Moving-iron measuring instruments

for alternating current and alternating voltage

for direct measurement

Type:

EQX 48

EQX 72

EQX 96

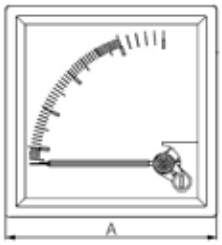
Application

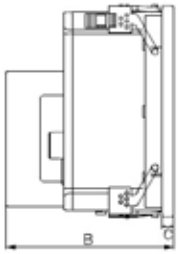
Moving-iron measuring instruments are mainly used in heavy-current installation for the measurement of alternating currents and alternating voltages (direct measurement). Moving-iron measuring instruments also indicate the rms value in case of non-sinusoidal quantities within a frequency range of 50/60 Hz.
With direct current and direct voltage, additional indication errors of approx. 1 % may occur due to magnetization errors inside the iron. As compared to moving-coil measuring instruments, the energy consumption is relatively high ranging between 0.6 VA and 2 VA. They are thus not suited for measuring small currents or voltages.

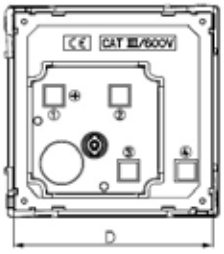
Function / Design

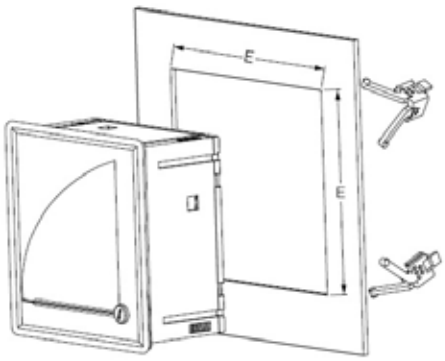
The moving iron movements are robust with spring-loaded bearings.
The moving iron measuring devices are manufactured in accordance with DIN EN 60051 and the other applicable VDE and DIN regulations. The accuracy is 1.5% (size 48 accuracy 2.5%), based on the full scale value and starts at approx. 10% (with voltmeters at approx. 20%) of the full scale value. The devices can be permanently overloaded by a factor of 1.2; Ammeters can be overloaded up to 50 times for a short time; Tension meter up to 2x. For the rest, DIN EN 60051 applies.

Dimensions









Size	„A“ mm	„B“ mm	„C“ mm	„D“ mm	„E“ mm
EQX 48	48	71	5,5	44,2	45,0
EQX 72	72	76	5,5	67,0	68,5
EQX 96	96	76	5,5	90,5	92,0

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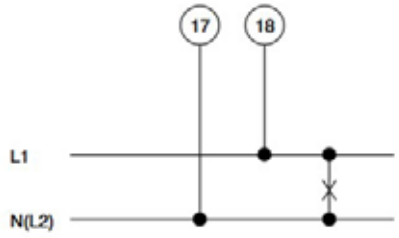
Technical data

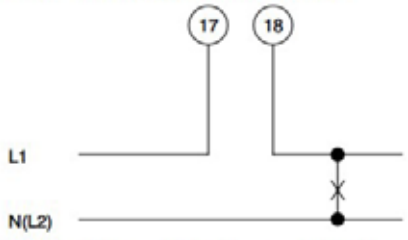
Front frame	Dimensions acc. to DIN 43 718. The front frames are delivered als light frames in black colour for all types.
Scale, pointer	Execution acc. to DIN 43 802. The graduation is carried out as coarse graduation, the pointers as knife bar pointers.
Front glass	low glare glass
Zero point correction	All types have a zero point correction.
Connection	Screw connection with clambs
Accuracy	Acc. to DIN EN 60 051. It is defined under reference conditions, based on the measuring range end value. If the zero point is offset, the sum of the two full-scale values applies. In the case of power factor measuring devices and resistance measuring devices (scale curve strongly non-linear), the measurement error is related to the scale length.
Reference conditions	Temperature 20°C ± 2K, nominal position of use ± 1°
Influencing variables	Usage position normal vertical ± 5 °, if the usage position deviates, the angle from the horizontal must be indicated. Influence of temperature, unless otherwise stated, the additional error is ≤ 1.5% at 20 ° C ± 10 K ambient temperature. Ferromagnetic switchboards have no influence on the measurement accuracy.
Operating temperatur	All types work in a temperature range from –25 ° C to + 55 ° C (if not otherwise specified, trouble-free).
Relative humidity	75% annual mean, no condensation
Installation location	Interior, max. height of 2000 m above sea level
IP code	IP 52 on front side, IP 20 at terminals with terminal cover
	acc. to DIN EN 60529
Internal resistance	DC-voltmeters: 1000 Ω / V, higher internal resistance possible on request
	DC-ammeters: 0,6 to 250 Ω
Test voltage	5,3 kV AC for 1 min at 50 Hz acc. to IEC 61010-1
Vibrating resistance	1,5 g at 50 Hz
Impact resistance	15 g for 11 ms
EMC	EMC acc. to DIN EN 61 326
Overload behavior	Moving-iron meters: 2-, 5-, 6-fold overload (depending on type) continuous 10-fold overload for 2 seconds only once in lifetime Moving-coil meters: witout overload Bimetall meters: 1,2-fold overload continuous

Connection

Connection (direct) alternating voltage



Connection (direct) alternating current



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Measuring ranges



Type		EQX 48	EQX 72	EQX 96
Front frame		48 x 48 mm	72 x 72 mm	96 x 96 mm
Cut-out		45 x 45 mm	68 x 68 mm	92 x 92 mm
Length of scale		42 mm	62 mm	90 mm
Pointer deflection		90 °	90 °	90 °
Accuracy class		2,5	1,5	1,5
Front glas		low-glare glas	low-glare glas	low-glare glas
Weight		0,1 kg	0,2 kg	0,25 kg
Alternating current direct measurement				
Measuring range (2-fold overload)				
mA	100	X	X	X
	400	X	X	X
	800	X	X	X
A	1	X	X	X
	1,5	X	X	X
	2,5	X	X	X
	4	X	X	X
	5	X	X	X
	6	X	X	X
	10	X	X	X
	15	X	X	X
	20	X	X	X
	25	X	X	X
	40	--	X	X
	60	--	X	X
Other measuring ranges on request!				
Alternating voltage direct measurement				
Measuring range (without overload)				
V	30	X	X	X
	60	X	X	X
	100	X	X	X
	110	X	X	X
	150	X	X	X
	250	X	X	X
	300	X	X	X
	500	X	X	X
	600	--	X	X
Other measuring ranges on request!				

„X" = available
„-" = not available

Typing

EQX 96 0-100 / 200 mA

- Moving-iron device
- Size
- Measuring range
- Overload range
- Measuring value

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