Electronic Phase-meters

Analogue indicator to measure cos φ

Description

- Does not need an auxiliary power supply
- DIN box with dimensions 96 and 144 mm
- Class 1.5
- Built-in electronic converter
- Balanced single and three-phase circuits

Application

Measurement of cos φ in balanced or unbalanced single and three-phase circuits.

Features

	FEM / FETC	FMZ / FTZ
Voltage circuit		
Consumption	1 V·A	4 V·A
Frequency	40 ... 70 Hz	
Overloads	1.2 U_n permanent 2 U_n during 5 s	
Current circuit		
Nominal current	... 5 A	
Consumption	1.5 V·A	0.75 V·A
Frequency	20 ... 100 Hz	
Overloads	1.2 I_n permanent 5 I_n during 30 s 10 I_n during 5 s 40 I_n during 1 s	
Accuracy	± 1.5 % FS	
Ambient conditions		
Operating temperature	+10 ... +30 ºC	
Limit temperature	- 25 ... +40 ºC	
Altitude	2000 m	
Build features		
Dimensions	See the following table	
Weight	See the following table	
Type of box	panel	
Degree of protection:		
Front panel	IP 52	
Terminals	IP 00	
Insulation voltage	2 kV, during 1 min, between the mechanism and the box	
Standards	**BS 89, EN 60051, IEC 144, UL 94, DIN 43780, IEC 51, UNE 21318**	

Electronic phase-meters

Analogue indicator to measure cos φ

References

Single-phase phase-meters 90º

	FEMC 96	FEMC 144
Class	1,5	
Scale	90º P1 (Simple profile)	
Dimensions (mm)		
a **b** **c**	96 96 62,9	144 144 71,8
Weight (g)	480	690
V	cos φ 0.5-1-0.5	
100/√3	**M13431**	**M13441**
110/√3	**M13432**	**M13442**
100	**M13433**	**M13443**
110	**M13434**	**M13444**
230	**M13435**	**M13445**
400	**M13436**	**M13446**
440	**M13437**	**M13447**
500	**M13438**	**M13448**

Single-phase phase-meters 240º

	FMZ 96	FMZ 144
Class	1,5	
Scale	240º P1 (Simple profile)	
Dimensions (mm)		
a **b** **c**	96 96 101,2	144 144 71,8
Weight (g)	500	710
V	cos φ 0.5-1-0.5	
100/√3	**M13531**	**M13541**
110/√3	**M13532**	**M13542**
100	**M13533**	**M13543**
110	**M13535**	**M13545**
230	**M13535**	**M13545**
400	**M13536**	**M13546**
440	**M13537**	**M13547**
500	**M13538**	**M13548**

Three-phase phase-meters 90º

	FETC 96	FETC 144
Class	1,5	
Scale	90º P1 (Simple profile)	
Dimensions (mm)		
a **b** **c**	96 96 62,9	144 144 71,8
Weight (g)	480	690
V	cos φ 0.5-1-0.5	
100/√3	-	-
110/√3	-	-
100	**M1343C**	**M1344C**
110	**M1343D**	**M1344D**
230	**M1343E**	**M1344E**
400	**M1343F**	**M1344F**
440	**M1343G**	**M1344G**
500	**M1343H**	**M1344H**

Three-phase phase-meters 240º

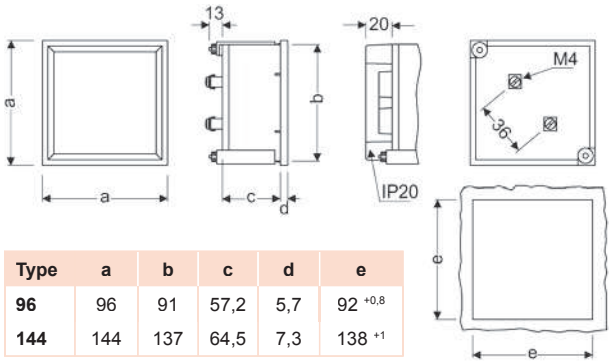
	FEMC 96	FEMC 144
Class	1,5	
Scale	240º P1 (Simple profile)	
Dimensions (mm)		
a **b** **c**	96 96 62,9	144 144 71,8
Weight (g)	480	690
V	cos φ 0.5-1-0.5	
100/√3	**M13431**	**M13441**
110/√3	**M13432**	**M13442**
100	**M13433**	**M13443**
110	**M13434**	**M13444**
230	**M13435**	**M13445**
400	**M13436**	**M13446**
440	**M13437**	**M13447**
500	**M13438**	**M13448**

Electronic phase-meters

Analogue indicator to measure cos φ

Dimensions

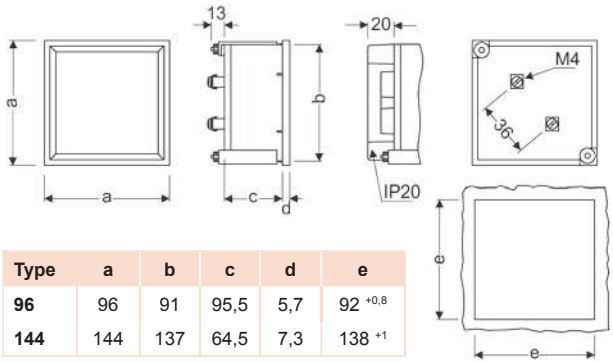
FEMC / FETC



Type	a	b	c	d	e
96	96	91	57,2	5,7	92 $^{+0,8}$
144	144	137	64,5	7,3	138 $^{+1}$

Dimensions (mm)

FMZ / FTZ

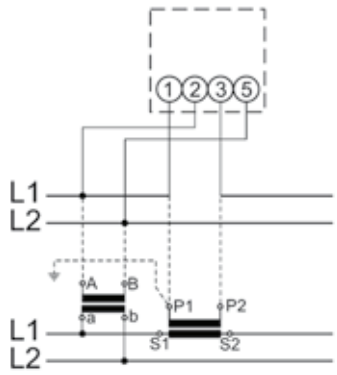


Type	a	b	c	d	e
96	96	91	95,5	5,7	92 $^{+0,8}$
144	144	137	64,5	7,3	138 $^{+1}$

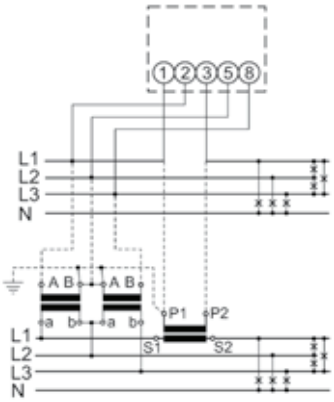
Dimensions (mm)

Connections

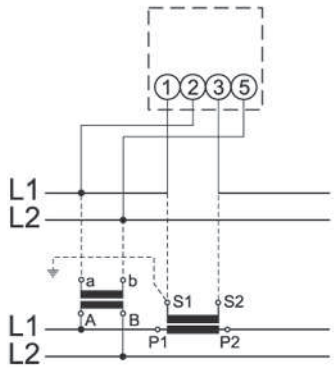
FEMC



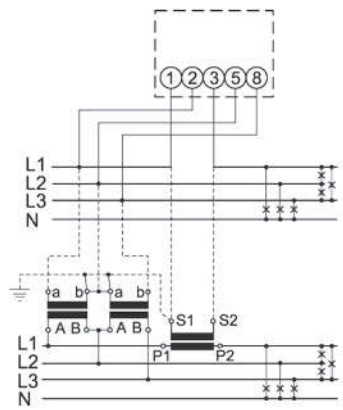
FETC



FMZ



FTZ



Coding table

Electronic phase-meters	M	1	X	X	X	X	0	0	X	X
	Code						Internal Code		↑	↑
	Secondary current			Standard .../ 5 A					0	
				... / 1 A					1	
	Frequency			Standard (50 Hz)						0
				60 Hz						1