

CSLW Series

Miniature Wired Open-Loop Current Sensors



DESCRIPTION

Honeywell's CSLW Series miniature, open-loop current sensors incorporate our SS490 Series miniature ratiometric linear Hall-effect sensor (MRL™). The sensing element is encapsulated in a printed circuit board-mountable plastic package.

The combination of sensor, flux collector, housing, and wire coil comprises the current sensor assembly. These sensors are ratiometric.

FEATURES

- Wired open-loop design with multiple turns for increased sensitivity
- ac or dc current sensing
- Linear ratiometric output
- Current sinking or sourcing output for interfacing flexibility
- Low insertion loss
- Fast response time
- Compact size for applications with limited space
- Accurate, low-cost sensing
- Minimum energy dissipation
- Maximum current limited only by conductor size
- Built-in temperature compensation promotes reliable operation
- Operating temperature range -25 °C to 100 °C [-13 °F to 212 °F]
- RoHs compliant (lead-free)

POTENTIAL APPLICATIONS

- Motor control in appliances, HVAC and consumer tools
- Current monitoring of electronic circuits
- Overcurrent protection
- Ground fault detectors
- Robotics
- Industrial process control
- UPS and telecommunication power supplies
- Welding current monitoring
- Battery management systems in mobile equipment
- Watt meters
- Variable speed drives

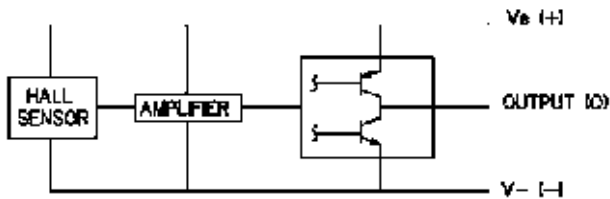
CSLW Series

PRODUCT SPECIFICATIONS

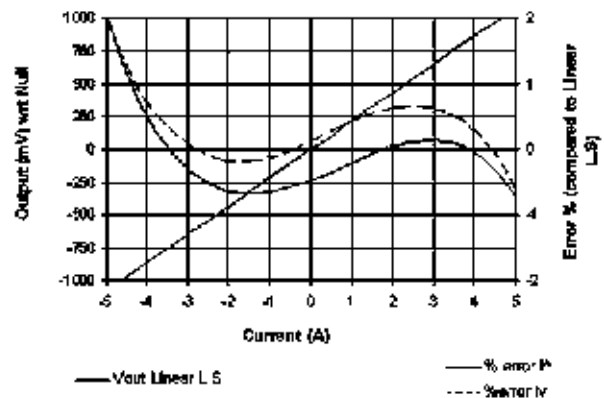
Product type	miniature hall-effect linear open-loop current sensor
Package quantity/type	25 per box
Package style	PC board mount – radial lead IC
Supply voltage	4.5 Vdc to 10.5 Vdc
Output type	sink/source
Magnetic actuation type	analog ratiometric

Parameter	CSLW6B1	CSLW6B5	CSLW6B40M	CSLW6B200M	Units	Symbol	Conditions
Current range (min.)	±1 A	±5 A	±40 mA	±200 mA	—	I_p	<±1.5 % error (-25 °C to 100 °C [-13 °F to 212 °F])
Supply voltage	4.5 to 10.5	4.5 to 10.5	4.5 to 10.5	4.5 to 10.5	V	V_s	—
V_{out} @ 0 AT	2.50 ±0.15	2.50 ±0.15	2.50 ±0.15	2.50 ±0.15	V	V_o	—
Supply current	typ.	7	7	7	mA	I_s	No Load
	max.	9	9	9			
Turns	60 ±1	12	1500 ±20	300 ±5	—	N	—
Coil resistance	typ.	0.16	0.01	120	Ω	—	—
Sensitivity	min.	898	179	22400	mV/A	$\Delta V / I$	-25 °C to 100 °C [-13 °F to 212 °F]
	typ.	1020	204	25500			
	max.	1142	229	30000			
Hysteresis	max.	0.5	0.5	0.5	%	—	@ min current range
Temp error – null	max.	±0.064	±0.064	±0.064	%/°C	$TC_{\Delta V_o/V_o}$	—
Temp error - gain	max.	-0.03 +0.12	-0.03 +0.12	-0.03 +0.12	%/°C	TC_G	-25 °C to 100 °C [-13 °F to 212 °F]
Rise time	typ.	3	3	3	μs	t_r	0 to 40% of min current range

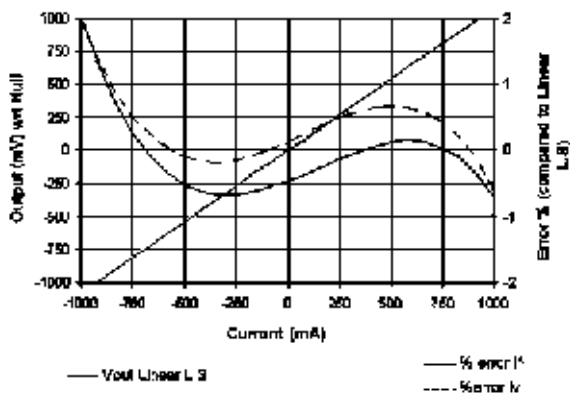
BLOCK DIAGRAM



CSLW6B5 TYPICAL TRANSFER FUNCTION [25 °C]

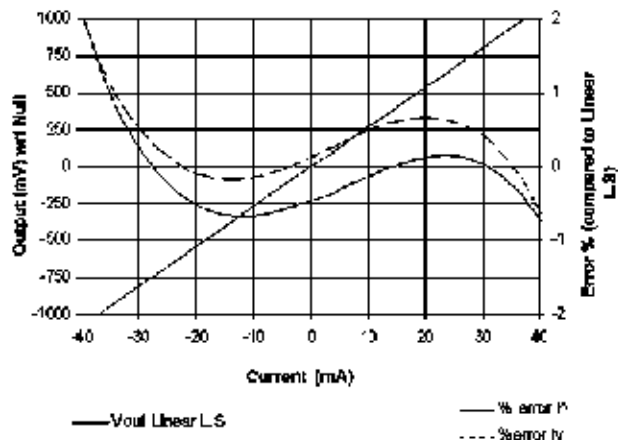


CSLW6B1 TYPICAL TRANSFER FUNCTION [25 °C]

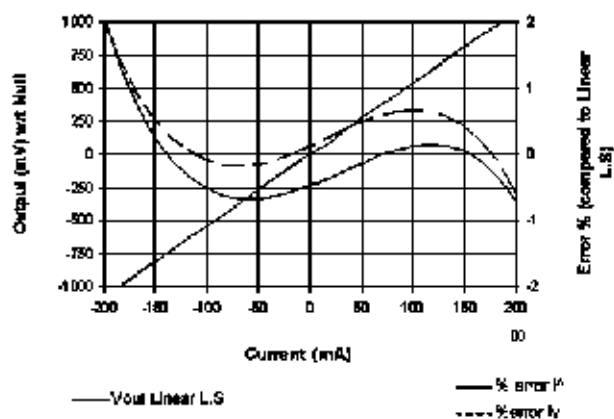


Miniature Wired Open-Loop Current Sensors

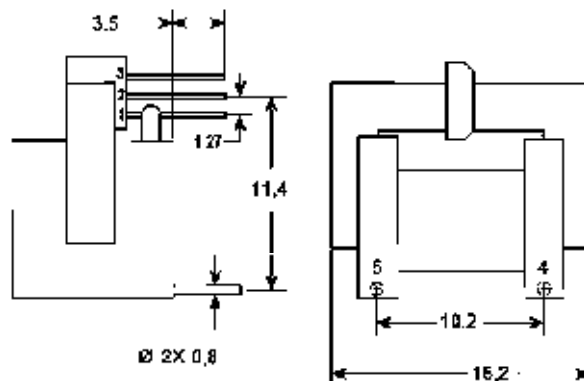
CSLW6B40M TYPICAL TRANSFER FUNCTION [25 °C]



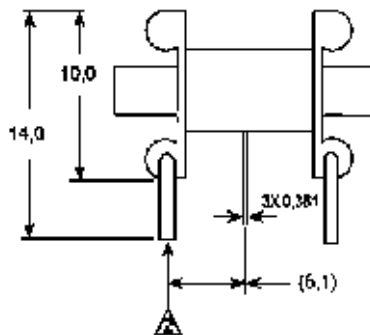
CSLW6B200M TYPICAL TRANSFER FUNCTION [25 °C]



DIMENSIONAL DRAWING (For reference only [mm])



- FIN (I)T**
 1 V_s (-)
 2 GND (-)
 3 OUT (O)
 4 PRIMARY I_{out}
 5 PRIMARY I_{in}



ORDER GUIDE

Catalog Listing	Description
CSLW6B1	CSLW Series, Miniature, Open-Loop Current Sensor, 1 A
CSLW6B5	CSLW Series, Miniature, Open-Loop Current Sensor, 5 A
CSLW6B40M	CSLW Series, Miniature, Open-Loop Current Sensor, 40 mA
CSLWB200M	CSLW Series, Miniature, Open-Loop Current Sensor, 200 mA

WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

SALES AND SERVICE

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office or:

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