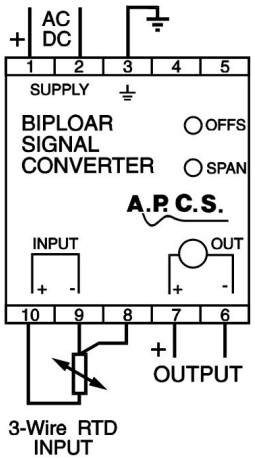
Input Options - Bipolar Signal Converter BSC133

Option 01 - RTD Input

The standard RTD is Platinum 100 (100Ω at 0°C), however any user specified type of RTD can be accommodated as long as there is no substantial non-linearity. There is no additional linearisation circuit. The RTD is wired in 3-wire fashion to avoid errors caused by lead resistance changes. 2-wire connection can be used with short lead length. Sensor excitation current is as low as 0.6mA, preventing self-heating of the sensor. Lead breakage will cause the output to increase to maximum output.

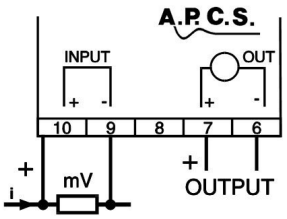
Combined linearity and drift error:	0.5% of span
Temperature effect:	0.01% per °C
Input span:	3.9Ω up to 112.0Ω (20°C...300°C Pt100, 10°C range available with reduced accuracy).



Option 02 - Bipolar (mV) Input

Low level millivolt or bipolar input signals require an additional input conditioning circuit to be fitted. This circuit provides both a high input impedance and a wide front-end offset.

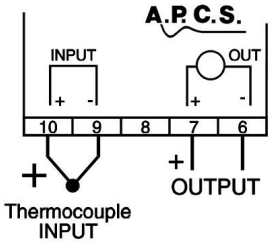
Input range:	±0.5 up to ±50mV (1 to 100mV span) bipolar or unipolar
Input impedance:	>1MΩ (100MΩ Optional)
Offset:	up to 500% of range (int. adjustment)
Temperature drift:	Typically 0.02% of span/°C



Option 03 - Thermocouple Input

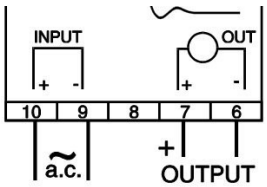
Thermocouple types can be E, J, K, N, R, S and T. Automatic cold junction compensation is standard. On request the circuit can be configured for up-or-down scale burn-out. The output of the converter follows the thermocouple curve with an accuracy of <0.5% (non linearised).

T/C input spans:	4mV up to 80mV
Input impedance:	>1MΩ
Cold junction compensation error:	0.02% per °C C/ on J change, ambient 0 - 60°C
Offset:	500% of range



Option 04 - AC Voltage Input (Sine Wave)

Input range:	10mV up to 50Vac
Input impedance:	12kΩ for 10mV input, >1MΩ for 500V input
Offset:	up to 200% of range
Combined linearity and drift error:	<0.5% of range



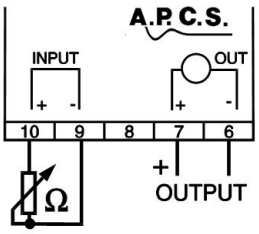
Option 05 - AC Current

Input range:	0.5 up to 10A
Input impedance:	0.008Ω at 5A.
Input output isolation:	2kV rms. by internal CT.
Combined linearity and drift:	< 0.5% of range.

Option 06 - Resistance Input

The measured resistance receives a constant current, the current source is configured as 4mA or 40mA depending on range.

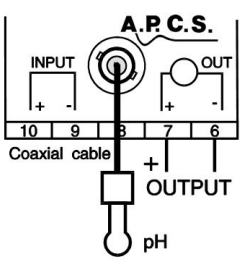
Input span:	2Ω up to 5kΩ
Combined linearity and drift error:	0.5% of input range.



Option 07 - pH / Orp Electrode Input

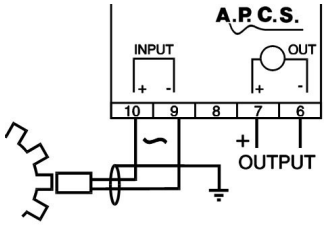
The BCS133 accepts a wide variety of electrochemical sensors as input - pH, Redox (ORP) or selective-ion when fitted with input Option 07. Please specify the input range required when ordering.

Input impedance:	$2.5 \times 10^{10}\Omega$
Combined linearity and drift error:	0.5% of range



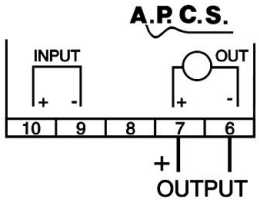
Option 08 - Frequency Input

Calibration range:	0 - 10Hz...0-3kHz
Input type:	Sine, Triangle, Pulse 200mVpp. (70mV rms) min. 22Vpp. max.
Input impedance:	10kΩ
Linearity & repeatability:	0.2% of range
Temperature effect:	0.012% / °C
Offset:	-50% of range (e.g. 1 - 2kHz input)
Span:	±20%



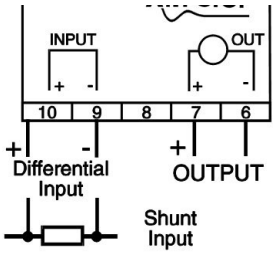
Option 09 - DC Pulse Input

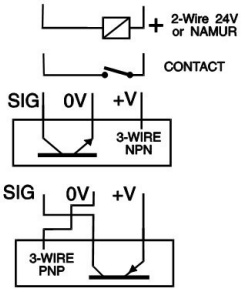
The converter can also accept a pulse input from proximity sensors or passive devices such as contact or open collector devices.
An auxiliary supply of 8Vdc or 24Vdc is available at terminal 8, other data as per Option 08 above.



Option 10 - Floating Differential

Common mode input voltage range:	±15Vdc
Differential input voltage range:	±12Vdc
Common mode rejection ratio:	40dB
Input resistance:	200kΩ

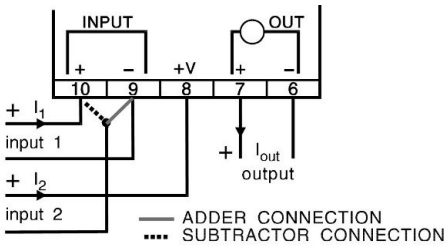




Option: 11 Adder or Subtract-or

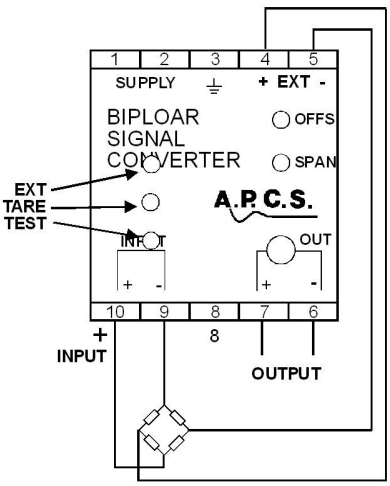
All inputs reference to the common of BCS133; must be independently sourced. Use Signal Powered Isolator SPI232 if isolation is required.

Input loads (4-20mA) :	$I_1 = 50\Omega$, $I_2 = 50\Omega + 0.7V$
Adder	$I_{OUT} = I_1 + I_2$
Averager	$I_{OUT} = \frac{8_1 + I_2}{2}$
Subtractor	$I_{OUT} = I_1 - I_2$



Input 17 Load Cell

1. Verify connections and power up.
2. With load-cell connected measure the excitation voltage on terminals 4 and 5, adjust in accordance with load cell specifications using "EXT" adjustment.
3. Measure the offset signal by using the 2mm test socket with reference to terminal 6. Adjust this signal to be 0V ±0.1V via the "TARE" adjustment.
4. Apply full load to load-cell. The signal on the 2mm test socket should rise to approximately 2Vdc.
5. Zero and span adjustments can now be used for final calibration as required.



Input: 25 Pot Input

Output reference voltage:	2.5V, 2.5mA
Minimum potentiometer value:	1k