B	ACCURACY & CALIBRATION NOTES ADDED ON SPECS, CASE WAS STD. SIMPSON No. 127	7-9-63	9496		N.P.	
A	MTG STUDS WERE 4-36 THD	6-12-63	9243			

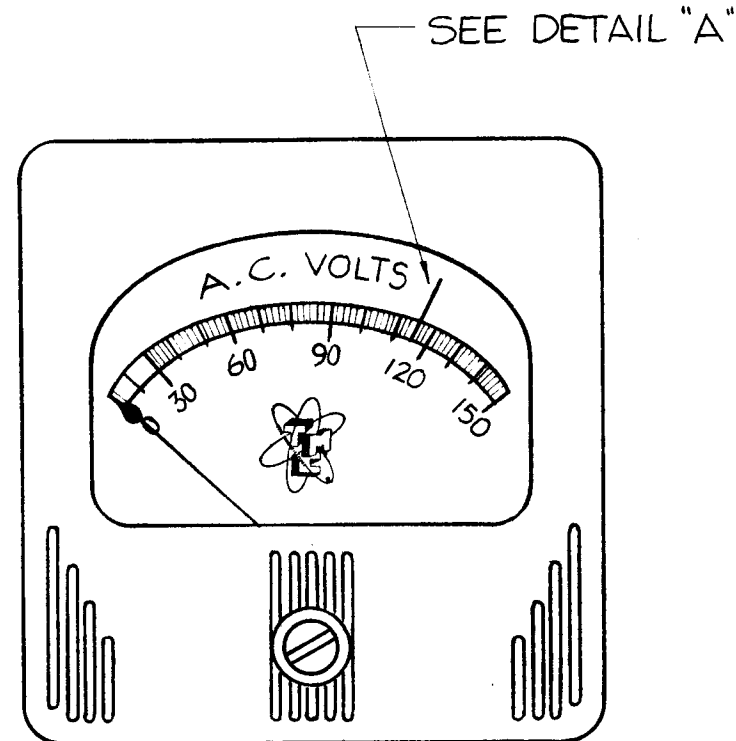
UNLESS OTHERWISE SPECIFIED:  
 DIMENSIONS ARE IN INCHES 5401-44(127)  
 TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 1/2°  
 SCALE: NONE  
 MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.  
 REMOVE ALL BURRS AND SHARP EDGES

REQ. PER UNIT	MODEL	SECTION	ASS'Y. NO.	DATE
1	GPE-1			6-6-61

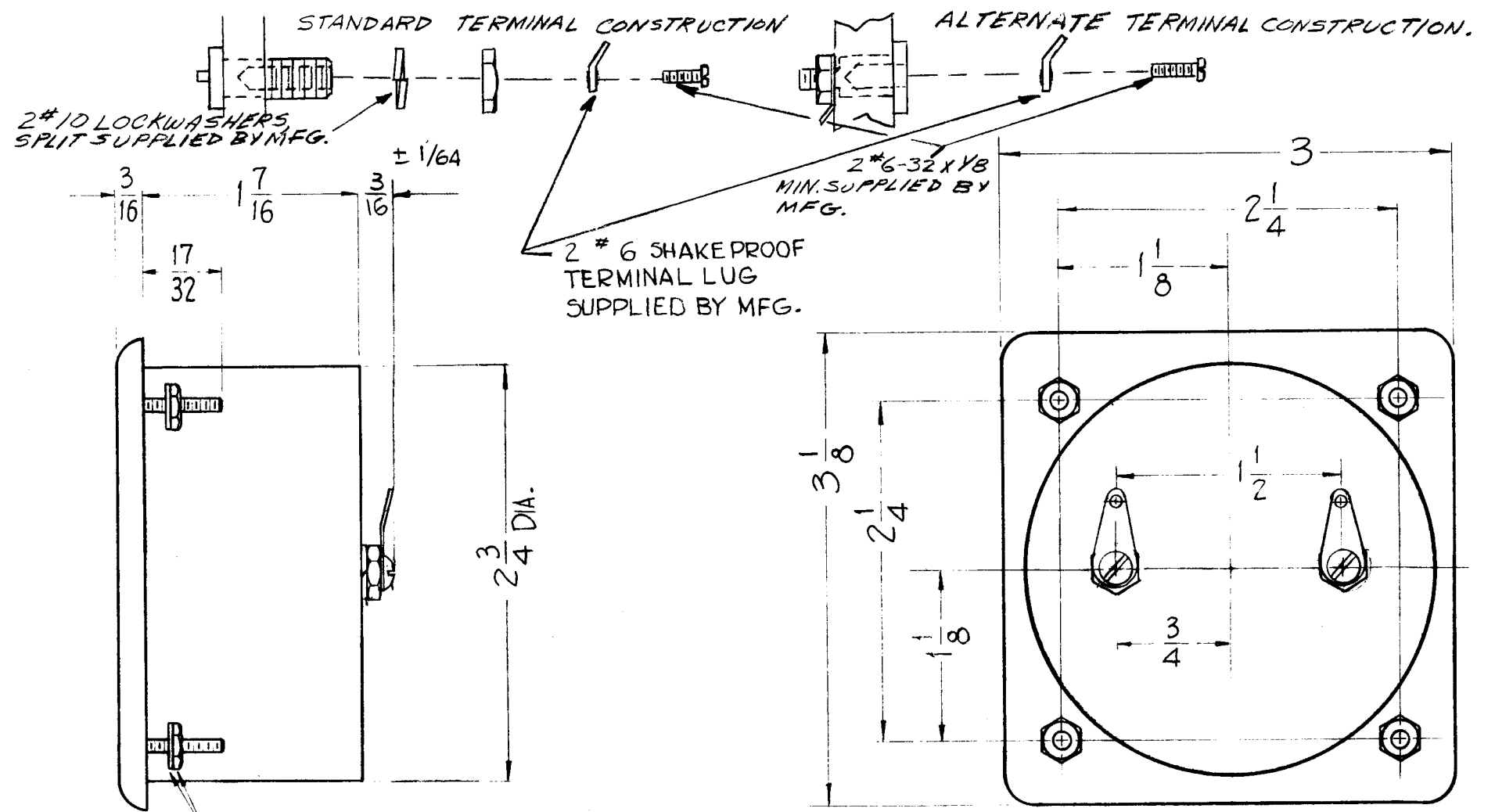
REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
STOCK SIZE		METER, OUTPUT	
MATERIAL			
TYPE & TEMPER	HEAT TREAT. SPEC.	John C. Biele	
		DRAWN	CHECKER
FINISH & SPEC. NO.		ELEC. DES. APP.	MECH. DES. APP.
			MR-151 B



MR 152 F



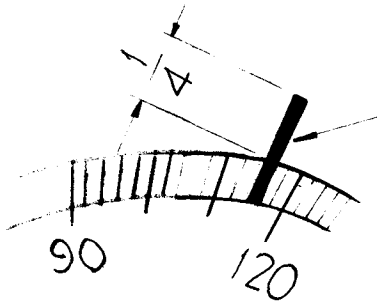
SEE DETAIL "A"



④ 4-40 HEX. NUTS, ④ FLAT WASHERS SUPPLIED BY MFG.

RECTIFIER TYPE.  
 ACCURACY AT FULL SCALE  $\pm 3\%$ .  
 CALIBRATED FOR NON MAGNETIC PANEL.  
 CASE FRONT, BLACK MATTE FINISH, WITH LINE DESIGN AS SHOWN.  
 SPADE TYPE POINTER.

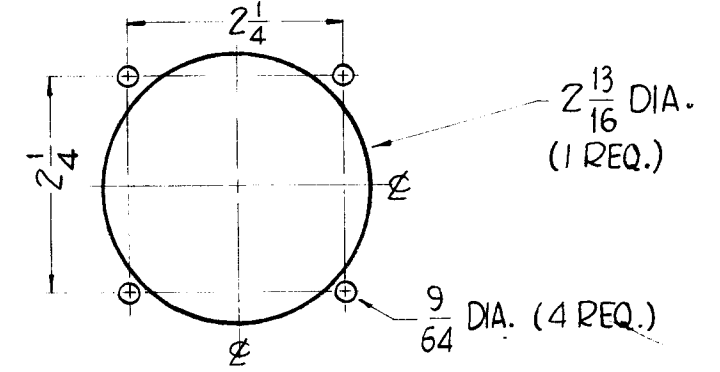
DETAIL "A"



FILL IN RED AS SHOWN.

NOTE  
 THE AREA BETWEEN CALIBRATION POINTS 114 & 116 IS TO BE RED FILLED AS SHOWN.

DRILLING PLAN



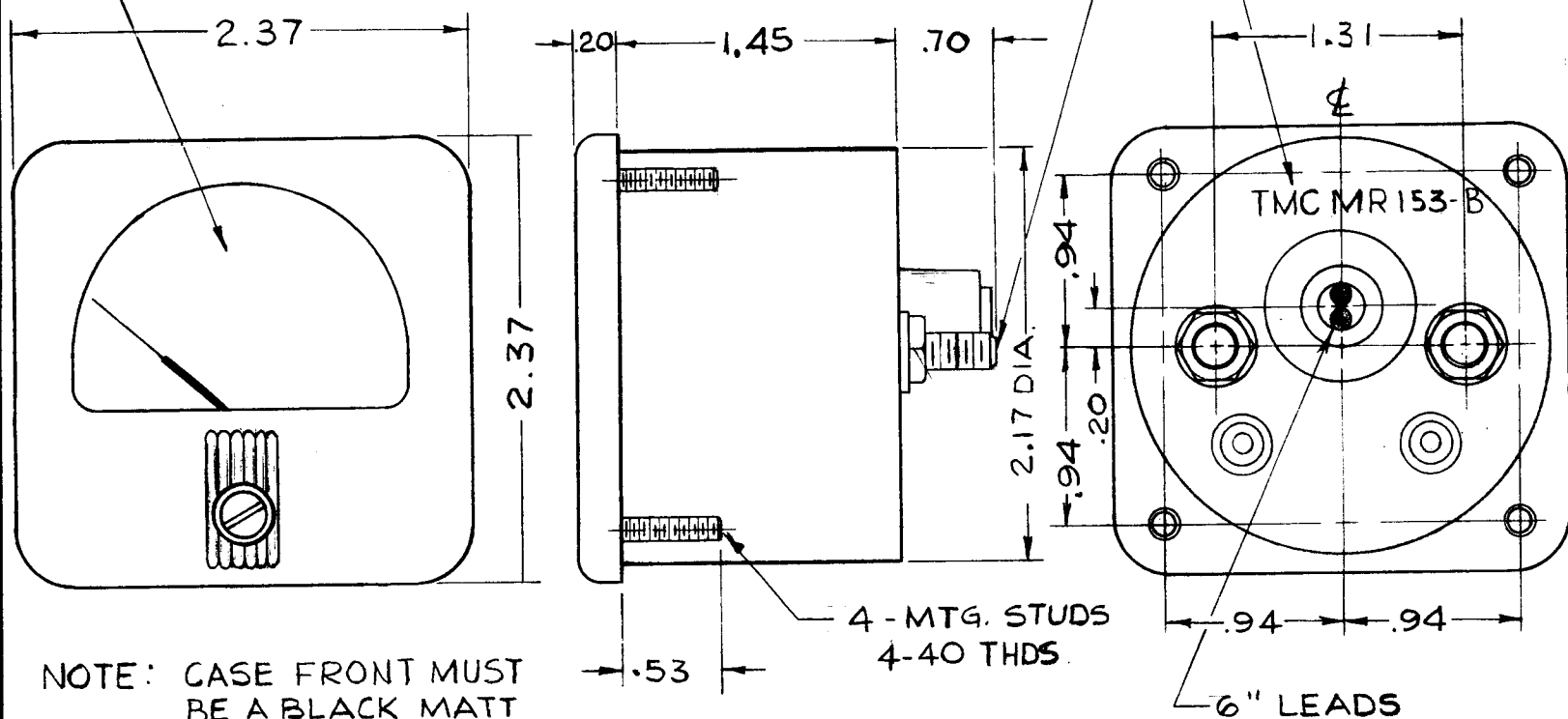
F	(2 TYPES) TERM CONSTRUCTION ADD	9/16	15289	R.V.	OK	OK
E	STUDS DIMS. WERE 1/4-1/64 HARDWARE-(2) #6-32 SCREWS (2) #10 LOCK WASHER SPLIT & (2) SHAKE PROOF LUGS ADDED	9-23-63	10 002	G.D.L.		
D	NOTES COMPLETELY CLARIFIED	7-16-63	9557			
C	4-40 Hex.Nuts Were 4-36, Note Added	12-19-61	6036	I.H.		
B	② Flat Washers Deleted DIM - 1/64 Was Added to 1/4 ±.000	11-15-61	5898	RU		
A	1/4 DIM. WAS .312	9-29-61	5632	I.H.		
SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
UNLESS OTHERWISE SPECIFIED:		SCALE: 3/401-44				
DIMENSIONS ARE IN INCHES		MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.				
TOLERANCES ON FRACTI NS $\pm 1/64$ DECIMALS $\pm .05$ ANGLES $\pm 1/2^\circ$		REMOVE ALL BURRS AND SHARP EDGES				
1	PS-4A					
REQ. PER UNIT	MODEL	SECTION	ASS'Y. NO.	DATE		
	USED ON					

REQ.	ITEM	PART NO.	DESCRIPTION	SYMBOL
			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
			VOLTMETER, AC (MODEL - PS-4A)	
			J.C. Biele	
			RK	
			MR 152 F	

SEE DETAIL AT RIGHT FOR DIAL FACE

2 TERMINALS  
1/4-28 THD

STAMP CASE AS SHOWN

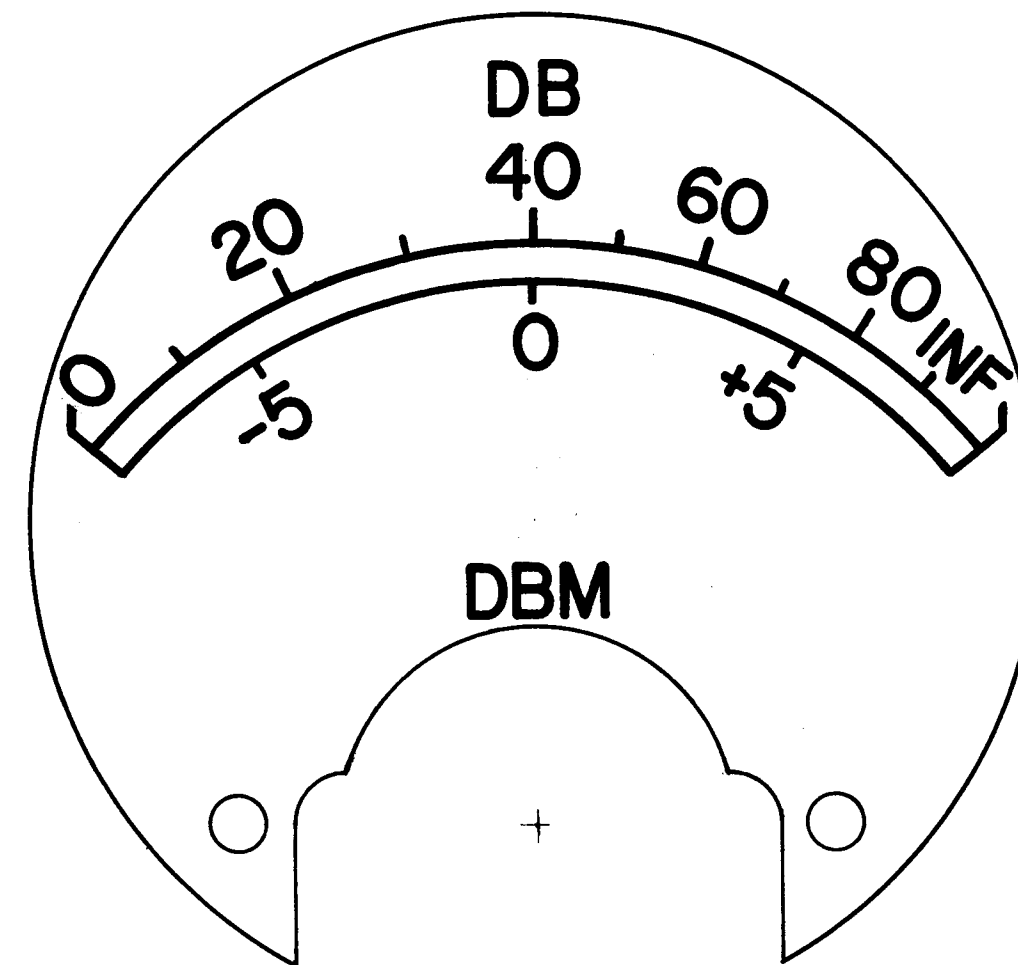


NOTE: CASE FRONT MUST BE A BLACK MATT FINISH WITH LINE DESIGN AS SHOWN

MR-153 B

REVISION

SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD	APPD.
A	ON SPECS; CASE NO. WAS 127C; INSIGNIA CLARIFIED	1-25-63	8087			
B	MTG STUDS WERE 4-36 THD	6-12-63	8243			



SCALE: 3X

— SPECIFICATIONS —

CASE - STANDARD SIMPSON NO. 127B

LUCITE ILLUMINATED

MOVEMENT: 0-1 MA.

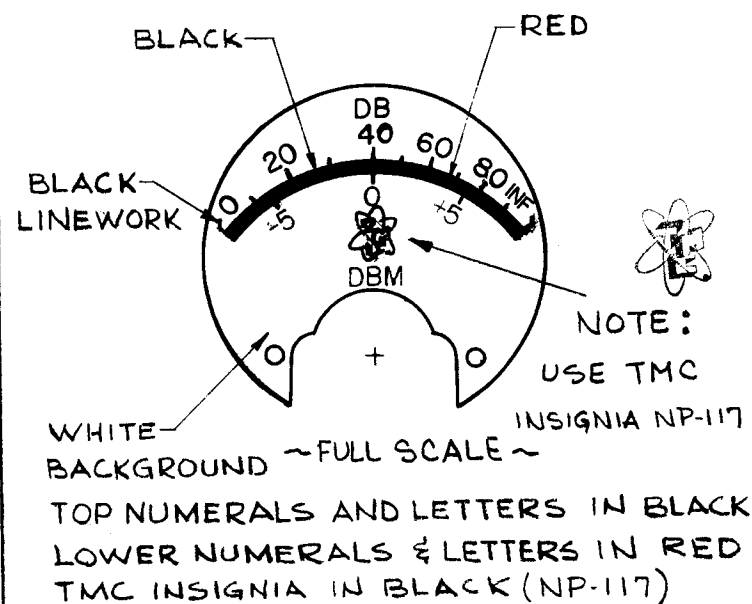
APPROX. RESISTANCE: 46 Ω

POINTER TYPE: KNIFE EDGE

ALL NECESSARY MOUNTING & TERMINAL

HARDWARE TO BE SUPPLIED BY

MANUFACTURER



Q'TY./UNIT	MODEL USED ON	ASS'Y. NO.
1	GPR-92	
SCALE	CODE	

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NOTES

REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
--------	------	-------------	-------------	--------

STRUMER LIST OF MATERIAL

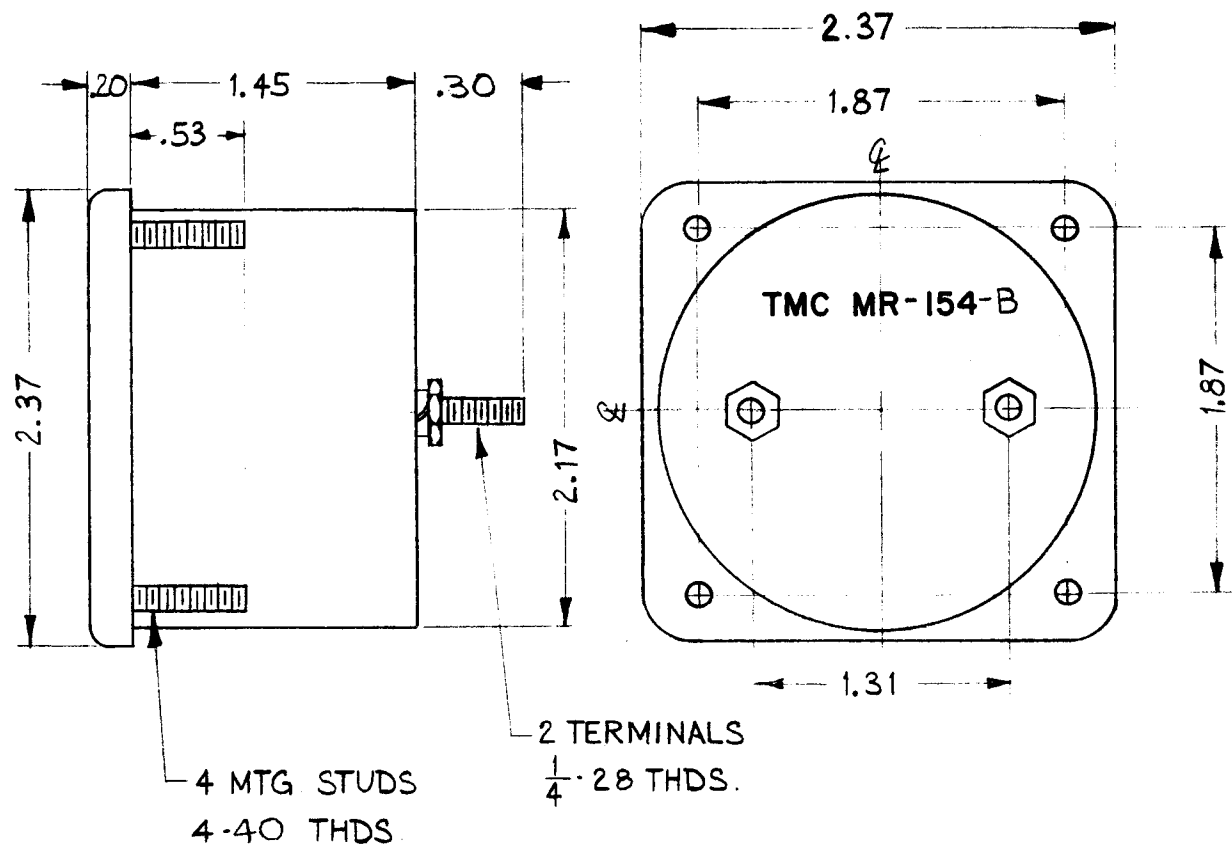
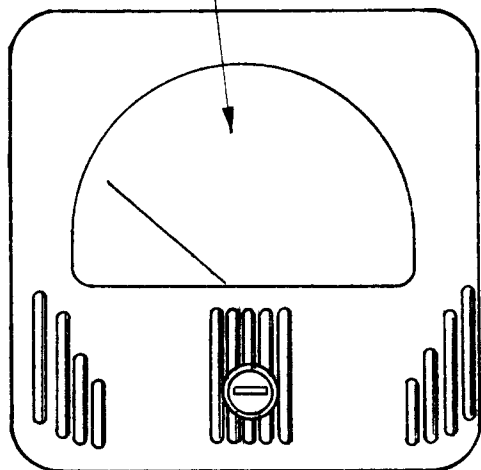
MATERIAL THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK

FINISH TITLE METER, "S" & "VU"

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		DRAWN T. RAMIREZ		DATE 12-7-62		FINAL APPROVAL BP		DATE 12-12-62	
DECIMALS	.X ± .05	FRACTIONS	± 1/64	CHECKED		DATE		MR-153	B
	.XX ± .01	TOLERANCES	ANGLES ± 0° 30'	ELECT.		DATE			
	.XXX ± .005			MECH. DES.		DATE			

MR-154 B

SEE DETAIL AT RIGHT FOR DIAL FACE.

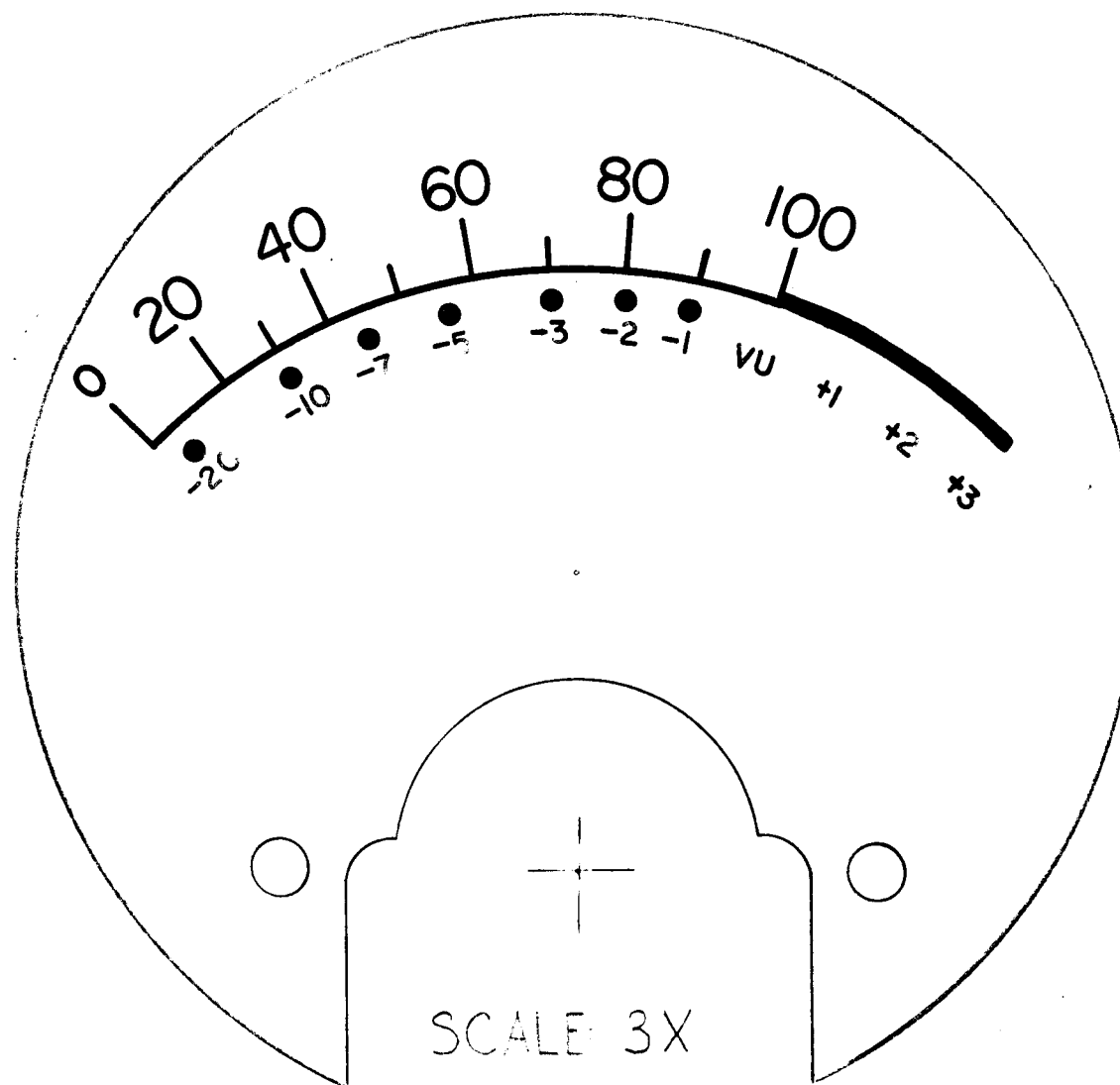
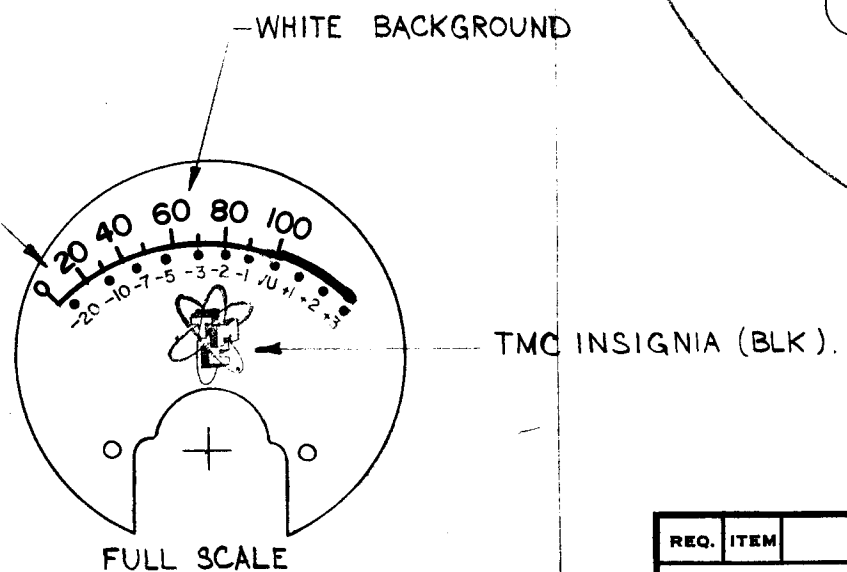


NOTE - METER FRONT MUST BE A BLACK MATT FINISH, WITH LINE DESIGN AS SHOWN.

**SPECIFICATIONS:**

CASE - STANDARD SIMPSON N<sup>o</sup> 147.  
 REFERENCE LEVEL - 1MW 600Ω LINE.  
 INTERNAL IMPEDANCE - 3900Ω.  
 SCALE - "B".  
 POINTER TYPE - KNIFE EDGE.  
 ALL NECESSARY MOUNTING & TERMINAL HARDWARE SUPPLIED BY MFG.

CALIBRATION MARKS TO BE BLK FROM 0 TO 100  
 RED FROM 100 TO +3  
 UPPER NUMERALS TO BE BLK  
 LOWER NUMERALS TO BE RED.  
 CALIBRATION DOTS TO BE RED.



SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
B	MTG STUDS WERE 4-36 THD	6-12-63	9243			
A	Internal Impedance Was 3800Ω	11-14-61	5854			

UNLESS OTHERWISE SPECIFIED:  
 DIMENSIONS ARE IN INCHES  
 TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 1/20

SCALE: DO NOT SCALE (S451-14)

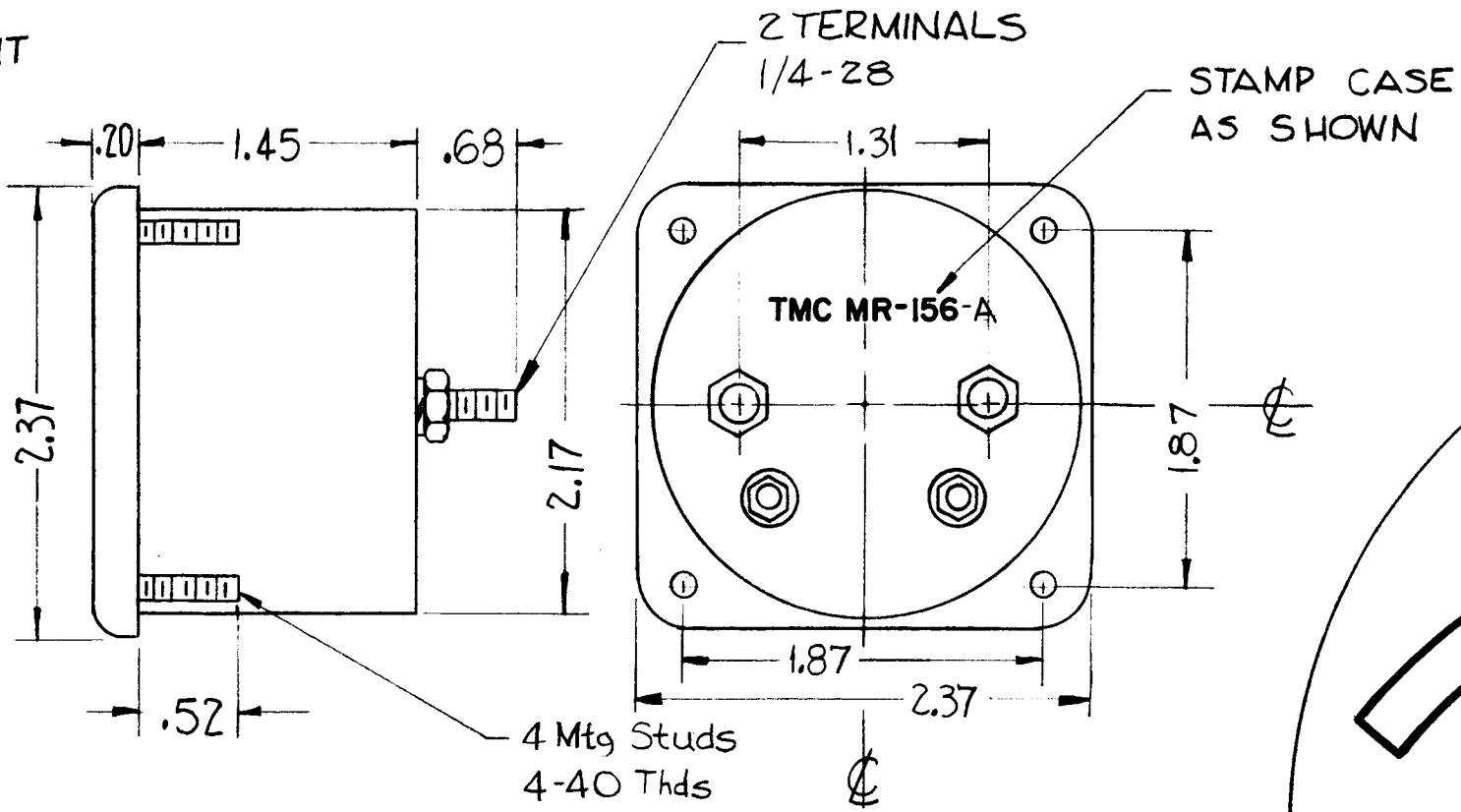
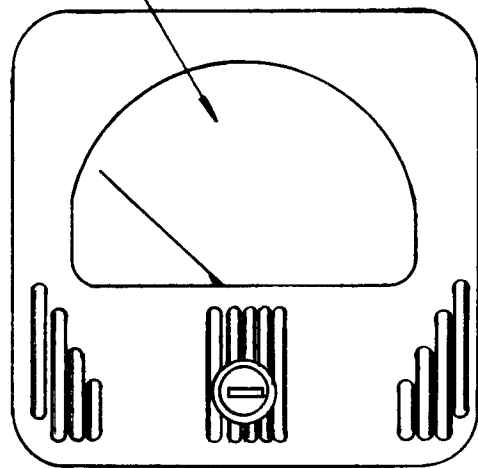
MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES

REQ. PER UNIT	MODEL	SECTION	ASS'Y. NO.	DATE
2	SBS-1			10-18-61
2	HFA-1			10-18-61

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
STOCK SIZE		METER, VU	
MATERIAL			
TYPE & TEMPER		HEAT TREAT. SPEC.	
FINISH & SPEC. NO.			
		DRAWN	CHECKER
		FINAL APPROVAL	
		MR-154	B

MR-156  
A

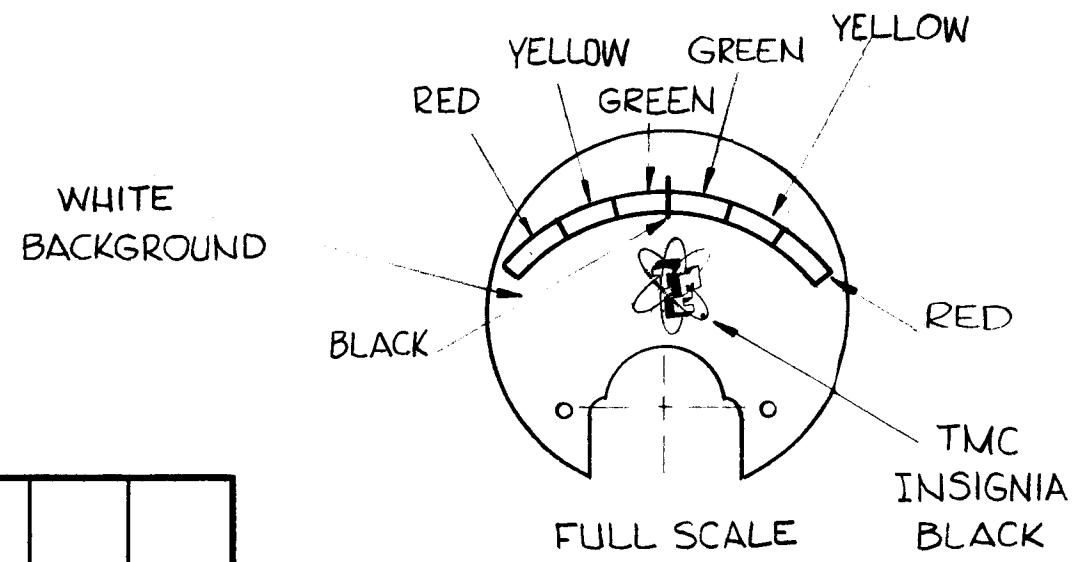
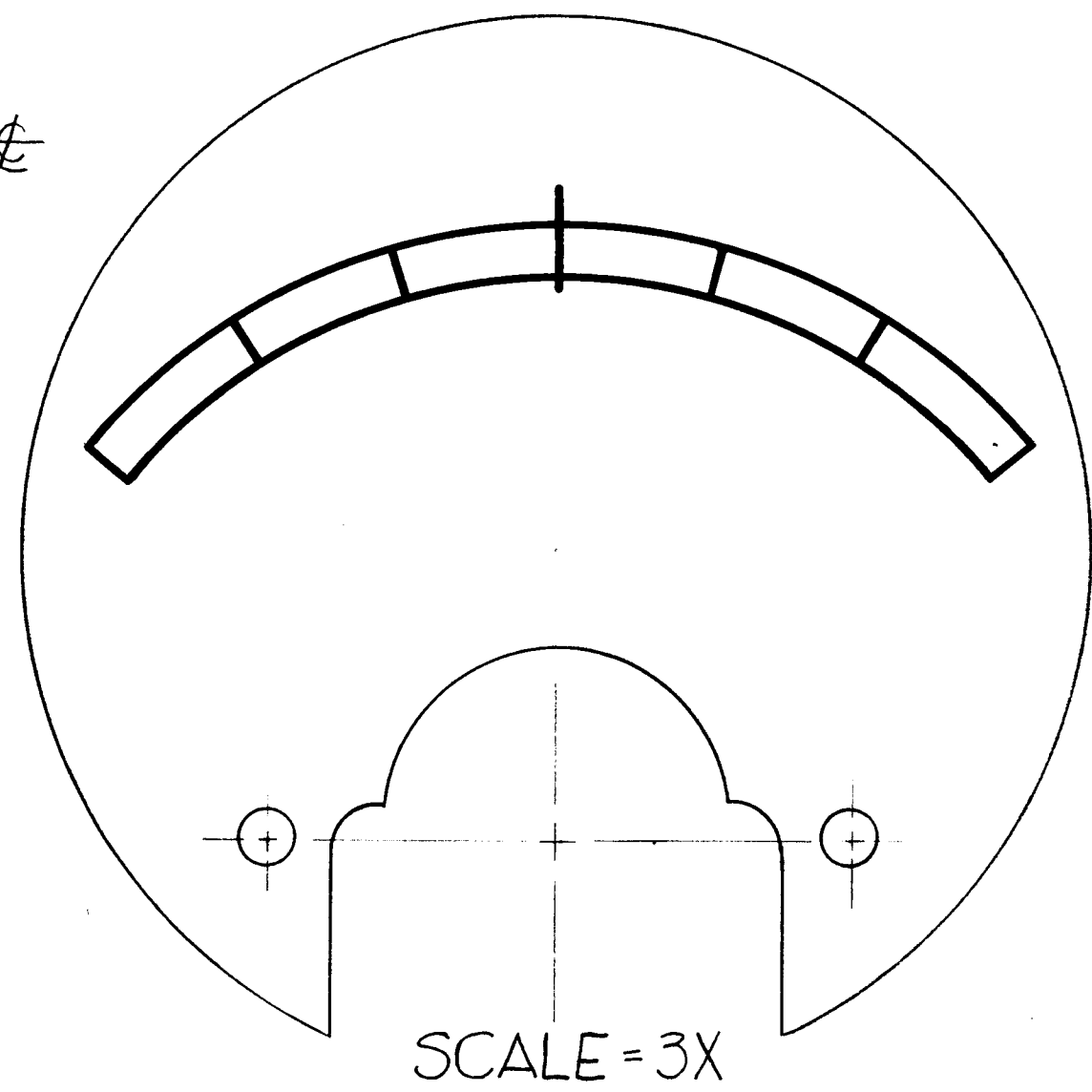
SEE DETAIL AT RIGHT FOR DIAL FACE



**NOTE:** Case Front must be a black Matt Finish, with Line Design as shown.

**SPECIFICATIONS:**

Case - Standard Simpson No. 127  
 Movement - 0-500 Micro-Amps  
 Approx. - resistance - 200 ohms  
 Pointer Type - Knife edge. All necessary mounting & terminal hardware supplied by mfg.



SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
A	MTG STUDS WERE 4-36 THD	6-12-63	9243			

UNLESS OTHERWISE SPECIFIED:  
 DIMENSIONS ARE IN INCHES  
 TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 1/2°

SCALE:  
 MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES

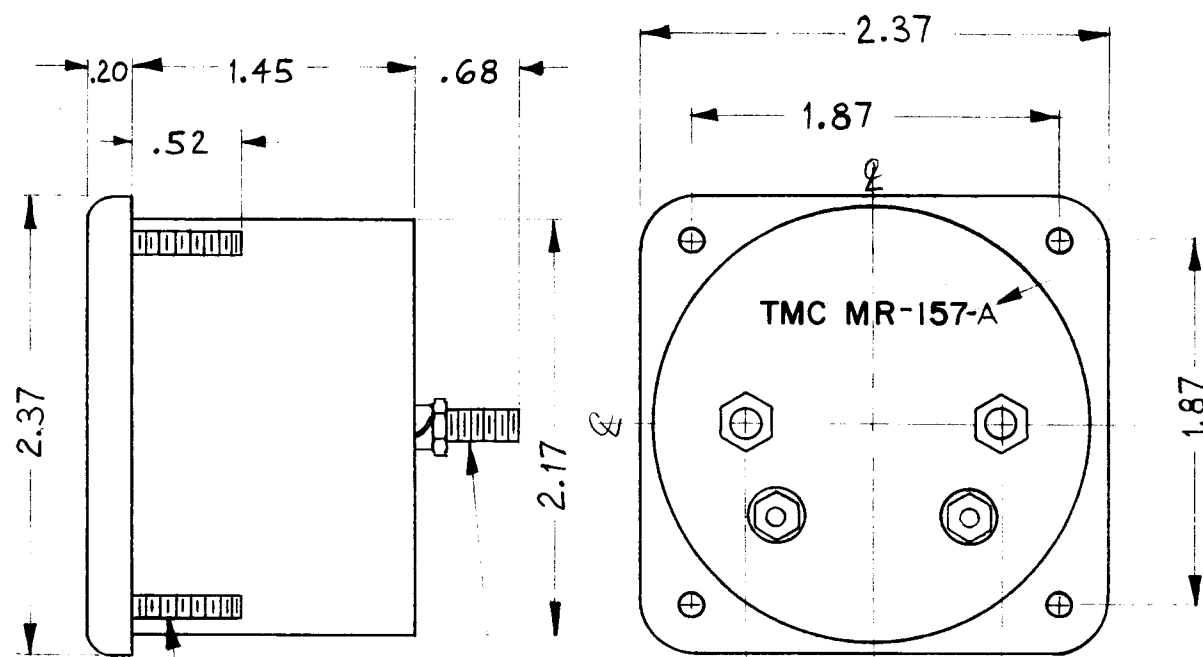
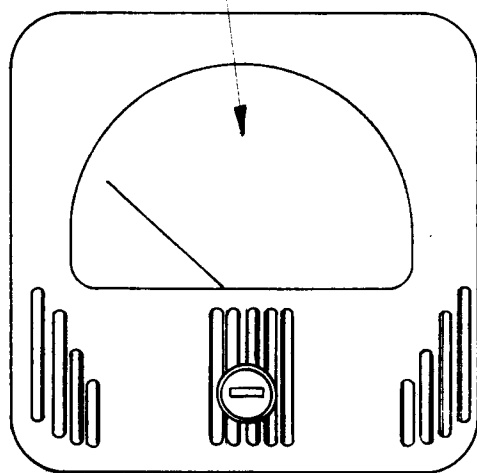
1	AFC-2	E-2630	10-11-61
REQ. PER UNIT	MODEL	SECTION	ABS'Y. NO. DATE
	USED ON		

REQ.	ITEM	PART NO.	DESCRIPTION	SYMBOL
			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
			METER, INDICATOR DRIFT	
			MATERIAL	
			TYPE & TEMPER HEAT TREAT. SPEC.	
			DRAWN CHECKER	
			FINAL APPROVAL	
			FINISH & SPEC. NO.	
			ELEC. DES. APP. MECH. DES. APP.	

MR-156 A

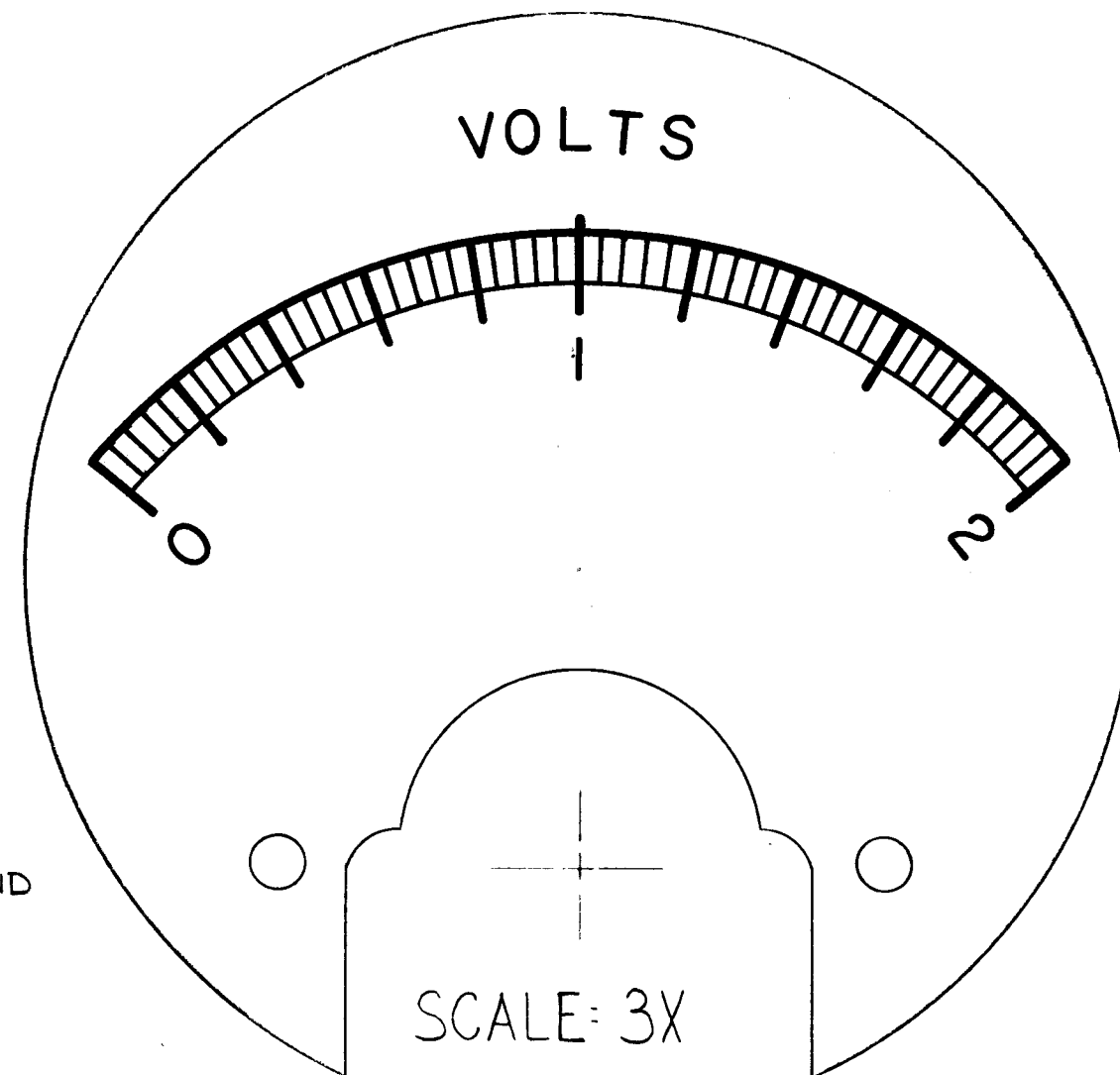
MR-157 A

SEE DETAIL AT RIGHT FOR DIAL FACE.



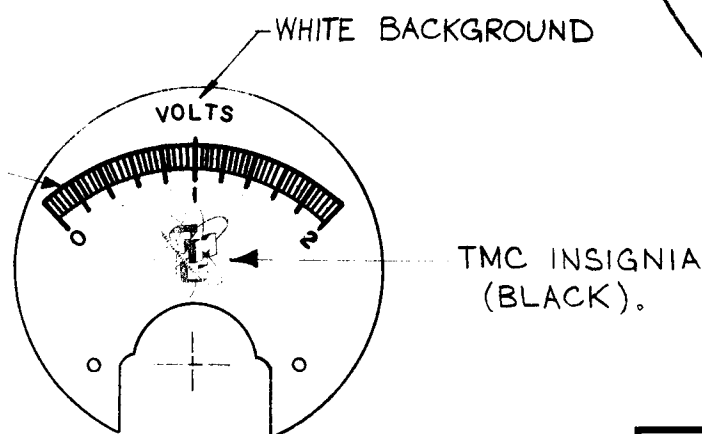
- STAMP CASE AS SHOWN

NOTE ~ METER FRONT MUST BE A BLACK MATT FINISH, WITH LINE DESIGN AS SHOWN.



SPECIFICATIONS:  
CASE ~ STANDARD SIMPSON N<sup>o</sup> 127  
MOVEMENT ~ 0-50  $\mu$ A  
APPROX. RESISTANCE ~  
POINTER TYPE ~ KNIFE EDGE  
ALL NECESSARY MOUNTING & TERMINAL HARDWARE SUPPLIED BY MFG

CALIBRATION MARKS & NUMERALS TO BE IN BLACK.



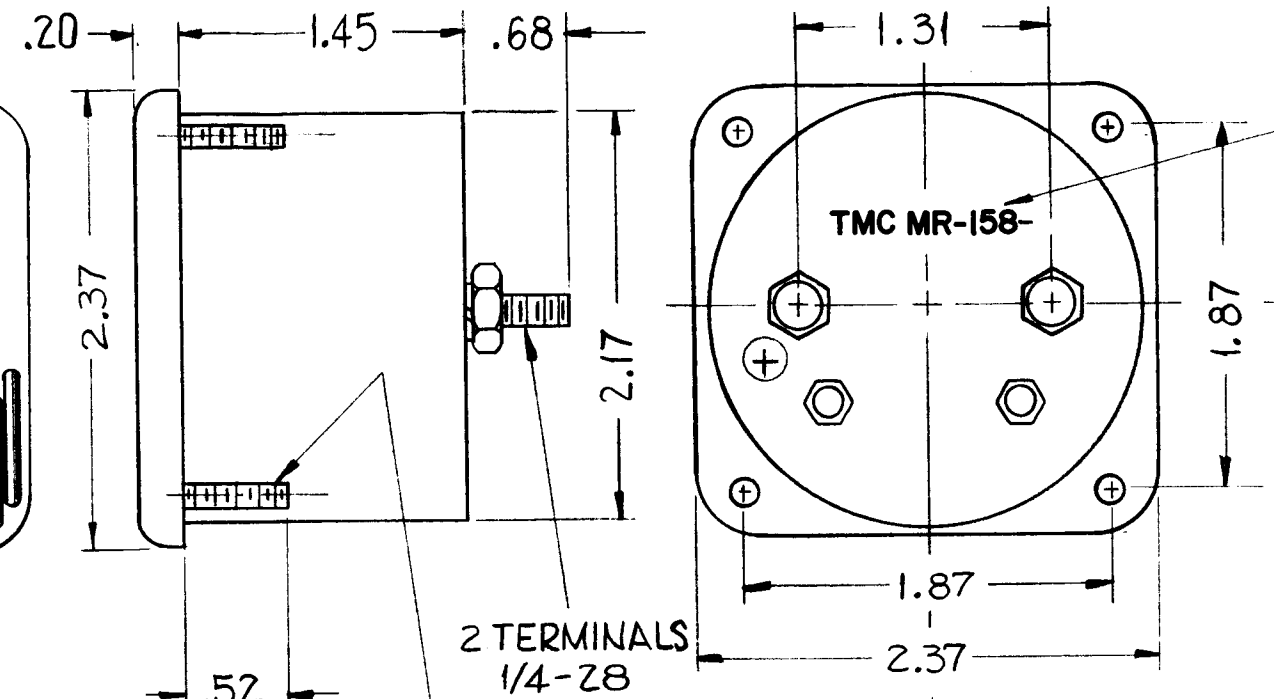
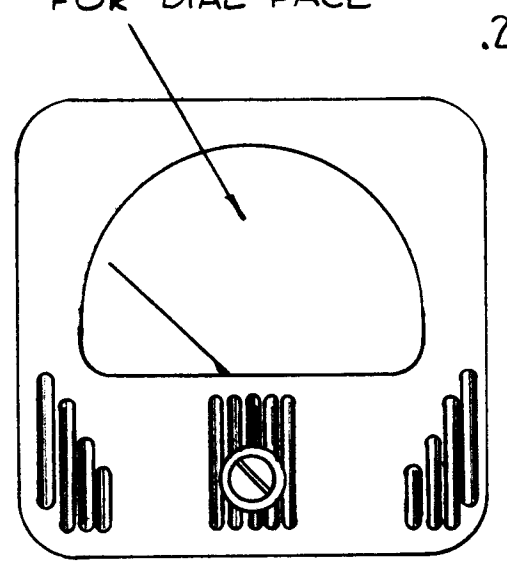
FULL SCALE

SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
A	MTG STUDS WERE 4-36 THD	6-12-63	9243			
UNLESS OTHERWISE SPECIFIED:						
DIMENSIONS ARE IN INCHES		SCALE:				
TOLERANCES ON FRACTIONS $\pm 1/64$ DECIMALS $\pm .005$ ANGLES $\pm 1/2^\circ$		MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES				
2	HFI-1					7-26-62
REQ. PER UNIT	MODEL	SECTION	ASSY. NO.	DATE	USED ON	

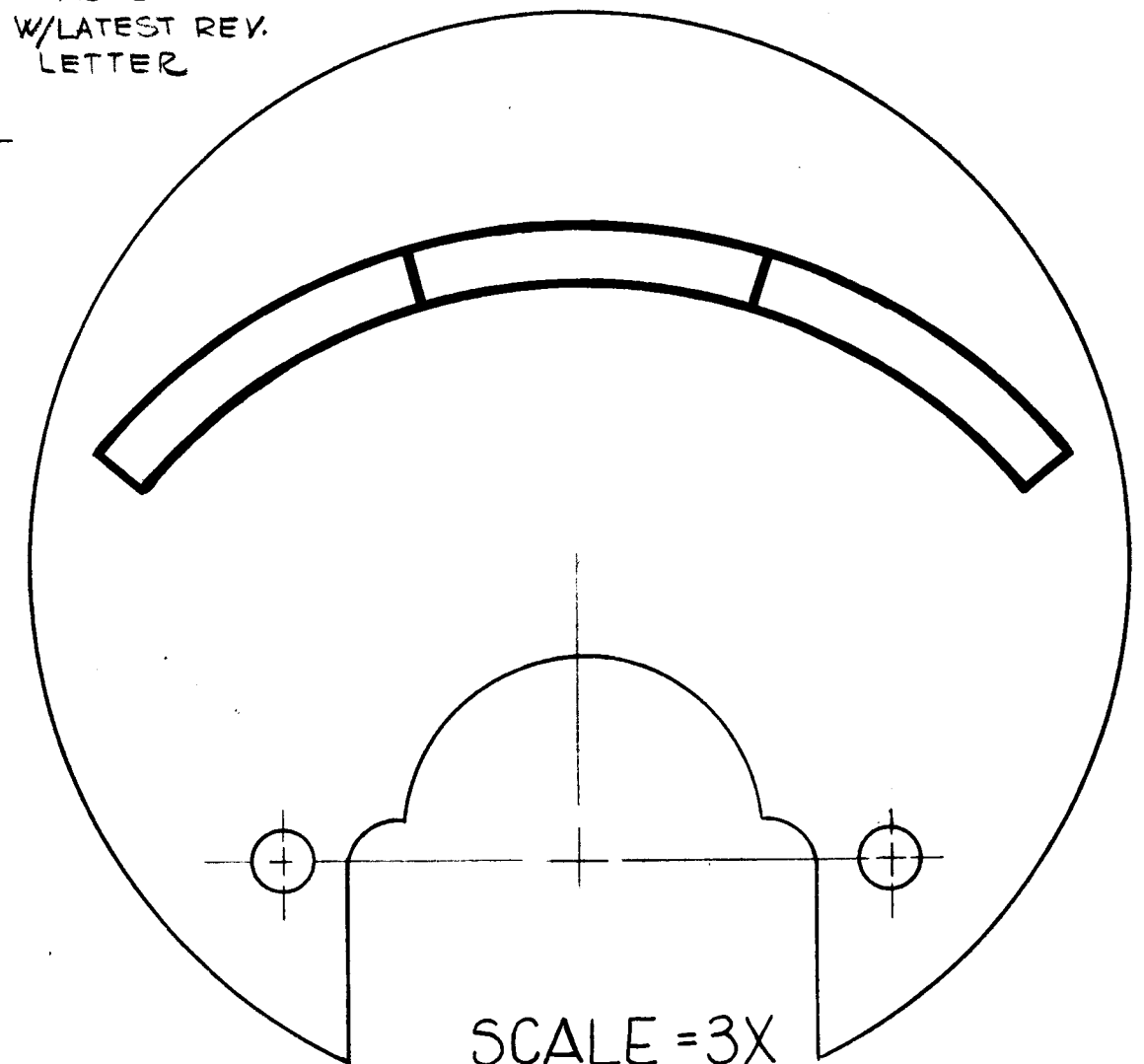
REQ. ITEM	PART NO.	M. GELLMAN	DESCRIPTI N	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK		
STOCK SIZE		METER, OUTPUT INDICATOR		
MATERIAL				
TYPE & TEMPER		HEAT TREAT. SPEC.	DRAWN	CHECKER
FINISH & SPEC. NO.		ELEC. DES. APP.	MECH. DES. APP.	MR-157 A

MR-158 C

SEE DETAIL AT RIGHT FOR DIAL FACE



STAMP CASE AS SHOWN W/LATEST REV. LETTER

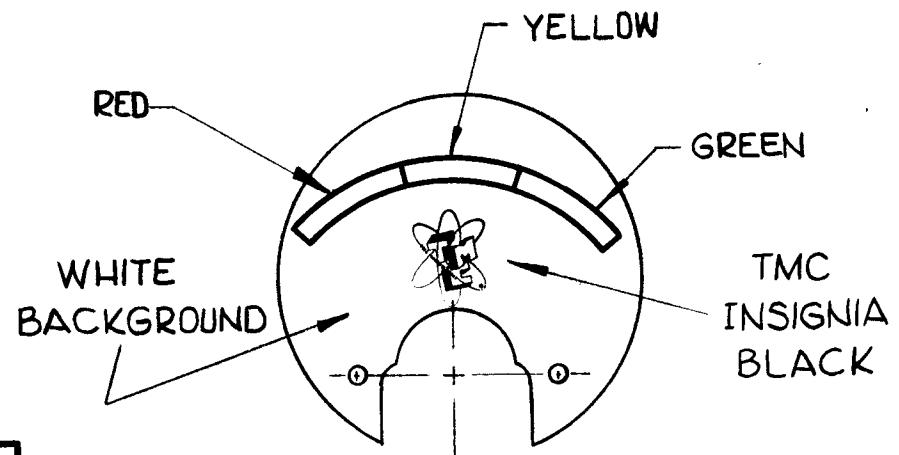


SCALE = 3X

NOTE: CASE FRONT MUST BE A BLACK MATT FINISH, WITH LINE DESIGN AS SHOWN.

SPECIFICATIONS:

- 1- CASE - STANDARD SIMPSON NO. 127 OR EQUIVALENT.
- 2- MOVEMENT - 0-500 MICRO-AMPS
- 3- APPROX - RESISTANCE - 200 ohms
- 4- POINTER TYPE - KNIFE EDGE. ALL NECESSARY MOUNTING & TERMINAL HARDWARE SUPPLIED BY MFG.
- 5- ACCURACY AT FULL SCALE  $\pm 2\%$ .
- 6- CALIBRATED FOR NON-MAGNETIC PANEL.



- FULL SCALE -

SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
C	ON DIM = 1.87 LEFT SIDE DIM. LINE CLARIFIED	3-24-66	16009	G.DL	[Signature]	[Signature]
B	SPECS *5 & 6 ADDED; REF CODE ADDED SPEC *1, "OR EQUIVALENT ADDED	7-17-63	9595	[Signature]	[Signature]	[Signature]
A	MTG STUDS WERE 4-36 THD	6-12-63	9243	[Signature]	[Signature]	[Signature]

UNLESS OTHERWISE SPECIFIED:  
 DIMENSIONS ARE IN INCHES  
 TOLERANCES ON FRACTI NS  $\pm 1/64$  DECIMALS  $\pm .05$  ANGLES  $\pm 1/2^\circ$   
 SCALE: 5401-4A  
 MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.  
 REMOVE ALL BURRS AND SHARP EDGES

REQ. PER UNIT	MODEL	SECTION	ASS'Y. NO.	DATE
1	AFC-2	E2630		10-28-61

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
		METER, LEVEL	
		MATERIAL	
		TYPE & TEMPER	
		HEAT TREAT. SPEC.	
		FINISH & SPEC. NO.	

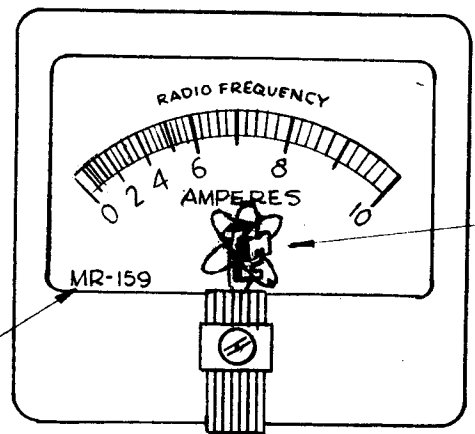
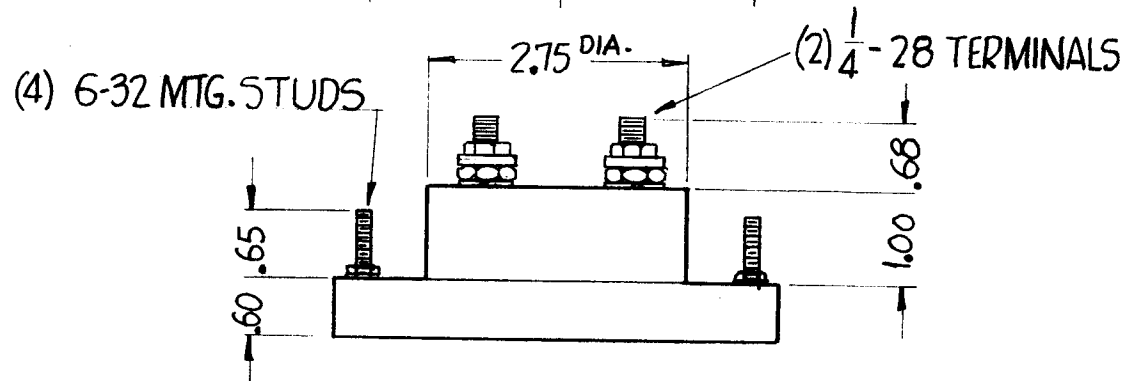
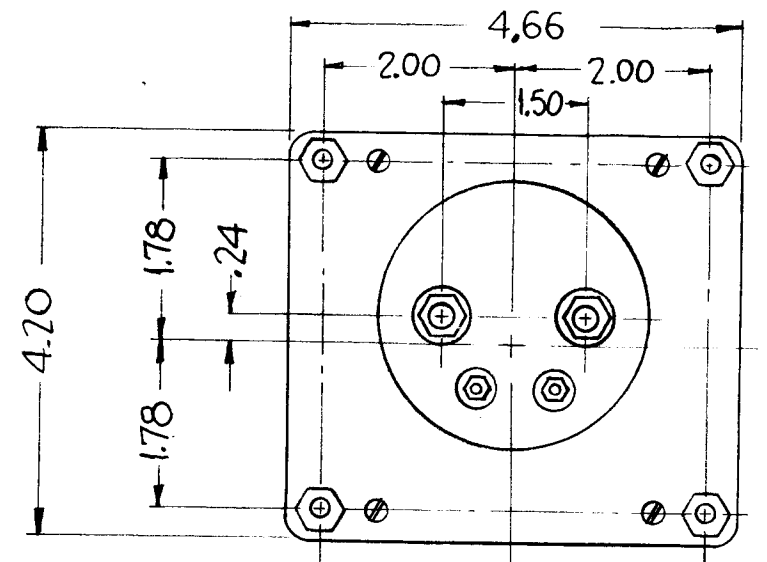
DRAWN: RUZZO  
 CHECKER: [Signature]  
 FINAL APPROVAL: [Signature]  
 ELEC. DES. APP. [Signature] MECH. DES. APP. [Signature]

MR-158 C



MR-159

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INSERT TMC INSIGNIA (NP-117) (BLACK) IMMEDIATELY BELOW WORD "AMPERES"

TMC PART NUMBER

NOTES ~

- CASE ~ STANDARD COMMERCIAL RECTANGULAR 4 1/2" CASE SIZE #39 w/INTERNAL THERMOCOUPLE.
- FINISH ~ GLOSSY BLACK
- RANGE ~ 0-10 AMPERES RF
- MATCHED WITHIN 2%
- POINTER ~ SPADE TYPE
- HARDWARE ~ (2) FLAT WASHERS, (4) 1/4"-28 HEXAGON NUTS FOR TERMINALS, (2) LOCKWASHERS, (4) 6-32 HEXAGON NUTS & (4) 6-32 SPLIT LOCKWASHER, SUPPLIED BY MANUFACTURER.

CONDITIONS RECEIVING THIS DRAWING

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Property of:  
THE TECHNICAL MATERIEL CORPORATION  
MAMARONECK, NEW YORK

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
STOCK SIZE		METER, RF, 0-10 AMPERES	
MATERIAL			
TYPE & TEMPER	HEAT TREAT. SPEC.	DRAWN: <i>J.S. Man</i>	CHECKED: <i>RUZZO</i>
FINISH & SPEC. NO.		FINAL APPROVAL: <i>SFM</i>	
		ELEC. DES. APP. <i>J.S.</i>	MECH. DES. APP.
		MR-159	

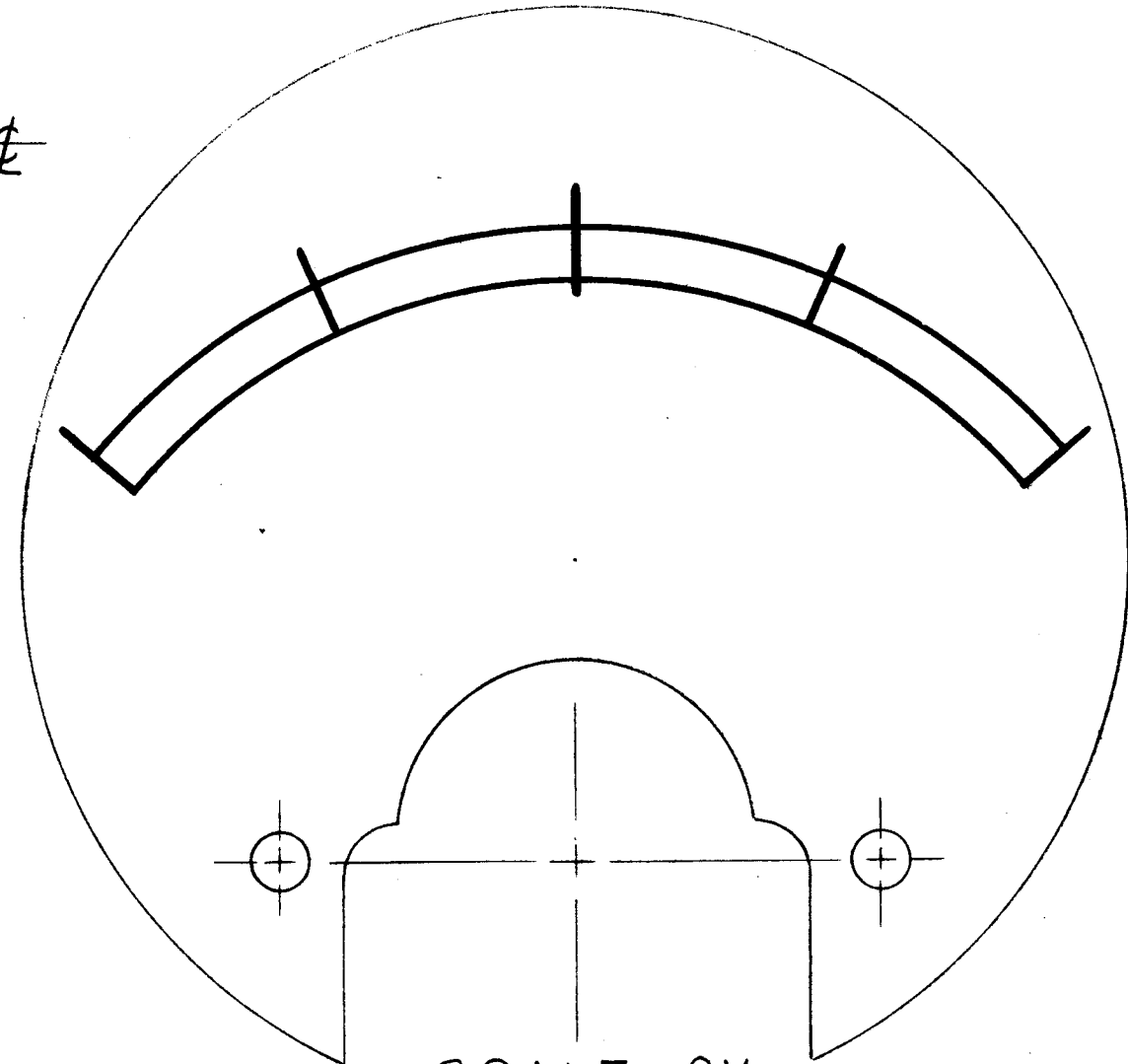
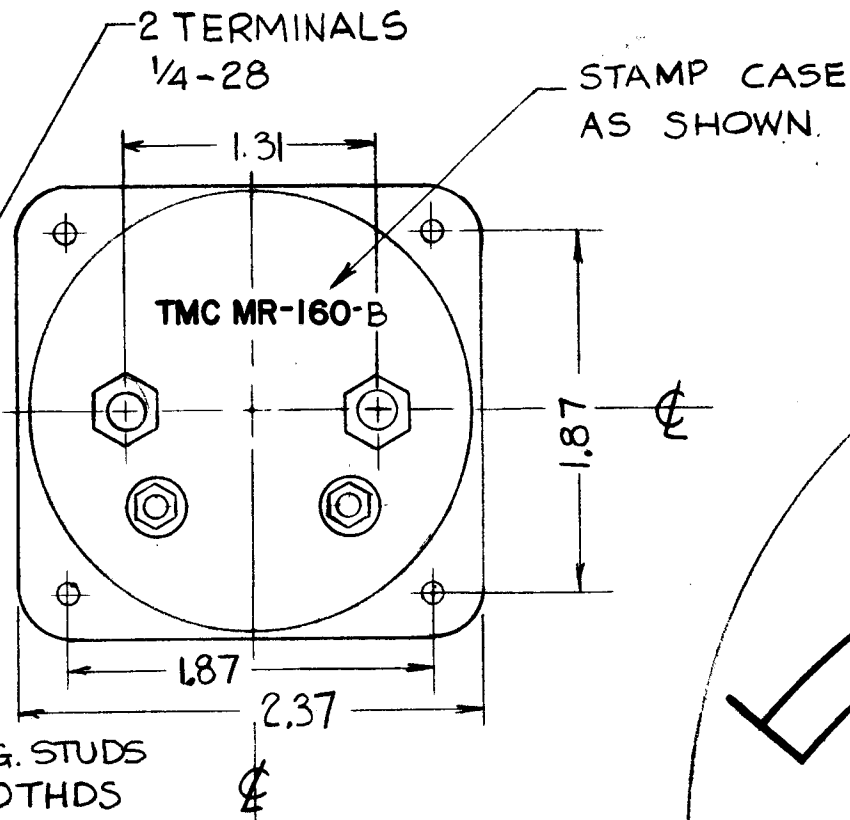
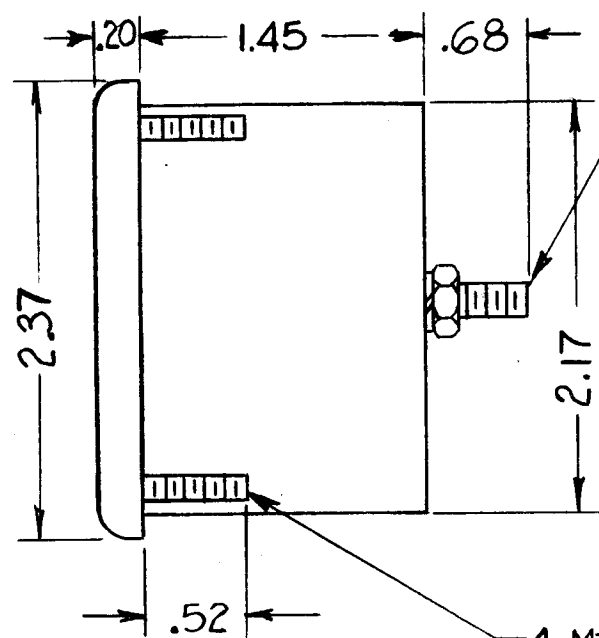
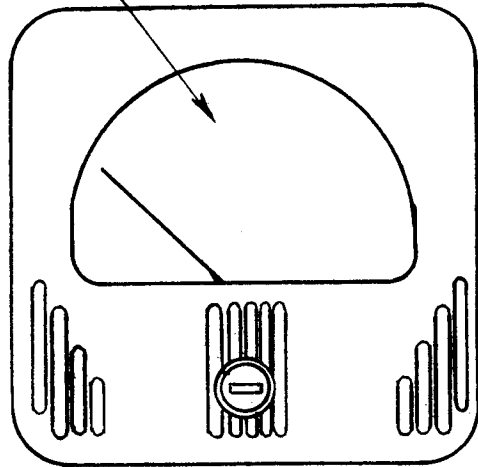
SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 1/2°					
	SCALE: DO NOT SCALE MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES					

REQ. PER UNIT	MODEL	SECTION	ASS'Y. NO.	DATE
2	TMA-40K			1-3-62
USED ON				

MR-160

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SEE DETAIL AT RIGHT FOR DIAL FACE



SCALE = 3X

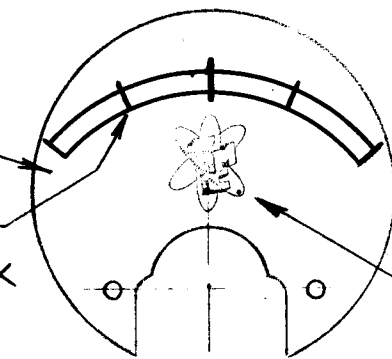
NOTE: CASE FRONT MUST BE A BLACK MATT FINISH, WITH LINE DESIGN AS SHOWN.

SPECIFICATIONS:

- 1- CASE-STANDARD SIMPSON NO. 127 OR EQUIVALENT
- 2- MOVEMENT- 0-1 MILLI AMPS
- 3- APPROX.- RESISTANCE - 75 OHMS ± 50%
- 4- POINTER TYPE- KNIFE EDGE. ALL NECESSARY MOUNTING & TERMINAL HARDWARE SUPPLIED BY MFG.
- 5- ACCURACY AT FULL SCALE ± 2%.
- 6- CALIBRATED FOR NON-MAGNETIC PANEL

WHITE BACKGROUND

BLACK LINE WORK



FULL SCALE

TMC INSIGNIA BLACK

B	SPECS #5 & 6 ADDED; REF CODE ADDED	7-17-63	9628			
	SPEC #1, OR EQUIVALENT ADDED					
A	MTG STUDS WERE 4-36 THD	6-12-63	9243			
SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.

UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN INCHES  
TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 1/2°

SCALE: S401-44  
MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.  
REMOVE ALL BURRS AND SHARP EDGES

1	HFR-1/C			7-24-62
REQ. PER UNIT	MODEL	SECTION	ASS'Y. NO.	DATE
	USED ON			

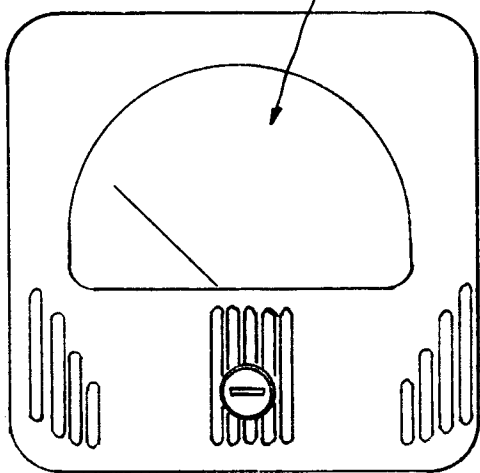
REQ.	ITEM	PART NO.	DESCRIPTION	SYMBOL
			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
			METER, PHASE COMPARATOR	
			MATERIAL	
			V.I.R.R. <i>[Signature]</i>	<i>[Signature]</i>
			TYPE & TEMPER HEAT TREAT. SPEC.	FINAL APPROVAL
			FINISH & SPEC. NO.	MR-160 B

A

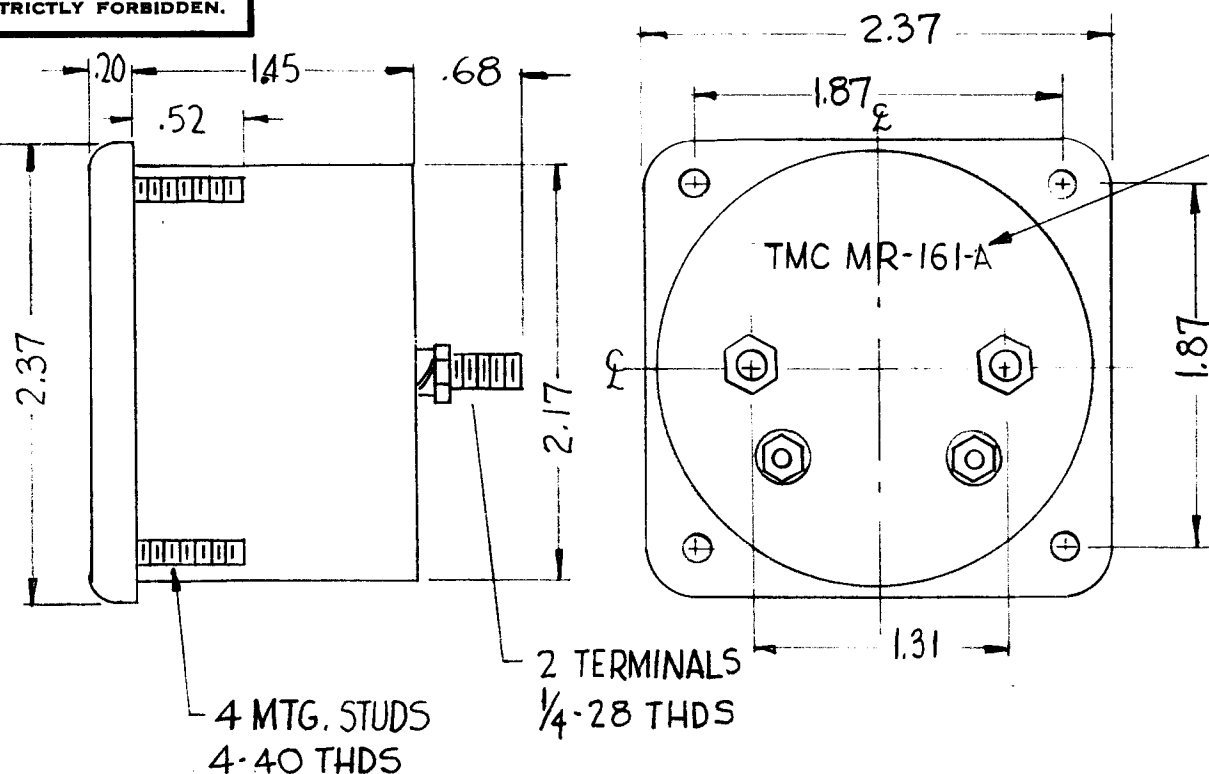
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MR-161

SEE DETAIL AT RIGHT FOR DIAL FACE

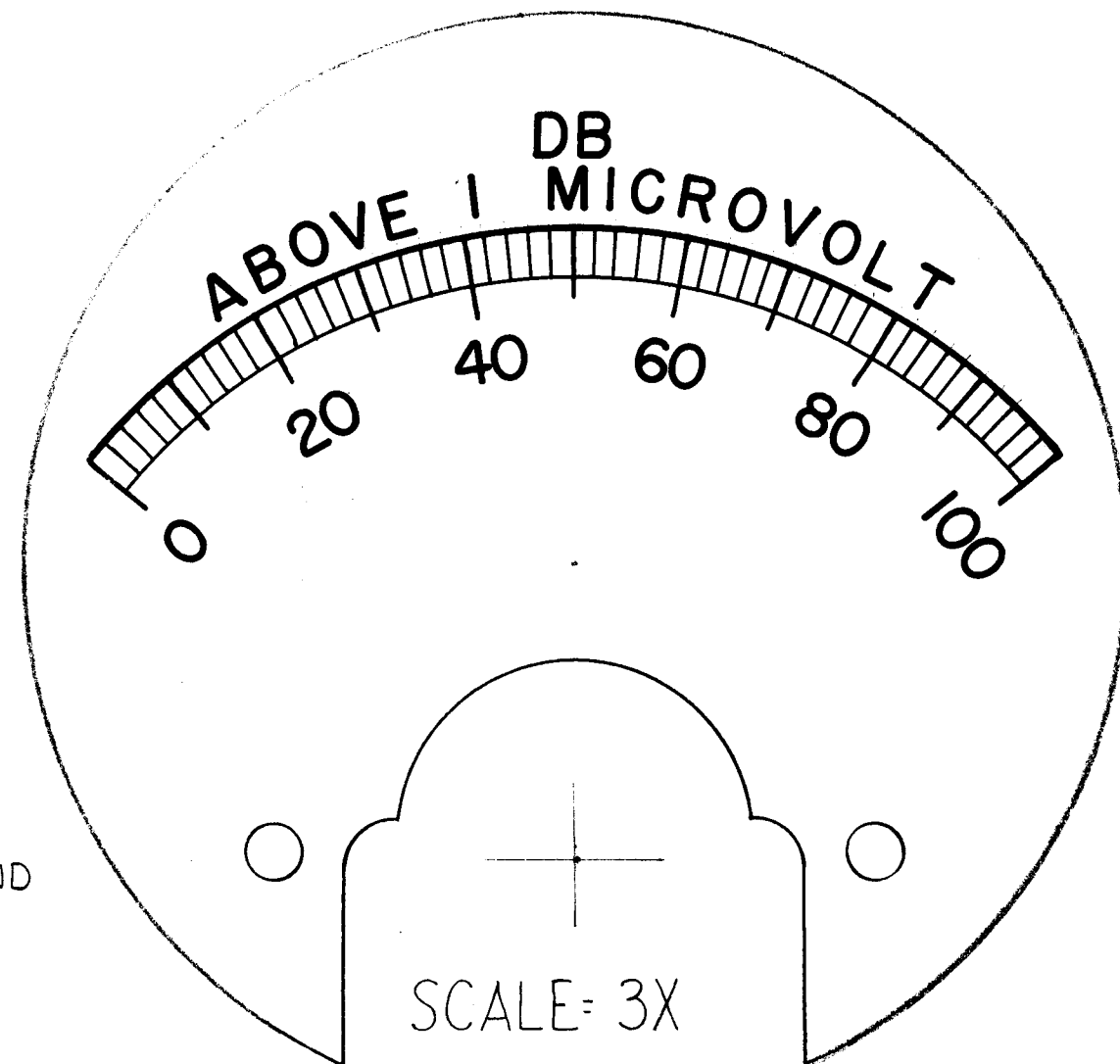


NOTE ~ METER FRONT MUST BE A BLACK MATT FINISH, WITH LINE DESIGN AS SHOWN.

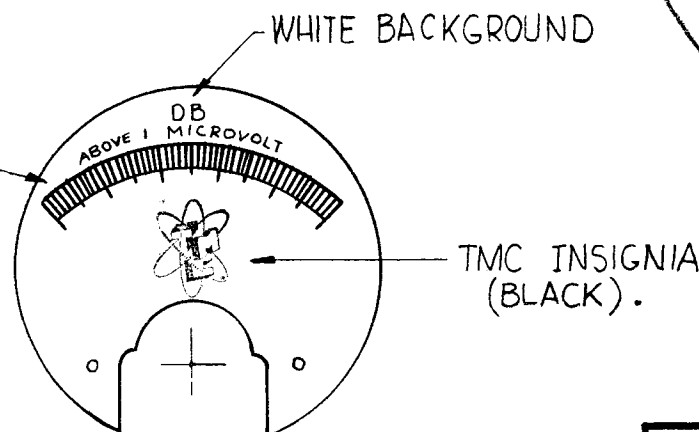


STAMP CASE AS SHOWN

SPECIFICATIONS  
CASE ~ STANDARD SIMPSON NO 127  
MOVEMENT ~ 0-50 uA  
APPROX RESISTANCE ~ 2 K  
POINTER TYPE ~ KNIFE EDGE  
ALL NECESSARY MOUNTING & TERMINAL HARDWARE SUPPLIED BY MFG.



CALIBRATION MARKS & NUMERALS TO BE IN BLACK



FULL SCALE

REQ. ITEM	PART NO.	M. GELLMAN DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
STOCK SIZE		METER, OUTPUT INDICATOR	
MATERIAL			
		D.J. Mann DRAWN	J.D. CHECKED
			FINAL APPROVAL
			MR-161
			A

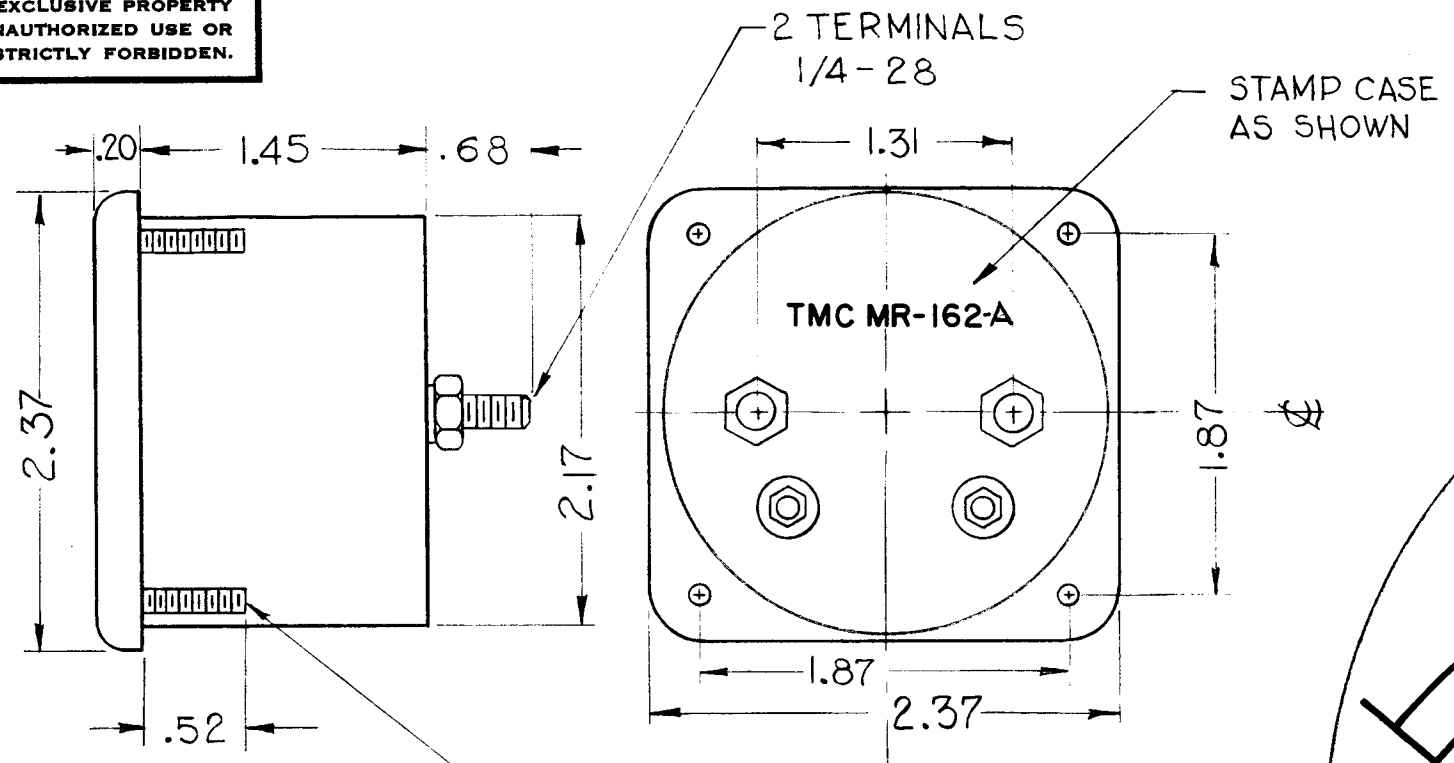
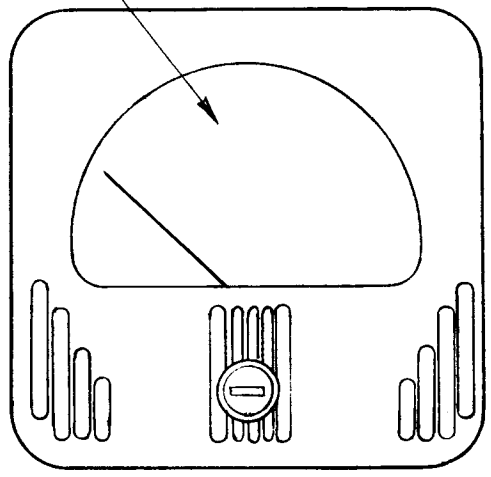
SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
A	MTG STUDS WERE 4-36 THD	6-26-62	9293			
UNLESS OTHERWISE SPECIFIED:		SCALE: 1:1				
DIMENSIONS ARE IN INCHES		MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.				
TOLERANCES N		REMOVE ALL BURRS AND SHARP EDGES				
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 1/2°						

REQ. PER UNIT	MODEL	SECTION	ASS'Y. NO.	DATE
1	HFR-1/C			4-3-62
USED ON				

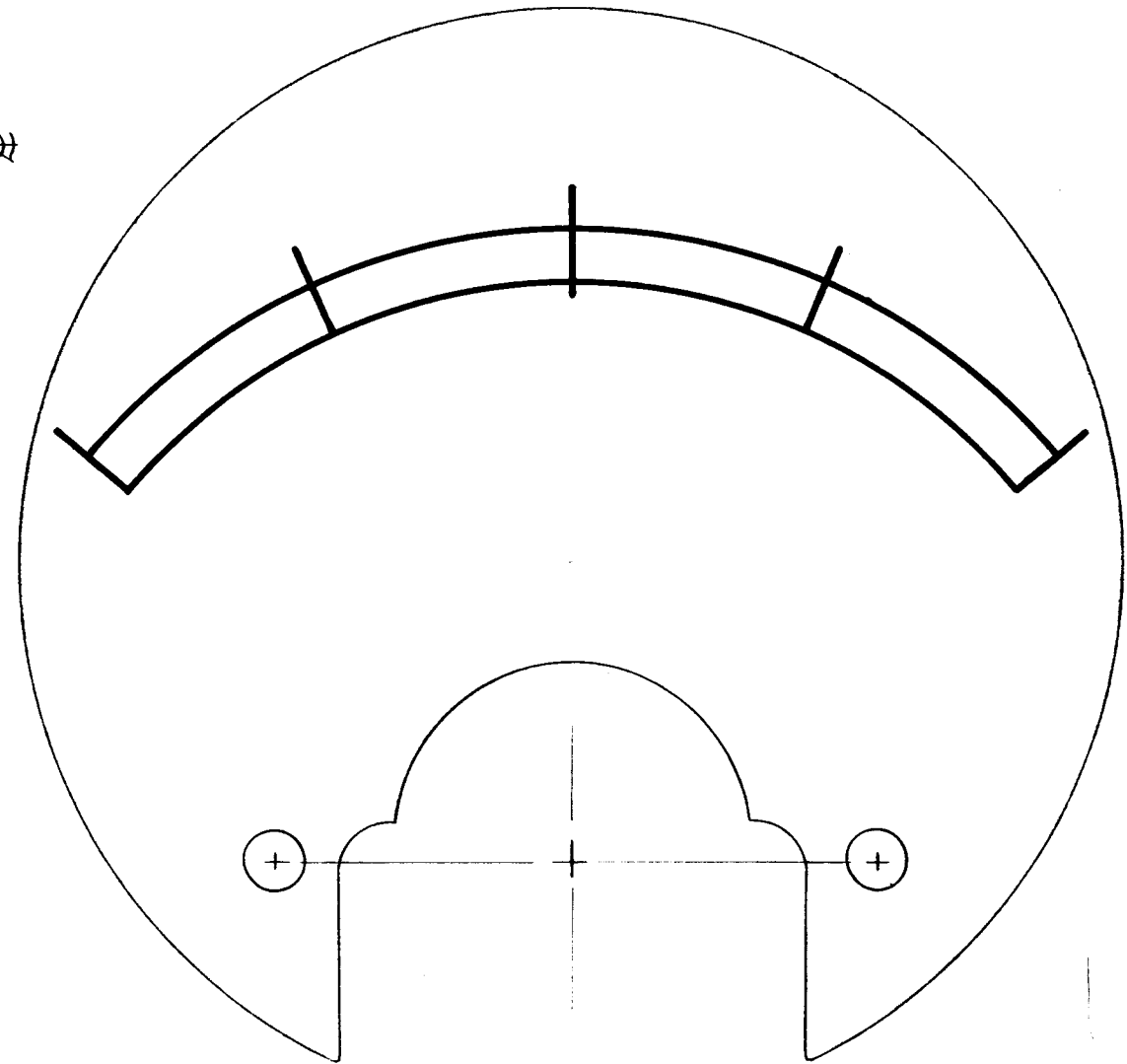
MR-162  
A

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SEE DETAIL AT RIGHT FOR DIAL FACE



4 MTG. STUDS  
4-40 THDS



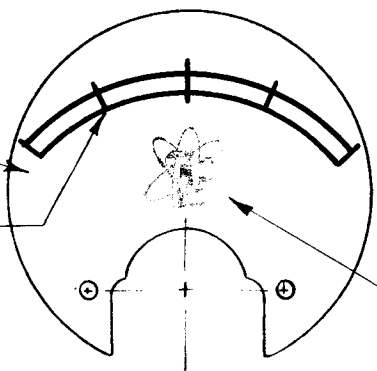
SCALE = 3X

NOTE: CASE FRONT MUST BE A BLACK MATT FINISH, WITH LINE DESIGN AS SHOWN.

SPECIFICATIONS:  
CASE - STANDARD SIMPSON No. 127  
MOVEMENT - 0-50  $\mu$ AMPS  
APPROX. RESISTANCE - 2000 OHMS  $\pm$  50%  
POINTER TYPE - KNIFE EDGE. ALL NECESSARY MOUNTING & TERMINAL HARDWARE SUPPLIED BY MFG.

WHITE BACKGROUND

BLACK LINE WORK



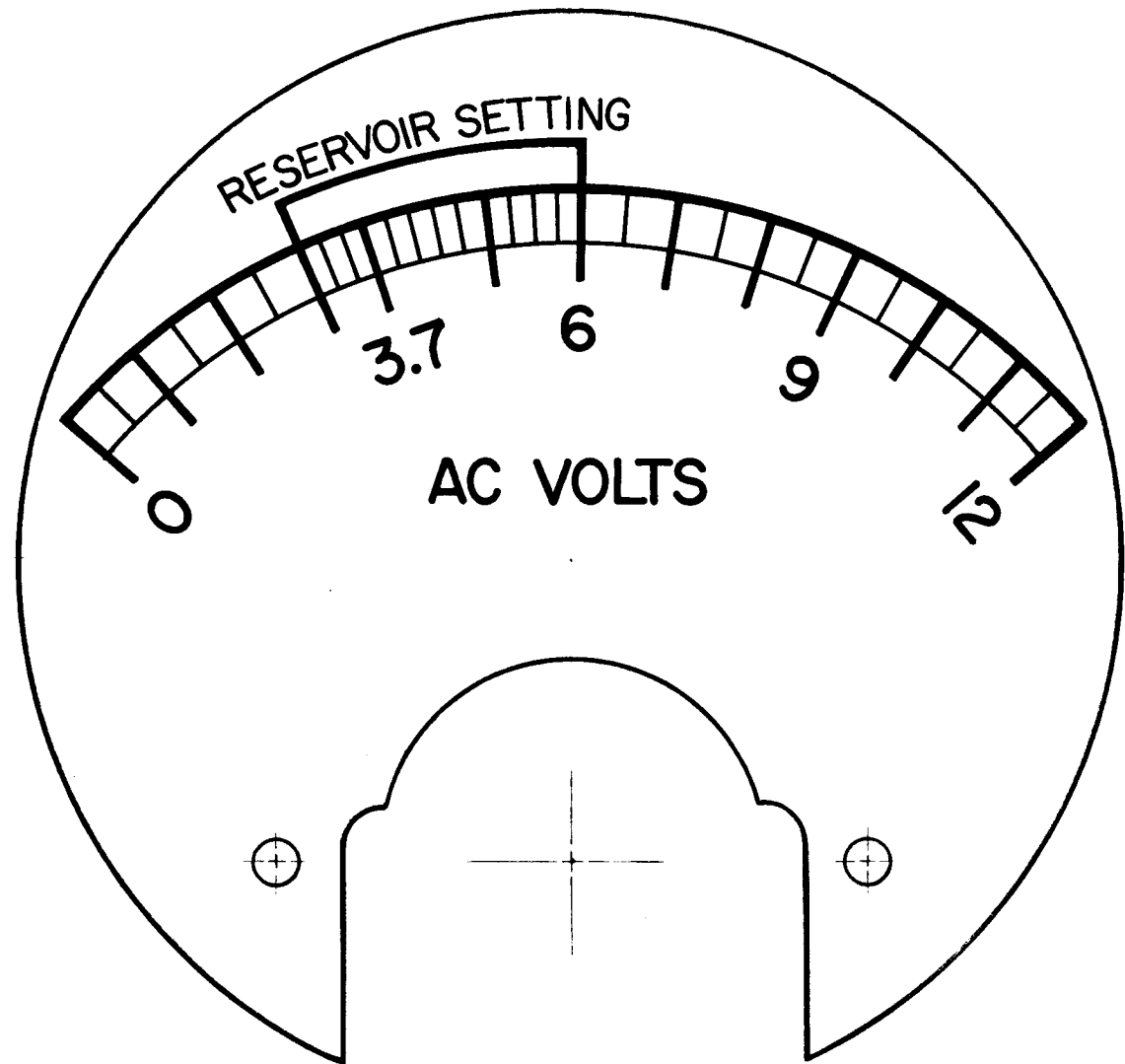
FULL SCALE

TMC INSIGNIA  
BLACK

A	MTG STUDS WERE 4-36 THD.	6-12-63	9243			
SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
UNLESS OTHERWISE SPECIFIED:		SCALE: DO NOT SCALE				
DIMENSIONS ARE IN INCHES		MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION.				
TOLERANCES ON FRACTIONS $\pm$ 1/64		REMOVE ALL BURRS AND SHARP EDGES				
DECIMALS $\pm$ .05						
ANGLES $\pm$ 1/2°						

1	HFS-1			8-15-62
REQ. PER UNIT	M DEL	SECTION	ASS'Y. NO.	DATE
USED ON				

REQ. ITEM	PART NO.	STRUHER DESCRIPTION	SYMBOL
STOCK SIZE		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
MATERIAL		METER, PHASE COMPARATOR	
		0-50 $\mu$ AMPS	
	G.D.L.		
	DRAWN	CHECKED	FINAL APPROVAL
FINISH & SPEC. NO.		ELEC. DES. APP.	MECH. DES. APP.
		MR-162 A	



SCALE - 3X

MR-163 0

REVISIONS

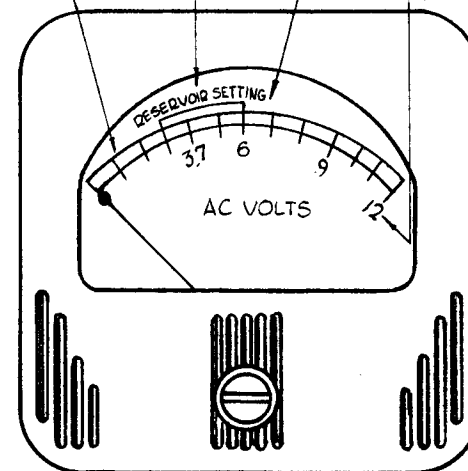
SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD	APPD
0	ORIGINAL RELEASE FOR PRODUCTION	5/28/64	0	A.M.		

SCALE, BLACK

LETTERS, BLACK (FINE LINE TYPE)

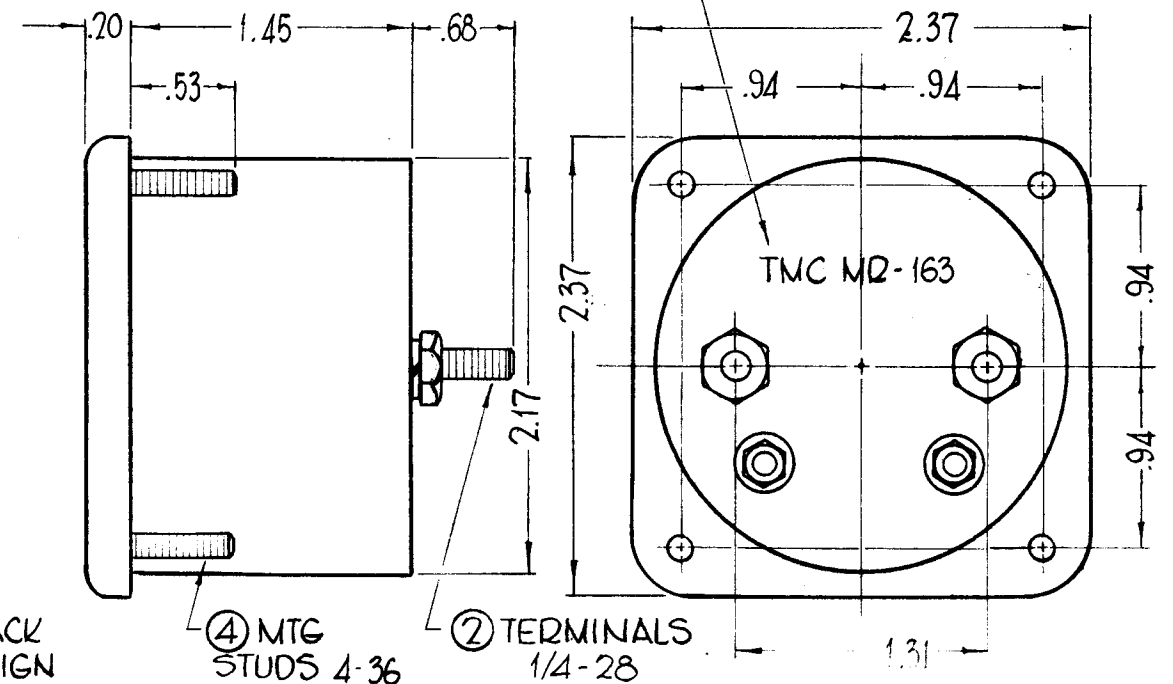
WHITE BACKGROUND

NUMBERS BLACK



NOTE: METER FRONT MUST BE BLACK MATT FINISH WITH LINE DESIGN AS SHOWN.

STAMP TMC NO ON CASE AS SHOWN WITH LATEST REVISION LETTER



SPECIFICATIONS

CASE - STANDARD SIMPSON NO 127.  
 MOVEMENT - 0-10VAC  
 APPROX. RESISTANCE - 1000 Ω PER VOLT.  
 POINTER - SPADE TYPE

HARDWARE (SUPPLIED BY MFG.)

ALL NECESSARY MOUNTING AND TERMINAL HARDWARE.

1	GPT 200K	AX - 398
Q'TY./UNIT	MODEL USED ON	ASS'Y. NO.
SCALE #	CODE A	

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REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
--------	------	-------------	-------------	--------

F. BUDETTI

LIST OF MATERIAL

MATERIAL THE TECHNICAL MATERIEL CORP.  
 MAMARONECK, NEW YORK

FINISH TITLE  
 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES  
 VOLTMETER, AC (RESERVOIR)

DECIMALS .X ± .05 .XX ± .01 .XXX ± .005	TOLERANCES	FRACTIONS ± 1/64 ANGLES ± 0° 30'	DRAWN John C. Biele DATE 3/7/63	FINAL APPROVAL RSL DATE 4/30/64	MR-163
ELECT. DES. DB			MECH. DES. WJC	DATE 4/30/64	REV. LTR.

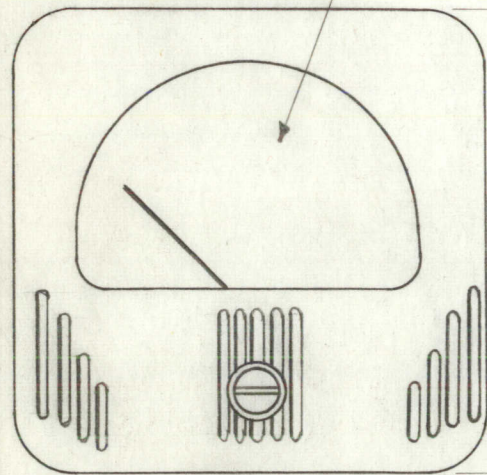
NOTES



# ~ SPECIFICATIONS ~

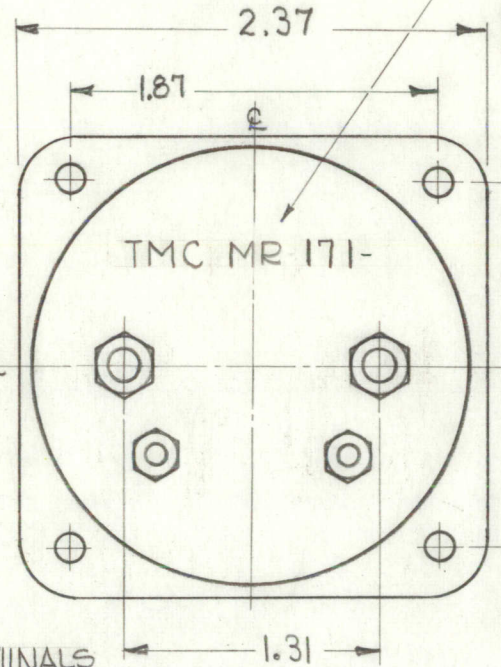
- 1-CASE- STANDARD SIMPSON N#127.
- 2-MOVEMENT- 50ua.
- 3- APPROX. RESISTANCE ~2000Ω.
- 4- POINTER TYPE- KNIFE EDGE.
- 5- ALL NECESSARY MOUNTING & TERMINAL HARDWARE SUPPLIED BY MFG.

SEE DETAIL AT RIGHT FOR DIAL FACE



NOTE~ METER FRONT MUST BE A BLACK MATT FINISH, WITH LINE DESIGN AS SHOWN.

STAMP CASE AS SHOWN WITH LATEST REVISION LETTER.

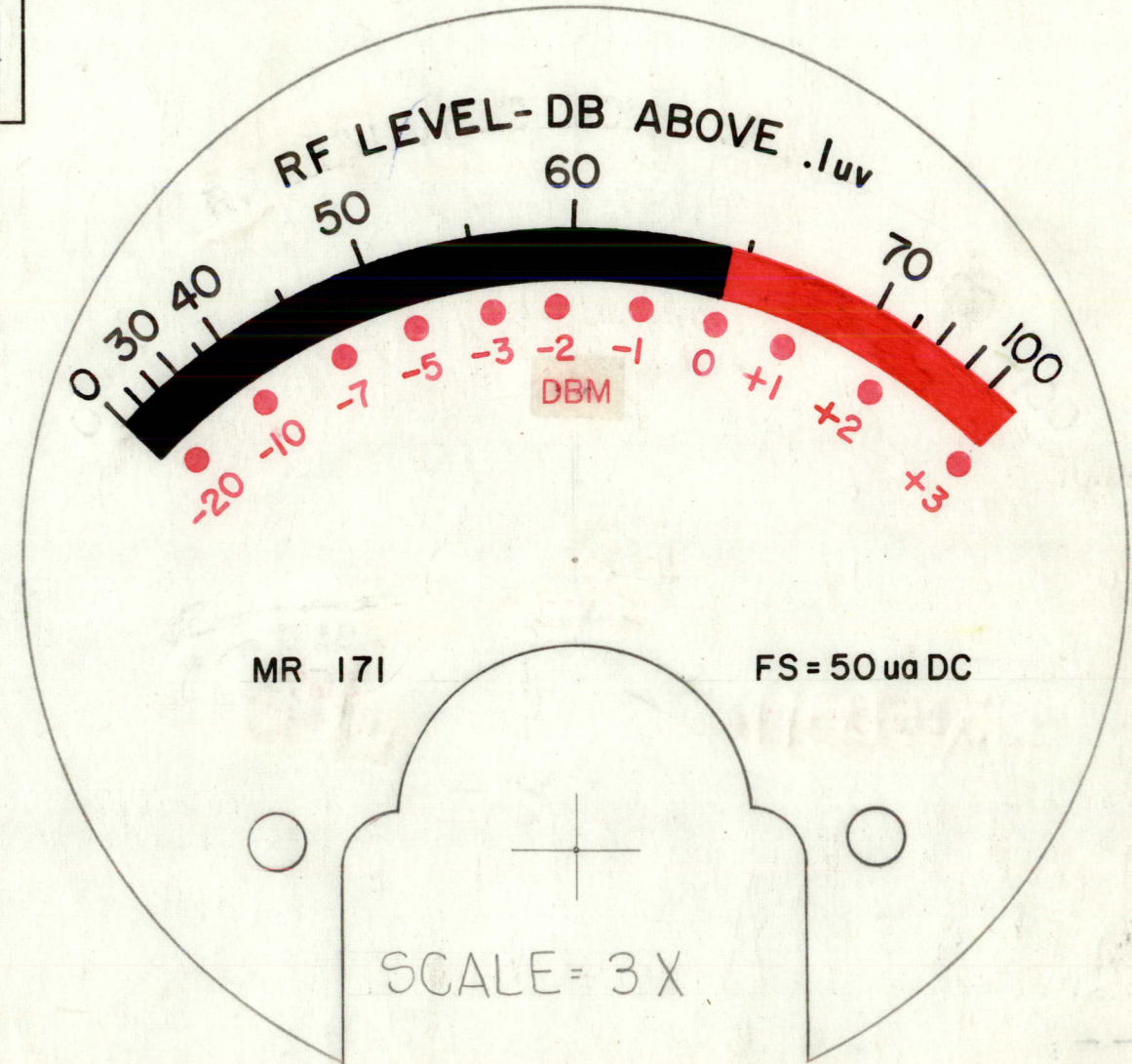


4 MTG. STUDS 4-36 THDS  
2 TERMINALS 1/4-28 THDS.

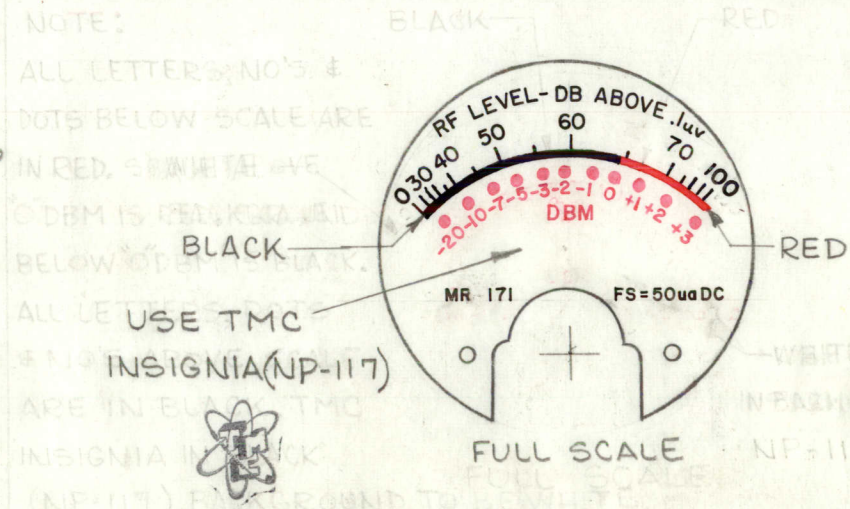
MR-171 A

## REVISIONS

SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD	APPD
O	ORIGINAL RELEASE FOR PRODUCTION	5-11-64	0	A.M.		
A	"0" & "100" MARKINGS RELOCATED.	8.25.64	12211	WB	T.R.	



THE ORIGINAL ARTWORK TO BE SUPPLIED BY TMC FOR PHOTOGRAPHING (SCALE 3:1)



NOTE:

- 1~ ALL LETTERS, NUMBERS AND DOTS BELOW SCALE ARE IN RED.
- 2~ SCALE ABOVE "0" DBM IS RED.
- 3~ SCALE BELOW "0" DBM IS BLACK.
- 4~ ALL LETTERS & NUMBERS ABOVE SCALE ARE IN BLACK.
- 5~ TMC INSIGNIA IN BLACK. (NP-117)
- 6~ BACKGROUND TO WHITE.

- 1~ ALL LETTERS, NUMBERS AND DOTS BELOW SCALE ARE IN RED.
- 2~ SCALE ABOVE "0" DBM IS RED.
- 3~ SCALE BELOW "0" DBM IS BLACK.
- 4~ ALL LETTERS & NUMBERS ABOVE SCALE ARE IN BLACK.
- 5~ TMC INSIGNIA IN BLACK. (NP-117)
- 6~ BACKGROUND TO WHITE.

Q'TY./UNIT	MODEL USED ON	ASS'Y. NO.
SCALE	CODE	

THE CONTENTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE TECHNICAL MATERIEL CORP. ITS UNAUTHORIZED USE OR REPRODUCTION IN WHOLE OR IN PART IS STRICTLY FORBIDDEN.

REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
<b>LIST OF MATERIAL</b>				
M. GELLMAN			<b>THE TECHNICAL MATERIEL CORP.</b> MAMARONECK, NEW YORK	
MATERIAL			TITLE	
FINISH			METER, AF/RF	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		DRAWN <i>[Signature]</i>	DATE 5-26-63	FINAL APPROVAL <i>[Signature]</i>
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005		FRACTIONS ± 1/64 ANGLES ± 0° 30'	CHECKED @	DATE 5-7-64
TOLERANCES		ELECT. DES.	DATE	MR171
		MECH. DES.	DATE	A
				SHEET
				REV. LTR.

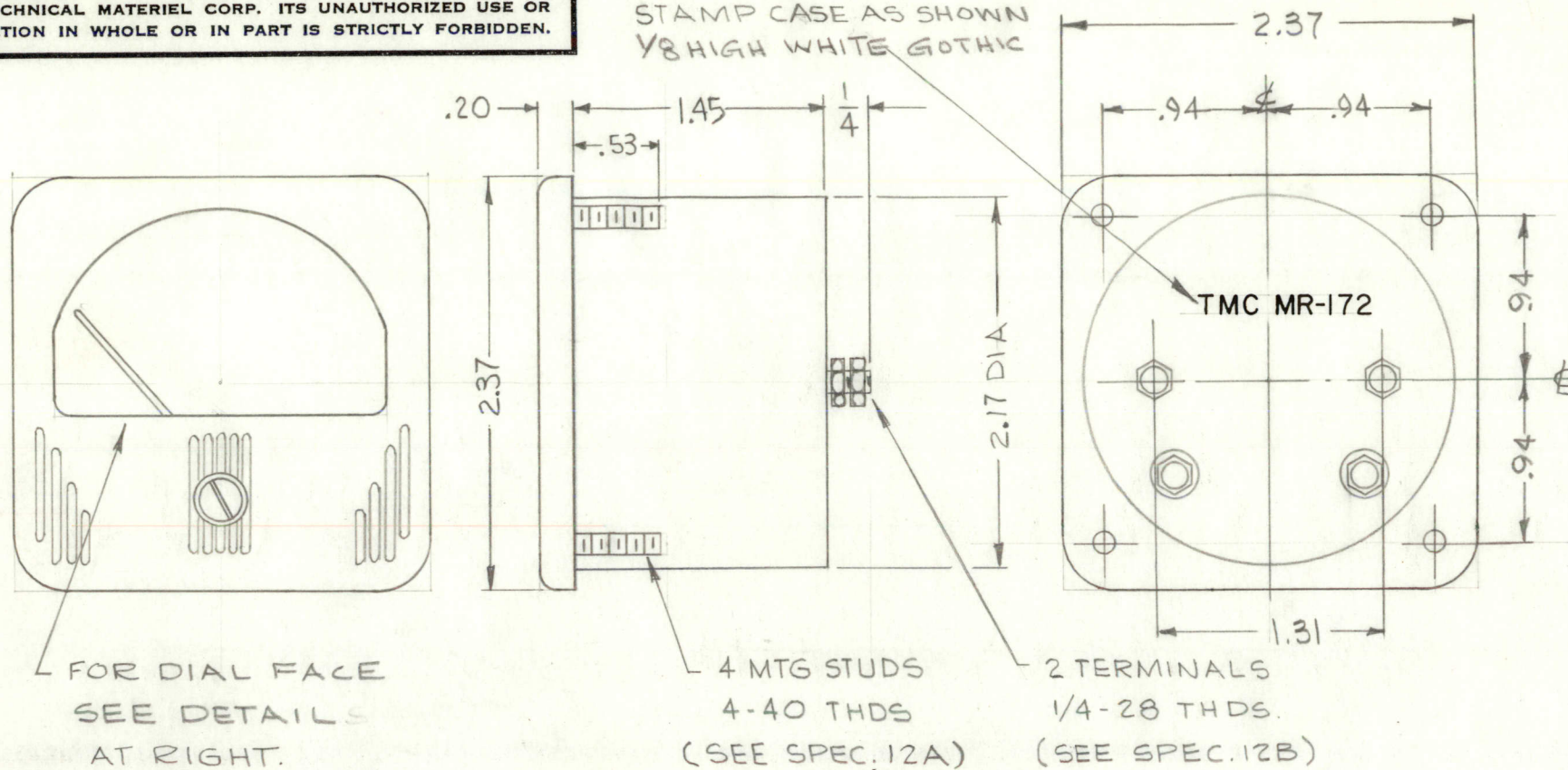
## NOTES



MR-172

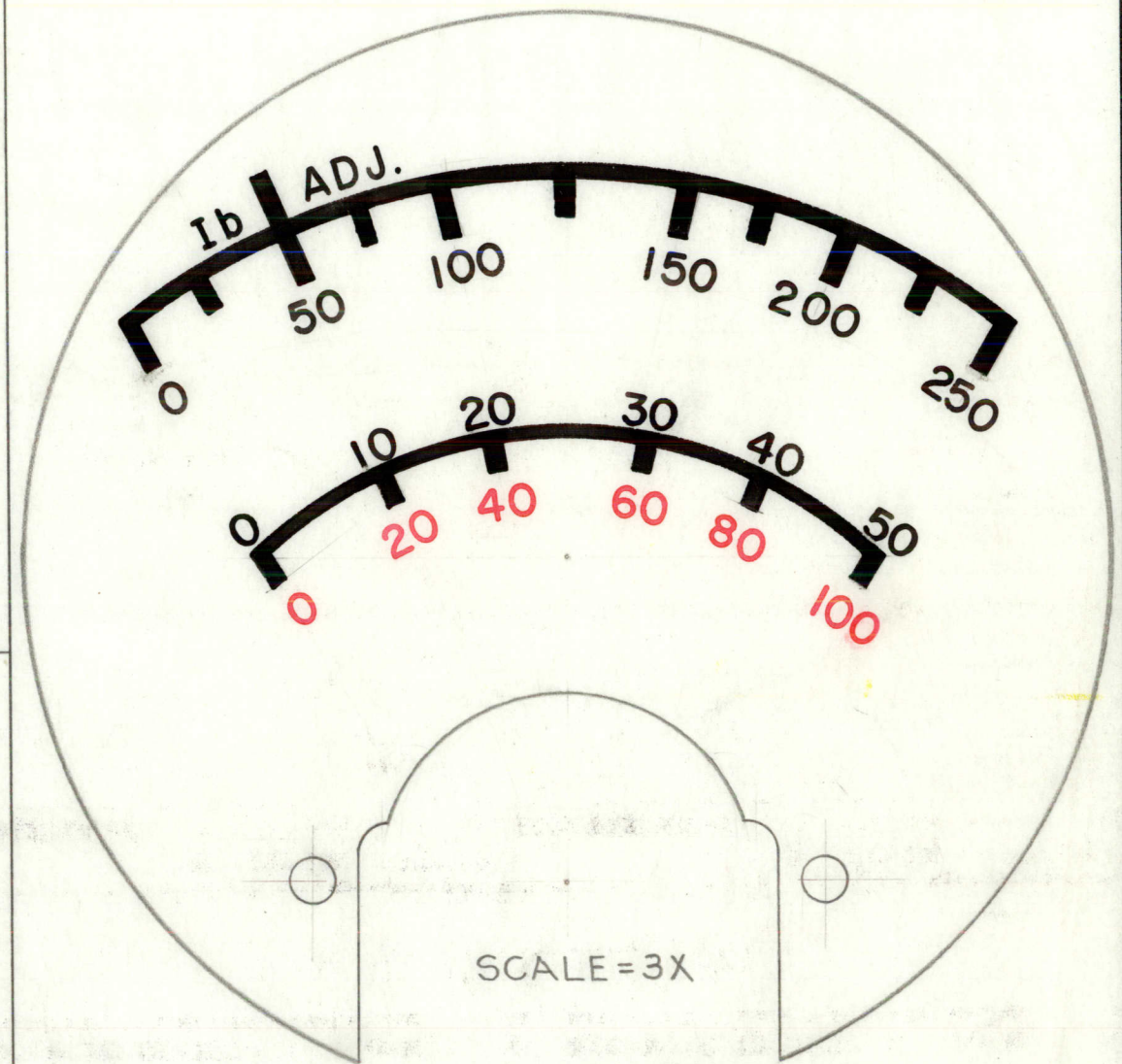
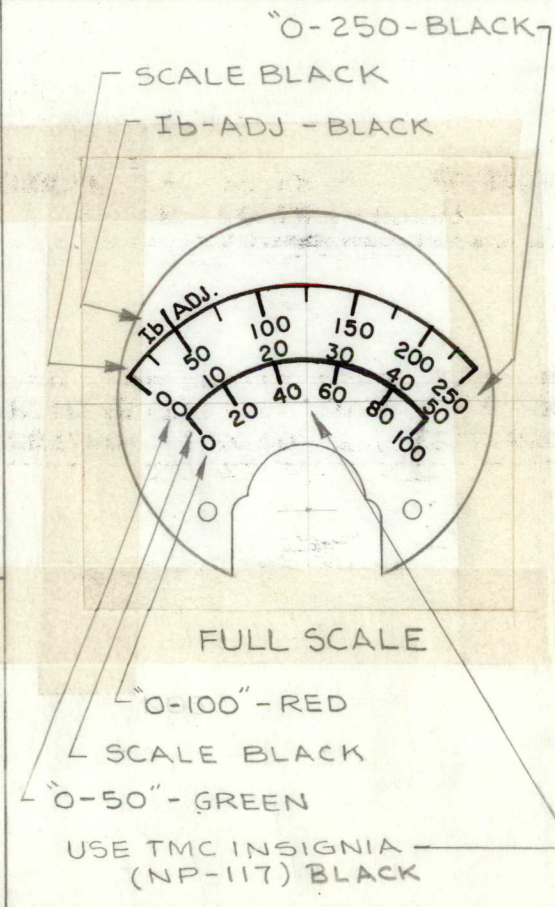
THE CONTENTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE TECHNICAL MATERIEL CORP. ITS UNAUTHORIZED USE OR REPRODUCTION IN WHOLE OR IN PART IS STRICTLY FORBIDDEN.

STAMP CASE AS SHOWN  
1/8 HIGH WHITE GOTHIC



**SPECIFICATIONS**

1. CIRCUIT APPLICATION: DC
2. SCALE: AS SHOWN IN DETAIL (All letters & numerals to be Fine Line Type)
3. DIAL COLORS: AS SHOWN, WITH A WHITE BACKGROUND
4. ILLUMINATION: NONE
5. CASE DATA:
  - A. MATERIAL - MOLDED PHENOLIC
  - B. COLOR - BLACK
  - C. FINISH - MATTE, WITH LINE DESIGN AS SHOWN ON FRONT VIEW
6. METER MOVEMENT: 0-50 UA
7. ACCURACY: +2% FOR FULL SCALE DEFLECTION
8. APPROX. RESISTANCE: 2000 OHMS
9. POINTER TYPE: KNIFE EDGE
10. MAGNETIC SHIELDING: NONE
11. CALIBRATION: FOR NON-MAGNETIC PANEL
12. HARDWARE SUPPLIED BY MANUFACTURER:
  - A. MTG. HARDWARE - 4 Each No. 4-40 Flat Washers & Hex Nuts
  - B. TERMINAL HARDWARE - 2 Each No. 1 Split Lockwashers; 4 Each No. 1/4-28 Hex Nuts



THIS METER DIAL FACE HAS BEEN DRAWN TO SCALE, (3X). THE ORIGINAL ARTWORK SHOULD BE OBTAINED FROM TMC FOR PHOTOGRAPHING.

UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN INCHES  
TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 1/2°

SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
	UNLESS OTHERWISE SPECIFIED:					
	DIMENSIONS ARE IN INCHES					
	TOLERANCES ON FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 1/2°					

REQ. PER UNIT	MODEL	SECTION	ASS'Y. NO.	DATE
1	TTR-10		AX-418	6-3-63

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		KOHN DESCRIPTION E3037-26	
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
METER, ARBITRARY SCALE, MULTIPLE			
DRAWN		CHECKED	FINAL APPROVAL
Ron KOHN 6/19/63		Ron KOHN 6/19/63	BP
FINISH & SPEC. NO.		ELEC. DES. APP.	MECH. DES. APP.
			MR-172



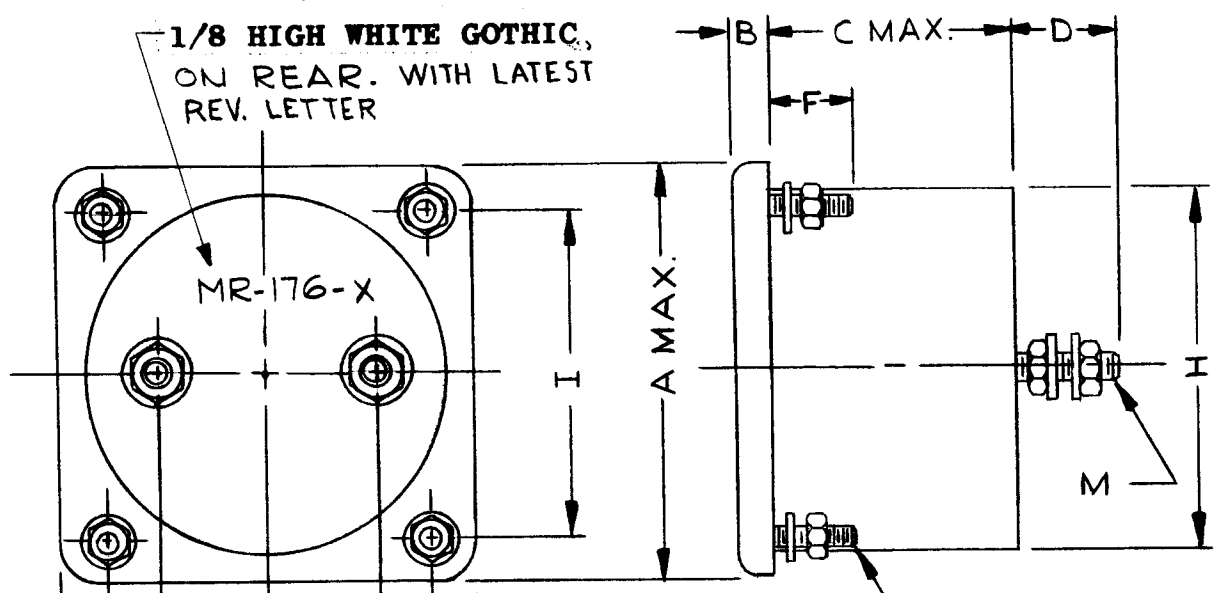
REVISIONS

SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD	APPD
Ø	ORIGINAL RELEASE FOR PRODUCTION	10-29-64	Ø	Ø		

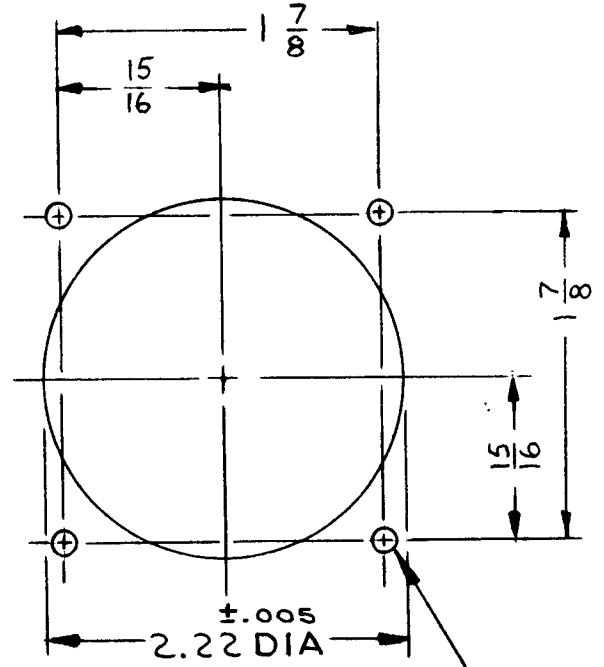
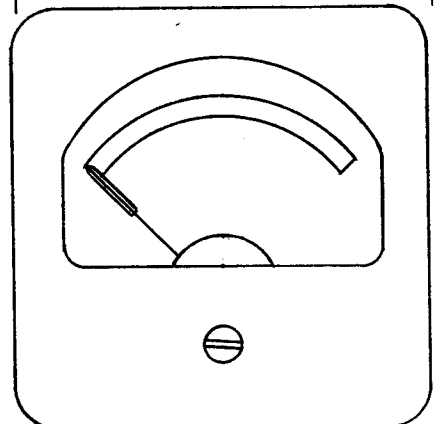
MR-176

L - (4) 4-40 STUDS, (4) FLAT WASHERS, (4) NUTS.  
M - (2) 1/4 - 28 STUDS, (4) FLAT WASHERS, (4) NUTS

TMC PART NUMBER TO BE  
1/8 HIGH WHITE GOTHIC,  
ON REAR. WITH LATEST  
REV. LETTER



TMC PART NUMBER	RESISTANCE	DIMENSIONS								F. S. DEFL.	SCALE	
		A	B	C	D MAX.	F MAX.	H	I	J			K
MR-176-1	75Ω ± 50%	2.37	.20	1.45	+0.000 -0.031 .375	.53	2.17	1.875	1.31	2.37	0-1 MA ± 2%	SEE LD-1443



SPECIFICATIONS

TYPE: PANEL  
CIRCUIT APPLICATION: D. C.  
CASE DATA:  
(A) MATERIAL: PHENOLIC  
(B) COLOR + FINISH: BLACK CASE, MATTE FRONT  
POINTER TYPE: KNIFE EDGE  
SCALE DATA:  
(A) SCALE LENGTH: 2 1/2"  
MARKING:  
1. TMC INSIGNIA TO BE PRINTED ON DIAL FACE.  
2. TMC PART NO. TO BE PRINTED ON DIAL FACE.  
3. MFG. NOMENCLATURE MUST NOT APPEAR ON DIAL FACE.  
4. SEE CHART FOR SPECIFIC SCALE, LD PRINT ACCESSORIES: ALL HARDWARE SUPPLIED BY MFG.

REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMB L
--------	------	-------------	-------------	--------

GELLMAN		LIST OF MATERIAL		
MATERIAL		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK		
FINISH		TITLE METER, D.C., MILLIAMPS		

1	BPS(-)-1	ASS'Y. NO.
Q'TY./UNIT	MODEL USED ON	ASS'Y. NO.
SCALE	CODE	5401-44

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		DRAWN G. Lencen		DATE 2-18-64	FINAL APPROVAL RJC		DATE
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005		FRACTIONS ± 1/64 ANGLES ± 0° 30'		CHECKED @	DATE 10-29-64	MR-176	
TOLERANCES		ELECT. DES. RW		DATE 10/19/64	SHEET		REV. LTR. Ø
		MECH. DES. [Signature]		DATE			

DRILL PANEL FOR SQUARE CASE.

NOTES









**SPECIFICATIONS**

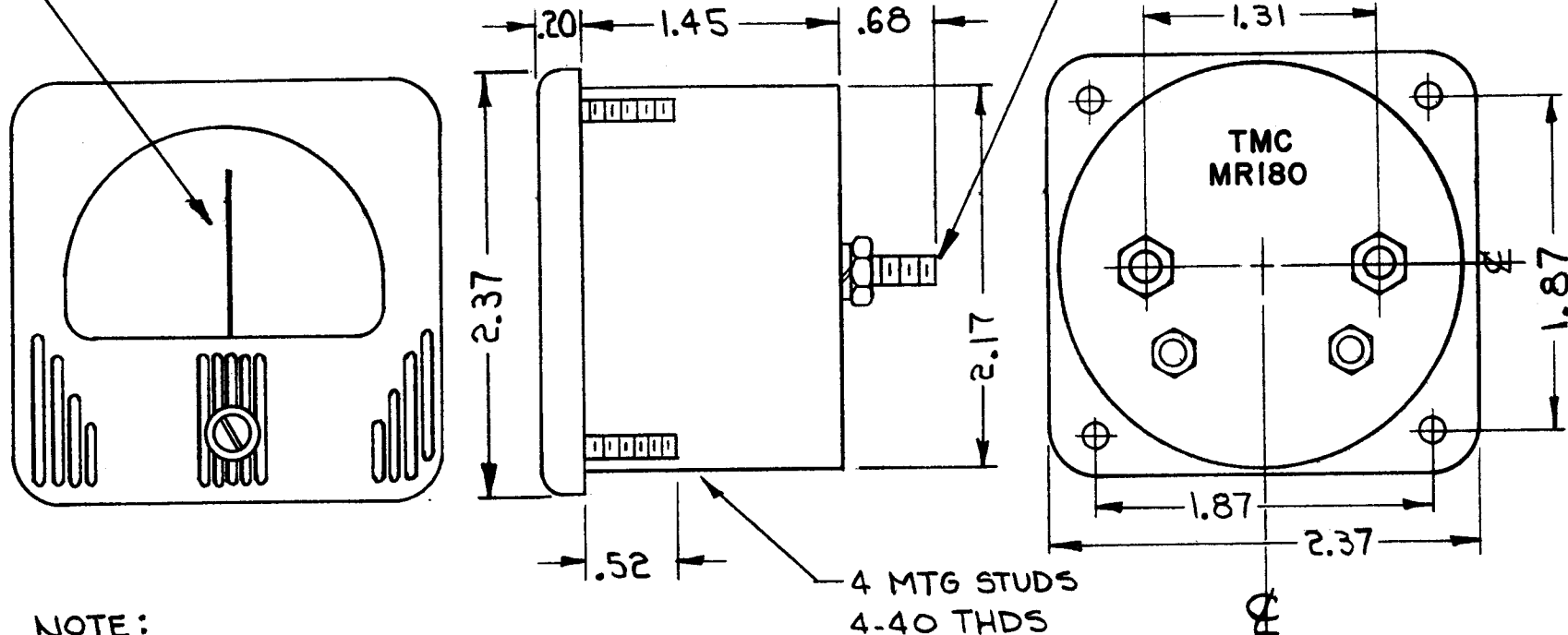
CASE : STANDARD SIMPSON #127  
 MOVEMENT : 25 - 0 - 25  $\mu$ A  
 APPROX. RESISTANCE : 2000 OHMS  
 POINTER TYPE : KNIFE EDGE.

ALL NECESSARY MOUNTING AND  
 TERMINAL HARDWARE TO BE  
 SUPPLIED BY MFR.

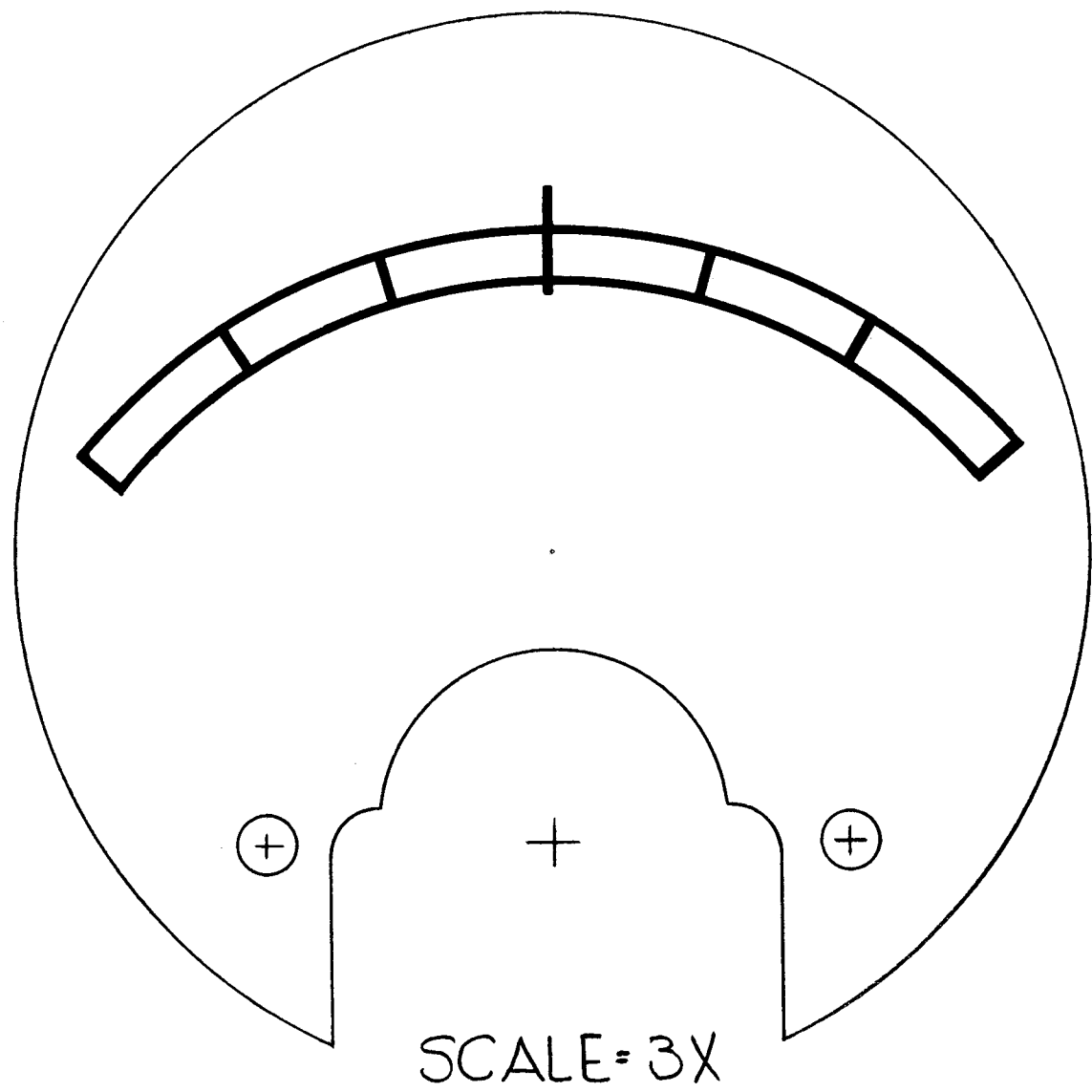
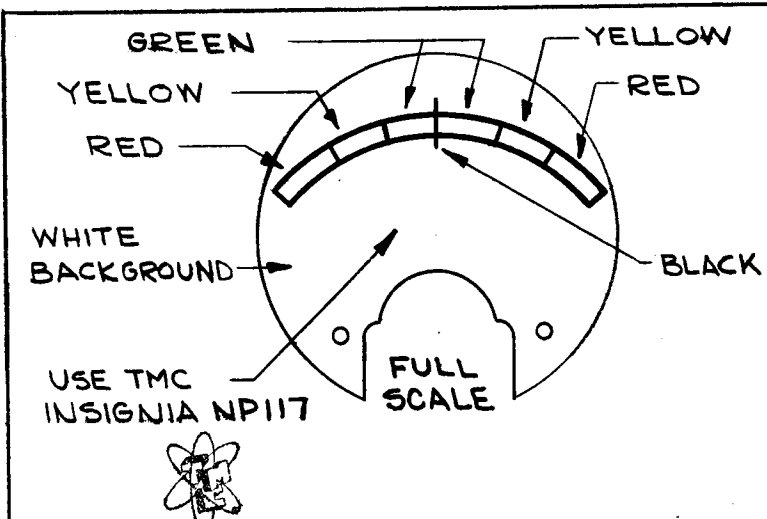
MR180 A

REVISIONS					
SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD
X	EXPER. RELEASE	8-13-64	X		
Q	ORIGINAL RELEASE FOR PRODUCTION	8-13-64	Q		
A	ON SPECS. MOVEMENT WAS 25-0-25 MA	9.15.64	12358	JB	

SEE DETAIL AT RIGHT  
 FOR DIAL FACE



**NOTE:**  
 1-CASE FRONT MUST BE A BLACK  
 MATT FINISH, WITH LINE DESIGN  
 AS SHOWN.  
 2-MARK TMC PART NO. 1/8 HIGH  
 BLACK GOTHIC, WITH LATEST  
 REVISION LETTER ON REAR  
 AS SHOWN.



ORIGINAL ARTWORK TO BE SUPPLIED BY TMC  
 FOR PHOTOGRAPHING (SCALE = 3X)

**NOTES**

1	LFCA-1	
Q'TY./UNIT	MODEL USED ON	ASS'Y. NO.
SCALE 3:1	CODE C	5401-44

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 REPRODUCTION IN WHOLE OR IN PART IS STRICTLY FORBIDDEN.

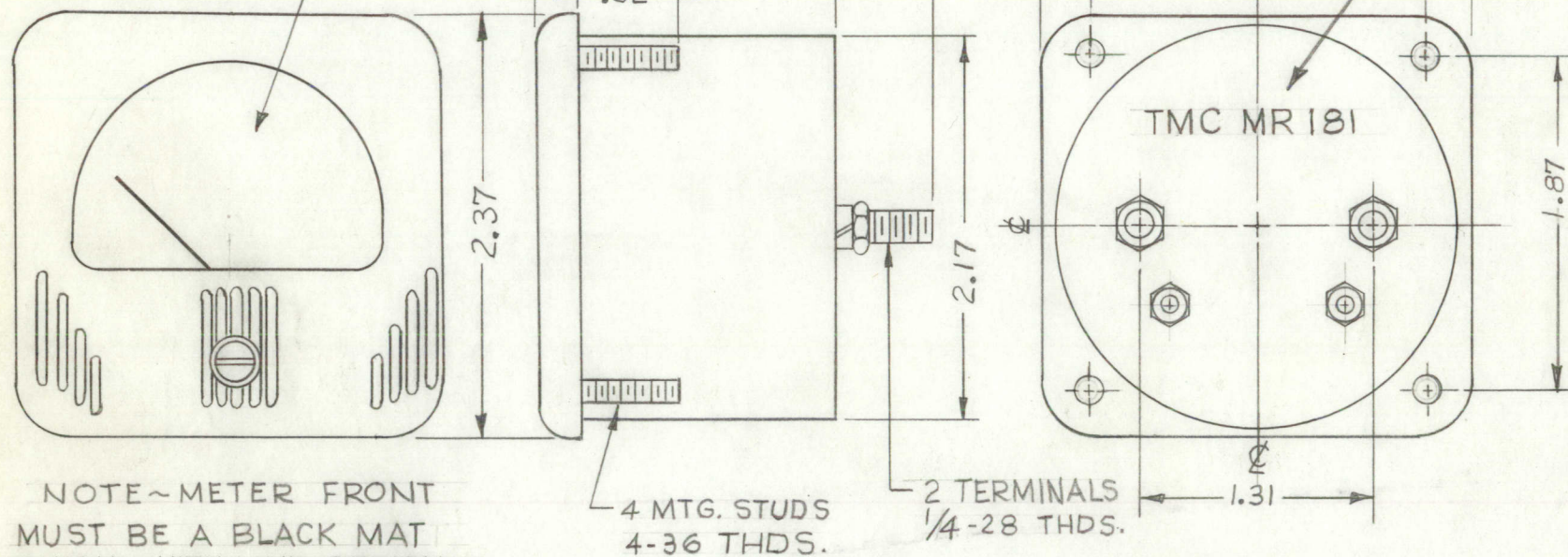
REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
<b>GELLMAN LIST OF MATERIAL</b>				
MATERIAL		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK		
FINISH		TITLE METER, INDICATOR DRIFT PHASE COMPARIOR		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		DRAWN Jensen	DATE 8-13-64	FINAL APPROVAL RJC
DECIMALS .X $\pm$ .05 .XX $\pm$ .01 .XXX $\pm$ .005		TOLERANCES		DATE
FRACTIONS $\pm$ 1/64 ANGLES $\pm$ 0° 30'		ELECT. DES. MECH. DES.		DATE
			MR180	A
			SHEET	REV. LTR.



# ~ SPECIFICATIONS ~

- 1-CASE~ STANDARD SIMPSON NO. 127.
- 2-MOVEMENT~ 50  $\mu$ a.
- 3-APPROX. RESISTANCE ~ 2000  $\Omega$ .
- 4- POINTER TYPE ~ KNIFE EDGE.
- 5- ALL NECESSARY MOUNTING & TERMINAL. HARDWARE SUPPLIED BY MFG.

SEE DETAIL AT RIGHT FOR DIAL FACE

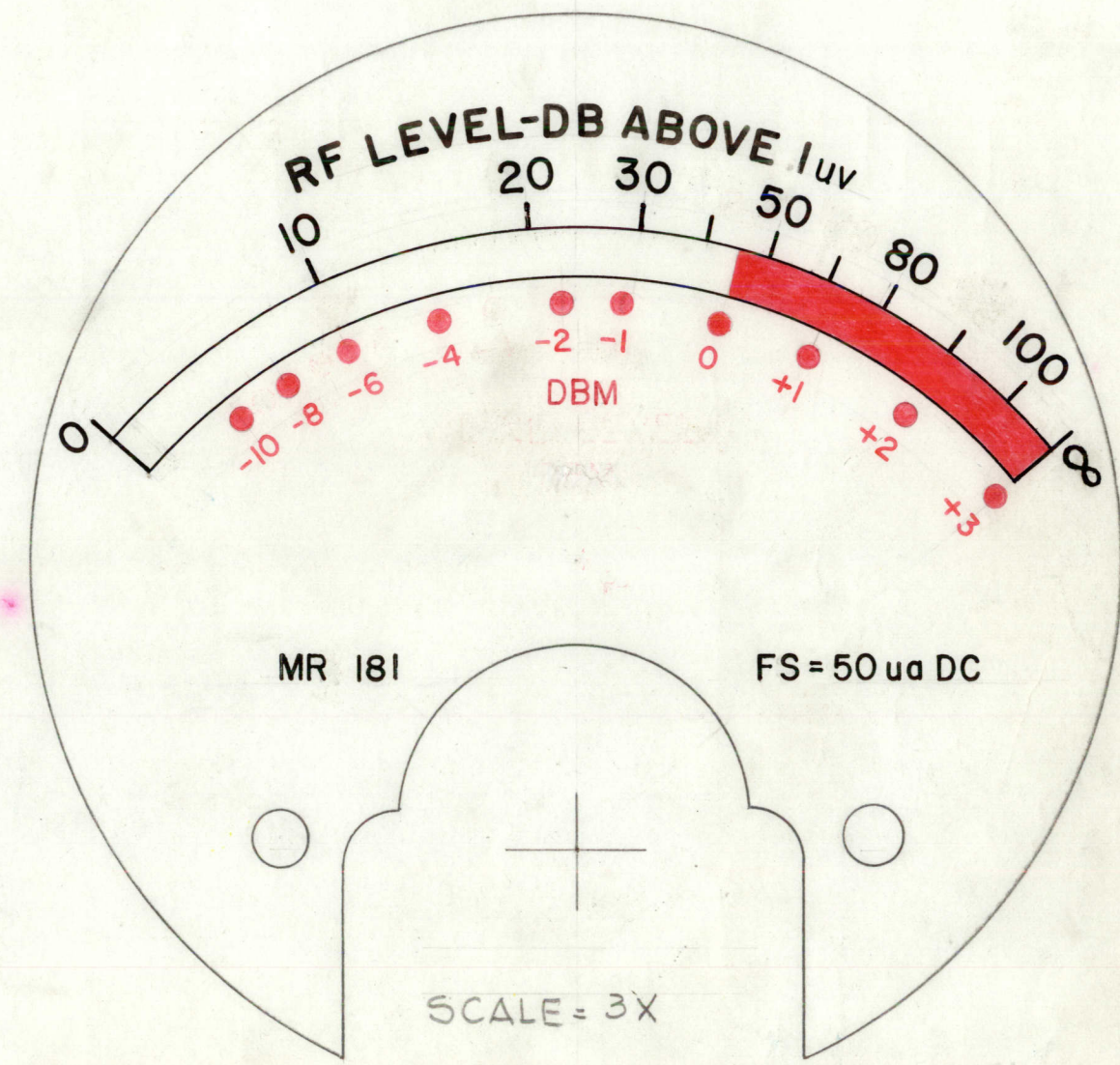


NOTE~ METER FRONT MUST BE A BLACK MAT FINISH, WITH LINE DESIGN AS SHOWN.

STAMP CASE AS SHOWN WITH LATEST REVISION LETTER.

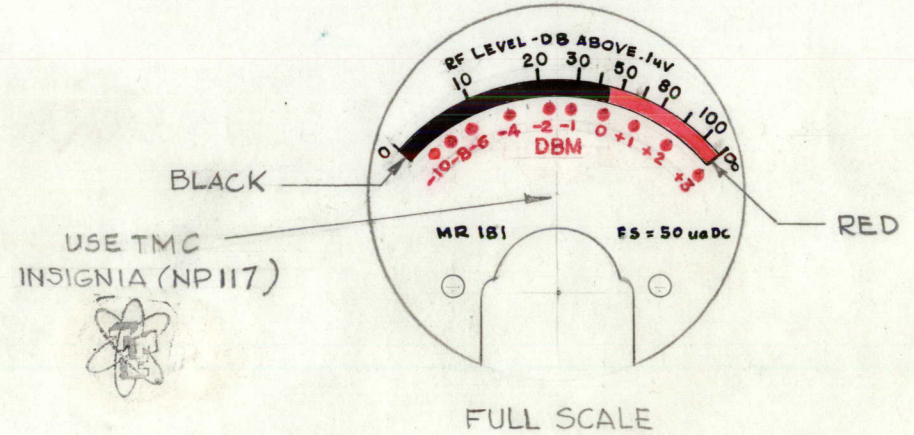
MR 181

REVISIONS					
SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD APPD
X	EXPERIMENTAL RELEASE	6-25-64	#	G.D.L.	
O	ORIGINAL RELEASE FOR PRODUCTION	7.8.64		lrb	



THE ORIGINAL ARTWORK TO BE SUPPLIED BY TMC FOR PHOTOGRAPHING (SCALE 3:1)

- NOTE :
- 1- ALL LETTERS, NUMBERS AND DOTS BELOW SCALE ARE IN RED
  - 2- SCALE ABOVE "0" DBM IS RED
  - 3- SCALE BELOW "0" DBM IS BLACK
  - 4- ALL LETTERS & NUMBERS ABOVE SCALE ARE IN BLACK.
  - 5- TMC INSIGNIA IN BLACK. (NP 117)
  - 6- BACKGROUND TO WHITE.



REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
W GELLMAN LIST OF MATERIAL				
MATERIAL			<b>THE TECHNICAL MATERIEL CORP.</b> MAMARONECK, NEW YORK	
FINISH			TITLE METER, AF/RF	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES			DRAWN <i>A. Marino</i> DATE 6-23-64 CHECKED <i>@</i> DATE 7-7-64 ELECT. DES. <i>Mej</i> DATE 7-7-64 MECH. DES.	FINAL APPROVAL <i>KDP</i> DATE 7-7-64 MR 181 SHEET
DECIMALS .X $\pm$ .05 .XX $\pm$ .01 .XXX $\pm$ .005			FRACTIONS $\pm$ 1/64 ANGLES $\pm$ 0° 30'	TOLERANCES REV. LTR.

Q'TY./UNIT	MODEL USED ON	ASS'Y. NO.
SCALE	CODE	
#	#	#

THE CONTENTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE TECHNICAL MATERIEL CORP. ITS UNAUTHORIZED USE OR REPRODUCTION IN WHOLE OR IN PART IS STRICTLY FORBIDDEN.

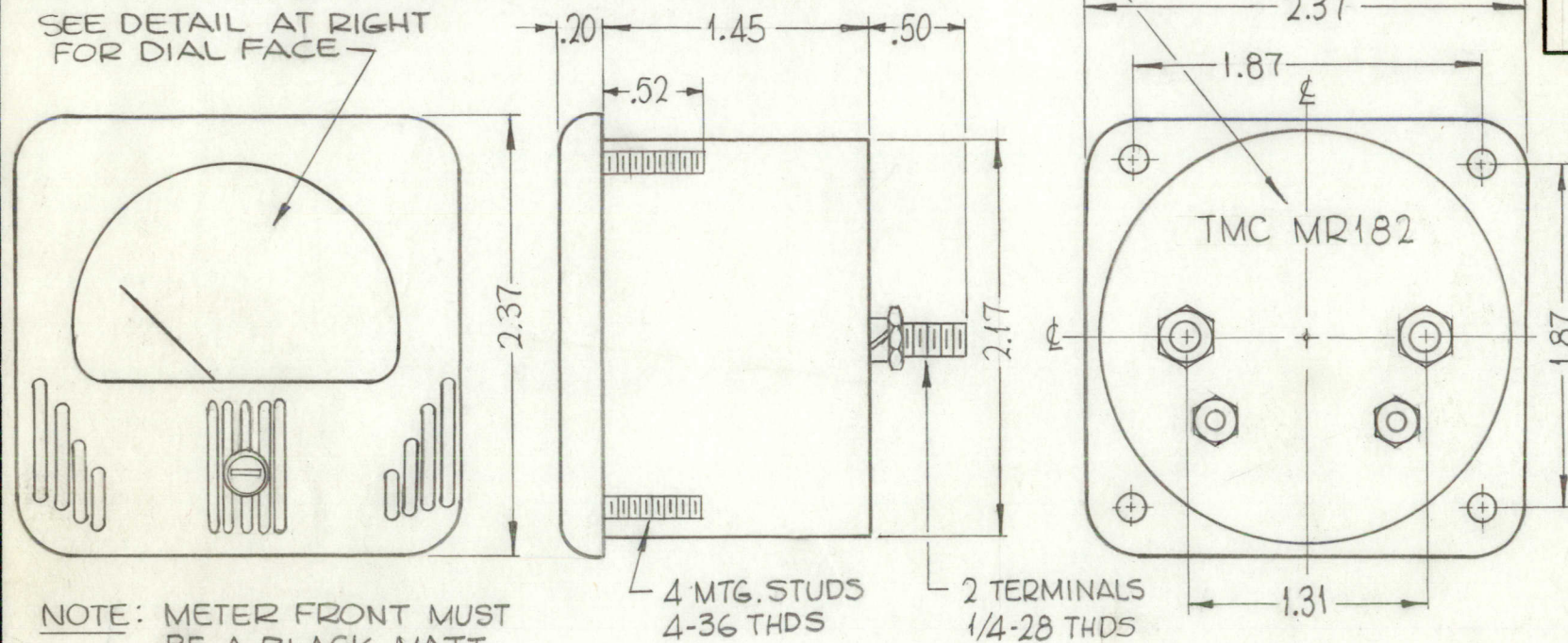
## NOTES



**SPECIFICATIONS:**

- 1-CASE ~ STANDARD SIMPSON № 127.
- 2-MOVEMENT ~ 50 $\mu$ a.
- 3-APPROX. RESISTANCE ~ 2000  $\Omega$ .
- 4-POINTER TYPE ~ KNIFE EDGE.
- 5-ALL NECESSARY MOUNTING & TERMINAL HARDWARE, SUPPLIED BY MFG.

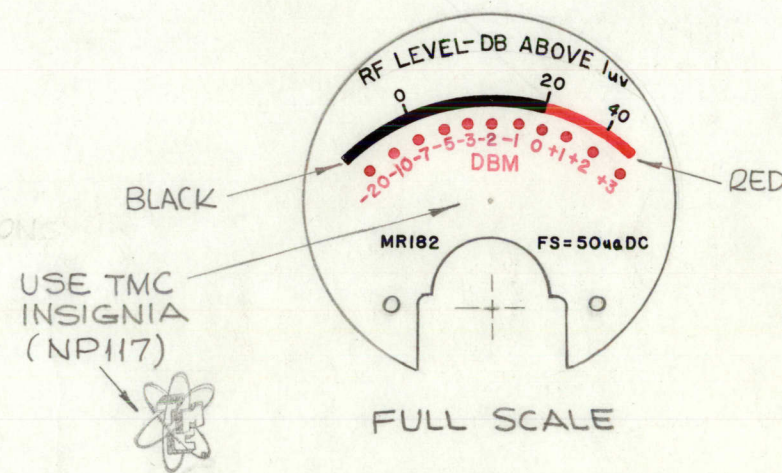
SEE DETAIL AT RIGHT FOR DIAL FACE



NOTE: METER FRONT MUST BE A BLACK MATT FINISH, WITH LINE DESIGN AS SHOWN.

**NOTES:**

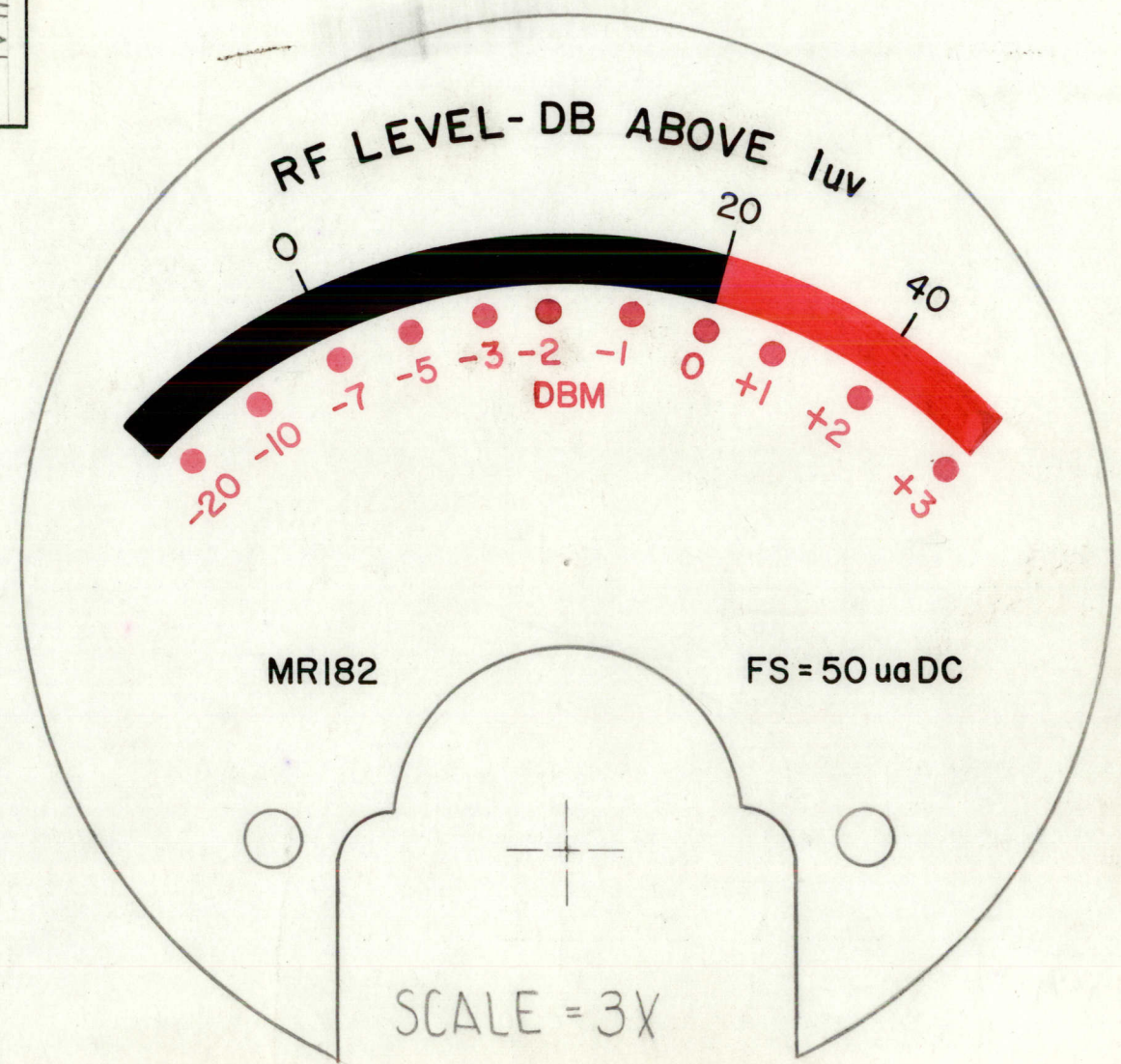
- 1~ ALL LETTERS, NUMBERS & DOTS BELOW SCALE ARE IN RED.
- 2~ SCALE ABOVE "0" DBM IS RED.
- 3~ SCALE BELOW "0" DBM IS BLACK.
- 4~ ALL LETTERS, NUMBERS AND GRADUATIONS ABOVE SCALE ARE IN BLACK.
- 5~ TMC INSIGNIA IN BLACK. (NPI17)
- 6~ BACKGROUND TO BE WHITE.



MR182

**REVISIONS**

SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD	APPD
X	EXPERIMENTAL RELEASE	7-2-64		SRG		
Ø	ORIGINAL RELEASE FOR PRODUCTION	8.25.64	+	WB		



ORIGINAL ARTWORK TO BE SUPPLIED BY TMC FOR PHOTOGRAPHING (SCALE 3:1)

REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
<b>T. AALTONEN LIST OF MATERIAL</b>				
MATERIAL			<b>THE TECHNICAL MATERIEL CORP.</b>	
FINISH			MAMARONECK, NEW YORK	
			TITLE <b>METER, AF/RF</b>	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES			DRAWN SRG	DATE 7-2-64
			CHECKED @	DATE 8-25-64
			ELECT. DES. RW	DATE 7-1-64
			MECH. DES. RW	DATE 8/25/64
			MR182	
			Ø	
			SHEET	
			REV. LTR.	

**NOTES**

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**SPECIFICATIONS:**

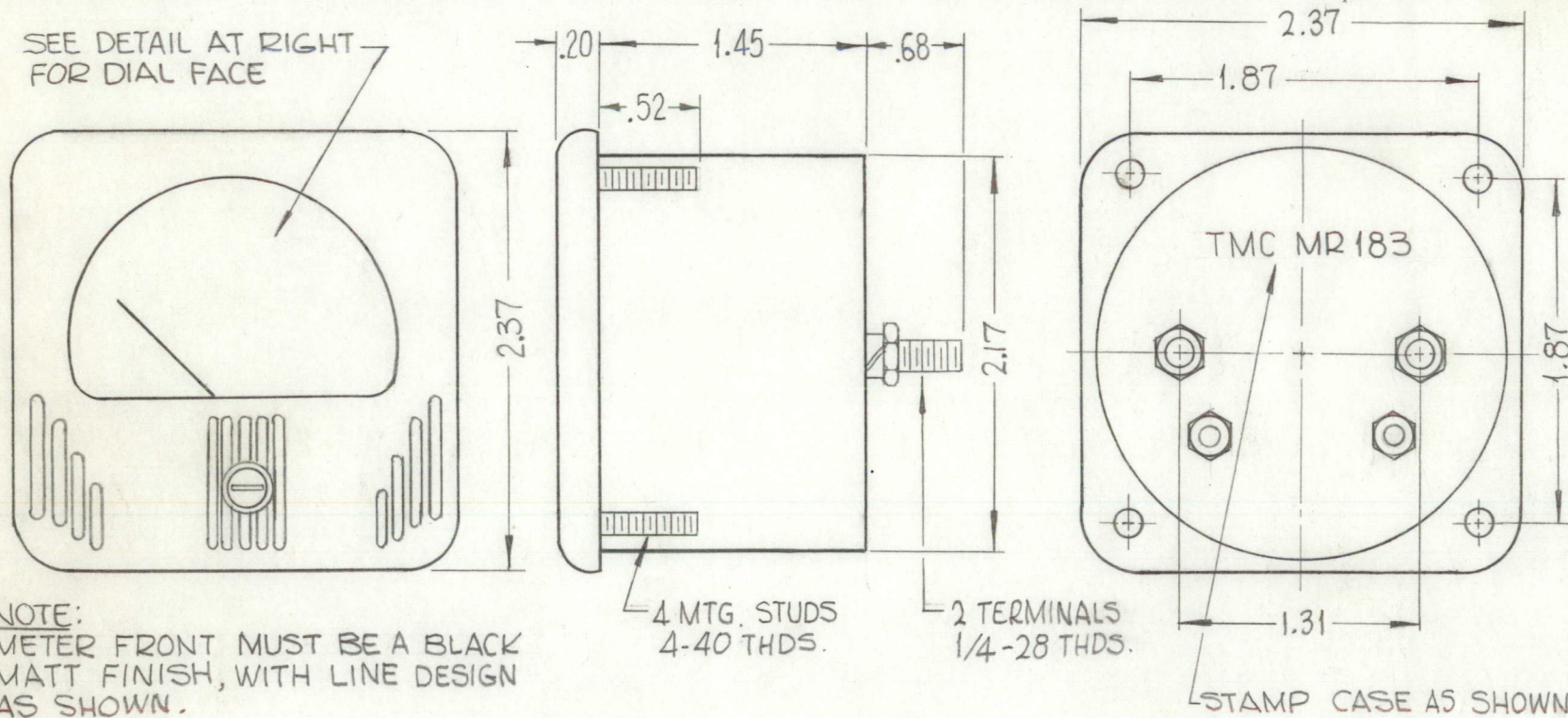
CASE ~ STANDARD SIMPSON No 127.  
 MOVEMENT ~ 0-50 uC.  
 APPROX. RESISTANCE ~ 2K.  
 POINTER TYPE ~ KNIFE EDGE.  
 ALL NECESSARY MOUNTING & TERMINAL HARDWARE SUPPLIED BY MFG.

MR183

**REVISIONS**

SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD	APPD
X	EXPERIMENTAL RELEASE	7-6-64		SRG		
Ø	ORIGINAL RELEASE FOR PRODUCTION	10-6-64	Ø	JL		

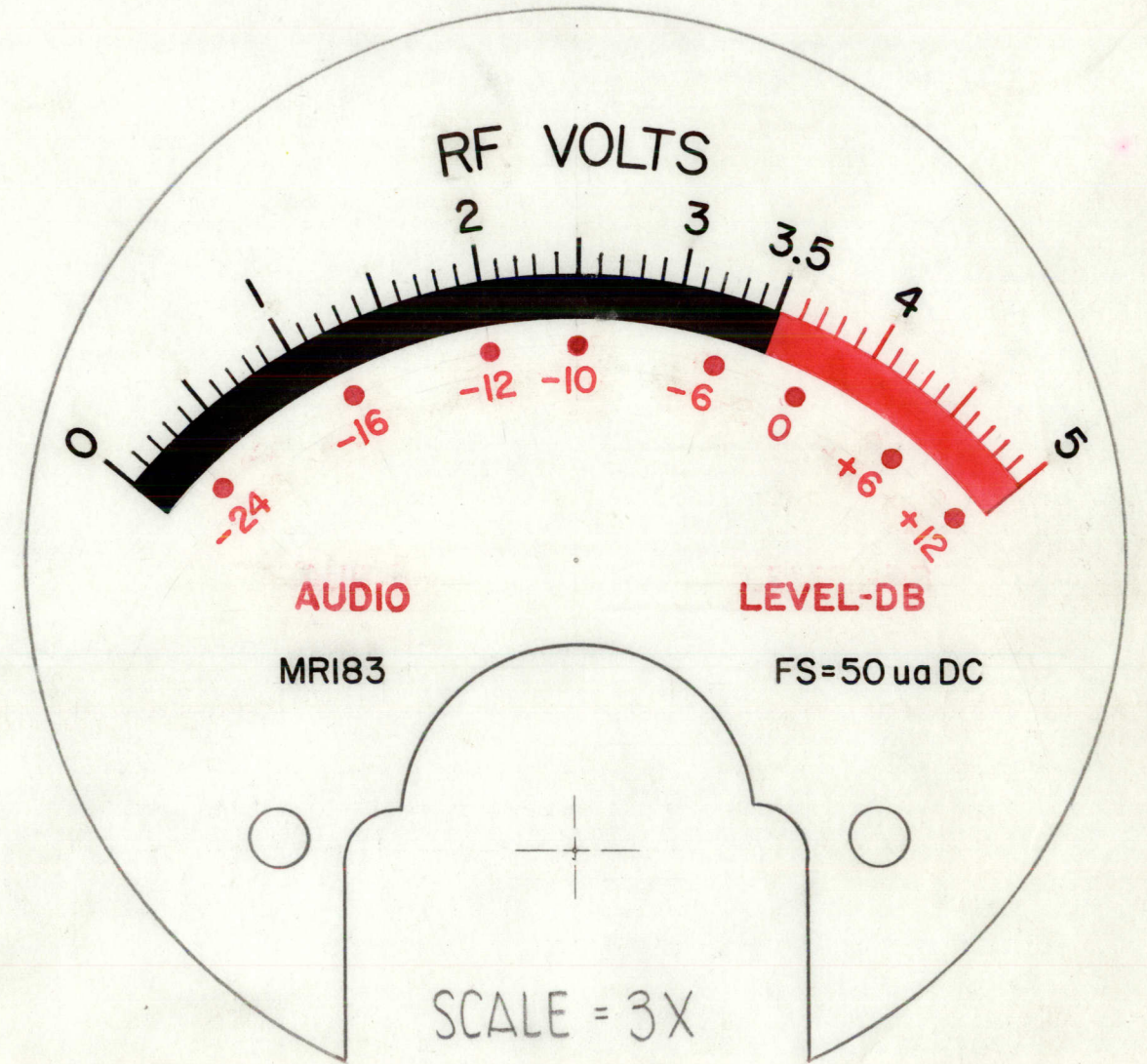
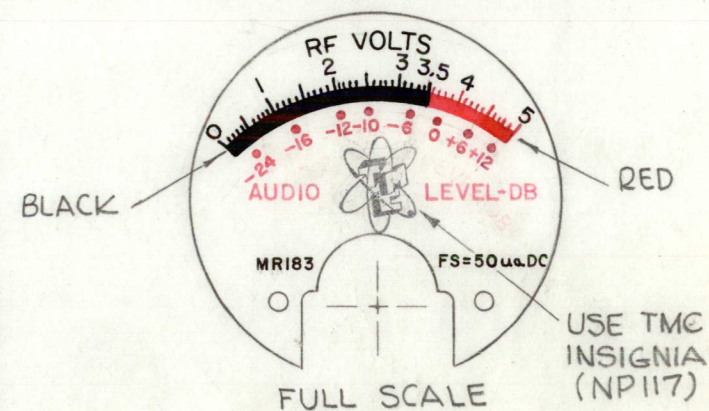
SEE DETAIL AT RIGHT FOR DIAL FACE



NOTE:  
 METER FRONT MUST BE A BLACK MATT FINISH, WITH LINE DESIGN AS SHOWN.

**NOTES:**

- 1~ ALL LETTERS, NUMBERS & DOTS BELOW SCALE ARE IN RED.
- 2~ SCALE ABOVE 3.5VRF IS RED.
- 3~ SCALE BELOW 3.5VRF IS BLACK
- 4~ ALL LETTERS, NUMBERS & GRADUATIONS ABOVE SCALE ARE IN BLACK.
- 5~ TMC INSIGNIA IN BLACK (NP 117)
- 6~ BACKGROUND TO BE WHITE.



ORIGINAL ARTWORK TO BE SUPPLIED BY TMC FOR PHOTOGRAPHING (SCALE)

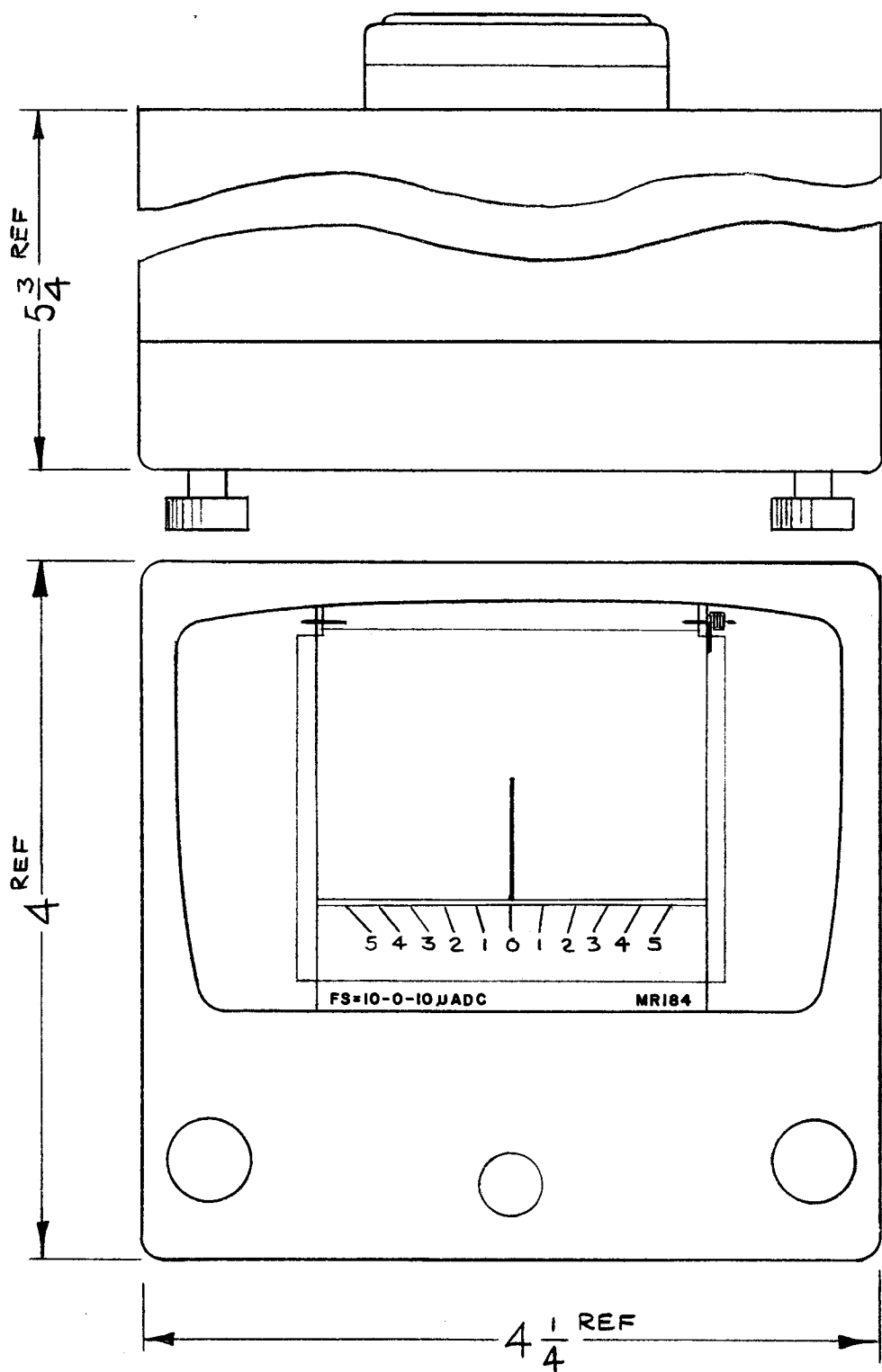
REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
<b>T. AALTONEN LIST OF MATERIAL</b>				
MATERIAL			<b>THE TECHNICAL MATERIEL CORP.</b> MAMARONECK, NEW YORK	
FINISH			TITLE <b>METER, AF/RF</b>	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES				
DRAWN <b>SRG</b>		DATE <b>7-6-64</b>	FINAL APPROVAL	
CHECKED <b>@</b>		DATE <b>10-6-64</b>	<b>MR183</b>	
ELECT. DES. <b>MRP</b>		DATE <b>7-5-64</b>		
MECH. DES.		DATE		
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005			FRACTIONS ± 1/64 ANGLES ± 0° 30'	
TOLERANCES			SHEET	
			REV. LTR.	

Q'TY./UNIT	MODEL USED ON	ASS'Y. NO.
1	SME-1	
SCALE	CODE	
//		

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**NOTES**



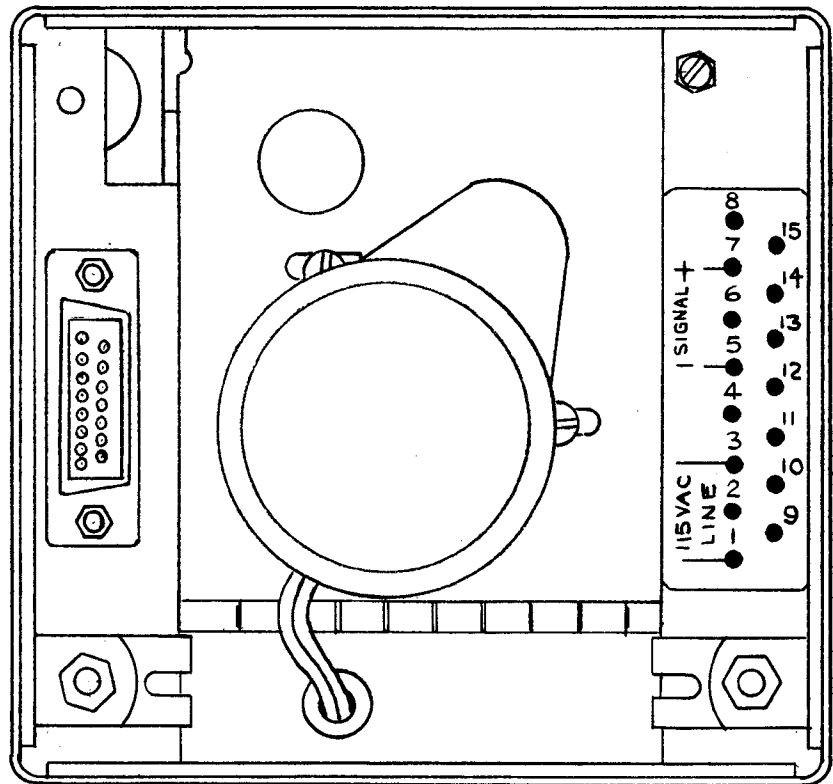


MR184

REVISIONS					
SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD APPD
X	EXPERIMENTAL RELEASE	10.17.64	X	JSB	
Ø	ORIGINAL RELEASE FOR PRODUCTION	10.29.64	Ø	JSB	

RANGE\* 10-0-10 MICROAMPS DC  
 SCALE\* 5-0-5 NO LEGEND, NO A.P.I.  
 VOLTAGE\* 110 V AC 60 CYCLE  
 SPEED\* 1 INCH PER HOUR  
 RESISTANCE\* 1500 OHMS +5%, -10%  
 CHART PAPER\* 50 DIVISIONS MFG P/N 1606-8  
 63 FT ROLL  
 ACCURACY\* ±2% FULL SCALE  
 CLAMPING RATE\* 5 SECOND INTERVAL

CONNECTOR: MALE & FEMALE 15 PIN CONNECTORS  
 SUPPLIED (PART NUMBER CINCH DM15)



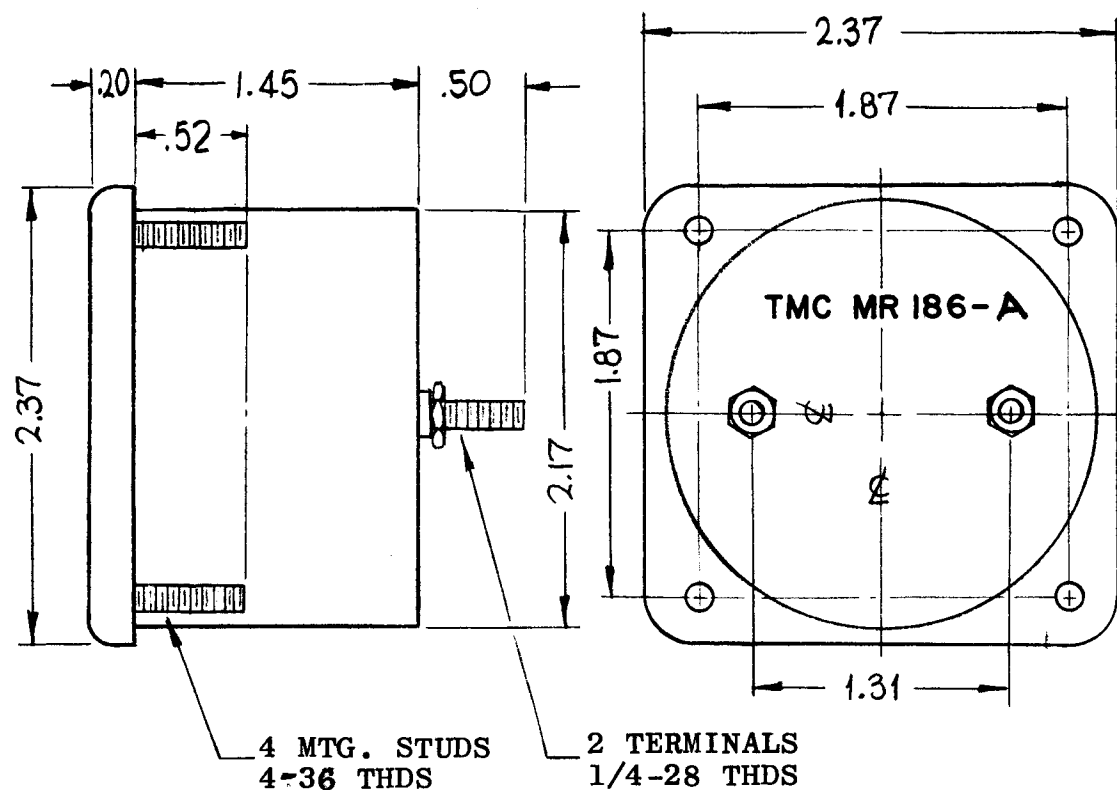
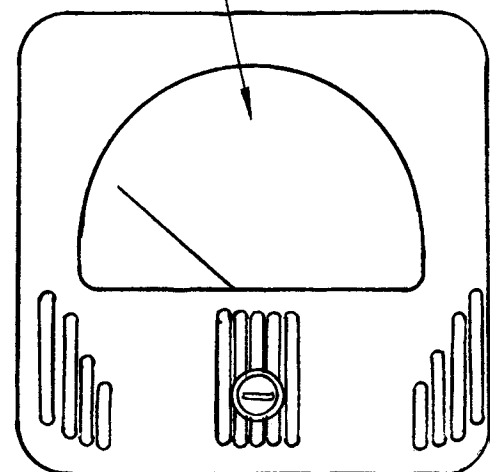
**NOTES**

PFCB-1		ASS'Y. NO.
Q'TY./UNIT	MODEL USED ON	
SCALE	CODE	S401-328 (2811-780-109)
NONE	C	

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REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
<b>LIST OF MATERIAL</b>				
MATERIAL		#		
FINISH		#		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES			<b>THE TECHNICAL MATERIEL CORP.</b> MAMARONECK, NEW YORK  <b>TITLE</b> <b>RECORDER, FREQ-TIME</b>	
DRAWN	DATE	FINAL APPROVAL	DATE	
JSB	10.17.64	JSB		
CHECKED	DATE			
@	10.26.64			
ELECT. DES.	DATE			
SC	10/28/64	MR184		
MECH. DES.	DATE			
		SHEET	REV. LTR.	
			Ø	

SEE DETAIL AT RIGHT FOR DIAL FACE



MR186 A

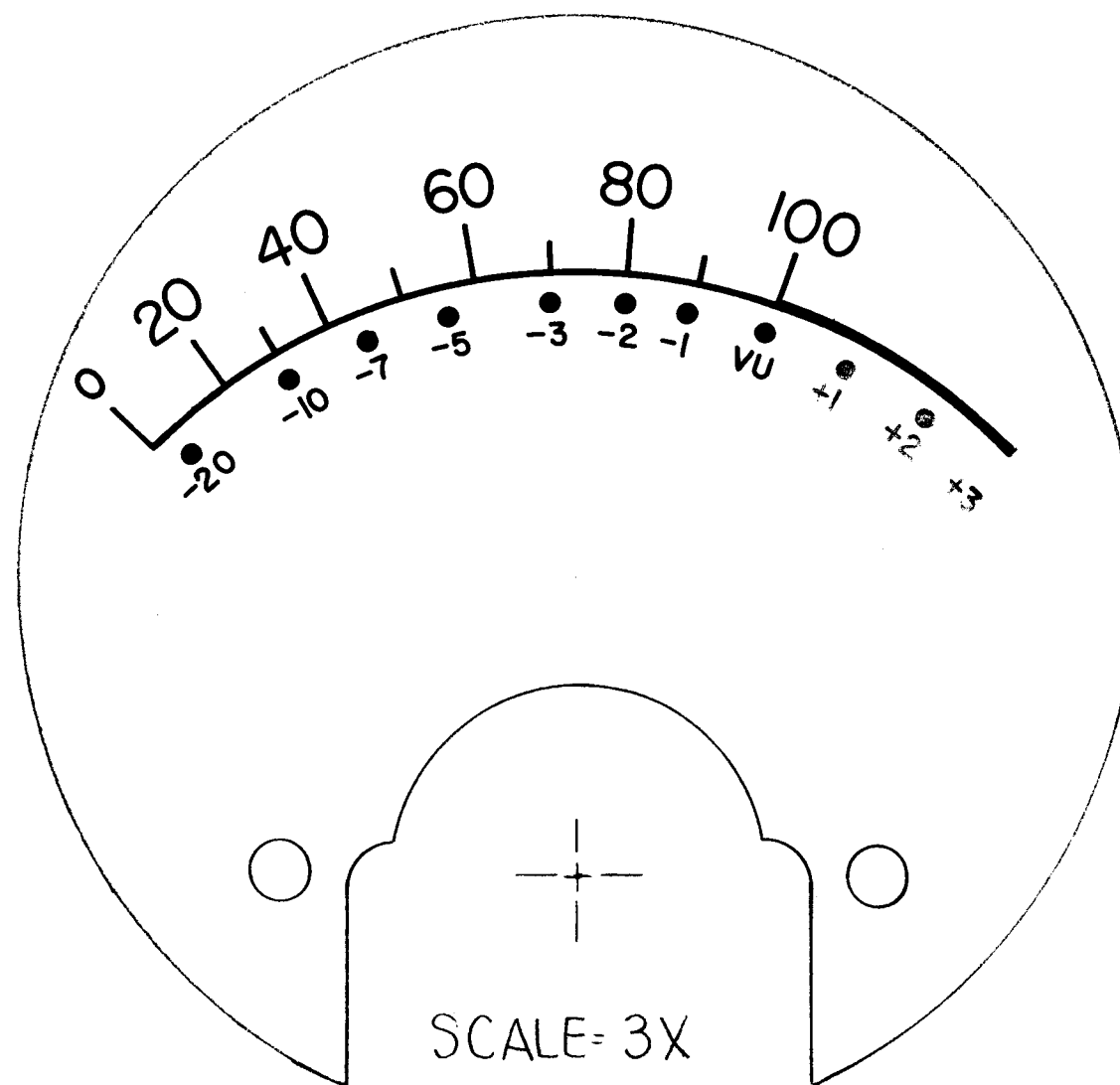
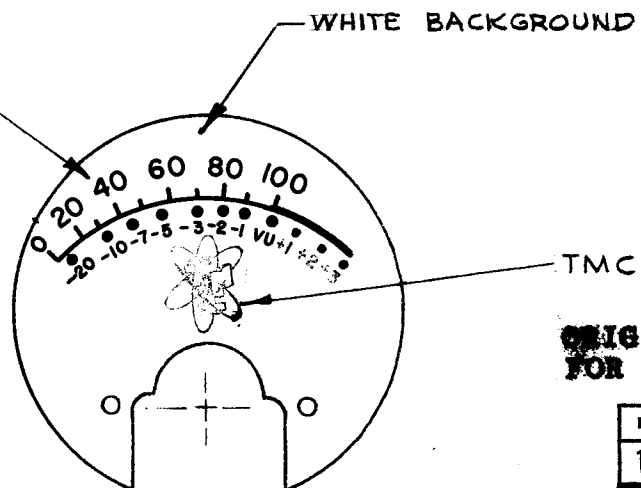
REVISIONS						
SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD	APPD
X	EXPERIMENTAL RELEASE	9-25-64	X	SRG		
Ø	ORIGINAL RELEASE FOR PRODUCTION	9-28-64	Ø	gk		
A	ON SPECS #1 NO.127 WAS 27.	10-19-64	12 L18	SR	10	AMR

**SPECIFICATIONS**

1. CASE- STANDARD SIMPSON NO.127
2. MOVEMENT-50ua
3. APPROXIMATE RESISTANCE-2000 Ω
4. POINTER TYPE-KNIFE EDGE
5. ALL NECESSARY MOUNTING & TERMINAL HARDWARE SUPPLIED BY MFG.

**NOTES:**

1. CALIBRATION MARKS TO BE BLACK FROM "0" TO "100"; INCLUDING ALL MARKS & NOMENCLATURE UP TO "VU" (SEE PICTORIAL)
2. ALL MARKS & NOMENCLATURE ABOVE 100 SHALL BE BRIGHT RED.
3. TMC INSIGNIA TO BE BLACK.
4. BACKGROUND TO BE WHITE.
5. METER FRONT MUST BE A BLACK MATT FINISH WITH LINE DESIGN AS SHOWN.
6. STAMP CASE AS SHOWN WITH LATEST REVISION LETTERS.



**ORIGINAL ARTWORK TO BE SUPPLIED BY TMC FOR PHOTOGRAPHING (SCALE 3:1)**

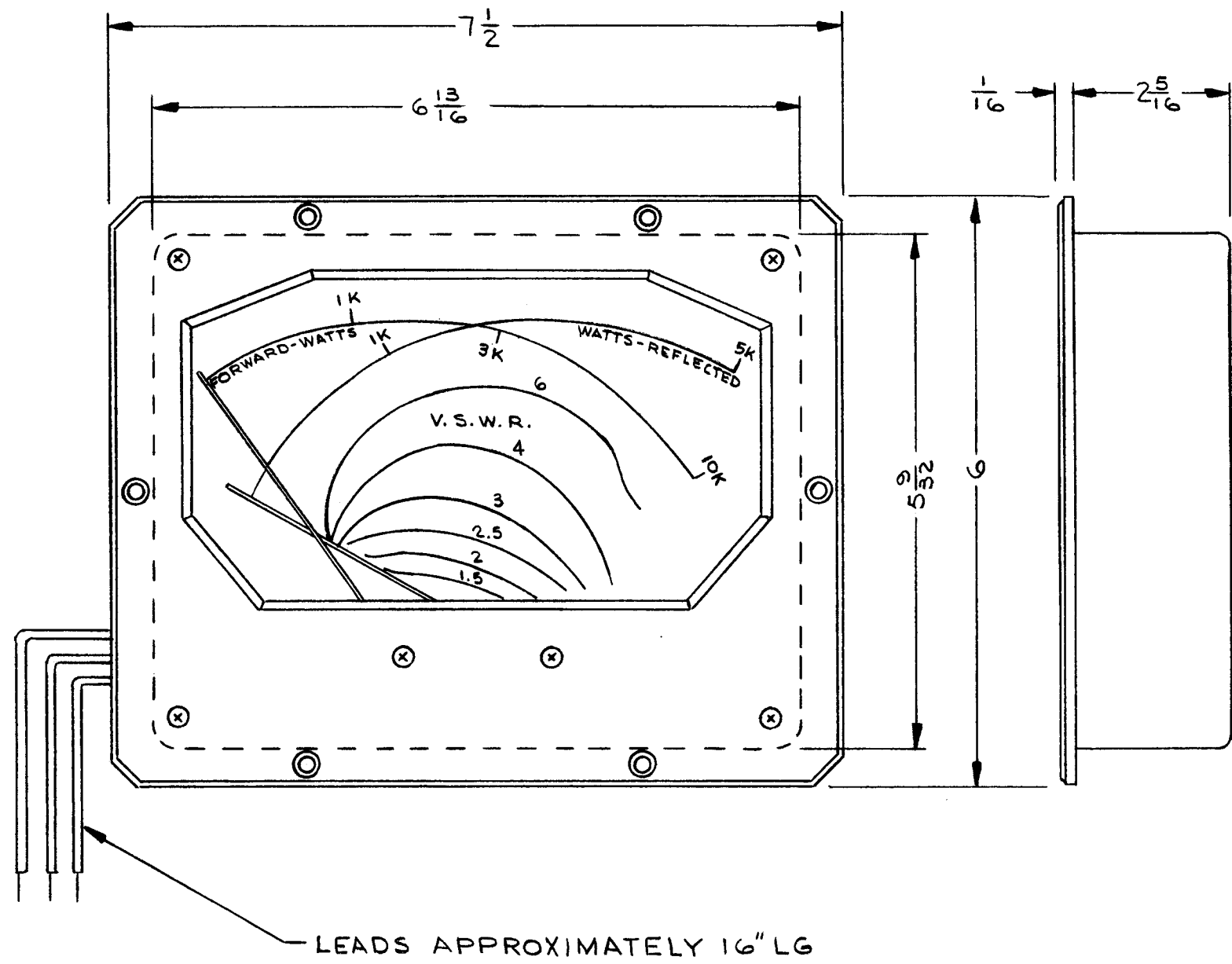
LFCA-1		
Q'TY./UNIT	MODEL USED ON	ASS'Y. NO.
SCALE #	CODE A	#

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REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
M.GELLMAN LIST OF MATERIAL				
MATERIAL			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
FINISH			TITLE METER, AUDIO LEVEL	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES				
DRAWN SRG		DATE 9-25-64	FINAL APPROVAL	
CHECKED @		DATE 9-28-64	MR186	
ELECT. DES.		DATE	A	
MECH. DES.		DATE	REV. LTR.	
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005			FRACTIONS TOLERANCES ± 1/64 ANGLES ± 0° 30'	
SHEET			REV. LTR.	

**NOTES**

MR188



LEADS APPROXIMATELY 16" LG

REVISIONS

SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD	APPD
Ø	ORIGINAL RELEASE FOR PRODUCTION	3/4/66	Ø	KLA		J. De

MECHANICAL DATA

CASE: BLK BAKELITE  
 FRONT PLATE: ALUMINUM, BLK GLOSS ENAMEL FINISH  
 SCALE COLORS: FOWARD WATTS-BLACK  
 REFLECTED WATTS-RED  
 VSWR-BLUE

ELECTRICAL DATA

RESISTANCE: BLK/BLUE LEADS-1700 Ω ± 20%  
 BLK/RED LEADS-1700 Ω ± 20%  
 RANGE: 0-100 μA ± 2%

REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
<b>BUDETTI LIST OF MATERIAL</b>				
MATERIAL		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK		
FINISH		TITLE		
		METER, STANDING WAVE RATIO		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		DRAWN J. LESHINSKI	DATE 3/2/66	FINAL APPROVAL <i>[Signature]</i>
		CHECKED <i>[Signature]</i>	DATE 3-3-66	DATE 3/11/66
		ELECT. DES. AA	DATE 3-11-66	MR188
		MECH. DES.	DATE	Ø
			SHEET	REV. LTR.

1	SWR-10K/50U	
Q'TY./UNIT	MODEL USED ON	ASS'Y. NO.
SCALE	CODE	8A1509-10K

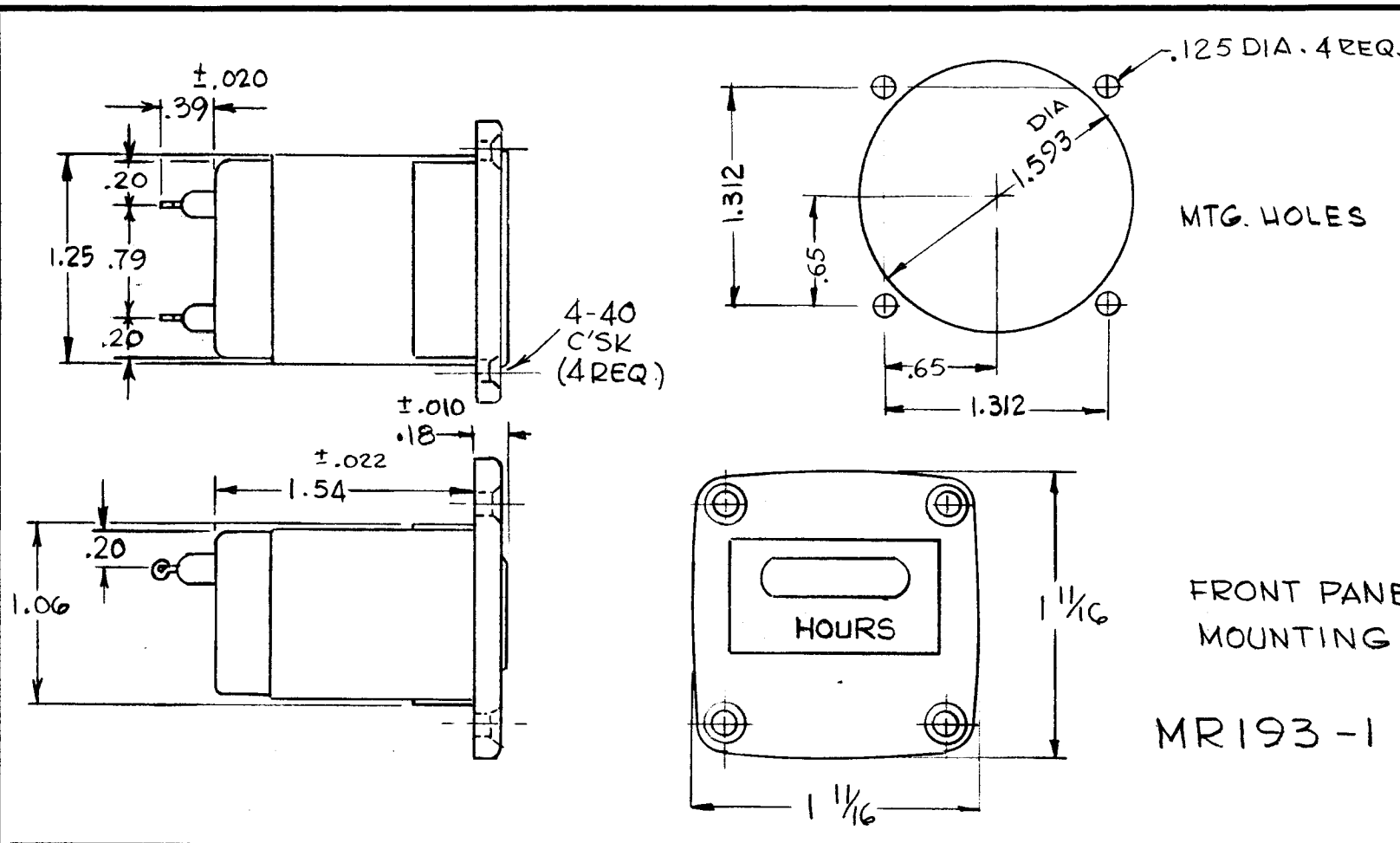
NOTES

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DECIMALS	FRACTIONS
.X ± .05	± 1/64
.XX ± .01	ANGLES
.XXX ± .005	± 0° 30'

ML 28 3/14/66

# STANDARD DRAWING



REVISIONS						
SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD	APPD
X1	TMC P/N MR193-2 DELETED. TOLERANCES & HARDWARE NOTE ADDED	8-25-65	X1	G.D.L	FRD	MM
Ø	ORIGINAL RELEASE FOR PROD.	10/21/65	Ø	HO	HO	
A	MFG. P/N CHGD. TO "G20H" - PICT. CHGD. ACCORDINGLY; ON SPECS. "2.5 W" WAS "3.0 W"; ADD. DIGITS & NOTE	2-21-66	15797	H.A.	OC	OC
B	PART NO ADDED, MOD. WAS TSTE 2.5K. 50 OR 60 CPS WAS 60 CPS	6-30-66	16471	MRJ	OC	OC

TMC PART No	MFG PART No.	USED ON MODEL	REQ'D
MR193-1	620 H FRONT	AP128	2

**SPECIFICATIONS**

TOTAL REGISTRATION: 9,999.9 HOURS STANDARD,  
 MOTOR RATING: 115 VOLTS, 2.5 WATTS MAX., 50 CPS OR 60 CPS  
 LIFE: 10,000 HOURS MINIMUM  
 WEIGHT: 4 OUNCES  
 HOUSINGS: HERMETICALLY SEALED, BLACK OXIDE FINISH, FRONT-PANEL MOUNTING. FRONT-PANEL MOUNTING MEETS MS28053 AND NEMA STANDARDS.

**MIL-M-7793B TESTS:**  
 HIGH ALTITUDE TO 60,000 FEET, OPERATING.  
 VIBRATION: 10 TO 55 CPS AT .06" DOUBLE AMPLITUDE, IN THREE MUTUALLY PERPENDICULAR DIRECTIONS.  
 SHOCK: 15G, 11 MILLISECONDS DURATION.  
 AMBIENT TEMPERATURE: FROM -55°C TO + 85°C

**HARDWARE SUPPLIED BY MANUFACTURER**  
 SCREW (4) 4-40 X 1/2" LONG PHILLIPS OVAL HEAD MACHINE SCREW, BRASS BLACK OXIDE.  
 HEX NUT (4) 4-40 X 1/4 X 5/64" THICK BRASS N.P.  
 LOCK WASHER (4) #4 SPLIT, STEEL

**DIGITS: TENTH - RED ON WHITE  
 HOURS - WHITE ON BLACK**

**NOTE: THE ONLY MARKING TO APPEAR ON FRONT BEZEL IS "HOURS"**

TMC PART NO TO BE IN THE FOLLOWING FORM:

MR193-1-50  
 BASIC TMC P/N 60 CPS  
 ADD ONLY WHEN 50 CPS IS REQUIRED.

REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
<b>LIST OF MATERIAL</b>				
MATERIAL			<b>THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK</b>	
FINISH			TITLE <b>METER, TIME ELAPSED</b>	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES			DRAWN G.D.L. DATE 8-18-65 CHECKED JCF DATE 8/27/65 ELECT. DES. AA DATE 11/9/66 MECH. DES. JC DATE 8/27/65	FINAL APPROVAL DATE 10/21/65 MR193 B
DECIMALS .X ± .05 .XX ± .01 .XXX ± .01 FRACTIONS ± 1/64 ANGLES ± 0° 30'			SHEET 10-21-65	REV. LTR.

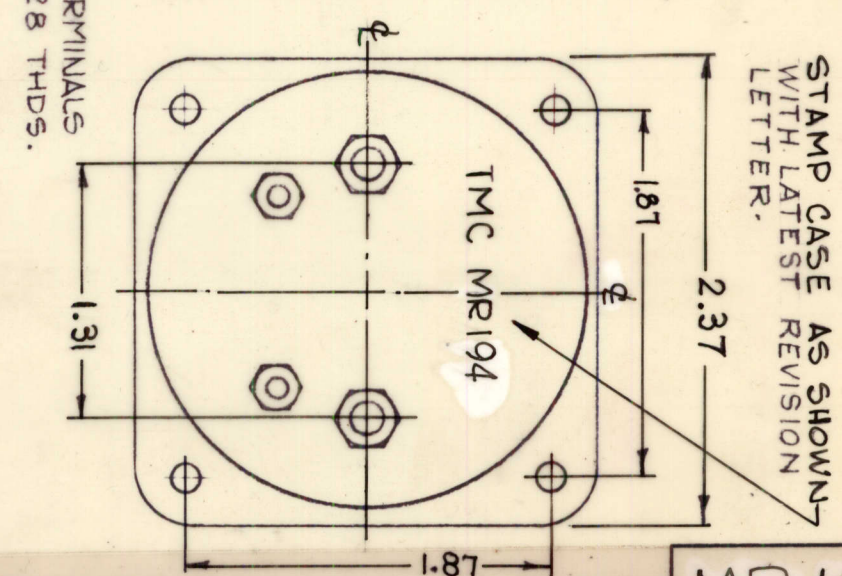
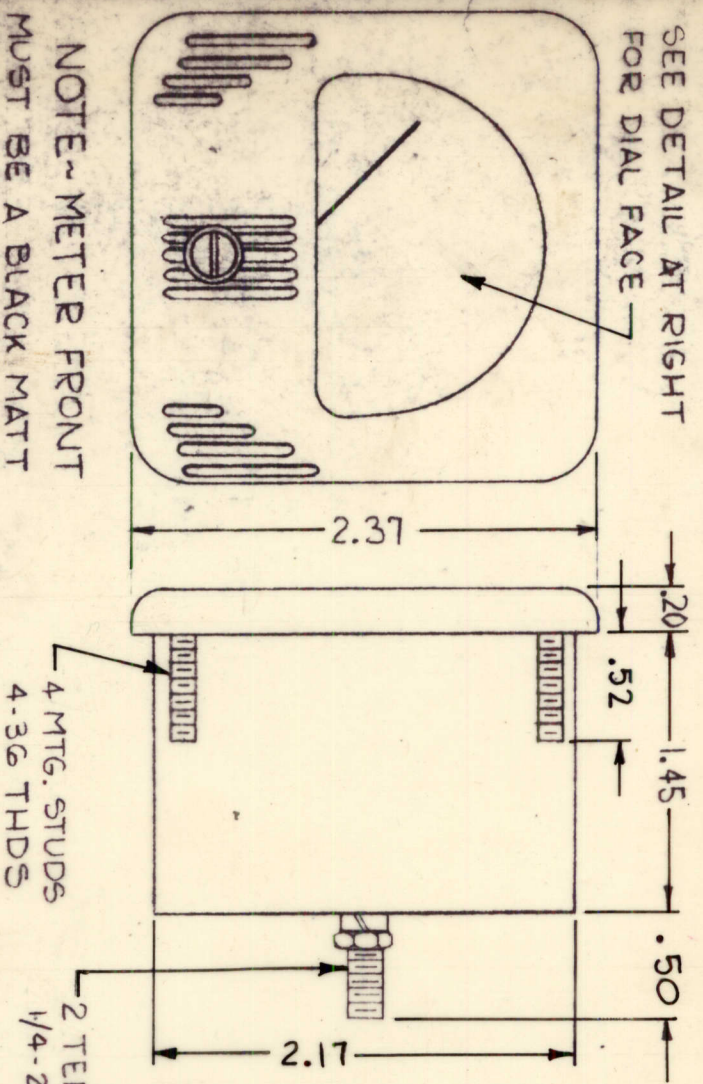
**NOTES**

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# ~ SPECIFICATIONS ~

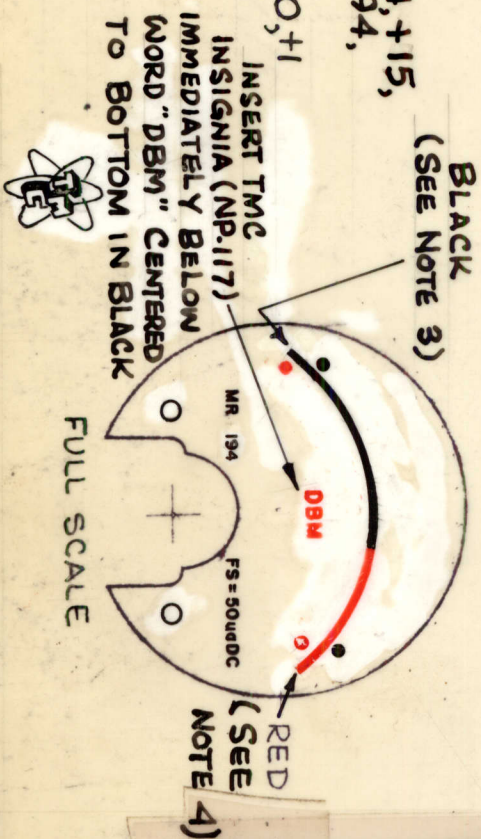
- 1- CASE ~ STANDARD SIMPSON N9127.
- 2- MOVEMENT - 50 u.a.
- 3- APPROX. RESISTANCE ~ 2000 Ω.
- 4- POINTER TYPE - KNIFE EDGE.
- 5- ALL NECESSARY MOUNTING & TERMINAL HARDWARE SUPPLIED BY MFG.



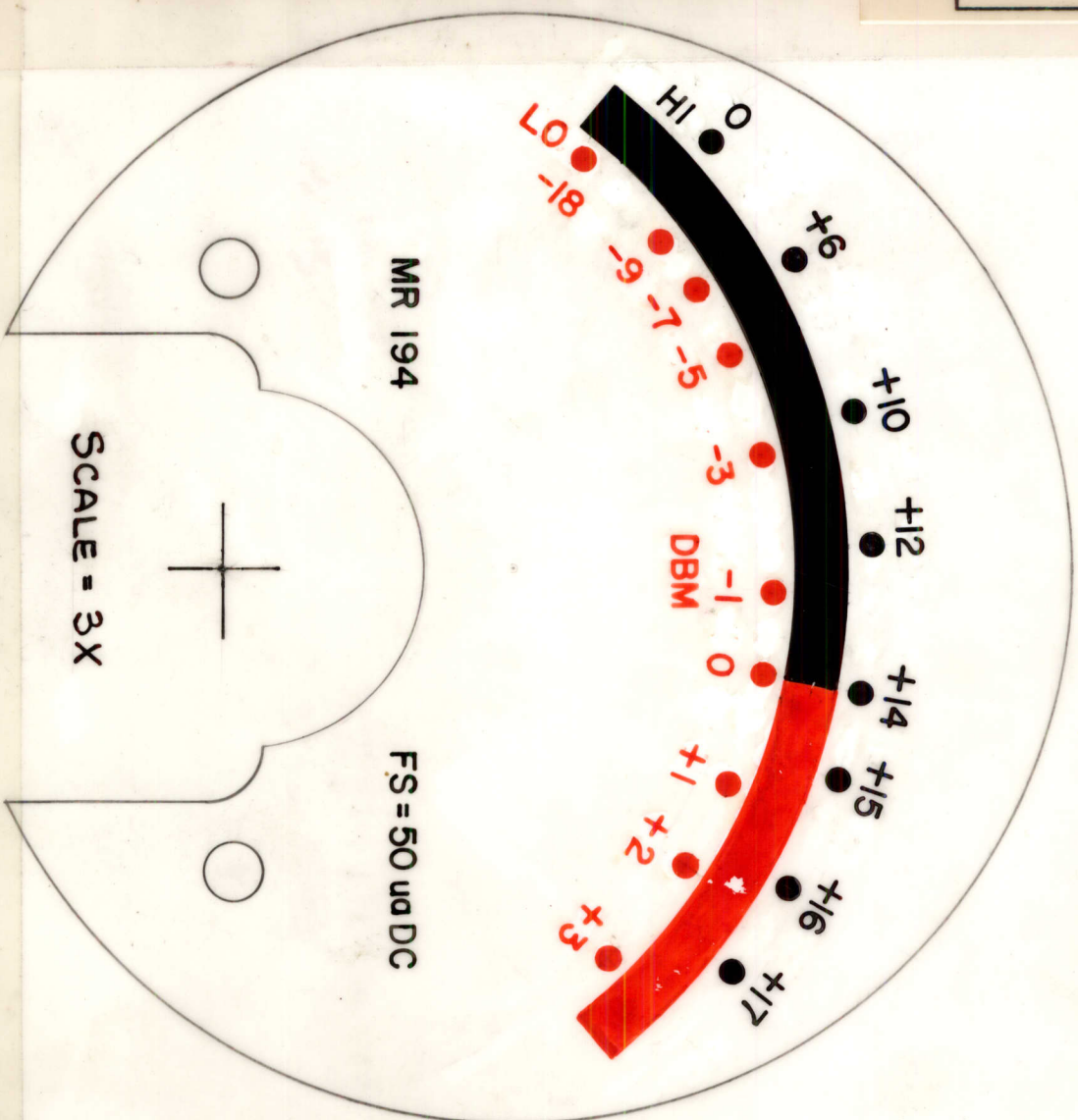
MR 194

NOTE ~ METER FRONT MUST BE A BLACK MATT FINISH, WITH LINE DESIGN AS SHOWN.

- NOTE:
1. "HI" 0, +6, +10, +12, +14, +15, +16, +17 & PERTAINING DOTS, MR194, FS=50 uADC TO BE BLACK.
  2. "LO", -18, -9, -7, -5, -3, -1, 0, +1 +2, +3, DBM & PERTAINING DOTS TO BE RED.
  3. SCALE BELOW "0" DBM IS BLACK.
  4. SCALE ABOVE "0" DBM IS RED.
  5. TMC IN SIGNIA IN BLACK (NP-117)
  6. BACKGROUND TO BE WHITE.



REVISIONS						
SYM	DESCRIPTION	DATE	EM.N. NO.	DRAFT	CHKD	APPD
X1	REVISED CALIBRATIONS ON SCALE	9.1.65	X1	HLA		
X2	IN NOTE & ON METER FACE "+13, +8, +4, -2, -4" DELETED	9/23/65	X2	HLA		
Ø	ORIGINAL RELEASE FOR PROD.	9/23	Ø	HLA		



THE ORIGINAL ARTWORK TO BE SUPPLIED BY TMC FOR THE PHOTOGRAPHING (SCALE 3:1)

REQD.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
	ZETENA		LIST OF MATERIAL	
			THE TECHNICAL MATERIEL CORP.	
			MAMARONECK, NEW YORK	
			METER, AF	

QTY/UNIT	MODEL USED ON	ASBY. NO.
SCALE	CODE	
VLRE-1		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	DECIMALS X ± .05 XX ± .01 XXX ± .005	TOLERANCES	REACTIONS ± 1/44 MINUS ± 0° 20'
DATE	DATE	DATE	DATE
8-11-65	8/11/65	9-30-65	9/24/65
DRW. APPROVAL	DATE	DATE	DATE
H. Austin	8/11/65	9-30-65	9/24/65
MR194			

NOTES

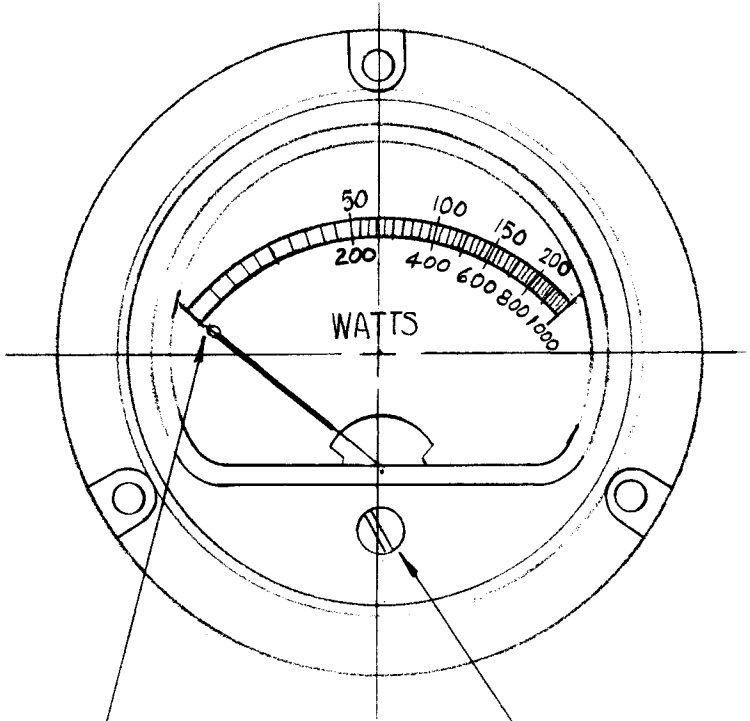
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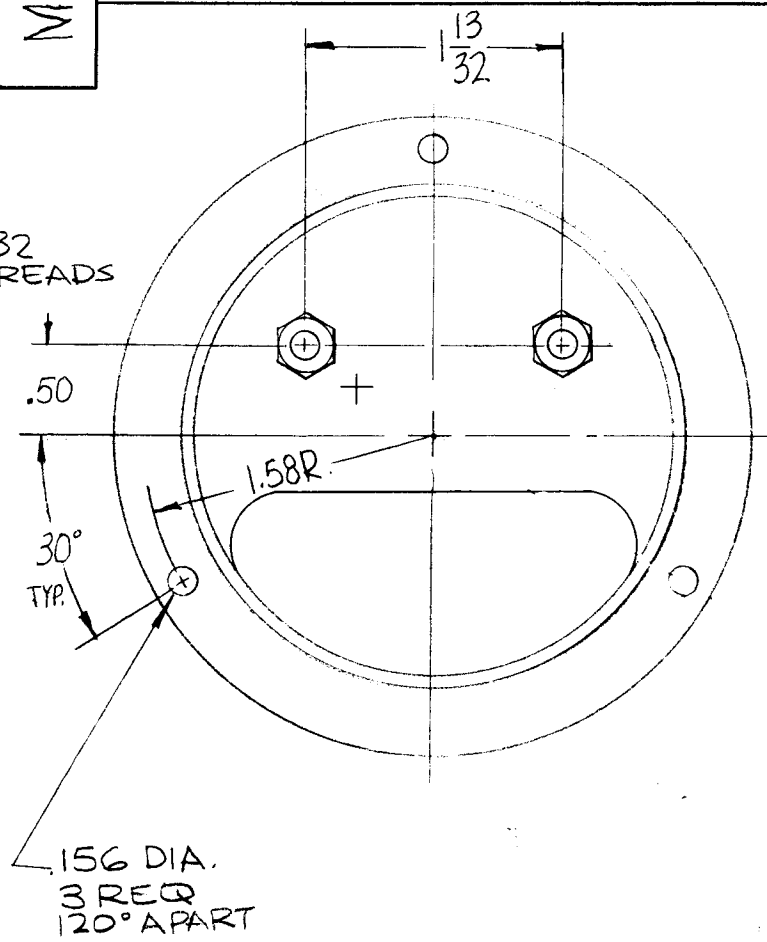
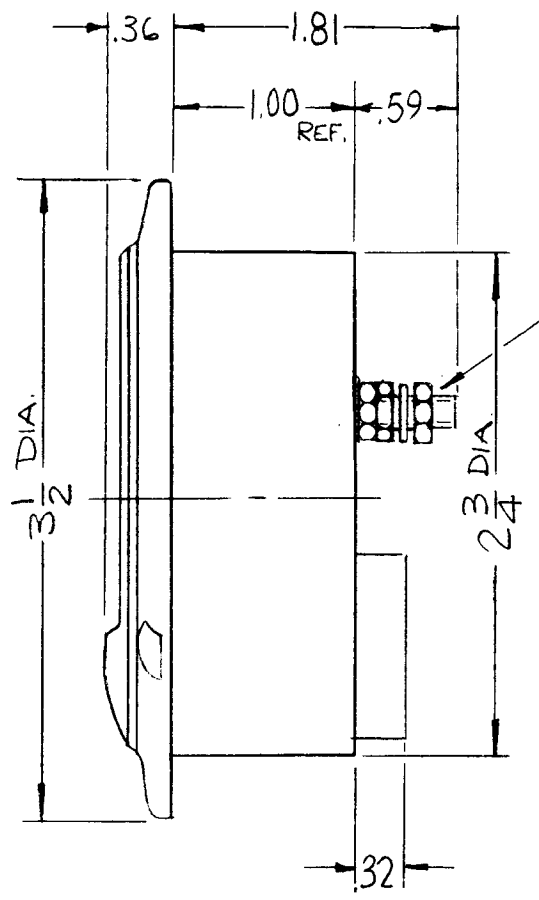
MR197

REVISIONS

SYM	DESCRIPTION	DATE	E.M.N. NO.	DRAFT	CHKD	APPD
X	EXP. RELEASE	12-22-66				
Ø	ORIGINAL RELEASE FOR PRODUCTION	1-30-67		L.A.K.		
A	SCALE WAS 0-25 & 0-100	4-14-67	18110	L.A.K.		



KNIFE EDGE, BACK POINTER.  
ZERO ADJUST



SPECIFICATIONS

TYPE: DC  
 METER MOVEMENT: PIVOT & JEWEL  
 DESCRIPTION: DC EXTERNAL MAGNET  
 CASE: 3-1/2 DIA BAKELITE  
 RANGE: 30 MICROAMPS  
 INTERNAL RESISTANCE: 1400 OHMS ±5% @25°C  
 POINTER: KNIFE EDGE ALL BLACK  
 TERMINALS: #8-32 SCREW TERM (2)

NOTES:

**BALANCE**  
 REQUIREMENT AT ZERO MARK ±1% (EQUIVALENT TO 1/4 OF FIRST DIVISION AT ZERO MARK)

**ACCURACY**  
 ±2% OF F.S.

REPEATABILITY TO BE ±1%

SCALE MUST BE 100 DEGREES

REQ'D.	ITEM	PART NUMBER	DESCRIPTION	SYMBOL
F. BUDETTI LIST OF MATERIAL				
MATERIAL			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
FINISH			TITLE METER,	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES			DRAWN <i>[Signature]</i> DATE 12-22-66	FINAL APPROVAL <i>[Signature]</i> DATE 1/30/67
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005			TOLERANCES ± 1/64 ANGLES ± 0° 30'	ELECT. DES. <i>[Signature]</i> DATE 1-23-67
THE CONTENTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE TECHNICAL MATERIEL CORP. ITS UNAUTHORIZED USE OR REPRODUCTION IN WHOLE OR IN PART IS STRICTLY FORBIDDEN.			MECH. DES. <i>[Signature]</i> DATE 1-23-67	MR197 SHEET
				A REV. LTR.

NOTES

1	SWRA-1K	
Q'TY./UNIT	MODEL USED ON	ASS'Y. NO.
—	CODE C S401-16A (208002)	