

Moving iron voltmeters (AC)

# Moving iron voltmeter

Analogue indicator to measure alternating current



### Description

- No need for auxiliary power supply, only the CEC 96 type
- DIN boxes with dimensions: 48, 72, 96 and 144
- Precision class according to type
- Measurement in true root mean square or V ... 600 V ac
- Exchangeable scales for EC48, EC72, EC96, EM 45
- The alarm system can be fully configured for CEC 96

### Application

In alternating current applications, to control the state of the voltage quickly and visually.

### Features

	EC	EM	EZC	EC F	EC FN	CEC 96
Auxiliary power supply						230 V ac
Consumption		-				2.5 V-A
Frequency		-				40 ... 90 Hz
<b>Input circuit</b>						
Consumption		1 ... 4 V-A				0.2 V-A
Frequency		20 ... 100 Hz				45 ... 65 Hz
Overloads		1.5 U <sub>n</sub> permanent 2 U <sub>n</sub> during 5 s				1.2 U <sub>n</sub> permanent
<b>Class</b>	1.5 % FS	5 % FS				1.5 % FS
<b>Ambient conditions</b>						
Operating temperature		+10 ... +30 °C				+ 5 ... +55 °C
Limit temperature		- 25 ... +40 °C				-25 ... +70 °C
Altitude					2000 m	
<b>Build features</b>						
Dimensions						See the following table
Weight						See the following table
<b>Type of box</b>	panel	DIN rail	panel	panel	panel	panel
Degree of protection:						
Front panel		IP 52				IP 52
terminals		IP 00				IP 20
Insulation voltage		2 kV, 50 Hz, 1 min, between the mechanism and the box				3 kV , 50 Hz, 1min
<b>Standards</b>	BS 89, EN 60051, IEC 144, UL 94, DIN 43780, IEC 51, UNE 21318, CE					IEC 51, IEC 1010, IEC 529, IEC 255, IEC 278, IEC 414, IEC 144, LLOYD'S (TEST. ESP. No. 1)

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**References**
**Voltmeters 90°, 240° and with 2 relays**

Voltmeters, 90°					Voltmeters, 240°			Voltmeters with 2 relays	
Type	EC 48	EC 72	EC 96	EC 144	EM 45	EZC 72	EZC 96	CEC 96	
Class	1,5					5		1,5	
Scale	90° , P1					240°, P1		90°, P1	
Dimensions (mm)									
	a	48	72	96	144	85	72	96	96
	b	48	72	96	144	52	72	96	96
	c	66,2	49,2	49,2	71,8	65	49,2	49,2	85,3
Weight (g)	85	180	220	430	142	180	220	435	
<b>V</b>									
150	-	-	-	-	-	-	-	M14821	
250	M10415	M10425	M10435	M10445	-	M11125	M11135	M14822	
300	M10416	M10426	M10436	M10446	M10456	-	-	M14823	
400	M10417	M10427	M10437	M10447	-	-	-	M14824	
500	M10418	M10428	M10438	M10448	M10458	M11128	M11138	M14825	
600	M10419	M10429	M10439	M10449	-	-	-	M14826	
.../110 V(*)	M10410	M10420	M10430	M10440	M10450	-	-	M14820	

**\* EC48 / EC 72 / EC96 / EC144 EM45:**

\*Scale not included, except in EC144 (equipment + scale included, indicate the transformer ratio)

\*For exchangeable scales, see Tables.

\*Different secondary voltages, on demand

\*1P or 1.2P setting, on demand

**\* EZC 72 / EZC96**

\*Scale included, indicate the transformer ratio

\*Different secondary voltages, on demand

\*1P setting, on demand

**\* CEC 96:**

Scale included, indicate the transformer ratio

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References



### Voltmeters with phase switch

Type	Three-phase (3 wires)		Three-phase (4 wires)		With sequence-meter	
	EC 72 F III	EC 96 F III	EC 72 FIII +N	EC 96 F III *N	EC 96 FN-S	
Class	1,5					
Scale	90°, P1					
Dimensions (mm)						
	a	72	96	72	96	96
	b	72	96	72	96	96
	c	49,2	49,2	49,2	49,2	49,2
Weight (g)	180	220	180	220	220	
<b>V</b>						
250	M10625	M10635	M10725	M10735	-	
300	M10626	M10636	M10726	M10736	-	
400	M10627	M10637	M10727	M10737	-	
500	M10628	M10638	M10728	M10738	M11038	
600	M10629	M10639	M10729	M10739	-	

\* Voltage inputs through transformers, on demand

### Exchangeable scales, Moving Iron Voltmeters

Type	SEC 48	SEC 72	SEC 96	SEM 45
Equipment	EC 48	EC 72	EC 96	EM 45
<b>V</b>				
1 000/110	M104Z1	M104Y1	M104X1	M104V1
3 300/110	M104Z2	M104Y2	M104X2	M104V2
6 600/110	M104Z3	M104Y3	M104X3	M104V3
13 200/110	M104Z4	M104Y4	M104X4	M104V4
15 000/110	M104Z5	M104Y5	M104X5	M104V5
20 000/110	M104Z6	M104Y6	M104X6	M104V6
22 000/110	M104Z7	M104Y7	M104X7	M104V7
25 000/110	M104Z8	M104Y8	M104X8	M104V8

\* If the input of the unit requested is not .../110 V, indicate the ratio

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**Coding table**
**CODIFICATION TABLE**
**EC Voltmeters with external transformer and EZC**

Code		Internal code									
M	1	X	X	X	0	0	X	X	X	Delivery time	+ €
Adjustment		Standard 1,2P		0						-	-
		1P		1						2	5,89
Voltage input		Standard (.../110 V)		0						-	-
		... / 100 V		1						1	-
		... / 63,5 V		2						1	-
		... / 57,8 V		3						1	-
					1000				1	2	2,00
					3300				2	2	2,00
Scales (For equipments with external transformer and all EC)					6600				3	2	2,00
					13200				4	2	2,00
					15000				5	2	2,00
					20000				6	2	2,00
					22000				7	2	2,00
					25000				8	2	2,00

(\*) Price 0 € for EC 144 and EZC

**EC scales and EM Voltmeters and scales**

Code		Internal code									
M	1	X	X	X	0	0	X	X	Delivery time	+ €	
Adjustment		Standard 1,2P		0						-	-
		1P		1						2	5,89(*)
Voltage inputs		Standard (.../110 V)		0						-	-
		... / 100 V		1						1	-
		... / 63,5 V		2						1	-
		... / 57,8 V		3						1	-

(\*) Price for equipment. Price 0 € for scales

**EC and EC-F direct Voltmeters**

Code		Internal code								
M	1	X	X	X	0	0	X	Delivery time	+ €	
Adjustment		Standard 1P		0					-	-
		1,2P		2					2	5,89

**CEC Voltmeters**

Code		Internal code										
M	1	6	5	2	X	0	0	X	X	X	Delivery time	+ €
Voltage input		.../110 V		0								
		... / 100 V		1								
		... / 63,5 V		3								
					1000				9		2	2,00
					3300				A		2	2,00
Scales (For equipments with external transformer and all EC)					6600				D		2	2,00
					13200				H		2	2,00
					15000				J		2	2,00
					20000				L		2	2,00
					22000				N		2	2,00
					25000				O		2	2,00
Scale + Relay		1 P (max+min)							1			
		1,2 P (max+min)							2			
		2 P (max+min)							3			
Supply		230 V <sub>ac</sub>									4	
		400 V <sub>ac</sub>									6	
		110 V <sub>ac</sub>									M	

Consult for others configurations

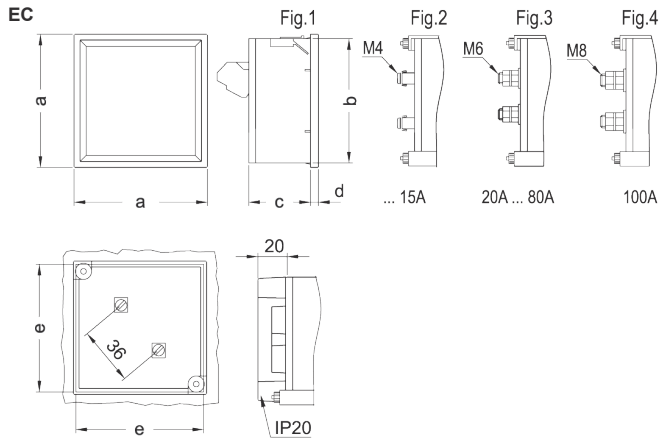
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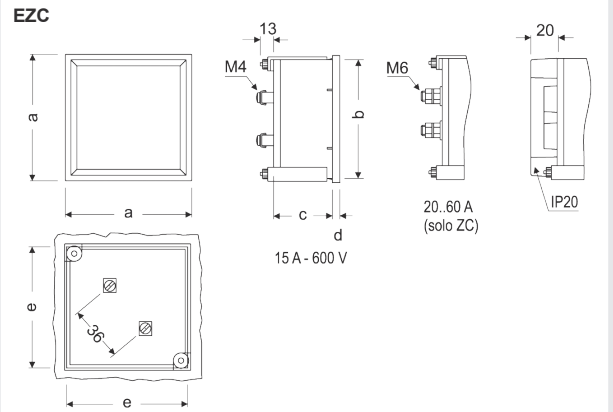


Dimensions



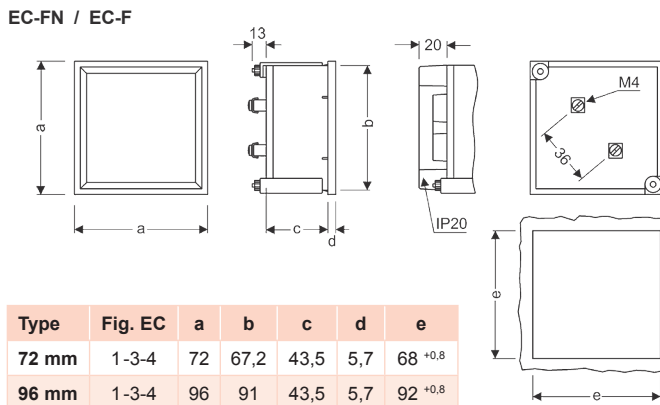
Type	Fig. EC	a	b	c	d	e
48 mm	1-3	48	44,7	61	5,2	45
72 mm	1-3-4	72	67,2	43,5	5,7	68
96 mm	1-3-4	96	91	43,5	5,7	92
144 mm	2-3-4	144	137	64,5	7,3	138

Dimensions (mm)



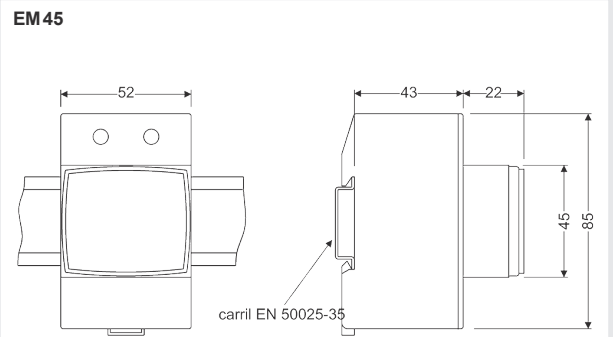
Type	Fig. Ezc	a	b	c	d	e
72 mm	1	72	67,2	43,5	5,7	68
96 mm	1	96	91	43,5	5,7	92

Dimensions (mm)



Type	Fig. EC	a	b	c	d	e
72 mm	1-3-4	72	67,2	43,5	5,7	68 <sup>+0,8</sup>
96 mm	1-3-4	96	91	43,5	5,7	92 <sup>+0,8</sup>

Dimensions (mm)



Connections

