BIPOLAR SIGNAL ISOLATOR (v3) BBSI234

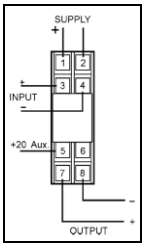
DESCRIPTION

The BBSI234 is an isolating converter providing true 3-way galvanic isolation up to 2kV rms. The BBSI234 produces an isolated bipolar output signal from an input signal. The BBSI234 comes in three, coding plug selectable models to accept either Process, mV or Bipolar input signals. No special tools or components are required for range changing in the field. A 20Vdc/22mA sensor supply is available at the input section, this can be useful for loop powered field transmitters. The output drive circuit is factory configured to provide load independent voltage or current outputs. Final calibration is trimmed using the front accessible zero and span 15-turn trim adjustments. The wide swing DCpower supply (8-60V) covers all popular DC sources. All units are fitted with a 500ms filter that can be link changed to 5ms for fast response. Surge protection for power supply and input is standard with all BASI modules.

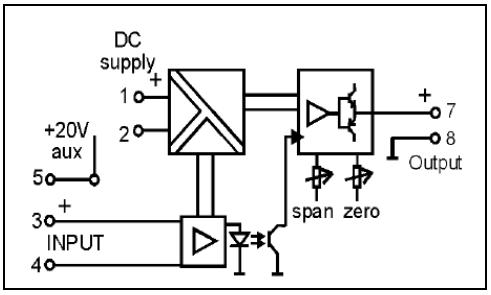
General Specifications

Size:	23.5W x 71.5H x 109D mm
Mounting:	Clip for 35mm DIN-Rail.
Housing material:	ABS.
Termination:	Top mounted screw terminals.
Protection class:	IP40 IP55 Enclosure Opt
Weight:	120 g.
Accuracy error:	<0.1%.
Linearity error:	<0.1%.
Long term drift:	<0.1%.
Temperature effect:	Typically 0.025% of span per °C.
Operating temperature:	-10...+60°C.
Output drive:	10mA into 0 - 2kΩ 20mA into 0 - 1kΩ 10V into ≥500Ω 20V into ≥1kΩ.
Input impedance:	Current 51Ω. Voltage 2M7Ω (10V/5V) 560kΩ (2V/1V range) mV 140kΩ (250-1000mV) 30k Ω (40-200mV)
Input/output isolation:	2kV r.m.s.
Auxiliary Output:	20Vdc with 22mA drive. (Suitable for 2-wire transmitter supply).
Electromagnetic compatibility:	Complies with EN 50081-1, EN 50082-2, EN 61010-1

CE

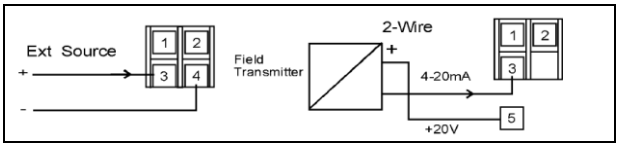


BLOCK DIAGRAM



Input Connections

When externally sourced signals are used terminal 3 is the positive input. When a 2-wire field transmitter is used, terminal 5 is a 20V power supply used to supply the loop current.



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BBSI234 - X X X 0 X X

TYPE NO. DESIGNATION

Power Supply:

3 = 8 - 60Vdc.
*) 4 = use 6
*) 5 = 20 - 48Vac.
*) 6 = 60 - 160Vdc / 48 - 150Vac.

Input (Specify required range from selected table):

1 = Process Signals, Table 2 (# 4-20mA).
2 = Millivolt Signals, Table 4 (# 75mV).
3 = Bipolar Signals, Table 5 (# +10V).
*) A = Potentiometer 3W voltage excitation.
*) B = Adder, 2 inputs 4 - 20mA floating.
*) C = Subtracter, 2 inputs 4 - 20mA floating.
*) D = MIN selector, 2 inputs 4-20mA signal.
*) E = MAX selector, 2 inputs 4-20mA signal.
*) 9 = Other. (Specify).

Refer to DS23432 for optional input connections, specification and ordering requirements.

Output 1 (Specify required range):

1 = -1...+1V (50Ω min).
2 = -5...+5V (250Ω min).
3 = -10...+10V (500Ω min).
4 = -20...+20V (1kΩ min).
5 = -1...+1mA (20kΩ max).
6 = -5...+5mA (4kΩ max).
7 = -10...+10mA (2kΩ max).
8 = -20...+20mA (1kΩ max).
*) 9 = Other. (Specify)

Action:

1 = Direct.
2 = Reverse.

Options:

0 = None.
*) 1 = Customised response time (Specify).
3 = Bipolar Millivolt Signals, DS23423 (# ±75mV)
*) 9 = Other.

*) = Price Extra. All extra price inputs disable future use of the program links.
= Default calibration from factory unless specified otherwise.

Response time Table 1

Table 1	SW1/1
5ms	
500ms	X

Process input Table 2

Table 2	SW1					
Input	2	3	4	5	6	7
4-20mA	X	X	X			X
0-20mA	X	X	X		X	
0-10mA	X	X	X	X	X	
0-1V		X	X		X	
0-2V		X			X	
0-5V			X		X	
1-5V			X			X
0-10V					X	
Other non-standard						
0-0.5V		X	X	X	X	
0-2.5V			X	X	X	
0-4V			X			
0-6V				X		
0-7.5V				X	X	

Millivolt input Table 4

Table 4	SW1					
Input	2	3	4	5	6	7
0-40mV		X	X	X		
0-50mV		X	X	X	X	
0-75mV		X	X			
0-100mV		X	X		X	
0-150mV		X		X	X	
0-200mV		X			X	
0-250mV			X	X	X	
0-400mV			X			
0-500mV			X		X	
0-600mV				X		
0-750mV				X	X	
0-1000mV					X	

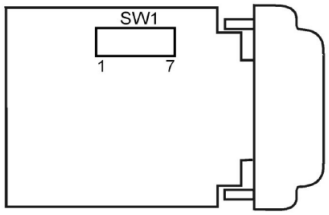
Bipolar input Table 5

Table 5	SW1					
Input	2	3	4	5	6	7
±20mA	X	X	X		X	
±10mA	X	X	X	X	X	
±1V		X	X		X	
±2V		X			X	
±5V			X		X	
±10V					X	

To change ranges

1. Disconnect power unclip housing lid and withdraw unit from housing.
2. Set coding plugs as required.
3. Reassemble unit and connect power.
4. Adjust "Span and "Offs" pots to recalibrate.
5. Change the label information to the new input/output values.

Coding Plug Location Diagram



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