

# SHT15DV and SHT75PG

## Humidity and Temperature Sensors from EME Systems

EME Systems manufactures two humidity/temperature probes based on Sensirion sensor elements. One is configured for mounting directly in the popular 7714 Davis Instruments radiation shield. The other is configured as a probe mounted on the end of a cable. Both come with a four-conductor cable and use the standard Sensirion digital protocol. We supply microcontroller code for both the Propeller and BASIC Stamp. Code for many other controllers is available online for this popular sensor.

### SHT15DV

The SHT15DV mounts directly onto the support posts in the ventilated interior of the Davis Instruments 7714 radiation shield, as seen in the photos to the right. The sensor is protected from the elements by a Gore-Tex® membrane and the support circuit is embedded in electronic grade epoxy. The SHT15DV comes standard with a one-meter long, four-conductor cable. Custom cable lengths are also available. The SHT15DV and Davis radiation shield can either be ordered separately or pre-assembled with the sensor installed by EME Systems.



### SHT75PG

In the SHT75PG, the sensor element is mounted in a PG7 gland nut. A

Gore-Tex® cover is provided to protect the sensor from contaminants. The cover can alternatively be removed, allowing the sensor, with its narrow stalk and low thermal mass, to respond rapidly to changing conditions. It can be ordered either as the PG7 only or as a probe assembly. The PG7 terminates in four ten-centimeter long wire leads and can be mounted and sealed on the side of an instrument enclosure. The probe version (SHT75PG/3m), comes mounted in a three-inch PVC tube terminating in a three-meter long, four-conductor cable.



Right: SHT75PG mounted in a PG7 gland nut alongside its Gore-Tex® cover. Left: (top) configured as probe (bottom) mounted on an enclosure.



## Specifications SHT75PG, SHT15DV

### Humidity

digital 12 bit resolution 0.03% RH

repeatability  $\pm 0.1\%$  RH

accuracy & interchangeability  $\pm 2\%$  RH (over range of 10% to 90% RH)

nonlinearity  $< 1\%$  RH (after linearity compensation math)

range 0%–100% RH (see below for accuracy spec)

response time 4 seconds (slowly moving air, no cap) to within 67% of final

hysteresis  $\pm 1\%$  RH

long term stability  $< 1\%$  RH per year typical

### Temperature

resolution  $\pm 0.01\text{ }^{\circ}\text{C}$

repeatability  $\pm 0.1\text{ }^{\circ}\text{C}$

accuracy  $\pm 0.5\text{ }^{\circ}\text{C}$  from  $0\text{ }^{\circ}\text{C}$  to  $40\text{ }^{\circ}\text{C}$ ,  $< 1\text{ }^{\circ}\text{C}$  from  $-20\text{ }^{\circ}\text{C}$  to  $+65\text{ }^{\circ}\text{C}$

range  $-40$  to  $+123\text{ }^{\circ}\text{C}$

response time 5 to 30 seconds to within 67% of final value

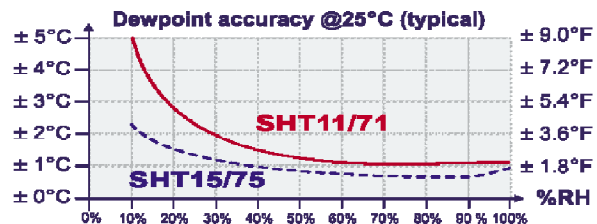
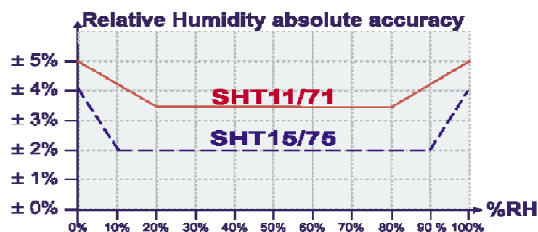
Response times are slower with the Gortex™ membrane in place, depending on air movement.

For additional specifications, and applications notes, please download the SHT15/SHT75 data sheet from

<http://www.sensirion.com>, and please visit

[http://www.emesystems.com/SHT15DV/sht15dv\\_overview.html](http://www.emesystems.com/SHT15DV/sht15dv_overview.html)

[http://www.emesystems.com/SHT75PG/sht75pg\\_overview.html](http://www.emesystems.com/SHT75PG/sht75pg_overview.html)



We use only the SHT15 and SHT75, which are the higher accuracy parts.

- White or yellow wire is clock signal from microprocessor.
- Red wire to  $+2.5\text{--}5.5\text{Vdc}$   $550\mu\text{A}$  measuring,  $1\mu\text{A}$  sleep.
- Black wire to common.
- Green wire is data signal to/from the microprocessor.

