

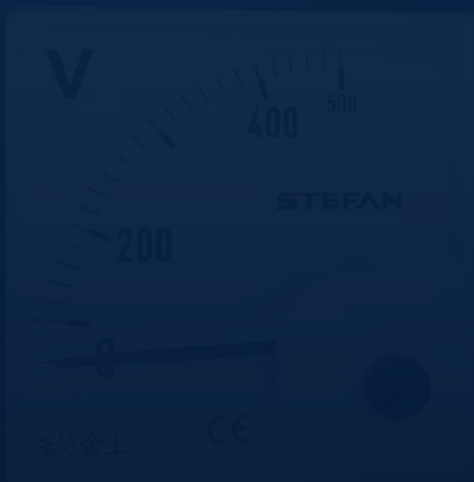
STEFAN[®]
ELECTRIC

CATALOGUE 2026

Analog meter

Precision Panel Instruments

Volt • Ampere • Frequency • Power Factor • MDI



Moving Iron Meters

AC Analog Volt & Ampere Measurement Instruments

Moving iron meters are suitable for the measurement of true rms AC current or voltage. All moving iron meters have interchangeable scale plates. Scales are non-linear and are calibrated down to 20% of full scale. Ammeters are available with a 2x overload as standard or a 6x overload for monitoring motor start-up currents. Voltmeters are also available with scales for high voltage measurement via voltage transformers. All moving iron meters are calibrated for operation at 50/60 Hz but calibration at 400 Hz is available upon request. Moving iron meters may be used to measure DC at reduced accuracy.



2. General Technical Requirements

Project	Technical Requirement	Reference Standards	Notes
Basic error	1.5 or 2.5	GB/T 7676.2-2017	
Reference value	Upper limit of measurement range	GB/T 7676.2-2017	
Response time	≤ 4s	GB/T 7676.1-2017	
Overshoot	≤ 15% scale length	GB/T 7676.1-2017	
Installation location	Vertical installation	DIN 16257	Can customize other installation locations
Measuring range	Refer to sections four and five		
Working frequency	45–65 Hz or 400 Hz		
IP class – Front	IP40	GB 4208-2008	Front panel can be customized: IP52, IP54, IP56, IP65
IP class – Other	IP20	GB 4208-2008	
Continuous current	120% upper limit of measurement range	GB/T 7676.2-2017	
Continuous voltage	120% upper limit of measurement range		
Short-term overload current	10×, once, 5 seconds	GB/T 7676.2-2017	
Short-term overload voltage	2×, 1 time, 5s		
Reference environmental conditions	T: (23±2)°C H: (40–60)% RH	GB/T 7676.1-2017	
Working environment conditions	T: –10°C ~ +55°C H: < 95% RH, No condensation		
Storage environment conditions	T: –25°C ~ +70°C H: < 95% RH, No condensation		
Impact	15g, 11ms	GB/T 7676.1-2017	
Vibration	2 Hz–13.2 Hz: Displacement amplitude ±1 mm; 13.2 Hz–100 Hz: Acceleration Degree Amplitude ±7 m/s ²	GB/T 7676.1-2017	

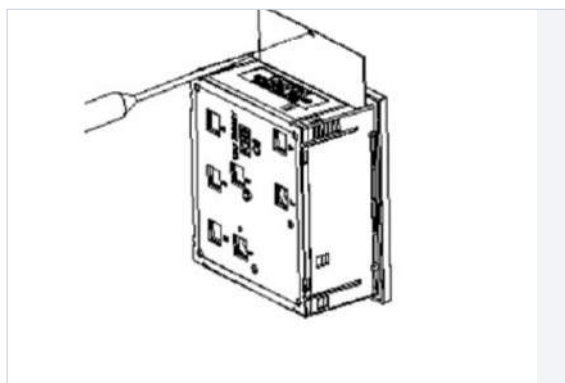
3. Safety Requirements

Size	Safety Requirement	VA Burden
72, 96	CAT 300V, Pollution Level: 2	Ammeter < 5VA Voltmeter < 5VA

4. Specific Technical Parameters – Square Meter

Product Name	Model	Measuring Range	Accuracy	Consumption
90° Electromagnetic System AC Voltmeter	72-T-V 96-T-V	30V ~ 600V PT: /100V, /110V PT: /100V, /110V	1.5	2 ~ 4VA

5. Square Instrument Dial Replacement Instructions

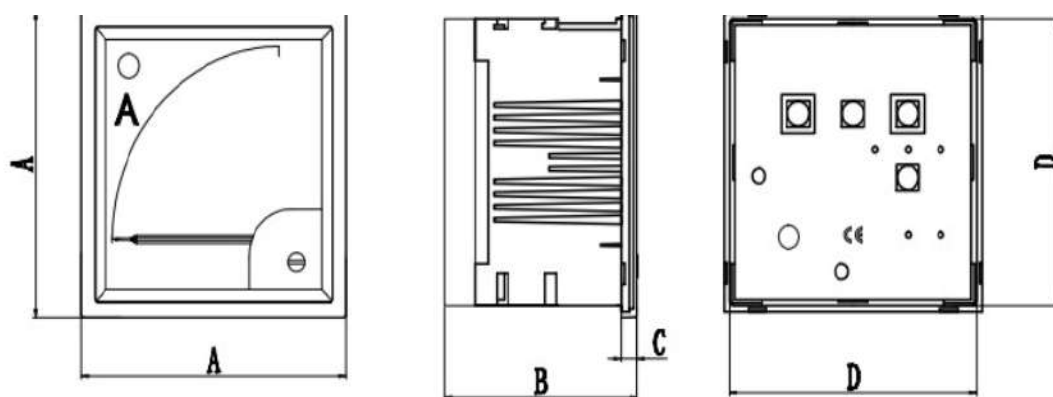


The scale plate can be replaced by removing the front bezel. Ensure the instrument is de-energised before performing any maintenance. Align the replacement scale correctly before refitting the bezel.

6. Installation Method

Model	Installation
SAM-72, SAM-96, SVM-96, SVM-72	Clamps

7. Outline and Mounting Dimensions – 7.1 Square



Dimension: mm

☒ A.C. ANALOG METERS, 90°, X/1A, X/5A

Series	Code	Product	Size	Scale
	SAM 72	Amperemeter	72×72 mm	0–5000A
	SVM 72	Voltmeter	72×72 mm	300V / 500V / 600V
	SAM 96	Amperemeter	96×96 mm	0–5000A
	SVM 96	Voltmeter	96×96 mm	300V / 500V / 600V

8. Precautions

- 8.1 Connect cables according to the wiring diagram.
- 8.2 Before connecting cables, be sure to cut off the power supply of the measurement object.
- 8.3 Do not apply voltage beyond the voltage range, which will cause the instrument to fail.
- 8.4 Do not use in the condition of dew.
- 8.5 When using the device around the exposed or live part, do not touch the part to which the voltage is applied. In this case, you are advised to use protective tools such as rubber gloves.

CE Certified	GB/T 7676 Compliant	DIN 16257	IP40 / IP65 Options	50/60 Hz 400 Hz
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Power Factor (cosØ) Meters

AC Analog Power Factor Measurement Instrument

Power factor meters are suitable for the measurement of power factor (cosØ). DIN96, 72 meters are self-contained whilst all smaller units are connected to a separate converter unit and calibrated as a complete unit to individual requirements. The converter unit has finger-proof terminal covers and can be remotely DIN rail mounted. All meters have a jewel and pivot movement which ensures reliability and accuracy. The power factor meters are available in short scale (90°, 240°) only. Scales are non-linear, bi-directional and are calibrated from 0.5 lead to 0.5 lag.



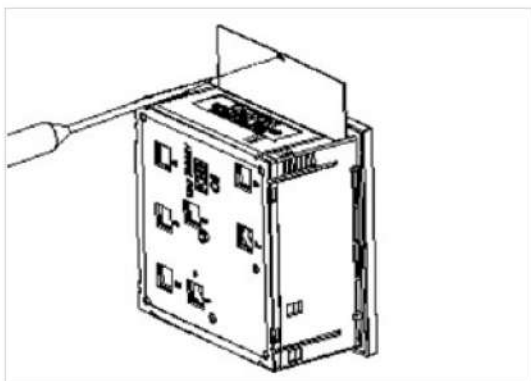
2. General Technical Requirements

Type	Parameters and Technical Indicators
Response time	90° or 240°: ≤ 4 seconds
Flame retardant grade of plastic parts	UL94(V0)
Shell protection level	Front panel: IP40; Other: IP20
Security level	CAT III 600V
Class of pollution	Two
Working environment conditions	Temperature: -10°C ~ +55°C Humidity: 5% ~ 90% RH, No condensation
Storage environment conditions	Temperature: -25°C ~ +70°C Humidity: 5% ~ 95% RH, No condensation
Continuous overload	1.2× rated value
Short-term overload – Voltage	2× rated value, 5 seconds
Short-term overload – Current	10× rated value, 5 seconds
Measured voltage component	±15% of rated value
Quantity usage range	20% to 120% of rated value

3. Specific Model Specifications

Model	Single Phase Accuracy	Three Phase Three Wire Balanced Type Accuracy	Angle	Structural Method
SPF-72	Class 2.5	Class 2.5	90°	Integrated type
SPF-96	Class 2.5	Class 2.5	90°	Integrated type
SPF-72-240	Class 2.5	Class 2.5	240°	Integrated type
SPF-96-240	Class 2.5	Class 2.5	240°	Integrated type

4. Square Instrument Dial Replacement Instructions

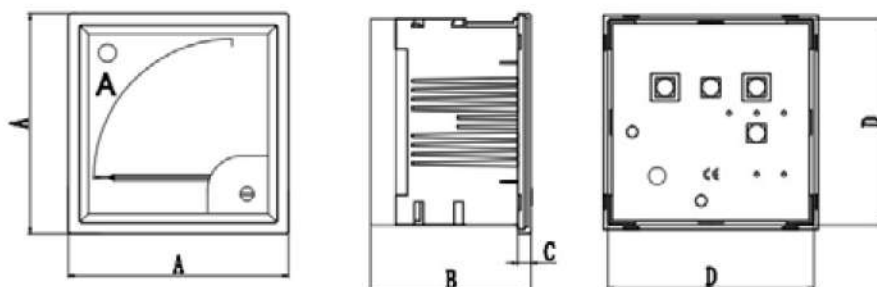


The scale plate can be replaced by removing the front bezel. Ensure the instrument is de-energised before performing any maintenance. Align the replacement scale correctly before refitting the bezel.

Installation Method – 6.1 Square

Model	Installation
72, 96	Clamps

5. Outline and Mounting Dimensions – 5.1 Square

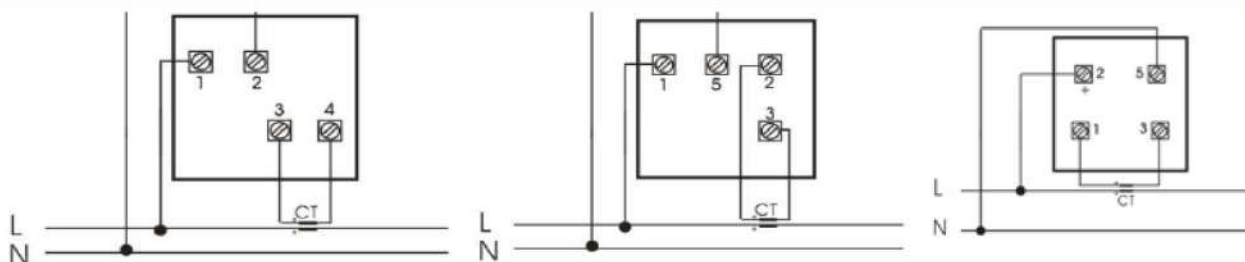


Dimension: mm

Model	A (mm)	B (mm)	C (mm)	E (mm)
96	96	71	6	92
72	72	71	6	68

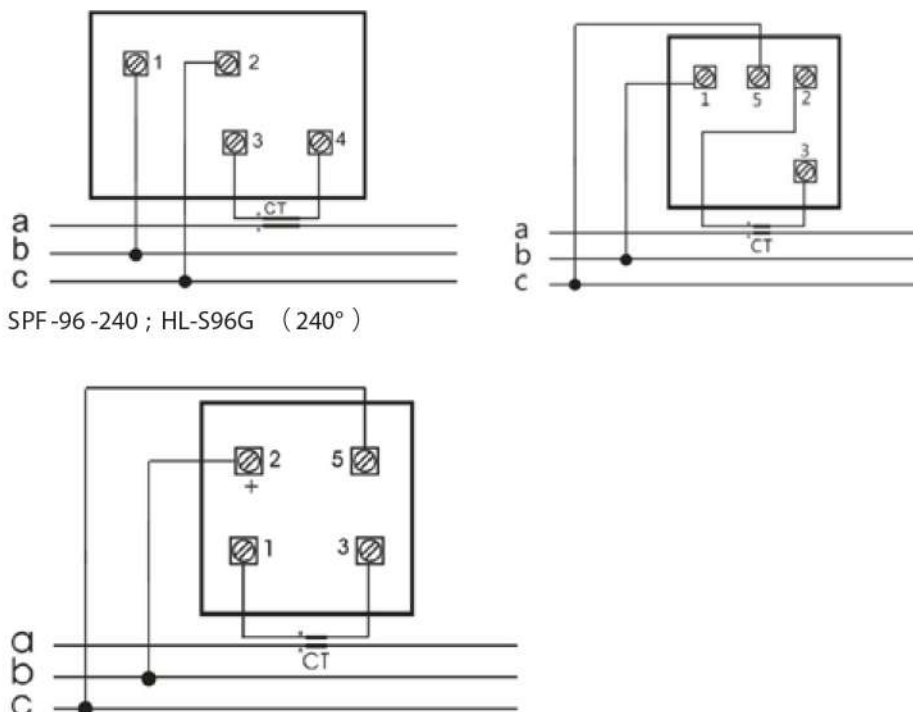
6. Wiring Diagrams

6.1 Single Phase Wiring Method – SPF-96; SPF-80 ; SPF-72



6.2 Three Phase Three Wire Wiring Method

SPF-96; SPF-80; SPF-72; HL-S96; HL-S72



7. Precautions

- 7.1 Connect cables according to the wiring diagram.
- 7.2 Before connecting cables, be sure to cut off the power supply of the measurement object.
- 7.3 Do not apply voltage beyond the voltage range, which will cause the instrument to fail.
- 7.4 Do not use in the condition of dew.
- 7.5 When using the device around the exposed or live part, do not touch the part to which the voltage is applied. In this case, you are advised to use protective tools such as rubber gloves.

CE Certified

CAT III 600V

UL94(V0) Housing

IP40 / IP20

0.5 Lead – 0.5 Lag

Frequency Meters

Frequency (Hz) Meter – AC Analog Measurement Instrument

Frequency meters are suitable for the measurement of the frequency of an AC supply. All meters have a jewel and pivot movement which ensures reliability and accuracy. All frequency meters have interchangeable scaleplates. Scales are linear and are calibrated from 45 to 65Hz with a suppressed zero. Frequency meters with dual scales (Hz & rpm) are available to display generator speed. High frequency (360–440Hz) meters and dual voltage input (110V & 230V) frequency meters are also available.



2. General Technical Requirements

Project	Technical Requirement	Reference Standards	Notes
Basic error	Pointer type: 1.5 or 2.5 Reed type: 0.5 or 1.5	GB/T 7676.2-2017	
Reference value	Upper limit of measurement range	GB/T 7676.2-2017	
Response time	≤ 4s	GB/T 7676.1-2017	
Overshoot	≤ 15% scale length	GB/T 7676.1-2017	
Installation location	Vertical installation	DIN 16257	Can customize other installation locations
Measuring range	Refer to sections four and five		
Working frequency	45–65 Hz or 400 Hz		
IP class – Front	IP40	GB 4208-2008	Front panel can be customized: IP52, IP54, IP56, IP65
IP class – Other	IP20	GB 4208-2008	
Continuous overload – Current	120% upper limit of measurement range	GB/T 7676.2-2017	
Continuous overload – Voltage	120% upper limit of measurement range		
Short-term overload – Current	10×, once, 5 seconds	GB/T 7676.2-2017	
Short-term overload – Voltage	2×, 1 time, 5s		
Reference environmental conditions	T: (23±2)°C H: (40–60)% RH	GB/T 7676.1-2017	
Working environment conditions	T: –10°C ~ +55°C H: < 95% RH, No condensation		
Storage environment conditions	T: –25°C ~ +70°C H: < 95% RH, No condensation		
Impact	15g, 11ms	GB/T 7676.1-2017	
Vibration	2 Hz–13.2 Hz: Displacement amplitude ±1 mm; 13.2 Hz–100 Hz: Acceleration ±7 m/s²	GB/T 7676.1-2017	

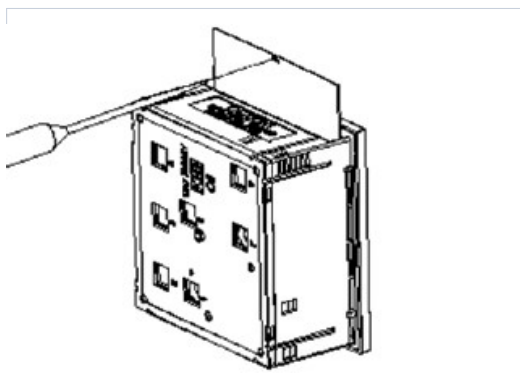
3. Safety Requirement

Size	Safety Requirement
72, 96	CAT III 300V, Pollution Level: 2

4. Specific Technical Parameters – Square Meter

Product Name	Model	Measuring Range	Accuracy	Consumption
90° Pointer Frequency Meter	48-HZ	45Hz–55Hz 55Hz–65Hz 45Hz–65Hz Voltage range: 57.7V–500V	1.5 / 2.5	≥3VA
	72-HZ 96-HZ	45Hz–55Hz 55Hz–65Hz 45Hz–65Hz 300Hz–600Hz Voltage range: 57.7V–500V	1.5	
240° Pointer Frequency Meter	72-GHZ 96-GHZ	45Hz–55Hz 55Hz–65Hz 45Hz–65Hz Voltage range: 57.7V–500V	1.5	
Vibrating Spring Frequency Meter	72-1F (1 reed) 96-1F (1 reed) 72-2F (2 reeds) 96-2F (2 reeds)	45~55Hz; 47~53Hz 55~65Hz; 57~63Hz Voltage range: 57.7V–500V	0.5 / 1.5	≥5VA

5. Square Instrument Dial Replacement Instructions

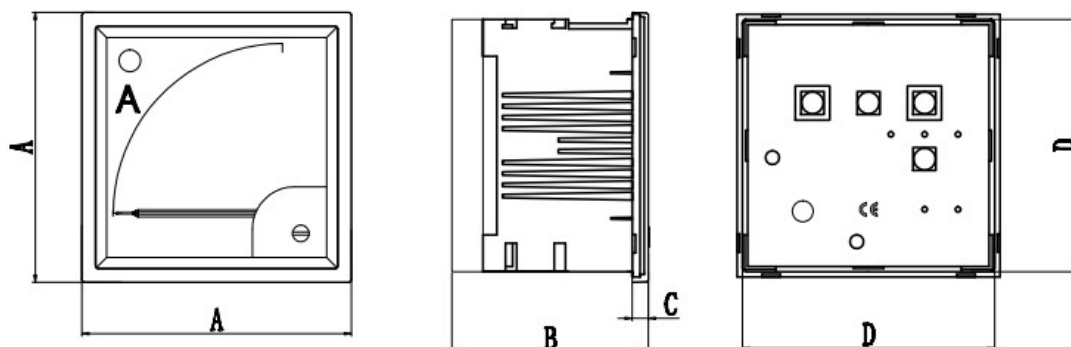


The scale plate can be replaced by removing the front bezel. Ensure the instrument is de-energised before performing any maintenance. Align the replacement scale correctly before refitting the bezel.

6. Installation Method – 6.1 Square

Model	Installation
72, 96	Clamps

7. Outline and Mounting Dimensions – 7.1 Square



Dimension: mm

Model	A (mm)	B (mm)	C (mm)	E (mm)
SFM-96, SFM-96-240	96	71	6	92
SFM-72, SFM-72-240	72	71	6	68

8. Precautions

- 8.1 Connect cables according to the wiring diagram.
- 8.2 Before connecting cables, be sure to cut off the power supply of the measurement object.
- 8.3 Do not apply voltage beyond the voltage range, which will cause the instrument to fail.
- 8.4 Do not use in the condition of dew.
- 8.5 When using the device around the exposed or live part, do not touch the part to which the voltage is applied. In this case, you are advised to use protective tools such as rubber gloves.

CE Certified	GB/T 7676 Compliant	DIN 16257	IP40 / IP65 Options	45–65 Hz 400 Hz
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DC Voltmeter

SVMD Series – Analog DC Voltage Measuring Instrument

The SVMD series pointer-type analog voltmeters are developed for measuring DC voltage on switchgear and instrument testing devices. They are widely used in low-voltage complete equipment, generator sets, track crossings, and other panel-mounted voltage indication applications. Installation adopts high-strength plastic clamping parts, fitted by pushing and tightening for a simple, firm mount.



2. General Technical Requirements

Project	Technical Requirement	Reference Standard	Notes
Basic error	$\pm 1.5\%$ FS ($\pm 2.5\%$ FS for SVMD-48)	GB/T 7676.1-2017	-
Response time	$\leq 4s$	GB/T 7676.1-2017	-
Overshoot	$\leq 15\%$ of scale length	GB/T 7676.1-2017	-
Measurement range – direct	50mV – 600V (multiple ranges)	-	See section 4
Measurement range – ratio	450V – 5000V; 5mA rated input current, external fixed resistor	-	See section 4
Continuous overload	120% of rated voltage / current	GB/T 7676.2-2017	-
Short-term overload	2× rated voltage, once, 5 seconds	GB/T 7676.2-2017	-
IP class – Front	IP40	GB 4208-2008	Customizable IP52 / IP54
IP class – Other	IP20	GB 4208-2008	-
Power consumption	$\leq 1VA$	-	-
Reference environmental conditions	T: (23 $\pm$ 2)°C H: (40–60)% RH	GB/T 7676.1-2017	-
Working environment conditions	T: –10°C ~ +55°C H: < 95% RH, No condensation	-	-
Storage environment conditions	T: –25°C ~ +70°C H: < 95% RH, No condensation	-	-
Materials	Shell: ABS / flame-retardant ABS. Base: PC / flame-retardant PC	UL94 (V0)	All flame-retardant grades

GB/T
7676.1-7676.9-2017

GD 01-2006

GB 4793.1-2007

GB/T 2423

GB 4208-2008

3. Safety Requirements

Size

Safety Requirement

48, 72, 96

CAT III 300V, Pollution Level: 2, Voltage Test 2000V

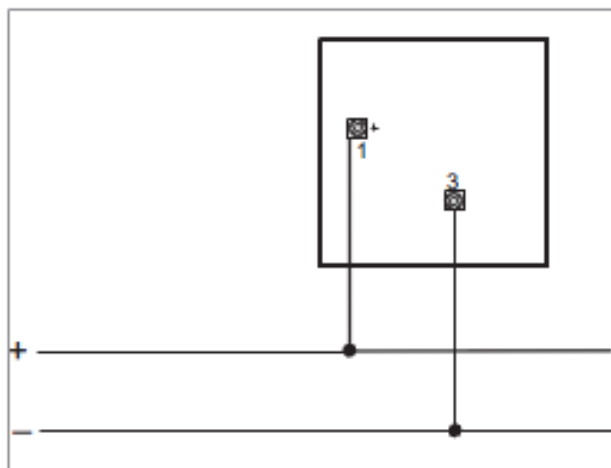
4. Specific Technical Parameters

Operation Mode	Name	Model	Accuracy	Characteristic
Direct / ratio type	DC Voltmeter	SVMD-96 V	1.5	Open-type
Direct / ratio type	DC Voltmeter	SVMD-72 V	1.5	Open-type
Direct / ratio type	DC Voltmeter	SVMD-48 V	2.5	Open-type

Standard range: 1, 1.2, 1.5, 2, 2.5, 3, 4, 4.5, 5, 6, 7.5, 8, and 10^n times them.

5. Instrument Wiring Instructions

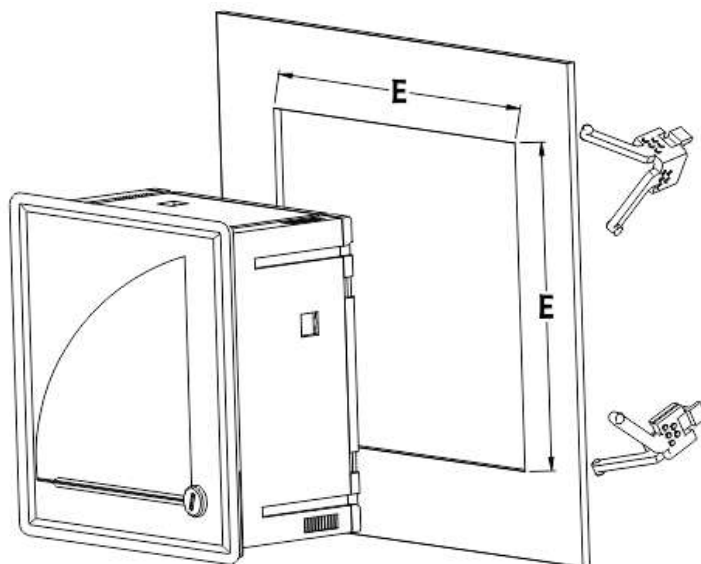
Schematic diagram of DC voltmeter wiring:



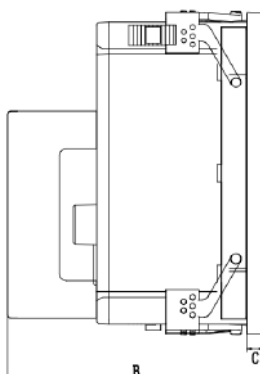
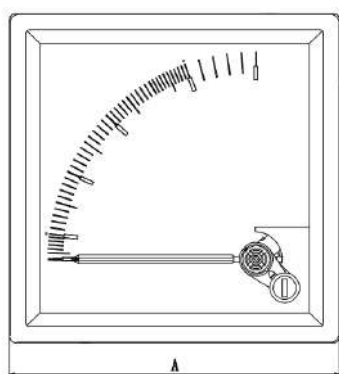
SVMD-96 V SVMD-72 V SVMD-48 V

6. Installation Method

Model	Installation
48, 72, 96	High-strength plastic clamping parts – push-fit and tighten



7. Outline and Mounting Dimensions



Dimension: mm

Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
SVMD-96	96	74	5.5	89.5	92
SVMD-72	72	74	5.5	66.2	68
SVMD-48	48	74	5.5	44	45

8. Precautions

- 8.1 Connect the wires correctly according to the wiring diagram; the actual product shall prevail.
- 8.2 Cut off the power supply before connecting the wires.
- 8.3 Do not apply voltage beyond the rated voltage range, as this may cause instrument malfunction.
- 8.4 Do not use the instrument in a condensed (dew) condition.
- 8.5 When using the instrument near exposed or live parts, do not touch parts under voltage; use protective tools such as rubber gloves.

CE Certified	GB/T 7676 Compliant	CAT III 300V	IP40 / IP20	50/60 Hz
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Maximum Demand Indicator

MDI – Thermal/Bimetallic AC Analog Measurement Instrument

The thermal/time characteristics of MDI meters monitor the most economic use of cable, fuse-gear and transformers. The directly heated bi-metal element indicates mean RMS current over 8, 15, or 20 minutes, and a red slave pointer shows the highest value reached. The reset knob is wire sealable. Scales are calibrated to match the CT primary plus 20% overload. End values are selected from: 1.2, 1.8, 2.4, 3, 3.6, 4.8, 6, 7.2, 9 amps and their multiples of 10 and 100.



2. General Technical Requirements

Project	Technical Requirement	Reference Standards	Notes
Basic error	Bimetallic class 3.0 Instant class 1.5	GB/T22265-2008	
Reference value	Upper limit of measurement range	GB/T22265-2008	
Response time	$\leq 4s$	GB/T 7676.1-2017	
Overshoot	$\leq 15\%$ scale length	GB/T 7676.1-2017	
Installation location	Vertical installation	DIN 16257	Can customize other installation locations
Measuring range	Refer to sections four and five		
Working frequency	45–65 Hz		
IP class – Front	IP20	GB 4208-2008	
IP class – Other	IP20	GB 4208-2008	
Continuous overload – Current	120% upper limit of measurement range	GB/T 7676.2-2017	
Continuous overload – Voltage	120% upper limit of measurement range		
Short-term overload – Current	10×, once, 5 seconds	GB/T 7676.2-2017	
Short-term overload – Voltage	2×, 1 time, 5s		
Reference environmental conditions	T: (23±2)°C H: (40–60)% RH	GB/T 7676.1-2017	
Working environment conditions	T: –10°C ~ +55°C H: < 95% RH, No condensation		
Storage environment conditions	T: –25°C ~ +70°C H: < 95% RH, No condensation		
Impact	15g, 11ms	GB/T 7676.1-2017	
Vibration	2 Hz–13.2 Hz: Displacement amplitude ±1 mm; 13.2 Hz–100 Hz: Acceleration ±7 m/s ²	GB/T 7676.1-2017	

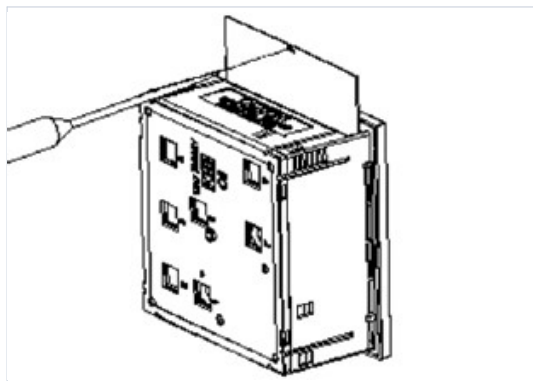
3. Safety Requirements

Size	Safety Requirement
72, 96	CAT III 300V, Pollution Level: 2

4. Specific Technical Parameters – Square Meter

Operation Mode	Name	Model	Specifications	Accuracy Level	Action Time	Consumption (VA)
Direct heating type	Single structure demand scale	M96A	1A or 5A	3.0	8 minutes or 15 minutes	≤2VA
		M72A	1A or 5A	3.0	8 minutes or 15 minutes	≤2VA
		M48A	1A or 5A	3.0	8 minutes or 15 minutes	≤2VA
Direct heating type	Dual structure demand scale	2M96A	1A or 5A	Bimetallic class 3.0 Instant class 1.5	8 minutes or 15 minutes	≤2.5V A
		2M72A	1A or 5A	Bimetallic class 3.0 Instant class 1.5	8 minutes or 15 minutes	≤2.5V A

5. Square Instrument Dial Replacement Instructions

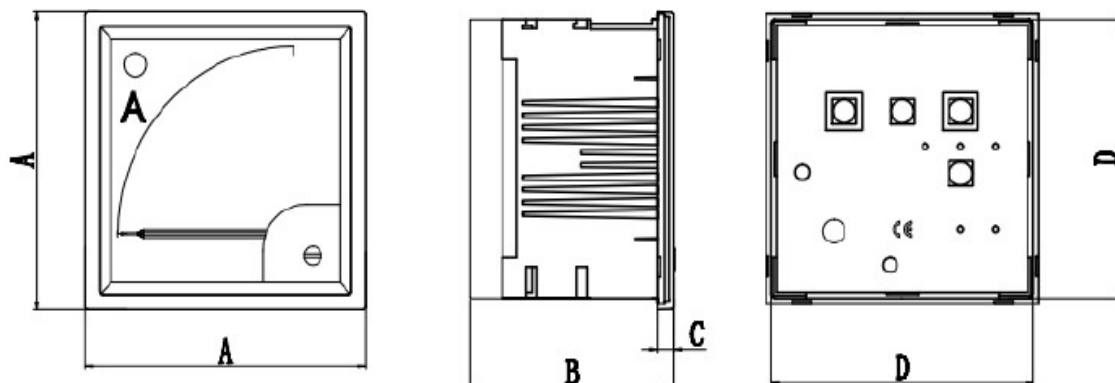


The scale plate can be replaced by removing the front bezel. Ensure the instrument is de-energised before performing any maintenance. Align the replacement scale correctly before refitting the bezel. The reset knob is wire sealable and should not be disturbed during scale replacement.

6. Installation Method – 6.1 Square

Model	Installation
72, 96	Clamps

7. Outline and Mounting Dimensions – 7.1 Square



Dimension: mm

Model	A (mm)	B (mm)	C (mm)	E (mm)
SAM-96-MDI	96	71	6	92
SAM-72-MDI	72	71	6	68

8. Precautions

- 8.1 Connect cables according to the wiring diagram.
- 8.2 Before connecting cables, be sure to cut off the power supply of the measurement object.
- 8.3 Do not apply voltage beyond the voltage range, which will cause the instrument to fail.
- 8.4 Do not use in the condition of dew.
- 8.5 When using the device around the exposed or live part, do not touch the part to which the voltage is applied. In this case, you are advised to use protective tools such as rubber gloves.

CE Certified	GB/T22265 Compliant	DIN 16257	CAT III 300V	45–65 Hz
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240° Analog Meter

Volt and Ampere Meter – SAM / SVM Series

The SAM / SVM series 240° analog meters are developed for AC and DC current and voltage measurement on switch cabinets and instrument testing devices. They are widely used in low-voltage complete sets of equipment, marine ships, electric welding machines, generator sets, rail transit, aerospace, chemical explosion-proof, nuclear power generation and other demanding applications.



2. General Technical Requirements

Item	Technical Requirement	Reference Standard	Notes
Accuracy	1.0, 1.5 or 2.5	GB/T 7676.2-2017	Level 1.0 customizable
Reference value	Measuring range upper limit	GB/T 7676.2-2017	-
Response time	≤ 4s	GB/T 7676.1-2017	-
Overshoot	≤ 15% of scale length	GB/T 7676.1-2017	-
Installation location	Vertical installation	DIN 16257	Other positions customizable
Measuring range	Refer to section 4	-	-
Working frequency	45–65 Hz or 400 Hz	-	-
Enclosure IP class – Front	IP40	GB 4208-2008	Customizable IP52 / IP54 / IP56 / IP65
Enclosure IP class – Other	IP20	GB 4208-2008	-
Continuous overload	120% of the upper limit of the measuring range	GB/T 7676.2-2017	-
Short-time overload	2× overload, once, 5 seconds (customizable to 6× overload, once, 5 seconds)	GB/T 7676.2-2017	-
Reference environmental conditions	T: (23±2)°C H: (40–60)% RH	GB/T 7676.1-2017	-
Working environment conditions	T: –25°C ~ +55°C H: < 95% RH, No condensation	-	-

Item	Technical Requirement	Reference Standard	Notes
Shock	15g, 11ms	GB/T 7676.1-2017	-
Vibration	2–13.2 Hz: $\pm 1\text{mm}$ displacement; 13.2–100 Hz: $\pm 7\text{m/s}^2$ acceleration	GB/T 7676.1-2017	-
Material	All plastic parts are flame retardant	UL94 (V0)	-

3. Safety Requirements

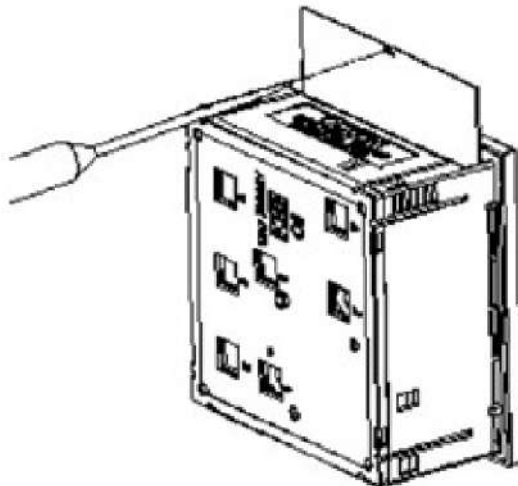
Model	Security Requirement
SAM-96-240, SAM-72-240, SVM-96-240, SVM-72-240	CAT III 600V, Pollution Degree: 2
SAM-48-240, SVM-48-240	CAT III 300V, Pollution Degree: 2

4. Specific Technical Parameters

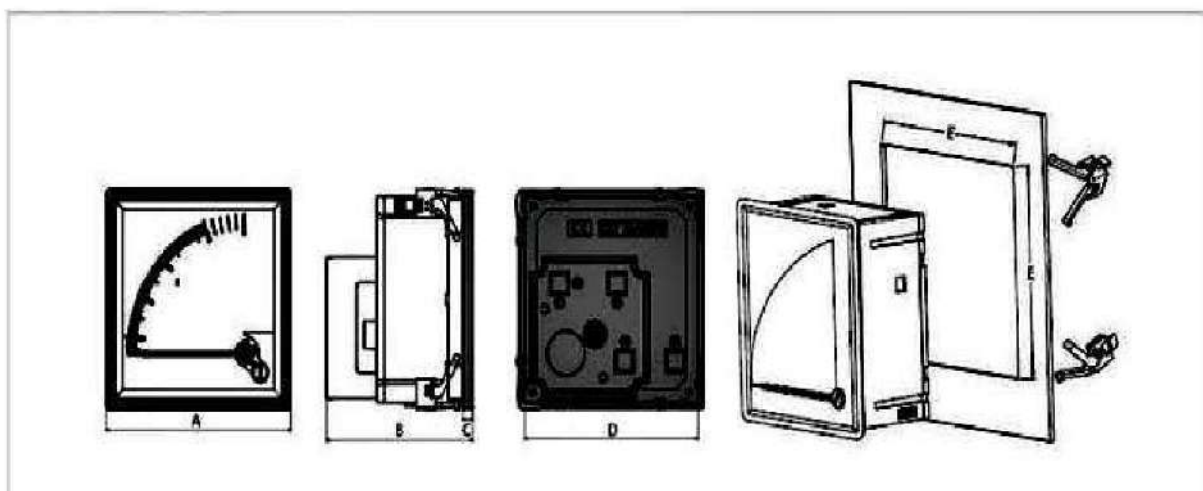
Product Name	Model	Measuring Range	Accuracy	Consumption
240° rectifier AC voltmeter	HL-S48-GL-V	10V ~ 500V	2.5	10V–30V: 0.45kΩ/V
240° rectifier AC voltmeter	HL-S72-GL-V	10V ~ 600V; with voltage transformer: /100V, /110V	1.5 / 1.0	40V–500V: 0.9kΩ/V
240° rectifier AC voltmeter	HL-S96-GL-V	10V ~ 600V; with voltage transformer: /100V, /110V	1.5 / 1.0	0.9kΩ/V
240° magneto-electric DC ammeter	HL-S48-GC-A	100uA; 100uA–5A, 4-20mA; with external shunt: /75mV, /60mV	2.5	Drop: 4-20mA < 2V; other 50mV–0.5V
240° magneto-electric DC ammeter	HL-S72-GC-A / HL-S96-GC-A	100uA ~ 15A; with external shunt: /75mV, /60mV	1.5 / 1.0	Drop: 4-20mA < 2V; other 50mV–0.5V

5. Appearance and Installation

The scale plate can be accessed by removing the front bezel. Ensure the instrument is de-energised before performing any maintenance, and align the replacement scale correctly before refitting the bezel.



6. Outline Overall and Installing Dimensions



Dimension unit: mm

Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
SAM-96-240 / SVM-96-240	96	76	5.5	90.5	92
SAM-72-240 / SVM-72-240	72	76	5.5	67	68.5
SAM-48-240 / SVM-48-240	48	71	5.5	44.2	45

7. Matters Needing Attention

- a. Please wire correctly according to the wiring diagram.
- b. Before connecting the wires, be sure to cut off the power of the measuring object.
- c. Do not apply a voltage exceeding the voltage range, as this will cause the instrument to malfunction.
- d. Do not use the instrument in a condensed (dew) condition.
- e. When using the instrument around exposed or live parts, do not touch the part where the voltage is applied. It is recommended to use protective tools such as rubber gloves.

CE Certified	GB/T 7676 Compliant	CAT III 600V	IP40 / IP20	45–65 Hz / 400 Hz
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240° Analog Meter

Volt and Ampere Meter – SAM / SVM Series

The SAM / SVM series 240° analog meters are developed for AC and DC current and voltage measurement on switch cabinets and instrument testing devices. They are widely used in low-voltage complete sets of equipment, marine ships, electric welding machines, generator sets, rail transit, aerospace, chemical explosion-proof, nuclear power generation and other demanding applications.



240° Analog Ammeter



240° Analog Voltmeter

2. General Technical Requirements

Item	Technical Requirement	Reference Standard	Notes
Accuracy	1.0, 1.5 or 2.5	GB/T 7676.2-2017	Level 1.0 customizable
Reference value	Measuring range upper limit	GB/T 7676.2-2017	-
Response time	≤ 4s	GB/T 7676.1-2017	-
Overshoot	≤ 15% of scale length	GB/T 7676.1-2017	-
Installation location	Vertical installation	DIN 16257	Other positions customizable
Measuring range	Refer to section 4	-	-
Working frequency	45–65 Hz or 400 Hz	-	-
Enclosure IP class – Front	IP40	GB 4208-2008	Customizable IP52 / IP54 / IP56 / IP65
Enclosure IP class – Other	IP20	GB 4208-2008	-
Continuous overload	120% of the upper limit of the measuring range	GB/T 7676.2-2017	-

Item	Technical Requirement	Reference Standard	Notes
Short-time overload	2× overload, once, 5 seconds	GB/T 7676.2-2017	-
Reference environmental conditions	T: (23±2)°C H: (40–60)% RH	GB/T 7676.1-2017	-
Working environment conditions	T: –25°C ~ +55°C H: < 95% RH, No condensation	-	-
Shock	15g, 11ms	GB/T 7676.1-2017	-
Vibration	2–13.2 Hz: ±1mm displacement; 13.2–100 Hz: ±7m/s ² acceleration	GB/T 7676.1-2017	-
Material	All plastic parts are flame retardant	UL94 (V0)	-

3. Safety Requirements

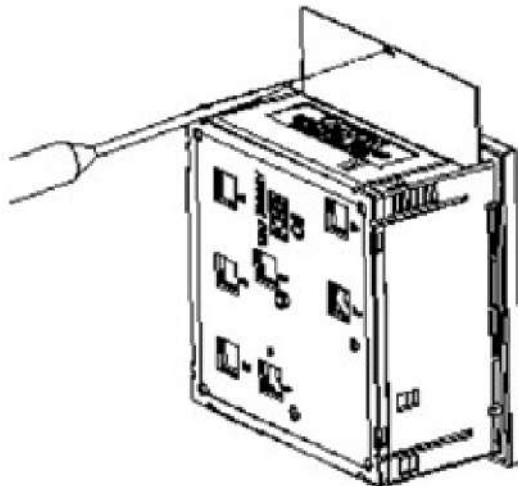
Model	Security Requirement
SAM-96-240, SAM-72-240, SVM-96-240, SVM-72-240	CAT III 600V, Pollution Degree: 2
SAM-48-240, SVM-48-240	CAT III 300V, Pollution Degree: 2

4. Specific Technical Parameters

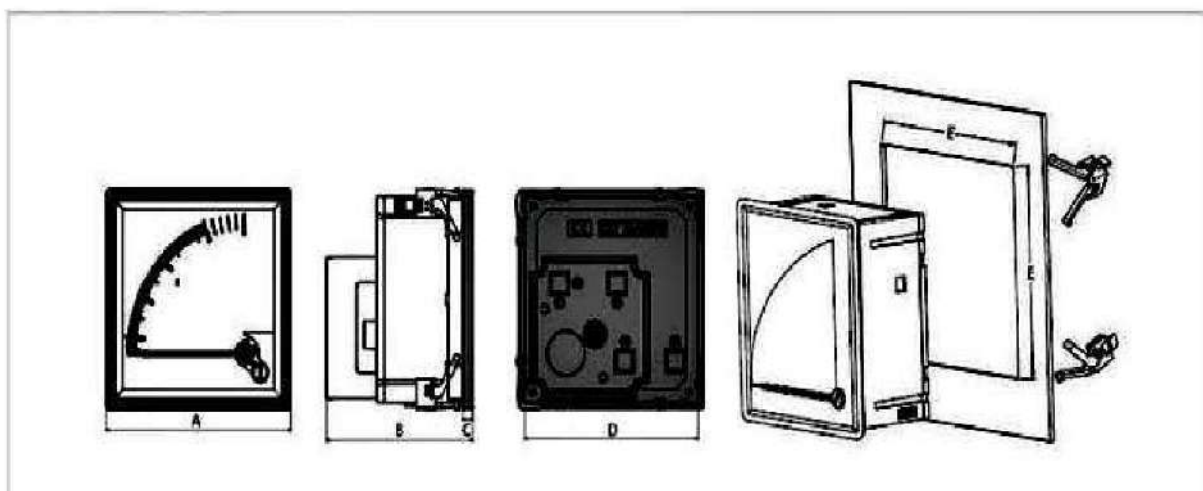
Product Name	Model	Measuring Range	Accuracy	Consumption
240° rectifier AC voltmeter	HL-S48-GL-V	10V ~ 500V	2.5	10V–30V: 0.45kΩ/V
240° rectifier AC voltmeter	HL-S72-GL-V	10V ~ 600V; with voltage transformer: /100V, /110V	1.5 / 1.0	40V–500V: 0.9kΩ/V
240° rectifier AC voltmeter	HL-S96-GL-V	10V ~ 600V; with voltage transformer: /100V, /110V	1.5 / 1.0	0.9kΩ/V
240° magneto-electric DC ammeter	HL-S48-GC-A	100uA; 100uA–5A, 4-20mA; with external shunt: /75mV, /60mV	2.5	Drop: 4-20mA < 2V; other 50mV–0.5V
240° magneto-electric DC ammeter	HL-S72-GC-A / HL-S96-GC-A	100uA ~ 15A; with external shunt: /75mV, /60mV	1.5 / 1.0	Drop: 4-20mA < 2V; other 50mV–0.5V

5. Appearance and Installation

The scale plate can be accessed by removing the front bezel. Ensure the instrument is de-energised before performing any maintenance, and align the replacement scale correctly before refitting the bezel.



6. Outline Overall and Installing Dimensions



Dimension unit: mm

Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
SAM-96-240 / SVM-96-240	96	76	5.5	90.5	92
SAM-72-240 / SVM-72-240	72	76	5.5	67	68.5
SAM-48-240 / SVM-48-240	48	71	5.5	44.2	45

7. Matters Needing Attention

- a. Please wire correctly according to the wiring diagram.
- b. Before connecting the wires, be sure to cut off the power of the measuring object.
- c. Do not apply a voltage exceeding the voltage range, as this will cause the instrument to malfunction.
- d. Do not use the instrument in a condensed (dew) condition.
- e. When using the instrument around exposed or live parts, do not touch the part where the voltage is applied. It is recommended to use protective tools such as rubber gloves.

CE Certified	GB/T 7676 Compliant	CAT III 600V	IP40 / IP20	45–65 Hz / 400 Hz
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