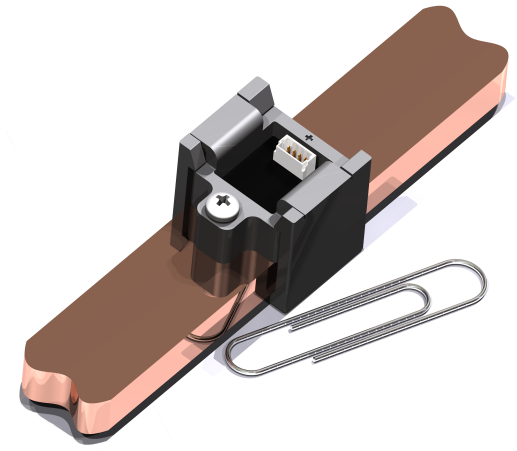
ISB Series Current Sense Transducers

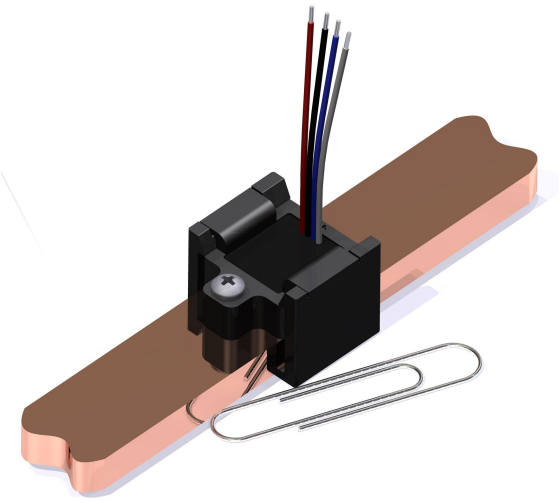
For the electronic measurement of AC and DC Signals

RoHS compliant 2011/65/EU

Connector Version



Lead Wire Version



Version Matrix	Response Time	Bandwidth	Supplementary Output	I/O Terminals
ISB-XXX-A-800	3 µS	200kHz	Reference	Connector
ISB-XXX-A-802	3 µS	200kHz	Reference	Lead Wires

Measurable Current Ranges

Part Number Table	I_P	Output Slope
ISB-100-A-YZZ	+/- 100	20.000 mV/A
ISB-175-A-YZZ	+/- 175	11.429 mV/A
ISB-300-A-YZZ	+/- 300	6.667 mV/A
ISB-425-A-YZZ	+/- 425	4.706 mV/A
Extended Range	**I_{PE}**	
ISB-550-A-YZZ	+/- 550	3.636 mV/A
ISB-670-A-YZZ	+/- 670	2.985 mV/A

ISB Analog Family Features

- ✦ Fast Response Time
- ✦ Wideband DC to 200 kHz
- ✦ Customizable Current Range
- ✦ Secondary Reference Output
- ✦ Easy Busbar Mounting
- ✦ Analog Output
- ✦ Factory Programmable
- ✦ Small Package Size

Applications

- ✦ DC/AC Converters
- ✦ DC/DC Converters
- ✦ Battery Management
- ✦ AC and DC Motor Drives
- ✦ Welding Applications
- ✦ Solar Applications

Electrical Specifications

I_P	Linear Range
I_{PE}	Extended Range
Supply Voltage (V_{dd})	5V(+/- 0.5V)@12mA
Secondary Output Voltage	Ratiometric to Input
Output at +Ip	90% of V_{dd}
Output at -Ip	10% of V_{dd}
Output at 0A	50% of V_{dd}
Max. Clamped Output, High	98% of V_{dd}
Max. Clamped Output, Low	10% of V_{dd}
Output Current	+/- 2 mA
Response Time	3 µS

Absolute Maximums

Overvoltage V_{DD} Protection.	+10 V / +20V
Reverse V_{DD} Protection	-10 V
Output Voltage Max.	+10 V
Reverse V_{OUT} Max.	-0.3 V
Reverse I_{OUT} Max.	-50 mA
Output Current Max.	+/- 70 mA

Accuracy

Accuracy (I_P)***	<= 0.6 %
Accuracy (I_{PE})	<= 2.5 %
Linearity Error	<= 0.1 %
Linearity Error (I_{PE})	<= 1.0%
DC Offset Accuracy	<= 10 mV; <= 0.25 %
DC Offset Hysteresis	<= 10 mV; <= 0.25 %
DC Offset Thermal Drift	<= 0.1 mV/°C

General Data

V_{RMS} for AC Insulation	4.3 kV
Safety Standard	EN50178
EMC Standard	EN61000
CTI	600 V

For -800 Version (Connector)

Creepage Distance: 8.5 mm
Clearance Distance: 8.5 mm
Ambient Operating Temp: -40°C to +85 °C
Ambient Storage Temp: -40°C to +90 °C

For -802 Version (Lead Wire)

Creepage Distance: >140mm
Clearance Distance: >140 mm
Ambient Operating Temp: -40°C to +105 °C
Ambient Storage Temp: -40°C to +105 °C

Required Mating Connector

JST #SHR-04V-S-B
JST #SSH-003T-P0.2 (Contact) x4

Lead Wire Type

22 AWG; Stranded; UL3239; 3kV Rated

Connector Information (-800)

Pin 1 - V_{DD} (Supply)
Pin 2 - Reference Output
Pin 3 - Output
Pin 4 - V_{SS} (Ground)

Wiring Information (-802)

Wire 1 (Red) - V_{DD} (Supply)
Wire 2 (Black) - Output
Wire 3 (Blue) - Reference Output
Wire 4 (White) - V_{SS} (Ground)

NOTES

- ✦ All specifications at 25°C and assumes $5V_{DD}$.
- ✦ Specifications dependent on mechanical attachment.
- ✦ Specs are % full scale.
- ✦ We recommend mounting the sensors with non-magnetic screws (e.g. stainless steel, brass, bronze, copper and aluminum) for maximum accuracy.

Analog Output Notes

- ✦ For pull down, resistor is between output and ground.
- ✦ For pull up, resistor is between output and supply