



Frequency meters

Pointer frequency meters

Type:

FQX 48

FQX 72

FQX 96



Application

Frequency measuring devices are used to measure the mains frequency in the specified frequency ranges with the corresponding nominal voltage. Only a selected partial area is preferably used as the measuring area.

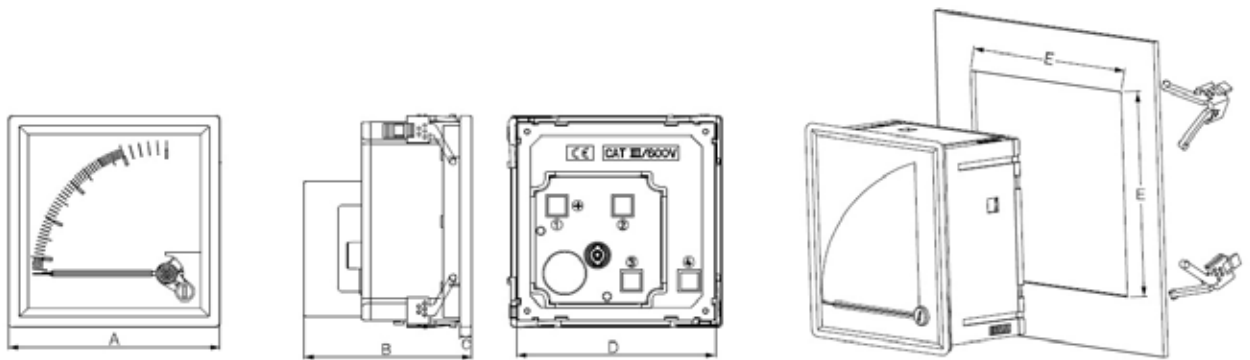


Function / Design

The frequency measuring devices are constructed with a core magnet moving-coil system and an integrated microcontroller. The measurement is independent of the waveform. The scale progression is linear. The frequency measuring devices are manufactured in accordance with DIN EN 60051 and the other applicable VDE and DIN regulations. The accuracy is 1.5%, related to the full scale value, for size 48 devices the accuracy is 2.5%. The devices can be permanently overloaded by a factor of 1.2. For the rest, DIN EN 60051 applies. The auxiliary voltage for supplying the electronics is obtained from the measuring voltage. The power consumption is approx. 10 mA.



Dimensions



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



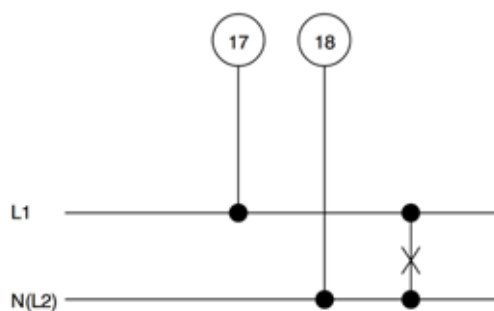
Technical data

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 clamps
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 $20^{\circ}\text{C} \pm 2\text{K}$, nominal position of use $\pm 1^{\circ}$
Influencing variables	Usage position normal vertical $\pm 5^{\circ}$, if the usage position deviates, the angle from the horizontal must be indicated. Influence of temperature, unless otherwise stated, the additional error is $\leq 1.5\%$ at $20^{\circ}\text{C} \pm 10\text{K}$ ambient temperature. Ferromagnetic switchboards have no influence on the measurement accuracy.
Operating temperatur	All types work in a temperature range from -25°C to $+55^{\circ}\text{C}$ (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
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: without overload Bimetal meters: 1,2-fold overload continuous






Connection

Connection frequency meter





Measuring ranges

			
Type	FQX 48	FQX 72	FQX 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	0,2 kg	0,35 kg	0,45 kg

Frequency / voltage				
Measuring range				
45 - 55 Hz	100 V	X	X	X
	230 V	X	X	X
	400 V	X	X	X
55 - 65 Hz	100 V	X	X	X
	230 V	X	X	X
	400 V	X	X	X
45 - 65 Hz	100 V	X	X	X
	230 V	X	X	X
	400 V	X	X	X

Other frequency and voltage range possible with type FZQ 72 / 96 DIN.

Typing

