

Temperature Sensor

Indoor/Outdoor Temperature Sensor with Serial Output

DC-TEMP-1

DC-Digital
tm



Features

- -50°C (-58°F) to 150°C (+302°F)
- -20°C to +90°C: ±0.5°C Accuracy
- -50°C to +150°C: ±0.7°C Accuracy
- Outputs Celsius and Fahrenheit
- Weather Resistant Solar Shield
- 3.3 or 5 Volts DC powered
- DIP switch selectable output
- Wall or Pole Mount
- 25 Foot Cable
- Made in the USA
- Factory Serviceable

Options

- Sensor only, no Solar Shield
- RS-232 interface
- Wireless transmitter
- 2 meter probe cable
- 1", 2.3", 4" Indoor LED displays
- 6", 8", 15", 30" Outdoor LED displays
- Custom Output Protocol
- Molex, XH, Dupont, JST, DB-9, MIDI etc. Connector

Specifications

- **Sensor Properties** ±0.5°C Accuracy within a range of -20°C to 90°C and ±0.7°C Accuracy outside of this range; 0.0625°C Resolution
- **Case** Polycarbonate Solar Radiation Shielding Enclosure
- **Case Dimensions** 7.00" H x 3.73" W x 3.98" D (177.8 x 94.74 x 101.9 mm)
- **Weight** 2.0 Pounds
- **Power Source** 0.05 Watts; 3.3 Volts DC or 5 Volts DC
- **Operating Temp** -40° to +85° Celsius (-40° to 185° Fahrenheit)
- **Communication** ASCII (Described Below); first output within first second, subsequently once per second ±2%
- **Serial Properties** 1 data signal line (and ground); TTL(CMOS); Logical 1 is the supplied positive voltage; Logical 0 is the supplied ground
- **Serial Parameters** 9600 baud, 8 bits, 1 stop-bit, no parity bit (8N1)

DC-TEMP-1

The DC-Digital DC-TEMP-1 is designed to be used where a high-accuracy temperature sensor is needed. The DC-TEMP-1 utilizes 12-bit analog to digital sampling to measure temperature to a .0625°C resolution. The sensing circuitry achieves a maximum ±0.5°C accuracy over a temperature range of -20°C to 90°C without system calibration or hardware and software compensation. To achieve a jitter-free output, the sensor measures the temperature approximately 10 times per second and outputs an average of the most recent samples. The unique design gives it a broad range of applications in education, industry, commerce, government, churches and charities. It can be used in either existing buildings or new construction. This unit includes one temperature sensor in a solar shield with a 25-foot long cable.

DC-TEMP-1 – Communication Protocol

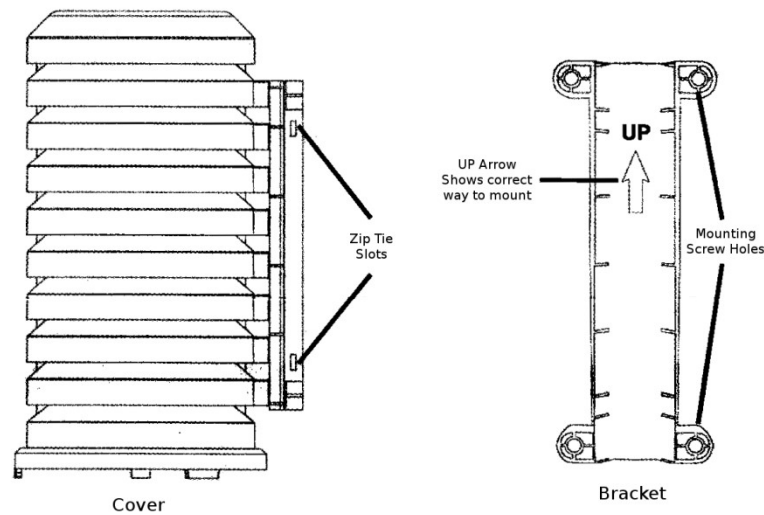
Each second, the temperature will be transmitted in Celsius and Fahrenheit in two ASCII strings of exactly 8 bytes as explained in **Table 1**. Custom protocol is available.

Table 1

Byte Position	1	2	3	4	5	6	7	8
Byte Definition	Degrees	Scale	Sign	Hundreds	Tens	Units	Tenths	Hundredths
Value Range	68	67 or 70	43 or 45	48-57	48-57	48-57	48-57	48-57
ASCII Code Text	D	C or F	+ or -	0-9	0-9	0-9	0-9	0-9

DC-TEMP-1 - Mounting and Dimensions

The cover detaches from the bracket for easy attachment to a wall or pole. The bracket has (4) screw holes for #6 screws and (4) Zip Tie slots.



DC-TEMP-1 – Accuracy

Temperature is sampled approximately every 104 milliseconds using a 12-bit analog to digital conversion and circuitry to achieve high accuracy. The graph below is typical units plotted in the center of the curve.

