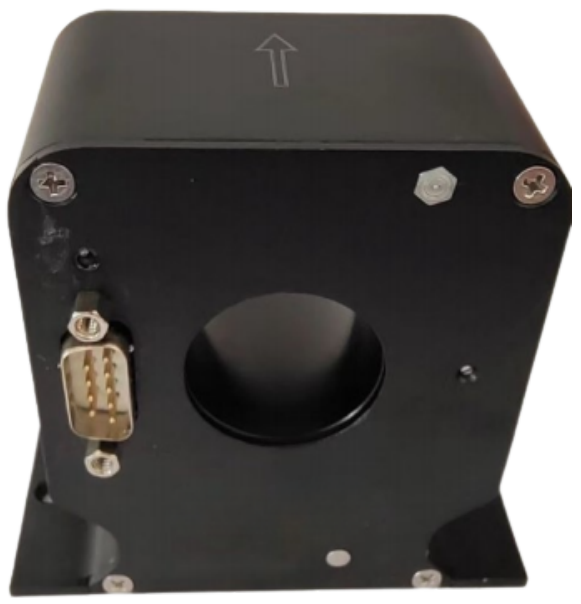
Fluxgate Current Sensor

YCFC300ITH



A current sensor developed based on the magnetic flux gate principle, capable of measuring AC current, DC current, and pulse current. It features primary and secondary insulation and zero insertion loss.

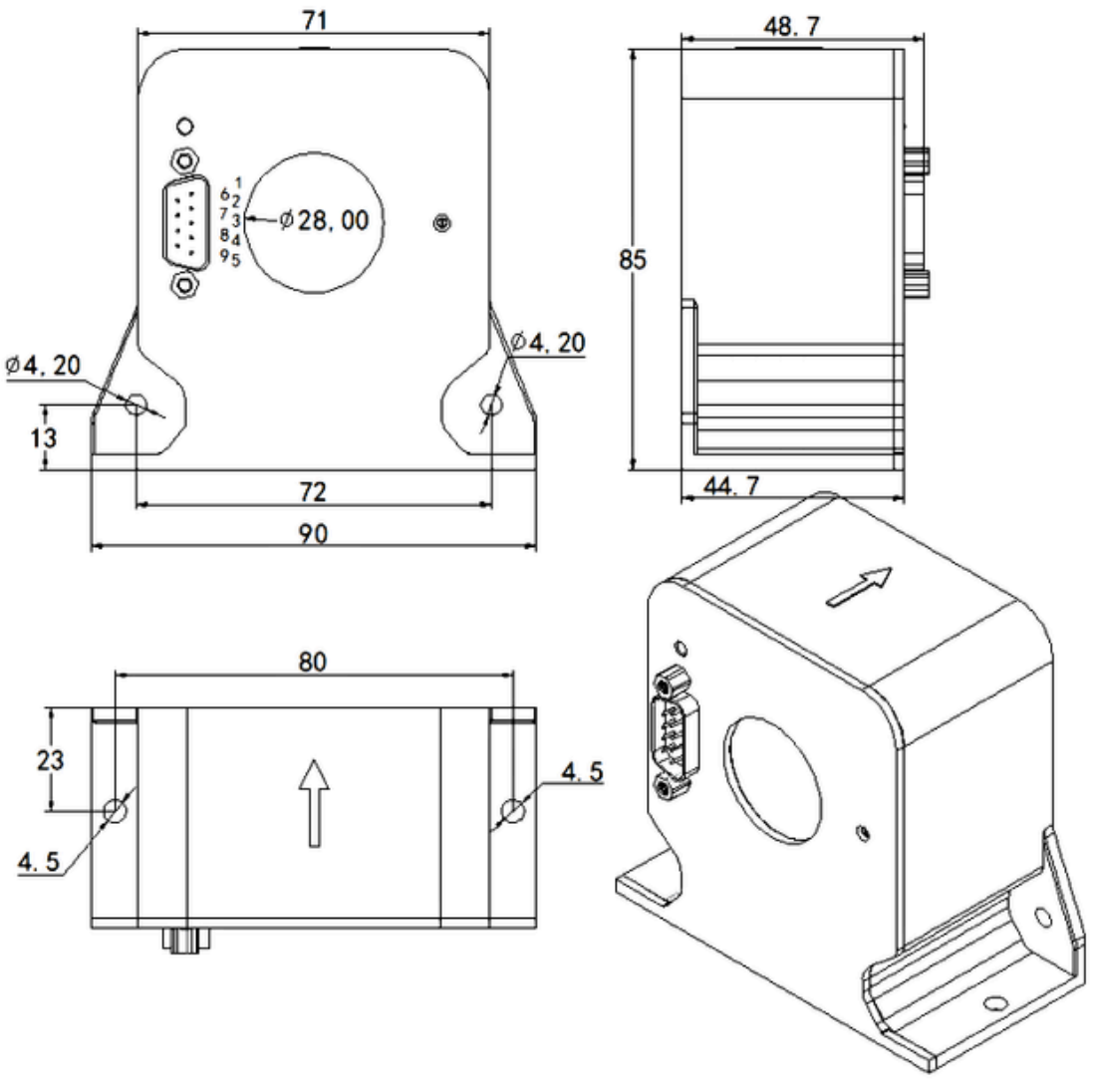
Product Model	Rated Current IPN (A)	Maximum Measuring Range IPM (A)	Rated Output IOUT (mA)
YFC300ITH	± 300A	± 400A	± 200

Application	
1	Medical Equipment
2	Magnetic Resonance Unit
3	Smart Grid
4	BMS (Battery Management
5	Instruments and Meters

Executive Standards

- JB/T 7490-2007 Hall Effect Current Sensors
- SJ20790-2000 General Specification for Current and Voltage Sensors

Outline Dimensions and Pin Definition (Unit: mm)



Pin No.	Pin Connection
1	GND
2	NC
3	GND
4	GND
5	−VCC
6	IOUT Output
7	NC
8	Valid Indicator
9	+VCC

General Tolerance	± 1 mm
Other Tolerances	Comply with GB/T 1804-2000-M
Original Edge Through Hole Diameter	28 mm
Connection Terminal Model	DB9

Operation Instructions

Under normal operating conditions, the valid indicator light is continuously lit. If the indicator light turns off, it indicates that the current sensor is in a non-zero flux state (e.g., the bus current exceeds the measurement range). At this point, the internal sensor enters a scanning state, and the output current is no longer proportional to the input current signal. Once the bus current returns within the measurement range, the sensor will resume normal operation.The valid indicator signal is driven by the same signal as the indicator light. It is in the form of an OD (Open-Drain) output, where a valid output corresponds to a low level.

Notes:

- I_S is positive when I_P flows in the direction of the arrow.
- The temperature of the primary conductor must not exceed 100°C.
- This module is a standard sensor. For special applications, please contact us.
- We reserve the right to modify the sensor without prior notice.

Measurement Instructions

Test Description: By measuring the test current I_S flowing through R_M, or the voltage U_R across R_M, the primary current I_P can be obtained:

$$I_P = K_N \times I_S = K_N \times (U_R / R_M)$$

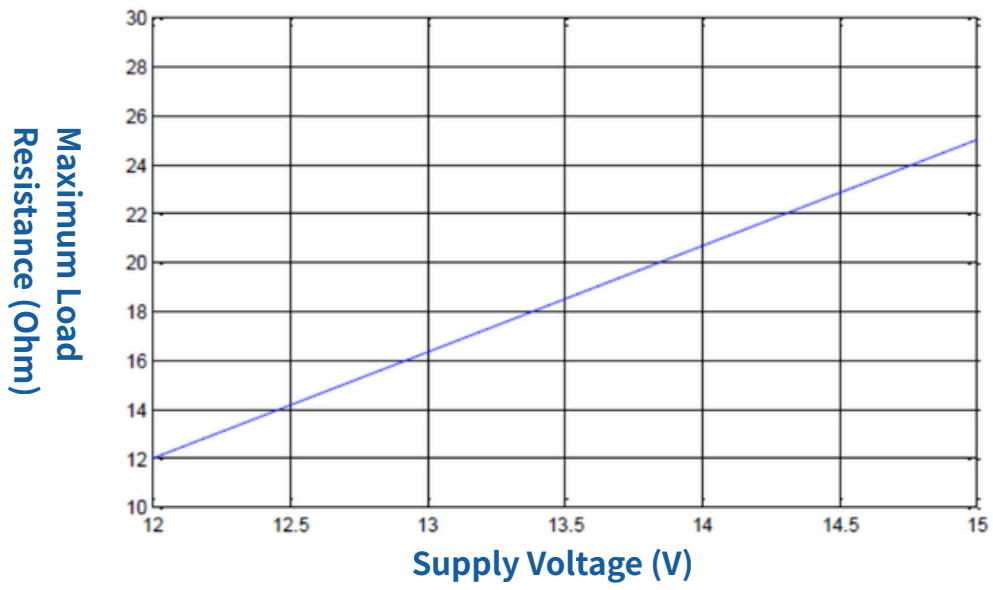
Note:

- IS is positive when IP flows in the direction of the arrow.
- The temperature of the primary conductor must not exceed 100 ° C.
- This module is a standard sensor; please contact us for special applications.
- We reserve the right to modify the sensor without prior notice.

Usage Instructions and Precautions 

- When wiring, pay attention to the exposed conductive parts of the wiring terminals and try to prevent ESD (Electrostatic Discharge) shocks. Only engineers with professional construction experience are allowed to perform wiring operations on this product. The power supply, input, and output connection wires must be connected correctly; they cannot be misaligned or reversed, otherwise, it may cause damage to the product.
- The product installation and usage environment should be free of conductive dust and corrosive substances.
- Severe vibration or high temperatures may also cause product damage; please pay attention to the application scenario.
- Please note the danger of electric shock. After installation, operators must not touch any exposed conductive parts. If necessary, protective measures can be taken for the sensor, such as adding a protective cover, etc.

Maximum Load vs. Supply Voltage Characteristic Curve



Electrical Parameter Characteristics @ Ta = 25°C

Parameter Description	Symbol	Unit	Test	Min.	Typ.	Max.
Power Supply Voltage	VCC	V	@DC	±12V	-	±15V
Power Consumption Current	IC	mA	@IPN	±30	±230	±300
Turns Ratio	KN	T	-	-	1500	-
Static Zero Output	IOE	uA	@IP=0A,	-10	0	10
Measuring Resistance	RM	Ω	-	-	-	25
Accuracy	XG	ppm	@IPN, T=25℃	-	-	10
Ratio Error	XGE	ppm	-	-	-	100
Phase Error	XP	Crad	-	-	-	0.01
Linearity	ε L	ppm	@IPN, T=25℃	-	-	2
Temperature Stability	TC	ppm/℃	-	-	-	0.1
Zero Output Temperature Drift	TCIOE	ppm	@-20℃~+70	-3	-	3
Operating Bandwidth	BW	KHz	@DC	-	300	-
Isolation Voltage	Vd	KV	Between	-	2.5	-
Transient Isolation Voltage	VW	KV	Between	-	5	-
Isolation Voltage	Vd	KV	Secondary to	-	2.5	-
Operating Temperature Range	TA	℃	-	-20℃	-	+70℃
Storage Temperature Range	TS	℃	-	-25℃	-	+85℃

Notes

1. Operating at ±12V < V_{CC} < ±15V will affect the maximum measurement range of the sensor.

2. Static zero output is the output value when $I_{PN} \rightarrow 0A$.

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