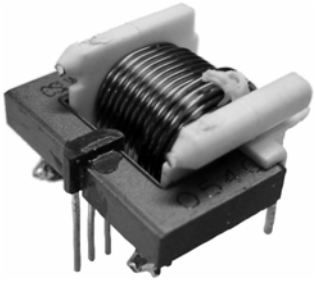
Honeywell

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

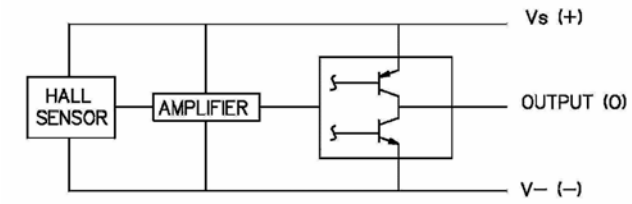
CSLW Series

PRODUCT SPECIFICATIONS

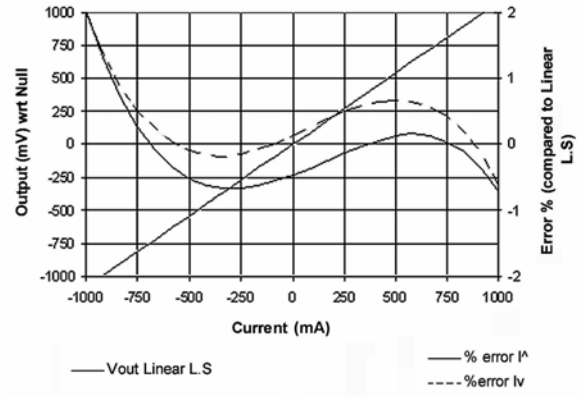
Product type	miniature hall-effect linear open-loop current sensor
Package quantity/type	25 per box
Package style	PC board mount – radial lead IC
Supply voltage	4.5 Vdc to 10.5 Vdc
Output type	sink/source
Magnetic actuation type	analog ratiometric

Parameter		CSLW6B1	CSLW6B5	CSLW6B40M	CSLW6B200M	Units	Symbol	Conditions
Current range (min.)		±1 A	±5 A	±40 mA	±200 mA	—	Ip	<±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	7	mA	I_s	No Load
	max.	9	9	9	9			
Turns		60 ±1	12	1500 ±20	300 ±5	—	N	—
Coil resistance	**typ.**	0.16	0.01	120	4	Ω	—	—
Sensitivity	**min.**	898	179	22400	4500	mV/A	Δ V/ I	-25 °C to 100 °C [-13 °F to 212 °F]
	typ.	1020	204	25500	5100			
	max.	1142	229	30000	5700			
Hysteresis	**max.**	0.5	0.5	0.5	0.5	%	—	@ min current range
Temp error – null	**max.**	±0.064	±0.064	±0.064	±0.064	%/°C	$TC_{\Delta Vo/Vo}$	—
Temp error - gain	**max.**	-0.03 +0.12	-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	3	µs	t_r	0 to 40% of min current range

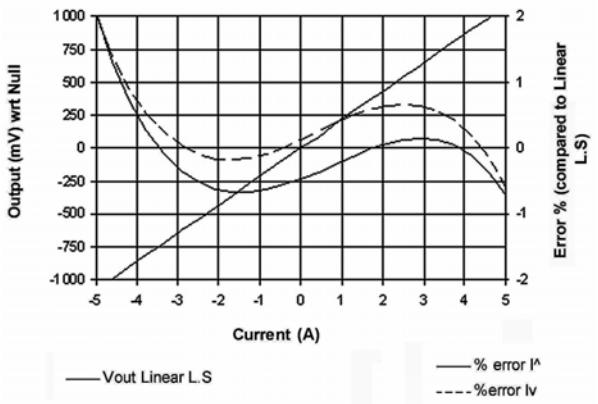
BLOCK DIAGRAM



CSLW6B1 TYPICAL TRANSFER FUNCTION [25 °C]



CSLW6B5 TYPICAL TRANSFER FUNCTION [25 °C]



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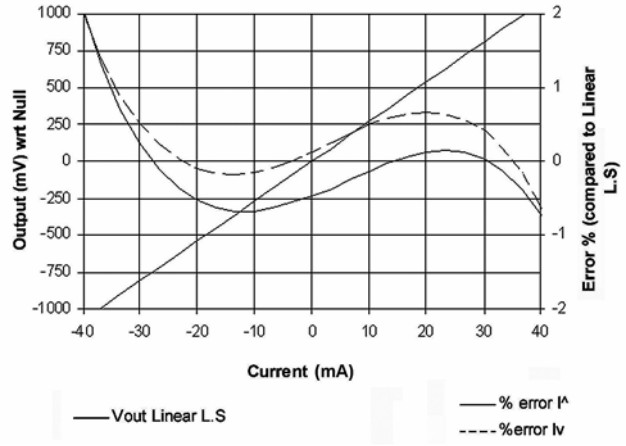
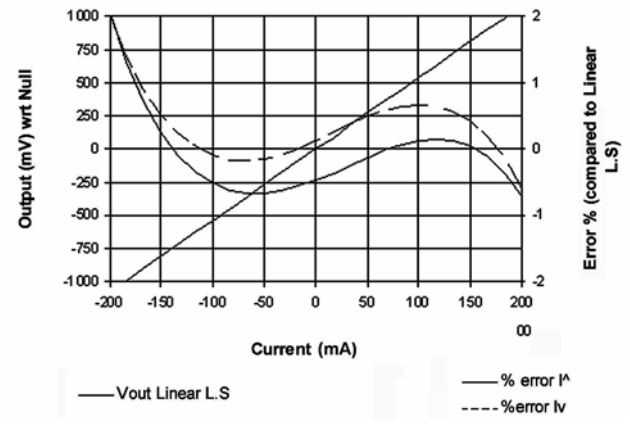
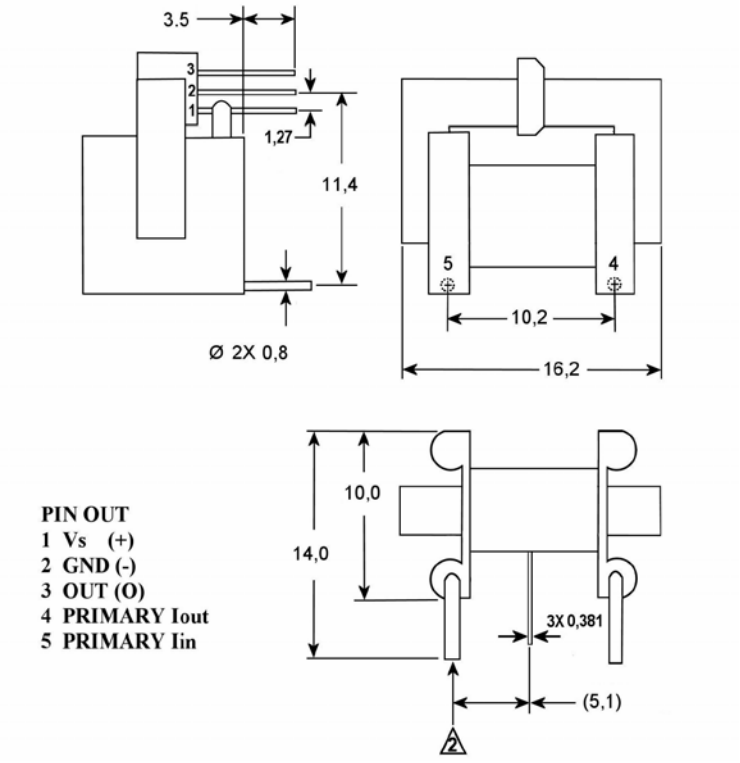
CSLW6B40M TYPICAL TRANSFER FUNCTION [25 °C]



CSLW6B200M TYPICAL TRANSFER FUNCTION [25 °C]



DIMENSIONAL DRAWING (For reference only [mm])



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