ChenYang Technologies GmbH & Co KG

Closed Loop Hall Effect Current Sensor CYHCS-LAS

This Hall Effect current sensor is based on closed loop compensating principle and can be used for measurement of DC and AC current, pulse currents etc. The output of the transducer reflects the real wave of the current carrying conductor.

Product Characteristics	Applications
• Excellent accuracy • Very good linearity • Small size and encapsulated • Less power consumption • Current overload capability	• **Photovoltaic equipment** • General Purpose Inverters • AC/DC Variable Speed Drivers • Battery Supplied Applications • Uninterruptible Power Supplies (UPS) • Switched Mode Power Supplies

ELECTRICAL DATA

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Part number	CYHCS-LAS50A	CYHCS-LAS100A
Nominal input current (I_{PN})	50A	100A
Measuring range (I_P)	0~ ±150A	0~±200A
Secondary coil resistance	Ta=70°C, 28Ω	Ta=70°C, 15Ω
Internal sampling resistor	3.75Ω±0.1% 10ppm/°C	1.875Ω±0.1% 10PPM/°C
Turns ratio 1:N	1:1200	1:1200
Nominal output voltage	2.5VDC±0.625V±0.5%	2.5VDC±0.625V±0.5%
Supply voltage	+5VDC ± 5%	
Current consumption	≤20mA + Ip/N	
Reference voltage VR	+2.5VDC±0.4%	
Galvanic isolation	50Hz, 1min, 5kV	

ACCURACY DYNAMIC PERFORMANCE

Zero offset voltage Ta=25°C, $I_P \rightarrow 0$	+2.5VDC±0.4%
Thermal drift of offset voltage	IP=0, Ta=-40°C ~ +85°C, ±0.5mV/°C
Response time	(@100A/µs, 10% -90%) <0.5µs
Accuracy at +25°C	± 0.5% FS
Linearity	≤0.1% FS
Bandwidth(-3dB)	DC…100kHz
following accuracy di/dt	>100A/µs

GENERAL DATA

Operating temperature	-40°C ~ +85°C
Storage temperature	-40°C ~ +125°C
Unit weight (net)	15g

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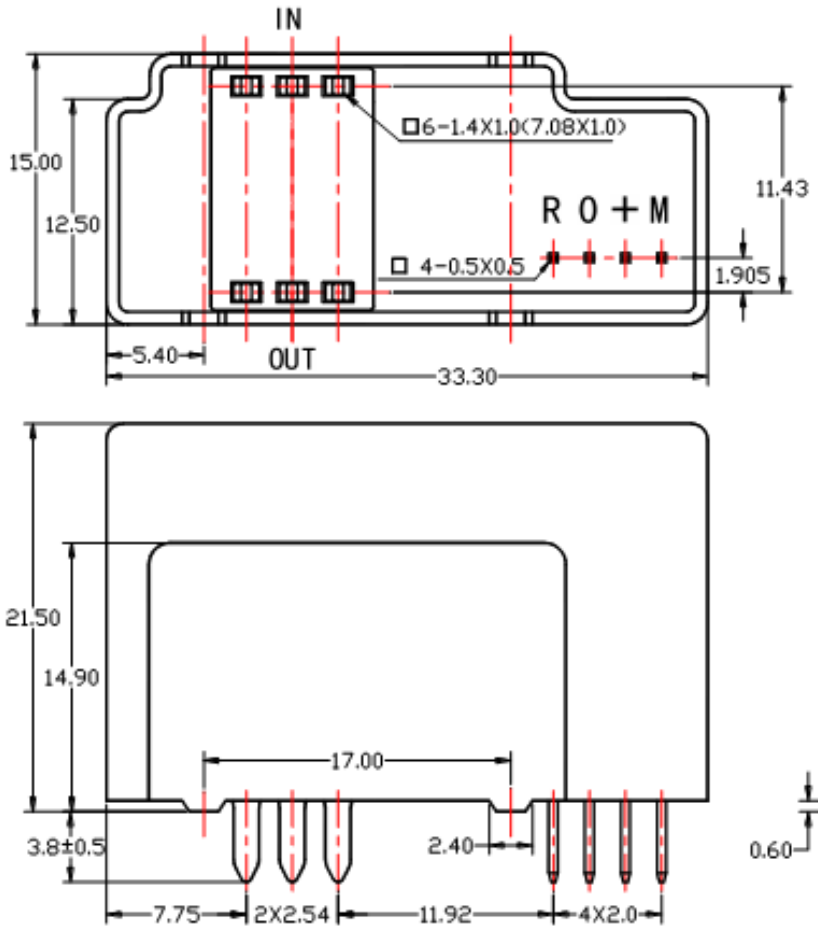
STANDARDS

- UL94-V0.
- EN60947-1:2004
- IEC60950-1:2001 Test Voltage: 1000V
- EN50178:1998 Test Voltage: 1000V
- SJ 20790-2000

DIMENSIONS (mm)



Secondary Pin Arrangement:

R: +2.5VDC

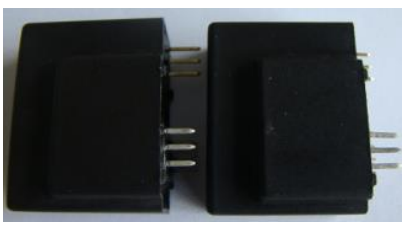
0: 0V (ground)

+: +5VDC (Power)

M: Output

Remarks:

1. All dimensions are in mm.
2. General tolerance ±1mm



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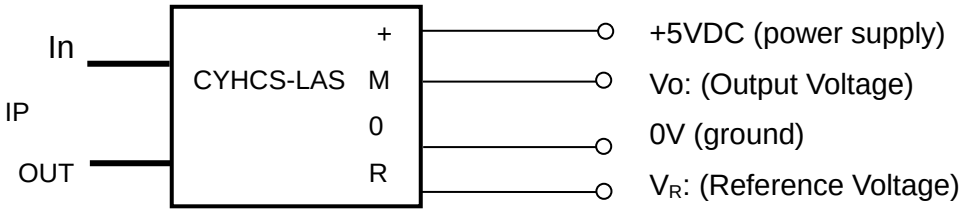
SENOSOR CONNECTION



Pin connections

Turns	Rated input current (A)	Measure range (A)	Rated output voltage (V)	Secondary turns	Primary resistance (mΩ)	Primary inductance (uH)
1	50(100)	160(300)	0.625	1200	0.08	0.007

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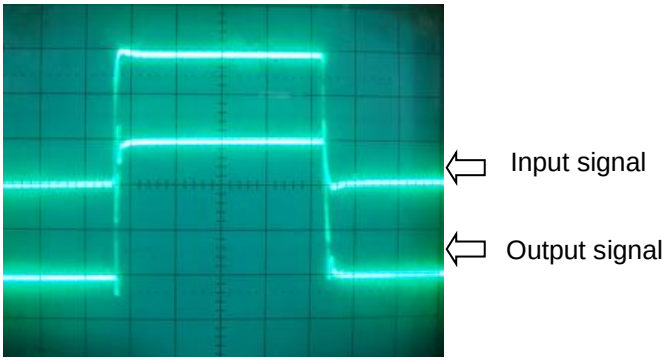
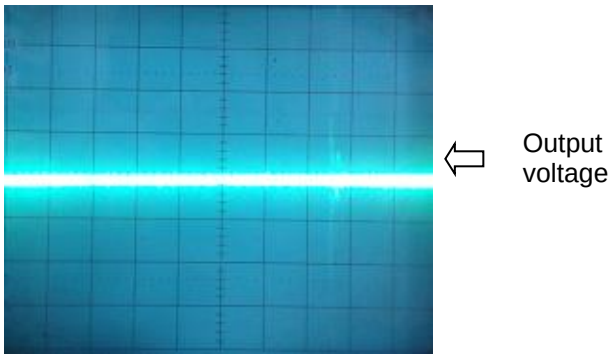
Pulse current signal response characteristic



Effects of impulse noise



OPERATION INSTRUCTIONS

1. Connect the terminals of power source, output respectively and correctly, never make wrong connection for DC current.

2. Temperature of the primary conductor should not exceed 100 °C.

3. Dynamic performances (di/dt and the response time) are the best with a single bar completely filling the primary hole.

4. In order to achieve the best magnetic coupling, the primary windings have to be wound over the top edge of the device.

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