

CQ0107, CQ0207, CQ0307, CQ0407, CQ0507¹⁾

Moving-coil panel instruments, exchangeable scales

CQ - INSTRUMENTS WITH A MOVING COIL AND A RECTIFIER

FEATURES:

- For measurement of AC currents and voltages
- Good read-out survey on larger distance
- Exchangeable dial
- Resistance to mechanical vibrations
- Protective cover for terminals (optional)

APPLICATION

Instruments with moving-coil and rectifier are designed for mounting into supervision panels and A.C. current and voltage measuring equipment, where small internal consumption of the instrument is required. They are provided for measurement of A.C. currents and voltages of sinuous curve within a 40 ... 5000 Hz frequency range.

CONSTRUCTION

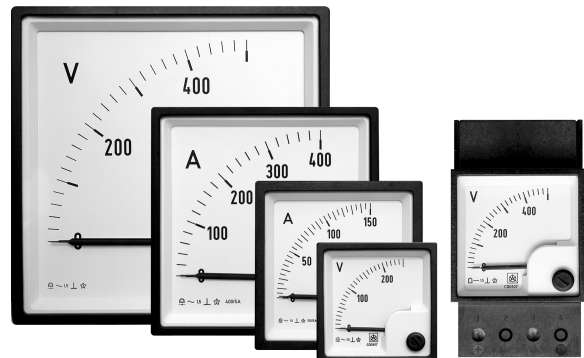
The instrument measure mean value of rectified current or voltage. The scale is expressed in effective values at sine form of the measure quantity. Distortion or deviation from the sine form for more than 1% entails additional errors.

Rectifying is based on the use of germanium diodes with very low reverse current. The instrument scale graduation is practically linear, only in case of voltmeters with measuring ranges below 10 V, the beginning of the scale is slightly squeezed. Ammeters are provided with a built-on transformer for measurement with measuring transformers .../1 A and .../5 A.

The instrument design enables quick replacement of the scale, therefore different scale versions are available for measurement of electrical and non-electrical quantities within the same measuring range. If, for example, with instruments that are connected via measuring transformers (1 A, 5 A, 100 V ranges), at unchanged value of the transformer secondary current the value of its primary current is changed, this does not require any replacement of the whole instrument but only of the scale. The same implies to the instruments that are connected to A.C. output of transducers.

The exchangeable scale has a number of advantages:

- quick and simple adaptation of the instrument to variable user technical requirements
- shorter delivery time
- allows flexible planning



Picture 1: Ammeters and voltmeters for a.c. current and voltage CQ0107, CQ0207, CQ0307, CQ0407, CQ0507¹⁾

TECHNICAL DATA

ACCURACY:

- accuracy class 1,5

DESIGN:

- Material of housing: PC
unflammable, according to **UL 94 V-0**
- Enclosure protection: Case IP 52, terminal contacts IP 00
(IP 20 for connection terminals)
according to **EN 60529: 1989**
- Operating position Vertical
- Test voltage 2 kV rms
according to **EN 61010-1: 1990**

AMBIENT CONDITIONS JVF (DIN 40 040)

- Climatic conditions:
Standards **EN 60051-1: 1995/01**
EN 60051-2: 1984
EN 60051-9: 1988
- Temperature:
Reference range of operation +18 ... +28°C
Nominal range of operation -25 ... +55°C
Storing -40 ... +70°C
- Humidity up to 80% (without condensing)

¹⁾For assembly CQ0507 rail mounting according to DIN 46277 and EN 50022. Bezel measures are 45x45 mm. Technical data are the same as for CQ0407.

MEASURING RANGE:

Ammeters:

Measuring range (μA)	100	150	250	400	500	600
-----------------------------------	-----	-----	-----	-----	-----	-----

Voltage drop (V)	1,5 V					
------------------	-------	--	--	--	--	--

Measuring range (mA)	1	1,5	2,5	4	5	6	10
----------------------	---	-----	-----	---	---	---	----

Voltage drop (V)	1,5 V					
------------------	-------	--	--	--	--	--

Measuring range (A)	1	5
---------------------	---	---

Voltage drop (V)	0,1 V	0,03 V
------------------	-------	--------

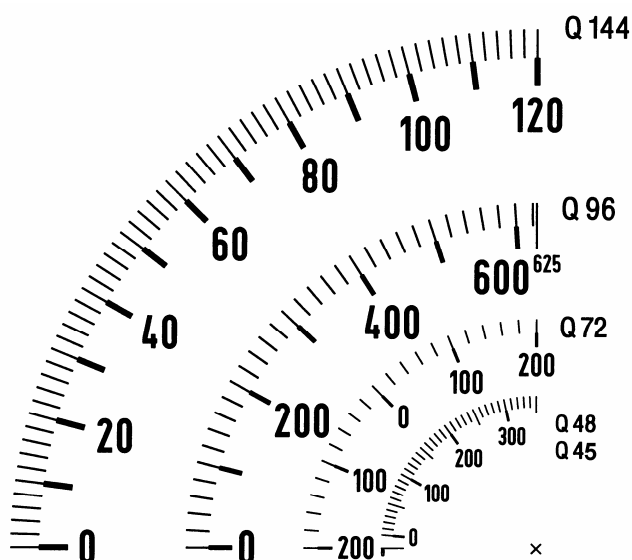
Voltmeters:

Measuring range (V)	2,5	6	10	15	25	40	60	100	150	250	400	500	600
---------------------	-----	---	----	----	----	----	----	-----	-----	-----	-----	-----	-----

Sensitivity	1 k Ω /V												
-------------	-----------------	--	--	--	--	--	--	--	--	--	--	--	--

Other measuring ranges available on special demand.

SCALE

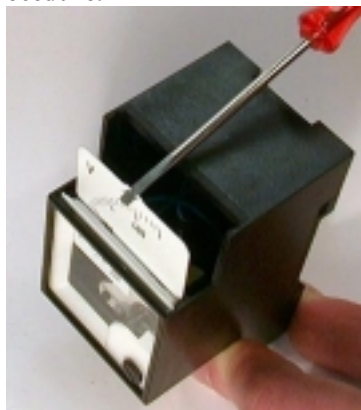


Picture 2: Drawing of scale: CQ0107, CQ0207, CQ0307, CQ0407, CQ0507 (voltmeters, ammeters)

EXCHANGING OF SCALES

Press the cover, on top of the instrument, in the direction of the arrow and extract the scale with a suitable tool. After exchanging the scale, carefully close the opening with the cover.

The instrument must be disconnected during the exchange procedure.



Picture 3: Exchanging of scales



Picture 4: Exchanging of scales

ORDERING DATA:

- Instrument type,
- Measuring range and scale.

ORDERING EXAMPLE:

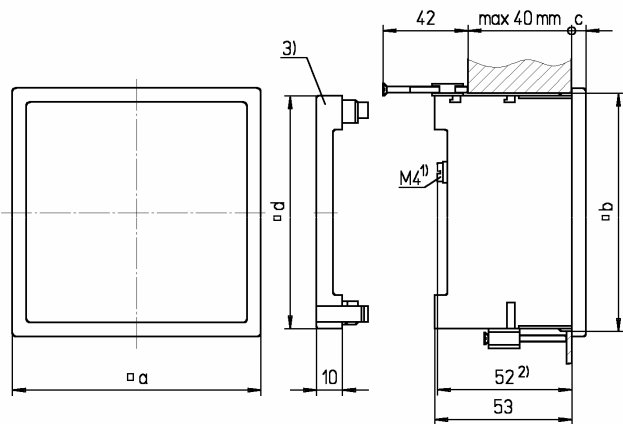
- CO0207 voltmeter, 60 V, 0 ... 60 V scale
- CO0207 milliammeter, 2,5 mA, 0 ... 10 m/s scale

For ordering only the scale state the same data as in case of ordering the instrument.

- Scale for CO0207 voltmeter, 60 V, 0 ... 60 V scale
- Scale for CO0207 milliammeter, 2,5 mA, 0 ... 10 m/s scale

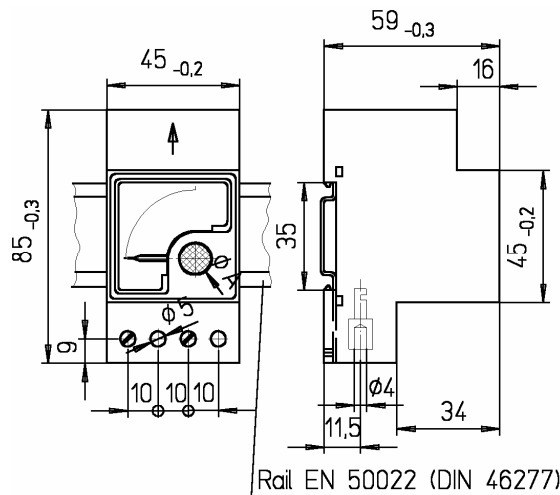
On special demand a protective cover against live parts is provided.

DIMENSIONAL DRAWINGS:



Picture 5: Dimensional drawing CQ0107, CQ0207, CQ0307 and CQ0407 (all dimensions are in mm)

- 1) Range 15 to 40 A - M6
- 2) Range 15 to 40 A - 59 mm
- 3) Protective cover (on special request)



Picture 6: Dimensional drawing CQ0507 (all dimensions are in mm)

Type		CQ0107	CQ0207	CQ0307	CQ0407	CQ0507
Bezel (mm)	□ a	144	96	72	48	45
Panel cut-out (mm)	□ b	138 ^{+1,0}	92 ^{+0,8}	68 ^{+0,8}	45 ^{+0,6}	--
Bezel height (mm)	c	8,0	5,5	5,5	5,0	--
Protect cover (mm)	□ d	90	90	66,5	42,5	--
Scales length (mm)		135	92	62	41	41
Weight approx. (kg)		0,4	0,2	0,18	0,14	0,14

Table 1: Dimensions and weight



Ljubljanska c. 24a
SI-4000 Kranj
Slovenia
tel.: +386 4 237 21 40
fax: +386 4 237 21 29
e-mail: info@iskra-mis.si
www.iskra-mis.si

