

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 or AC currents in a 3-phase system.

With a built-in 4, 6, or 7 position switch, all voltages and currents in a 3-wire or 4-wire 3-phase system can be measured.

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.

The instruments are suitable to be mounted in switchboards, control panels, machine tool consoles and mosaic panels. The bezel, the glass window and the dial can be easily exchanged on-site.

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	glass reinforced 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 $\pm 5^\circ$ ↗	
panel fixing	screw clamps	
mounting	stackable next to each other	
panel thickness	≤ 25 mm	
terminals	hexagon studs, M4 screws and wire clamps E3	
dimensions (in mm)	EQ 72 SWT	EQ 96 SWT
bezel	□ 72	□ 96
bezel height	5.5	5.5
case	□ 66	□ 90
panel cutout	□ 68 ^{+0.7}	□ 92 ^{+0.8}
depth	53	53
depth with full-sized rear cover ↗	64	64
weight approx.	0.18 kg	0.24 kg

Electrical Data

	voltmeters	ammeters
measuring unit	AC voltage	AC current
frequency range	15 ... 100 Hz	15 ... 400 Hz
power consumption	<4.5 VA	<0.5 VA
overload capacity acc. to DIN EN 60 051 - 1		
continuously	1.2x rated voltage	1.2x rated current
5 s max.	2x rated voltage	10x rated current
measurement category	CAT III	
operating voltage	600 V	
pollution level	2	
enclosure code	IP 52 case front side IP 00 for terminals without protection IP 20 for terminals with protection ↗	

Measuring Ranges

	voltmeters	ammeters
measuring unit	AC voltage	AC current
measuring range	500 V	
for use on VT	N/100 V¹⁾	N/1 A; N/5 A²⁾

Please state transformer ratio when ordering.

¹⁾ full scale value = 1.2 times rated value (overload scaling)

²⁾ full scale value = 2 times rated value (overload scaling)

switch positions in a 3-wire or 4-wire 3-phase system

voltmeters:

6 switch positions L1L3; L2L3; L1L2; L1N; L2N; L3N

7 switch positions OFF, L1L3; L2L3; L1L2; L1N; L2N; L3N

ammeters:

4 switch positions OFF, L1; L2; L3

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 (for use on transformers)	1.2 times rated voltage / 2 times rated current	

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 $\pm 1^\circ$ ↗
input	rated measuring value
wave form	sinusoidal, distortion factor $\leq 5\%$
frequency	45 ... 65 Hz
others	DIN EN 60 051 - 1

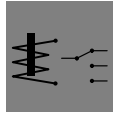
influences

ambient temperature	23°C ± 2 K
position of use	nominal position $\pm 5^\circ$
frequency	15 ... 100 Hz (voltage) 15 ... 100 Hz (current)
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	$\leq 75\%$ 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"



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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	Direct acting indicating analogue electrical measuring instruments and their accessories
-1	Part 1: Definitions and general requirements common to all parts
-2	Part 2: Special requirements for ammeters and voltmeters
-9	Part 9: Recommended test methods
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
EN 61 326-1	Electrical equipment for measurement, control and laboratory use – EMC requirements Part 1: General requirements
DIN IEC 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 0 ... 180°

terminal safety protection

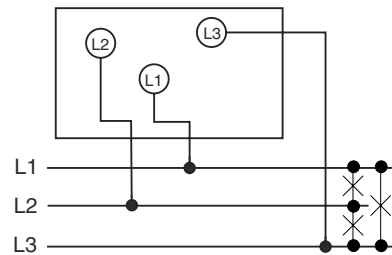
full-sized rear cover or protective sleeves to go on hexagon studs and M4 screws with wire clamps E3

dial

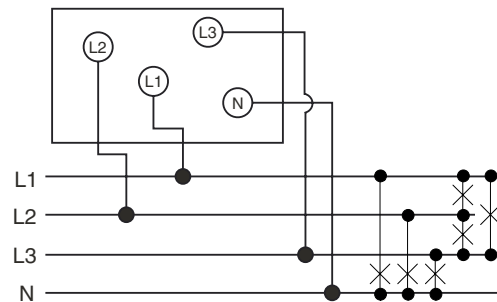
non-calibrated	with dial symbols
blank dial	pencil-marked on initial and end values
scale division and figuring	0 ... 100%
linear scale division	non-standard captions on request
additional lettering	on request e.g. "generator"
additional figuring	on request
coloured marks	red, green or blue for important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

Connections

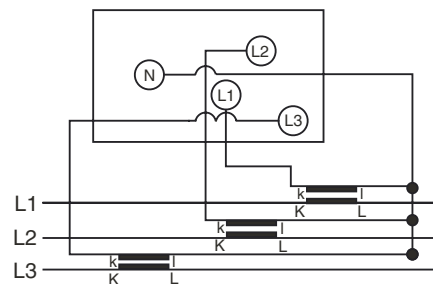
voltmeters 3-wire 3-phase system



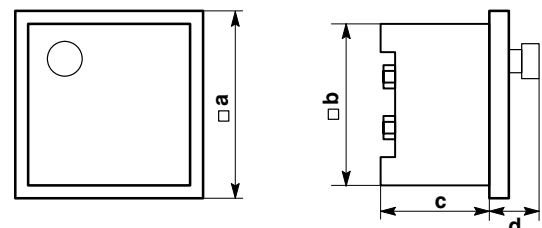
voltmeters 4-wire 3-phase system



ammeters



Dimensions



dimensions (in mm)	EQ 72 SWT	EQ 96 SWT
a	72	96
b	66	90
c	53	53
d	13	13

Ordering Information

type EQ	moving-iron panel meter, switchable
front dimensions 72 SWT 96 SWT	72 mm x 72 mm 96 mm x 96 mm
measuring ranges	refer to preceding table
window	glass ¹⁾ non-glaring glass
colour of bezel	black (similar to RAL 9005) ¹⁾ red, yellow, blue or, white ²⁾
position of use	vertical ¹⁾ on request 0 ... 180° ²⁾
terminal safety protection	none ¹⁾ full-sized rear cover protective sleeves
dial	according to measuring range resp. standard series for use on transformers ¹⁾ non-calibrated, with dial symbols blank dial scale division and figuring 0 ... 100% according to standard series additional lettering on request ²⁾ additional figuring on request ²⁾ coloured marks red, green or blue ²⁾ coloured sector red, green or blue ²⁾
logo	WEIGEL ¹⁾ none OEM logo ²⁾

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

– specifications subject to change without notice; date of issue 03/15 –

Weigel Meßgeräte GmbH

Postfach 720 154 • 90241 Nürnberg • Phone: 0911/42347-0
Erlenstraße 14 • 90441 Nürnberg • Fax: 0911/42347-39
Sales: Phone: 0911/42347-94
Internet: <http://www.weigel-messgeraete.de>
e-mail: vertrieb@weigel-messgeraete.de

