HY-CTSU200 Economical Fluxgate Current Sensor

Hpower
AC&DC Power Source

High precision

Zero drift small

Full scale

anti-interference
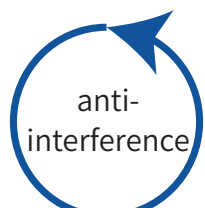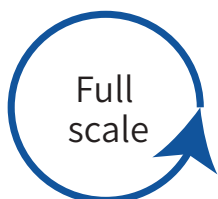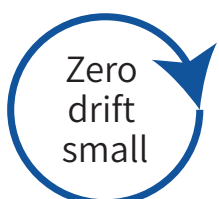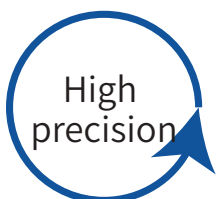
HY-CT Series Economical Fluxgate Current Sensor

After years of technological precipitation, Hangyu Power has always been committed to the import replacement of high-end high-precision sensors,continuously improve sensor quality in terms of measurement accuracy, temperature characteristics, response time, stability, reliability, etc.Launched HY-CTSU series economical fluxgate current sensor,multi-point zero flux technology system applied to Hangyu high precision DC sensor,the excitation flux closed-loop control technology, self-excited flux gate technology and multi-closed-loop control technology are combined,zero-flux closed-loop control of excitation flux, DC flux and AC flux is realized, and high-frequency ripple detection is realized by constructing high-frequency ripple induction channel.Thus, the sensor has relatively high gain and measurement accuracy in the full bandwidth range.
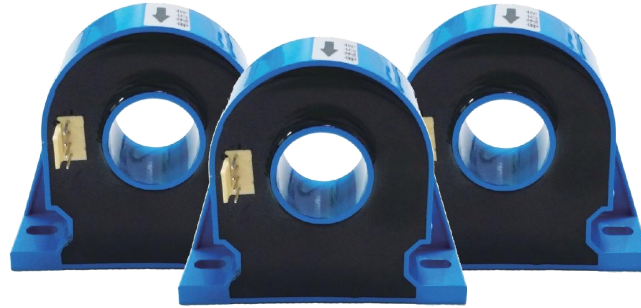
Core Technology

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

Performance Characteristics

- Input and output current isolation measurement
- Excellent linearity and accuracy
- Very low temperature drift
- Extremely low zero drift
- Strong resistance to electromagnetic interference
- Wide band and low response time

Application Field

- Medical equipment: scanner, MRI
- Rail transportation: high-speed train, subway, tram, trolley bus
- Aerospace: Satellites, rockets
- Instrumentation: Power analyzer, high precision power supply
- Smart grid: power generation, battery monitoring, medium and low voltage substation
- Industrial control: industrial motor drive, UPS, welding, robot, crane, elevator, ski lift
- Ships: Electric powered ships
- Power: converter, inverter
- Measurement: verification and calibration
- Cars: Electric cars
- New energy: photovoltaic, wind energy
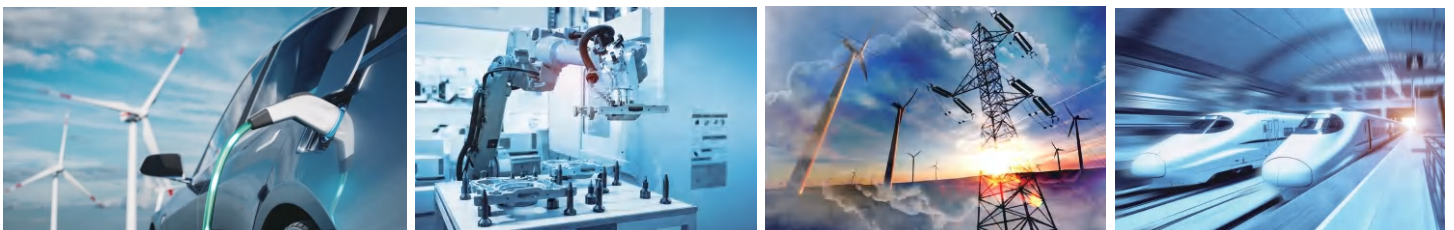
Electrical Performance

Item	Symbol	Test condition	Minimum value	Nominal	Maximum value	Unit
Input terminal rated DC current	IPN_DC	—	—	±200	—	Adc
Input terminal rated AC current*	IPN	—	—	141	—	Aac
Overload current at the input	IPM	1 minute	—	—	±240	Adc
Operating voltage	VC	—	±14.2	±15	±15.8	V
Power consumption current	IPWR	Input terminal rated working current	±30	±130	±150	mA
Current variable ratio	KN	Input: Output	2000:1	2000:1	2000:1	—
Rated output current	ISN	Input terminal rated working current	—	±0.1	—	A
Measuring resistance	RM	—	0	10	25	Ω

＊ Refers to AC valid value

Measurement Of Accuracy

Item	Symbol	Test condition	Minimum value	Nominal	Maximum value	Unit
Accuracy	X_G	Lnput DC, full temperature range	—	—	500	ppm
Linearity	ε_L	Full range	—	—	50	ppm
Temperature stability	T_C	—	—	—	25	ppm
Zero offset current	I_{OT}	@25℃	—	—	±5	μA
Zero offset current	I_{OT}	Full temperature range	—	—	±10	μA
Reaction time	t_r	di/dt=100V/μs,rising to 90%IPN	—	1	—	μs
Rate of current change	di/dt	—	100	—	—	A/μs
Band width (-3dB)	F	—	0	—	100	kHz

Safety Feature

Item	Symbol	Test condition	Numerical value	Unit
Isolation voltage / Between input and output	V_d	50Hz,1min	5	kV
Transient isolation withstand voltage/ Between input and output	V_w	50μs	10	kV
Creepage distance / Between the input and the shell	dCp	—	11	mm
Electrical clearance distance / Between the input and the shell	dCi	—	11	mm
Comparative tracking index (CTI)	CTI	IEC-60112	275	V

General Characteristic

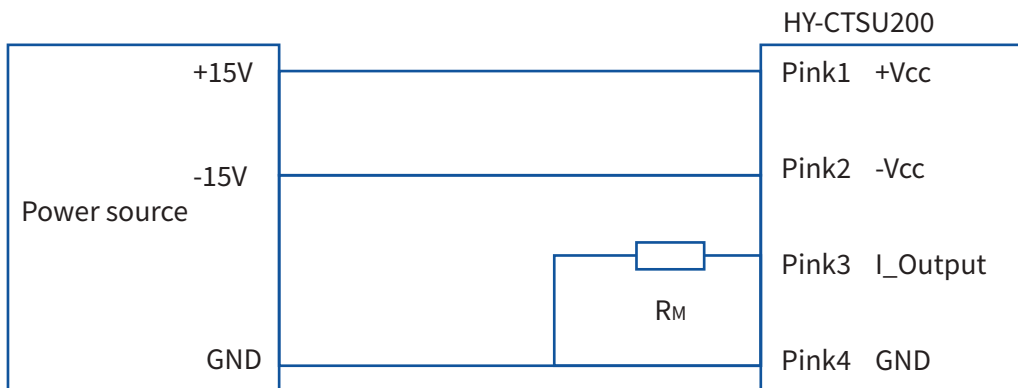| Item	Symbol	Test condition	Minimum value	Nominal	Maximum value	Unit
Operating temperature range	T_A	—	-40	—	+80	°C
Storage temperature range	T_S	—	-55	—	+95	°C
Relative humidity	RH	—	20	—	80	%
Quality	M	—		89.5±1.5		g

Running Status Description

- In the case of normal power supply,when the bus current passing through the current sensor is below the rated operating current of the sensor, the input current passing through the sensor is proportional to the output current of the sensor.If the input current exceeds the working range of the sensor, the sensor enters the overload working mode, and its output current is no longer proportional to the input current signal.When the input current of the sensor is restored to the rated working current range of the sensor, the output current of the sensor and the input current return to the normal proportional relationship.

Application Connection And Description

■ Phoenix terminal pin function definition

Pin Number	Definition	Instructions
1	+15V Supply	Power supply+15V
2	-15V Supply	Power supply-15V
3	I_Output	Current output
4	GND	Ground wire

HY-CTSU200

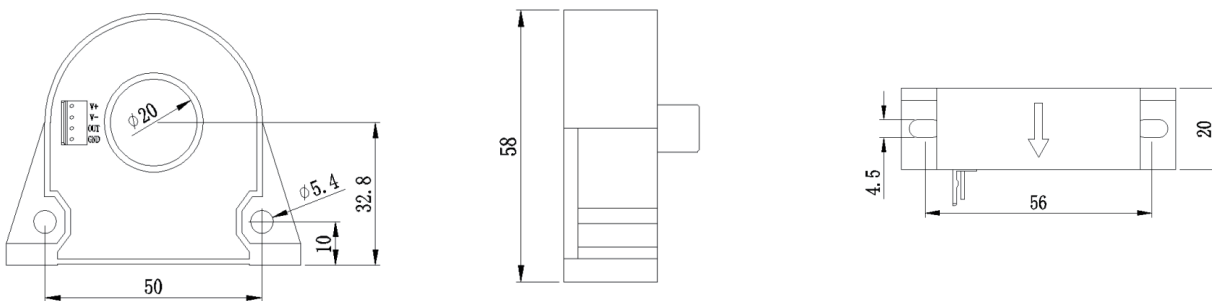| Power source		HY-CTSU200
+15V	→	Pink1 +Vcc
-15V	→	Pink2 -Vcc
	R_M	Pink3 I_Output
GND		Pink4 GND

Test instructions:

By measuring the test current I_S flowing through the R_M, or the voltage U_R at both ends of the R_M,

Can get the input current is:

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

Overall Dimension Specification Unit: mm

This product is a molded part, the material is PC+PBT, the shape and installation size tolerance is in accordance with GB/T14486-2008 MT6.

Tolerance class	Size range (mm)													
	0~3	3~6	6~10	10~14	14~18	18~24	24~30	30~40	40~50	50~65	65~80	80~100	100`120	120~140
MT6	±0.23	±0.26	±0.29	±0.33	±0.27	±0.41	±0.45	±0.50	±0.57	±0.65	±0.74	±0.84	±0.96	±1.10

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Contact us

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Authorized distributor：