Analog Meters for clamping to DIN Rails
Application

The analog meters W 35 and P 35 are designed for clamping to DIN rails and to be used for the measurement of current and voltage in distribution installations which utilize 35 mm DIN rails according to DIN EN 60 715 for equipment mounting.

The mounting width of 52.5 mm is equal to 3 sectional units. The meters can also be surface mounted besides clamping to a DIN rail.

Functional Principle

W 35 moving-iron movement with shell-type system, silicon oil damping and spring loaded jewel bearings, pivot suspension.

P 35 moving-coil movement with core-type magnetic system, dual spring loaded jewel bearings, pivot suspension.

Mechanical Data

case details projecting case clamping to 35 mm mounting rail complying with DIN EN 60 715
material of case thermoplastics, self-extinguishing
colour of case gray (similar to RAL 7032)
colour of window polycarbonate
position of use vertical
terminals screw terminals (up to 5 mm²)
dimensions LxWxH 75 mm x 52.5 mm x 68 mm
weight approx. W 35 0.1 kg, P 35 0.1 kg

Electrical Data

measuring unit W 35 AC voltage or AC current
P 35 DC voltage or DC current
overload capacity (acc. to DIN EN 60 051-1)
continuously 1.2 times rated voltage / current
5 s max.
voltmeters 2 times rated voltage
ammeters 10 times rated current
power consumption W 35 approx. 1.5 ... 3 VA
ammeters approx. 0.5 ... 1 VA
frequency range W 35 45 ... 65 Hz
enclosure code IP 52 case front side
IP 60 for terminals without protection against accidental contact
IP 20 for terminals protected against accidental contact
measurement category CAT III
operating voltage W 35 600 V
P 35 300 V
pollution level 2

Measuring Ranges

For mains use

<table>
<thead>
<tr>
<th>AC current</th>
<th>AC voltage W 35</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 A</td>
<td>150 V</td>
</tr>
<tr>
<td>1.5 A</td>
<td>150 V</td>
</tr>
<tr>
<td>2.5 A</td>
<td>250 V</td>
</tr>
<tr>
<td>4 A</td>
<td>400 V</td>
</tr>
<tr>
<td>5 A</td>
<td>500 V</td>
</tr>
<tr>
<td>6 A</td>
<td>600 V</td>
</tr>
<tr>
<td>10 A</td>
<td>1000 V</td>
</tr>
<tr>
<td>15 A</td>
<td>1500 V</td>
</tr>
<tr>
<td>25 A</td>
<td>2500 V</td>
</tr>
</tbody>
</table>

W 35 for use on current transformer
N/1 A
N/5 A

P 35 for use with external shunt
60 mV 1000 Ω/V
100 mV 1000 Ω/V
150 mV 1000 Ω/V

DC current

<table>
<thead>
<tr>
<th>DC voltage P 35</th>
<th>voltage drop approx.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mA</td>
<td>10 V</td>
</tr>
<tr>
<td>6 mA</td>
<td>50 V</td>
</tr>
<tr>
<td>20 mA</td>
<td>150 V</td>
</tr>
<tr>
<td>0.5 A</td>
<td>250 V</td>
</tr>
<tr>
<td>1.5 A</td>
<td>600 V</td>
</tr>
<tr>
<td>2.5 A</td>
<td>1000 V</td>
</tr>
</tbody>
</table>

P 35 for use with external shunt

<table>
<thead>
<tr>
<th>DC voltage P 35</th>
<th>sensitivity ³</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 mV</td>
<td>1000 Ω/V</td>
</tr>
<tr>
<td>100 mV</td>
<td>1000 Ω/V</td>
</tr>
<tr>
<td>150 mV</td>
<td>1000 Ω/V</td>
</tr>
</tbody>
</table>

a total lead resistance of 0.05 Ω is considered in the calibration of the indicator for connecting leads 1 m, 2 x 0.75 mm²

Not for mains use

DC voltage P 35 ≤5V

<table>
<thead>
<tr>
<th>DC voltage P 35</th>
<th>sensitivity ³</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 V</td>
<td>1000 Ω/V</td>
</tr>
<tr>
<td>1.5 V</td>
<td>1000 Ω/V</td>
</tr>
<tr>
<td>2.5 V</td>
<td>1000 Ω/V</td>
</tr>
<tr>
<td>4 V</td>
<td>1000 Ω/V</td>
</tr>
</tbody>
</table>

³ the resistance values are limited to a tolerance of ±20%
Analog Meters for clamping to DIN Rails

Scaling

- pointer: bar / knife-edge pointer
- dial: white
- pointer deflection: 0 ... 90°
- scale characteristics: W 35 initial scale compressed, calibrated down to 1/5 th of rated full-scale value linear
- scale division: coarse–fine
- scale length: 35 mm
- overload scaling: W 35 ammeters 2 times rated current
- voltmeters for use on voltage transformers 1.2 times rated voltage

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 quantity: rated measuring value
  - frequency: W 35 45 ... 65 Hz
  - wave form: W 35 sinusoidal, distortion factor <5%
  - others: DIN EN 60 051-1
- influences
  - ambient temperature: 23°C ± 2K
  - position of use: nominal position ± 5°
  - frequency: W 35 15 ... 100 Hz (voltage)
  - stray magnetic field: 0.5 mT

Environmental

- climatic suitability: climatic class 2 according to VDE/VDI 3540, sheet 2
- operating temperature range: –25 ... +40°C
- storage temperature range: –25 ... +65°C
- relative humidity: ≤ 75% annual average, non-condensing
- shock resistance: 15 g, 11 ms
- vibration resistance: 2.5 g, 5 ... 55 Hz

Rules and Standards

- 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: Direct acting indicating analogue electrical measuring instruments and their accessories
  - Part 1: Definitions and general requirements common to all parts
  - Part 2: Special requirements for ammeters and voltmeters
  - Part 9: Recommended test methods

Options

- dial: blank dial, pencil marked initial and end values
- scale division: 0 ... 100%, linear, full–scale values acc. to DIN series (1 – 1.5 – 2.5 – 4 – 6 and any decimal multiple of these numbers e.g. 150 m³/h) or deviating from DIN series; captions optional
- additional lettering: to be specified e.g. "generator"
- additional figuring: to be specified
- 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 to be specified

Dimensions and Terminals

- W 35 / P 35

(Dimensions in mm)
## Ordering Information

<table>
<thead>
<tr>
<th>type</th>
<th>analog instrument with 90° scale for clamping to DIN rail for AC voltage or AC current for DC voltage or DC current</th>
</tr>
</thead>
<tbody>
<tr>
<td>W 35</td>
<td></td>
</tr>
<tr>
<td>P 35</td>
<td></td>
</tr>
<tr>
<td>measuring ranges</td>
<td>refer to preceding table</td>
</tr>
<tr>
<td>dial</td>
<td>scale division and measuring range alike resp. full-scale values acc. to DIN series 1 – 1.5 – 2.5 – 4 – 6 ¹) blank dial scale division and figuring 0 ... 100% ³) linear acc. to DIN series ²) ³) linear deviating from DIN series ²) ³) additional lettering to be specified ²) additional figuring to be specified ²) coloured marks red, green or blue ²) coloured sector red, green or blue ²)</td>
</tr>
<tr>
<td>logo on the dial</td>
<td>WEIGEL ¹) none OEM logo ²)</td>
</tr>
</tbody>
</table>

¹) Standard
²) Please clearly add the desired specifications.
³) P 35 only

### ordering example

P 35, measuring range and scaling 0 ... 1 mA