

CHCS-ITH-50S 系列高精度电流传感器 CHCS-ITH-50S series ultra high precision current sensor

产品介绍 Product introduction

用于电流的超高精度测量: DC, AC, 脉冲....., 初级和次级之间采用电流隔离。

For ultra-high precision measurement of current:DC,AC,pulsed...,with galvanic separation between primary and secondary.

Current transducer uses Fluxgate principle to measure any kinds of electric current. The output signal is small current that can be accepted by electronic circuit. The primary input current and the secondary output signal is highly electric isolated. This kind of transducer has a compact size but with a big hole aperture.

产品特性 Product characteristics	应用领域 application area
<ul style="list-style-type: none">• 超高稳定性和准确度 High stability and accuracy• 优异的线性度: Excellent linearity• 极低温度系数 Very low temperature coefficient• 响应速度快 Fast response speed• 抗干扰能力强 Strong anti-interference ability• 无开机预热时间 No boot time	<ul style="list-style-type: none">• 医疗设备 Medical equipment• 特殊电源 Special power supply• 磁共振(MRI)单元 Magnetic resonance unit• 智能电网 Smart grid• 测试仪器仪表 Testing instruments and meters• 工业测量 Industrial measurement



- ★ AC/DC/Pulsed and Mixed current
- ★ High accuracy
- ★ Optimized response time
- ★ Very good linearity
- ★ High immunity to external interference
- ★ Wide frequency bandwidth
- ★ Very low temperature drift



电气性能 Electrical data

参数 parameter	符号 Symbol s	测试条件 Test conditions	数值 Value			单位 Unit
			最小 Min	标称 Typ	最大 Max	
原边额定电流 Primary rated current	I_{PN}	--	--	±50	--	Adc
原边过载电流 Primary overload current	I_{PM}	1 min	--	--	±60	Adc
工作电压 Supply voltage	V_C	--	--	±12	--	V
功耗电流 Current consumption	I_{Pwr}	--	±10	±60	±80	mA
电流变比 Conversion ratio	K_N	--	1000:1			--
额定输出电流 Rated output current	I_{SN}	@I _{pn} =±200	--	±50	--	mA
测量电阻 Measuring resistance	R_M	@I _{pn} =±50	0	--	120	Ω
		@I _{pn} =±100	0	--	60	

动态参数 Dynamic parameter:

参数 parameter	符号 Symbol s	测试条件 Test conditions	数值 Value			单位 Unit
			最小 Min	标称 Typ	最大 Max	
精度 Accuracy	X	@ DC Ta =+25℃	--	--	0.1	%
线性度 Linearity	ε_L	--	--	--	2	ppm
零点失调电流 Zero offset current	I_o	@25℃	--	--	50	uA
动态响应时间 Dynamic response time	t_r	di/dt=100A/us, 上 升至 90% I _{PN}	--	--	1	us
频带宽度(-3 dB) Current change rate(-3 dB)	F	--	0	--	100	kHz
零点失调电流 Zero offset current	I_{oT}	全温度范围 Full temperature range	--	--	300	uA

一般特性 General characteristics:

参数 parameter	符号 Symbol s	测试条件 Test conditions	数值 Value			单位 Unit
			最小 Min	标称 Typ	最大 Max	
工作温度范围 working temperature	T _A	--	-20	--	+70	℃
储存温度范围 Storage temperature	T _s	--	-25	--	+85	℃
质量 weight	m	--	58±5			g

安全特性 Safety characteristics:

参数 parameter	符号 Symbols	测试条件 Test conditions	数值 Value	单位 Unit	
隔离电压 Isolation voltage	原、副边之间 Primary and secondary	V _d	50Hz,1min	5	KV
瞬态隔离耐压 Transient isolation withstand voltage	原、副边之间 Primary and secondary	V _w	50us	10	KV
隔离电压 Isolation voltage	副边对外壳 secondary and shell	V _d	50Hz,1min	2.5	KV
相比漏电起痕指数 Compared with leakage index	CTI	IEC-60112	275	v	

机械特性 Mechanical properties:

- 公差：外形尺寸、安装定位尺寸公差按照 GB/T1804-2000 C 级标准执行。

Tolerance: Shape size and Installation location dimensions are carried out according to GB/T1804-2000 C standard.

- 紧固点：35mm 导轨卡扣，见图 1。

Fastening points: 35mm guide rail buckle, as shown in Figure 1.

- 原边穿孔直径：Ø8。

Primary perforation diameter: Ø 8.

- 连接端子型号：接线柱。

Connection terminal type: Terminal.

外形尺寸及端子定义(单位: mm):

Outline size and terminal definition(Unit: mm)

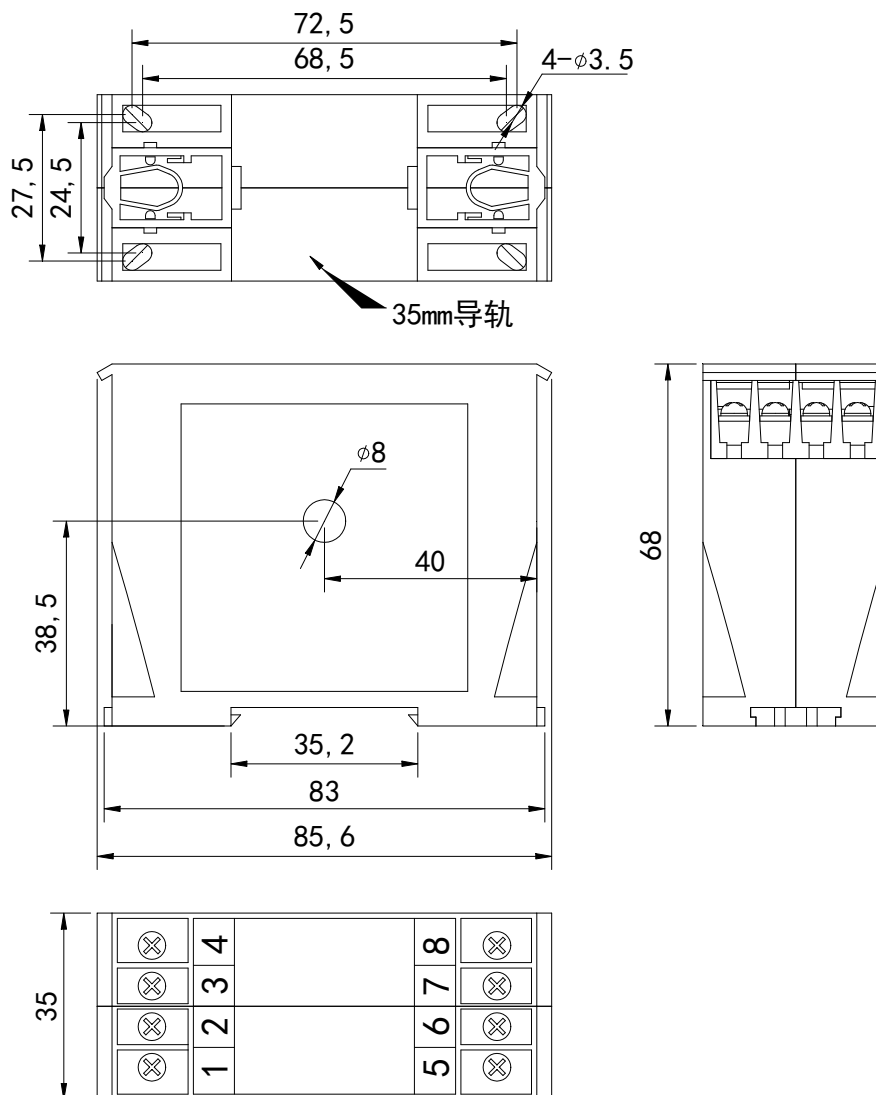


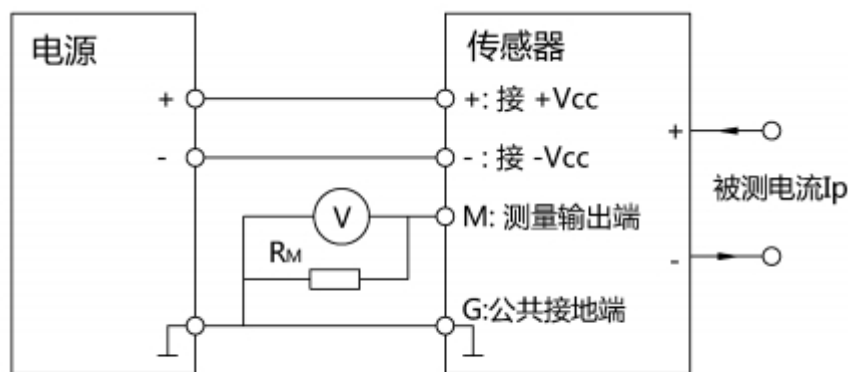
图 1 外形图

Figure 1 Size diagram

端子定义 Terminal definition:

Pin	Definition	Pin	Definition
1	— + Supply voltage	5	+ Supply voltage
2	—	6	- Supply voltage
3	—	7	output
4	—	8	GND

应用连接及说明 Application connection and description:



电气连接图

Figure 2 Electrical connection diagram

1. 测试说明 Test instructions:

通过测量流过 R_M 的测试电流 I_S ，或者 R_M 两端的电压 U_R ，可以得到原边电流 I_P ：

By measuring the test current I_S flowing through the R_M , or the voltage U_R at both ends of the R_M , the original side current I_P can be obtained:

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

- ◆ I_S 在 I_P 按箭头方向流动时，是正向的。

I_S is positive when I_P flows in the direction of arrow.

- ◆ 原边导体温度不能超过 100°C 。

The temperature of the primary conductor should not exceed 100°C .

- ◆ 此模块为标准传感器，对于特殊的应用请与我们联系。

This module is standard sensor. For special purposes, please contact us.

- ◆ 我们保留对传感器修改的权利，恕不另行通知。

We reserve the right to modify the sensor without notice.

安全事项 Security matters:



1. Attention should be paid to the bare conductive part of the terminal when wiring to prevent ESD impact as far as possible. It needs professional construction experience engineers to wiring the product. The connecting wires of power supply, input and output must be connected correctly, and must not be dislocated or reversed, otherwise the product may be damaged.
2. There should be no conductive dust in the installation and use environment.
3. The potentiometer installed on the product is used for internal debugging and calibration of the company, and the user can not be adjusted.
4. Severe vibration or high temperature may also cause damage to products. Please pay attention to using environment.



1. Please pay attention to the danger of electric shock. After installation, the operator should not touch any bare conductive parts. When necessary, sensors can be protected, such as protective cover and so on.