Enabling the Electronics Revolution

PIHER sensing systems
an Amphenol® company

HCSP-1BS

Automotive Open Loop Current Sensor - Busbar Mounting



KEY FEATURES

- Open loop current transducer based on Hall effect
- Busbar mounting
- Simple analog ratiometric output
- Measured current value from ±200 A to ±1.500 A
- Non-intrusive technology
- Galvanic separation between power and control
- Operating temperature from -40°C to +125°C
- UL94 V0 plastic housing material

DESCRIPTION

Piher Sensing Systems' HCSP1BS family of open loop current sensors generates a ratiometric analog output voltage signal proportional to the current flowing through the conductor. Based on Hall effect technology the sensor has been designed for accurate measurement of AC and DC currents in automotive battery management and motor control applications.

APPLICATIONS

- Battery management
- Motor control
- EV motor inverters
- DC/DC converters

SPECIFICATIONS

Parameter	Unit	Min.	Typ.	Max.
Supply voltage	V	4,5	5	5,5
Supply current	mA	9	12	19
Output voltage	V	0,5		4,5
Offset voltage	V		2,5	
Response time	µsec			3
Frequency bandwidth	kHz	70		250
Operating temperature	°C	-40		+125
Typical error (at 25°C; V_{cc} = 5V)	%	0,65		2,5
Max. error (at -40°C to +125°C; V_{cc} = 5V)	%	1		3,5

Other specifications on request

HCSP-1BS

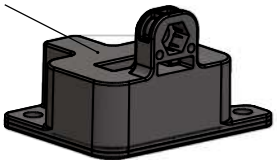
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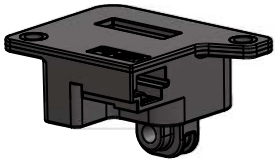
DIMENSIONS (IN MM)

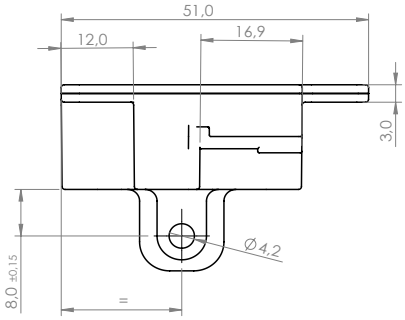
Laser mark surface:

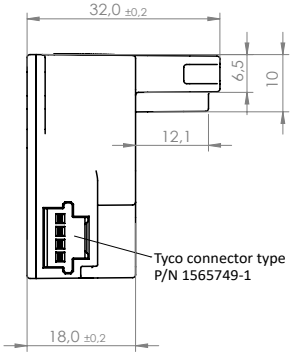
HCSP-1BS-0200
(02000= Current Variant from 200-1500)

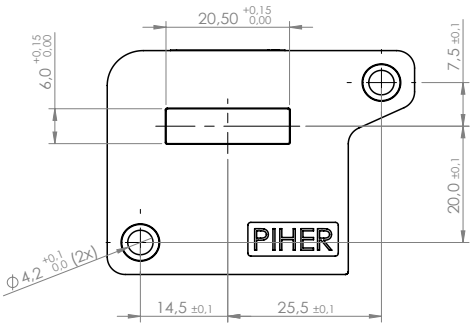
N40 xxxxx
(N40= Nº Week)
(xxxxx= Universal Correlative part number for all current sensor)

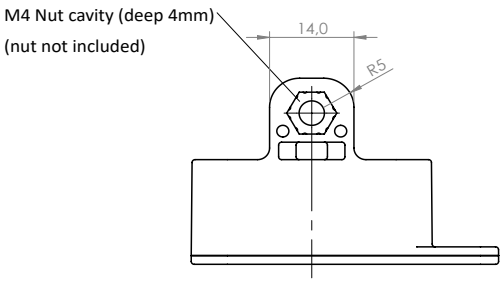












Download the STEP file here:
www.piher.net

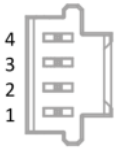
MOUNTING AND CONNECTIONS

Connections	
Mating connector	TYCO 1473672-1
1	n/c
2	Supply voltage
3	Ground
4	Signal output

Other pinouts on request

Mounting Recommendation

Pin order



-M4 nut (acc. to ISO 4032)
-M4 screw
-Spring washer
-Max Torque: 2Nm





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TESTS	
Operating temperature	-40° to +125°C
Thermal shock	ISO 16750-4 5.3.2 (2010) Nº temperature cycles: 100 Temperature Profile: Tmax= +125ºC
Thermal cycle	ISO 16750-4 5.3.1 (2010)
Chemical resistance	ISO 16750-5 4.7 (2010)
Salt spray	ISO 16750-4 5.5.1
Sealing	IP6K4 ISO 20653-02-2013
Vibration	ISO 16750-3 4.1.2.4 - ISO 16750-3 4.1.1 27,1 m/s², 8h/axes 10Hz-1000Hz; T^a max: 125ºC ISO 60068-2-6:2007
Shock	ISO 16750-3 4.2.2 (2012) 50 g/6ms; 3 axis; 10 shocks of each direction
Bulk current inmunity	ISO 11452-4:2005
Radiated inmunity	ISO 11452-2:2005
Trasients inmunity	EN 61000-4-4:2013
Conducted emissions	CISPR25:2008
ESD	ISO 10605:2008
Insulation resistance	500 V DC, time = 60 s R_{INS} ħ 500MΩ Minimum
Dielectric Withstand Voltage	ISO 16750-2:2012 4.11 2500 V AC / 1 min / 50 Hz

PERFORMANCE DATA

HCSP-1BS-_ _ _ _	0200	0300	0400	0500	0600	0700	0800
Current measuring range	±200 A	±300 A	±400 A	±500 A	±600 A	±700 A	±800 A
Current nominal value	±200 A	±300 A	±400 A	±500 A	±600 A	±700 A	±800 A
Sensitivity*	10 mV/A	6,66 mV/A	5 mV/A	4 mV/A	3,33 mV/A	2,85 mV/A	2,5 mV/A
Sensitivity error*	± 0,6 %						
Electrical offset voltage*	± 3 mV						

HCSP-1BS-_ _ _ _	0900	1000	1100	1200	1300	1400	1500
Current measuring range	±900 A	±1.000 A	±1.100 A	±1.200 A	±1.300 A	±1.400 A	±1.500 A
Current nominal value	±900 A	±1.000 A	±1.100 A	±1.200 A	±1.300 A	±1.400 A	±1.500 A
Sensitivity*	2,22 mV/A	2 mV/A	1,81 mV/A	1,67 mV/A	1,53 mV/A	1,42 mV/A	1,33 mV/A
Sensitivity error*	± 0.6 %						
Electrical offset voltage*	± 3 mV						

*at 25°C / Vcc = 5V; Other specification on request

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ORDER CODE (e.g. HCSP-1BS-0300)

Family	- Phase	Mounting	Output	- Measuring Range	- Measuring Range		
HCSP					1st Output	2nd Output	
	1						Single
	3*						Triple
		B					Busbar
			S				Simple
				_ _ _ _			0200 to 1.500 A
			D*				Dual
					_ _ _ _ -	_ _ _ _	0200 to 1.500 A

*on request

check inventory

RoHS REACH compliant

Please always use the latest updated datasheets and 3D models published on our website.

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