

HygroSmart HS3 Quick Start Guide

Overview

The HS3 Probe is very simple to install and requires only a few basic considerations to get up and running, the essentials of which are covered in this document.

Installation Site

When choosing an installation site for the sensor, consider the environment around it.

Ensure that the site:

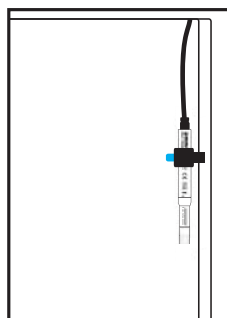
- is clear of nearby obstructions which could limit air circulation to the probe
- is away from any hot or cold spots, i.e. air conditioning or heater vents
- is not adjacent to any high power sources
- is representative of the surrounding environment at the point of interest

Mounting

Wall Mounting

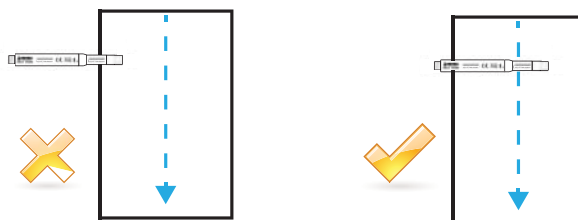
To securely fasten the probe to a fixed surface, a mounting clamp (HS3-PMC) is available. The mounting clamp can be attached at the point of installation using the 1/4" 20 UNC thread.

The probe should be installed so that the sensor and filter assembly are both facing downwards.



Duct Mounting

When installing the HS3 Probe into a duct, ensure that the probe is inserted as far as possible into the environment to be measured.



If measurement in a pressurized environment is required, then the optional metal gland (HS3-PMG) should be used to provide the seal. Sealing up to 10 barg is possible with this item.



When operating at pressure, ensure that the probe is securely tethered to a solid surface.

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Wiring

The HS3 Probe should be wired according to the diagram below. Complete cable assemblies with M12 connectors can be ordered to facilitate this. Cables are available in 2, 5 and 10m lengths:

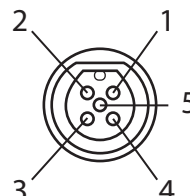
HS3-PC-02

HS3-PC-05

HS3-PC-10

A supply voltage between 5 to 28 VDC is required.

	Analog
1	Output 1
2	Output 2
3	N/C
4	+5 V to +28 V
5	0 V



Calibration

HS3 Probes are adjusted in the factory prior to delivery. Recalibration is recommended after one year of operation, depending on application. Recalibration can be carried out on-site using the Michell HygroCal100 Humidity Validator system. Please contact your Michell Instruments representative for further information.

Technical Data

Performance Specifications	
RH Measurement Range	0 to 100% RH
RH Accuracy @ 23°C	± 0.8% RH (5 to 95%RH)
RH Measurement Response Time	< 1 sec to RH event
RH Long Term Stability	±1% RH per year
Temperature Measurement Range	-40 to +85°C (-40 to +185°F)
Temperature Accuracy	±0.2°C
Calibration	Traceable 5-point calibration certificate
Electrical Specifications	
Voltage Output Signals	0-1 V, 0-2.5 V, 0-5 V, 0-10 V
Digital Output Signal	Modbus RTU over RS485 2-wire
Load Resistance	0-1, 0-2.5 V : 10K Ω 0-5, 0-10 V : 50K Ω
Supply Voltage Range	5 to 28 V DC
Supply Current Consumption	5 V : 4 mA 28 V : 7 mA
Supply Protection	Protected against reverse voltage and overvoltage
CE Conformity	2004/108/EC heavy industrial immunity
Operating Specifications	
Probe Operating Temperature	Probe: -40 to +85°C (-40 to +185°F) Interchangeable sensor: -40 to +120°C (-40 to +248°F) Recommended storage: +10 to +40°C (+14 to +104°F)
Mechanical Specifications	
Ingress Protection	IP67
Dimensions	Probe: L=145mm, ø15mm (5.7", ø 0.6") Interchangeable sensor: L= 56mm, ø12mm (2.2", ø 0.47")
Weight	31g (1.09oz) approx (packed weight 45g (1.59oz))