

SINCE 1996



温州赛发电气有限公司
WENZHOU SAIFA ELECTRIC CO., LTD

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温州赛发电气有限公司
WENZHOU SAIFA ELECTRIC CO., LTD

DIGITAL METER

TRANSDUCER

PANEL METER

CURRENT TRANSFORMERS

SHUNT

GENERAL CHANGEOVER SWITCH

CE CB  ROHS ISO9001 Exe II

Company Profile

Wenzhou Saifa Electric Co.,Ltd., established in May, 1996, covers an area of 8000m² and has 200 employees. With 30 excellent professional engineers, we own a powerful researching and developing ability. We have the certificate of ISO9001-2008. Our products have also got the CE, CB certificates approved by Germany TUV company. The panel meters are strictly produced under the International Standard IEC60051, IEC 61010 and National Standard GB/T7676-1998. The digital meters are strictly produced under the International Standard IEC1010 and National Standard GB/T13978-2008. The current transformers are strictly produced under the International Standard IEC60044-1(2003) and National Standard GB1208-2006. Our management philosophy is: Service our customers with high quality products; Build the products image as "Stable, Accurate, Exquisite". Our principal: To be honest, satisfy all our customers!

Products Certificates



General Technical Index

Technical parameters			Index
Input	Voltage	Rated value	AC 0~600V
		Over load	Consistent: 1.2 times instantaneous: 2 times /30s
		Consumption	<0.5VA (each phase)
	Current	Rated value	AC 1A, 5A
		Over load	Consistent: 1.2 times instantaneous: 2 times /1s
		Impedance	<2mΩ
Frequency		45~65Hz	
Measuring accuracy	Voltage, current		±(0.5%FS+one digit)
	Active reactive power		±(0.5%FS+one digit)
	Frequency		±0.1Hz
	Harmonic		The three-phase voltage/current 21 total harmonic content
	Power factor		±0.01PF
	Active energy		±0.5% (only for reference, not for meterage)
Power	Scope		AC 220V, 50/60Hz AC/DC 85~265V
	Consumption		<5VA
Safety	Withstand voltage	Input and power	>2kv50Hz/1min
		Input and output	>1kv50Hz/1min
		Output and power	>2kv50Hz/1min
Insulating resistance		Any two of input, output, power, casing >20MΩ	
Environment	Temperature		Operation: -10~50°C Storage: -25~70°C
	Humidity		≤85%RH. free of wet and corrosive gas
	Elevation		≤3000m

Type and designation

SFN-□□□-□□+□

- Additional functions**
 - nDO: switch value output (n=1,2,3,4 channels)
 - nDI: switch value input (n=1,2,3,4 channels)
 - nAO: analog quantity output (n=1,2,3,4 channels)
 - H: harmonic
- Measurement parameters** (can combine several parameters)
 - U: voltage I: current F: frequency H: power factor P: active power
 - Q: reactive power R: revolutions per minute E: multifunction power meter
- Phase**
 - Omit: single-phase or DC
 - 3: three-phase
- Display mode**
 - 1: one-row nixietube display
 - 2: two-row nixietube display
 - 3: three-row nixietube display
 - 4: four-row nixietube display
 - 5: five-row nixietube display
 - Y: LCD display
- Function code**
 - K: programmable meter without RS485 communication
 - S: programmable meter with RS485 communication
- Shape code**
 - 2: 120×120
 - 4: 48×48
 - 5: 96×48
 - 7: 72×72
 - 8: 80×80
 - 9: 96×96
 - G: modular type

DIGITAL AC/DC AMMETER


Model	Panel dimension	Cutout hole dimension
SFN-2K1-I	120×120	112×112
SFN-9K1-I	96×96	92×92
SFN-8K1-I	80×80	76×76
SFN-7K1-I	72×72	68×68
SFN-4K1-I	48×48	45×45
SFN-5K1-I	96×48	92×45

Input: AC 5A; DC 5A, 75mV, 0/4-20mA, 0-5/10V
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□S1-I)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

DIGITAL AC/DC VOLTMETER


Model	Panel dimension	Cutout hole dimension
SFN-2K1-U	120×120	112×112
SFN-9K1-U	96×96	92×92
SFN-8K1-U	80×80	76×76
SFN-7K1-U	72×72	68×68
SFN-4K1-U	48×48	45×45
SFN-5K1-U	96×48	92×45

Input: AC 0~600V; DC 0~600V, 0/4-20mA, 0-5/10V
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□S1-U)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

DIGITAL FREQUENCY METER


Model	Panel dimension	Cutout hole dimension
SFN-2K1-F	120×120	112×112
SFN-9K1-F	96×96	92×92
SFN-8K1-F	80×80	76×76
SFN-7K1-F	72×72	68×68
SFN-4K1-F	48×48	45×45
SFN-5K1-F	96×48	92×45

Input: 30~99Hz(AC 30~500V); DC 0/4-20mA, 0-5/10V
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□S1-F)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

SINGLE/THREE-PHASE DIGITAL ACTIVE POWER METER


Model	Panel dimension	Cutout hole dimension
SFN-2K1-P/3P	120×120	112×112
SFN-9K1-P/3P	96×96	92×92
SFN-8K1-P/3P	80×80	76×76
SFN-7K1-P/3P	72×72	68×68
SFN-4K1-P/3P	48×48	45×45
SFN-5K1-P/3P	96×48	92×45

Input: AC 0~500V, 5A
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□S1-P/3P)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

SINGLE/THREE-PHASE DIGITAL POWER FACTOR METER


Model	Panel dimension	Cutout hole dimension
SFN-2K1-H/3H	120×120	112×112
SFN-9K1-H/3H	96×96	92×92
SFN-8K1-H/3H	80×80	76×76
SFN-7K1-H/3H	72×72	68×68
SFN-4K1-H/3H	48×48	45×45
SFN-5K1-H/3H	96×48	92×45

Input: AC 0~500V, 5A
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□S1-H/3H)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

THREE-PHASE DIGITAL AMMETER


Model	Panel dimension	Cutout hole dimension
SFN-2K3-3I	120×120	112×112
SFN-9K3-3I	96×96	92×92
SFN-8K3-3I	80×80	76×76
SFN-7K3-3I	72×72	68×68
SFN-4K3-3I	48×48	45×45

Input: AC 5A, 1A;
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□S3-3I)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

THREE-PHASE DIGITAL VOLTMETER


Model	Panel dimension	Cutout hole dimension
SFN-2K3-3U	120×120	112×112
SFN-9K3-3U	96×96	92×92
SFN-8K3-3U	80×80	76×76
SFN-7K3-3U	72×72	68×68
SFN-4K3-3U	48×48	45×45

Input: AC 0~600V;
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□S3-3U)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

SINGLE-PHASE DIGITAL COMBINED METER


Model	Panel dimension	Cutout hole dimension
SFN-2K3-UIF	120×120	112×112
SFN-9K3-UIF	96×96	92×92
SFN-8K3-UIF	80×80	76×76
SFN-7K3-UIF	72×72	68×68
SFN-4K3-UIF	48×48	45×45

Input: AC 0~500V, 5A;
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□S3-UIF)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

SINGLE-PHASE DIGITAL COMBINED METER


Model	Panel dimension	Cutout hole dimension
SFN-2K3-UIP	120×120	112×112
SFN-9K3-UIP	96×96	92×92
SFN-8K3-UIP	80×80	76×76
SFN-7K3-UIP	72×72	68×68
SFN-4K3-UIP	48×48	45×45

Input: AC 0~500V, 5A;
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□S3-UIP)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

SINGLE-PHASE DIGITAL COMBINED METER


Model	Panel dimension	Cutout hole dimension
SFN-2K3-UIH	120×120	112×112
SFN-9K3-UIH	96×96	92×92
SFN-8K3-UIH	80×80	76×76
SFN-7K3-UIH	72×72	68×68
SFN-4K3-UIH	48×48	45×45

Input: AC 0~500V, 5A;
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□S3-UIH)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

**THREE-PHASE
DIGITAL COMBINED METER**



Model	Panel dimension	Cutout hole dimension
SFN-9K5-3UIF	96×96	92×92

Can choose several Additional Functions
For example: SFN-9K5-3UIF+4DO4DI4AO
SFN-9S5-3UIF+4DO4DI4AO

Input: AC 0~500V, 5A;
Net work: 3P4W or 3P3W
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-9S5-3UIF)
- ▲ 4-channels switch value output(model+4DO)
- ▲ 4-channels switch value input(model+4DI)
- ▲ 4-channels analog quantity output(model+4AO)

**THREE-PHASE
DIGITAL COMBINED METER**



Model	Panel dimension	Cutout hole dimension
SFN-9K5-3UIP	96×96	92×92

Can choose several Additional Functions
For example: SFN-9K5-3UIP+4DO4DI4AO
SFN-9S5-3UIP+4DO4DI4AO

Input: AC 0~500V, 5A;
Net work: 3P4W or 3P3W
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-9S5-3UIP)
- ▲ 4-channels switch value output(model+4DO)
- ▲ 4-channels switch value input(model+4DI)
- ▲ 4-channels analog quantity output(model+4AO)

**THREE-PHASE
DIGITAL COMBINED METER**



Model	Panel dimension	Cutout hole dimension
SFN-9K5-3UIHF	96×96	92×92

Can choose several Additional Functions
For example: SFN-9K5-3UIHF+4DO4DI4AO
SFN-9S5-3UIHF+4DO4DI4AO

Input: AC 0~500V, 5A;
Net work: 3P4W or 3P3W
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-9S5-3UIHF)
- ▲ 4-channels switch value output(model+4DO)
- ▲ 4-channels switch value input(model+4DI)
- ▲ 4-channels analog quantity output(model+4AO)

**MULTIFUNCTIONAL
POWER INSTRUMENT**



Model	Panel dimension	Cutout hole dimension
SFN-2S3-3E	120×120	112×112
SFN-9S3-3E	96×96	92×92
SFN-8S3-3E	80×80	76×76
SFN-7S3-3E	72×72	68×68

Can choose several Additional Functions
For example: SFN-9S3-3E+4DO4DI4AOH

Input: AC 0~500V, 5A;
Net work: 3P4W or 3P3W
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz
Communication interface: RS485

Additional functions

- ▲ 4-channels switch value output(model+4DO)
- ▲ 4-channels switch value input(model+4DI)
- ▲ 4-channels analog quantity output(model+4AO)
- ▲ harmonic(model+H)

**MULTIFUNCTIONAL
POWER INSTRUMENT**



Model	Panel dimension	Cutout hole dimension
SFN-2SY-3E	120×120	112×112
SFN-9SY-3E	96×96	92×92
SFN-8SY-3E	80×80	76×76
SFN-7SY-3E	72×72	68×68

Can choose several Additional Functions
For example: SFN-9SY-3E+4DO4DI4AOH

Input: AC 0~500V, 5A;
Net work: 3P4W or 3P3W
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz
Communication interface: RS485

Additional functions

- ▲ 4-channels switch value output(model+4DO)
- ▲ 4-channels switch value input(model+4DI)
- ▲ 4-channels analog quantity output(model+4AO)
- ▲ harmonic(model+H)

DIGITAL AC/DC AMMETER



Model	Panel dimension	Cutout hole dimension
SFN-2KY-I	120×120	112×112
SFN-9KY-I	96×96	92×92
SFN-8KY-I	80×80	76×76
SFN-7KY-I	72×72	68×68

Input: AC 5A; DC 5A, 75mV, 0/4-20mA, 0-5/10V
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□SY-I)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

DIGITAL AC/DC VOLTMETER



Model	Panel dimension	Cutout hole dimension
SFN-2KY-U	120×120	112×112
SFN-9KY-U	96×96	92×92
SFN-8KY-U	80×80	76×76
SFN-7KY-U	72×72	68×68

Input: AC 0~600V; DC 0~600V, 0/4-20mA, 0-5/10V
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□SY-U)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

DIGITAL FREQUENCY METER



Model	Panel dimension	Cutout hole dimension
SFN-2KY-F	120×120	112×112
SFN-9KY-F	96×96	92×92
SFN-8KY-F	80×80	76×76
SFN-7KY-F	72×72	68×68

Input: 30~99Hz(AC 30~500V); DC 0/4-20mA, 0-5/10V
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□SY-F)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

**SINGLE/THREE-PHASE
DIGITAL ACTIVE POWER METER**



Model	Panel dimension	Cutout hole dimension
SFN-2KY-P/3P	120×120	112×112
SFN-9KY-P/3P	96×96	92×92
SFN-8KY-P/3P	80×80	76×76
SFN-7KY-P/3P	72×72	68×68

Input: AC 0~500V, 5A
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□SY-P/3P)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

**SINGLE/THREE-PHASE
DIGITAL POWER FACTOR METER**



Model	Panel dimension	Cutout hole dimension
SFN-2KY-H/3H	120×120	112×112
SFN-9KY-H/3H	96×96	92×92
SFN-8KY-H/3H	80×80	76×76
SFN-7KY-H/3H	72×72	68×68

Input: AC 0~500V, 5A
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□SY-H/3H)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

THREE-PHASE DIGITAL AMMETER



Model	Panel dimension	Cutout hole dimension
SFN-2KY-3I	120×120	112×112
SFN-9KY-3I	96×96	92×92
SFN-8KY-3I	80×80	76×76
SFN-7KY-3I	72×72	68×68

Input: AC 5A, 1A;
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□SY-3I)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

THREE-PHASE DIGITAL VOLTMETER



Model	Panel dimension	Cutout hole dimension
SFN-2KY-3U	120×120	112×112
SFN-9KY-3U	96×96	92×92
SFN-8KY-3U	80×80	76×76
SFN-7KY-3U	72×72	68×68

Input: AC 0~600V;
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□SY-3U)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

SINGLE-PHASE DIGITAL COMBINED METER



Model	Panel dimension	Cutout hole dimension
SFN-2KY-UIF	120×120	112×112
SFN-9KY-UIF	96×96	92×92
SFN-8KY-UIF	80×80	76×76
SFN-7KY-UIF	72×72	68×68

Input: AC 0~500V, 5A;
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□SY-UIF)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

SINGLE-PHASE DIGITAL COMBINED METER



Model	Panel dimension	Cutout hole dimension
SFN-2KY-UIP	120×120	112×112
SFN-9KY-UIP	96×96	92×92
SFN-8KY-UIP	80×80	76×76
SFN-7KY-UIP	72×72	68×68

Input: AC 0~500V, 5A;
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□SY-UIP)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

SINGLE-PHASE DIGITAL COMBINED METER



Model	Panel dimension	Cutout hole dimension
SFN-2KY-UIH	120×120	112×112
SFN-9KY-UIH	96×96	92×92
SFN-8KY-UIH	80×80	76×76
SFN-7KY-UIH	72×72	68×68

Input: AC 0~500V, 5A;
Accuracy class: 0.5
Auxiliary: AC 220V, 50/60Hz

Additional functions

- ▲ Communication interface: RS485(SFN-□SY-UIH)
- ▲ 2-channels switch value output(model+2DO)
- ▲ 1-channels analog quantity output(model+1AO)

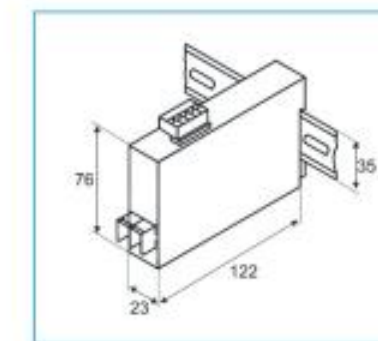
General Technical Index

Parameters	Index
Accuracy	±(0.5%FS+one digit)
Input	Current: 1mA, 10mA, 100mA, 1A, 5A, 10A
	Voltage: 1V, 10V, 100V, 220V, 450V
Over load	Instantaneous: current: 10 times /s, voltage: 2 times /s
Frequency	45~65Hz
Communication	RS485, MODBUS_RTU

Parameters	Index
Power	AC/DC 85~265V
Consumption	<4VA
Operation	-5~55°C
Working	≥50000h
Environment	≤85%RH, free of wet and corrosive gas ≤85%RH
Output	DC4~20mA, DC0~20mA, DC0~10V, DC0~5V

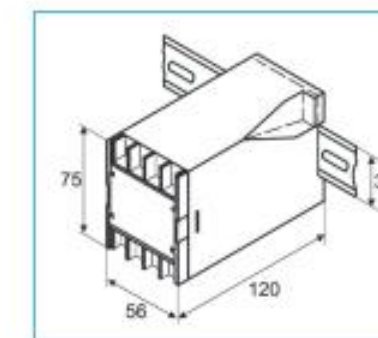
Model and Specification

ECONOMIC TRANSDUCER



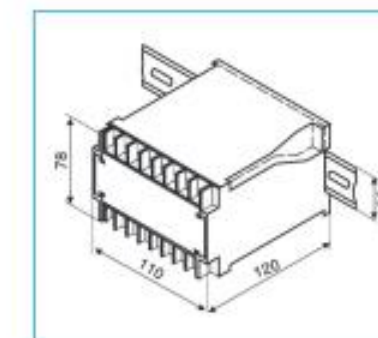
NAME	MODEL
AC Current Transducer	SFN-BS4I
AC Voltage Transducer	SFN-BS4U
Frequency Transducer	SFN-BS4F
DC Current Transducer	SFN-BS5I
DC Voltage Transducer	SFN-BS5U

SINGLE-PHASE TRANSDUCER



NAME	MODEL
Single-phase Current Transducer	SFN-BS4ID
Single-phase Voltage Transducer	SFN-BS4UD
Frequency Transducer	SFN-BS4FD
Single-phase Active power Transducer	SFN-BS4PD
Single-phase Reactive power Transducer	SFN-BS4QD
Single-phase Power Factor Transducer	SFN-BS4HD

THREE-PHASE TRANSDUCER



NAME	MODEL
Three-phase Current Transducer	SFN-3BS4ID
Three-phase Voltage Transducer	SFN-3BS4UD
Three-phase Active power Transducer	SFN-3BS4PD
Three-phase Rective power Transducer	SFN-3BS4QD
Three-phase Power Factor Transducer	SFN-3BS4HD
Three-phase Multifunctional Transducer	SFN-3BS4ED



Model and Specification

Function shape	Measuring functions										Shape code					
	AC/DC voltage	AC/DC current	Three-phase voltage	Three-phase current	Frequency	Single-phase power factor	Three-phase power factor	Single-phase active power	Three-phase active power	Single-phase reactive power	Three-phase reactive power	2	9	8	7	5
Model											120x120	96x96	80x80	72x72	96x48	48x48
SFD-□K1-U	•										√	√	√	√	√	√
SFD-□K1-I		•									√	√	√	√	√	√
SFD-□K1-F					•						√	√	√	√	√	√
SFD-□K1-H						•					√	√	√	√	√	√
SFD-□K1-3H							•				√	√	√	√	√	√
SFD-□K1-P								•			√	√	√	√	√	√
SFD-□K1-3P									•		√	√	√	√	√	√
SFD-□K1-Q										•	√	√	√	√	√	√
SFD-□K1-3Q											•	√	√	√	√	√
SFD-□K2-UI	•	•										√				
SFD-□K2-3PQ												•	√			
SFD-□K3-3U			•								√	√	√	√		√
SFD-□K3-3I				•							√	√	√	√		√
SFD-□K3-UIF	•	•			•						√	√	√	√		
SFD-□K3-UIH	•	•				•					√		√			
SFD-□K3-UIP	•	•					•				√		√			
SFD-□K4-3UI			•	•							√					
SFD-□K5-3UIF			•	•	•						√					
SFD-□K5-3UIP			•	•				•			√					
SFD-□K5-3UIHF			•	•	•						√					

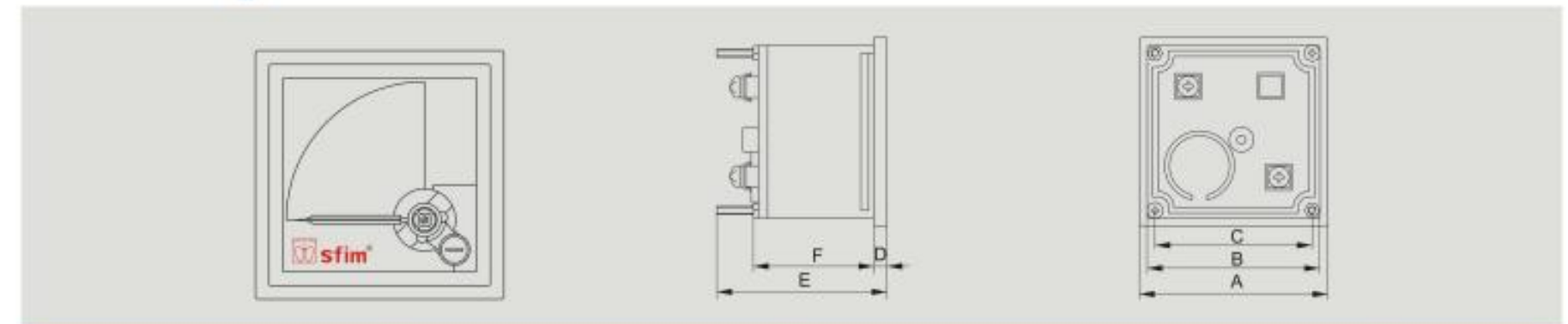
All the technical parameters of SFD series meter refer to the SFN series

Ammeter/Voltmeter



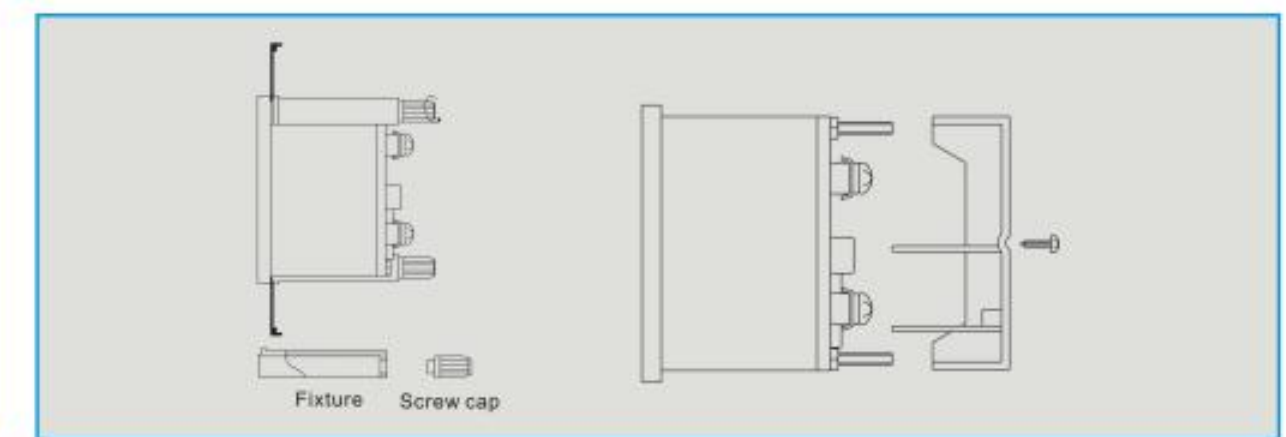
Type	SF-96 (80, 72, 48) -3
Range	AC 0-100A (48-3 MAX AC 30A)
	AC 0-750V, 110V/PT
	DC 0-100UA, DC 0-500MA, DC 0-50 (60, 75) MV
	DC 0-2000V

Outline drawing (unit:mm)

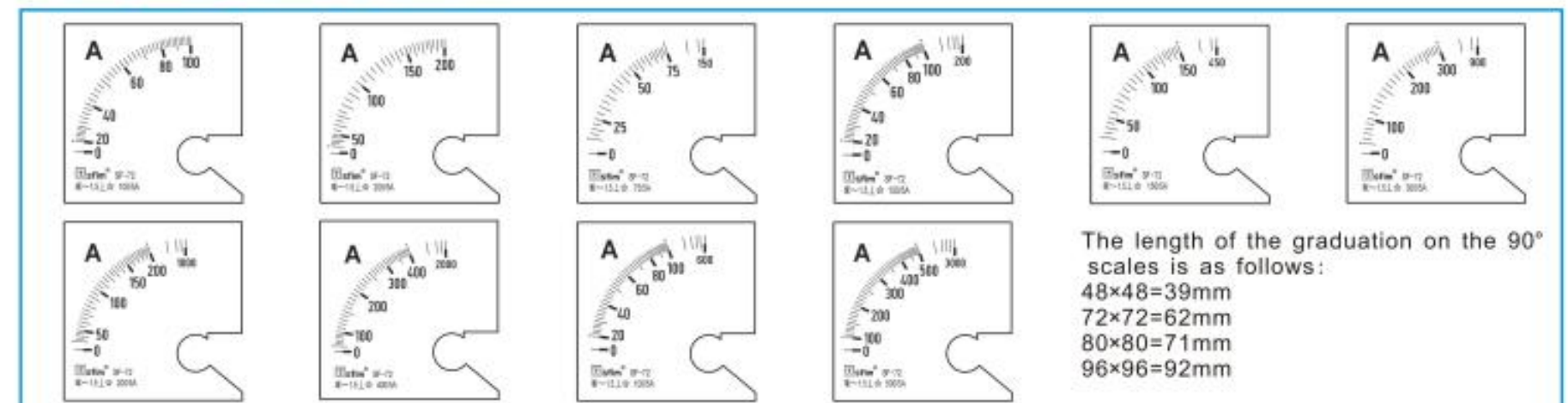


Type 型号	A	B	C	D	E	F	Hole
SF-96-3#	96	91	90	5.5	65	43	92x92
SF-80-3#	80	75	72	5.5	65	43	76x76
SF-72-3#	72	67	66	5.5	65	43	68x68
SF-48-3#	48	43	42	5.5	65	43	45x45

Flush Mounting With Fixture



The standard scale plates :
90° Scale plates with 1In 2In 3In 5In 6In



The length of the graduation on the 90° scales is as follows:
48x48=39mm
72x72=62mm
80x80=71mm
96x96=92mm

SF-96(72)-1 Panel meter



Type	SF-96 (72) -1
Range	AC 0-100A
	AC 0-750V, 110V/PT
	DC 0-100UA, DC 0-500MA, DC 0-50 (60, 75) MV
	DC 0-2000V

Outline drawing (unit:mm)



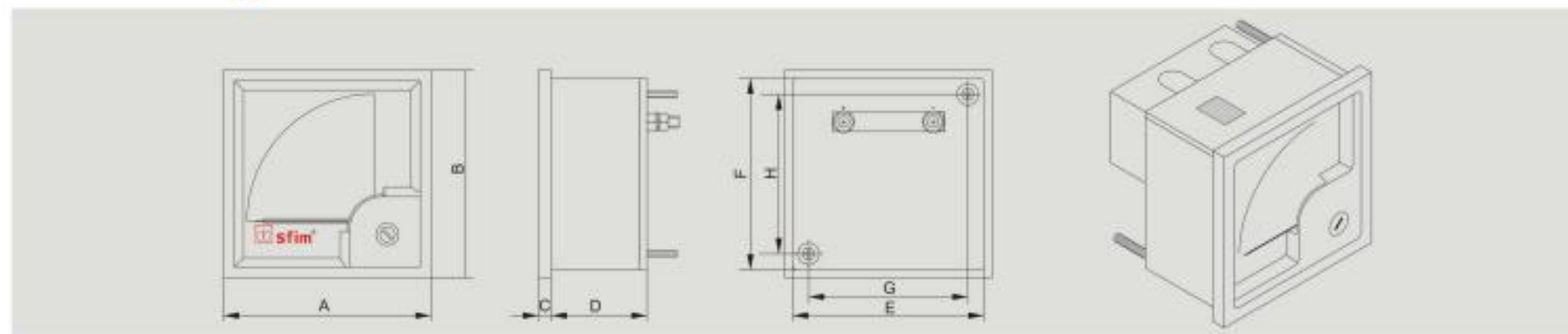
Type	A	B	C	D	E	F
SF-96-1#	96	96	6	50	89	89
SF-72-1#	72	72	6	45	66	66

SF-96(72, 48)-6 Panel Meter



Type	SF-96 (72, 48) -6
Range	AC 0-100A (48-3 MAX AC 30A)
	AC 0-750V, 110V/PT
	DC 0-100UA, DC 0-500MA, DC 0-50 (60, 75) MV
	DC 0-2000V

Outline drawing (unit:mm)



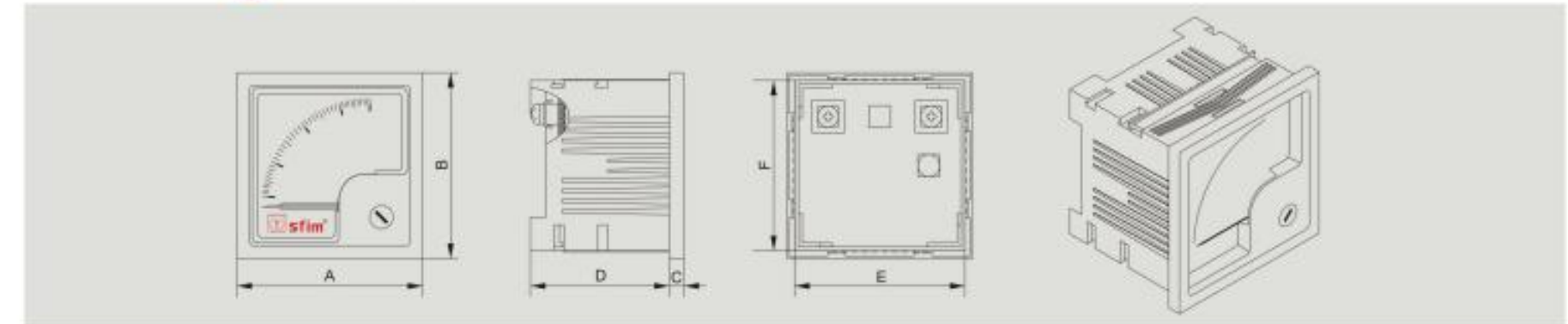
Type	A	B	C	D	E	F	G	H
SF-96-6#	96	96	5	44	90	90	84	84
SF-72-6#	72	72	5	44	66	66	60	60
SF-48-6#	48	48	5	44	44	44	38	38

SF-96(72, 48)-8 Panel meter



Type	SF-96 (72, 48) -8
Range	AC 0-100A (48 MAX AC 30A)
	AC 0-750V, 110V/PT
	DC 0-100UA, DC 0-500MA, DC 0-50 (60, 75) MV
	DC 0-2000V

Outline drawing (unit:mm)



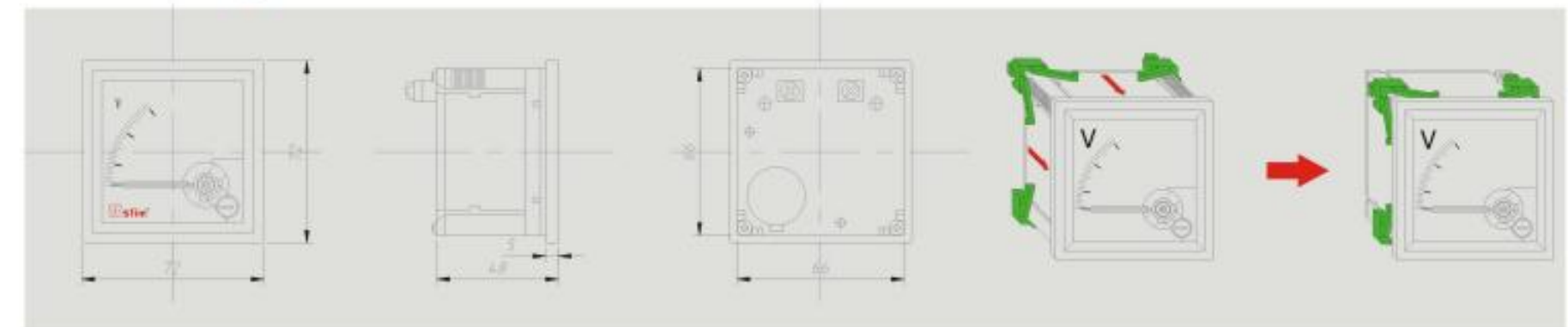
Type	A	B	C	D	E	F
SF-96-8#	96	96	5	54	90	90
SF-72-8#	72	72	5	54	66	66
SF-48-8#	48	48	5	44	44	44

SF-96(72, 48)-9 Panel Meter





Type	SF-96 (72, 48) -9
Range	AC 0-100A (48-3 MAX AC 30A)
	AC 0-750V, 110V/PT
	DC 0-100UA, DC 0-500MA, DC 0-50 (60, 75) MV
	DC 0-2000V

Outline drawing (unit:mm)


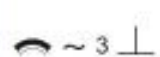


Type	A	B	C	D	E	F	G	H
SF-96-9#	96	96	5	44	90	90	84	84
SF-72-9#	72	72	5	44	66	66	60	60
SF-48-9#	48	48	5	44	44	44	38	38



AC Ammeter and Voltmeter with Selector Switch

Picture	Product Structure	Type	Specification	Overload ration	Accuracy	Standard Mounting
	AC Ammeter with selector switch 3-Position	SF-96-3# SF-72-3#	××/1A ××/5A	1 or 2 times customized 3, 5, 6times	1.5	Flush mounting with bracket
	AC Voltmeter with selector switch 3-Position	SF-96-3# SF-72-3#	10V-500V	/	1.5	Flush mounting with bracket
	AC Voltmeter with selector switch 6-Position	SF-96-3# SF-72-3#	10V-500V	/	1.5	Flush mounting with bracket

Maximum Demand Ammeter

Picture	Product Structure	Symbols	Type	Specification	Response Time	Accuracy	Standard Mounting	Remark
	Maximum Demand Ammeter		SF-96-3# SF-72-3#	5A 50/5A 60/5A 75/5A 100/5A 200/5A ... 5000/5A	15min	3.0	Flush mounting with bracket	
	MDI with Moving Iron Ammeter		SF-96-3#	5A 50/5A 60/5A 75/5A 100/5A 200/5A ... 5000/5A	15min	3.0	Flush mounting with bracket	

Double Meter


Picture	Product Structure	Type	Specification	Accuracy	Standard Mounting	Remark
	Double AC Ammeter Double AC Voltmeter	SF-96-3#	100mA-5A 10V-500V	1.5	Flush mounting with bracket	
	Double DC Ammeter Double DC Voltmeter		50mV-600V		Flush mounting with bracket	
	Double Frequency Meter	SF-96-3#	45-55Hz 45-65Hz 55-65Hz 100V 220V 380V 440V	1.5	Flush mounting with bracket	

Marine Meter 船用仪表




Product Structure	Type	Specification	Accuracy	Instruction Angle	Remark	
AC Ammeter	SF-110# SF-96# SF-80# SF-72#	50mA-1000mA ×/1A, ×/5A	1.5	240°	1A, 5A the scales plate is changable	
AC Voltmeter		0-600V			Connecting to PT /110V	
DC Ammeter		50uA-800uA			75mV, 60mV, 50mV the scales plate is changable	
		1mA-20A				
DC Voltmeter		0-2000V			/	
Frequency Meter		45-55Hz 45-65Hz			/	
Power Factor		1A			110V 220V 380V 440V	cosφ meter should be connected with external convertor
		5A				
Power Meter 1P1W KW 3P3W KW 3P4W KW		1A			110V 220V 380V 440V	KW Meter should be connected with external convertor
		5A				



Synchroscope

Picture	Product Structure	Type	Specification	Accuracy	Standard Mounting	Remark
	Synchroscope	SF-96-3# SF-72-3#	AC 57V AC 100V AC 220V AC 380V	2.5	Flush mounting with bracket	


Analogue Frequency Meter

Picture	Product Structure	Symbols	Type	Specification	Operating Voltage	Accuracy	Standard Mounting	Instruction Angle	Remark
	Frequency Meter	$\sim 1.0 \perp$	SF-96-3#	45-55Hz	100V	0.5	Flush mounting with bracket	90°	
			SF-80-3#	45-65Hz	220V	1.0			
			SF-72-3#	47-63Hz	380V	1.5			
			SF-48-3#	55-65Hz	415V				
			SF-48-3#	57-63Hz	440V				



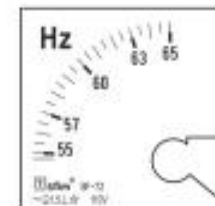
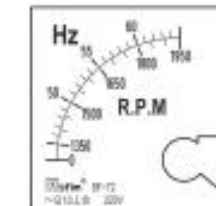


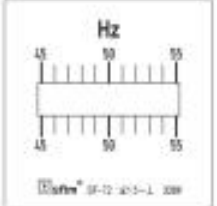
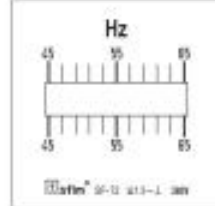
Reeds Frequency Meter

Picture	Product Structure	Symbols	Type	Specification	Operating Voltage	Accuracy	Standard Mounting	Characteristics	Remark
	Reeds Frequency Meter	$\nabla \sim 1.5 \perp$	SF-96-3# SF-72-3#	45-55Hz 45-65Hz 47-63Hz 55-65Hz 57-63Hz	100V 220V 380V 415V 440V	0.5	Flush mounting with bracket	Single row vibrating reed	
	Reeds Frequency Meter	$\nabla \sim 1.5 \perp$	SF-96-3#	45-55Hz 45-65Hz 47-63Hz 55-65Hz 57-63Hz	100V 220V 380V 415V 440V	0.5	Flush mounting with bracket	Double row vibrating reeds	



LED Frequency Meter

Picture	Product Structure	Symbols	Type	Specification	Operating Voltage	Accuracy	Standard Mounting	Characteristics	Remark
	LED Frequency Meter	$1.5 \sim \perp$	SF-96-3# SF-72-3#	45-55Hz 45-65Hz 55-65Hz	100V 220V 380V 415V 440V	0.5	Flush mounting with bracket	LED display	


Frequency Meter Scale Plates

					
		<p>The length of the graduation on the 90° scales is as follows: 48×48=39mm 72×72=62mm 80×80=71mm 96×96=92mm</p>			



Power Factor Meter

Picture	Product Structure	Symbols	Type	Specification	Operating Voltage	Current	Accuracy	Standard Mounting	Remark
	Power Factor Meter Single-phase system	$\sim 2.5 \perp$	SF-96-3# SF-80-3# SF-72-3# SF-48-3#	CAP	100V 220V 240V	1A 5A	2.5	Flush mounting with bracket	
				IND					
	Power Factor Meter Three-phase system with balanced load	$\sim 2.5 \perp$	SF-96-3# SF-80-3# SF-72-3# SF-48-3#	CAP	100V 220V 240V 380V 415V	1A 5A	2.5	Flush mounting with bracket	
				IND					

Active Power Meter and Rective Power Meter

Picture	Product Structure	Symbols	Type	Specification	Operating Voltage	Current	Accuracy
	Active Power Meter(Reactive Power Meter) Single-Phase system	$\sim 1.5 \perp$	SF-96-3# SF-80-3# SF-72-3# SF-48-3#	0-800KW 0-10000MW	57.7V 100V 220V	1A 5A	1.5
	Active Power Meter(Reactive Power Meter) 3P3W balanced system 3P3W unbalanced system				100V 220V 380V 440V		
	Active Power Meter(Reactive Power Meter) 3P4W balanced system 3P4W unbalanced system				220V 240V 380V 415V		

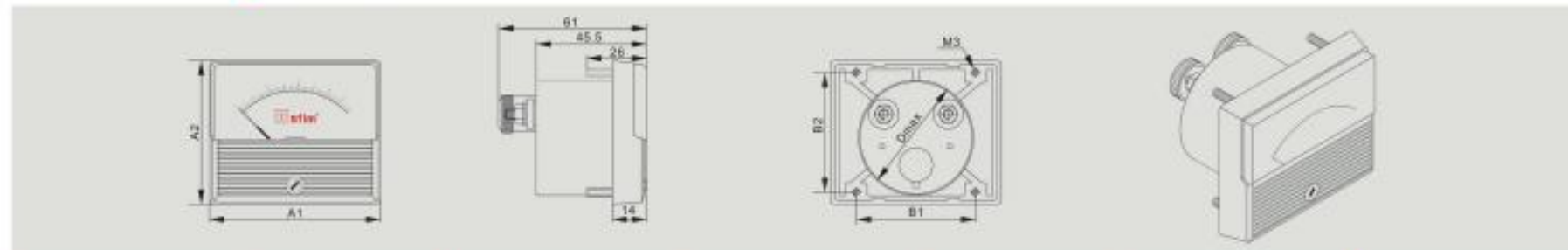
Phase Sequence Indicator , Hours Run Meter

Picture	Product Structure	Type	Specification	Accuracy	Standard Mounting	Remark
	Phase Sequence Indicator	SF-96-3#	AC 100V-380V AC 150V-500V	1.5	Flush mounting with bracket	
	Hours Run Meter	SF-96-3# SF-72-3# SF-48-3#	AC 110V-250V AC 250V-450V	0.5	Flush mounting with bracket	

SFT Panel Meter



Outline drawing (unit:mm)

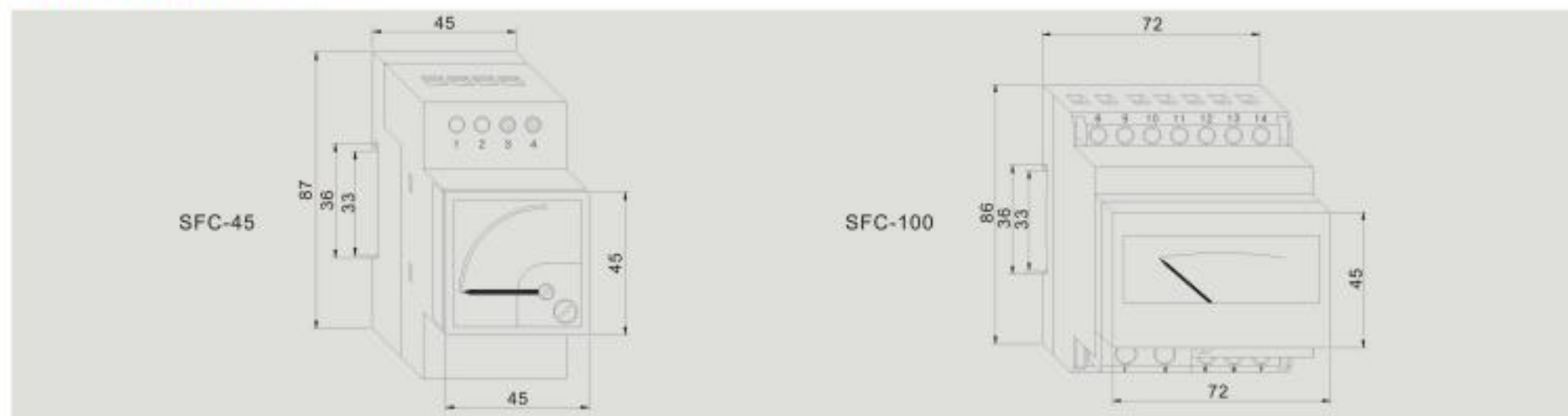


Type	A1	A2	B1	B2	Dmax	Hole Cutout Dimension
SFT-8100	100	80	64	64	46.5	47.5
SFT-80	80	80	64	64	46.5	47.5
SFT-780	80	70	64	64	46.5	47.5
SFT-680	80	60	47.5	47.5	46.5	47.5
SFT-670	70	60	47.5	47.5	46.5	47.5
SFT-60	60	60	47.5	47.5	46.5	47.5
SFT-560	60	50	36	36	43	44
SFT-50	50	50	36	36	43	44

Modular Type Panel Meter



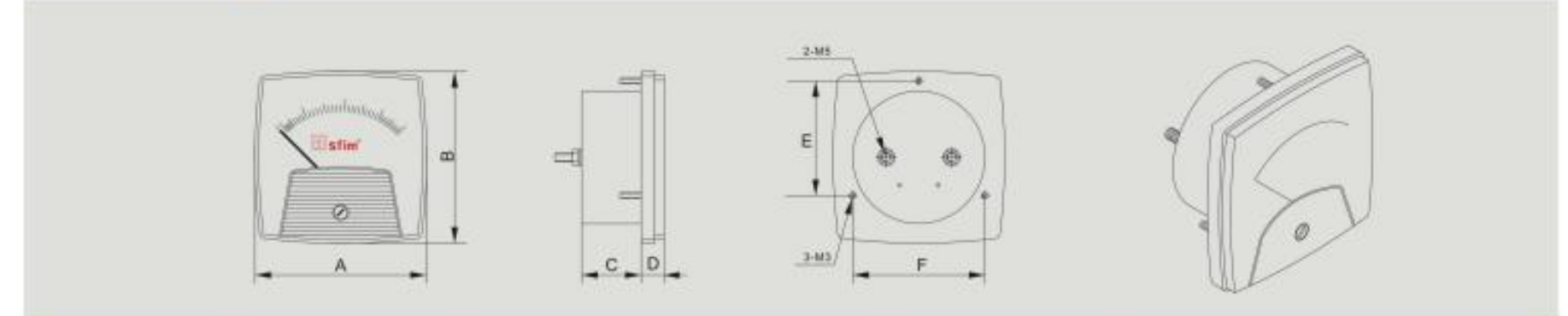
Outline drawing (unit:mm)



SF-100Y Panel Meter



Outline drawing (unit:mm)

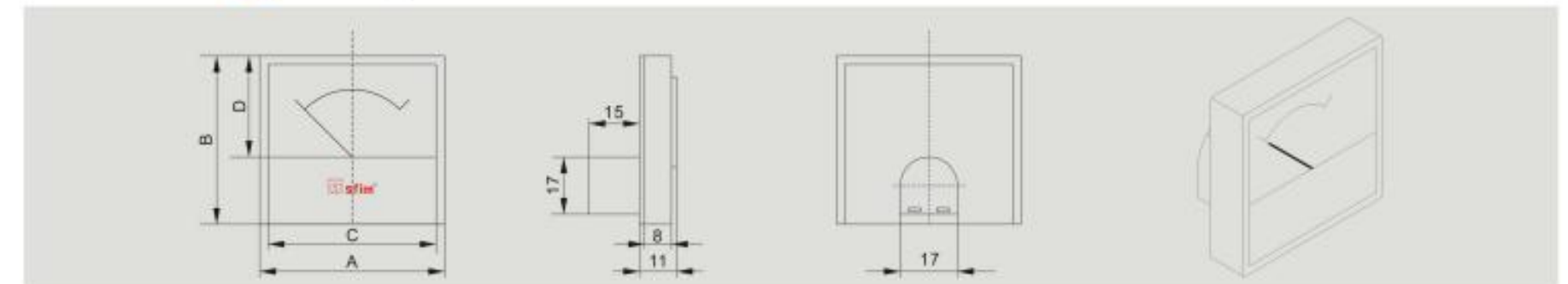


Type	A	B	C	D	E	F
SF-68Y	68	68	32	12.5	45	55
SF-100Y	89.5	89.5	32	12.5	60	68

Supply-Battery Panel Meter



Outline drawing (unit:mm)

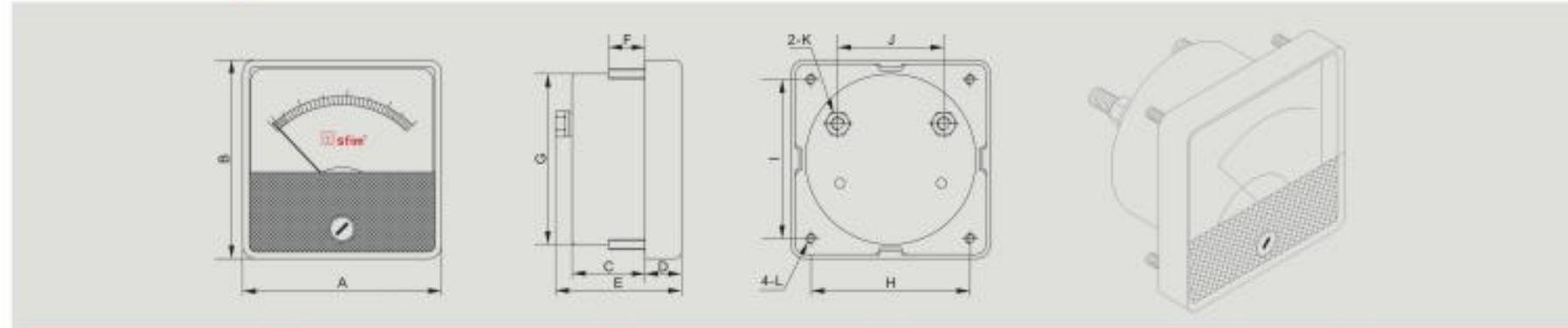


Type	A	B	C	D
SF-55	55	50	50	30
SF-48	55	48	60	28
SF-40	40	40	36	21
SF-48A	48	48	44	25

Square or Rectangular Panel Meter



Outline drawing (unit:mm)

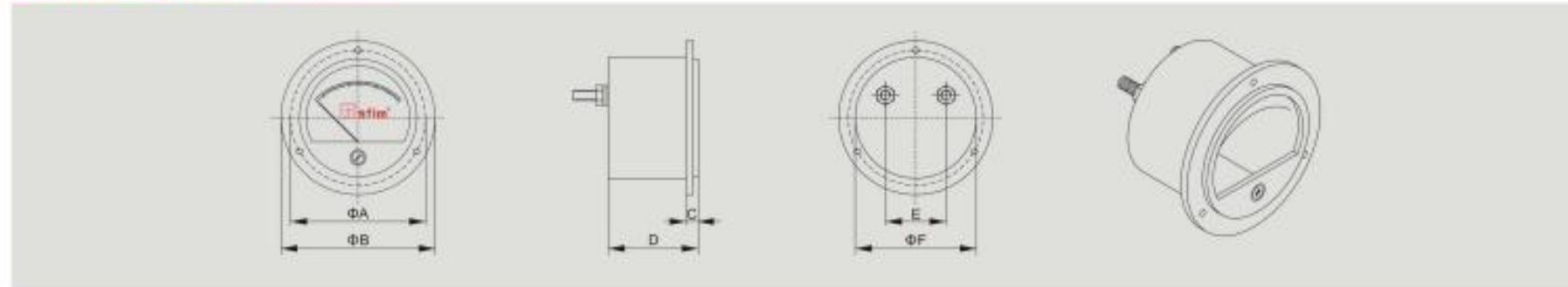


Type	A	B	C	D	E	F	G	H	I	J	K	L
SF-80	80	80	23	13	49	13	63	65	65	24	M5 Outside	M3
SF-670	70	60	22	11	45	10	51	50	50	31	M4 Inside	M3
SF-60	60	60	22	11	39	11	51	48	48	25	M4 Inside	M3
SF-50	52	52	22	11	39	10	44	38	38	31	M4 Inside	M3

Round Panel Meter



Outline drawing (unit:mm)



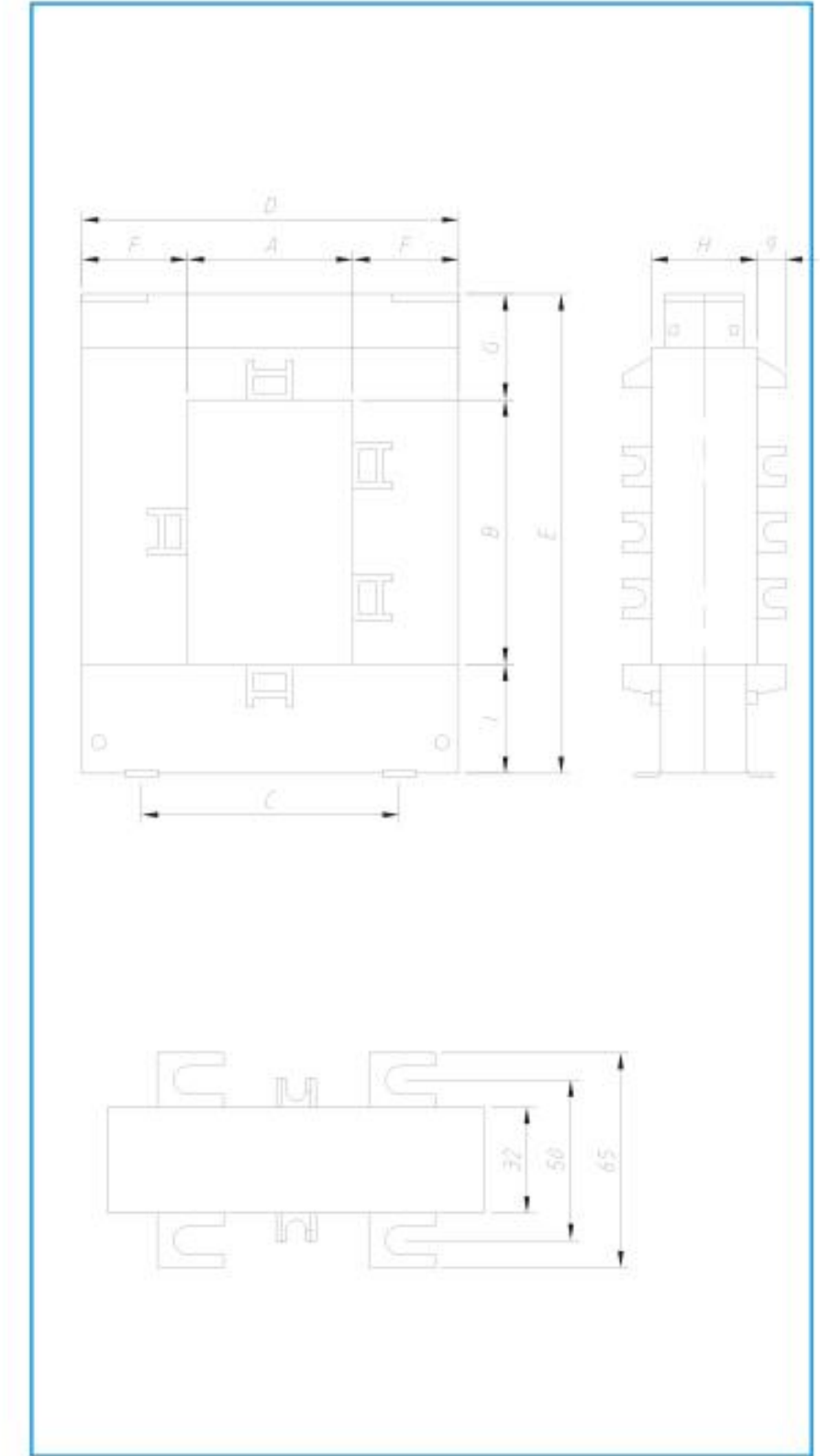
Type	A	B	C	D	E	F
SF-45	45	45	1.5	35	18	45.2
SF-52	58	58	4.5	40.5	39	52
SF-65	73.5	83.5	4.5	42	39	65
SF-62T2	78	90	8	52	35	70

DP Series Current Transformer



Type	Standard current ratio	Class:0.5
		Rated Burden (VA)
DP-23	100	
	150	
	200	
	250	
	300	1.5
DP-58	400	2.5
	500	2.5
	600	2.5
	750	2.5
	800	2.5
DP-88	1000	5
	250	1.5
	300	1.5
	400	1.5
	500	2.5
DP-812	600	2.5
	750	2.5
	800	2.5
	1000	5
	1200	6
DP-816	1250	7.5
	1500	7.5
	2000	15
	2500	15
	3000	20
	4000	20
	5000	20

Outline drawing (unit:mm)



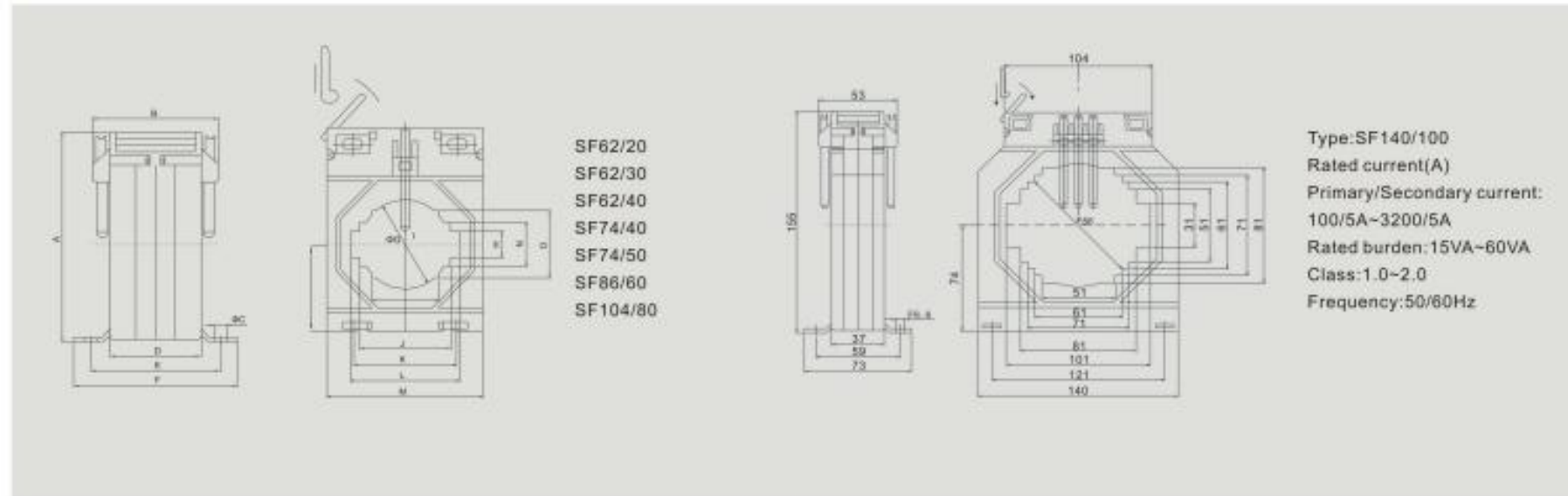
Type	A	B	C	D	E	F	G	H	I	Weight (kg)
DP-23	20	30	51	89	111	34	47	40	32	0.75
DP-58	50	80	78	114	145	32	32	32	33	0.90
DP-88	80	80	108	144	145	32	32	32	33	1.05
DP-812	80	120	108	144	185	32	32	32	33	1.25
DP-816	80	160	120	184	245	52	47	52	38	4.30

SF Series Current Transformer



Outline drawing (unit:mm)

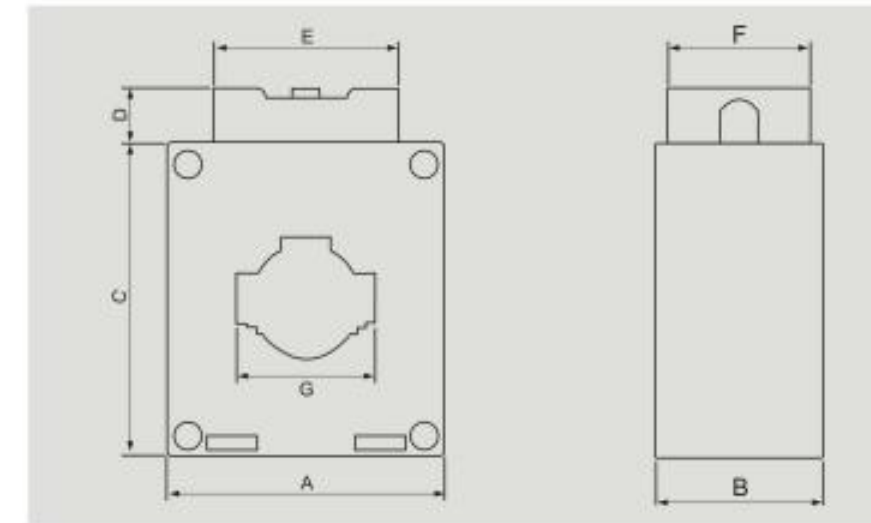
Type	Rated Current(A)	Rated Burden(VA)	Class	Rated Voltage(V)	Rated Frequency(Hz)
SF62/20	30/5A~200/5A	1.5~2.5	3.0~0.5	720	50/60
SF62/30	100/5A~400/5A	1.5~5	1.0~0.5	720	50/60
SF62/40	200/5A~600/5A	5~10	1.0~0.5	720	50/60
SF74/40	150/5A~600/5A	2.5~20	1.0~0.5	720	50/60
SF74/50	250/5A~1000/5A	5~20	1.0~0.5	720	50/60
SF86/60	250/5A~1200/5A	5~30	1.0~0.5	720	50/60
SF104/80	600/5A~2000/5A	5~45	1.0~0.5	720	50/60
SF140/100	1000/5A~3200/5A	5~50	1.0~0.5	720	50/60









Outline drawing (unit:mm)

Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
SF62/20	78	36	6.6	36	55	71	30.1	30.1	11	23	44	21	62	21	26
SF62/30	78	47	6.6	35	55	71	31	31	16	31	44	31	62	21	26
SF62/40	78	47	6.6	35	55	71	33	33	11	31	47	41	74	21	31
SF74/40	98	61	6.6	45	67	81	41	41	31	41	47	41	74	21	31
SF74/50	98	61	6.6	45	67	81	51	51	21	51	68	51	86	31	44
SF86/60	110	56	6.6	40	62	76	65	65	31	61	86	61	104	31	56
SF104/80	126	56	6.6	40	62	76						81			

MSQ Series Current Transformer



Type	A	B	C	D	E	F	G
MSQ-30	60	36	68	16	60	30	30
MSQ-40	75	40	82	16	60	30	40
MSQ-60	101	39	110	16	60	30	60
MSQ-80	124	40	102	16	60	30	80
MSQ-100	170	40	120	16	60	30	100
MSQ-120	165	50	135	16	60	30	120

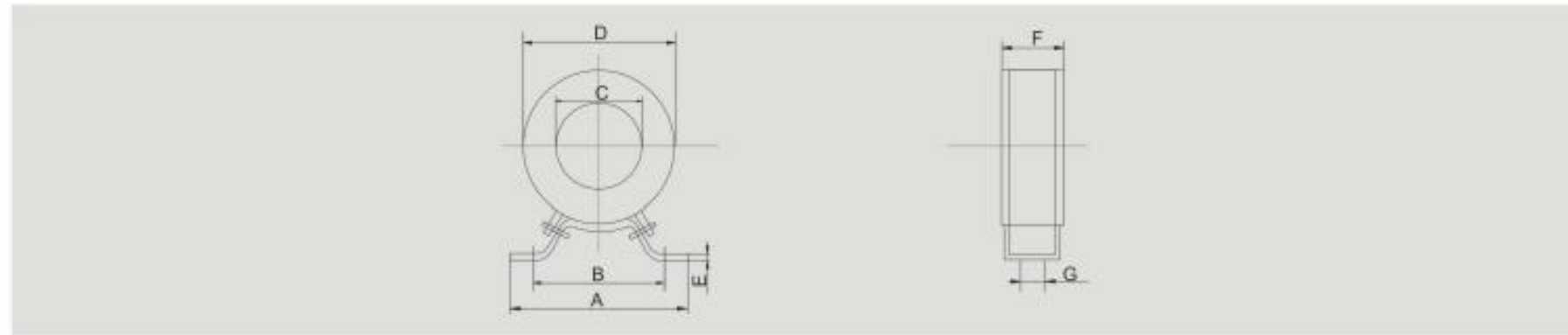
Picture	Type	Rated current	Rated Burden (VA)		Weight(kg)	
			Class:0.5	Class:1.0		
	MSQ-30 Bar:30x10mm Conductor:F20mm	30/5A	5	5	0.30	
		60/5A				
		80/5A				
		100/5A				
		200/5A				
	MSQ-40 Bar:40x10mm Conductor:F30mm	100/5A	2.5	2.5	0.38	
		200/5A	5	5~10		
		300/5A	5~10	5~10		
		400/5A	5~10	5~10		
		500/5A	5~10	5~10		
	MSQ-60 Bar:60x20mm Conductor:F40mm	300/5A	5	5	0.60	
		400/5A	5~10	5~10		
		500/5A	5~10	5~10		
		600/5A	10~15	10~15		
		800/5A	10~15	10~15		
	MSQ-80 Bar:82x30mm Conductor:F80mm	1000/5A	15	15	0.75	
		750/5A	15	15		0.82
		800/5A				0.89
		1000/5A				0.99
		1200/5A				1.02
	MSQ-100 Bar:105x30mm Conductor:F60mm	1500/5A			15	15
		1600/5A	0.80			
		2000/5A	0.94			
		2500/5A	1.10			
		3000/5A	1.16			
	MSQ-120 Bar:125x57mm or 125x10mm Conductor:F60mm	1500/5A	15	15	1.00	
		2000/5A			1.15	
		2500/5A			1.45	
		3000/5A			1.60	
		4000/5A			1.90	
5000/5A	2.20					

RCT Series Current Transformer



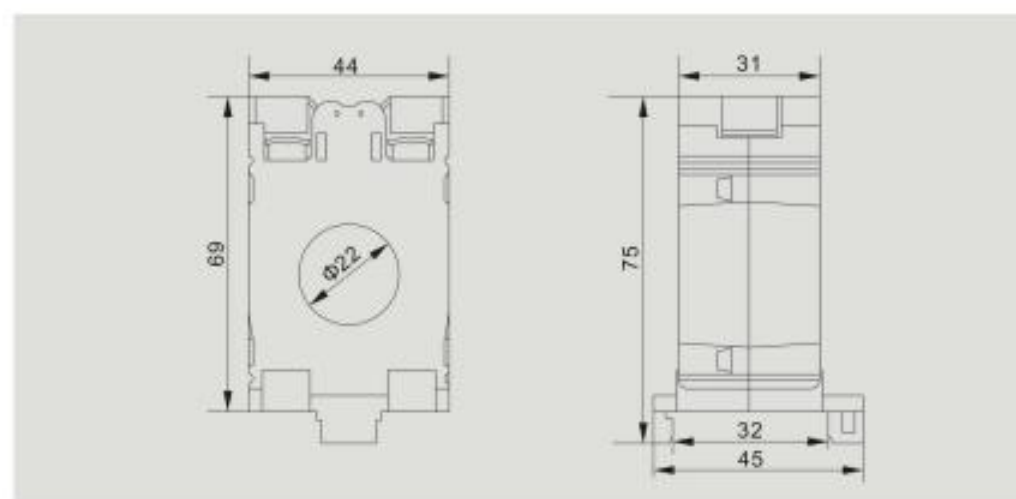
Type	Rated Current (A)
RCT-35	30/5A, 50/5A, 60/5A, 80/5A, 100/5A, 120/5A, 150/5A, 200/5A, 250/5A, 300/5A
RCT-58	300/5A, 400/5A, 500/5A, 600/5A, 800/5A, 1000/5A, 1200/5A
RCT-90	800/5A, 1000/5A, 1200/5A, 1500/5A, 1600/5A
RCT-110	1000/5A, 1200/5A, 1500/5A, 1600/5A, 2000/5A, 2500/5A, 3000/5A

Primary current: 30~3000A
 Secondary current: 5A, 1A
 Standard approval: IEC44-1
 Maximum voltage: 0.66KV
 Frequency: 50/60Hz
 Rated load: 15VA
 Class: 1.0
 Short-time thermal current: 1th=60×1h
 Rated security coefficient: FS<5



Type	A	B	C	D	E	F	G
RCT-35	93	78	25	78	2	55	9
RCT-58	93	78	60	104	2	41	9
RCT-90	93	78	90	136	2	41	9
RCT-110	102	86	111	157	2	52	9

DM Series Current Transformer

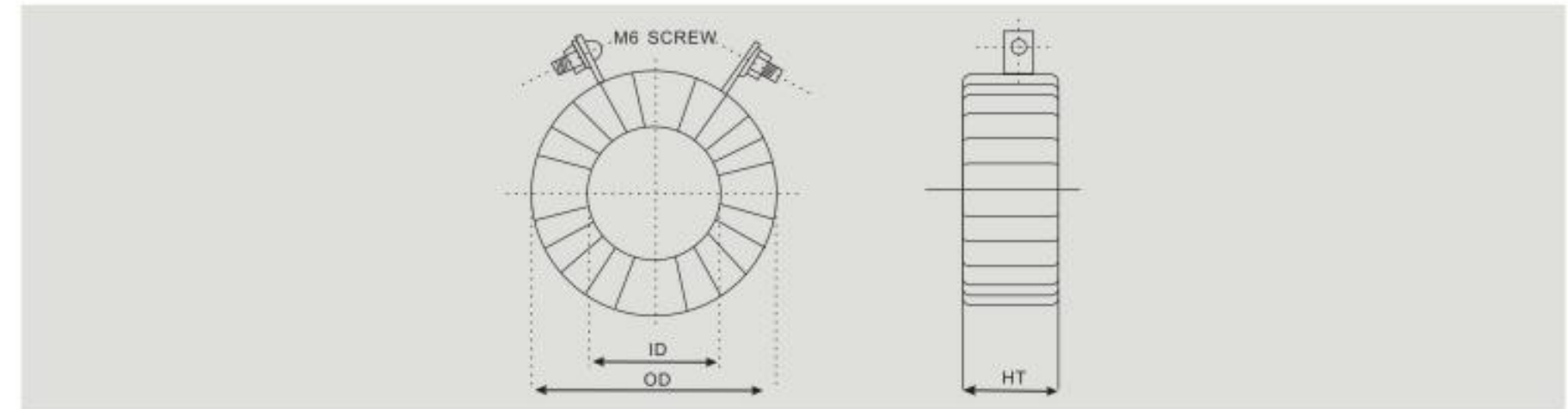


Type	Rated Current(A)	Secondary Current	Rated Burden(VA)	Class	Rated Voltage(V)	Rated Frequency (Hz)	High Voltage Test	Security Factor
DM-20	50/5A~400/5A	5A	1.5~5	1.0~0.5	720	50/60	4KVeFF, 50Hz, 1min	FS<5

MR Series Current Transformer



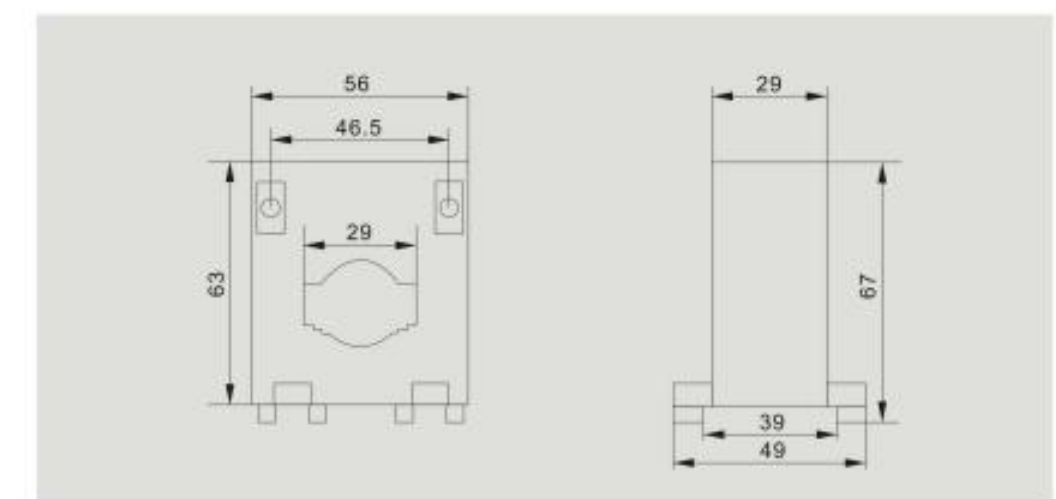
Primary current:	30~5000A
Secondary current:	5A, 1A
Standard approval:	BS7626, IEC185
Maximum voltage:	0.72KV
Frequency:	50/60Hz
Rated load:	5VA~15VA
Class:	1.0, 3.0
Short-time thermal current:	1th=60×1h
Rated security coefficient:	FS<5



Type	Rated Current(A)	ID	OD	HT
MR-28	30/5A~100/5A	28	70	40
MR-42	100/5A~250/5A	42	80	30
MR-45	300/5A	45	80	30
MR-60	400/5A	60	100	30
MR-60	500/5A~600/5A	60	100	30
MR-85	800/5A~1600/5A	85	120	20
MR-125	2000/5A~5000/5A	125	165	20

★ Noted: For measuring current transformers, the accuracy class is designated by the highest permissible percentage current (ratio) error at the rated current prescribed for the accuracy class concerned.

DSC Series Current Transformer



Type	Rated Current(A)	Secondary Current	Rated Burden(VA)	Class	Rated Voltage(V)	Rated Frequency (Hz)	High Voltage Test	Security Factor
DSC-30	50/5A~400/5A	5A	1.5~5	1.0~0.5	720	50/60	4KVeFF, 50Hz, 1min	FS<5

FL-2 Shunt



1~50A



75~100A



150~200A



300A



500A



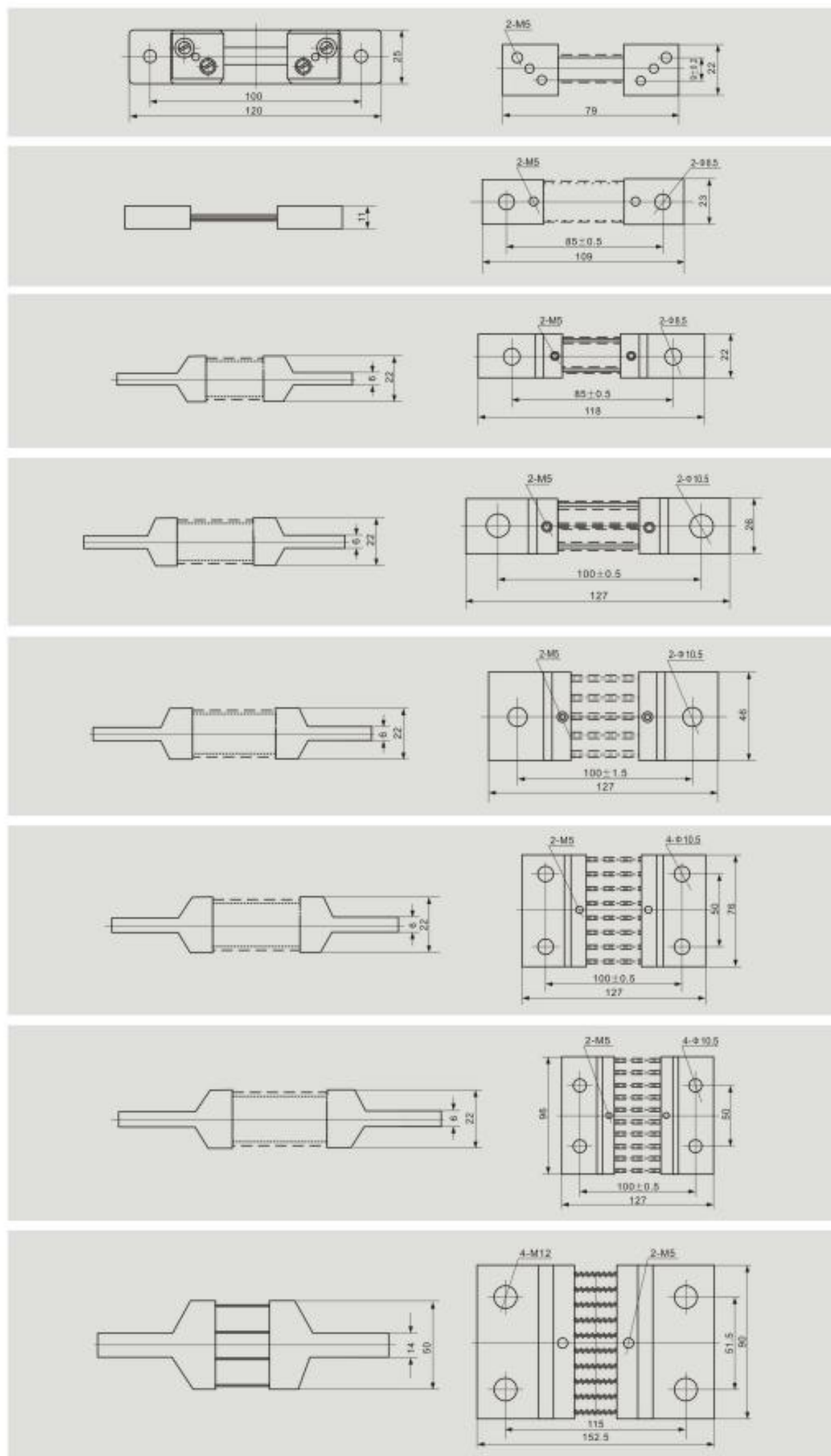
750A



1000A



1500A



★Note: If you need special specification, please contact with us

General changeover switch



Sphere of application

LW 28 series general changeover switch, is mainly used in the electric circuit for AC 50HZ, rated voltage lower than 380V, DC 220V and rated current up to 160A. It is used for controlling and changing the unfrequently manual connecting or cutting circuit. It can directly control the three phase asynchronous motor and also used for master controlling and circuit measuring. The LW-28 is widely used and instead of the national various changeover switch. It can be used as circuit controlling switch, instrument testing switch, motor controlling switch, master controlling switch and welding machine used changeover switch.

Standards-compliant: main circuit changeover switch, directly controlling motor changeover switch in line with GB14048. 3-2001
master controlling and testing changeover switch in line with GB14048. 5-2001

Classification

According to purpose: main circuit changeover switch, directly controlling motor changeover switch and master controlling and testing changeover switch

According to the operation mode: self-restoring, position-type, self-re-positioning

According to the connecting system: position-type changeover switch has 1~12 segments (63A only has 8 segments), self-restoring changeover switch has 1~3 segments, directly controlling motor changeover switch has 1~6 segments

According to the changing angle: 30 degree, 45 degree, 60 degree and 90 degree

According to the scales shape: Square scales, rectangular scales and round scales (only 20A)

According to the rotary switch: R type, O type, F type, B type, S type, L type, P type and K type

According to operation mode and actuator position, see the following picture (See form 1)

Outline drawing (unit:mm) 外形图 (单位:毫米)

