

BBP-150H, 300H and 600H Open Loop Hall Effect

Description

The BBP Series Hall effect current sensors accurately measure DC and AC currents and provide electrical isolation between the output of the sensor and the current carrying conductor.

Features

- High accuracy
- Wide frequency range
- Excellent linearity
- Safety isolation
- Low cost housed design for light duty environments

Applications

- Motor controllers and drives
- Battery supplied equipment
- Switch mode and uninterrupted power supplies
- Welding equipment



Measuring Circuit

	Units	BBP-150H	BBP-300H	BBP-600H
Full Scale (FS) DC or AC peak	± A	150	300	600
Full Scale output	± V		6	
AC Bandwidth (± 1 dB) (1)	kHz	60	10	10
Response time (2)	µs	< 2	< 3	< 3
Slew rate	A/µs	>60	>50	>50

Excitation Circuit

Supply voltage ±1%	± Vdc	15		
Maximum supply current, positive supply	mA	6		
Maximum supply current, negative supply	mA	15	10	10

Output

Sensitivity	mV/A	40	20	10	
Linearity	± % FS	0.6	0.7	1.25	
Calibration point (3)	± % RDG		1.25		
Typical zero current offset	± mV		5		
Maximum zero current offset	± mV		20		
Maximum hysteresis of offset (4)	± mV	35	20	15	
Minimum load resistance	k ohms		2		

Influences On Accuracy

Typical offset drift with temperature	± mV/°C	0.30	0.15	0.15	
Maximum offset drift with temperature	± mV/°C	1.50	1.00	0.50	
Excitation change of ±1% Max. sensitivity change	± %		0.15		
Typical sensitivity drift with temperature	± %/°C		0.04		
Maximum sensitivity drift with temperature	± %/°C		0.065		

Withstand Capabilities

Dielectric test (5)	kV	4.0			
Output short or open circuit		No Damage			

General Information

Operating temperature range	°C	-25 to +85		
Storage temperature range	°C	-40 to +95		
Aperture opening	Inches (mm)	0.80 (20.3)		
Weight	Grams	140		
Mounting		Two mounting holes 0.187 inch (4.75 mm) diameter		
Output reference		To obtain a positive output on pin marked "Vo", positive conventional current must flow as shown. (See mechanical dimensions)		

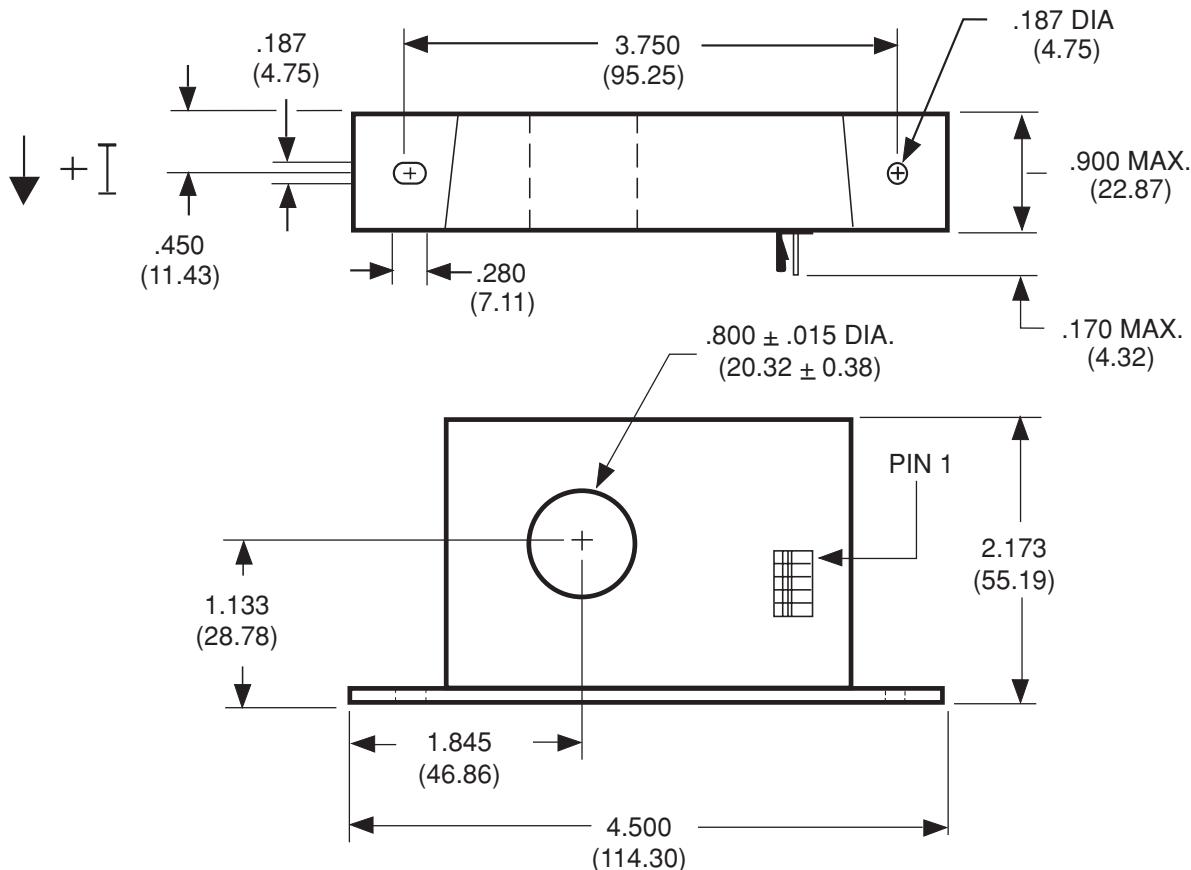
Current Sensors



Mechanical Dimensions

All dimensions are in inches (millimeters)

Model BBP-150H, 300H and 600H



Mating Connector: ITW Pancon No. CE100F26-5 (331577)

ELECTRICAL CONNECTIONS

PIN	SIGNAL
1	Vo
2	Vo GND
3	GND
4	-Vcc
5	+Vcc

Notes:

1. Consult F.W. Bell if the product of the aperture current and frequency exceeds 1000 ampere-kilohertz for the BBP-150H and 400 ampere-kilohertz for the BBP-300H and the BBP-600H.
2. Response time is affected by the positioning of the conductor in the aperture, the proximity of the return conductor and ferrous metals. It is best to test the sensor in the actual environment to obtain representative performance.
3. The sensors are calibrated at 80% of Full Scale.
4. Hysteresis specifications given for Full Scale aperture current remnant.
5. The dielectric test consists of 4.0 kVac at 60 Hz for one minute between a bare 0.775 inch diameter conductor (located concentrically through the aperture) and the output of the sensor.