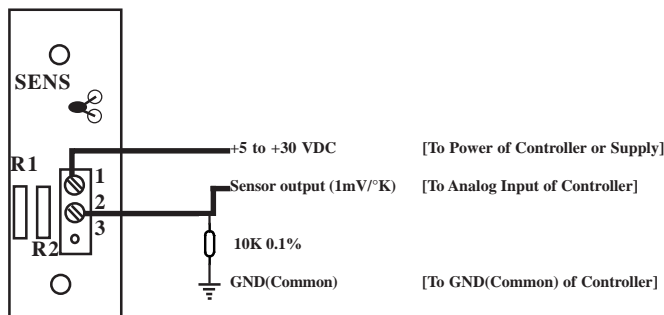


Termination

BAPI recommends using twisted pair of at least 22 AWG and crimp type connectors for all wire connections. Also, it is recommended that wiring **NOT** be run in the same conduit as line voltage wiring or with wiring used to supply highly inductive loads such as motors, generators, and coils.

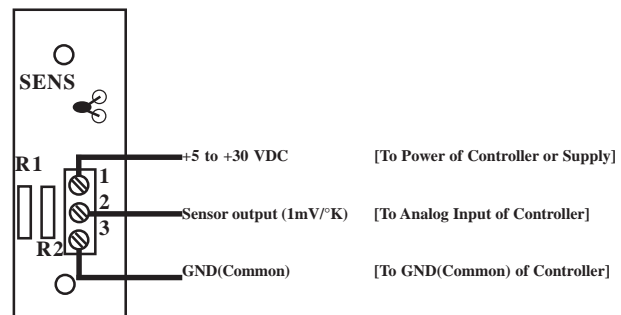
LM334 (2 Wire) sensors

1. Install a 10K 0.1% resistor between the sensor Output (terminal 2) and Ground (GND).
2. Make sure that the resistor is connected between the analog input (A.I.) point and Ground.
3. Connect the sensor Output to the A.I. point.
4. Connect the 5 to 30 VDC wire last.



LM334-10K (3 Wire) sensors

1. All LM334-10K (3 wire) sensors have a 10K 0.1% resistor built in.
2. Connect the Ground (terminal 3) wire first.
3. Connect the Sensor Output wire second.
4. Connect the 5 to 30 VDC wire last.



Offsetting

All LM334 sensors will have the following information provided on a label:

Therm Reading _____

The actual temperature reading according to a thermometer that is certified traceable to recognized standards by the National Institute of Standards and Technology (NIST).

Sensor Reading _____

The temperature reading according to the LM334 sensor, using the output in either mA or mV and converting the output to a Fahrenheit temperature.

Offset _____

The difference between the Thermometer Reading and the Sensor Reading

To correct the Sensor Reading, simply add the offset value to the sensor reading so that it equals the thermometer reading.

e.g. Therm Reading 74.6 Sensor Reading 73.0 Offset +1.6
Correction: Add (+1.6) °F to the sensor for an accurate reading: $73 + 1.6 = 74.6^{\circ}\text{F}$

e.g. Therm Reading 75.4 Sensor Reading 77.2 Offset -1.8
Correction: Add (-1.6) °F to the sensor for an accurate reading: $77.2 + (-1.8) = 75.4^{\circ}\text{F}$



Troubleshooting

Problems:

Temperature sensor in front end software is reading high

Temperature sensor in front end software is reading low

Possible Solutions:

- Confirm the input is set up correctly in the front end software
- Check wiring for proper termination
- Verify the “Sensor” output is correct from Pin 2 to Pin 3
Refer to table below for proper reading
- Determine if the semiconductor appears physically shorted
- Check wiring for proper termination
- Verify the “Sensor” output is correct from Pin 2 to Pin 3
Refer to table below for proper reading

<u>Temp.</u>		<u>LM334</u>	
°F	°C	(μ A)	(V)
50	10	283.2	2.83
60	15.56	288.7	2.89
62	16.67	289.8	2.90
64	17.78	290.94	2.91
66	18.89	292.1	2.92
68	20	293.2	2.93
70	21.11	294.3	2.94
72	22.22	295.4	2.95
74	23.33	296.5	2.97
76	24.44	297.6	2.98
77	25	298.2	2.98
78	25.56	298.7	2.99
80	26.67	299.8	3.00
82	27.78	300.9	3.01
84	28.89	302.1	3.02
86	30	303.2	3.03
88	31.11	304.3	3.04
90	32.22	305.4	3.05
100	37.78	310.9	3.10