Closed Loop Precise Hall Current Sensor CYHCS-SH

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 • Accuracy independent on the position of premiary cable • Lager measuring range	• **Photovoltaic equipment** • General Purpose Inverters • AC/DC Variable Speed Drivers • Battery Supplied Applications • Uninterruptible Power Supplies • Switched Mode Power Supplies

ELECTRICAL DATA

Part number	CYHCS-SH500A	CYHCS-SH1000A
Nominal input current	500A	1000A
Measuring range	0-1500A	0-3000A
Turns ratio	1:5000 (1:4000 custom made)	
Measuring resistance	with Vc=±15V, @±1000Amax, 0-30Ω, @±1500Amax, 0-5Ω,	
	with Vc=±24V, @±1000Amax, 0-68Ω, @±3000Amax, 0-3Ω,	
Supply voltage	±15VDC ~ ±24VDC	
Nominal output current	100mA (125mA for 1:4000)	200mA (250mA for 1:4000)
Accuracy at +25°C	0.2%FS	
Current consumption	≤30mA + Output current at Vc=±15V	
Galvanic isolation	50Hz, 1min, 6KV	
Secondary internal resistance	Ta=25°C, 47 Ω (37 Ω for turns ratio 1:4000)	

ACCURACY DYNAMIC PERFORMANCE

Zero offset current Ta=25°C	< ±0.2mA
Magnetic Offset current IP→0	< ±0.2mA
Thermal drift of offset current	IP=0, Ta=-40°C ~ +85°C, ±0.5mA
Response time	<1μs
Linearity	≤0.1%FS
Accuracy	± 0.2% for rated current 100A ~1000A
Bandwidth(-3dB)	DC…150kHz
di/dt	>100A/μs

GENERAL DATA

Operating temperature	-40°C ~ +85°C
Storage temperature	-40°C ~ +100°C

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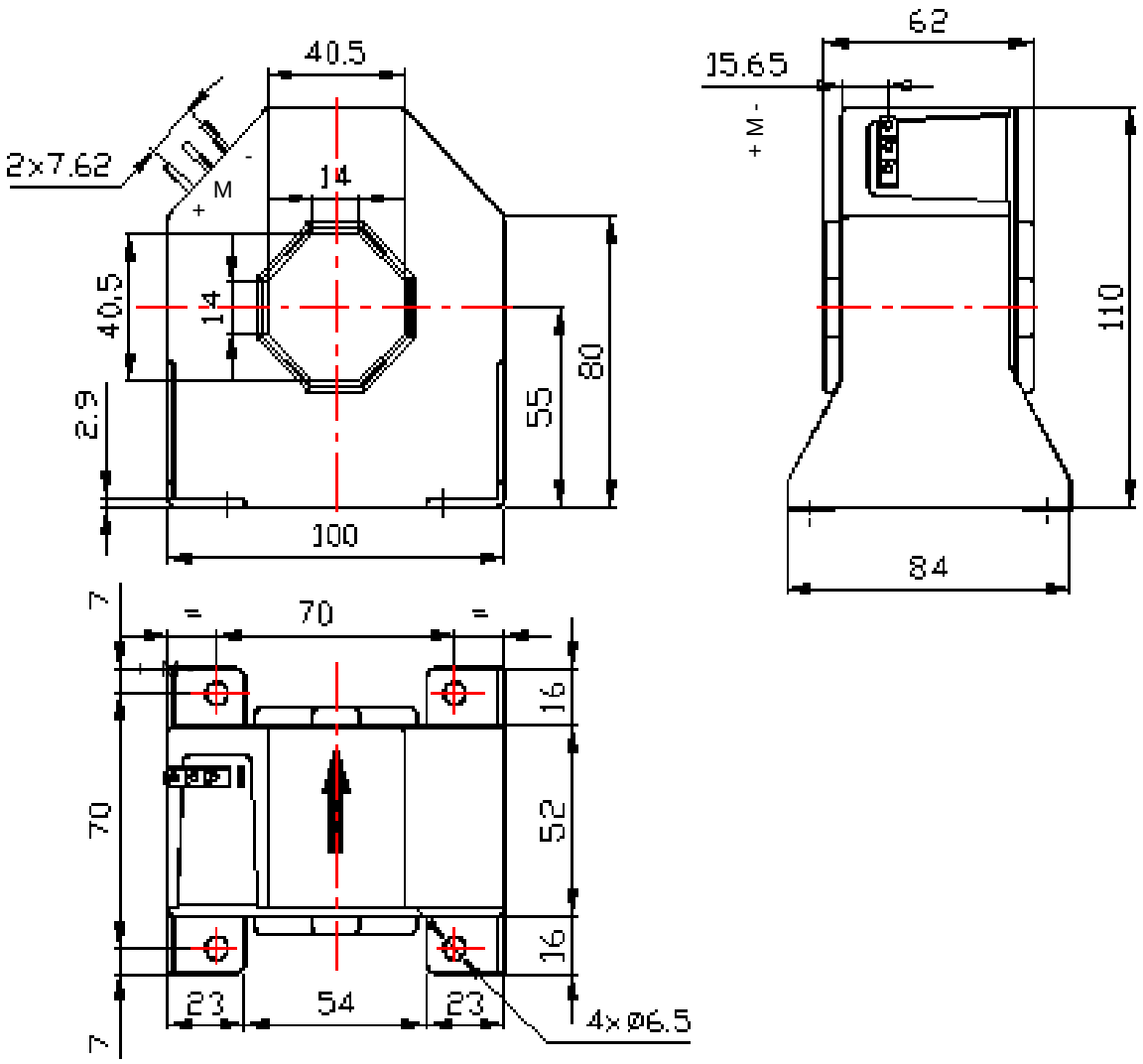
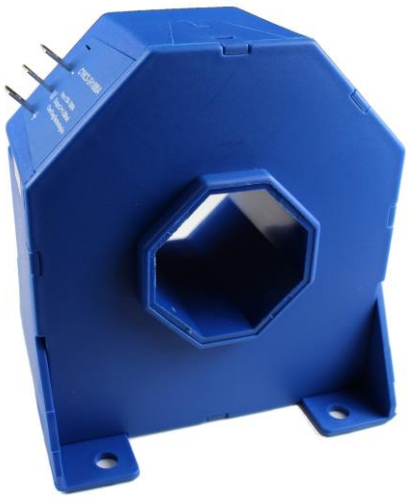
Dimensions (mm)





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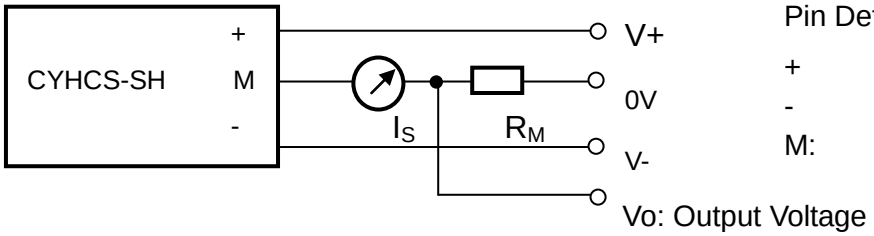
Sensor Connections

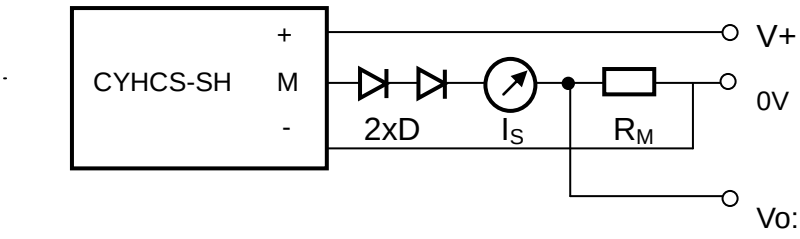
1) For Measurement of Bidirectional Current



Pin Definition:

+	V+: +15~+24VDC
-	V-: -15~ -24VDC
M:	Output current

2) For Measurement of Unidirectional Current



Pin Definition:

+	V+: +15~+24VDC
-	0V (GND)
M:	Output current

Two diodes for instance IN4007 must be connected at the output of the sensor in order to guarantee the sensor to work well.

Operating 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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