



Calibration Capsules

CAL CAPS

Function: The Lee-Dickens range of Relative Humidity, Dewpoint and Temperature probes, meters and transmitters can all be fitted with Calibration Capsules. The CAL CAPS will screw on in place of the sensor guard whether it be a polypropylene cage or a sintered bronze guard. The CAL CAPS contain saturated salts and simulate conditions of 0% and 75% RH. By applying these to a probe the RH output/indication can be checked in the field and if necessary adjusted. The capsules will, with careful usage, give up to 100 calibration checks. They also have a shelf life of approximately one year and can therefore be stocked for use when required.



HP Relative Humidity Range

SPECIFICATIONS

The CAL CAPS are a very easy method of field checking Lee-Dickens' probes and transmitters. Please note, however, that if a traceable or certified calibration is required, the probes can be returned to Lee-Dickens. We can supply an In-House Certificate of Conformity or a NAMAS Certificate of Calibration.

The following gives a brief outline of the method to be employed when using the CAL CAPS.

0% REFERENCE CAPSULE

Carefully unscrew the sensor guard or filter from the probe, avoiding damage to the sensor. Unscrew the stopper of the 0% capsule, and carefully screw the capsule on to the probe. Within about ten minutes the atmosphere inside the capsule will have stabilised to within 1% of true zero. If greater accuracy is needed, it is necessary to allow several hours – preferably overnight, after which the reference will reach within 0.25% of true zero. After use, and if necessary trimming the Zero potentiometer of the probe, carefully unscrew the capsule and immediately replace its stopper.

75% REFERENCE CAPSULE

Unscrew the stopper of the 75% reference capsule. If droplets of moisture are present on the inside wall of the capsules remove them with tissue paper. Carefully screw the capsule on to the probe. Within fifteen minutes the atmosphere should stabilise to within 2% of 75% RH at 20°C to 25°C. After use, and trimming of the span potentiometer, carefully unscrew the capsule and replace the stopper. Finally, carefully replace the sensor guard filter on the probe, avoiding damage to the sensor.

Temperature and RH measurements are very closely related. When setting the 75% RH level, it is necessary to ensure the capsule, salt solution and atmosphere within the capsule are at the ambient air temperature.

For the most accurate calibration, the capsule and probe assembly must be maintained at a constant temperature for a period of twelve hours to ensure that the capsule, atmosphere and sensor have achieved equilibrium before calibration is carried out.

ACCURACY OF REFERENCES

The 0% capsule should provide a reference of 0% to 0.25% RH after ten hours, or 1 to 1.25% after only ten minutes. The 75% capsule should be within $\pm 2\%$ of 75% RH at 20°C to 25°C within fifteen minutes. It is not recommended that the 75% reference is used outside the recommended temperature range of 15°C to 35°C although they can be stored in temperatures between 0°C and 50°C without deterioration.

It is estimated that the capsule life will exceed one year in normal use, if the above procedures are followed. With age however, and depending upon the time exposed to atmosphere, both capsules will gradually drift towards the normal ambient humidity in which they are kept. If there is a possibility that a capsule is no longer active, a simple test is to slightly warm the capsule while it is fitted to a probe – grasping it tightly in the hand is usually sufficient. If it is still active, the hygrometer reading will increase slightly, then recover. If it is no longer active, the reading will decrease.

GENERAL:

Operating Temperature Range
+15 to +35°C

Storage Temperature Range
0 to +50°C

Operating/Storage Humidity Range
0 to 95% RH non-condensing

Weight
1 pair of CAL CAPS 136 gms

ORDERING DETAILS

- (a) Specify CAL CAPS
- (b) Specify quantity required, i.e. 3 pairs



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