

AE9018

Multi-Circuit Power and Energy Meter



REVENUE METERING

- ANSI C12.20 0.2 & IEC 62053-22 0.2S
- TOU, 4 Tariffs, 14 Seasons, 14 Schedules
- Measure 18 Single-Phase or 6 Three-Phase Circuits Simultaneously

POWER QUALITY ANALYSIS

- Power Quality Event Record
- PQ Events can Trigger the Waveform Record
- Record 8 Cycles Before and After the Triggering Point Every Group Waveform

SNAPON CT TECHNOLOGY

Ablewise's innovative CT technology allows any 80 mA, 100 mA, 333 mV or RCT Rogowski Coil current transformer to simply plug into the AE9018 without any wiring configuration. This solution reduces common wiring mistakes and simplifies troubleshooting for a fast, convenient installation experience.

STATISTICS/ALARM

- Data Logs
- Peak Demand with Time Stamp
- Over/Under Limit Alarm

HIGH PERFORMANCE

- Compact Design: 9 mm/circuit
- Reduces Polarity Errors as well as Installation & Maintenance Times
- LCD, White Backlight, Easy Reading

APPLICATIONS



FEATURES

Complete Multi-Point Submetering Solution

- Measure 18 Single-Phase or 6 Three-Phase Circuits
- Real Time Monitoring Voltage, Current, Power, Frequency
- Accuracy: ANSI C12.20 Class 0.2 & IEC62053-22 0.2S
- Demand & Peak Demand: Total and Per-Circuit Power and Monthly Demand

Metering

- Phase-to-Neutral Voltage, Line -to-Line Voltage, Current
- Active Power, Reactive Power, Apparent Power, Power Factor
- Frequency

Power Quality

- Voltage Unbalance, Current Unbalance
- THD and Individual Harmonics to 31st
- K Factor, Crest Factor
- Voltage Sags, Voltage Swells can Trigger Power Quality Event Record

Time of Use (TOU)

- Four Tariffs, 14 Seasons, 14 schedules
- Weekends and 10-Year Holiday Settings
- Sharp, Peak, Valley, Normal Energy and Max Demand

Waveform Capture

- Simultaneous Capture of Voltage and Current Waveforms
- PQ Events can Trigger the Waveform Record
- Record 8 Cycles Before and After the Triggering Point Every Group Waveform

Alarms

- Over or Under Setting Limit
- Power Measurement Parameters can be Set
- Alarm can Trigger the Relay Output, Screen Flashing and Alarm Record

Data Logging

- 8 MB Memory
- Record Metering Parameter with Time Stamp

Multiple I/O Functions

- Digital Output: Energy Pulse Output; 1 Pulse Per Second
- Digital Input: Monitor Switch Status or Pulse Count
- Relay Output: Relay Command Control Output ON/OFF; Limit Alarm Control Output

Communication

- Ethernet Port
- WiFi Port
- Modbus RTU Protocol Via RS485 Port
- Support Modbus-TCP, SMTP, SNMP, HTTP Protocols

SPECIFICATION

Measurement Accuracy

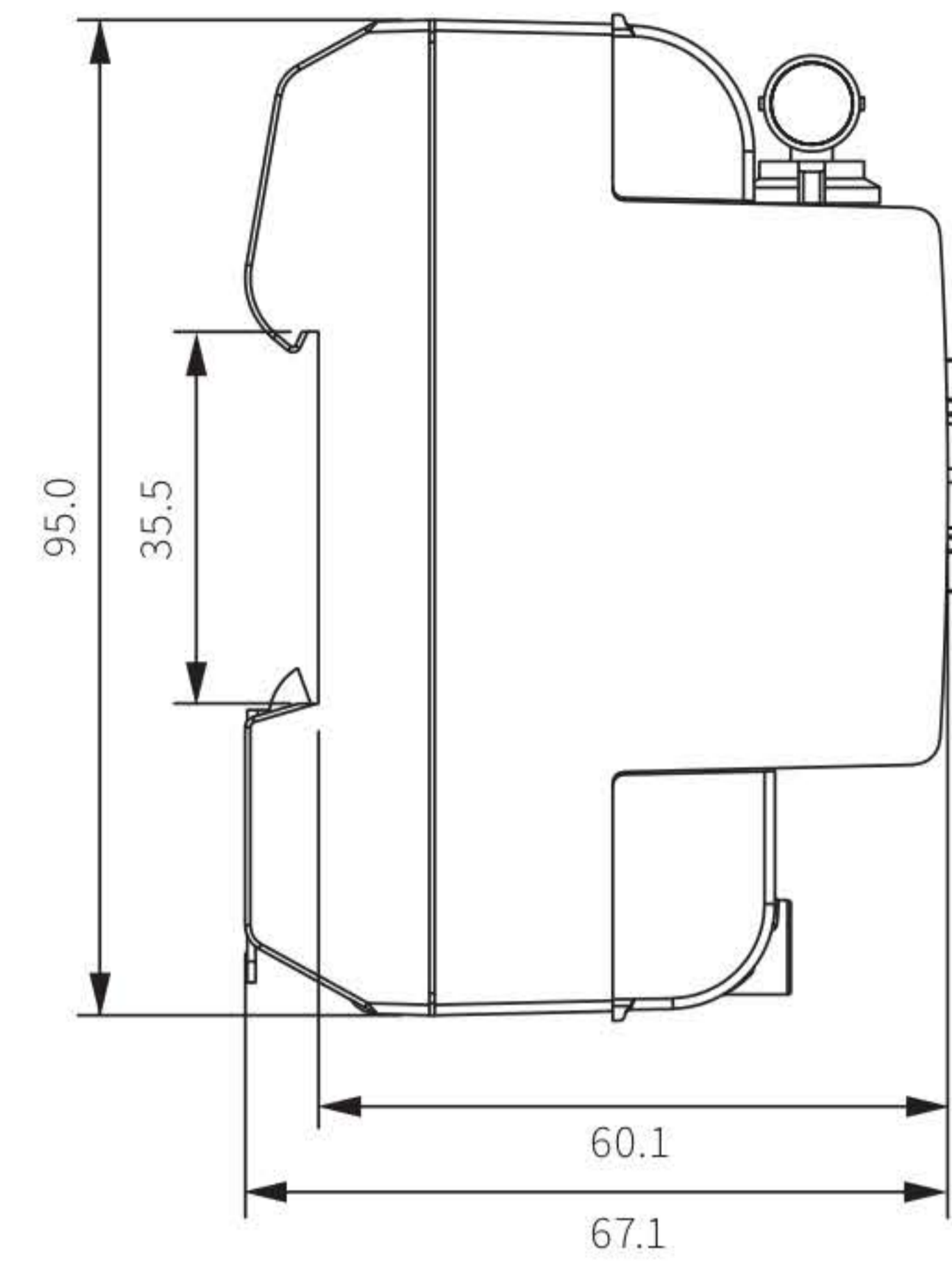
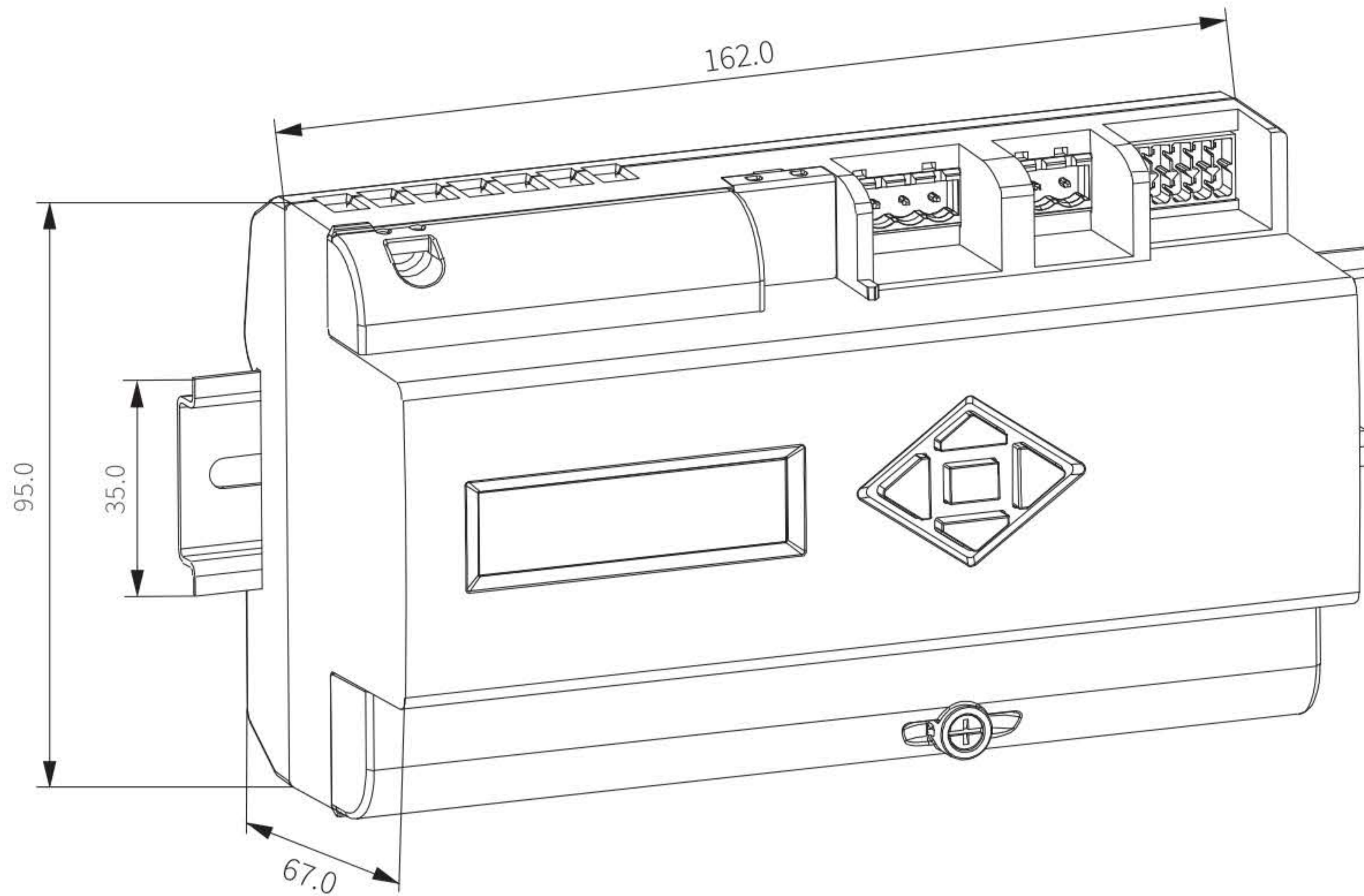
Parameters	Accuracy	Resolution	Range
Active Energy	0.2S	0.1 kWh	0 ~ 99999999.9 kWh
Reactive Energy	0.5%	0.1 kvarh	0 ~ 99999999.9 kvarh
Apparent Energy	0.5%	0.1 kVAh	0 ~ 99999999.9 kVAh
Voltage	0.2%	0.1 V	10 ~ 400 V
Current	0.2%	0.001 A	5 mA ~ 10000 A
Active Power	0.2%	0.1 W	4000.0 kW
Reactive Power	0.5%	0.1 var	4000.0 kvar
Apparent Power	0.5%	0.1 VA	4000.0 kVA
Power Factor	0.5%	0.001	-1.000 ~ 1.000
Frequency	0.02%	0.01 Hz	45 ~ 65 Hz
Active Power Demand	0.5%	0.1 W	4000.0 kW
Reactive Power Demand	0.5%	0.1 var	4000.0 kvar
Apparent Power Demand	0.5%	0.1 VA	4000.0 kVA
Current Demand	0.2%	0.001 A	5 mA ~ 10000 A
Unbalance	1.0%	0.01%	0 ~ 300%
Running Time		0.01 h	0 ~ 999999.9 h

Operating Conditions

Metering	Parameters	Specification
Voltage	Nominal Voltage	400 V AC L-N, 690 V AC L-L (+20%)
	Withstand	2500 V AC, 50 Hz/60 Hz for 1 minute
	Input Impedance	5 MΩ/Phase
	Burden	<0.2 VA
Current	Nominal Current	80 mA
	Starting Current	0.1% I _n
Frequency	Frequency	45 ~ 65 Hz, Resolution: 0.01 Hz
Energy	Active Energy	0.2S
	Reactive & Apparent Energy	0.5
Energy Pulse	Voltage	5 ~ 30 V DC
	Current	2 ~ 50 mA
	Pulse Width (High Level)	20 ~ 100 ms, Programmable
	Pulse Constant	1 ~ 60000 imp/kWh, Settable
Digital Input	Input Type	Dry
	Input Impedance	10 kΩ (Typical)
	Input Voltage	24 V DC
	Pulse Frequency (Max)	100 Hz, 50% Duty Ratio
	SOE Resolution	2 ms
Relay Output	Switching Voltage	250 V AC or 30 V DC
	Switching Current	5 A (R)
	Output Type	Level or Pulse
Communication	RS485 Port	Baud Rate: 2400 ~ 115200 bps
	Communication Protocol	Modbus RTU
Operating Environment	Operating Temperature	- 25 °C ~ +70 °C
	Storage Temperature	- 40 °C ~ +85 °C
	Relative Humidity	5 % ~ 95 % (Non- Condensing)
	Case Material	UL 94V-0
Power Supply	Operating Range	100 ~ 415 V AC or 100 ~ 300 V DC
	Power Consumption	<5 W or 10 VA
	Withstand	3250 V AC, 50/60 Hz for 1 minute

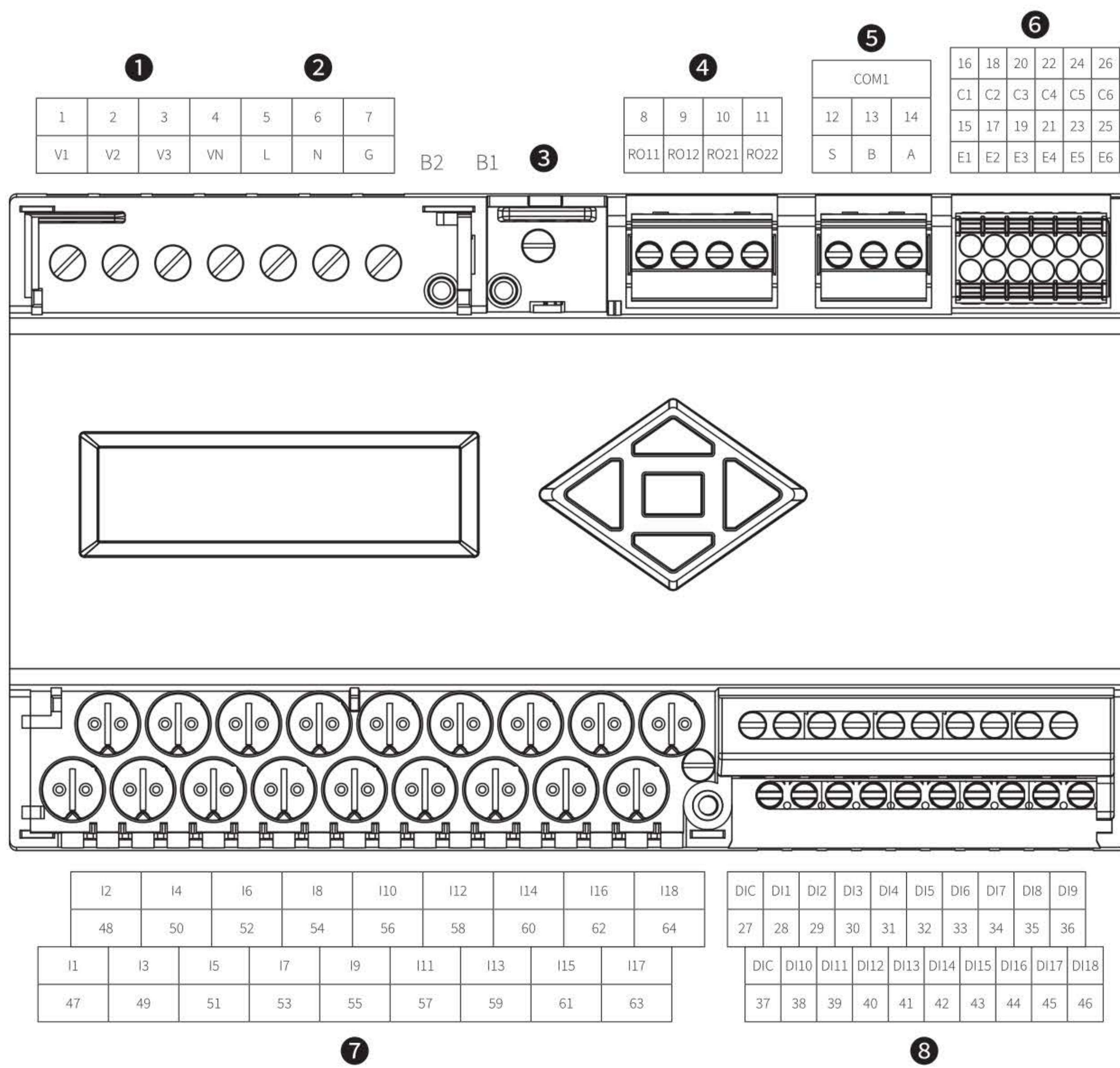
DIMENSIONS

Unit: mm



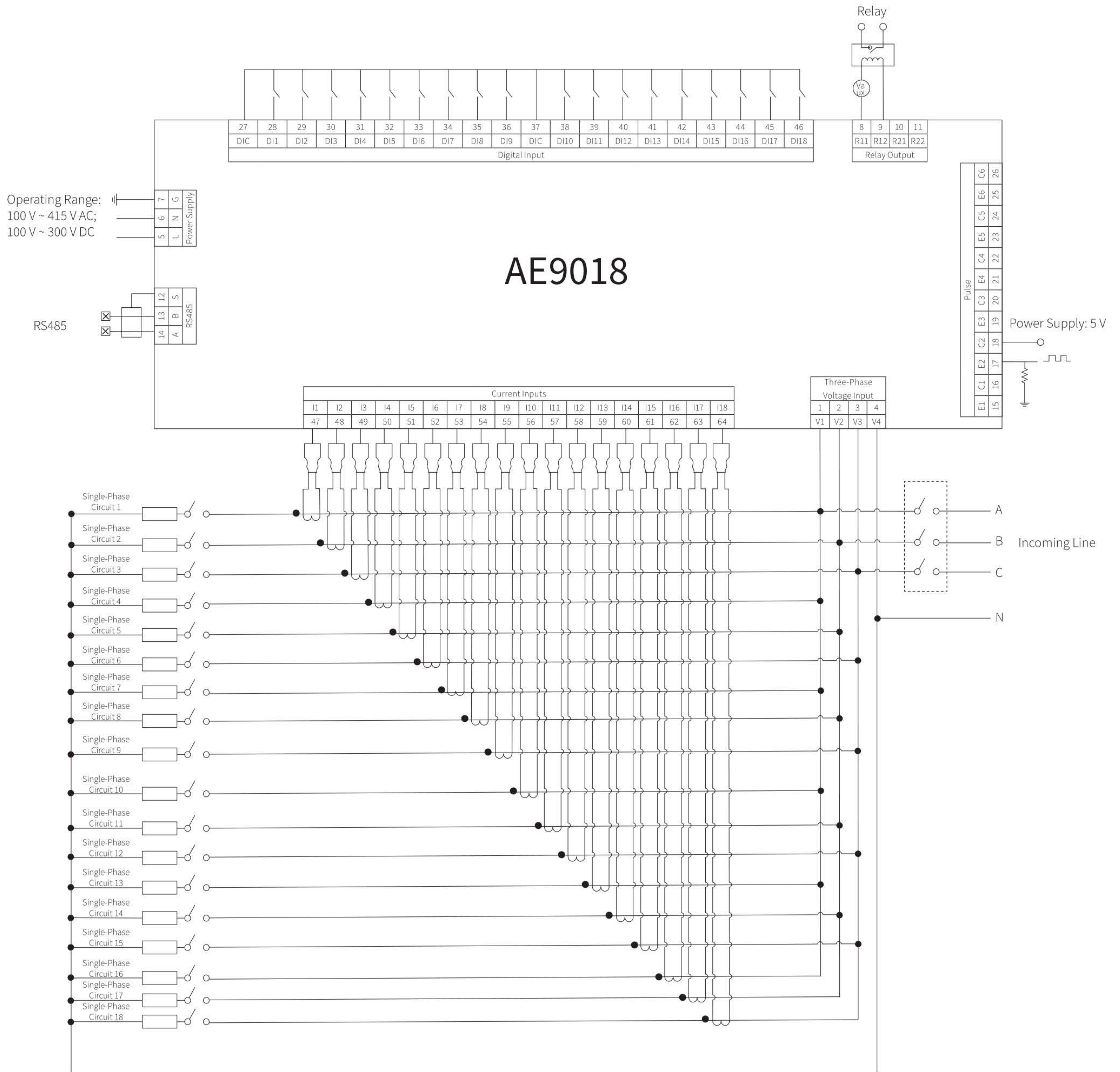
Side View

TERMINAL DIAGRAM



1	Voltage Input
2	Power Supply
3	Programming and Terminal Tamper-proof Seal
4	Relay Output
5	RS485 Port
6	Pulse Output
7	Current Input
8	Digital Input

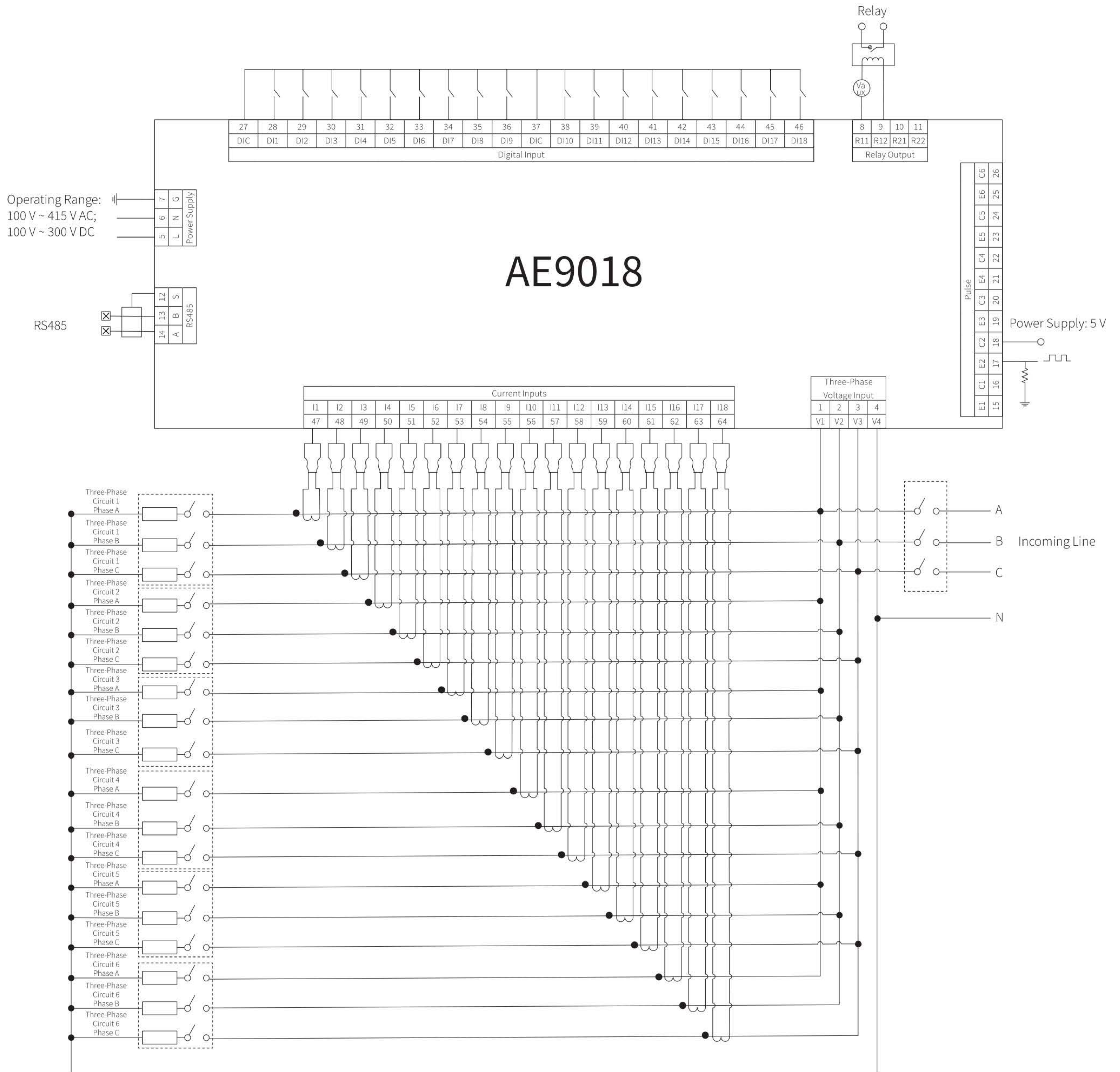
TYPICAL WIRING *Wiring Diagram 1: 3LN In, 1LN Out, Single-Phase Circuit Load*



Description:

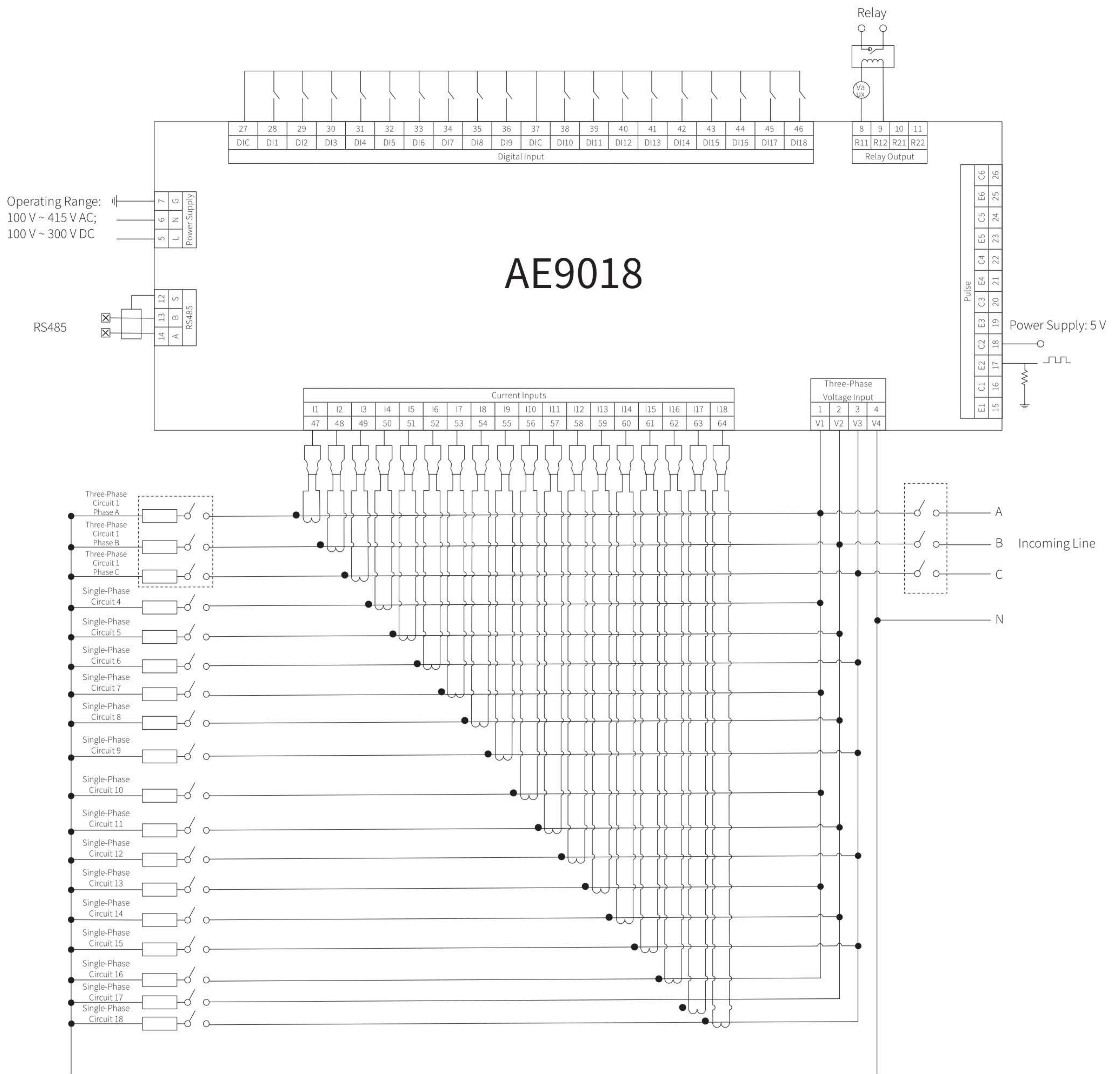
1. This wiring diagram is suitable for scenarios with a three-phase four-wire incoming line and a single-phase load.
2. Outgoing single-phase loads should be wired in sequence. Unused circuits don't need to be wired.
3. The range for the number of single-phase circuits is 0 to 18. It's equal to the number of enabled circuits.

TYPICAL WIRING *Wiring Diagram 2: 3LN In, 3LN Out, Three-Phase Four-Wire Circuit Load*



Description:

1. This wiring diagram is suitable for scenarios with a three-phase four-wire incoming line and a three-phase four-wire load.
2. Outgoing three-phase four-wire loads should be wired in sequence. Unused circuits don't need to be wired.
3. The range for the number of three-phase circuits is 0 to 6. It's equal to the number of enabled circuits.



Description:

1. This wiring diagram is suitable for scenarios with a three-phase four-wire incoming line and the load is a mix of three-phase and single-phase.
2. The outgoing wires are arranged sequentially according to the principle of accommodating three-phase loads followed by single-phase loads. This wiring method can support a maximum of one three-phase circuit and fifteen single-phase circuits. Unused circuits do not need to be wired; however, three-phase circuits cannot be converted into single-phase circuits.
3. The range for the number of three-phase circuits is 0 to 1 and single-phase circuits is 0 to 15. It's equal to the number of enabled circuits.
4. The wiring configurations for 2 three-phase and 12 single-phase, 3 three-phase and 9 single-phase, 4 three-phase and 6 single-phase and 5 three-phase and 3 single-phase circuits are similar to this method.

ORDERING INFORMATION

The product support one model: AE9018

Description:

AE9018 meter default configuration: 3 circuits voltage inputs, 400 V AC L-N, 690 V AC L-L; power supply 100 ~ 415 V AC, 50/60 Hz, 100 ~ 300 V DC; 18 Digital inputs; 6 pulse outputs; 2 Relay outputs; RS485 communication.

Revision Date: Apr., 2024 V1.02



CURRENT TRANSFORMER SELECTION

aCT-2862A-010-P SOLID-CORE CURRENT TRANSFORMER

aCT-2862A-010-P Solid-Core current transformers are suitable for power monitoring, energy management and metering in low voltage power supply and distribution systems. The transformer adopts three-phase integrated design with compact and beautiful structure and can measure three-phase currents at the same time with good consistency. The product adopts ultra-microcrystalline magnetic core and advanced winding technology, with excellent measurement characteristics and product linearity. It is especially suitable for high precision current, power or energy measurement. When used with multifunctional meters or power meters, they can meet the accuracy requirements of IEC62053-22 and ANSI C12.20.

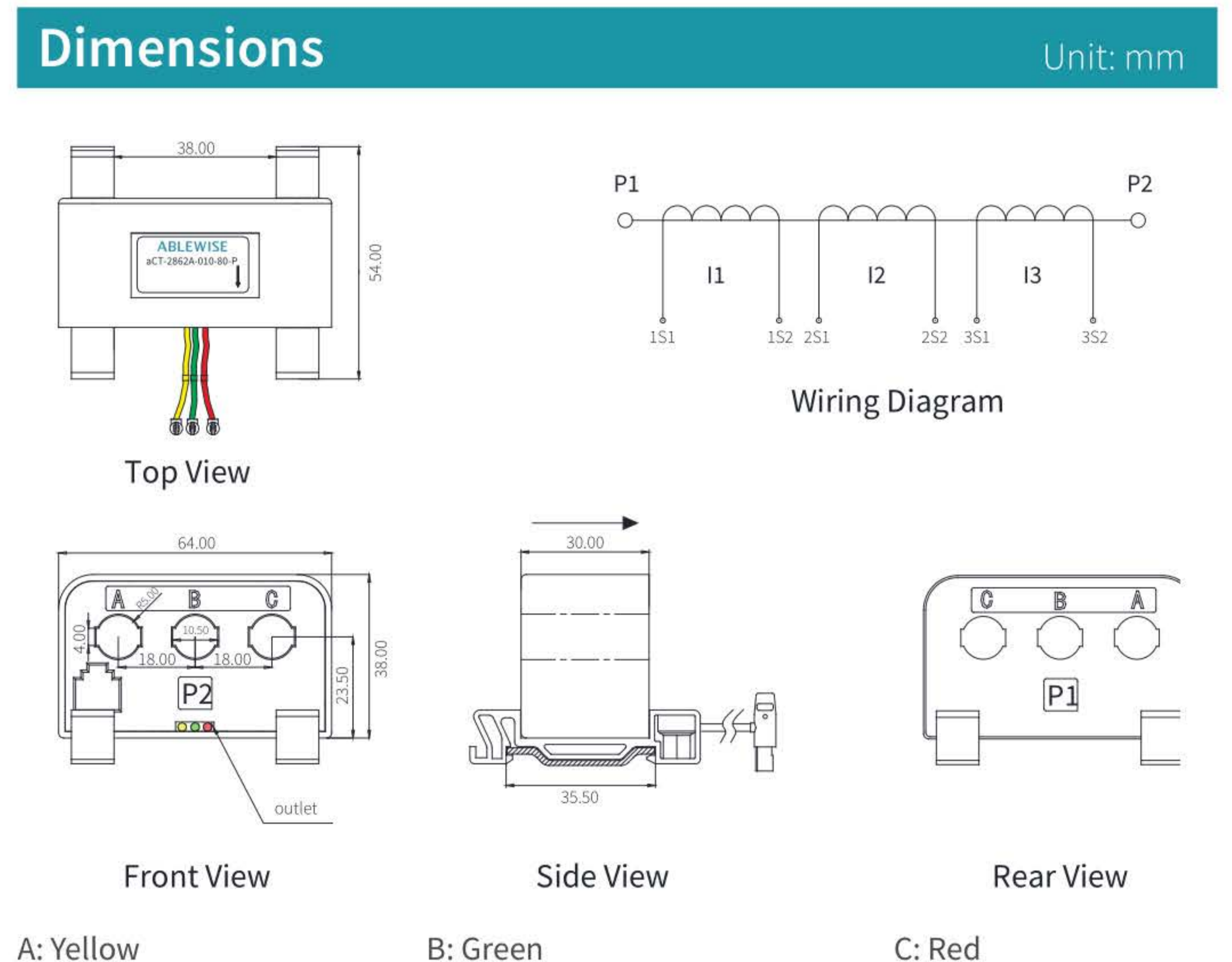
This series products are made of high flame-retardant engineering plastics ensuring safety and reliability. It is equipped with snap type rail mounting strip which can realize quick installation and dismantling on the spot.

Feature

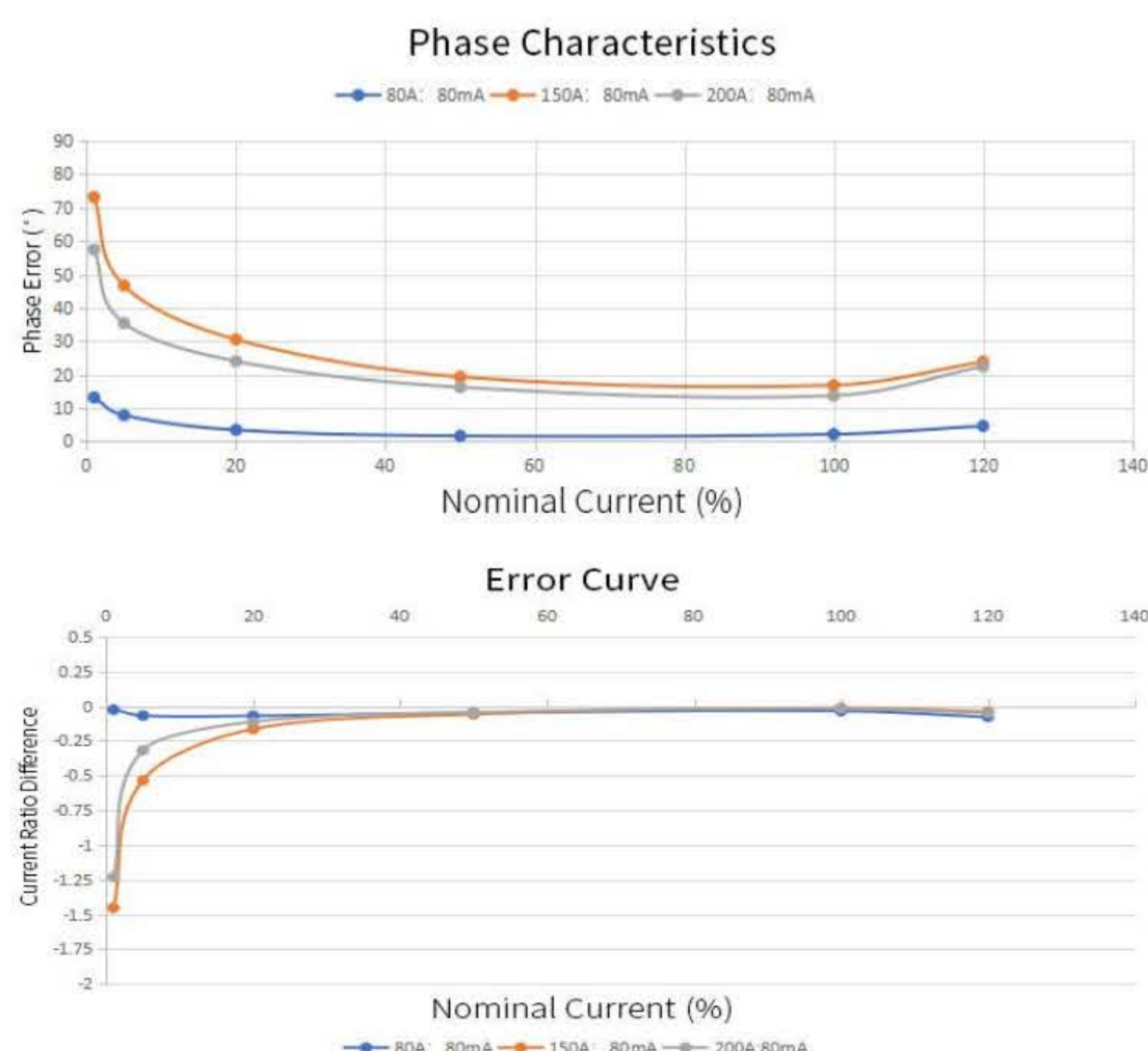
- Accuracy: 0.5S
- IEC 61869-2
- Three-Phase, Compact Size
- Hole Size $\Phi 10$ mm, Phase Spacing 18 mm



Specification		
Electrical	Nominal Current	80 A
	Range	1 ~ 120%
	Accuracy	0.5S
	Phase Error	$\leq 30'$
	Output	80 mA
	Load	10 Ω
	Frequency Range	50 ~ 60 Hz
Mechanical	Form Factor	Solid-Core CT
	Inside Diameter	10 mm
	External Dimensions	64 mm \times 38 mm \times 30 mm
	Case Material	Black ABS; UL 94V-0
Operating Environment	Lead Wires	1.5 m (6.5ft) Shielded Cable, 24AWG
	Operating Temperature	-25° C ~ 70° C
	Operating Humidity	0 ~ 85% RH
Standards Compliance	Installation Conditions	Indoor Use
	Nominal Voltage	600 V AC
	Certifications	RoHS, IEC 61869-2



Typical Accuracy Curve



Ordering Information

Model	Series	Current	Plug
Order Specification	aCT-2862A-010	- XX (A)	- P
Order Numbers	aCT-2862A-010	- 80A	- P

NOTE:

- 1.5 meters lead plug, if you need other length, please contact us.
- The current transformer is equipped with rail mounting clips, allowing for self-installation and disassembly. The rail spacing is 35mm.
- The side with the secondary lead is the direction of the primary conductor outlet.

CCT-025 SERIES SOLID-CORE CURRENT TRANSFORMER

CCT series AC current transformers are suitable for power monitoring, energy management and metering in low voltage power supply and distribution systems. CCT series AC current transformers are designed with Solid-Core, epoxy resin casting for stable performance. The products are made of ultra-microcrystalline core, silicon steel and advanced winding technology, which provide excellent measurement characteristics and product linearity. Especially suitable for high precision current, power or energy measurement. When used with a multifunction meter or power meter, they can meet the accuracy requirements of IEC62053-22 and ANSI C12.20.

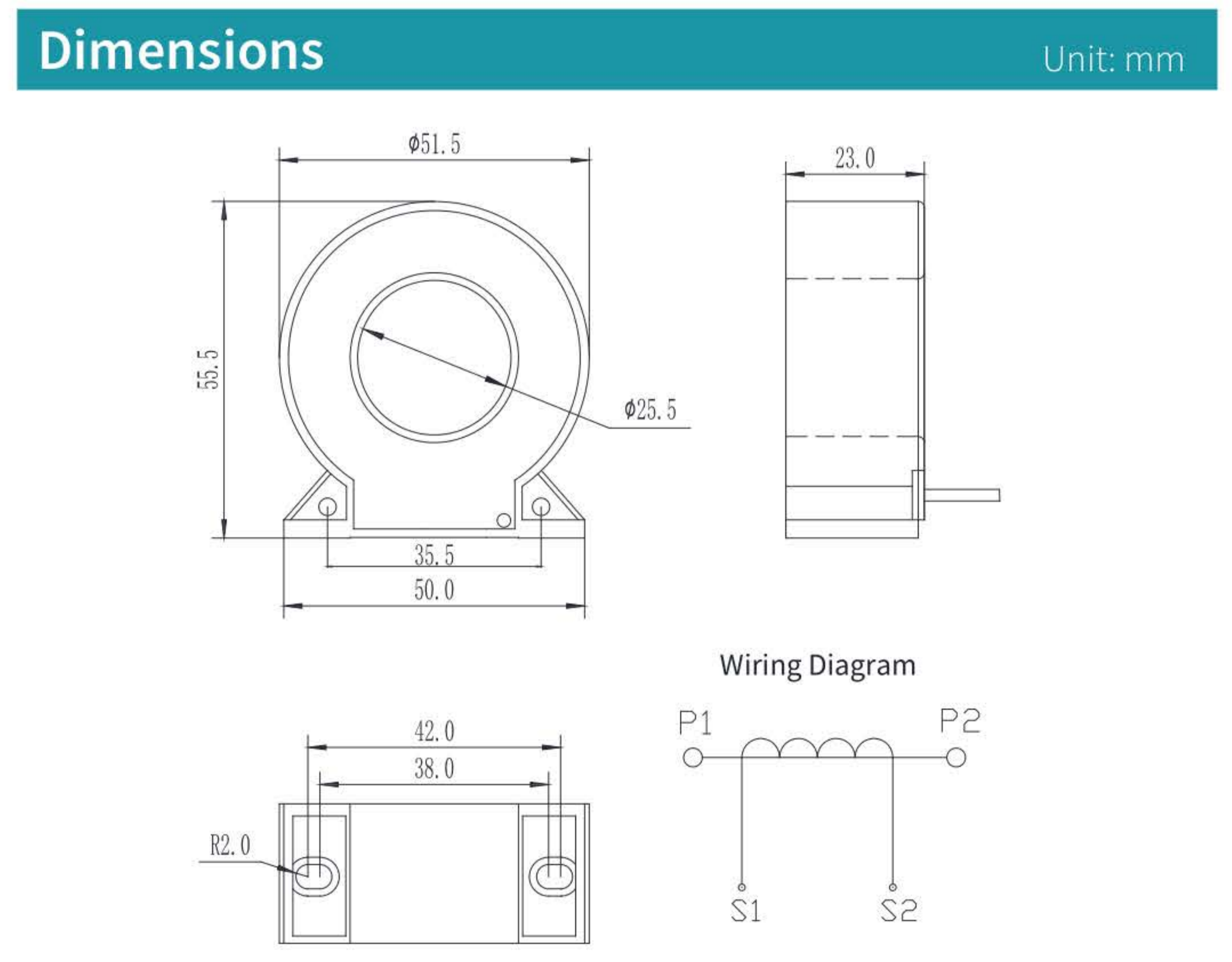
This series products are available in a variety of sizes to meet the needs of more current measurement, high flame-retardant housing to ensure stable long-term performance, dustproof, moisture-proof. The housing has its own mounting structure, which provides a variety of mounting methods for easy on-site fixing.

Feature

- High Accuracy
- IEC 61869-2
- Wide Range of Measurement

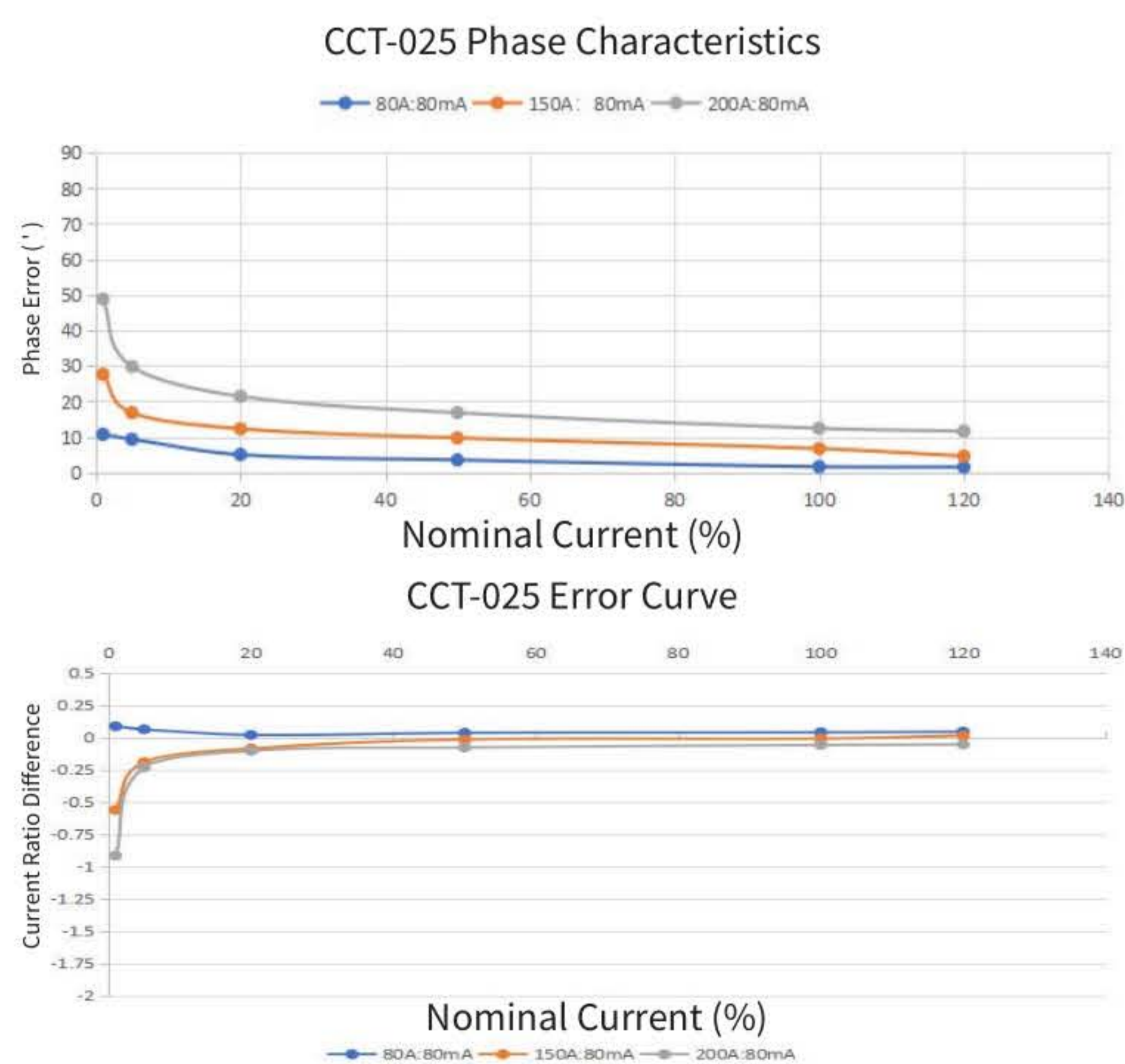


Specification		
Electrical	Nominal Current	100 A; 150 A; 200 A
	Range	1~ 120%
	Accuracy	0.5S; 0.2S (Optional)
	Phase Error	≤ 30'
	Output	80 mA
	Load	10 Ω
	Frequency Range	50 ~ 60 Hz
Mechanical	Form Factor	Solid-Core CT
	Inside Diameter	25.5 mm
	External Dimensions	56 mm × 52 mm × 23 mm
	Case Material	Black ABS; UL 94V-0
	Lead Wires	2.m (6.5ft) Shielded Cable , 24AWG
Operating Environment	Operating Temperature	-25° C ~ 70° C
	Operating Humidity	0 ~ 85% RH
	Installation Conditions	Indoor Use
Standards Compliance	Nominal Voltage	600 V AC
	Certifications	RoHS, IEC 61869-2, IEC 61010-1



CCT-045 Phase Characteristics

Typical Accuracy Curve



Ordering Information

Model	Series	Current	Plug
Order Specification	CCT-025	- XX (A)	- P
Order Numbers	CCT-025	- 100 A	- P
	CCT-025	- 150 A	- P
	CCT-025	- 200 A	- P

NOTE:

1. -P means lead with plug, lead length 2 meters, if you need other sizes, please contact us.
2. Accuracy default 0.5S, if you need other accuracy, please contact us.

CCT-045 SOLID-CORE CURRENT TRANSFORMER

CCT series AC current transformers are suitable for power monitoring, energy management and metering in low voltage power supply and distribution systems. CCT series AC current transformers are designed with Solid-Core, epoxy resin casting for stable performance. The products are made of ultra-microcrystalline core, silicon steel and advanced winding technology, which provide excellent measurement characteristics and product linearity. Especially suitable for high precision current, power or energy measurement. When used with a multifunction meter or power meter, they can meet the accuracy requirements of IEC62053-22 and ANSI C12.20.

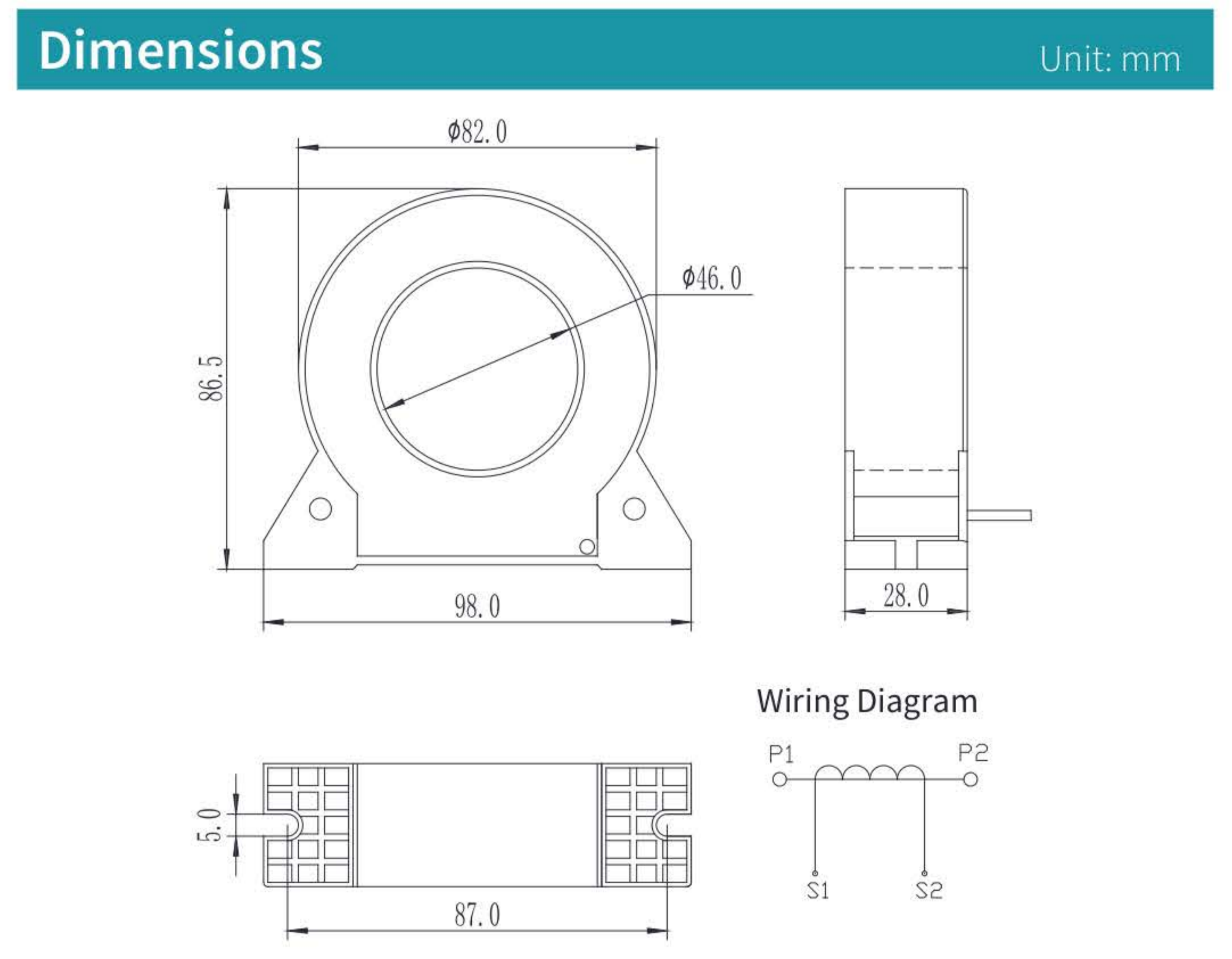
This series products are available in a variety of sizes to meet the needs of more current measurement, high flame-retardant housing to ensure stable long-term performance, dustproof, moisture-proof. The housing has its own mounting structure, which provides a variety of mounting methods for easy on-site fixing.

Feature

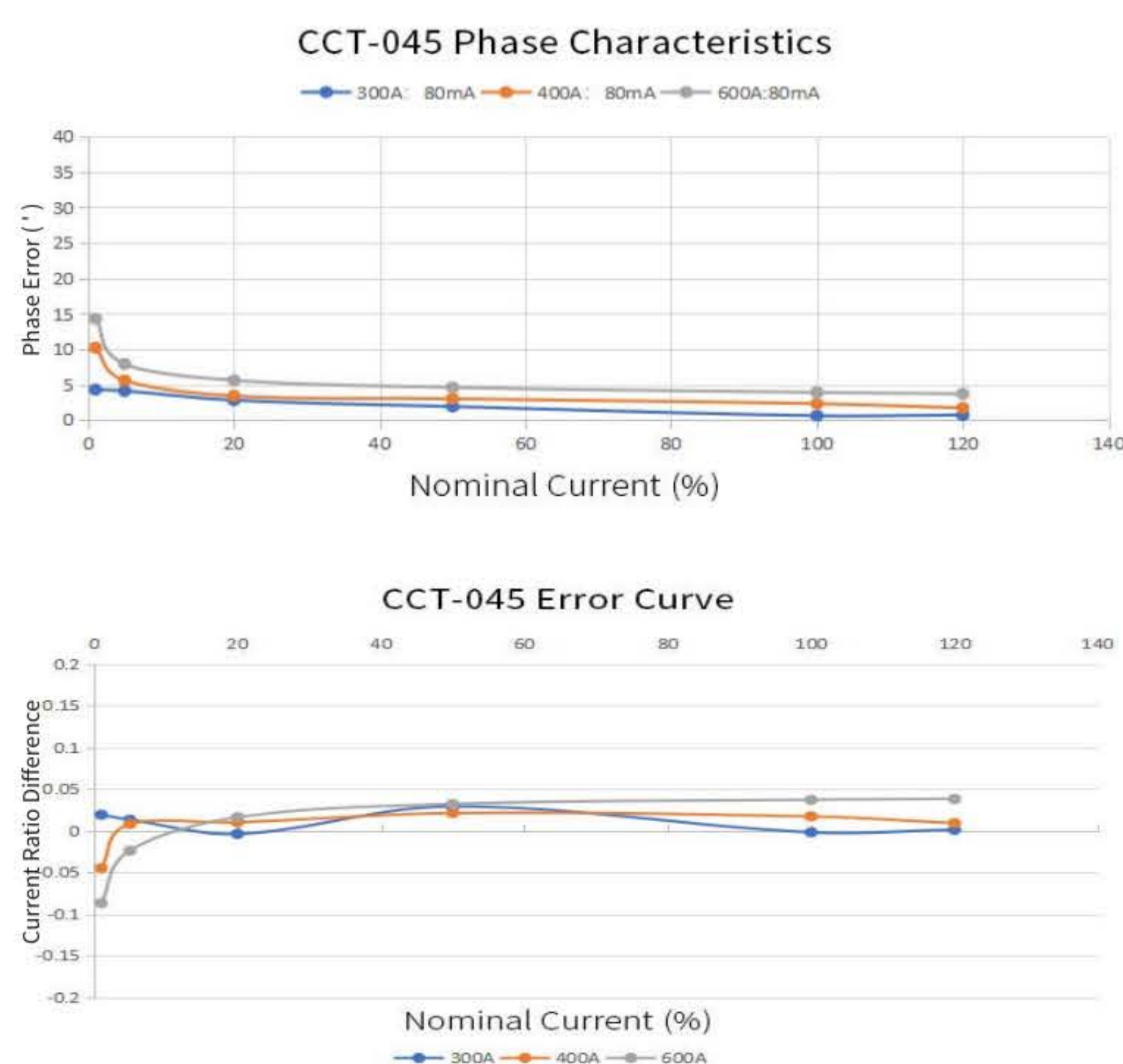
- High Accuracy
- IEC 61869-2
- Wide Range of Measurement



Specification		
Electrical	Nominal Current	300 A; 400 A; 600 A
	Range	1~ 120%
	Accuracy	0.5S; 0.2S (Optional)
	Phase Error	≤ 30'
	Output	80 mA
	Load	10 Ω
	Frequency Range	50 ~ 60Hz
Mechanical	Form Factor	Solid-Core CT
	Inside Diameter	46 mm
	External Dimensions	87 mm × 98 mm × 28 mm
	Case Material	Black ABS; UL 94V-0
	Lead Wires	2.m (6.5ft) Shielded Cable , 24AWG
Operating Environment	Operating Temperature	-25° C ~ 70° C
	Operating Humidity	0 ~ 85% RH
	Installation Conditions	Indoor Use
Standards Compliance	Nominal Voltage	600 V AC
	Certifications	RoHS, IEC 61869-2



Typical Accuracy Curve



Ordering Information

Model	Series	Current	Plug
Order Specification	CCT-045	- XX (A)	- P
Order Numbers	CCT-045	- 300 A	- P
	CCT-045	- 400 A	- P
	CCT-045	- 600 A	- P

NOTE:

1. -P : lead with plug, lead length 2 meters, if you need other sizes, please contact us.
2. Accuracy : default 0.5S, if you need other accuracy, please contact us.

aCT-H063 COMPACT SPLIT-CORE CURRENT TRANSFORMER

aCT-H063 Compact Split-Core Current Transformer is suitable for power monitoring, energy management and metering in low voltage power supply and distribution systems. The current transformer adopts the Split-Core design, which can quick installation with continuous power supply. It's suitable for secondary renovation projects. The product adopts high quality ferrite, silicon steel magnetic core and advanced winding process with excellent measurement characteristics and product linearity. Especially suitable for high precision current, power or energy measurement. When used with a multifunction meter or power meter, they can meet the accuracy requirements of ANSI C12.20.

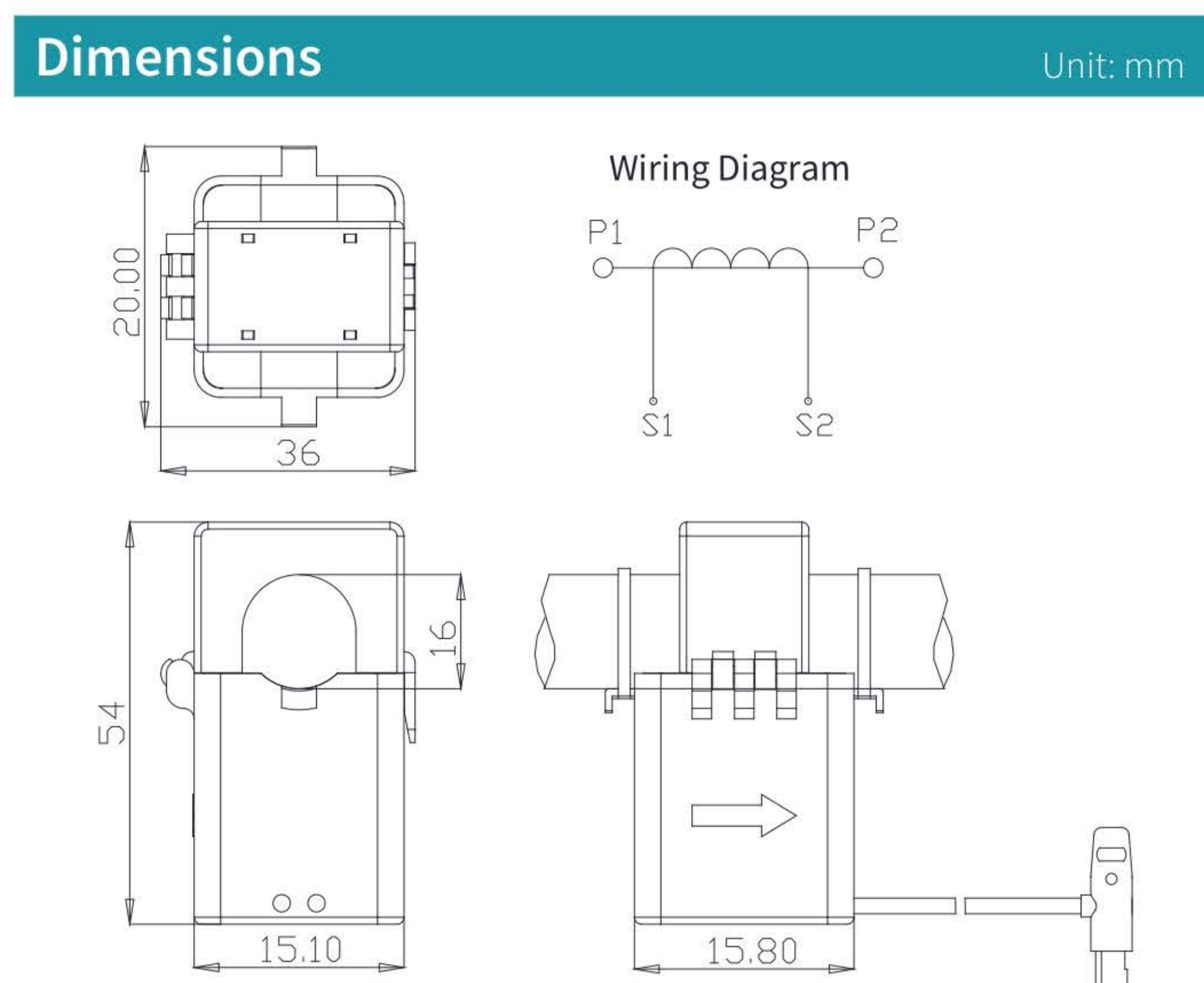
This series products has a variety of sizes to apply to more current measurement needs with low weight. It can be directly stuck to any position on the cable, easy to install.

Feature

- Accuracy: 0.5
- IEC 61869-2
- Compact Design
- Quick Installation



Specification		
Electrical	Nominal Current	100 A
	Range	5 ~ 120%
	Accuracy	0.5
	Phase Error	≤ 30'
	Output	80 mA
	Load	10 Ω
	Frequency Range	50 ~ 60 Hz
Mechanical	Form Factor	Split-Core CT
	Inside Diameter	16 mm
	External Dimensions	30 mm × 54 mm × 31 mm
	Case Material	Black PC; UL 94V-0
Lead Wires	2.m (6.5ft) Shielded Cable , 24AWG	
Operating Environment	Operating Temperature	-25° C ~ 70° C
	Operating Humidity	0 ~ 85% RH
	Installation Conditions	Indoor Use
Standards Compliance	Nominal Voltage	600 V AC
	Certifications	RoHS, IEC 61869-2



Ordering Information			
Model	Series	Current	Plug
Order Specification	aCT-H063	- XX (A)	- P
Order Numbers	aCT-H063	- 100 A	- P

NOTE:

1. -P : lead with plug, lead length 2 meters, if you need other sizes, please contact us.

aCT-H100 COMPACT SPLIT-CORE CURRENT TRANSFORMER

aCT-H100 Compact Split-Core Current Transformer is suitable for power monitoring, energy management and metering in low voltage power supply and distribution systems. The current transformer adopts the Split-Core design, which can quick installation with continuous power supply. It's suitable for secondary renovation projects. The product adopts high quality ferrite, silicon steel magnetic core and advanced winding process with excellent measurement characteristics and product linearity. Especially suitable for high precision current, power or energy measurement. When used with a multifunction meter or power meter, they can meet the accuracy requirements of ANSI C12.20.

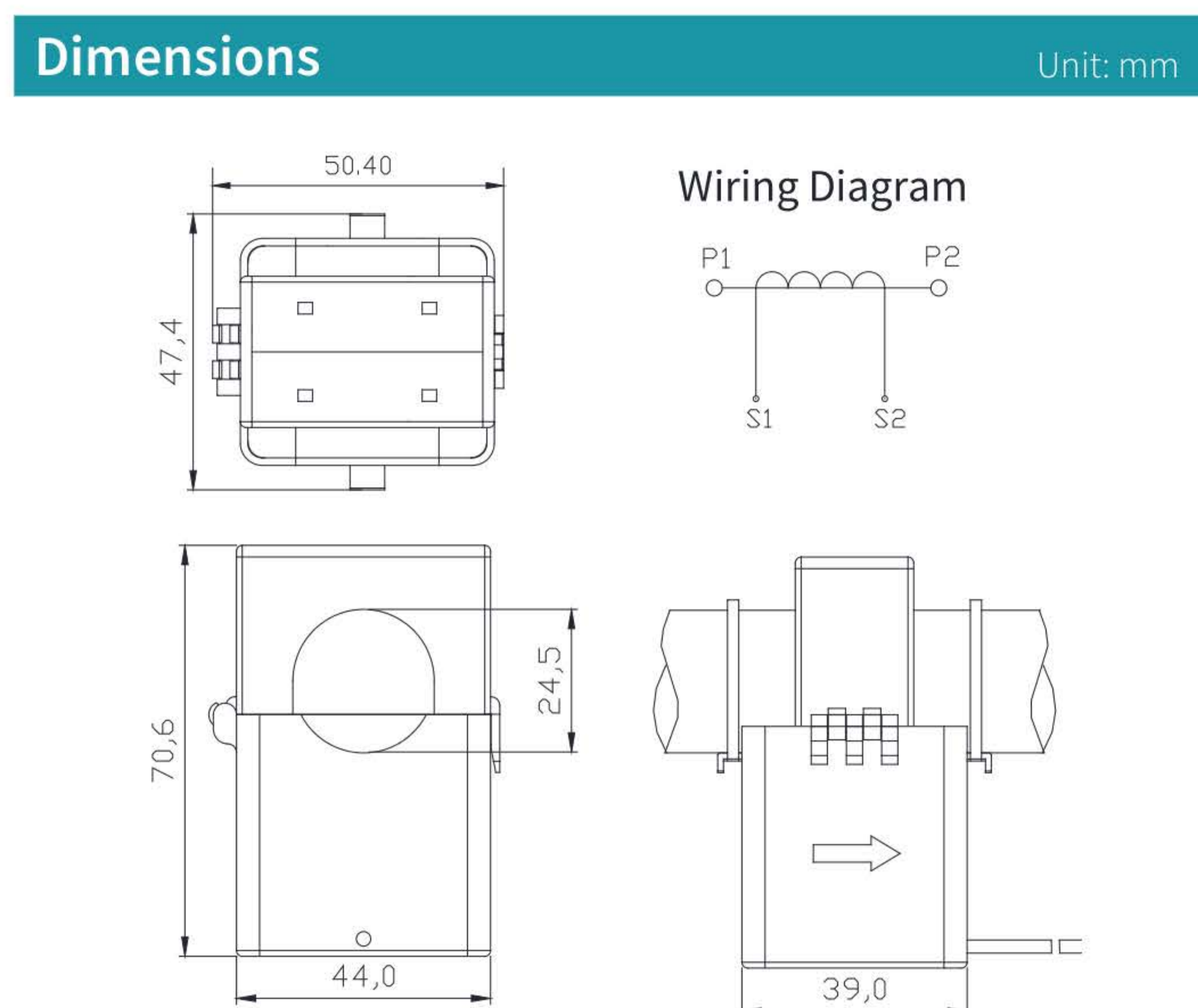
This series products has a variety of sizes to apply to more current measurement needs with low weight. It can be directly stuck to any position on the cable, easy to install.

Feature

- Accuracy: 0.5
- IEC 61869-2
- Compact Design
- Quick Installation



Specification		
Electrical	Nominal Current	150 A; 200 A
	Range	5 ~ 120%
	Accuracy	0.5
	Phase Error	≤ 30'
	Output	80 mA
	Load	10 Ω
	Frequency Range	50 ~ 60 Hz
Mechanical	Form Factor	Split-Core CT
	Inside Diameter	24.5 mm
	External Dimensions	51 mm × 48 mm × 71 mm
	Case Material	Black PC; UL 94V-0
Lead Wires	2.m (6.5ft) Shielded Cable , 24AWG	
Operating Environment	Operating Temperature	-25° C ~ 70° C
	Operating Humidity	0 ~ 85% RH
	Installation Conditions	Indoor Use
Standards Compliance	Nominal Voltage	600 V AC
	Certifications	CE; RoHS; cULus (E359521); IEC61869-2; IEC 61010-1



Ordering Information

Model	Series	Current	Plug
Order Specification	aCT-H100	- XX (A)	- P
Order Numbers	aCT-H100	- 150 A	- P
	aCT-H100	- 200 A	- P

NOTE:

1. -P : Lead with plug, lead length 2 meters, if you need other sizes, please contact us.

aCT-H138 COMPACT SPLIT-CORE CURRENT TRANSFORMER

aCT-H138 Compact Split-Core Current Transformer is suitable for power monitoring, energy management and metering in low voltage power supply and distribution systems. The current transformer adopts the Split-Core design, which can quick installation with continuous power supply. It's suitable for secondary renovation projects. The product adopts high quality ferrite, silicon steel magnetic core and advanced winding process with excellent measurement characteristics and product linearity. Especially suitable for high precision current, power or energy measurement. When used with a multifunction meter or power meter, they can meet the accuracy requirements of ANSI C12.20.

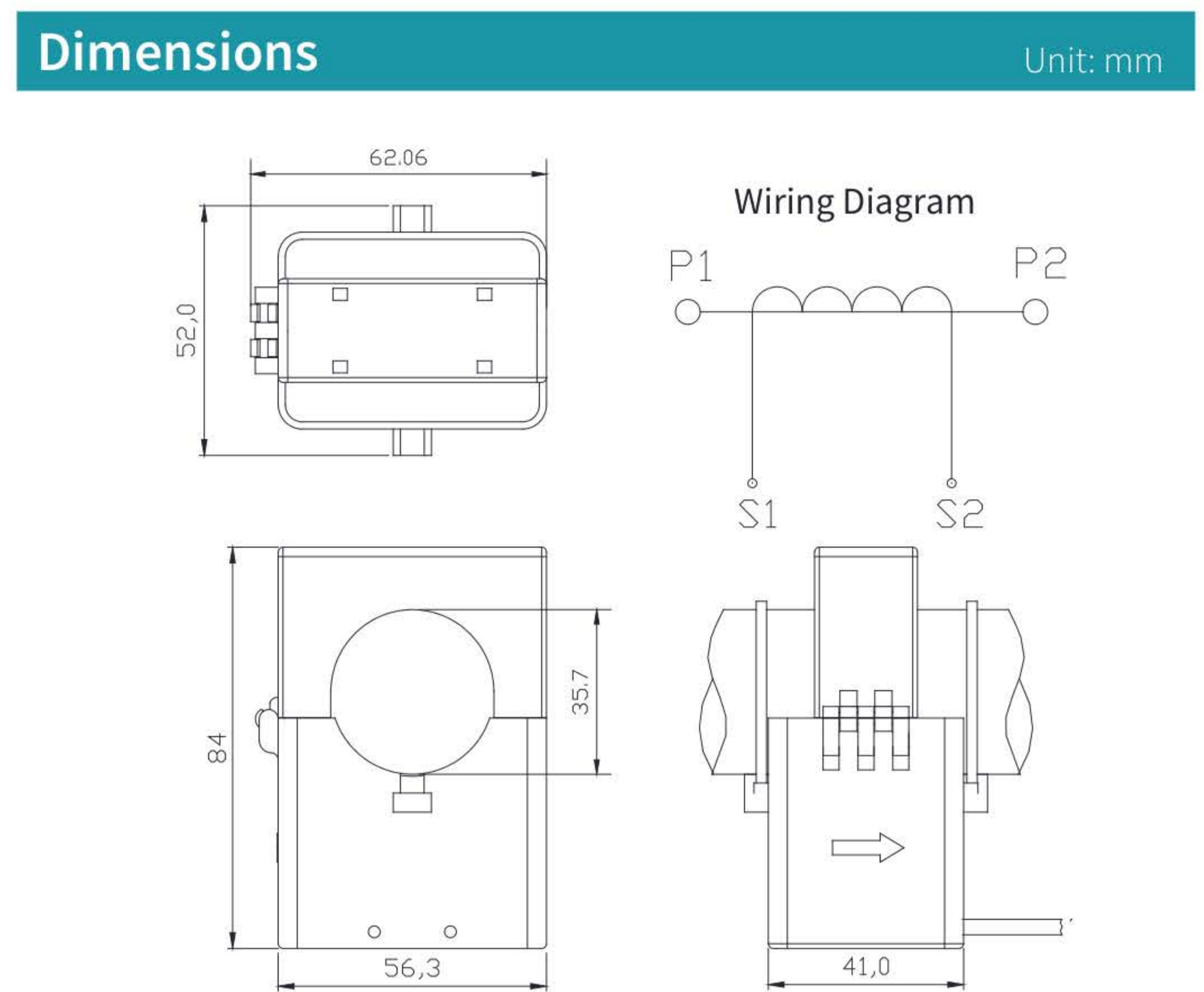
This series products has a variety of sizes to apply to more current measurement needs with low weight. It can be directly stuck to any position on the cable, easy to install.

Feature

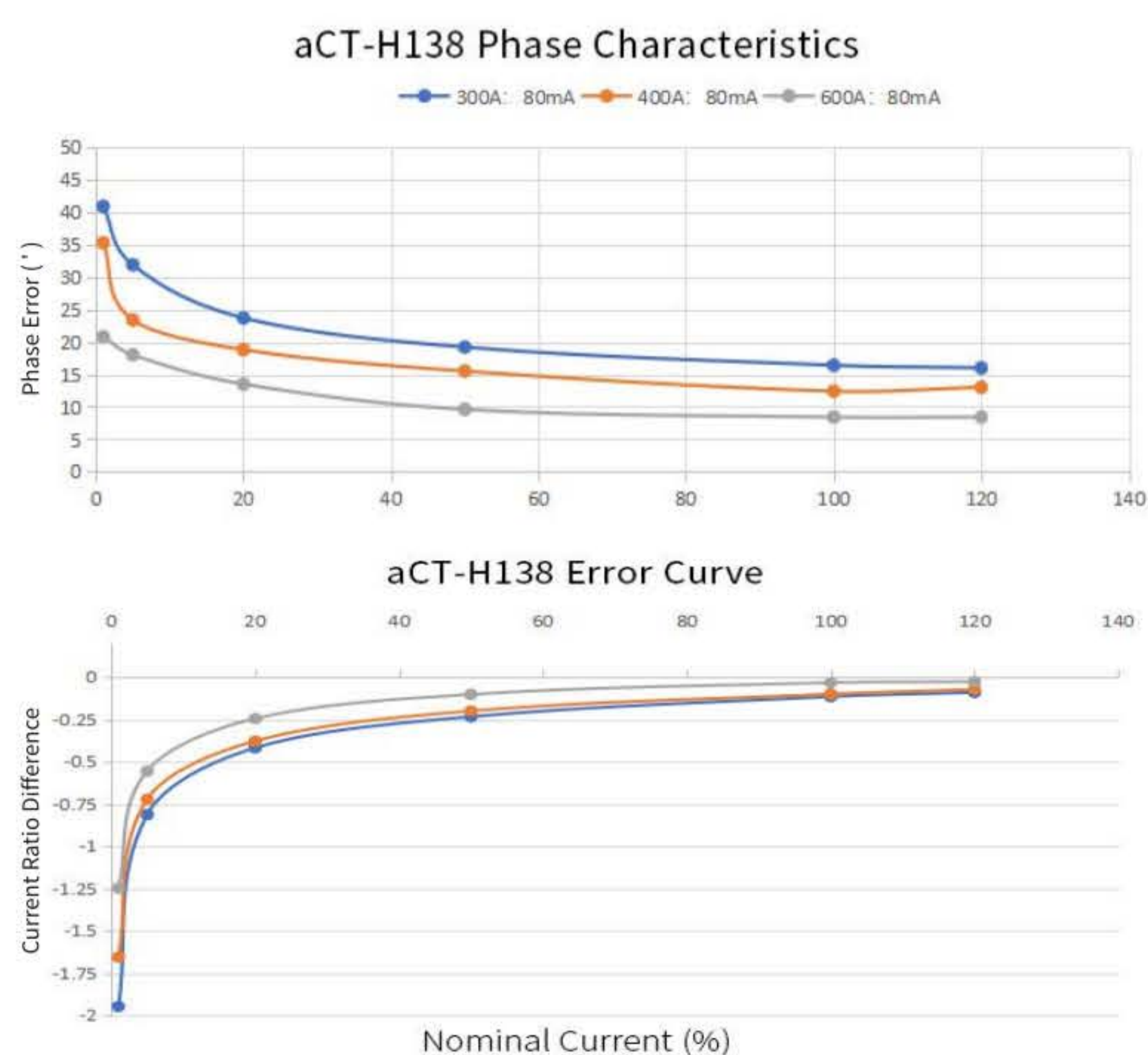
- Accuracy: 0.5
- IEC 61869-2
- Compact Design
- Quick Installation



Specification		
Electrical	Nominal Current	300 A; 400 A; 600 A
	Range	5 ~ 120%
	Accuracy	0.5
	Phase Error	≤ 30'
	Output	80 mA
	Load	10 Ω
	Frequency Range	50 ~ 60 Hz
Mechanical	Form Factor	Split-Core CT
	Inside Diameter	36.7 mm
	External Dimensions	62 mm × 52 mm × 84 mm
	Case Material	Black PC; UL 94V-0
Lead Wires	2.m (6.5ft) Shielded Cable , 24AWG	
Operating Environment	Operating Temperature	-25° C ~ 70° C
	Operating Humidity	0 ~ 85% RH
	Installation Conditions	Indoor Use
Standards Compliance	Nominal Voltage	600 V AC
	Certifications	CE; RoHS; cULus (E359521); IEC 61869-2



Typical Accuracy Curve



Ordering Information

Model	Series	Current	Plug
Order Specification	aCT-H138	- XX (A)	- P
Order Numbers	aCT-H138	- 300 A	- P
	aCT-H138	- 400 A	- P
	aCT-H138	- 600 A	- P

NOTE:

1. -P : Lead with plug, lead length 2 meters, if you need other sizes, please contact us.

SCT-025 COMPACT SPLIT-CORE CURRENT TRANSFORMER

SCT-025 Compact Split-Core Current Transformer is suitable for power monitoring, energy management and metering in low voltage power supply and distribution systems. The current transformer adopts the Split-Core design, which can quick installation with continuous power supply. It's suitable for secondary renovation projects. The product adopts high quality ferrite, silicon steel magnetic core and advanced winding process with excellent measurement characteristics and product linearity. Especially suitable for high precision current, power or energy measurement. When used with a multifunction meter or power meter, they can meet the accuracy requirements of ANSI C12.20.

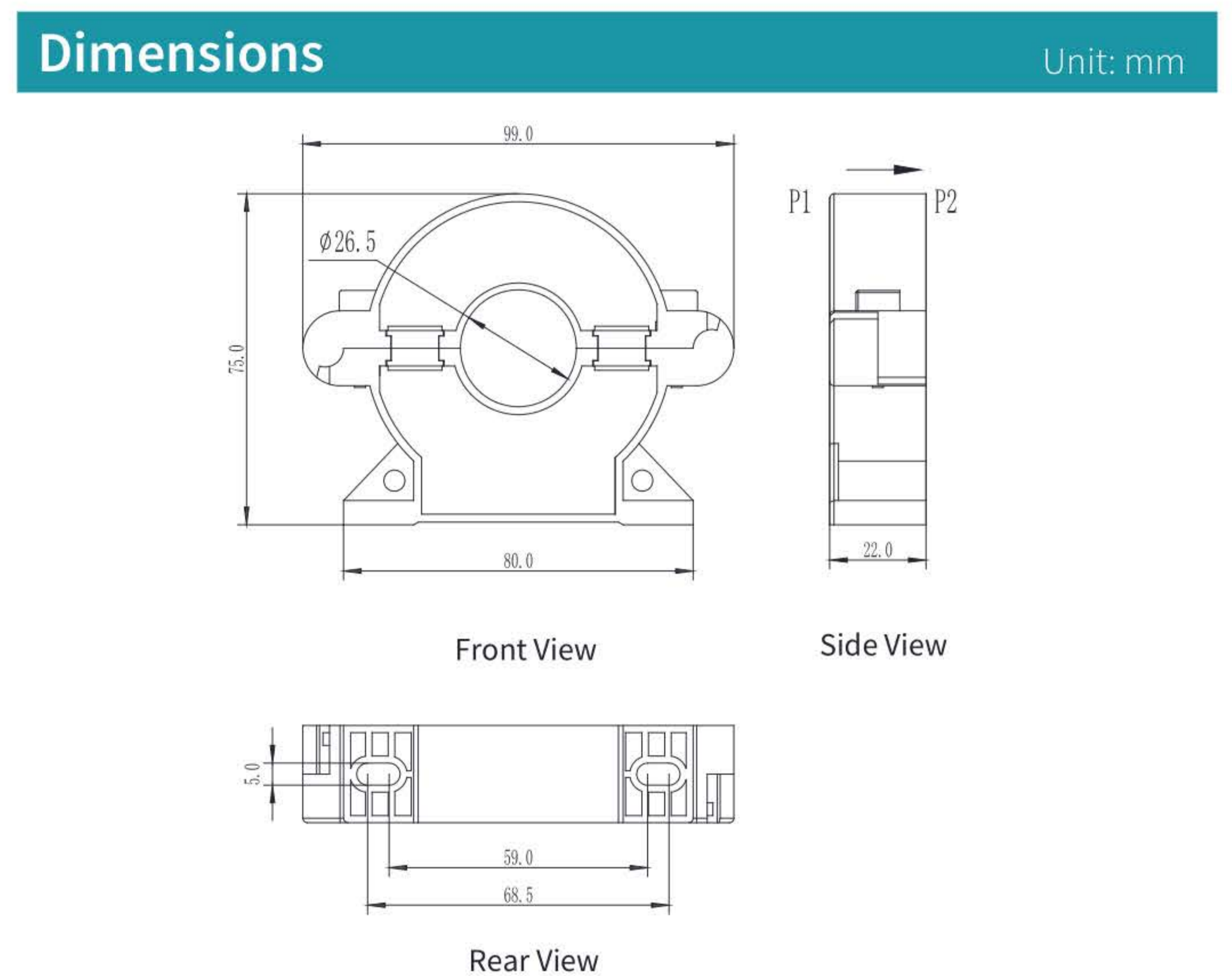
This series products has a variety of sizes to apply to more current measurement needs with low weight. It can be directly stuck to any position on the cable, easy to install.

Feature

- Accuracy: 0.5
- IEC 61869-2
- Compact Design
- Quick Installation



Specification		
Electrical	Nominal Current	80 A; 100 A; 150 A; 200 A
	Range	5~ 120%
	Accuracy	0.5
	Phase Error	≤ 30'
	Output	80 mA
	Load	10 Ω
	Frequency Range	50 ~ 60 Hz
Mechanical	Form Factor	Split-Core CT
	Inside Diameter	25 mm
	External Dimensions	99 mm × 75 mm × 22 mm
	Case Material	Black PC; UL 94V-0
	Lead Wires	2.m (6.5ft) Shielded Cable , 24AWG
Operating Environment	Operating Temperature	-25° C ~ 70° C
	Operating Humidity	0 ~ 85% RH
	Installation Conditions	Indoor Use
Standards Compliance	Nominal Voltage	600 V AC
	Certifications	RoHS; IEC 61869-2



Ordering Information

Model	Series	Current	Plug
Order Specification	SCT-025	- XX (A)	- P
Order Numbers	SCT-025	- 100 A	- P
	SCT-025	- 150 A	- P
	SCT-025	- 200 A	- P

NOTE:

1. -P : Lead with plug, lead length 2 meters, if you need other sizes, please contact us.

SCT-045 COMPACT SPLIT-CORE CURRENT TRANSFORMER

SCT-045 Compact Split-Core Current Transformer is suitable for power monitoring, energy management and metering in low voltage power supply and distribution systems. The current transformer adopts the Split-Core design, which can quick installation with continuous power supply. It's suitable for secondary renovation projects. The product adopts high quality ferrite, silicon steel magnetic core and advanced winding process with excellent measurement characteristics and product linearity. Especially suitable for high precision current, power or energy measurement. When used with a multifunction meter or power meter, they can meet the accuracy requirements of ANSI C12.20.

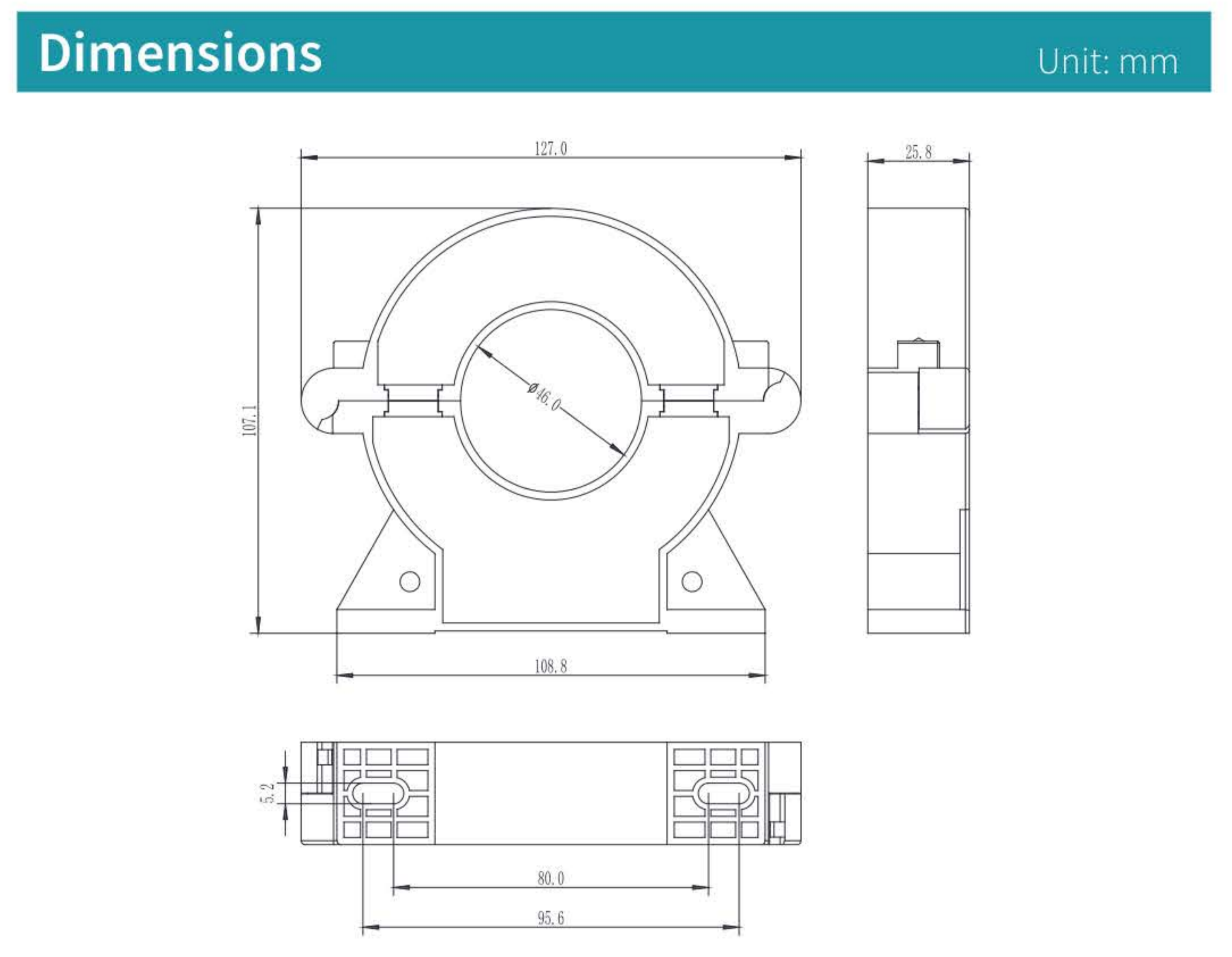
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Feature

- Accuracy: 0.5
- IEC 61869-2
- Compact Design



Specification		
Electrical	Nominal Current	300 A; 400 A; 600 A
	Range	5 ~ 120%
	Accuracy	0.5
	Phase Error	≤ 30'
	Output	80 mA
	Load	10 Ω
	Frequency Range	50 ~ 60 Hz
Mechanical	Form Factor	Split-Core CT
	Inside Diameter	45 mm
	External Dimensions	127 mm × 107 mm × 26 mm
	Case Material	Black PC; UL 94V-0
	Lead Wires	2.m (6.5ft) Shielded Cable , 24AWG
Operating Environment	Operating Temperature	-25° C ~ 70° C
	Operating Humidity	0 ~ 85% RH
	Installation Conditions	Indoor Use
Standards Compliance	Nominal Voltage	600 V AC
	Certifications	RoHS; IEC 61869-2



Ordering Information

Model	Series	Current	Plug
Order Specification	SCT-045	- XX (A)	- P
Order Numbers	SCT-045	- 300 A	- P
	SCT-045	- 400 A	- P
	SCT-045	- 600 A	- P

NOTE:

1. -P : Lead with plug, lead length 2 meters, if you need other sizes, please contact us.