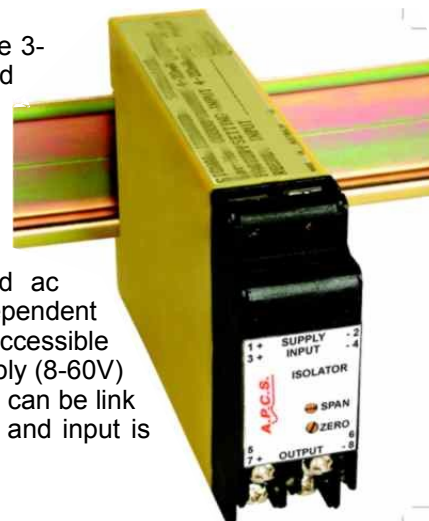


Bipolar Signal Isolator (v2) BSI234

DESCRIPTION

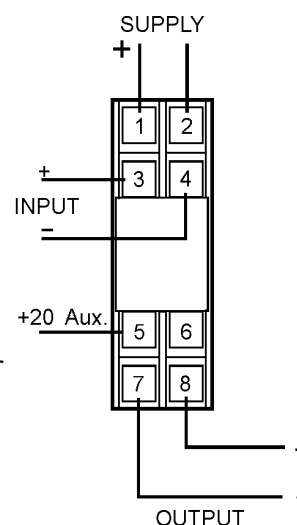
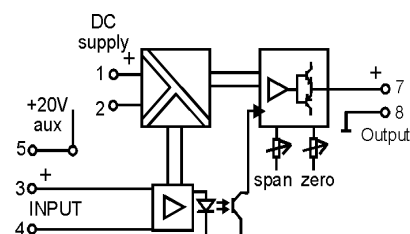
The Bipolar Signal Isolator BSI234 is an isolating converter providing true 3-way galvanic isolation up to 2kV r.m.s. The BSI234 produces an isolated bipolar output signal from an input signal. The BSI234 comes in three, coding plug selectable models to accept either Process, mV or Bipolar input signals. 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. Optional input conditioning cards can be added to interface to a variety of process signals, such as temperature, frequency, resistance and ac signals. 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 DC-power 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 A.P.C.S. modules.



General Specifications

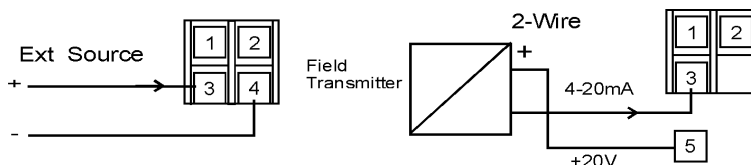
Size:	22.5W x 68H x 109D (mm).
Mounting:	Clip for 35mm DIN-Rail.
Housing material:	Polycarbonate.
Termination:	Top mounted screw terminals.
Protection class:	IP40 (IP55 Enclosure Opt).
Weight:	0.120 kg.
Protection class:	IP40.
Calibration accuracy:	<0.2%.
Front 'ZERO' adjust:	±20% typical.
Front 'SPAN' adjust:	±25% typical.
Linearity:	<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 2M7 Ω (10V/5V range). 560k Ω (2V/1V range). mV 140k Ω (250-1000mV ranges). 30k Ω (40-200mV ranges).
Supply/Input/output isolation:	2kV r.m.s.
Auxiliary Output:	20Vdc with 22mA drive (Suitable for 2-wire transmitter supply).
Electromagnetic compatibility:	Complies with AS/NZS 4251.1 (EN 50081.1)

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.



For input / output combinations refer to TYPE NO. DESIGNATION overleaf.

TYPE NO. DESIGNATION

Power Supply:

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

Input (Specify required range from selected table):

- 1 = Process Signals, Table 2 (4-20mA def). *) 6 = Frequency / Pulse (specify).
 2 = Millivolt Signals, Table 4 (75mV def). *) 7 = Resistance 2W (specify).
 3 = Bipolar Signals, Table 5 ($\pm 10V$ def). *) 8 = AC Current / Voltage (specify).
 *) 4 = Thermocouple (specify). *) A = Potentiometer 3W voltage excitation
 *) 5 = RTD (specify). *) 9 = Other. (Specify).

All extra price inputs disable future use of the program links.
 Refer to DS23422 for input options connection, specification and ordering requirements.
 Refer to DS23423 for bipolar millivolt input table (Input 9, Option 3 no extra charge).

Output 1 (Specify required range):

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

Action:

- 1 = Dir. 2 = Rev.

Options:

- 0 = None.
 *) 1 = Customised response time (Specify). *) 9 = Other.
 3 = Bipolar Millivolt Signals, DS23423 ($\pm 75mV$ def)

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	

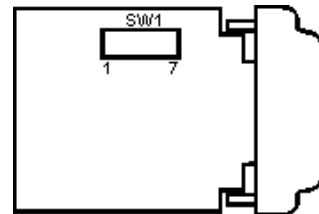
Bipolar input Table 5

Table 5	SW1					
Input	2	3	4	5	6	7
$\pm 20mA$	X	X	X		X	
$\pm 10mA$	X	X	X	X	X	
$\pm 1V$		X	X		X	
$\pm 2V$		X			X	
$\pm 5V$			X		X	
$\pm 10V$					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



*) Price Extra.

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