Switchable Analog Meters with Moving-Iron Movement

EQ 72 SWT
EQ 96 SWT

with Slide-In-Dial
Application

The moving-iron panel meters EQ 72/96 SWT (K series) housed in moulded thermoplastic cases are used for the measurement of AC voltages in the usual 3-phase system.

Moving–iron meters indicate rms-values practically independent of wave form even of high harmonics. Error of indication may occur for extreme wave forms (e.g. phase gating controls) and / or frequencies above 100 Hz.

With the built-in 6 position switch, all voltages in a 4-wire 3-phase system can be measured.

Movements

Moving–iron movement with pivot suspension, spring loaded shock absorbing jewel bearings and silicon oil damping.

Mechanical Data

case details moulded square case suitable to be mounted in control / switchgear panels, machine tool consoles or mosaic panels, stackable
material of case polycarbonate thermoplastics, flame retardant with UL rating of 94 V – 0
material of window glass ♦
colour of bezel black (similar to RAL 9005) ♦
position of use vertical ±5° ♦
panel fixing screw clamps
mounting stackable next to each other
panel thickness ≤ 40 mm
terminals hexagon studs, M4 screws and wire clamps E3
dimensions (in mm) EQ 72 SWT EQ 96 SWT
bezel □ 72 □ 96
case □ 66 □ 90
depth 53 53
panel cutout □ 68·0.7 □ 92·0.8
weight approx. 0.19 kg 0.23 kg

Electrical Data

measuring unit AC voltage / current
frequency range 16²/³ ... 100 Hz
power consumption <4.5 VA
overload capacity (acc. to DIN EN 60 051-1) continuously 1.2 times rated voltage 5 s max. 2 times rated voltage, 1000 V max.
measurement category CAT III
operating voltage refer to Measuring Ranges
pollution level 2
enclosure code IP 52 case front side
IP 00 for terminals without protection against accidental contact
IP 20 for terminals protected against accidental contact ♦

Measuring Ranges

AC voltage 500 V
operating voltage 600 V
for use on VT N/100 V ¹
operating voltage 150 V

Please state transformer ratio when ordering.
¹) full scale value = 1.2 times rated value (overload scaling)

switch positions in a 4-wire 3-phase system
6 switch positions L1L3; L2L3; L1L2; L1N; L2N; L3N
7 switch positions OFF, L1L3; L2L3; L1L2; L1N; L2N; L3N

Scaling

pointer bar / knife–edge pointer
pointer deflection 0 ... 90°
scale characteristics practically linear above 10% of rated full–scale value
scale division coarse–fine
scale length EQ 72 SWT 54 mm
EQ 96 SWT 97 mm
overload scaling 1.2 times rated voltage (voltmeters for use on voltage transformers)

Accuracy at Reference Conditions

accuracy class 1.5 according to DIN EN 60 051-1
reference conditions ambient temperature 23°C
position of use nominal position ±1° ♦
input rated measuring value
wave form sinusoidal, distortion factor ≤ 5%
frequency 45 ... 65 Hz
others DIN EN 60 051-1

influences ambient temperature 23°C±2K
position of use nominal position ±5°
frequency 15 ... 100 Hz
stray magnetic field 0.5 mT

Environmental

climatic suitability climatic class 3 acc. to VDE/VDI 3540 sheet 2
operating temperature range −10 ... +55°C
storage temperature range −25 ... +65°C
relative humidity ≤ 75% annual average, non–condensing
shock resistance 15 g, 11 ms
vibration resistance 10–55–10 Hz with 0.15 mm amplitude (1.5 g, 50 Hz)

♦ also refer to "Options"
Rules and Standards

DIN 43 718  Measurement and control; front-frames and frontpanels of measurement and control equipment; principal dimensions
DIN 43 802  Line scales and pointers for indicating electrical measuring instruments; general requirements
DIN 16 257  Nominal positions and position symbols used for measuring instruments
DIN EN 60 051 –1 Part 1: Definitions and general requirements common to all parts
DIN EN 60 051 –2 Part 2: Special requirements for ammeters and voltimeters
DIN EN 60 529  Enclosure codes by housings (IP-code)
DIN EN 61 010-1 Safety requirements for electrical measuring, control and laboratory equipment Part 1: General requirements
DIN EN 61 326-1 Electrical equipment for measurement, control and laboratory use – EMC requirements Part 1: General requirements
DIN EN 61 554 Panel mounted equipment – Electrical measuring instruments – Dimensions for panel mounting
VDE/VDI 3540 sheet 2 reliability of measuring and control equipment (classification of climates)

Options

**case**
- window non–glaring glass
- colour of bezel red, yellow, blue or, white
- index marking pointer red, front adjustable
- position of use on request 15...165°

**terminal safety protection**
- full-sized rear cover or protective sleeves to go on hexagon studs and M4 screws with wire clamps E3

**dial**
- non–calibrated with dial symbols
- blank dial pencil–marked on initial and end values
- scale division 0 ... 100%
- and figuring
- linear scale division non–standard captions on request
- additional lettering on request e.g. "generator"
- additional figuring on request
- coloured marks red, green or blue for important scale values
- coloured sector red, green or blue within scale division
- logo on the dial none or on request

Connections

<table>
<thead>
<tr>
<th>Connections</th>
<th>EQ 72 SWT</th>
<th>EQ 96 SWT</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQ 72 SWT</td>
<td><img src="image1.png" alt="EQ 72 SWT" /></td>
<td><img src="image2.png" alt="EQ 96 SWT" /></td>
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<tr>
<td>EQ 96 SWT</td>
<td><img src="image3.png" alt="EQ 96 SWT" /></td>
<td><img src="image4.png" alt="EQ 96 SWT" /></td>
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</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th>dimensions (in mm)</th>
<th>EQ 72 SWT</th>
<th>EQ 96 SWT</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>72</td>
<td>96</td>
</tr>
<tr>
<td>b</td>
<td>66</td>
<td>90</td>
</tr>
<tr>
<td>c</td>
<td>53</td>
<td>53</td>
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<tr>
<td>d</td>
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## Ordering Information

<table>
<thead>
<tr>
<th><strong>type</strong></th>
<th><strong>EQ</strong></th>
<th>moving-iron panel meter, switchable</th>
</tr>
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<tbody>
<tr>
<td><strong>front dimensions</strong></td>
<td></td>
<td></td>
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<tr>
<td>72 SWT</td>
<td>72 mm x 72 mm</td>
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<td>96 SWT</td>
<td>96 mm x 96 mm</td>
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<tr>
<td><strong>measuring ranges</strong></td>
<td>refer to preceding table</td>
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<tr>
<td><strong>window</strong></td>
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<td></td>
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<tr>
<td></td>
<td>glass ¹)</td>
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<tr>
<td></td>
<td>non–glaring glass</td>
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<tr>
<td><strong>colour of bezel</strong></td>
<td>black (similar to RAL 9005) ¹)</td>
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<td></td>
<td>red, yellow, blue or, white ²)</td>
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<tr>
<td><strong>position of use</strong></td>
<td>vertical ¹)</td>
<td></td>
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<td></td>
<td>on request 15 ° ... 165° ²)</td>
<td></td>
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<tr>
<td><strong>index marking pointer</strong></td>
<td>none ¹)</td>
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<td></td>
<td>red, front adjustable</td>
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<td><strong>terminal safety protection</strong></td>
<td>none ¹)</td>
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<td>full–sized rear cover</td>
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<td>protective sleeves</td>
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<tr>
<td><strong>dial</strong></td>
<td>according to measuring range resp. standard series for use on transformers ¹)</td>
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<td>non–calibrated, with dial symbols</td>
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<td>blank dial</td>
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<td></td>
<td>coloured marks red, green or blue ²)</td>
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<td></td>
<td>coloured sector red, green or blue ²)</td>
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<tr>
<td><strong>logo</strong></td>
<td>WEIGEL ¹)</td>
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<td>none</td>
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<td></td>
<td>OEM logo ²)</td>
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</table>

¹) Standard  
²) Please clearly add the desired specifications.

### ordering example

EQ 72 SWT, measuring range 0 ... 500 V, window non–glaring glass, WEIGEL logo