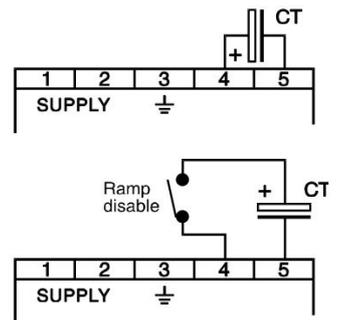
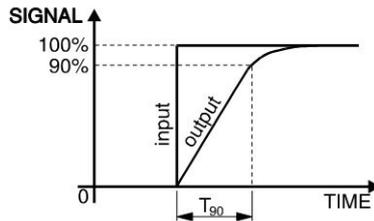


# Output options - Bipolar Signal Converter BSI133

## Output Option 1: Ramp Output.

T<sub>90</sub> time is defined as: for an input step of 0 - 100%, the output will rise to 90% in 'T<sub>90</sub>' seconds.

CT	T <sub>90</sub> TIME
2µF	1 sec
22µF	5 sec
47µF	10 sec
100µF	20 sec
147µF	30 sec



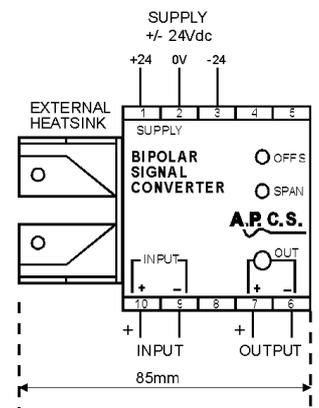
Timing capacitor CT is selected to achieve the desired ramp time. Capacitor CT can be an Electrolytic capacitor or tantalum, minimum voltage 16V.

## Output Option 2: 50 - 500mA With Side Mounted Heat-sink

An external ±24V power supply is required to directly power the output stage of the amplifier.

Minimum power supply: ±24Vdc ±10%  
 Minimum supply current: required output +100mA

All models of the BSC133 with an output drive between 50 and 500mA use a side mounted heat-sink. The module must be mounted in an area with adequate ventilation. The pass transistor mounted on the heat-sink is at an elevated voltage, and its case must not be allowed to contact any objects. The transistor is insulated from the heat-sink, the heat-sink may be grounded.



## Output Options 3 or 4 With External Heat-sink

An external ±24V power supply is required to directly power the output stage of the amplifier.

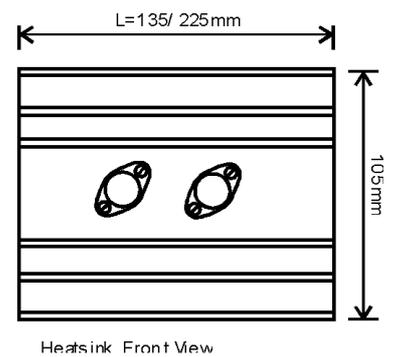
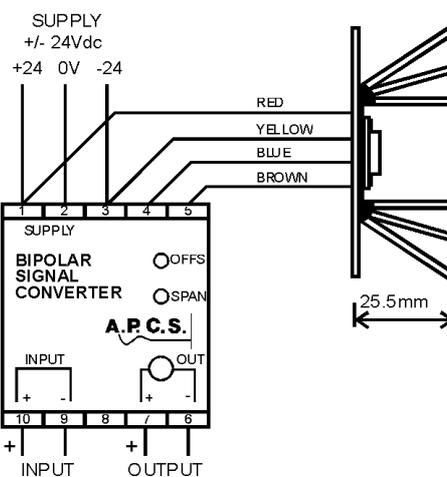
Minimum power supply: ±24Vdc ±10%  
 Minimum supply current: required output +100mA

Heat- sink length  
 500mA – 2A (option 3): 135mm  
 2A – 5A (option 4): 225mm

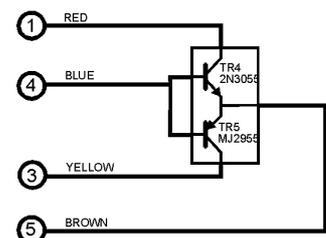
All models of the BSC133 with an output above 500mA use a separate heat-sink.

This heat-sink must be mounted in an area with adequate ventilation. The pass transistors mounted on the external heat-sink is at an elevated voltage, and its case must not be allowed to contact any objects.

The transistor is insulated from the heat-sink, the heat-sink may be grounded.



### Heat-sink Wiring



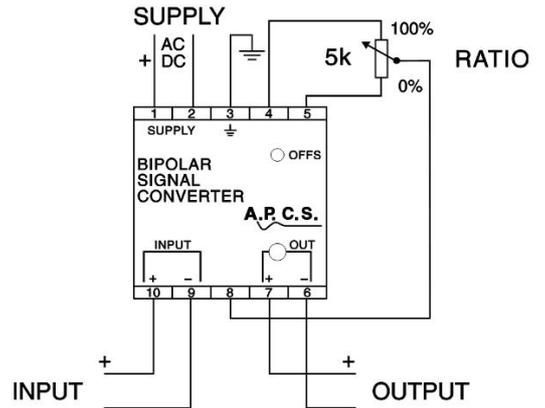
## Output Option 5: External Ratio Adjustment

The range of the ratio adjustment is manufactured to the customer requirement. A typical ratio adjustment range is 0.5 to 1.5.  $OUTPUT = INPUT \times RATIO$

### EXAMPLE 1

Ratio adjustment range: 0.5 to 1.5  
 Input: 4-20mA.  
 Output: 4-20mA.

- When the ratio adjustment is set to the minimum (0%, RATIO = 0.5)  
4-20mA IN results in 4-12mA OUT.
- When the ratio adjustment is set half way (50%, RATIO = 1.0)  
4-20mA IN results in 4-20mA OUT.
- When the ratio adjustment is set to the maximum (100%, RATIO = 1.5)  
4-14.7mA IN results in 4-20mA OUT.  
Inputs above 14.7mA will not increase in a linear fashion above 20mA out.



### EXAMPLE 2

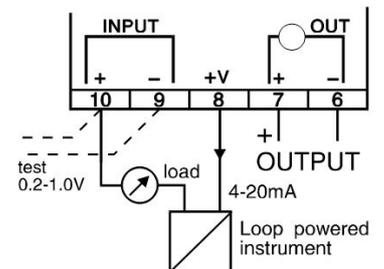
Ratio adjustment range: 1.0 to 2.0  
 Input: 4-20mA.  
 Output: 4-20mA.

- When the ratio adjustment is set to the minimum (0%, RATIO = 1.0)  
4-20mA IN results in 4-12mA OUT.
- When the ratio adjustment is set half way (50%, RATIO = 1.5)  
4-14.7mA IN results in 4-20mA OUT.
- When the ratio adjustment is set to the maximum (100%, RATIO = 2.0)  
4-12.0mA IN results in 4-20mA OUT.

## Output Option 6: Auxiliary 24Vdc Supply For 3-Wire Input.

$$R_{load\ max} = \frac{23 - U_T}{0.02} \ (\Omega)$$

$U_T =$  Voltage drop across loop powered instrument (12V typically).

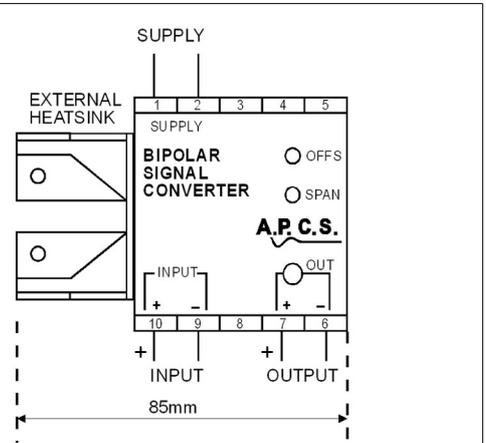


## Output Option A: 40mA With Side Mounted Heat-sink

Available with reduced PSU working range

Power Supply Option	Piratical working range
1 = 90-280Vac 50/60Hz (65-280Vdc)	100-280Vac 50/60Hz (80-280Vdc)
6 = 8 - 60Vdc.	10-60Vdc
3 = 16-48Vac 50/60Hz (10-60Vdc)	3 = 20-48Vac 50/60Hz (12-60Vdc)

The module must be mounted in an area with adequate ventilation. The pass transistor mounted on the heat-sink is at an elevated voltage, and its case must not be allowed to contact any objects. The transistor is insulated from the heat-sink, the heat-sink may be grounded.



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