High Temp Waterproof DS18B20 Digital Temperature Sensor – 3m long

PRODUCT ID: 3846

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 cablebecause this one can be used up to 125°C – the limit of the sensor itself. That said, it's still not recommended for salt-water or corrosive environments since the stainless steel will eventually rust!

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 ($\pm0.5°C$ 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.

You'll need a 4.7k resistor which is required as a pullup from the DATA to VCC line when using the sensor. Here's a CircuitPython/Python guide for these sensors. We don't have a detailed Arduino tutorial, 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 3m long / 300cm 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