



## Frequency meters

Vibrating reed frequency meters

Vibrating reed double frequency meters

Type:

**FZQX 72**

**FZQX 96 / FZDQX 96**



### Application

Vibrating reed 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.

The vibrating reed double frequency meters, with two rows of reeds, can be used to synchronize two networks.

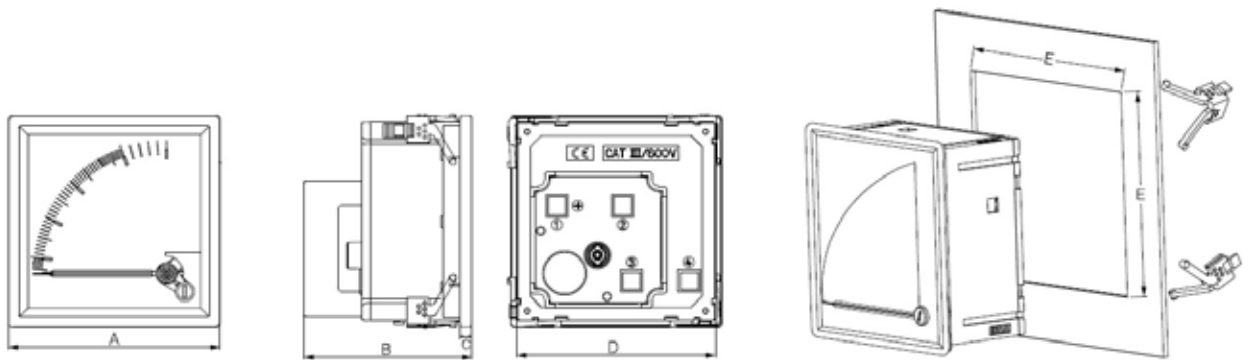


### Function / Design

The vibrating reed frequency measuring devices are equipped with one or two vibration measuring mechanisms, in which a comb with springy reeds is attached to an electromagnet. If the frequency of the applied voltage corresponds to the resonant frequency of a tongue of the vibration measuring mechanism, then this tongue begins to oscillate. The deflection of the tongues is proportional to the square of the applied voltage. 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. The devices can be permanently overloaded by a factor of 1.2. For the rest, DIN EN 60051 applies.



### Dimensions



Size	„A“ mm	„B“ mm	„C“ mm	„D“ mm	„E“ mm
FZQX 72	72	76	5,5	67,0	68,5
FZQX / FZDQX 96	96	76	5,5	90,5	92,0



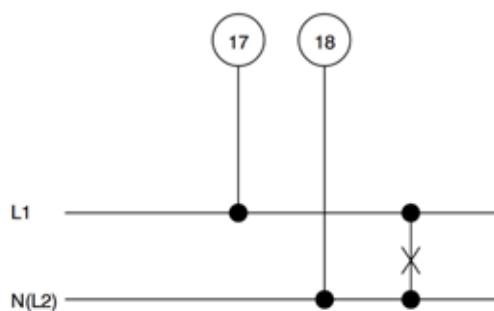
## Technical data

<b>Front frame</b>	Dimensions acc. to DIN 43 718. The front frames are delivered als light frames in black colour for all types.
<b>Scale, pointer</b>	Execution acc. to DIN 43 802. The graduation is carried out as coarse graduation, the pointers as knife bar pointers.
<b>Front glass</b>	low glare glass
<b>Zero point correction</b>	All types have a zero point correction.
<b>Connection</b>	Screw connection with clamps
<b>Accuracy</b>	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.
<b>Reference conditions</b>	Temperature $20^{\circ}\text{C} \pm 2\text{K}$ , nominal position of use $\pm 1^{\circ}$
<b>Influencing variables</b>	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.
<b>Operating temperatur</b>	All types work in a temperature range from $-25^{\circ}\text{C}$ to $+55^{\circ}\text{C}$ (if not otherwise specified, trouble-free).
<b>Relative humidity</b>	75% annual mean, no condensation
<b>Installation location</b>	Interior, max. height of 2000 m above sea level
<b>IP code</b>	IP 52 on front side, IP 20 at terminals with terminal cover acc. to DIN EN 60529
<b>Test voltage</b>	5,3 kV AC for 1 min at 50 Hz acc. to IEC 61010-1
<b>Vibrating resistance</b>	1,5 g at 50 Hz
<b>Impact resistance</b>	15 g for 11 ms
<b>EMC</b>	EMC acc. to DIN EN 61 326
<b>Overload behavior</b>	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

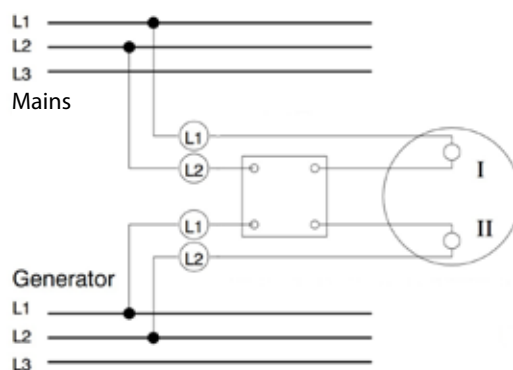


## Connection

Connection frequency meter



Connection double frequency meter





## Measuring ranges

Type	FZQX 72	FZQX / FZDQX 96
Front frame	72 x 72 mm	96 x 96 mm
Cut-out	68 x 68 mm	92 x 92 mm
Length of scale	--	--
Pointer deflection	--	--
Accuracy class	1,5	1,5
Front glas	low-glare glas	low-glare glas
Weight	0,35 kg	0,45 kg

Frequency / voltage for 1 frequency			FZQX 72	FZQX 96
Measuring ranges		No. of reeds		
45 - 55 Hz	100 V	11	X	X
	230 V	11	X	X
	400 V	11	X	X
47 - 53 Hz	100 V	13	X	X
	230 V	13	X	X
	400 V	13	X	X
55 - 65 Hz	100 V	11	X	X
	230 V	11	X	X
	400 V	11	X	X
57 - 63 Hz	100 V	13	X	X
	230 V	13	X	X
	400 V	13	X	X

Other frequency and voltage ranges on request!

Frequency / voltage for 2 frequencies			FZDQX 72	FZDQX 96
Measuring ranges		No. of reeds		
2 x 45 - 55 Hz	100 V	2 x 11		X
	230 V	2 x 11	-	X
	400 V	2 x 11		X
2 x 47 - 53 Hz	100 V	2 x 13		X
	230 V	2 x 13	-	X
	400 V	2 x 13		X
2 x 55 - 65 Hz	100 V	2 x 11		X
	230 V	2 x 11	-	X
	400 V	2 x 11		X
2 x 57 - 63 Hz	100 V	2 x 13		X
	230 V	2 x 13	-	X
	400 V	2 x 13		X

Other frequency and voltage ranges on request!

## Typing

