

TECHNICAL SPECIFICATION

Standards : IEC 51, BS 89, DIN 43780, VDE 0410.

Enclosure : * ABS & Polycarbonate.
 * Base material UL 94VL,
 * Case & Terminal protection material UL 94VO.
 * The scale division marking DIN 43802. (see drawing of scales, Direct, F1, F2, F3 & F5).

Accuracy : Class 1.5 ($\pm 1.5\%$ max, error)

Overload : Current - $1.2 \times I_n$ or U_n for 2 hours.
 $10 \times I_n$ or U_n for 5 seconds.
 Voltage - $1.2 \times I_n$ or U_n for 2 hours.
 $2 \times I_n$ or U_n for 5 seconds.

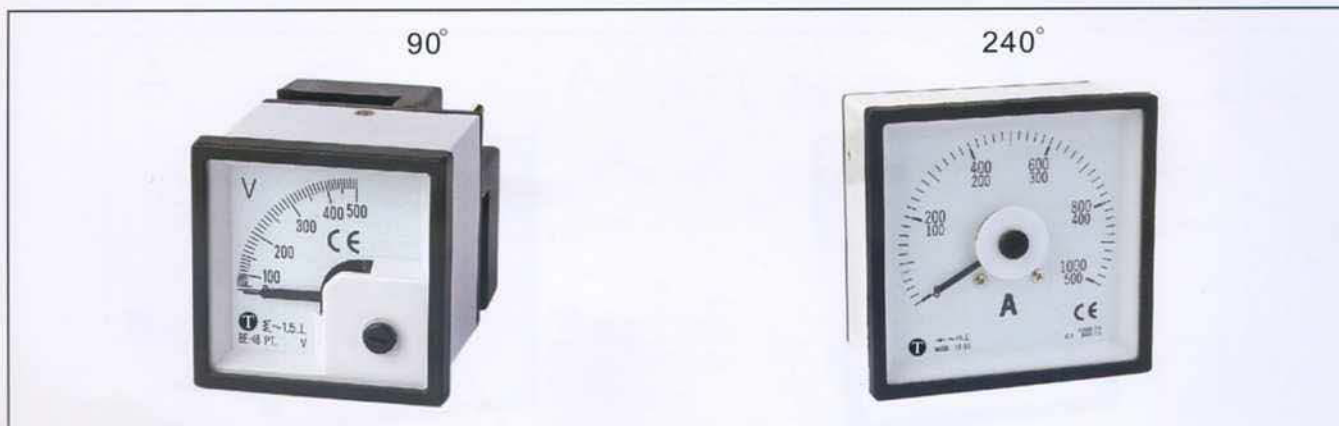
Insulation Test : 2KV 50HZ/60HZ for 1 minute.

Temperature : Working temperature between -25°C and $+50^\circ\text{C}$
 (calibrated at 23°C)

SIGNS OF THE INSTRUMENT TECHNICAL CHARACTERISTICS

SIGN	DESCRIPTION	SIGN	DESCRIPTION
	Electronic device in a measure circuit		D.C. circuit.
	Rectifier		A.C. circuit.
	Shunt		D.C. and/or A.C. circuit.
	Additional/ resistor		Testing voltage higher than 500 V (for example 2kV)
	Zero setting device		Instrument to be used with vertical scale
	General accessories		Moving coil for D.C. Instruments
	Ground terminal		Moving Iron for A.C. Instruments
	Positive terminal		Bimetal instrument
	Negative terminal		Vibrating reeds instrument

DIN PANEL METERS (For A.C.)



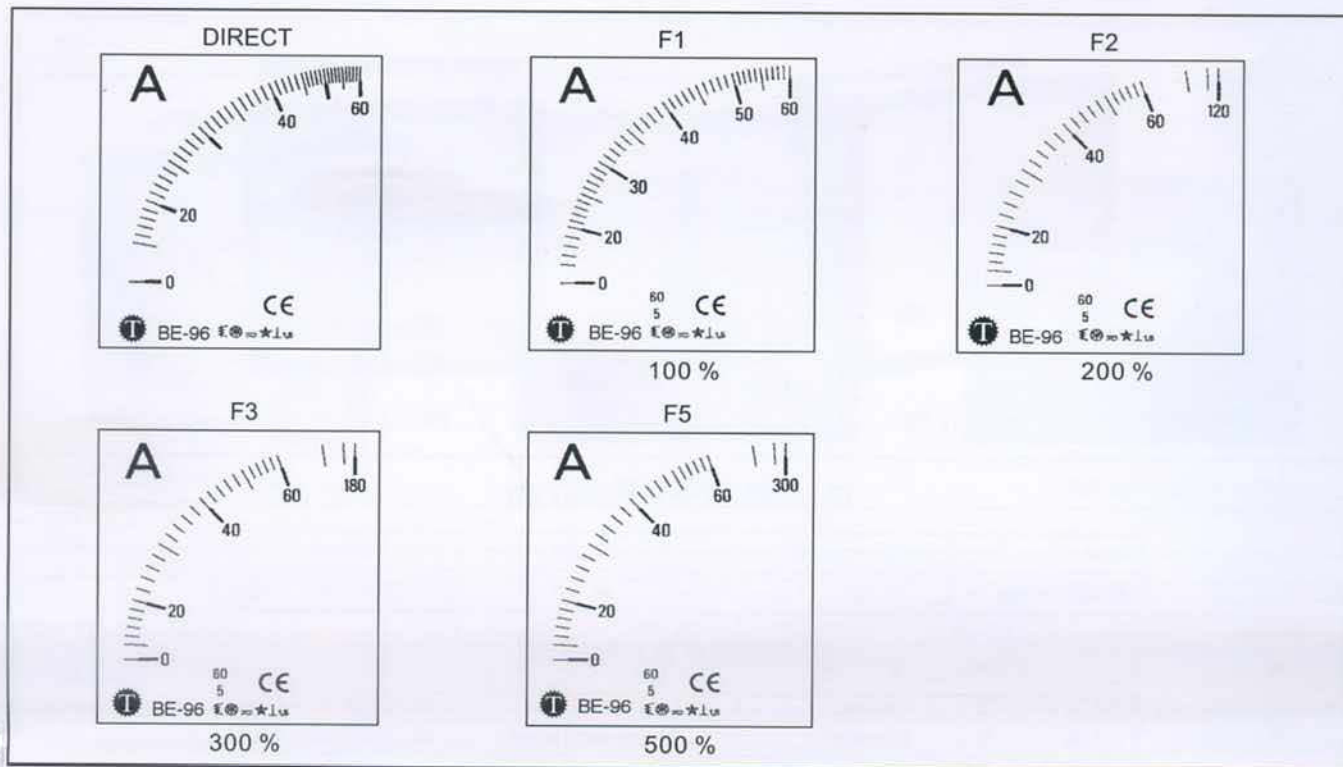
AMMETERS																
Type	BE-48				BE-72				BE-96				BE-144			
Size	48×48mm				72×72mm				96×96mm				144×144mm			
	DIRECT		CT /1A or /5A		DIRECT		CT /1A or /5A		DIRECT		CT /1A or /5A		DIRECT		CT /1A or /5A	
	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2
1A					●○	●					●○	●				
5A	●	●	●	●	●○	●	●○	●	●○	●	●○	●	●	●	●	●
10A	●	●	●	●	●○	●	●○	●	●○	●	●○	●	●	●	●	●
15A	●	●	●	●	●○	●	●○	●	●○	●	●○	●	●	●	●	●
20A	●	●	●	●	●○	●	●○	●	●○	●	●○	●	●	●	●	●
25A	●	●	●	●	●○	●	●○	●	●○	●	●○	●	●	●	●	●
30A	●	●	●	●	●○	●	●○	●	●○	●	●○	●	●	●	●	●
40A	●	●	●	●	●○	●	●○	●	●○	●	●○	●	●	●	●	●
50A			●	●	●○	●	●○	●	●○	●	●○	●	●	●	●	●
60A			●	●	●○	●	●○	●	●○	●	●○	●	●	●	●	●
75A			●	●			●○	●	●○	●	●○	●	●	●	●	●
100A			●	●			●○	●	●○	●	●○	●	●	●	●	●
120A			●	●			●○				●○	●			●	●
150A			●	●			●○	●			●○	●			●	●
200A			●	●			●○	●			●○	●			●	●
250A			●	●			●○	●			●○	●			●	●
300A			●	●			●○	●			●○	●			●	●
400A			●	●			●○	●			●○	●			●	●
500A			●	●			●○	●			●○	●			●	●
600A			●	●			●○	●			●○	●			●	●
800A			●	●			●○	●			●○	●			●	●
1000A			●	●			●○	●			●○	●			●	●
1200A							●○	●			●○	●				
1250A							●○	●			●○	●			●	●
1500A							●○	●			●○	●			●	●
2000A							●○	●			●○	●			●	●
2500A							●○	●			●○	●			●	●
3000A							●○	●			●○	●			●	●
VOLTMERS																
Type	BE-48				BE-72				BE-96				BE-144			
100V	●				●○				●○				●			
300V	●				●○				●○				●			
500V	●				●○				●○				●			
600V					●○				●○				●			
●	90°				1. Interchangeable dials											
○	240°				1. Interchangeable dials				2. Fixed dials							

DIN PANEL METERS (For D.C.)



AMMETERS								
Type	BE-48		BE-72		BE-96		BE-144	
Size	48×48mm		72×72mm		96×96mm		144×144mm	
	50,60,75 mV	0 central 50,60,75mV	50,60,75 mV	0 central 50,60,75 mV	50,60,75 mV	0 central 50,60,75 mV	50,60,75 mV	0 central 50,60,75 mV
10A	●	●	●○	●○	●○	●○	●	●
15A	●	●	●○	●○	●○	●○	●	●
20A	●	●	●○	●○	●○	●○	●	●
25A	●	●	●○	●○	●○	●○	●	●
30A	●	●	●○	●○	●○	●○	●	●
40A	●	●	●○	●○	●○	●○	●	●
50A	●	●	●○	●○	●○	●○	●	●
60A	●	●	●○	●○	●○	●○	●	●
80A	●	●	●○	●○	●○	●○	●	●
100A	●	●	●○	●○	●○	●○	●	●
150A	●	●	●○	●○	●○	●○	●	●
200A	●	●	●○	●○	●○	●○	●	●
300A~	●	●	●○	●○	●○	●○	●	●
VOLTMETERS								
Type	BE-48		BE-72		BE-96		BE-144	
Size	48×48mm		72×72mm		96×96mm		144×144mm	
DIRECT		0 central		0 central		0 central		0 central
60mV	●	●	●○	●○	●○	●○	●	●
10V	●	●	●○	●○	●○	●○	●	●
20V	●	●	●○	●○	●○	●○	●	●
40V	●	●	●○	●○	●○	●○	●	●
100V	●	●	●○	●○	●○	●○	●	●
150V	●	●	●○	●○	●○	●○	●	●
200V	●	●	●○	●○	●○	●○	●	●
300V	●	●	●○	●○	●○	●○	●	●
400V	●	●	●○	●○	●○	●○	●	●
500V	●	●	●○	●○	●○	●○	●	●
●	90°		1. Interchangeable dials					
○	240°		1. Interchangeable dials		2. Fixed dials			

DRAWING OF DIALS



DIRECT		F1 (A)	F2 (A)	F3 (A)
1	1/2	1	1/2	1/3
5	5/10	5	5/10	5/15
10	10/20	10	10/20	10/30
15	15/30	15	15/30	15/45
20	20/40	20	20/40	20/60
25	25/50	25	25/50	25/75
30	30/60	30	30/60	30/90
40	40/80	40	40/80	40/120
50	50/100	50	50/100	50/150
60	60/120	60	60/120	60/180
80	80/160	80	80/160	80/240
100	100/200	100	100/200	100/300
		120	120/240	120/360
		150	150/300	150/450
		200	200/400	200/600
		250	250/500	250/750
		300	300/600	300/900
		400	400/800	400/1200
		500	500/1000	500/1500
		600	600/1200	600/1800
		800	800/1600	800/2400
		1000	1000/2000	1000/3000
		1250	1250/2500	1250/3750
		1500	1500/3000	1500/4500
		2000	2000/4000	2000/6000
		2500	2500/5000	2500/7500
		3000	3000/6000	3000/9000

REEDS/POINTER, FREQUENCY METERS



BE-48/72/96



BE-72/96

IF SERIES BY POINTER

Type	Frequency Hz	Range	Voltage
BE48/72/96/144	50/60	45~65	110V-220V-380V $\pm 15\%$

IF SERIES BY REEDS

BE-72	7 reeds	1 cycle each reed	47~53Hz 57~63Hz
BE-96	11 reeds	1 cycle each reed	45~55Hz 55~65Hz

MAXIMUM DEMAND, BIMETALLIC PANEL METER



MD-96 (2pointers)



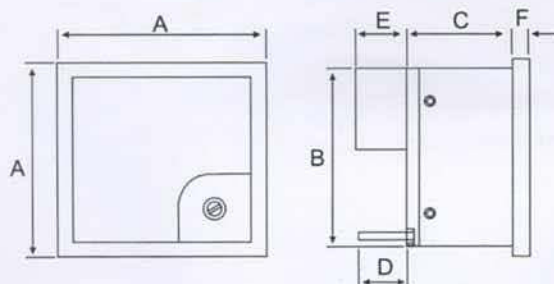
MDI-96 (3pointers)

Bimetallic (Maximum Demand) Panel Meter are designed for testing thermal load If transformers, cables, electrical machines, etc. They can indicate average rms current value in a setting period of 15 minutes.

IF SERIES BY POINTER

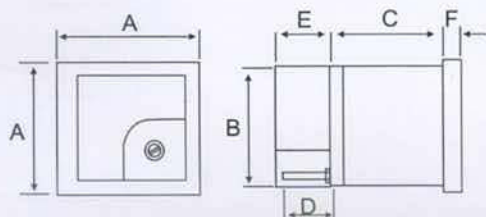
 BIMETALLIC (MAXIMUM DEMAND) AMMETES		
Type	DELAY TIME	ON C.T. RATIO / 5A
BE-96 BE-72	15 minutes	10A, 15A, 25A, 40A, 60A, 100A, 150A, 250A, 400A, 600A, 1000A~

OVERALL DIMENSIONS



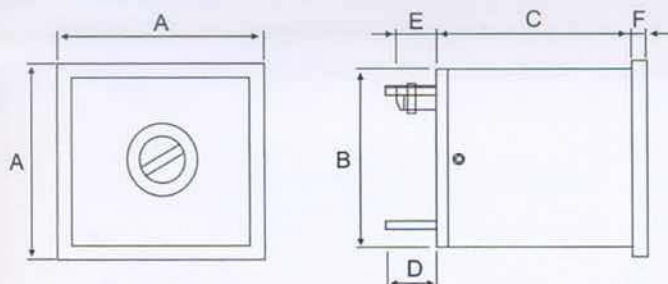
Size	A	B	C	D	E	F	Hole
BE-48	48	44	39	17	20	5.5	46×46
BE-144	144	136	144	17	20	7	140×140

mm



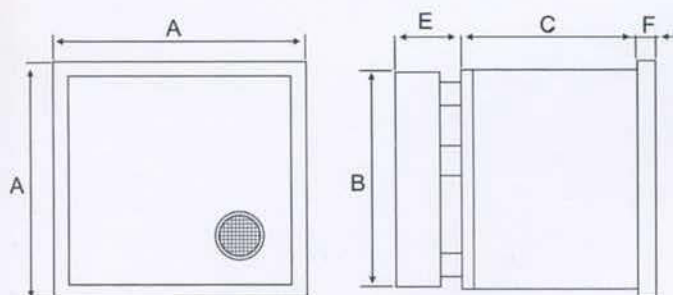
Size	A	B	C	D	E	F	Hole
BE-72	72	66	36.5	17	17.5	5.5	68×68
BE-96	96	90	45	17	17.5	6	92×92

mm



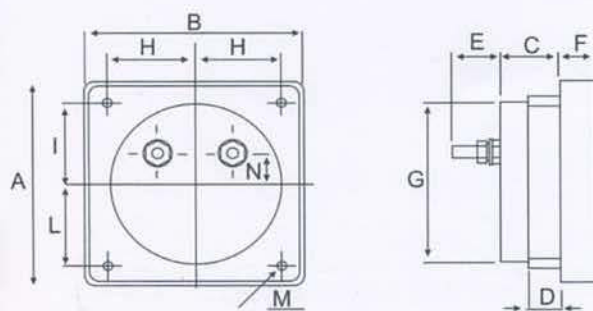
Size	A	B	C	D	E	F	Hole
BE-72	73	66	68	17	13	6.5	68×68
BE-96L	96.5	90	45	17	13	6	92×92

mm



Size	A	B	C	E	F	Hole
BE-96B	96	90	68	24	8	92×92

mm



Size	A	B	C	D	E	F	G	H	I	L	M	N	For Hole
BP-50S	50	52	23.5	13.5	4.4	12.5	45	19	19	19	3.5	15	46
BP-60	60	60	24	11	9.5	11	52	24	24	24	3.5	4	53
BP-65	67	67	24	11	10	13	52.5	25.5	25.5	25.5	3.5	4	53.5
BP-670	60	70	25.5	13	10	11	52.5	24	24	24	3.5	5	53
BP-80	81	81	22	12	18.5	13.5	63.5	32.5	32.5	32.5	3.5	12	65
BP-100S	80	100	25	13.5	11	14	64	41.5	36.5	27.5	3.5	4	65

mm

CURRENT TRANSFORMERS FOR AMMETERS. (LOW VOLTAGE)



MFO-30



MFO-40



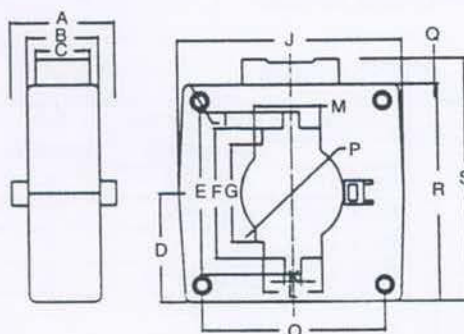
MFO-60



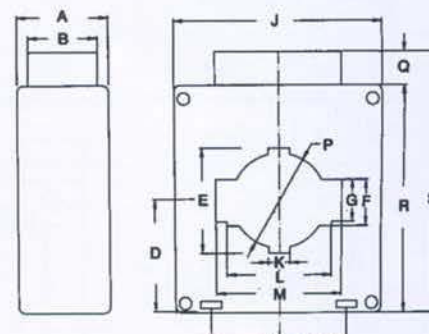
MFO-100

MOTD	MFO-30		MFO-40		MFO-60		MFO-100	
RATIO	POWER	CLASS	POWER	CLASS	POWER	CLASS	POWER	CLASS
50/5A	2VA*	1A						
60/5A	2VA*	1A						
75/5A	2,5VA*	1A						
100/5A	2,5VA*	1A						
125/5A	2,5VA*	1A						
150/5A	3VA*	1A						
200/5A	5VA	1	3VA*	1A				
250/5A	5VA	1	3VA*	1A				
300/5A	5VA	1	5VA	1				
400/5A	5VA	1	5VA	1				
500/5A	5VA	1	5VA	1	7,5VA	1		
600/5A					7,5VA	1		
700/5A					7,5VA	1		
750/5A					7,5VA	1		
800/5A					7,5VA	1		
1000/5A					7,5VA	1	10VA	1
1200/5A					10VA	1	10VA	1
1500/5A					10VA	1	10VA	1
2000/5A							10VA	1
2500/5A							10VA	1
3000/5A							10VA	1

MFO-100



MFO-30~MFO-60



ITEM NO.	PRIMARY / SECONDARY (A)	WINDOW DIMENSION	PCOAD (VA)	ACCURACY CLASS	RATED VOLTAGE
MFO-30	30/5A-500/5A	30X10mm	2.5	1.0	600V
MFO-40	30/5A-500/5A	40X10mm	5	1.0	600V
MFO-60	400/5A-800/5A	60X20mm	10	1.0	600V
MFO-100	800/5A-3000/5A	100X10mm	15	1.0	600V