Bipolar Signal Converter v5 BSC133

DESCRIPTION

The BSC133 has been designed to produce a bipolar output signal from any type of input signal. Input signals can be bipolar or uni-polar process signals such as -10, +10V or 4 – 20mA. Optional input conditioning cards permit the use of the BSC133 for low level, AC or sensor inputs. The 4 - 20mA input version also features a 24Vdc (25mA) auxiliary supply output to operate loop-powered transmitters connected to its input.

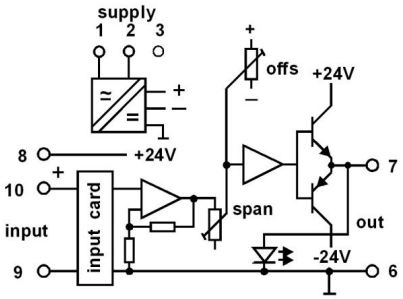
The output drive circuit is factory configured to provide load independent voltage or load independent bipolar current output. Maximum current drive for voltage output is 50mA at ±20V output. Applications requiring and output with up to 5A drive can be accommodated using an external bipolar DC-power supply.

Final calibration is trimmed using the front accessible 'offs' and 'span' 15-turn trim adjustments. The output signal level is indicated by a green LED on the front, giving a clear indication of module function. All units are fitted with a 100ms second filter. This filter constant can be increased or decreased if required. The basic BSC133 does not provide galvanic isolation from input to output, use the BSI134 for input/output isolation.

General Specifications

Size 0 to 500mA output:	52W x 70H x 110D mm.
Size 500mA to 2A output:	Width increases to 85mm.
Size 2A to 5A output:	Separate heat- sink see option drawing.
Mounting:	DIN-Rail, gear plate.
Termination:	Screw terminals on front.
Protection class:	IP40
Weight:	0.300 kg.
Housing material:	ABS.
Accuracy:	0.2% of span.
Front ‘OFFS’ adjust:	±25% typical
Front ‘SPAN’ adjust:	±25% typical
Temperature effect:	0.01% per °C.
Operating range:	-10...+60°C.
Input voltage impedance:	1MΩ.
Output load effect:	less than 0.25% up to max. load.
Output loop drive:	±10mA into 0 - 2000Ω ±20mA into 0 - 1000Ω.
Output voltage load:	±10V into 200Ω minimum. ±20V into 400Ω minimum. 10 minutes max.
Input to output isolation:	None (use BSI134).
Input/output response:	500ms standard, 1ms to 6s with customised option.
Power requirements:	3W.
Power supply isolation:	2kV.
Electromagnetic compatibility:	Complies with AS/NZS 4251.1 (EN 50081.1)

Block Diagram



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

A.P.C.S.

BSC133 – X XX X X X XX

TYPE NO. DESIGNATION

Power Supply:

1 = 90-280Vac 50/60Hz (65-280Vdc).
*) 3 = 16-48Vac 50/60Hz (10-60Vdc)
*) 6 = 8 - 60Vdc.
*) 9 = External.

Input:

01 = 100mV +/-.
02 = 200mV +/-.
03 = 500mV +/-.
04 = 1V +/-.
05 = 2V +/-.
06 = 5V +/-.
07 = 10V +/-.
08 = 20V +/-.
09 = 50V +/-.
10 = 100V +/-.
11 = 100µA +/- (1kΩ).
12 = 1mA +/- (1kΩ).
13 = 5mA +/- (220Ω)
14 = 10mA +/- (100Ω).
15 = 20mA +/- (51Ω).
16 = 50mA +/- (20Ω).
#) 17 = 4 - 20mA (51Ω).
19 = See input options.
*) 25 = 3-wire Potentiometer.

All inputs are bipolar based. Select the range and specify the required calibration within the range.

Output:

1 = 1V (25Ω min).
2 = 5V (100Ω min).
3 = 10V (200Ω min).
4 = 20V (400Ω min).
5 = 1mA (20kΩ max).
6 = 5mA (4kΩ max).
7 = 10mA (2kΩ max).
8 = 20mA (1kΩ max).
9 = See output options.

All outputs are bipolar based. Select the range and specify the required calibration within the range.

Action:

1 = In/Out Direct.
*) 2 = In/Out Reverse.
*) 3 = Direct Custom Response (specify 1ms to 6s)
*) 4 = Reverse Custom Response (specify 1ms to 6s)

Output Options:

See output options data sheet for details.

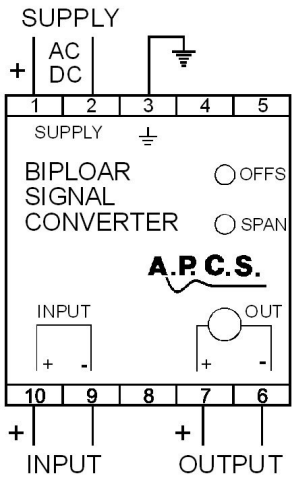
0 = None.
*) 1 = Output ramp.
*) 2 = Output 50 to 500mA, external bipolar supply.
*) 3 = Output 500mA to 2A, external bipolar supply.
*) 4 = Output 2A to 5A, external bipolar supply.
*) 5 = External ratio 0.5 to 1.5
*) 6 = Auxiliary supply 24Vdc/25mA max
*) A = Output 40mA side mounted heat sink.
*) B = SPL0633 5A drive 30V supply

Input Options:

See input options data sheet for details. Specify type of sensor and calibration details.

00 = None.
*) 01 = RTD input (Pt100 20...400°C span).
*) 02 = mV input (up to 100mVdc span).
*) 03 = Thermocouple input (all types 4-80mV span).
*) 04 = AC voltage (5mV up to 50V).
*) 05 = AC current (0.5 up to 10A isolated using internal CT).
*) 06 = Resistance 2W constant current. (5Ω to 5kΩ).
*) 07 = pH/ORP electrode input (>100MΩ).
*) 08 = Frequency (sine) input (5Hz up to 5kHz Span).
*) 09 = DC pulse input (5Hz up to 5kHz Span).
*) 10 = Floating differential.
*) 11 = Adder or Subtractor (2 x 4-20mA floating).
*) 17 = Load cell input.
*) 21 = Dither for hydraulic applications.

Connection Diagrams



Includes 24Vdc/25mA auxiliary supply on terminal 8.
*) Price Extra.