



- High Accuracy
- Broad Bandwidth
- Low Zero-drift

Shenzhen Hangzhi Precision Electronics Co., Ltd.

Product Model: CIT600A

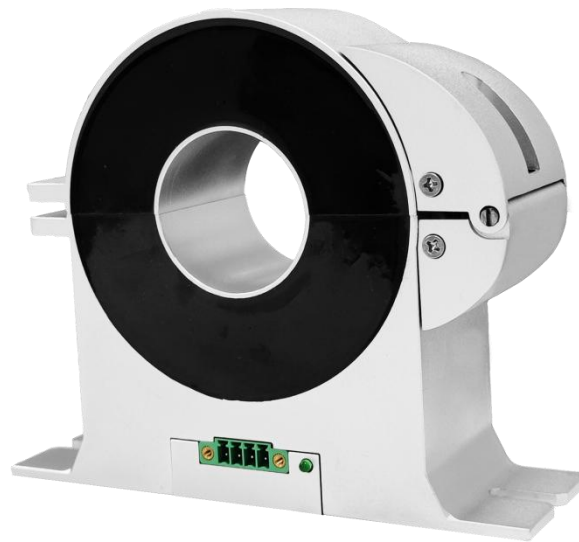
Measurement Range: DC \pm 600A

Accuracy: 0.05%

CIT600A High-precision Split Core Current Transducer

Hangzhi launches a high-precision open current sensor with independent intellectual property rights, using fluxgate technology. The purpose is to provide an open current sensor to solve the problem of low current detection accuracy of existing open current sensors in the industrial field. The multi-point zero flux technology system is applied to the existing high-precision open current sensor. The excitation flux closed-loop control technology, self-excited flux gate technology and multi-closed-loop control technology are combined to realize the control of excitation flux, DC flux, AC. The zero-magnetic flux closed-loop control of the magnetic flux and the detection of high-frequency ripples are achieved by constructing a high-frequency ripple sensing channel, so that the sensor has relatively high gain and measurement accuracy within the full bandwidth range.

Product photo





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Key Technologies

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

Features

- ◇ Insulated measurement between 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

- ◇ In the field of new energy, oscilloscope and power meter are used for on-site verification
- ◇ Power distribution system transformation: such as power plant DC power system transformation, substation DC system transformation, communication room transformation, railway locomotive transformation and other application scenarios
- ◇ Distribution Network Live Work Scenario
- ◇ Other application scenarios that cannot interrupt the operation of the device

Electrical Performance

Parameter	Symbol	Measuring Conditions	Min	Typ	Max	Unit
Primary nominal direct current	I _{PN_DC}	—	—	±600	—	Adc
Primary nominal RMS current*	I _{PN_AC}	—	—	424	—	Aac
Primary current, measuring range	I _{PM}	One minute	—	—	±720	Adc
Power supply voltage DC	U _C	—	±14.2	±15	±15.8	V
Current consumption	I _C	Rated primary current	±50	±630	±750	mA
Conversion ratio	K _N	Primary/secondary	1000:1	1000:1	1000:1	—
Secondary nominal RMS current	I _{SN}	Rated primary current	—	±0.6	—	A
Secondary burden resistance	R _M	—	0	2	5	Ω

* 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	—	—	0.05	%
Linearity error	ϵ_L	Full temperature range	—	—	0.02	%
Zero offset current	I_{OT}	@25°C	—	—	±20	μA
Zero offset current	I_o	Full temperature range	—	—	±30	μA
Step response time to 90% I_{PN_DC}	t_r	di/dt of 100A/μs	—	—	2	μs
di/dt accurately followed	di/dt	—	100	—	—	A/μs
Frequency bandwidth (-3dB)	BW	—	0	—	350	kHz

Safety Characteristics

Parameter	Symbol	Measuring Conditions	Value	Unit
Insulation voltage / Between primary and secondary	Ud	50Hz, 1min	5	KV
Impulse withstand voltage / Between primary and secondary	Uw	50μs	10	KV
Creepage distance / Between primary and shield	d_{CP}	—	11	mm
Clearance distance / Between primary and shield	d_{Cl}	—	11	mm
Comparative tracking index	CTI	IEC-60112	600	V

General Characteristics

Parameter	Symbol	Measuring Condition	Min	Typ	Max	Unit
Ambient operating temperature	T_A	—	-30	—	+75	°C
Ambient storage temperature	T_S	—	-40	—	+85	°C
Relative humidity	RH	—	20	—	85	%
Mass	M	—	—	1050±30	—	g



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Safety



Cautions

This specifications documents provide users with relevant precautions for installation, commissioning, operation and maintenance. Please read carefully before installation and use. This manual is provided with the product, please keep it in a proper place for reference during maintenance.

The device must be used according to the manufacturer specifications, otherwise there are risks to damage the device, other equipment connected, and safety risks to operators.

Always inspect the device and its accessories, and confirm they are in good status before energize the device.

If you find any damage to the device housing, fixing, power cord, connecting cables, or connected equipment, immediately disconnect the device from the power source.

If you have concerns about the safe operation of the equipment, you should immediately shut down the equipment and the corresponding accessories, and get in touch with the technical support department of our company as soon as possible to communicate and solve the problem.



Danger

The current sensor is not allowed to be used when the secondary output is open-circuited, that is, when the primary has current or the sensor is powered on, the secondary output terminal is not allowed to be disconnected; only when the bus has no current and the sensor is not powered on, the current output terminal of the sensor can be disconnected. Otherwise, high voltage may be induced and there is a danger of electric shock or equipment damage.

When you need to move the product, please be sure to cut off the power first and unplug all the connecting cables connected to it.



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Operating Status Instructions

◇ During normal operation, the green light is always on:

After the device is powered on, when the device is working normally, the green indicator light is always on. When the power supply is connected, if the green light is not on, you should first check whether the power supply of the sensor is normal.

◇ When the current is overloaded, the green indicator light is off:

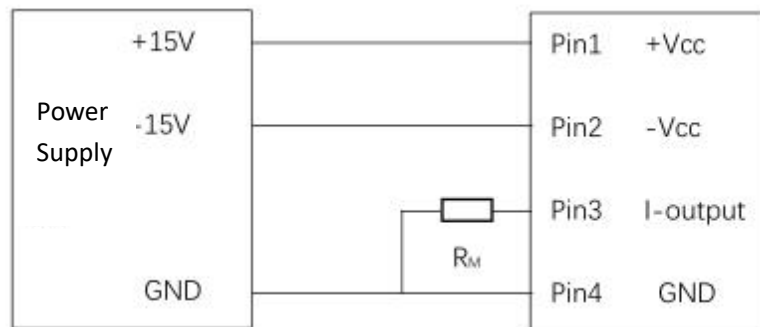
When the power supply is normal, if the green indicator light is off, it means that the current sensor is in a state of non-zero magnetic flux. At this time, if the amplitude of the bus input current exceeds the specified range of the sensor, the sensor enters the overload working mode, and the output current is no longer proportional to the input current signal. When the input current returns to the specified measured current range, the output current of the sensor returns to normal, and the green indicator light is always on.

Connection system

1. Phoenix terminal pin function definition

Pin	1	2	3	4
Definition	+15V Supply	-15V Supply	I_Output	GND

CIT 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 :

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



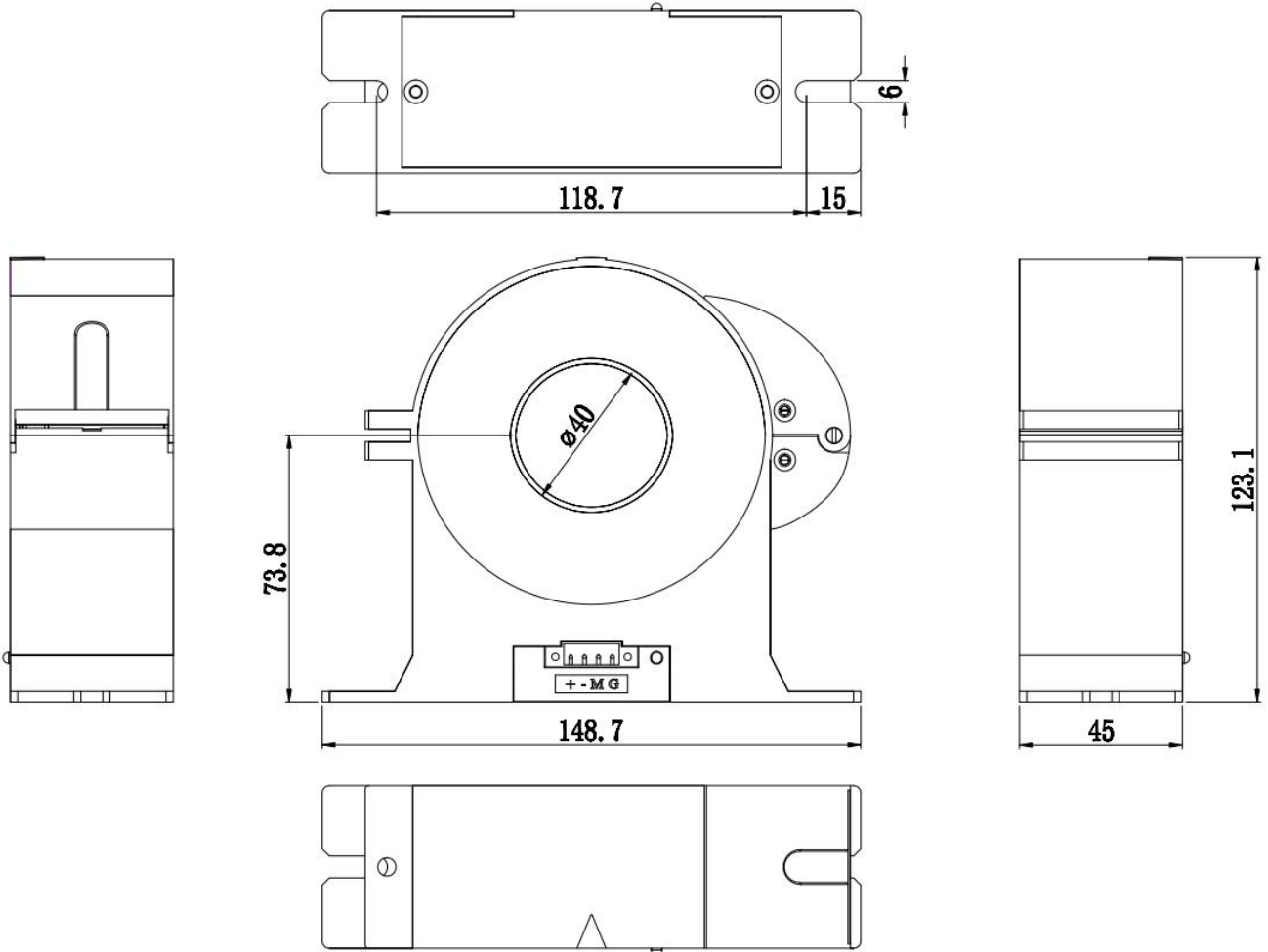
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Dimensions

Unit: mm



Installation specifications: Use standard M5 screws to install and lock, the screw strength grade is 8.8, and the tightening torque is 4.5N.m.

Packing List & Dimensions

Package dimensions (L x W x H): 177mm x 165mm x 112mm

Item	Description	Quantity	Comments
CIT600A	Current Transducer	1	/
	Phoenix Terminal	1	/