



Temperature/Humidity Probe Model 5190



Overview

The Model 5190 series of Temperature/Relative Humidity probes is designed for a variety of environmental monitoring applications, including All Weather Inc.'s Automated Weather Observing Systems (AWOS). The probes use reliable and high-stability components that allow them to withstand harsh environmental conditions. They operate using a DC supply voltage and have a low current draw. In the case of data logger applications, battery power can be conserved by energizing the probe for only 15 seconds during each measurement.

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 probes are converted into two linearized voltage output signals. All three models offer the standard analog voltage outputs; the Model 5190-G also offers a serial output.

The electronic circuit of the 5190 probes use data from the Pt100 temperature sensor to automatically compensate the effect of temperature on the accuracy of the humidity measurement.

The All Weather, Inc. (AWI) 5190 Series of Temperature/Relative Humidity probes is certified by the Federal Aviation Administration (FAA) and meets the recommendations of both the International Civil Aviation Organization (ICAO) and the World Meteorological Organization (WMO).

SPECIFICATIONS

Parameter	Specification		
	5190-F	5190-FI	5190-G
Humidity Sensor	Thin-Film Capacitor		
Temperature Sensor	Pt100 RTD		
Analog Interface			
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		
Digital Interface			
Serial Protocol	—		RS-485 19200 bps, 8-N-1
Reporting Temperature Limits	-50°C to +100°C		
Minimum Load per Output	10 kΩ		
Accuracy	±0.1°C , ±0.8% RH		
Resolution	Typically 0.01°C, 0.2% RH		
First Signal After	2.3 s		
Measurement Interval	0.7 s		
Response time	<15 s		
Supply Voltage	5–24 V DC		
Current Consumption	approx. 4 mA		
Cable Length	5 m (16 ft), tinned ends		
Sensor Protection	Polyethylene filter		
IP Rating	IP66 (NEMA 4X)		

CE - Compliant 2007/108/EG

ORDERING INFORMATION

Part Number	Description
5190-F	Temperature/Relative Humidity Probe with Analog Interface (U.S.)
5190-FI	Temperature/Relative Humidity Probe with Analog Interface (International)
5190-G	Temperature/Relative Humidity Probe with Analog/Digital Interface (International)

DIMENSIONS & WEIGHTS

Size	208 mm x 15 mm diameter (8.19" x 0.59" diameter)
Weight	120 g (0.27 lb)
Shipping Dimensions	203 mm x 254 mm x 51 mm (8" x 10" x 2")
Shipping Weight	450 g (1 lb)

ACCESSORIES AND PARTS

Part Number	Description
M482207-01	Replacement Temperature/Relative Humidity probe for 5190 series
M482208-00	Replacement dock with 5 m tinned end cable for 5190-F and 5190-FI
M482218-00	Replacement dock with 5 m tinned end cable for 5190-G
8141-D	Self Aspirated Radiation Shield (SARS)
8190-01	Motor Aspirated Radiation Shield (MARS)
8195	Motor Aspirated Radiation Shield (MARS) for extreme environments



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