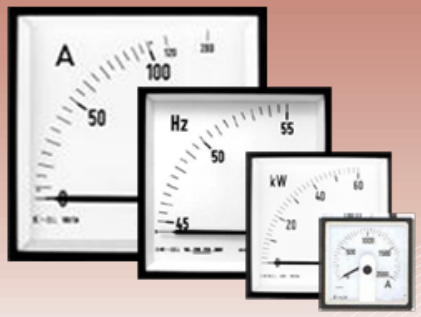
STANDARD SERIES

Analog Panel Meter



AMPTRON

We Measure Up To Your Standard

The Standard Series range of DIN analogue measuring meters were originally designed and engineered in Germany. They are manufactured under stringent ISO 9001 Quality System to international standards for accuracy , performances and quality.

The meter's core movement is a hardened pivot intricately suspended between 2 sapphire-jewel bearings. This design has stood the test of time proving both reliability and robustness in the extreme measuring applications all over the World.

Features

Accuracy

According to EN 60051-1and IEC51 Standards

Meter Casing

FR polycarbonate casing : UL 94V0
Available in Standard DIN 48, 72, 96 & 144mm sizes

Interchangeable scale

Scale interchangeability with no loss of accuracy allows for quick and simple adaptation of project's requirements and specifications.

Intergrated Electronics

Where electronics are incorporated in the meter's measurement techniques, built-in conversion circuitry employing Surface Mounted Technology (SMT) are used.

The SMT electronics are tropically treated to ensure performance , reliability & quality of the Standard Series meters.

Removable glass & bezel

Bezel and front glass are removable for easy replacement.

Mounting

Solid S-type mounting screws(zinc-plated for corrosion resistance) supplied as standard equipment are resistant to high level of vibration and shock.

Mounting is possible on any two sides of the meter, either left & right sides or top & bottom sides.

Optionally, flexible leaf-spring mounting are available where space constraints & quick installations are essential.

Terminals and clamps

Screw terminals come with self-lifting clamp (to secure bare cables) make wiring works easy and tidy.

The terminal screw & self-lifting clamp is not separable eliminating misplacing them. Terminal screws are useable with cross-head and flat screwdrivers.

IP 52

The dual rubber O-Ring design incorporated in the zero-adjustment knob of the Standard meters protects against fine dust particles and water elements.

General Specifications

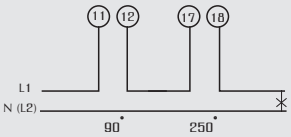
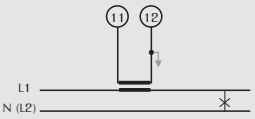
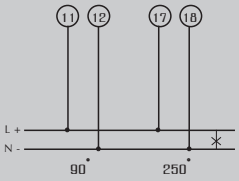
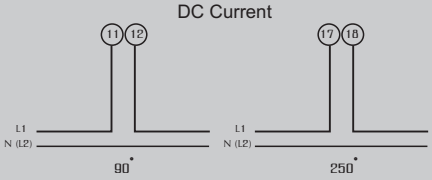
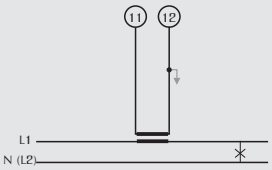
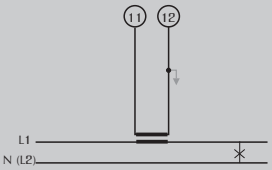
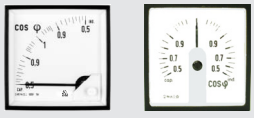
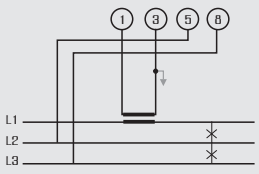
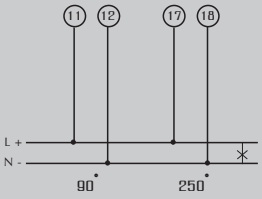
Housing	Dimensions and panel cutouts conform to DIN 43700
Glass Front	Standard Glass Front Options: Anti-glare or Polycarbonate (shatter-proof) front cover
Bezel	Conform to DIN 47380. Slim-line bezel, Black is standard. Options: Red, Yellow, Blue & Green on request
Mounting Fasteners	Standard: " S Type " screw clamp Option: Leaf spring for control panel thickness of >1mm
Installation	Flush mounted vertically or horizontally in switch board panels or other surface panels of up to 25mm thickness
Terminals	M4 screw terminals with self-lifting clamps are standard (use cross or straight head screwdrivers). M6 for direct-connected ammeters, models DS>6A & DE 40/60A. M8 for models DE & DS>75A.
Housing Front Protection	IP52 Protection as per IEC 529
Terminal Protection	IP 20 protection as per IEC 529
Operating Temp. Range	-10 °C ... ...+55°C as per IEC 51 & EN 60051-1
Storage Temp. Range	-25 °C ... ... +65°C as per IEC 51 & EN 60051-1
Accuracy	1.5 % as per IEC 51 & EN-60051-1
Vibration & Shock	10 Hz 55 Hz 10 Hz 0.15mm 147 m/s^2(15gn), 11ms as per IEC 51 & EN 60051-1
Scale Dial illumination	Scale Dial illumination available on request
Mounting Position	Standard mounting position: Vertical. Other mounting angle option on request

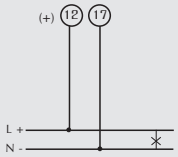
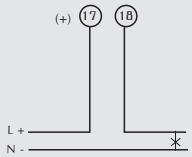
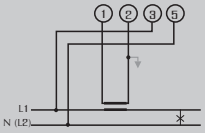
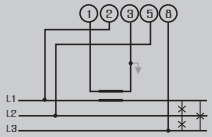
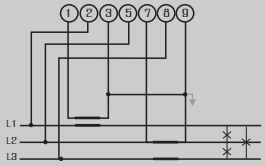
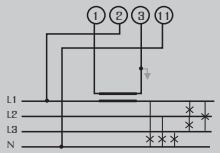
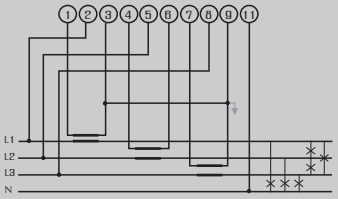
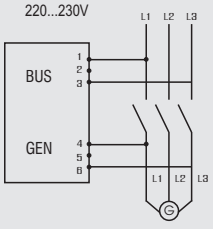
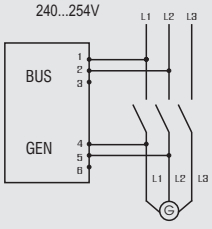
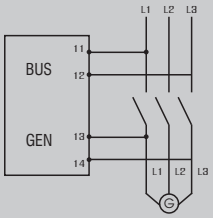
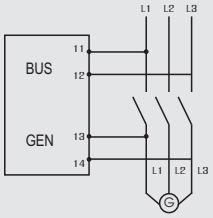
Technical Data - 90°

Type of Instrument	Moving iron	Moving coil	Moving coil with rectifier	Moving coil with built-in transducer for power (active or reactive)	Moving coil with built-in transducer for power factor	Moving coil with built-in transducer for frequency	Bimetal Ammeter	Bimetal Ammeter with moving iron movement
Size (in mm)	48 x 48 72 x 72 96 x 96 144 x 144	48 x 48 72 x 72 96 x 96 144 x 144	72 x 72 96 x 96 144 x 144	96 x 96 144 x 144	96 x 96 144 x 144	72 x 72 96 x 96 144 x 144	72 x 72 96 x 96	72 x 72 96 x 96
Measurands	A) Alternating current B) Alternating voltage	A) Direct current B) Direct voltage	A) Alternating current B) Alternating Voltage	Power - Single & 3 Phase Network (Bal & Unbal load)	Power factor - Single & 3 Phase Network	Frequency for all networks	Mean, Maximum RMS Current	Mean, Maximum & Instantaneous RMS Current
Cut-Out Size (in mm)	$45^{+0.6}$ x $45^{+0.6}$ $68^{+0.7}$ x $68^{+0.7}$ $92^{+0.8}$ x $92^{+0.8}$ 138^{+1} x 138^{+1}	$45^{+0.6}$ x $45^{+0.6}$ $68^{+0.7}$ x $68^{+0.7}$ $92^{+0.8}$ x $92^{+0.8}$ 138^{+1} x 138^{+1}	$68^{+0.7}$ x $68^{+0.7}$ $92^{+0.8}$ x $92^{+0.8}$ 138^{+1} x 138^{+1}	$92^{+0.8}$ x $92^{+0.8}$ 138^{+1} x 138^{+1}	$92^{+0.8}$ x $92^{+0.8}$ 138^{+1} x 138^{+1}	$68^{+0.7}$ x $68^{+0.7}$ $92^{+0.8}$ x $92^{+0.8}$ 138^{+1} x 138^{+1}	$68^{+0.7}$ x $68^{+0.7}$ $92^{+0.8}$ x $92^{+0.8}$	$68^{+0.7}$ x $68^{+0.7}$ $92^{+0.8}$ x $92^{+0.8}$
Mounting Depth (in mm)	≤30 A=53 mm >30 A to 60 A =60 mm >60 A=67 mm	53 mm to 78 mm	53 mm	105 mm to 131 mm	53 mm	53 mm	53 mm	53 mm
Measurement Range	Current 100mA-100A Voltage 6V-750V	Current 15µA-100A Voltage 15mV-600V	Current 100µA-100mA Voltage 6V-600V	Rated Current 1A to 5A Rated Voltage 57.7V to 500V	Rated Current 1A to 5A Rated Voltage 57.7V to 500V	Rated Voltage 57.7V to 500V	CT.../1A or CT .../5A 8 or 15 min	CT.../1A or CT .../5A 8 or 15 min
Proof Voltage	3.25kV a.c.	3.25kV a.c.	3.25kV a.c.	2.2kV a.c.	2.2kV a.c.	2.2kV a.c.	3.25kV a.c.	3.25kV a.c.
Model Number	S-EQ48 S-EQ72 S-EQ96 S-EQ144	S-PQ48 S-PQ72 S-PQ96 S-PQ144	S-VQ72 S-VQ96 S-VQ144	S-WQ96 S-WQ144	S-CQ96 S-CQ144	S-ZQ72 S-ZQ96 S-ZQ144	S-BIQ72 S-BIQ96	S-BIEQ72 S-BIEQ96
Shunt Resistors	Shunts are available for DC Current from 5A to 7500A Standard 60mV voltage drop. Other mV on request.							

Technical Data - 250°

Type of Instrument	Moving coil for current and voltage measurement	Moving coil with rectifier for current and voltage	Moving coil with bulit-in transducer for power measurement	Moving coil with built-in transducer for power factor (cos ϕ)	Moving coil with built-in transducer for frequency measurement
Size	72 x 72 96 x 96	72 x 72 96 x 96	96 x 96	96 x 96	72 x 72 96 x 96
Measurement	Direct Current Direct Voltage	Alternating Current Alternating Voltage	Power - Single & 3 Phase Network (Bal & Unbal load)	Power factor - Single & 3 phase network	Frequency
Mounting Depth (in mm)	53 mm	53 mm	105 mm to 131 mm	105 mm	105 mm
Smallest Measuring Range	40 mV 15µA	6 V 100 µA	Rated Voltage 57.7 V Rated current 1 A	Rated Voltage 57.7 V Rated current 1 A	Rated Voltage 57.7 V- 500 V
Cut-Out Size (in mm)	$68^{+0.7}_{+0.8}$ x $68^{+0.7}_{+0.8}$ 92 x 92	$68^{+0.7}_{+0.8}$ x $68^{+0.7}_{+0.8}$ 92 x 92	$92^{+0.8}$ x $92^{+0.8}$	$92^{+0.8}$ x $92^{+0.8}$	$68^{+0.7}_{+0.8}$ x $68^{+0.7}_{+0.8}$ 92 x 92
Proof Voltage	2 kV A. C.	2 kV A. C.	2 kV A. C.	2 kV A. C.	2 kV A. C.
Model Number	S-PL72 S-PL96	S-VL72 S-VL96	S-WL96	S-CL96	S-ZL72 S-ZL96

	Model	Connection
MOVING IRON 	AC Ammeter & Voltmeter **90°** S-EQ48 S-EQ72 S-EQ96 S-EQ144 **250°** S-VL72 S-VL96	AC Current direct connection  AC Current transformer connection 
MOVING COIL 	DC Ammeter & Voltmeter **90°** S-PQ48 S-PQ72 S-PQ96 S-PQ144 **250°** S-PL72 S-PL96	DC Voltage  DC Current 
BI-METAL 	Maximum Demand Meter **90°** S-BIQ72 S-BIQ96	Current Transformer operated 
BI-METAL + MOVING IRON 	Max Demand Meter + Ammeter **90°** S-BIEQ72 S-BIEQ96	Current Transformer operated 
BUILT-IN TRANSDUCER + MOVING COIL 	Power Factor Meter **90°** S-CQ96 S-CQ144 **250°** S-CL96	Power factor 3Ph 3W Bal.Load 
BUILT-IN TRANSDUCER + MOVING COIL 	Frequency Meter **90°** S-ZQ72 S-ZQ96 S-ZQ144 **250°** S-ZL72 S-ZL96	Frequency 1Ph / 3Ph AC 

	Model	Connection
AC RECTIFIED - MOVING COIL	AC Rectified Ammeter/ Voltmeter 90˚ S-VQ72 S-VQ96 S-VQ144 250˚ S-VL72 S-VL96	AC Voltage  AC Current 
BUILT- IN TRANSDUCER + MOVING COIL	Active & Reactive Power Meter (Bal & Unbal loads) 90˚ S-WQ96 S-WQ144 250˚ S-WL96	Single Ph AC - P12  3Ph 3W bal load - P13  3Ph 3W unbal load - P33  3Ph 4W bal load - P14  3Ph 4W unbal load - P34 
SYNCHROSCOPE	Rotating LED Synchroscope S-SQ96	FOR 120...127V 380...415V 220...230V  FOR 100...120V 440...450V 240...254V 
MOVING IRON	Double Pointer Voltmeter S-DEQ96	
BUILT-IN TRANSDUCER + MOVING COIL	Double Pointer Frequency S-DZQ96	

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