

# High Accuracy Transducer

## CTA Series

CTA60      60A /DC ~ 800kHz

CTA200    200A/DC ~ 500kHz

CTA700    700A/DC ~ 100kHz

CTA1000   1000A/DC ~ 500kHz



Shenzhen Zhiyong Electronics Co., Ltd

## Preface

First of all, thank you for purchasing our products, the product specification is about the function, usage, operation attention points, etc. Before use, please read the instructions carefully and used correctly. Please save it after reading.

Manual annotation will use the following symbols to distinguish.



**This symbol means it has a harm to the machine and human body, you must refer to manual operation.**

**Warn**

**In the case of wrong operation, the user has the threat of injury, it records the relevant matters needing attention to avoid such dangers.**

**Notice**

**The user may have suffered minor injuries and material damage while with the wrong operation, to avoid such situation, note the matters needing attention.**

**Note**

**Recording of important notes while using the machine.**

For the safe use of the machine, you must abide by the following safety precautions strictly. If it is not in accordance with the manual, is likely to damage the protective function of the machine. In addition, the company is not responsible for the violation of personal safety arise from the matters needing attention in operation.



**Warning**

- Please do not continue testing if the machine or the user is wet, there could be a deadly electric shock.
- Please be careful to get an electric shock, pay attention to the highest input voltage.



**Note**

- During transporting and operating, please avoid vibration and impact, especially the impact caused by fall.
- Please avoid storing and operating under bad condition such as, direct sunlight, high temperature, damp or frost environment, which will cause deformation and worsen insulation, thus cannot meet the requirement.
- Before using, please check if there are malfunctions caused by the bad storing condition and transportation. When malfunction is confirmed, please contact the commercial agent or operator nearby.
- Please do not use the machine in dusty and wet environment since it is neither waterproof nor dustproof.

**CTA Series Brief Summary**

Type	Max current		Bandwidth	Current transfer ratio
	DC	RMS		
CTA60	60A	42A	800kHz	1:600
CTA200	200A	141A	500kHz	1:1000
CTA700	700A	495A	100kHz	1:1750
CTA1000	1000A	707A	500kHz	1:1000

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## 1. Summary

CTA series is the ultra-accuracy transducer that can measure both DC and AC. Its current range covers from 60A to 1000A with precision of 0.03% and 800 kHz bandwidth. By using Flux-gate technic, the CTA series realized high accurate measurement, excellent linearity, low DC offset, lower temperature drift, low insertion loss, high immunity to external field and low noise.

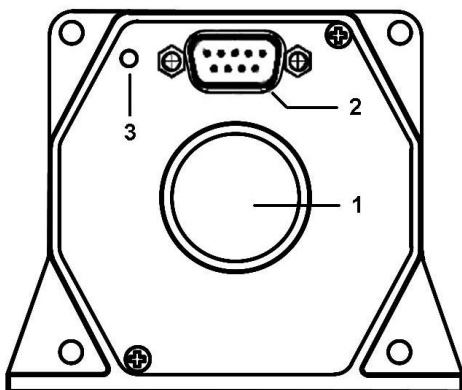
CTA series transducer includes CTA60(60A), CTA200(200A), CTA700(700A) and CTA1000(1000A). CTA60 and CTA200 have measurement aperture of 26mm; CTA700 and CTA1000 have measurement aperture of 30mm. CTA series transducers have standard 9 pin D-Sub male interface and LED Indicator, making the system not only easy to use but also reliable.

## 2. Application

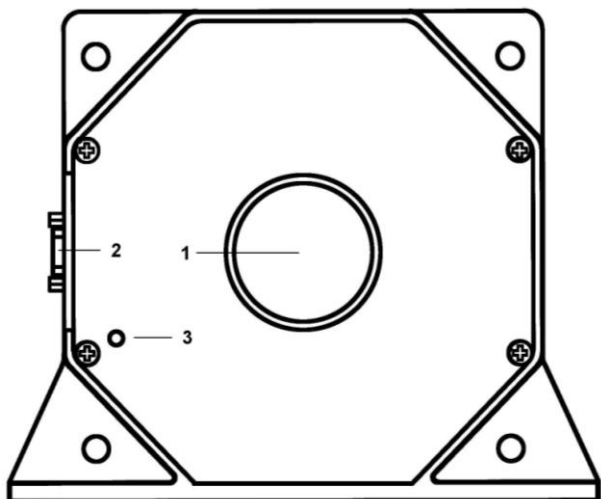
- ✧ High accuracy and highly stable current feedback unit.
- ✧ Current calibration unit.
- ✧ Energy measurement.
- ✧ Medical Equipment.
- ✧ New energy vehicle electronics.

## 3. Instruction about the product and accessories

### ■ Product



CTA60、 CTA200 Figure

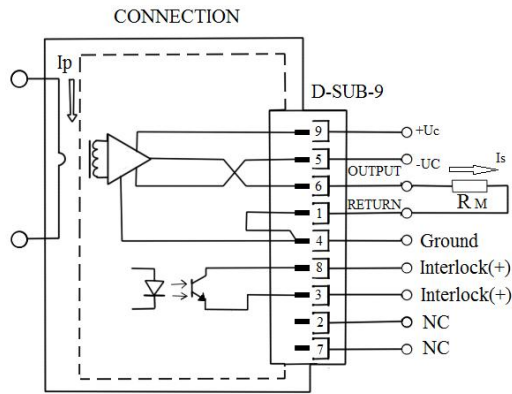


CTA700、 CTA1000 Figure

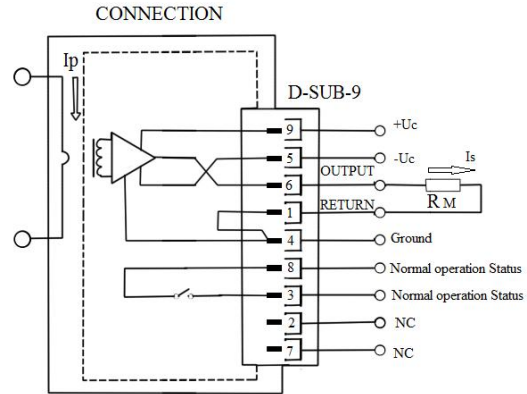
- ✧ **Transducer PTH (Primary Through Hole):** The input interface of the conductor under test, measuring the current under test.

CTA60,CTA200 PTH Diameter: 26mm; CTA700,CTA1000 PTH Diameter: 30mm

- ✧ **Communication Port:** including current output, power supply interface, and status indicator function. The diagram below represent the pin configuration.



CTA60, CTA200 Interface Diagram



CTA700, CTA1000 Interface Diagram

❖ **Status Indicator:** When the machine is working properly, the green light will on; when there's any situation, the light will be off.

■ **Accessories**



Cable (CK-330): Connecting transducer, power supply and current output port



**Power supply ( PS200 Series):** Transducer power supplying equipment

**PS202:** two channels;**PS204:**four channels

**Note**

❖ **Cable CK-330:** Standard Length is 2 meter, customization accepted. Accessories are sold separately.

❖ **Power Supply PS200 Series:** **PS202:** two channels; **PS204:**four channels ;every channel with  $\pm 15/1.5A$  of Voltage Output. Accessories are sold separately.

## 4. Specification

Test temperature: 25°C; Voltage Supplied:  $\pm U_c = \pm 15V$

Type	CTA60		CTA200		CTA700		CTA1000		
Primary nominal continuous Direct current ( $I_{PN}$ DC)	60A		200A		700A		1000A		
Primary nominal rms current ( $I_{PN}$ )	42A		141A		495A		707A		
Primary current, measuring range ( $I_{PM}$ )	$\pm 60A$		$\pm 200A$		$\pm 700A$		$\pm 1000A$		
Conversion ratio $K_N$	1:600		1:1000		1:1750		1:1000		
Secondary current ( $I_s$ )	$\pm 100mA$		$\pm 200mA$		$\pm 400mA$		$\pm 1000mA$		
Accuracy (DC, 50/60Hz sine wave)	$\leq \pm(0.03\%$ of the readings $+30\mu A)$								
Bandwidth( $\pm 3dB$ )	800kHz		500kHz		100kHz		500kHz		
Measuring resistance over operating current temperature and supply voltage range	$R_{M\ min}$	$R_{M\ max}$	$R_{M\ min}$	$R_{M\ max}$	$R_{M\ min}$	$R_{M\ max}$	$R_{M\ min}$	$R_{M\ max}$	
	0	60 $\Omega$	0	30 $\Omega$	0	2.5 $\Omega$	0	3 $\Omega$	
	Figure 1		Figure 2		Figure 3		Figure 4		
Overload capability @ pulse of 100ms	$\pm 300A$		$\pm 1000A$		$\pm 3500A$		$\pm 4000A$		
Supply voltage	$\pm 15V(\pm 5\%)$								
Supply current	$\leq 80mA + I_s$								
Rated operational voltage RMS (IEC61010-1)	Basic insulation	2000V		2000V		1600V		300V	
	Reinforced insulation	600V		600V		300V		150V	
Max measurement aperture	26mm		26mm		30mm		30mm		
Second interface	D-Sub-9Pin								
Fastening screws and tightening torque	M4 steel screw *4; 2.8Nm M5 steel screw *2; 3.7Nm				M5 steel screw *4; 3.7Nm M6 steel screw *2; 4.4Nm				

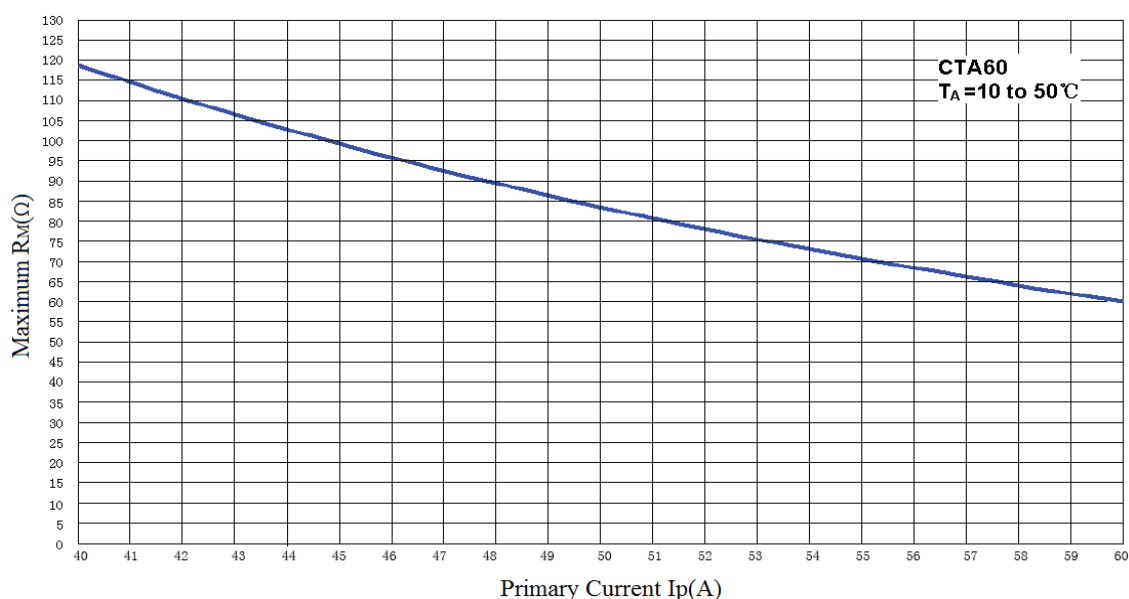


Figure 1 CTA60 Maximum measuring resistor versus primary current

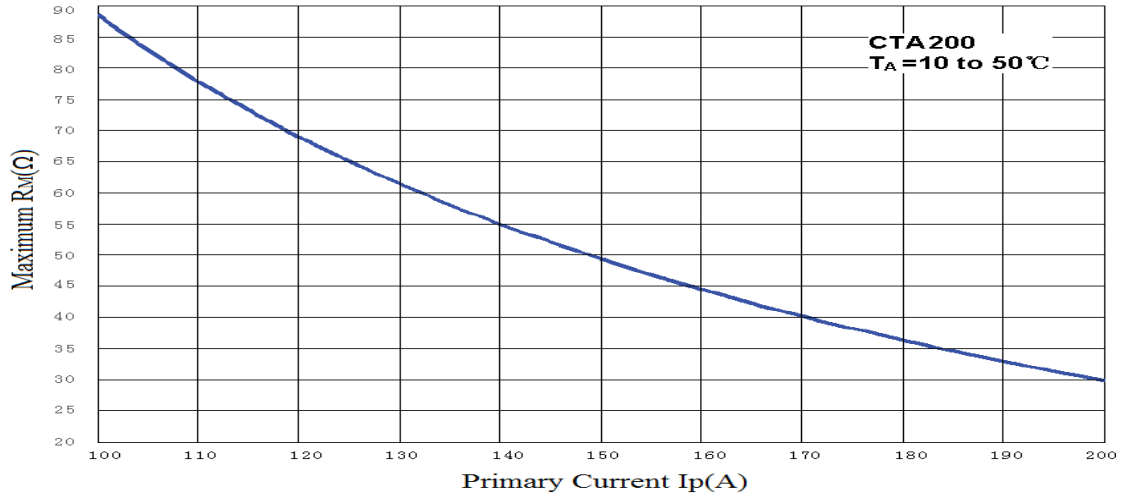


Figure 2 CTA200 Maximum measuring resistor versus primary current

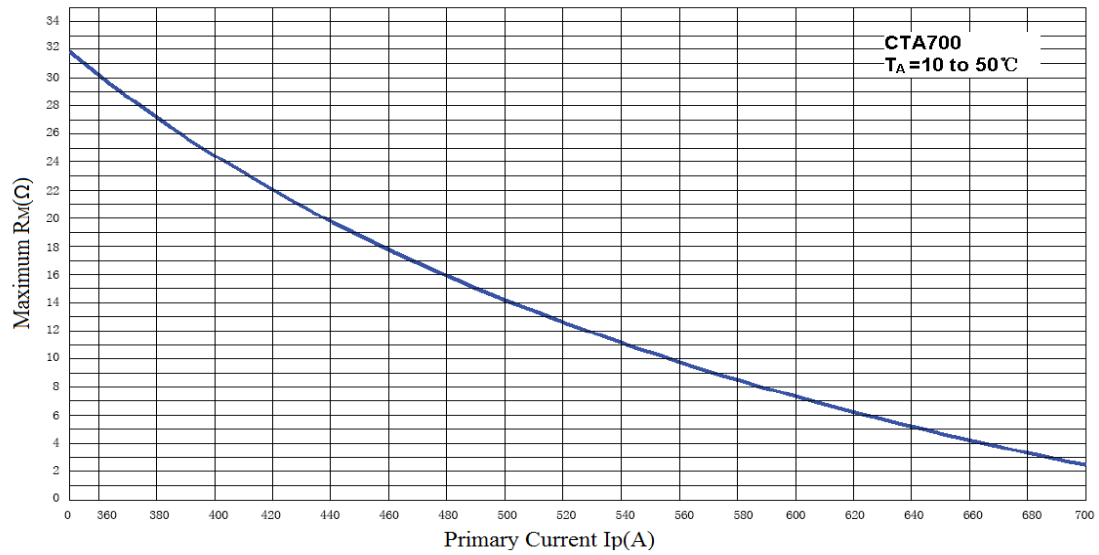


Figure 3 CTA700 Maximum measuring resistor versus primary current

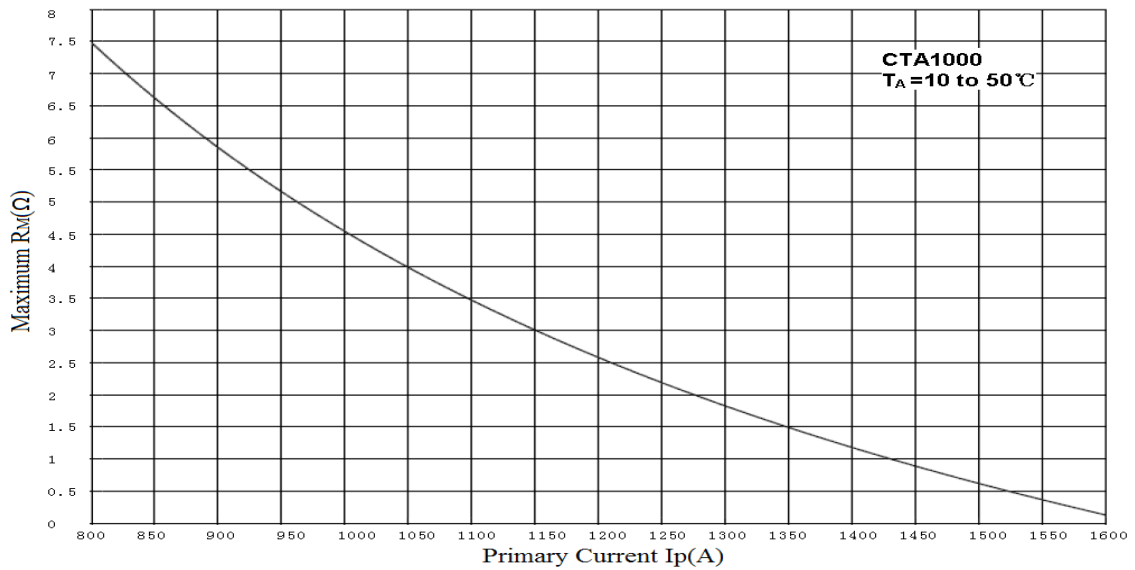


Figure 4 CTA1000 Maximum measuring resistor versus primary current



## 5. Operation Instruction

### 5.1 Overload Protection

When Primary Current surpassed the overload trigger point, the core flux-gate will be fully saturated, and then, the transducer will switch from the normal mode to overload mode.

The overload trigger point should be at least 1.1 times of Primary Nominal Continuous Direct Current. The actual overload point is related to overload resistor and working condition.

After the overload, the transducer will enter park mode. When the primary current reduced into normal range ( $\pm$ Primary DC), the transducer will automatically recover to normal status. (Probably need to take a few seconds)

In the overload mode:

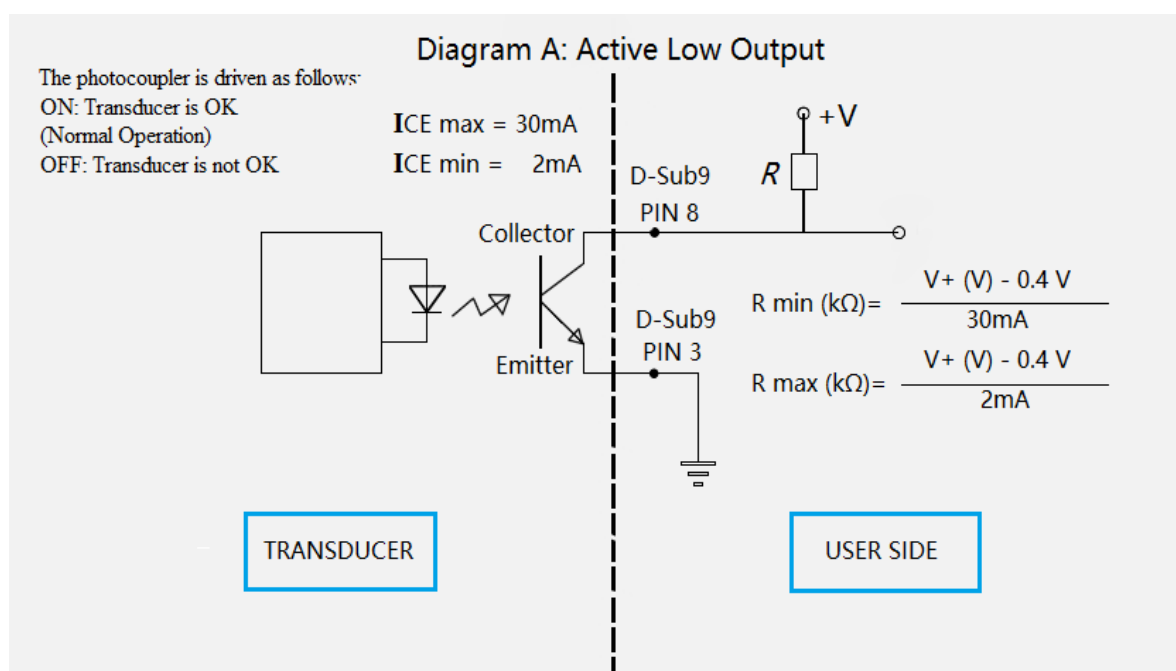
- ❖ Secondary Current output will be low frequency triangular wave, the output range of CTA60 will be  $\pm 100\text{mA}$ , the output range of CTA200 will be  $\pm 200\text{mA}$ , the output range of CTA700 will be  $\pm 400\text{mA}$ , and the output range of CTA1000 will be  $\pm 1000\text{mA}$ .
- ❖ Output port pin 3 and 8 disconnected
- ❖ Status Indicator will be off.

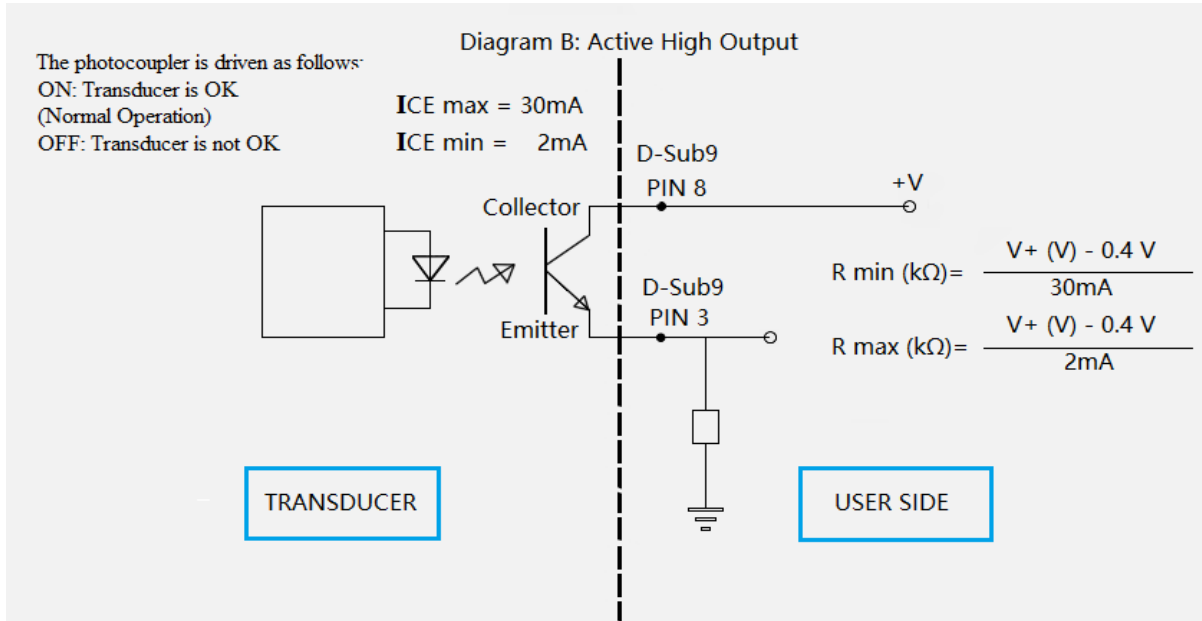
**Note**

To make sure recover from saturation state to normal state, the overload resistance must not surpass the value below: CTA60:60 $\Omega$ ; CTA200:30 $\Omega$ ; CTA700:2.5 $\Omega$ ; CTA1000:3 $\Omega$

### 5.2 Status/Interlock Interface summary

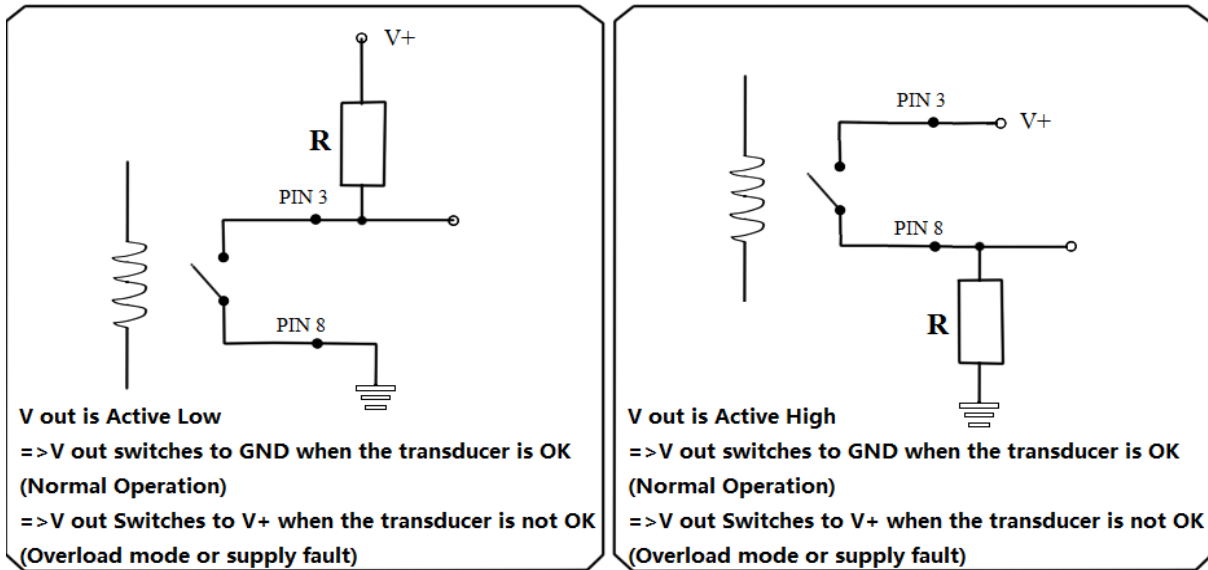
#### ① CTA60, CTA200 Operating instruction





② CTA700, CTA1000 Operating instruction:

### Example of Application Status/Interlock Port Wiring



### 5.3 Operating Method

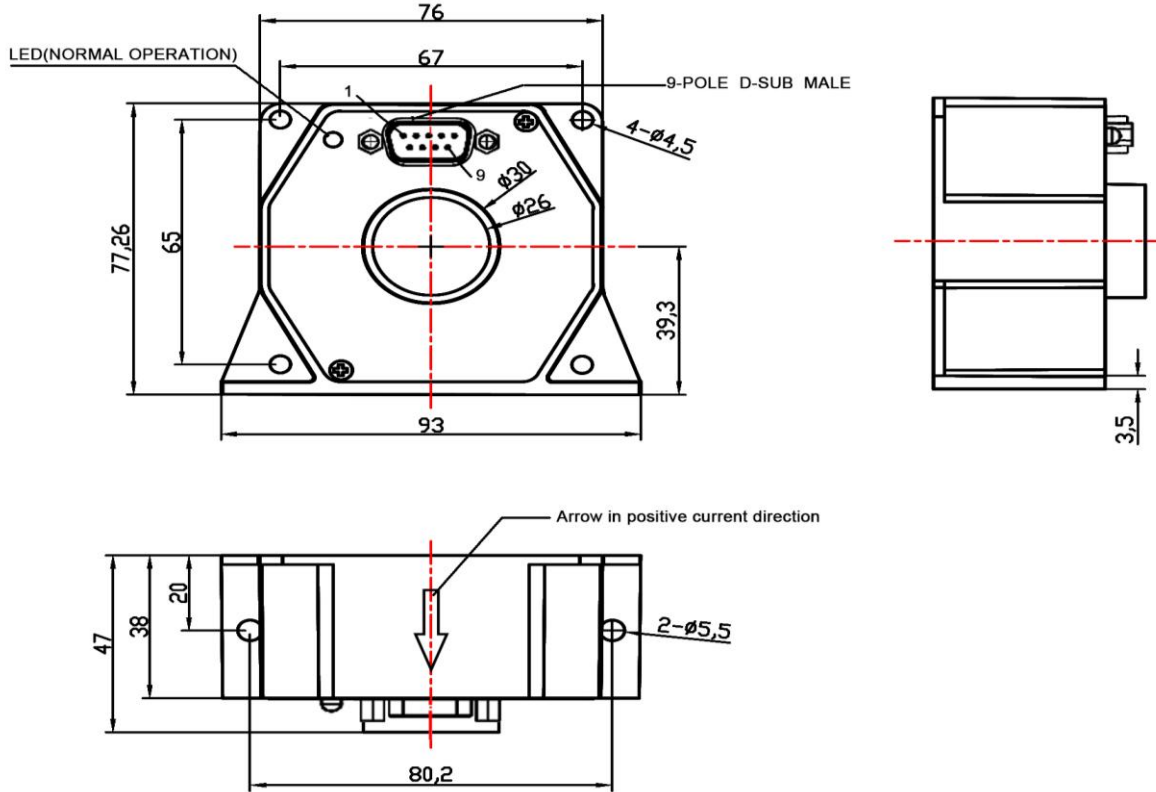
- ❖ Connect Transducer and Power Supply
- ❖ Connect Transducer and Measurement Device
- ❖ Turn on Transducer, power it up
- ❖ Connect the cable under test and measure it.

**Attention**

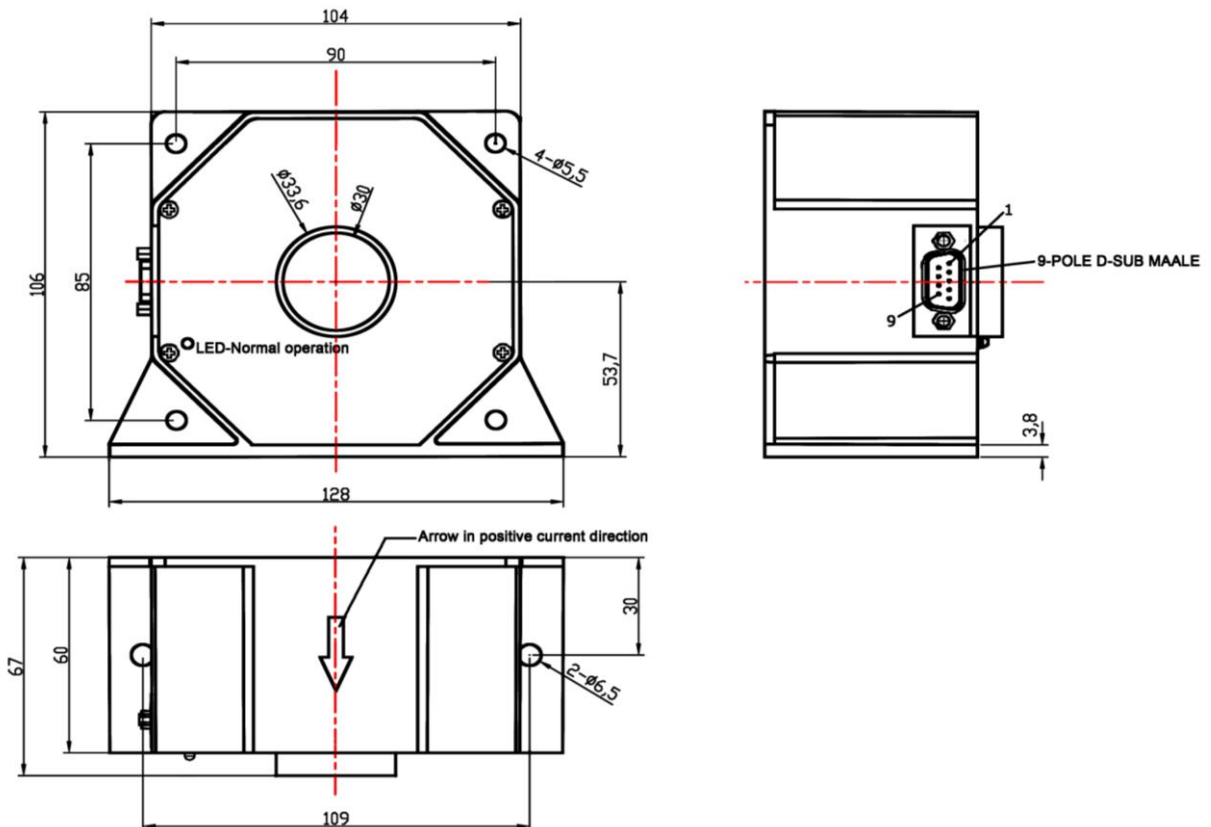
While measuring, to make the measurement result right, please turned on the power of the transducer and then connect the current under test and measure it.

## 6. Mechanic Specification

### ■ CTA60 CTA200 Mechanic Specification



### ■ CTA700 CTA1000 Mechanic Specification



## 7. Environmental Characteristics

Operating Temperature & Humidity	10~50°C , 20~80%RH
Storing Temperature & Humidity	-20~85°C , 20~80%RH

## 8. Packing List

Packing List	
Name	Quantity
Current Transducer	1
Tool Bag	1
Instruction Book	1
Warranty Card	1
Test Report	1

# CYBERTEK

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