

# Waterproof DS18B20 Digital temperature sensor + extras

PRODUCT ID: 381



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## DESCRIPTION

This is a pre-wired and waterproofed version of the DS18B20 sensor. Handy for when you need to measure something far away, or in wet conditions. While the sensor is good up to 125°C the cable is jacketed in PVC so we suggest keeping it under 100°C. Because they are 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.

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# Technical Details

## **Cable specs:**

Stainless steel tube 6mm diameter by 30mm long

Cable is 36" long / 91cm, 4mm diameter

Contains DS18B20 temperature sensor

If your sensor has four wires – Red connects to 3–5V, Black connects to ground and White is data. The copper wire is soldered to the wire shielding  
If your sensor has three wires – Red connects to 3–5V, Blue/Black connects to ground and Yellow/White 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