

Model 912

TEMPERATURE & HUMIDITY SENSOR

Applications

- AIRPORTS
- METEOROLOGY
- BOTANY
- HORTICULTURE
- FORESTRY
- BUILDING RESEARCH

Features

- WMO STANDARD
- RUGGED
- SENSITIVE
- ENVIRONMENTALLY PROVEN

Description

The 912 Temperature and Relative Humidity Sensor comprises a platinum resistance temperature sensor, and capacitive RH sensor mounted in a multiplate screen. The 912 has a naturally ventilated version and an aspirated version. The flexible mounting bracket allows a number of mounting arrangements.

Operation

The 912 sensor requires a 12V DC supply from the data-logger or Data telemetry unit.

The RH channel outputs a 0-1Volt signal representing the range 0-100% RH. In the M1 version, the temperature channel is a voltage output in the range 0-1V representing a temperature range of -50 to +80 Degrees C. In the high precision M2 Version a 3 wire direct connection to the platinum resistance element can be made, with a usable range within -50 to +80 degrees C.



Construction

The 912 is constructed from non hygroscopic aluminium plates, and a robust mounting bracket. The sensor element can be unplugged for easy replacement. The forced aspiration version features a built in 12 Volt DC fan.

Calibration: The calibration is done at 10, 35 and 80%, and is stable to within 1% over a year. Yearly calibration is recommended.

Application

All versions of the 912 are fully compatible with the MTECH 2060 Automatic Weather Station telemetry Unit

Model Variations

912-M1	(Naturally ventilated)
912-M1-ASP	(Aspirated housing)
912-M2	(High Precision, Naturally ventilated)
912-M2-ASP	(High Precision, Aspirated housing)

Specifications:

General

Parameter	912 M1 and M2	
Excitation Supply	12V DC	
Excitation Current	Natural Version	ASP Version
	5 mA	250mA
MTBF	Depends on environmental conditions typically 35,000 hours in clean air	Typically 45,000 hrs fan only. Aspiration reduces the MTBF in polluted atmospheres
Operating Temperature	-40 to +60C, 0-100% RH	
Connection	8 core cable, 3 metres long	
Materials, Plates	Powder Coated Aluminium	
Materials Base Bracket	304 Stainless steel	
Bracket Mounting.	2 holes, 6 mm diameter on 65 mm centres.	
Filter	Replaceable mesh screen	
Accessories	U bolt for 63 mm diameter pole	
Optional Extras	912-AP Adapter Plate for alternative U Bolt sizes	

RH

Parameter	912 M1 and M2	
Sensor Type	Polymer Dielectric capacitive RH sensor	
Range	0-100 percent RH	
Resolution	0.1%	
Accuracy at 21C	+/-1% RH	
Reproducibility	< 0.5%	
Long Term Stability	< 1% per year typical	
Sampling Frequency	1 Second Minimum	1 Second Minimum
Sensor Time Constant	Naturally Aspirated	ASP version
	<20Seconds	<10 seconds
Output Characteristic	Linear, 0-100% RH, 0-1000mV	

Temperature

Parameter	912-M1	912-M2
Sensor Type	Platinum RTD, with internal signal conversion	Platinum RTD
Range	-40 to +60°C	-50 to +80°C
Accuracy	±0.25 K at 0°C *	±0.1 K at 0°C *
Resolution	0.1° C	0.1° C
Reproducibility	α: +0.00003%	α: +0.00003%
Long Term Stability	Ro< 0.2% per year	Ro< 0.05% per year
Sampling Frequency	1 Second	1 Second
Sensor Time Constant - Natural Ventilated	<30Seconds	<30Seconds
Sensor Time Constant - Aspirated	<10 seconds	<10 seconds
Output Characteristic	0V=-40C, 1.0V=+60C	DIN 60751 1/3 Pt. 3 wire

* For greater accuracy, DIN 1/5 or 1/10 grades available on special order

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