

## ***Temperature Sensors and Temperature Measurement***

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*Thermocouple sensors and RTD sensors are commonly used as temperature sensors in aero engine. This paper focuses on solving confidence problem in an analogue circuit of sensor signal which is based on the self-correcting amplifier. The project uses thermal resistance and thermocouple analogue circuits. Facing timing-drift and thermal drift phenomenon ordinary op amp, the use of self-correcting op amp to improve the stability of simulation signal is implemented. In addition, to ensure the stability of input signal and power supply, a tripartite isolation circuit including input, output, and power supply signal is built which can ensure confidence as well. By using the comparing test under different conditions (such as time, temperature) and observing the ripple wave and filtered data, the result shows that the self-correcting amp circuit has better stability. Therefore, the project has a high application performance to meet the emulation requirements in hardware in the loop (HILS).*

**Key Words:** *Temperature sensor, Thermocouple sensor, RTD sensor, self-correcting amplifier, Signal analogue circuit*