

Analog Devices TMP36 :: Temperature Sensor

The [Analog Devices TMP36](#) are low voltage, precision centigrade temperature sensors. They provide a voltage output that is linearly proportional to the Celsius (centigrade) temperature.

The low output impedance of the TMP36, along with its linear output and precise calibration, simplify connection to temperature control circuits and ADCs. All three devices are designed to operate from a single supply voltage of 2.7 V to a maximum of 5.5 V. The supply current is well below 50 μ A, resulting in very low self-heating of less than 0.1°C in still air. In addition, a shutdown function is available to reduce the supply current to less than 0.5 μ A.

The software is architected with long-term maintainability, portability across MCU platforms, and adherence to high software quality standards as core design principles.

- ✔ Layered architecture with clear HAL abstraction
- ✔ Conforms to ISO C99 standard
- ✔ Portable across multiple MCU platforms
- ✔ Supports both RTOS and bare-metal environments
- ✔ CMake build system for scalable integration
- ✔ Seamless integration with GCC toolchain
- ✔ Statically analyzed for MISRA, CERT, and CWE compliance

Initialization Interface

```
tmp36_result_t tmp36_init( tmp36_handle_t*, tmp36_attr_t )
```

Configuration Interface

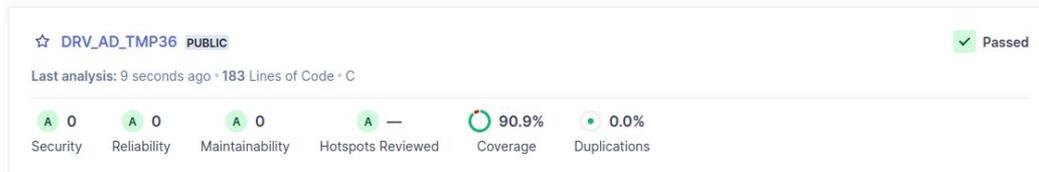
```
tmp36_result_t tmp36_set_mode( tmp36_handle_t*, ... )
```

Data Retrieval Interface

```
tmp36_result_t tmp36_get_celsius( tmp36_handle_t*, ... )
```

```
tmp36_result_t tmp36_get_kelvin( tmp36_handle_t*, ... )
```

```
tmp36_result_t tmp36_get_vout( tmp36_handle_t*, ... )
```



Communication Interface:

ADC