

1.1 Digital vs analog sensors

Older, analog sensors typically produce a voltage or current output in response to the characteristic (light, temperature, etc.) that they measure. Meters are then used to measure the resulting voltage or current. That voltage or current signal can then be converted into a meaningful number by applying a calibration to the measured signal. Accurate calibrations are critical for converting a sensor signal into a usable measurement.

Many newer sensors provide a digital output. Such sensors contain a micro-processor that takes the signal from the sensor(s) and subsequently uses that signal to do all kinds of calculations. You can think of digital sensors as smart sensors: they not only can measure things, they can also process the collected data. A fairly simple example of a digital sensor is Decagon's VP3 sensor. This sensor measures temperature and relative humidity and then uses those measurements to calculate vapor pressure deficit.

With the ever decreasing cost and increasing capabilities of micro-processors, digital sensors are becoming increasingly popular and powerful.