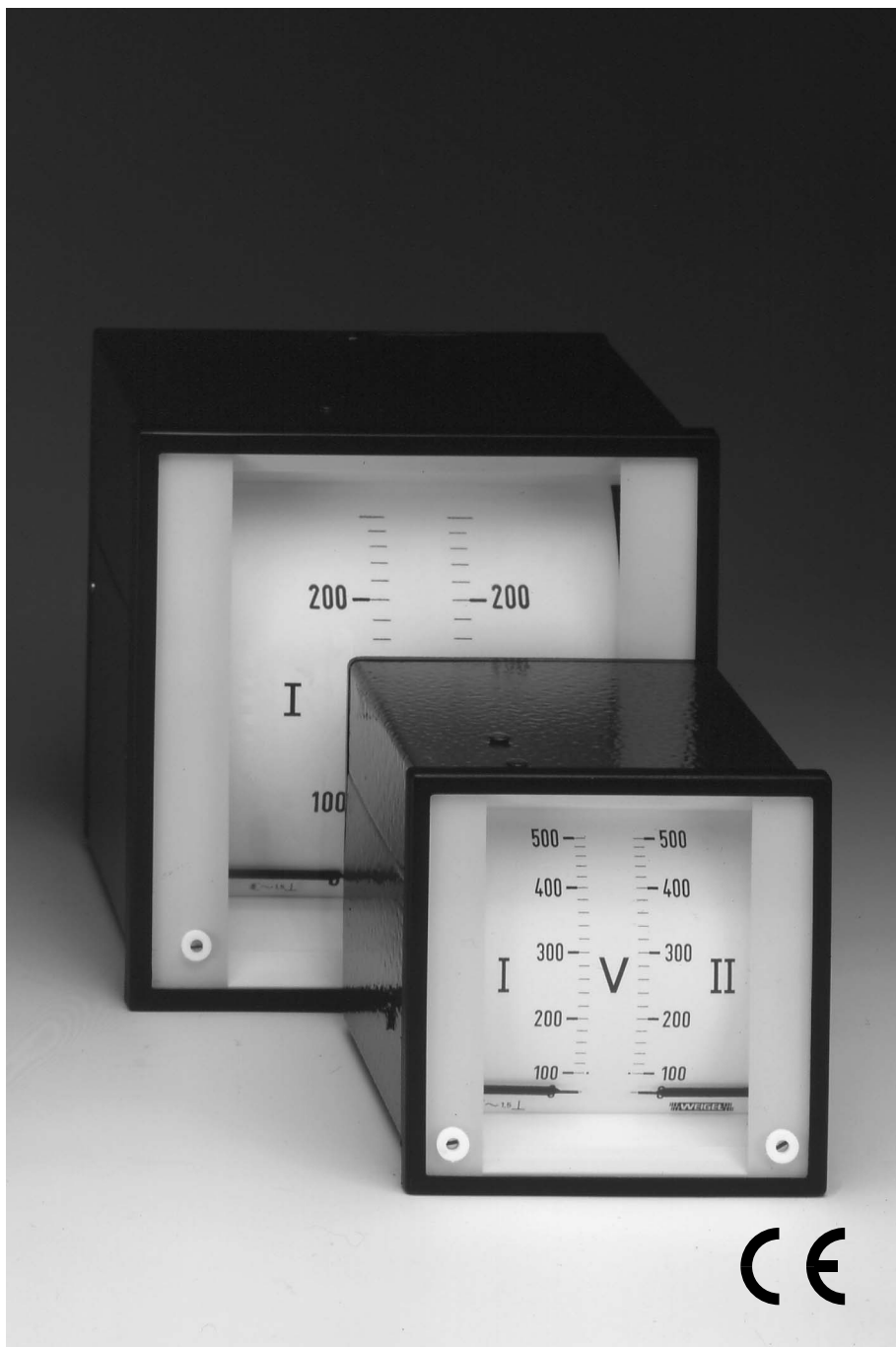


Data Sheet

M Series
023.D.101.05

Analog Meters with Two Moving-Iron Movements

WQ 96/2S
WQ 144/2S



WEIGEL

Application

The dual voltmeters **WQ 96 /2S** and **WQ 144 /2S** (M series) comprise two electrically independent moving-iron movements for simultaneously measuring two AC voltages, one to indicate the generator voltage, the other to indicate the power supply voltage.

The dual voltmeters are housed in pressed steel cases. They are suitable to be mounted in generating sets, power supply control panels, switchboards or mosaic panels.

Functional Principle

Two electrically independent moving-iron movements, pivot suspended. Spring loaded jewel bearings and silicon oil damping for vibration and shock resistance.

Mechanical Data

| | | |
|--------------------|---|--|
| case details | square case suitable to be mounted in control / switchgear panels or mosaic panels, stackable | |
| material of case | pressed steel | |
| material of window | glass ▶ | |
| colour of bezel | black (similar to RAL 9005) ▶ | |
| position of use | vertical $\pm 5^\circ$ ▶ | |
| mounting | stackable next to each other | |
| terminals | hexagon studs, M3 x 6 screws and wire clamps connector blades 6.3 x 0.8 for protective wire (WQ 96/2 only) | |
| dimensions | WQ 96 /2S | WQ 144 /2S |
| bezel | □ 96 mm | □ 144 mm |
| case | □ 90 mm | □ 137 mm |
| depth | 115 mm | 121 mm |
| panel cutout | □ 92 ^{+0.8} mm | □ 138 ⁺¹ mm |
| panel thickness | 1...15 mm | 1...40 mm |
| panel fixing | 4 pieces WEIGEL screw clamps | 2 pieces type B screw clamps acc. to DIN 43 835 |
| weight approx. | 1.2 kg | 1.5 kg |

Electrical Data

| | |
|---|---|
| measuring units | two AC voltages |
| frequency range | 50 ... 100 Hz |
| overload capacity (acc. to DIN EN 60 051) | |
| continuously | 1.2 times rated voltages |
| 5 s max. | 2 times rated voltages |
| enclosure code | IP 52 case IP 00 for terminals without protection against accidental contact IP 20 for terminals protected against accidental contact |
| measurement category | CAT III |
| operating voltage | refer to Measuring Ranges |
| pollution level | 2 |

▶ also refer to "Options"

Measuring Ranges

| AC voltages | operating voltage | power consumption approximately | |
|--------------------|-------------------|---------------------------------|------------|
| | | WQ 96 2/S | WQ 144 2/S |
| 2 x 0 ... 100 V *) | 300 V | 1.8 VA | 2.5 VA |
| 2 x 0 ... 110 V *) | 300 V | 2.0 VA | 2.3 VA |
| 2 x 0 ... 150 V | 300 V | 2.2 VA | 2.6 VA |
| 2 x 0 ... 250 V | 300 V | 2.3 VA | 3.9 VA |
| 2 x 0 ... 500 V | 300 V | 2.1 VA | 3.8 VA |
| 2 x 0 ... 600 V | 600 V | 2.5 VA | 4.5 VA |

*) also for use on voltage transformer, please state primary rating of voltage transformer.

Scaling

| | | |
|-----------------------|---|----------------------------|
| pointer | bar / knife-edge pointer | |
| pointer deflection | 0 ... 60° | |
| scale characteristics | practically linear down to 1/5 th of full-scale rating | |
| scale division | coarse-fine | |
| scale length | WQ 96 /2S 60 mm | WQ 144 /2S 97 mm |

Accuracy at Reference Conditions

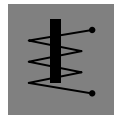
| | |
|-----------------------------|--------------------------------|
| accuracy class | 1.5 acc. to DIN EN 60 051 |
| reference conditions | |
| ambient temperature | 23°C \pm 1K |
| position of use | nominal position $\pm 1^\circ$ |
| input | rated measuring value |
| others | DIN EN 60 051 |

influence quantities

| | |
|----------------------|--------------------------------|
| ambient temperature | -25°C ... +23°C ... +40°C |
| position of use | nominal position $\pm 5^\circ$ |
| 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 | \leq 75% annual average, non-condensing |
| shock resistance | 15 g, 11 ms |
| vibration resistance | 2.5 g, 5...55 Hz |



Analog Meters with Two Moving-Iron Movements

Rules and Standards

| | |
|----------------------|--|
| DIN 43 700 | measuring and control instruments for panel mounting; nominal case and cutout dimensions |
| DIN 43 701 | electrical switchboard instruments |
| DIN 43 718 | bezels and front panels |
| DIN 16 257 | nominal position of use and position symbols applicable for measuring instruments |
| DIN 40 050 | enclosure codes; protection of electrical equipment against ingress of solid foreign bodies and of water |
| DIN EN 60 051 | direct acting indicating electrical measuring instruments and their accessories |
| DIN EN 61 010 | safety requirements for electrically operated measuring, control and laboratory equipment |
| VDE/VDI 3540 sheet 2 | reliability of measuring and control equipment (classification of climates) |

Options

case

| | |
|-----------------|----------------------------|
| window | non-glaring glass |
| colour of bezel | gray (similar to RAL 7037) |
| position of use | on request 15° ... 165° |

performance

| | |
|----------------------------------|--|
| climatic suitability | limited use in the tropics climatic class 3 according to VDE/VDI 3540 |
| with operating temperature range | -10 ... +55 °C |
| marine application | non-certified |
| enclosure code | IP 54 splash-water protected front |
| dielectric test | 3 kV based on 50 Hz, 1 min acc. to DIN 57 410 |

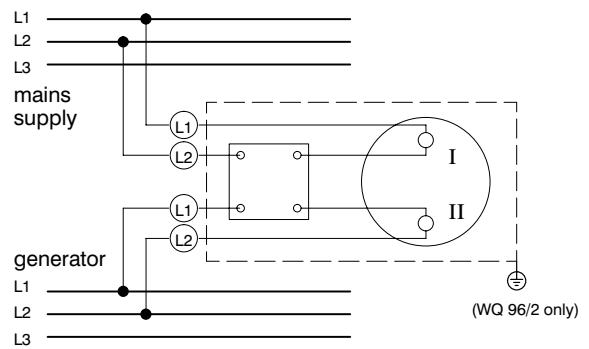
dial

| | |
|-----------------------------|--|
| blank dial | pencil-marked on initial and end values |
| scale division and figuring | 0 ... 100% or deviating from 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 |

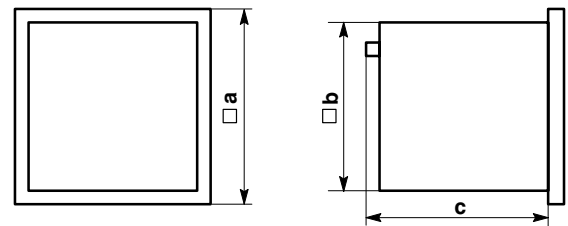
accessories

| | |
|--|--|
| terminal protection against accidental contact | full-sized rear cover (WQ 96 /2S only) or protective sleeves SW6 |
| terminals | connector blades 6.3 x 0.8 |

Connections



Dimensions



| dimensions (in mm) | WQ 96 /2S | WQ 144 /2S |
|--------------------|-----------|------------|
| a | 96 | 144 |
| b | 90 | 137 |
| c | 115 | 121 |

Ordering Information

| | |
|--------------------------------------|--|
| type WQ | dual moving-iron voltmeter |
| front dimensions 96 144 | 96 mm x 96 mm 144 mm x 144 mm |
| version /2S | two movements |
| measuring ranges | refer to preceding table |
| window | glass *) non-glaring glass |
| colour of bezel | black (similar to RAL 9005) *) gray (similar to RAL 7037) |
| position of use | vertical *) on request 15 ... 165° **) |
| climatic suitability | class 2, -25 ... +40°C *) class 3, -10 ... +55°C |
| marine application | none *) non-certified |
| enclosure code | IP 52 *) IP 54 splash-water protected front |
| terminal protection | none *) full-sized rear cover ***) protective sleeves |
| terminals | screws M3 x 6 and wire clamps *) connector blades 6.3 x 0.8 |
| dial | scale division & measuring range alike *) blank dial scale division and figuring 0 ... 100% deviating from standard **) additional lettering on request **) additional figuring on request **) coloured marks red, green or blue **) coloured sector red, green or blue **) |
| logo | WEIGEL *) none OEM logo **) |

*) standard

**) Please clearly add the desired specifications.

***) WQ 96 /2S only

ordering example

WQ 96 /2S, measuring range 2x 0 ... 150 V,
window non-glaring glass, dial 0 ... 100%, no logo

– specifications subject to change without notice; date of issue 09/06 –

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