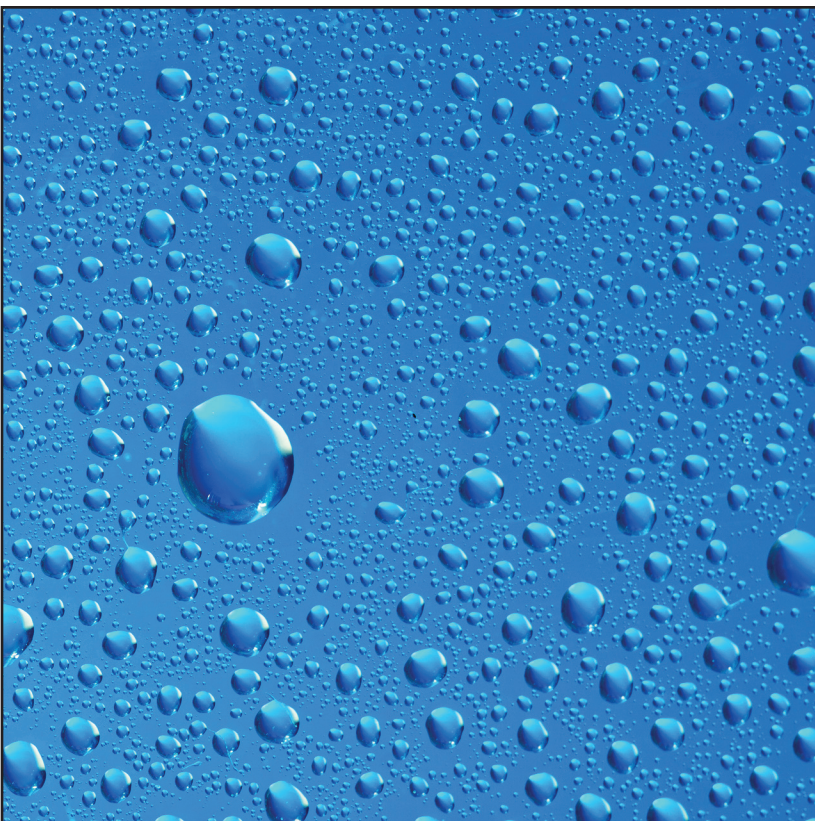


Selecting a Hygrometer



How to Choose a Best-Fit Hygrometer



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Selecting a Hygrometer

These 10 questions should be asked and answered as you determine your best-fit hygrometer.

1. Why do we need to measure?

- to meet a customer's specification
- regulatory requirement
- internal need to maintain product quality
- internal desire to control energy consumption
- determine efficiency, i.e. drying time
- to avoid/predict condensation
- to prevent static electricity
- automate a process
- maintain human or animal comfort

2. What humidity parameter will we use?

- RH, Td, a, x, h, ppm, Tw?
- relative measure or absolute measure
- will the instrument sensor measure the parameter or calculate it
- what is our industry using
- will the parameter we choose fulfill the reason for the measurement

3. What is the expected range of measurement?

- RH, Td, a, x, h, ppm, Tw?
- temperature range of the process
- pressure range of the process
- flow rate at the sensor

4. What level of performance will we need?

- uncertainty or accuracy (for our range of measurement)
- response time required for control or condition changes
- stability or drift
- repeatability, linearity, hysteresis
- resolution of output

5. What format will we need for output?

- display only
- signal (RS232, mA, VDC, Ethernet, Modbus, Lonworks)
- measurement report only or controlling a process
- how many parameters & how many channels do we require
- will we need the instrument to log data & download
- will we want to have the ability to configure in the field
- is the output automatically adjusted for temperature and pressure
- do we require temperature as one of the measurement outputs

6. What is the most convenient & practical configuration for us?

- fixed or portable
- what type of power is available
- remote probe or fixed/wall mount probe
- if remote, what is the cable length to the probe
- any probe size or mounting limitations
- do we need it to be accessible for calibration, repair or maintenance
- will we want to calibrate in place without disrupting our process
- are the sensors interchangeable and replaceable in the field
- can the probe be inserted and removed from the process without disrupting the plant operations

7. What is the composition of the air/gas to be measured?

- do we know what chemicals may be present in our air
- will the sensor measure accurately in our air or gas
- do we have chemicals in the air and will they affect the measurement accuracy
- are there special conditions that might affect measurement in our particular gas application

8. What are the installation requirements?

- cable lengths to the transmitter; to the measurement point
- will we need pressure or vacuum tight fittings
- will we need vapor tight fittings; is the feed through vapor tight
- will the measurement be made in the process
- will we need to install a sampling system
- will the sensor require the sample to be conditioned for accurate measurement
- if we are measuring in extremely dry gas, are the materials non-hygroscopic and impermeable
- do we need a NEMA or IP rated enclosure for the transmitter
- is the area of installation rated as potentially explosive & is the instrument rated to meet it
- will we need to insert or remove the probe from a process under pressure

9. Cost versus Performance, lifespan, maintenance?

- higher accuracy, more options, working in extreme conditions = higher \$\$\$
- what is the recommended calibration interval, cost of calibration
- can we calibrate it ourselves, what equipment would we need to buy
- how easy is it to use, will we have to spend time and money in training, setup time
- will we need an instrument that can stand up to harsh conditions, rough handling
- what additional expense will incur for spare parts
- what is the cost to our organization for poor measurement or poor performance
- can we save money by using the same instrument in more than one application or location

10. What can I expect from the manufacturer for aftersales support?

- consider availability & accessibility to technical support and aftersales support
- consider the warranty period
- is there domestic depot level repair facility available
- can I modify or upgrade quickly and easily
- how was I treated, what was expertise, availability of personnel during the sales process
- what is the lead time for calibration or repair, option for rush service
- was the manufacturer willing to provide a demo instrument to help me make a decision
- is the manufacturer asking you these question???

Choosing a Humidity Measurement Instrument Vendor

- find a couple of suppliers
- evaluate the vendor based on the service you receive during your investigation phase
- you should be asked a lot of questions (like 1...10)
- Is there a demo instrument available to test?
- does the instrument include a calibration? accredited calibration?
- visit the factory
- is the sensor made by the manufacturer or is it purchased from a third party?
- is it only a vendor that you need? or do you need a vendor who can provide expertise?

For more information about measuring humidity, sign up for complimentary Vaisala Knowledge eNewsletters at www.vaisala.com/knowledge

For assistance with choosing a hygrometer, please feel free to utilize Vaisala Application Engineers as a resource.

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