



- High Accuracy
- Broad Bandwidth
- Low Zero-drift

Shenzhen Aerospace Precision Electronics Co. Ltd.

## IIT200 High Precision Current Transducer

The multi-point zero-flux technology system applied in this high-precision DC transducer combines closed-loop excitation flux control technology, self-excited flux gate technology, and multiple closed loop control technology. The combination of technologies enables zero-flux closed-loop control of excitation flux, DC flux and AC flux, and can detect high-frequency ripple by constructing a high-frequency ripple sensing channel, so that the transducer can achieve high gains and measuring accuracy over the full bandwidth.

### Product photo



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## Key Technologies

- ◇ Excitation closed-loop control technology
- ◇ Self-exciting demagnetization technology
- ◇ Multi-point zero-flux technology
- ◇ Temperature control compensation technology
- ◇ Multi-range automatic switching technology

## Features

- ◇ Insulation measurement at primary and secondary side
- ◇ Excellent linearity and accuracy
- ◇ Extremely low temperature drift
- ◇ Extremely low zero drift
- ◇ Broad band and low response time
- ◇ Strong anti-electromagnetic interference

## Application Domain

- ◇ Medical Equipment: Scanner, MRI
- ◇ Power: Converter, Inverter
- ◇ New Energy: Photovoltaic, Wind energy
- ◇ Testing Instrument: Power analyzer, High-precision power supply
- ◇ Smart Power Grid: Power generation and battery monitoring, Medium low voltage substation
- ◇ Industry Control: Industrial motor drive, UPS, Welding, Robot, Hoist, Elevator, Ski lift
- ◇ Rail Transit: EMU, Metro, Trolley car
- ◇ Ship: Electric driven ship
- ◇ Car: Electric car

## Electrical Performance

Parameter	Symbol	Measuring Conditions	Min	Typ	Max	Unit
Primary nominal direct current	$I_{PN\_DC}$	—	—	$\pm 200$	—	Adc
Primary nominal alternating current*	$I_{PN}$	—	—	141	—	Aac
Primary overload current	$I_{PM}$	1 Minute	—	—	$\pm 300$	Adc
Operating voltage	$V_C$	—	$\pm 14.2$	$\pm 15$	$\pm 15.8$	V
Power consumption current	$I_{PWR}$	Rated primary current	$\pm 30$	$\pm 130$	$\pm 180$	mA
Current ratio	$K_N$	Input : Output	2000:1	2000:1	2000:1	—
Rated output current	$I_{SN}$	Rated Primary current	—	$\pm 0.1$	—	A
Measuring resistance	$R_M$	—	0	10	25	$\Omega$

\* refers to AC effective value

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## Accuracy Measurement

Parameter	Symbol	Measuring Conditions	Min	Typ	Max	Unit
Accuracy	$X_G$	Input direct current, full temperature range	—	—	0.02	%
Linearity	$\epsilon_L$	Full temperature range	—	—	15	ppm
Zero offset current	$I_{OT}$	@25°C	—	—	±5	μA
Zero offset current	$I_O$	Full temperature range	—	—	±10	μA
Response time	$t_r$	di/dt=100A/us, rised to 90%I <sub>PN</sub>	—	—	1	us
Current change rate	di/dt	—	200	—	—	A/us
Frequency bandwidth (-3dB)	F	—	0	—	100	kHz

## Safety Characteristics

Parameter	Symbol	Measuring Conditions	Value	Unit
Insulation voltage / Between primary and secondary sides	Vd	50Hz, 1min	5	KV
Transient isolation withstand voltage / Between primary and secondary sides	Vw	50us	10	KV
Creepage distance / Between the primary and the outer shell	dCp	—	11	mm
Clearance distance / Between the primary and the outer shell	dCi	—	11	mm
Comparative tracking index	CTI	IEC-60112	275	V

## General Characteristics

Parameter	Symbol	Measuring Condition	Min	Typ	Max	Unit
Ambient operating temperature	T <sub>A</sub>	—	-40	—	+75	°C
Ambient storage temperature	T <sub>S</sub>	—	-55	—	+95	°C
Relative humidity	RH	—	20	—	80	%
Mass	M	—		420±10		g

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## Operating Status Instructions

- ◇ The green indicator is on when the device is running normally:

After the device is powered on, the green indicator is on when the device is running normally. When the green light is off, you should check whether the power supply of the transducer is normal.

- ◇ The green light is blinking when the current overloads:

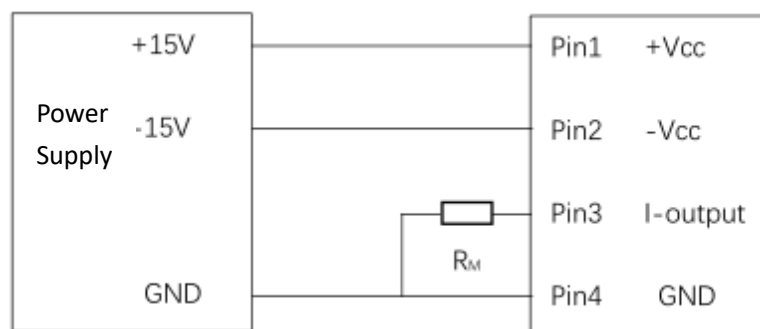
When the power supply is normal, if the green light is blinking, the current transducer is in a non-zero flux state. At this time, the input current amplitude of the bus exceeds the specified range, and the transducer enters the overload state. The output current is no longer proportional to the input current signal. In the overload mode, the output current of the transducer is kept in the maximum output state, and the green indicator is off. When the input current recovers within the specified current range, the transducer output current will return to normal and the green indicator will be normal on.

## Connection system

### 1. Phoenix terminal pin function definition

Pin	1	2	3	4
Definition	<b>+15V Supply</b>	<b>-15V Supply</b>	<b>I_Output</b>	<b>GND</b>

IIT Series Transducer



Test instruction:

The primary current  $I_P$  can be obtained by measuring the test current  $I_S$  flowing through  $R_M$  or the voltage  $U_R$  across  $R_M$ :

$$I_P = K_N * I_S = K_N * (U_R / R_M)$$

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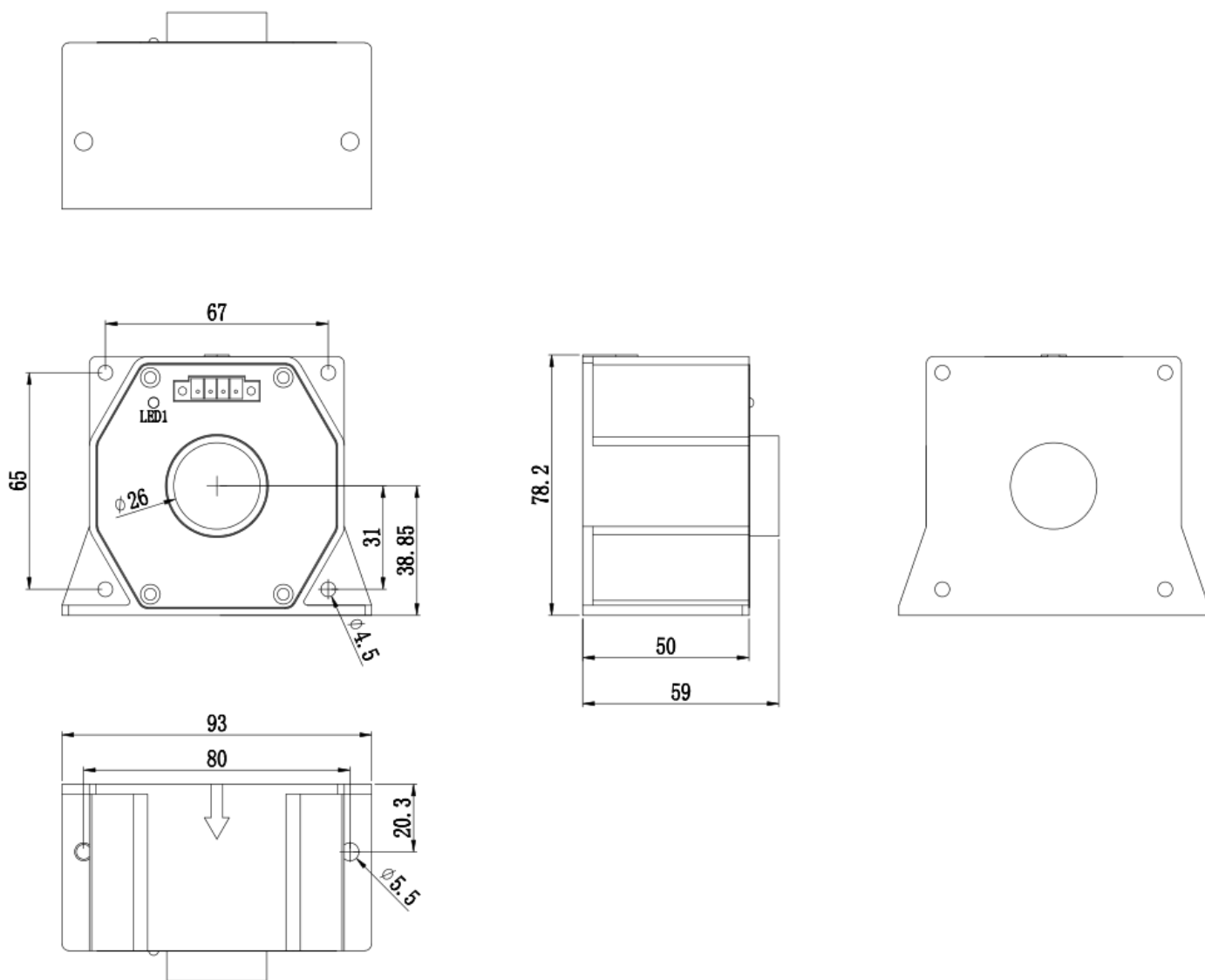


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## Dimensions

Unit: mm



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