

 **MQ – COMBINED BIMETAL PANEL  
INSTRUMENTS**

**FEATURES:**

- For measurement of maximum and momentary AC currents
- Good read-out survey on larger distance
- Exchangeable dial
- Resistance to mechanical vibrations
- Protective cover for terminals (optional)
- MQ0117, MQ0217, MQ0317 are according to DIN 43700



Picture 1: Ammeter MQ0217

**APPLICATION**

Combined bimetallic instruments are intended especially for thermal monitoring of transformers, cables, etc. due to their slow reaction to current changes. They indicate mean r.m.s. current value during the measuring period of the instrument. The instrument does not react to short current pulses essentially. Maximum mean value in a response time period is indicated by the red slave pointer. The latter can be reset or set to zero by means of a knob which can be sealed. Besides the bimetal system the instrument also includes a moving-iron system which measures instantaneous r.m.s. values.

**CONSTRUCTION**

Combined bimetal maximum current meters are provided with a built-in bimetal system and a system with a moving iron. Special instrument design enables quick replacement of the scale both in case of a new or an already used instrument. This is especially suitable for instruments which are connected to current transformers .

**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

**TECHNICAL DATA**

**ACCURACY:**

- accuracy class bimetal system **3**
- accuracy class moving-iron system **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**  
in accordance 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)**

## MEASURING RATINGS:

1.2A; 6A

$\times A/1A^{1)}$ ,  $\times A/5A^{1)}$  for connection to current transformer

Current transformer ratio <sup>2)</sup> (A)	Rating (A)	Current transformer ratio <sup>2)</sup> (A)	Rating (A)
10	12	40	48
15	18	50	60
20	24	60	72
25	30	75	90
30	36	80	96

Consumption (VA) .../1A  
.../5A

1.8 app.

2.8 app.

Response time <sup>3)</sup> (min)

8

15<sup>3)</sup>

20<sup>3)</sup>

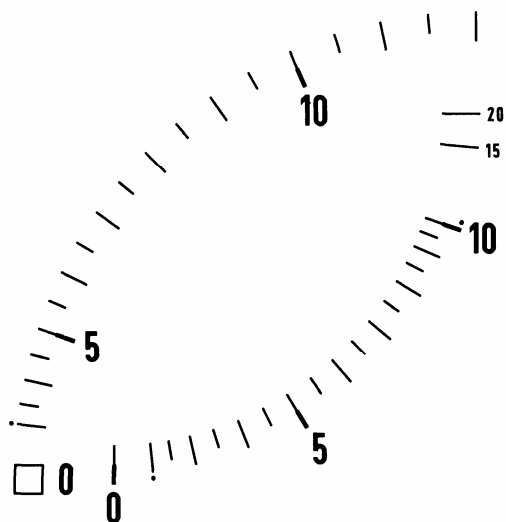
30<sup>3)</sup>

<sup>1)</sup> Rating of average current is for 20% higher from the current transformer ratio. The meter for the momentary value can indicate either 20% or 100% overload.

<sup>2)</sup> Table is also relevant for decade multiples

<sup>3)</sup> Normal response time 8 min, on request 15 min, 20min, 30min.

## SCALE

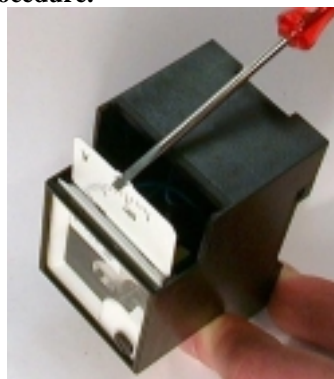


Picture 2: Drawing of scale: MQ0217

## 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 dial exchange procedure.**



Picture 3: Exchanging of scales



Picture 4: Exchanging of scales

## ORDERING DATA:

- instrument type,
- current transformer ratio,
- response time
- scale (moving iron)

## ORDERING EXAMPLE:

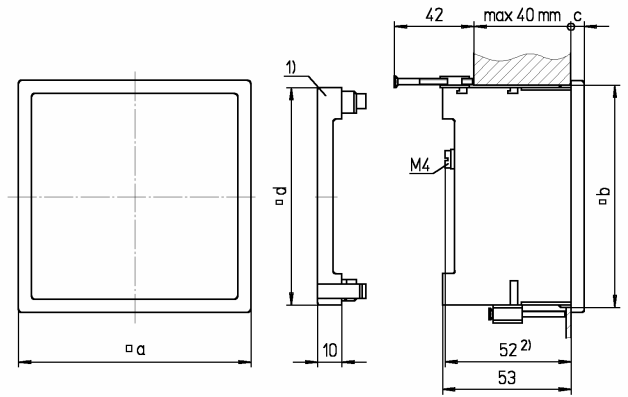
- MQ0217, 100A/5A, 15min, scale (moving iron)  
120/5A or 100/200A

For ordering scales the same data as in case of ordering the instrument must be state.

- Scale for MQ0217, 20A/1A, 8min, scale (moving iron)  
24A/1A or 20A/40A

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

## DIMENSIONAL DRAWINGS:



Picture 5: Dimensional drawing MQ0117, MQ0217, MQ0317 (all dimensions are in mm)

1) Protective cover (on special request)

Type		MQ0117	MQ0217	MQ0317
Bezel (mm)	□ a	144	96	72
Panel cut-out (mm)	□ b	138 <sup>+1,0</sup>	92 <sup>+0,8</sup>	68 <sup>+0,8</sup>
Bezel height (mm)	c	8,0	5,5	5,5
Protect cover (mm)	□ d	90	90	66,5
Scales length (mm)		135/120	95/72	62/43
Weight approx. (kg)		0,45	0,25	0,22

Table 1: Dimensions and weight



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