



# High Temp Waterproof DS18B20 Digital temperature sensor + extras

PRODUCT ID: 642



## . Description

This is a pre-wired and waterproofed version of the DS18B20 sensor made with a PTFE wire cable. Handy for when you need to measure something far away, or in wet conditions. This sensor is a little more expensive than the other waterproof version we have with a PVC cable because this one can be used up to 125°C - the limit of the sensor itself.

Because the sensor signal is digital, you don't get any signal degradation even over long distances! These 1-wire digital temperature sensors are fairly precise ( $\pm 0.5^{\circ}\text{C}$  over much of the range) and can give up to 12 bits of precision from the onboard digital-to-analog converter. They work great with any microcontroller using a single digital pin, and you can even connect multiple ones to the same pin, each one has a unique 64-bit ID burned in at the factory to differentiate them. Usable with 3.0-5.0V systems.

The only downside is they use the Dallas 1-Wire protocol, which is somewhat complex, and requires a bunch of code to parse out the communication. If you want something really simple, and you have an analog input pin, the TMP36 is trivial to get going.

We toss in a 4.7k resistor, which is required as a pullup from the DATA to VCC line when using the sensor. We don't have a detailed tutorial up yet but you can get started by using the Dallas Temperature Control Arduino library which requires also the OneWire Library.

## • Technical Details

Cable specs:

- Stainless steel #316 tube 6mm diameter by ~30mm long (size of stainless steel capsule may vary!)
- Cable is approx 3 ft long / 90cm long
- Contains DS18B20 temperature sensor
- Three wires - Orange Stripe connects to 3-5V, White connects to ground and Blue Stripe is data.

DS18B20 Technical specs:

- Usable temperature range: -55 to 125°C (-67°F to +257°F)
- 9 to 12 bit selectable resolution
- Uses 1-Wire interface- requires only one digital pin for communication
- Unique 64 bit ID burned into chip
- Multiple sensors can share one pin
- ±0.5°C Accuracy from -10°C to +85°C
- Temperature-limit alarm system
- Query time is less than 750ms
- Usable with 3.0V to 5.5V power/data

DS18B20 Datasheet

