

# WEATHER

## Temperature/Relative Humidity

Model 5190-F



### Overview

The Model 5190-F Temperature/Humidity Probe is designed for a variety of environmental monitoring applications, including ADB Safegate's Automated Weather Observing Systems (AWOS). The 5190-F operates with a DC supply voltage and has a low current draw. Relative humidity is measured with a thin-film capacitor sensor, and temperature is measured using a Pt100 RTD with an accuracy of  $\pm 0.1^\circ\text{C}$ . The signals from the sensors are converted into two linearized output voltages.

The QLTX sensor uses a combined crossed-loop and passive antenna, which correlates the electric and magnetic signatures of lightning strikes. The antenna has been designed to filter out pulsed noise from sources other than lightning discharges.

The QLTX antenna detects the electrical and magnetic fields generated by the electrical discharges and sends the resulting "discharge signals" to the processor. The processor digitizes, analyzes, and converts the discharge signals into range and bearing data, then stores the data in memory.

Parameter		
Temperature	0–1.0 V DC	-40°C to +60°C
Relative Humidity	0–1.0 V DC	0–100% RH

The 5190-F probe is Federal Aviation Administration (FAA) certified, and meets all current regulatory requirements.

### Ordering Information

Part Number	Description
5190-F	Temperature and Humidity Probe
8190	Motor-Aspirated Radiation Shield
8141-D	Self-Aspirated Radiation Shield

### Specifications

Parameter	Specification
Temperature Sensor	Pt100 RTD
Humidity Sensor	thin-film capacitor
Operating Temperature Limits	-40°C to +60°C
Temperature Output Signal (linear)	0–1.0 V DC = -40°C to +60°C
Humidity Output Signal (linear)	0–1.0 V DC = 0–100% RH
Minimum Load per Output	10 k $\Omega$
Accuracy (at 23°C)	$\pm 0.1^\circ\text{C}$ , $\pm 1.5\%$ RH
Resolution	$\pm 0.0015^\circ\text{C}$ , $\pm 0.0015\%$ RH
First Signal After	2.3 s
Measurement Interval	0.7 s
Supply Voltage	5–24 VDC
Current	approx. 4 mA
Cable Length	5 m (16 ft), tinned ends
Sensor Protection	wire mesh filter

### Dimensions & Weights

Size	208 mm x 15 mm diameter (8.19" x 0.59" diameter)
Weight	120 g (0.27 lb)
Shipping Weight	450 g (1 lb)