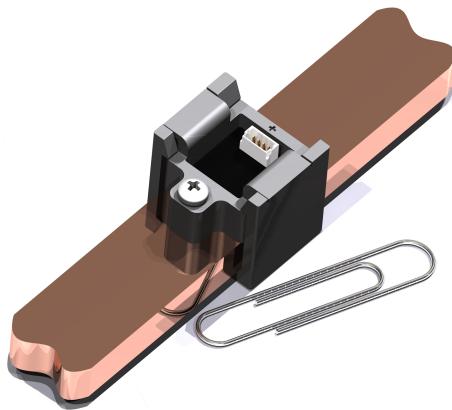


## ISB Series Current Sense Transducers

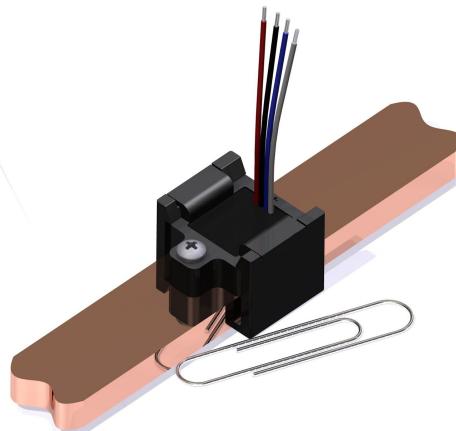
For the electronic measurement of AC and DC Signals



**Connector Version**



**Lead Wire Version**



Version Matrix	Response Time	Bandwidth	Supplementary Output	I/O Terminals
ISB-XXX-A-600	8 $\mu$ S	90kHz	Temperature	Connector
ISB-XXX-A-601	8 $\mu$ S	90kHz	Reference	Connector
ISB-XXX-A-604	8 $\mu$ S	90kHz	Temperature	Lead Wires
ISB-XXX-A-606	8 $\mu$ S	90kHz	Reference	Lead Wires
ISB-XXX-A-800	3 $\mu$ S	200kHz	Reference	Connector
ISB-XXX-A-802	3 $\mu$ S	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 90kHz/200 kHz
- ◆ Customizable Current Range
- ◆ Temp. Output for Compensation -600 and -604 models

- ◆ 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 + $I_P$	90% of $V_{dd}$
Output at - $I_P$	10% of $V_{dd}$
Output at 0A	50% of $V_{dd}$
Clamped Output High	90% of $V_{dd}$
Clamped Output Low	10% of $V_{dd}$
Output Current	+/- 2 mA
Response Time	3 $\mu$ s / 8 $\mu$ s

### Absolute Maximums

Overvoltage $V_{DD}$ Protection.	+20 V or +10V
Reverse $V_{DD}$ Protection	-10 V
Output Voltage Max.	+10 V
Reverse Vout Max.	-0.3 V
Reverse Iout Max.	-50 mA
Output Current Max.	
◆ For 600/ 601/ 604/ 606	+/- 300 mA
◆ For 800/ 802	+/- 70 mA

### For 600, 601 and 800 Versions

Creepage Distance: 8.5 mm  
Clearance Distance: 8.5 mm

### Required Mating Connector

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

### Connector Information\*

Pin 1 -  $V_{DD}$  (Supply)  
Pin 2 - Output  
Pin 3 - Temp. or Ref. Output  
Pin 4 -  $V_{SS}$  (Ground)

### Notes

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

### 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

### Temperature Output (for 600 and 604 versions)

Offset	1.38V @ 35°C
Accuracy (Full range)	+/- 5°C
Slope	13.5mV/°C
$I_{OUT}$	+/- 0.1 mA

### General Data

Ambient Operating Temp.	-40 to +85 °C
Ambient Storage Temp.	-40 to +90 °C
$V_{RMS}$ for AC Insulation	4.3 kV
Safety Standard	EN50178
EMC Standard	EN61000
CTI	600 V

### For 604, 606 and 802 Versions

Creepage Distance: >140mm  
Clearance Distance: >140 mm

### Lead Wire Type

22 AWG; Stranded; UL3239; 3kV Rated

### Connection Information

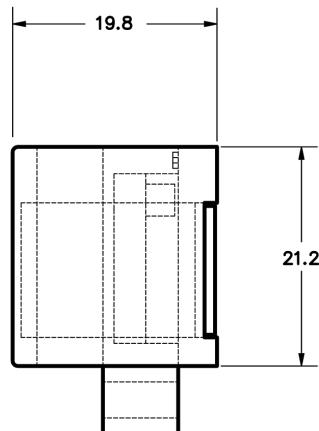
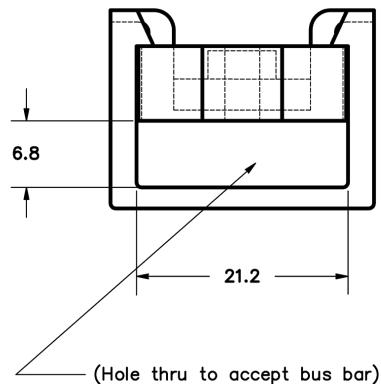
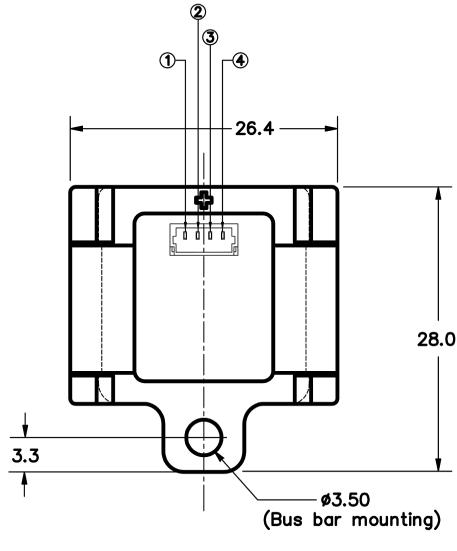
Wire 1 (Red) -  $V_{DD}$  (Supply)  
Wire 2 (Black) - Output  
Wire 3 (Blue) - Temp. or Ref Output  
Wire 4 (White) -  $V_{SS}$  (Ground)

### Analog Output Notes

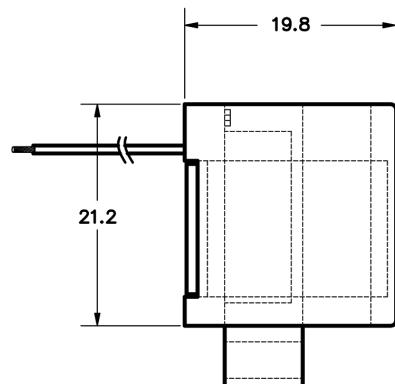
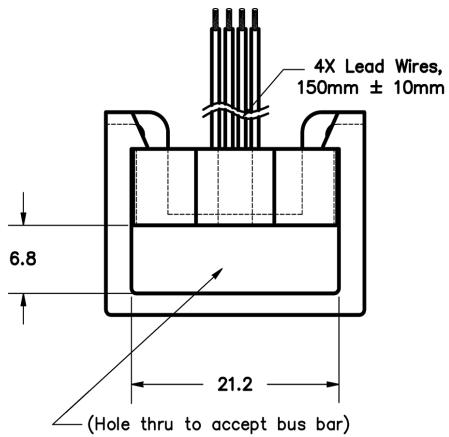
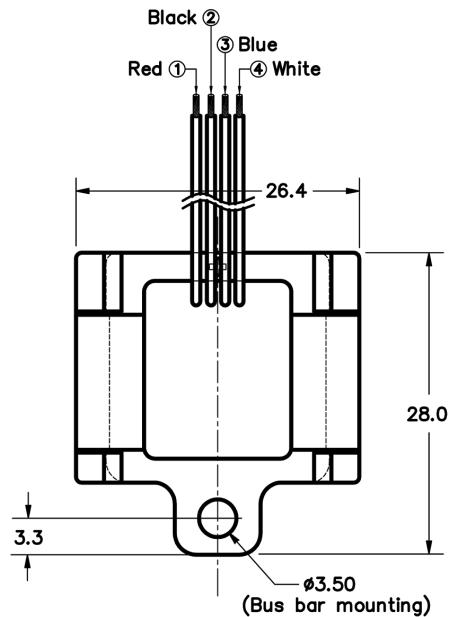
- ◆ For pull down, resistor is between pin 2 and pin 4
- ◆ For pull up, resistor is between pin 2 and pin 1
- ◆ For -800 version, Pin 2 and Pin 3 is interchanged.

## Mechanical Drawing (Dimensions: in mm, 1mm = 0.0394 inch)

### Connector Version



### Lead Wire Version



# Mouser Electronics

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