

July 2009

## Measuring Humidity



27th July, 1953

US Army Gen. Mark W. Clark signs the armistice agreement to pause the Korean war. North Korea pulled out of the agreement on 27/05/2009.



15th July, 1933

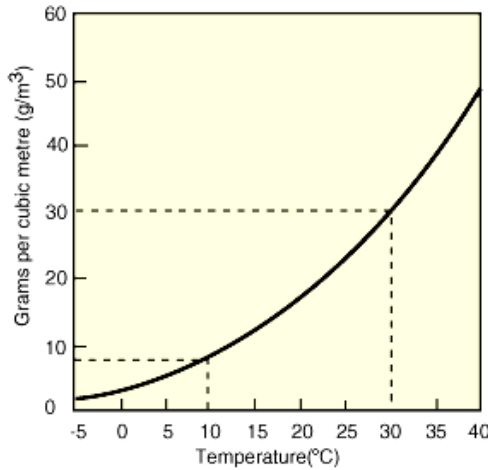
At Princeton University, New Jersey Jack Lovelock wins the 'mile of the century' race in a World record time of 4:07.6.



9th July 1956

Screen Actor Tom Hanks is born in Concord, California.

Humidity is a very common measurement in many process plants. Timber kilns, Hospital operating theatres and Art galleries all are places where correct humidity is crucial. Humidity is a measure of the water content that an atmosphere holds.



Air @ 30°C can hold over 3 times as much water vapour as air at 10°C

### Electro-Chemical Sensors

Typically such sensors consist of a surface of glass, ceramic or silicon on which a polymer or metal oxide sits between conductive electrodes. The greater the humidity the greater the capacitance and this entirely dependant on the water content or Humidity of the air.



Wall Mount LPN-H-W

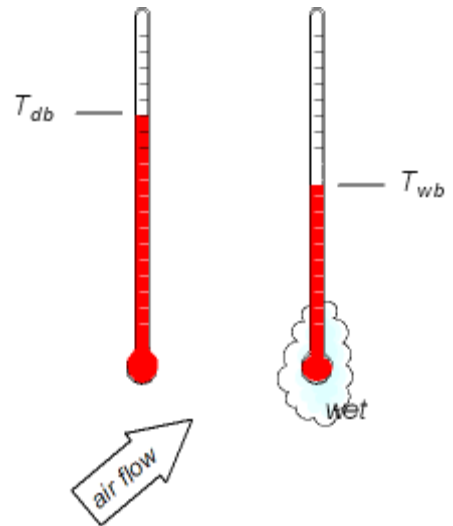


Duct Mount LPN-H-D

### Wet & Dry Bulb

For water to change phase to water vapour, energy or 'heat' is required. A wet & dry bulb uses this principle to measure humidity.

One bulb is wrapped with a water saturated wick. The other is left uncovered. As water from the wet bulb evaporates, energy is removed from surface of the wet bulb and the measured temperature reduces. The reduction in temp of the wet bulb depends on the rate of evaporation of water from the wick. This in turn is dependant on the ambient air temperature but more importantly - the humidity of the atmosphere.



At 100% RH (Relative Humidity)  $T_{db}$  &  $T_{wb}$  will be exactly the same. The lower the ambient humidity, the greater the differential.



Intech's 2100-A4-HWD provides dual 4-20mA outputs for both temperature & Relative Humidity

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- ◆ Experience you can rely on



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Meet the XI-L4:-

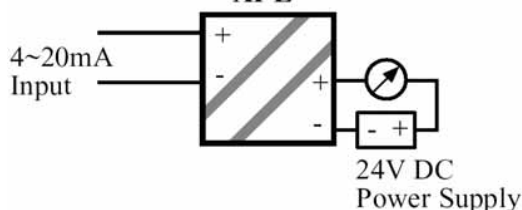


- \* Isolating 4x 4-20mA Input / output
- \* 1kV Signal Isolation
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- \* Reverse Polarity Protected



Although good, Intech transmitters won't get you out off all tight spots.

**Typical Hookup  
 XI-L**



**TRUSTED  
 RELIABLE  
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Software Programmable

**SHIMADEN**

Man's Best Friend?

R2D2 in Christchurch yesterday: "Intech are very much a part of me".



No no, you're not mistaken. It's Tom Hanks pointing at you again - just like page 1.