ChenYang
Technologies GmbH & Co. KG

Fluxgate Closed Loop Current Sensor CYFGCS500LFBH

CYFGCS500LFBH is a current sensor based on the fluxgate closed-loop principle, and can be used for measuring DC, AC, pulse and various irregular waveform currents under galvanic isolation conditions. It has ultra-high accuracy and linearity, ultra-high sensitivity and resolution, very low out-of-phase current and temperature drift. It is widely used in instrumentation, medical equipment, metrology and calibration, laboratories, high-precision power supplies, new energy vehicles and so on.

Features

- High electrical isolation
- High linearity, high accuracy
- High reliability
- Good overload capability
- Small sizes
- Insulated plastic case recognized according to UL94-V0
- Very good property-price ratio

Applications

- Battery supplied applications
- Uninterruptible power supplies (UPS)
- Variable speed drives
- Welding machine
- Electric power network monitoring
- AC frequency conversion servo-motors
- Electrochemical applications

Technical Data

Parameters	Symbol	Values	Unit
Part number		CYFGCS500LFBH	
Rated input current	I_{PN}	500	A
Current Measuring Range	I_P	0~±900（±15V，10Ω）	A
Rated output current	I_{OUT}	250	mA
Turns ratio	K_N	1:2000	
Measuring resistance	R_M	@±500Amax 0(min) 34(max) @±900Amax 0(min) 10(max)	Ω
Supply Voltage	V_C	±15(±5%)	V
Current consumption	I_C	$15+I_P/K_N$	mA
Insulation voltage	V_d	5kVrms/50Hz/1min, primary and secondary circuits	
Linearity	ε_L	<0.005	%FS
Accuracy	X	<0.02	%FS
Zero Offset Current	I_0	T_A=25°C, <±3	uA
Thermal drift of offset current	I_{OT}	I_{PN}=0, T_A=-40~+85℃ <±5	uA
Following Accuracy	di/dt	>100	A/μs
Response Time	Tr	@100A/μs, 10%-90% ≤1	μs
Bandwidth (-3dB)	f	DC~100	kHz
Operating Temperature	T_A	-40~+85	℃
Storage Temperature	T_S	-45~+125	℃
Internal resistance of secondary coil (T_A=25℃)	R_S	16	Ω
Mass (approx.)	m	253	g
Usage standard		Q/320115QHKJ01-2016	

Markt Schwabener Str. 8
D-85464 Finsing
Germany

Tel.: +49 (0)8121 – 2574100
Fax: +49 (0)8121– 2574101
Email: info@cy-sensors.com
http://www.cy-sensors.com

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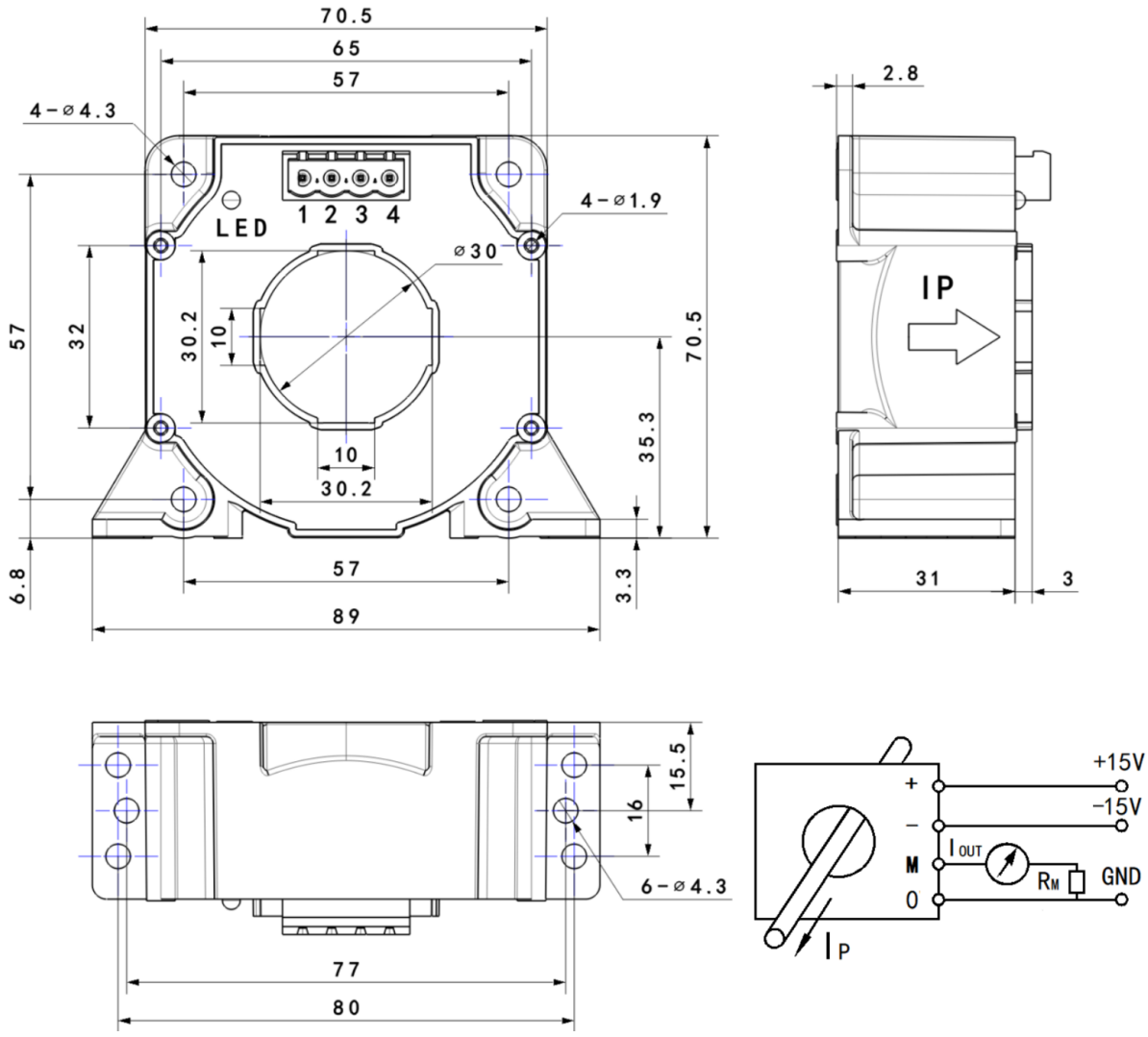
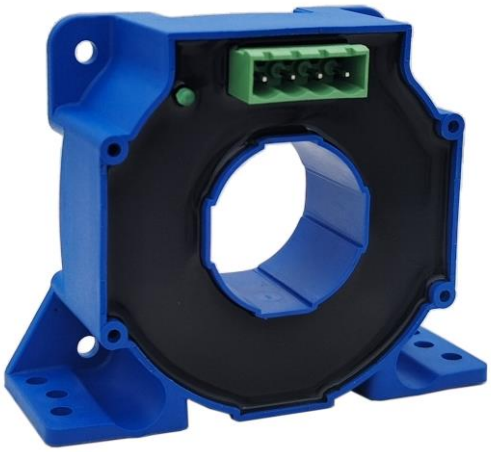
Case Style and Connection



Pin arrangement: +: +15V -: -15V M: V_{OUT} O: 0V (power ground)



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Application Note

1. Incorrect wiring may cause damage to the sensor. After the sensor is powered on, the same-phase voltage value can be measured at the output terminal when the measured current passes through the sensor in the direction of the arrow.
2. Under normal operating conditions, the active indicator is always on. If the indicator is off, it means that the current sensor is in a non-zero flux state, such as the bus current exceeds the measuring range. In this case, the sensor internal system runs in scanning state, the output current is no longer proportional to the input current signal, once the bus current back down to within the current range, the sensor is back to normal operation.
3. Measuring resistance refers to the measurement of DC current. If measuring AC current, the measuring resistance is reduced to 70%.
4. The temperature of the primary measuring wire or copper rod should not exceed 100°C.

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