ISB Series Current Sense Transducers
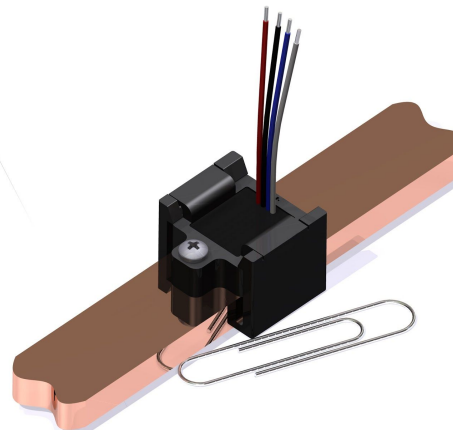
For the electronic measurement of AC and DC Signals

CE c**UL**US **RoHS** compliant 2011/65/EU
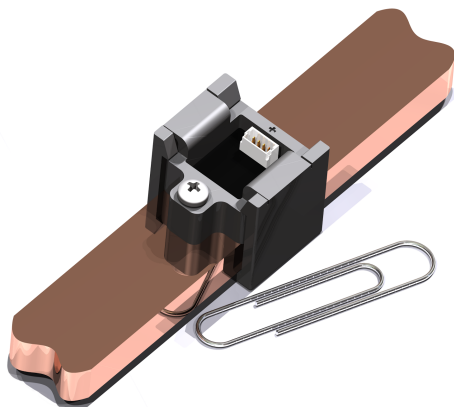
Connector Version

Lead Wire Version

Version Matrix	Response Time	Bandwidth	Supplementary Output	I/O Terminals
ISB-XXX-A-600	8 µS	90kHz	Temperature	Connector
ISB-XXX-A-601	8 µS	90kHz	Reference	Connector
ISB-XXX-A-604	8 µS	90kHz	Temperature	Lead Wires
ISB-XXX-A-606	8 µS	90kHz	Reference	Lead Wires
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 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 +Ip	90% of V_{dd}
Output at -Ip	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 µS / 8 µS

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_{DD}.

* 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
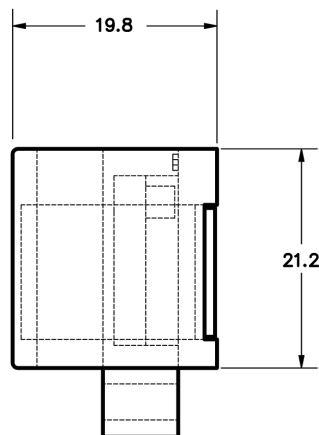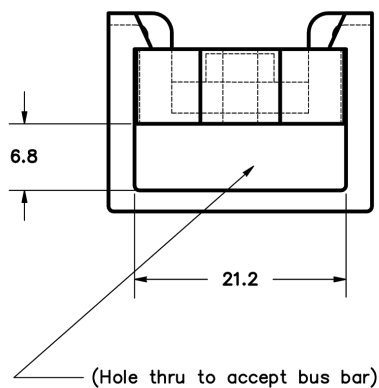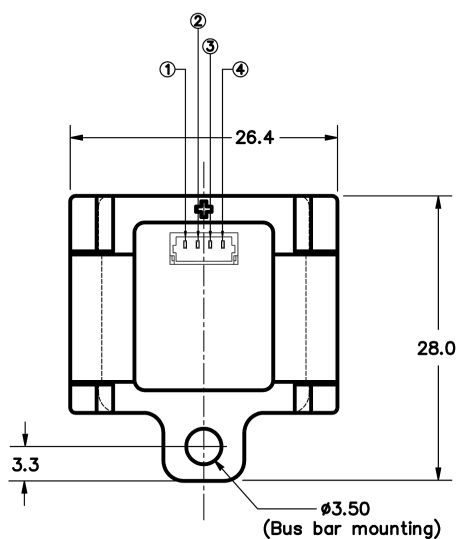22 AWG; Stranded; UL3239; 3kV Rated

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.

![ice components logo]

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

Connector Version

② ③ ① ④

26.4

28.0

3.3

ø3.50
(Bus bar mounting)

6.8

21.2

(Hole thru to accept bus bar)

19.8

21.2

Lead Wire Version

Black ② ③ Blue
Red ① ④ White

26.4

28.0

3.3

ø3.50
(Bus bar mounting)

4X Lead Wires,
150mm ± 10mm

6.8

21.2

(Hole thru to accept bus bar)

19.8

21.2