



Current Sensor

# SCTX/SCTH Series



Highest Measurement Accuracy:  $\pm(0.008\% \text{ of rdg} + 10\mu\text{A})$

Low Operating Noise

Excellent Stability and Accuracy

Superior Linearity:  $<5\text{ppm}$

Ultra-low Temperature Coefficient:  $0.1\text{ppm/K}$

Saturation Detection and Self-recovery Capability

Strong Immunity from Interference

Instant-On: No Warm-up Time



Suita Electric Website

SUITA ELECTRIC Corporation, headquartered in Suita, Osaka, Japan, is a leading provider of high-end equipment with a focus on quality and innovation. Drawing from years of dedicated research and development, our company delivers top-notch products that span various industries, including electric power, energy resources, transportation, automobiles, and telecommunications. Our advanced, reliable, and comprehensive test and measurement solutions are sought after by R&D companies and manufacturers. Through systematic approaches, we address the intricate demands of our customers, actively contributing to the continuous development and updating of global industries.

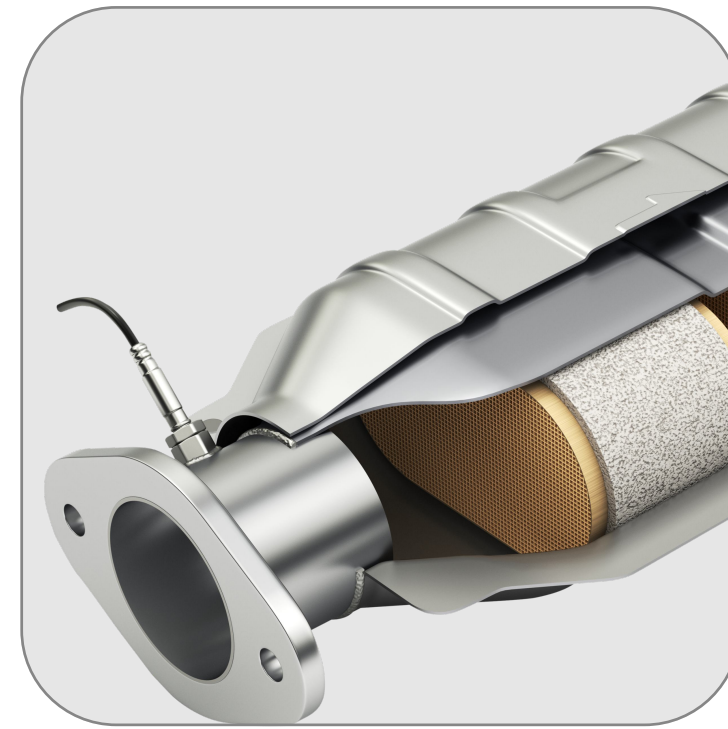


# Applications



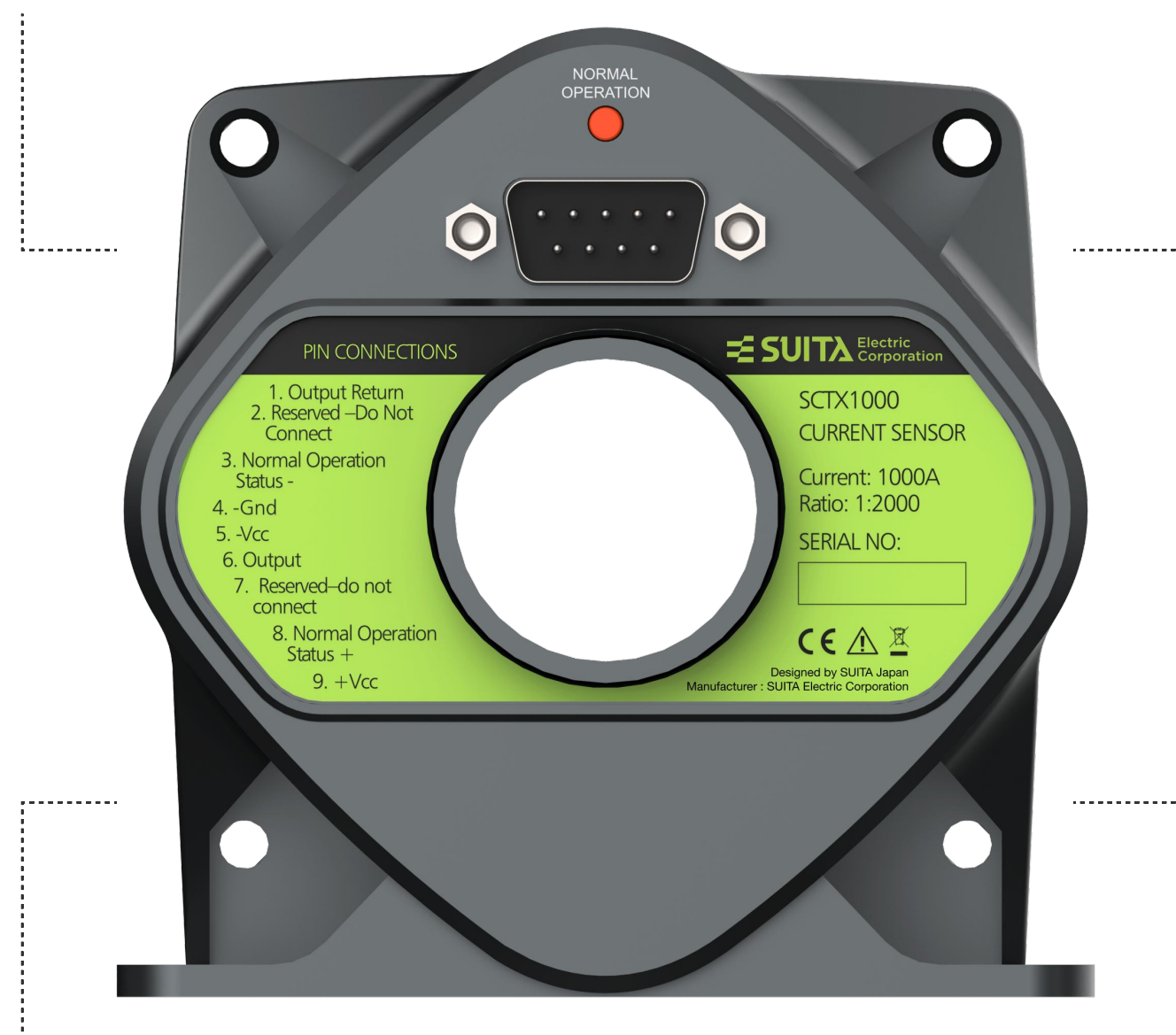
## Medical Facility

The current sensor can be used as an auxiliary device in medical care, a great help in gaining more precise diagnostic results.



## High Accuracy Inverter

The current sensor provides more reliable, highly effective solutions in the inverter manufacturing.



## Measuring Instrument

The current sensors exert their advantages in many instrument areas.



## Smart Grid

The current sensor plays a great role in the flow measurement of the smart grid.

# Model and Technical Specifications

## Current Sensor of SCTH

Items	Model			
	SCTH60	SCTH200	SCTH600	SCTH1000
DC	0-60A	0-200A	0-600A	0-1000A
AC	60Apeak	200Apeak	600Apeak	1000Apeak
Accuracy	±(0.05% of rdg + 15µA)	±(0.05% of rdg + 15µA)	±(0.05% of rdg + 15µA)	±(0.05% of rdg + 15µA)
Measuring Bandwidth	DC-800KHz	DC-500KHz	DC-300KHz	DC-300KHz
Ratio KN	1:600	1:1000	1:1500	1:2000
Resistance Rm	0-25Ω	0-25Ω	0-12Ω	0-3Ω
Aperture	Φ28mm	Φ28mm	Φ30.9mm	Φ30.9mm
Connector	DB9	DB9	DB9	DB9
Supply	±12V~±15V	±12V~±15V	±15V~±24V	±15V~±24V

## Current Sensor of SCTX

Items	Model			
	SCTX60	SCTX200	SCTX600	SCTX1000
DC	0-60A	0-200A	0-600A	0-1000A
AC	60Apeak	200Apeak	600Apeak	1000Apeak
Accuracy	±(0.01% of rdg + 10µA)	±(0.008% of rdg + 10µA)	±(0.008% of rdg + 10µA)	±(0.008% of rdg + 10µA)
Measuring Bandwidth	DC-800KHz	DC-500KHz	DC-300KHz	DC-300KHz
Ratio KN	1:600	1:1000	1:1500	1:2000
Resistance Rm	0-25Ω	0-25Ω	0-12Ω	0-3Ω
Aperture	Φ28mm	Φ28mm	Φ30.9mm	Φ30.9mm
Connector	DB9	DB9	DB9	DB9
Supply	±12V~±15V	±12V~±15V	±15V~±24V	±15V~±24V

# Usage and Precaution

## Definitions of the Terminals

Pin Number	1	6	2、7	3	8	4	5	9
Definition	Output return	Output	Reserved – do not connect	Normal Operation Status -	Normal Operation Status +	GND	-VCC	+VCC

## Notes on Measurement

Equation:  $I_p = I_S / KN$

Where, the primary current ( $I_p$ ) can be obtained by calculating the test current ( $I_S$ ) flowing through the measuring resistor ( $R_m$ ).

## Notes on Indicators and Signals

Normally, the indicator is always on. If it is off, the current sensor works based on non-zero flux (e.g. bus current over-range). Meanwhile, sweep current inside the sensor makes the current output disproportional to the current input. Only when the bus current falls within the range can the sensor resume working normally. The indicating device and the indicator light are driven by the same signal. The high-low levels are user-definable on the condition of the effective signal output, as shown in the picture A and B.

## Connection and Illustration

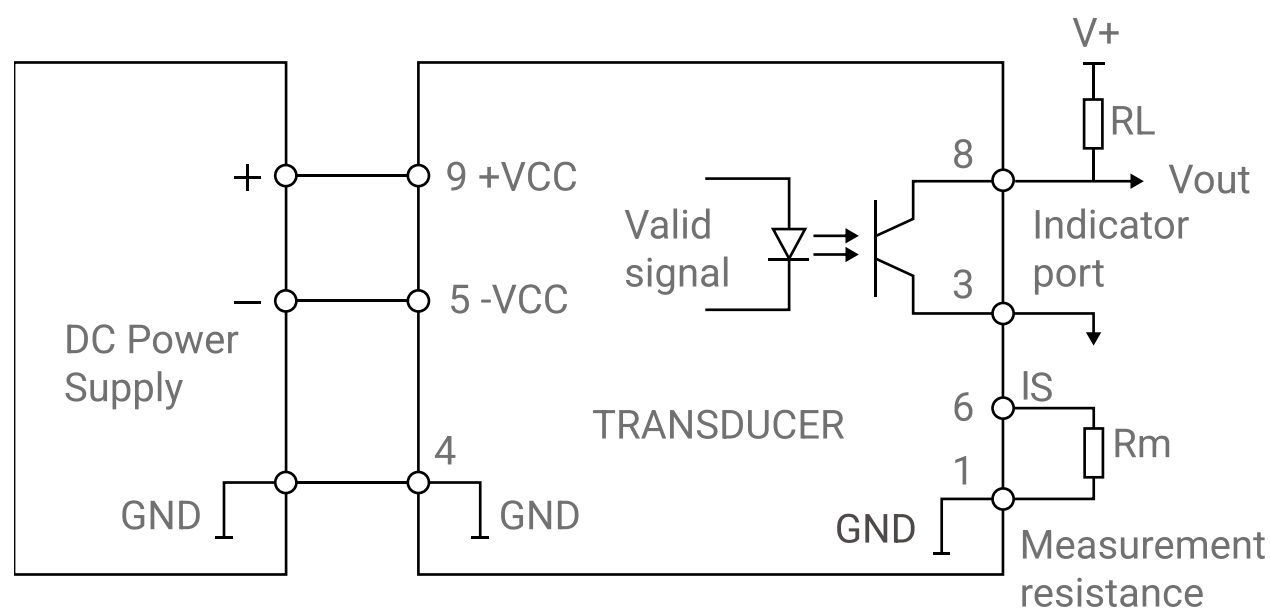


Figure A:Active Low Output

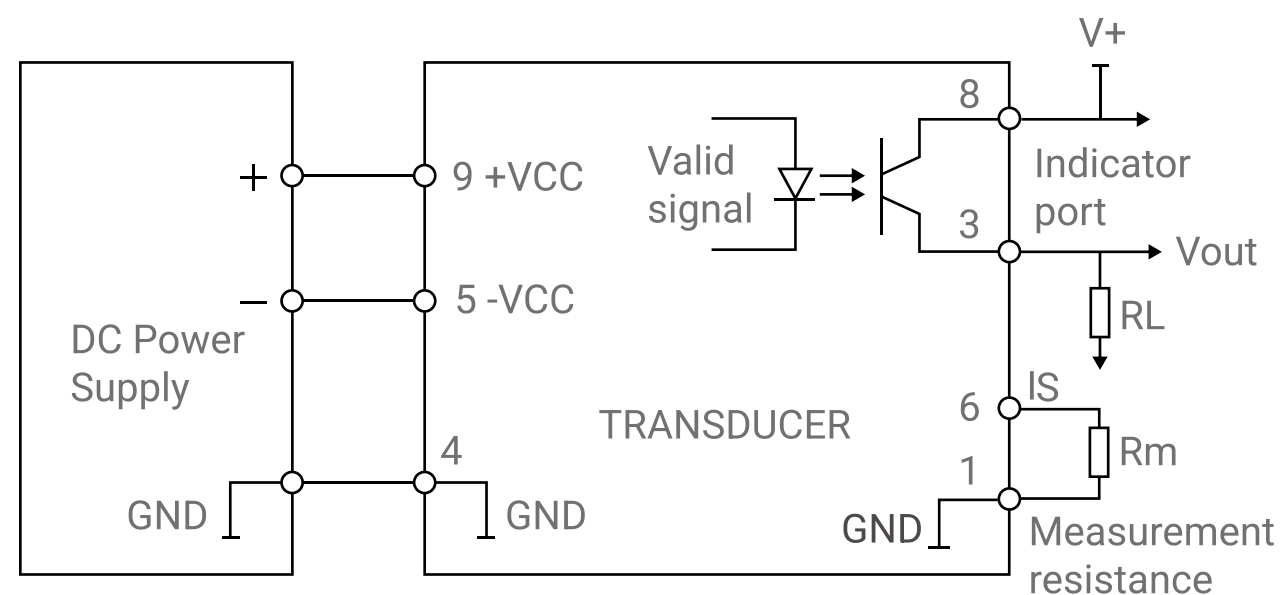


Figure B:Active High Output

## Specifications on indicator

Connection Mode	Vout (Voltage)	Descriptions
Figure A	<0.8V	Sensor works normally
	V*	Sensor works abnormally (Overload or power supply failure)
Figure B	<0.2V	Sensor works normally
	>V* - 0.8V	Sensor works abnormally (Overload or power supply failure)

## Applied voltage and standard resistance recommended

Power Supply V+	RLmin(KΩ)	RLmax(KΩ)	Standard Values ±5%
5V	0.153	1.84	180Ω,1KΩ,1.8KΩ
12V	0.386	4.64	470Ω,2.2KΩ,4.3KΩ
24V	0.786	9.44	1KΩ,2.2KΩ,9.1KΩ

## Specifications on RL value

$$RL \text{ min(K}\Omega) = \frac{V+(V)-0.4(V)}{30\text{mA}}$$

$$RL \text{ max(K}\Omega) = \frac{V+(V)-0.4(V)}{2.5\text{mA}}$$

## Parameters

General Characteristic						
Item	Symbol	Condition	Value			Unit
			Min	Typ	Max	
Operating Temperature Range	TA	--	0	--	+50	°C
Storage Temperature Range	TS	--	-25	--	+85	°C
Relative Humidity	RH	--	20	--	80	%

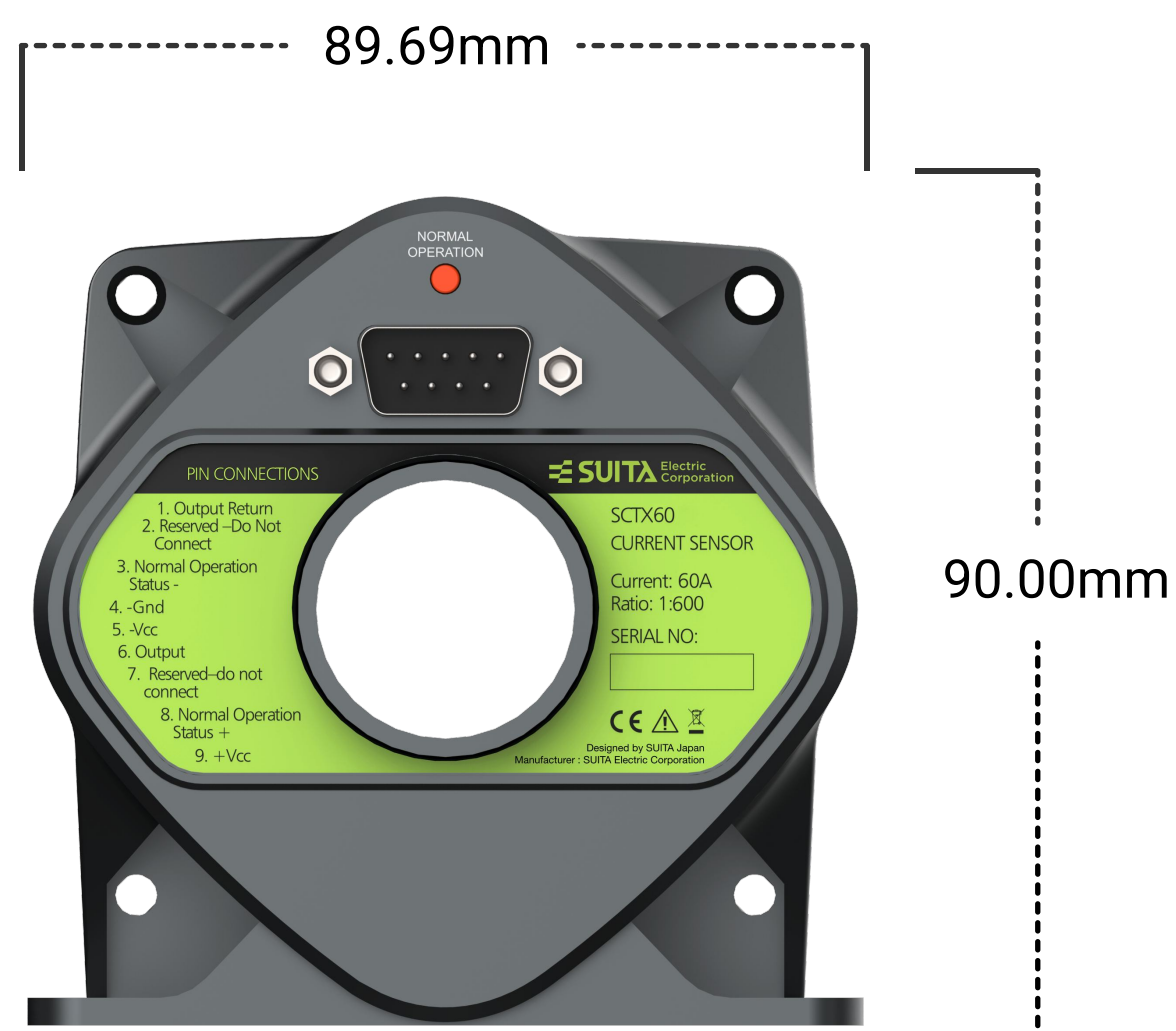
## Safety Feature

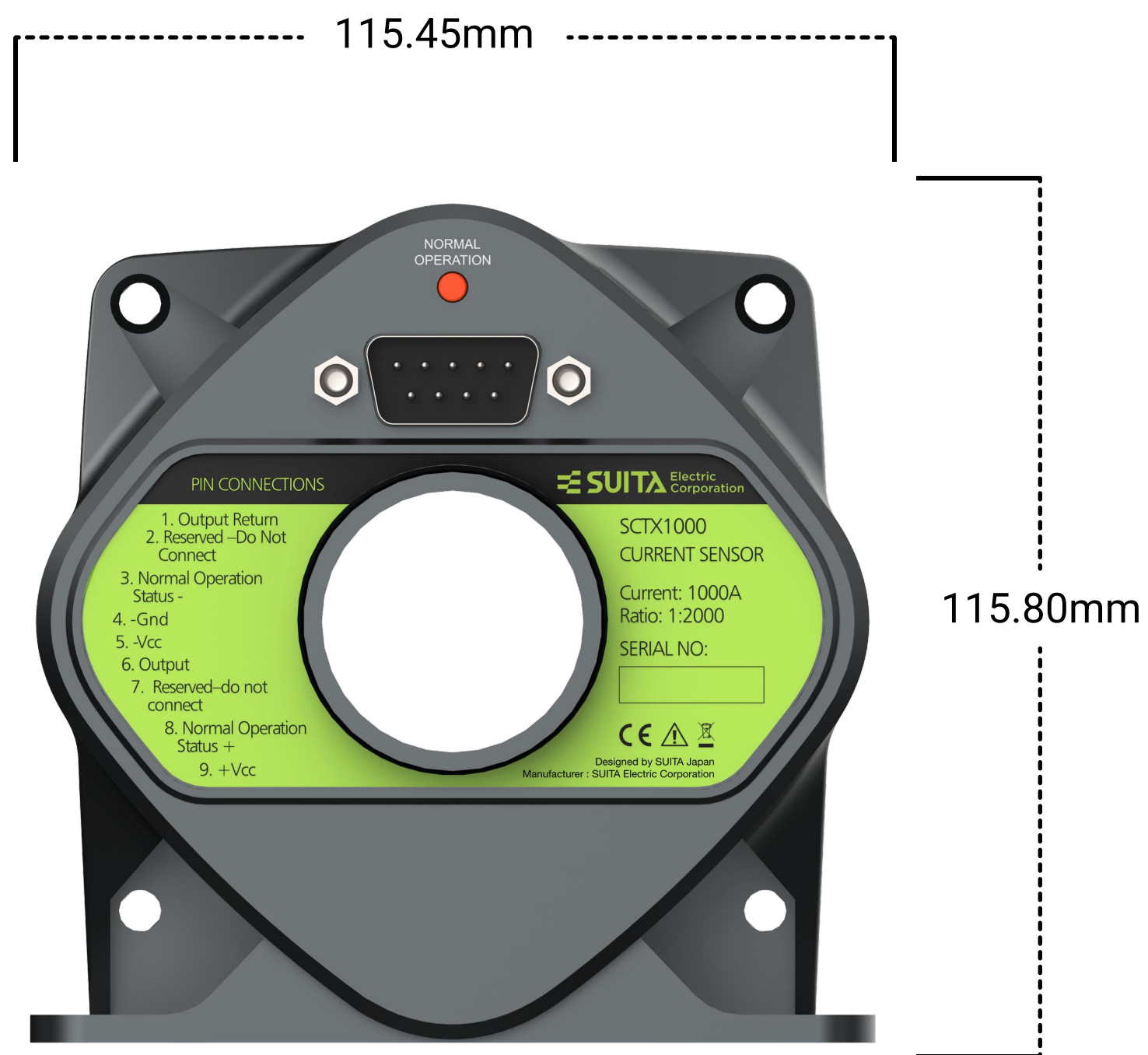
Voltage	Symbol	Condition	Value	Unit	
Isolation Voltage	Between the original and the side	Vd	50/60Hz, 1min	2.0	KV
Transient Isolation Withstand Voltage	Between the original and the side	VW	1.2/50us	5	KV
Comparative Tracking Index		CTI	IEC-60112	600	V

## Dimensions of the Current Sensor

Model:SCTH60/SCTX60/SCTH200/SCTX200

Model:SCTH600/SCTX600/SCTH1000 /SCTX1000





## Note

- The direction of the current  $I_s$  is positive, when the current  $I_P$  flows in the directions shown by the arrows;
- The temperature of the primary-side conductor should not exceed 100°C;
- The sensor described in this manual is standard in configuration. Please contact us if special application is needed.



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