

The DS18B20 digital thermometer provides 9-bit to 12-bit Celsius temperature measurements and has an alarm function with nonvolatile user-programmable upper and lower trigger points. The DS18B20 communicates over a 1-Wire bus that by definition requires only one data line (and ground) for communication with a central microprocessor. It has an operating temperature range of -55°C to $+125^{\circ}\text{C}$ and is accurate to $\pm 0.5^{\circ}\text{C}$ over the range of -10°C to $+85^{\circ}\text{C}$.



Typical Applications

Heater systems
Measuring instruments
Washing machines
Over-heating protection

Features

- Measures temperatures from -55°C to $+100^{\circ}\text{C}$ (-67°F to $+212^{\circ}\text{F}$)
- Thermometer resolution is user-selectable from 9 to 12 bits

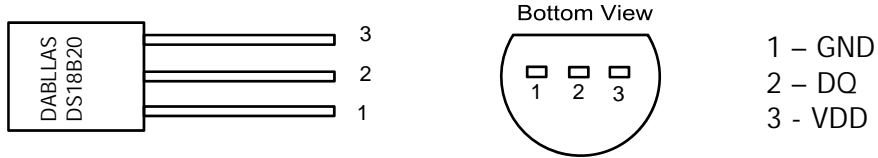
Technical Data

Parameter	Temperature
Power Supply	3.0~5.5V
Sensor	DS18B20
Measurement Range	-55°C - $+125^{\circ}\text{C}$
Accuracy	$\pm 0.5^{\circ}\text{C}$ accuracy from -10°C to $+85^{\circ}\text{C}$ $\pm 2^{\circ}\text{C}$ accuracy from -55°C to $+125^{\circ}\text{C}$
Work Current	1.5mA
Standby Current	1uA
Output Pin Sink Current	4mA (@ VI/O=0.4V)
Response	Converts temperature to 12-bit digital word in 750 ms (max.)
Output	Open-drain 1-Wire interface pin.
Drift	$\pm 0.2^{\circ}\text{C}$ on a 1000h stress test at $+125^{\circ}\text{C}$ with VDD= 5.5V

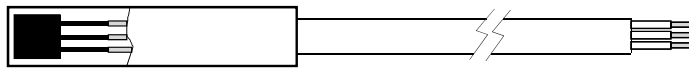
Note :

1. House material, size and configuration adjustable according to mounting requirement.
2. Cable insulation, gauge and length adaptable with requirement.
3. Other accessories available on request.
4. If only monitor the environment temperature, may be used MAX31820, but power supply from 3.0V to 3.7V, and $\pm 0.5^{\circ}\text{C}$ Accuracy from $+10^{\circ}\text{C}$ to $+45^{\circ}\text{C}$
5. 1-wire communication protocol see [MAXIM](#) "DS18B20" datasheet

Dimensions (mm)



Sensor Assembly



Ordering Guide

SERIES	SENSOR	OUTPUT	T-SCALING	HOUSES ⁽¹⁾
FST	- (18B20): DS18B20	- (D): Digital Output	(T5): -55°C TO 125°C	

Note:

(1) Please contact with sales department