

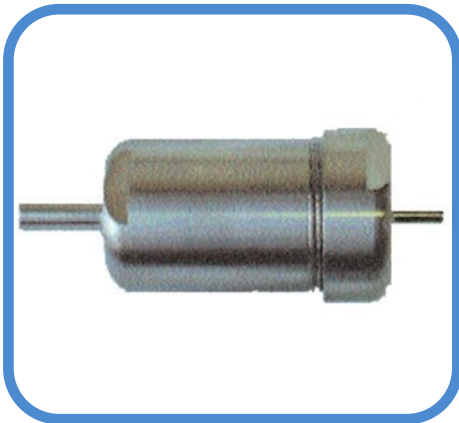


Easidew

Desiccator

From the Impedance Range

A simple in-line desiccator to enhance the speed of response of the Easidew Portable Hygrometer



*Easidew
Desiccator*

Features

- Reduces sampling time by up to 85%
- Simple to use
- Low cost
- Easy maintenance

Background

The Easidew Portable Hygrometer is designed to provide reliable measurement of air or process gas dew point at the point of use, as a spot-check instrument. In most applications the inherently fast response of the ceramic moisture sensor is fast enough to give an acceptable sampling time to achieve a stable end result. However, in some applications there is a need for a faster response - for example in cases where an expensive gas is to be tested, or where many measurements at different sampling points need to be made in real-time.

For these applications the Easidew Desiccator provides a reliable and cost effective solution.

The Desiccator

The Easidew Desiccator is a simple, in-line desiccant charge within a 316 stainless steel housing, provided with stainless steel gas in and out ports for direct connection between the gas sample line and the Easidew Portable Hygrometer's inlet quick-release coupling. The desiccator is charged with 4Å molecular sieve, an extremely effective desiccant material. This desiccant will last for months, even in regular use, and when saturated can either be re-generated by heating in a commercial or domestic oven, or be easily replaced with a new charge. Operation time between re-activations is dependent on frequency and duration of usage and also application gas moisture levels.

Method of operation

Operation is simple. At the start of a test, connect the Easidew Desiccator in line between the flexible PTFE sample tube (provided) and the Easidew Portable Hygrometer inlet port. Allow the sample to be measured to pass firstly through the desiccator and then the hygrometer's internal sampling system, for a few minutes. The desiccant charge will super-dry the sensor and sampling system. After a short period (5 to 30 minutes, depending on the actual dew point of the gas sample), simply, but quickly, remove the Easidew Desiccator from the sample flow path and re-connect the sample pipe to the hygrometer inlet port. Within a very short period the Easidew Portable will now show actual dew point of the gas under test.

Results

The improvement in response speed depends on a number of factors, including test gas dew point, flow rate, prevailing ambient conditions etc. However, real and significant improvements can be achieved, as the table and graph show on the next page show.

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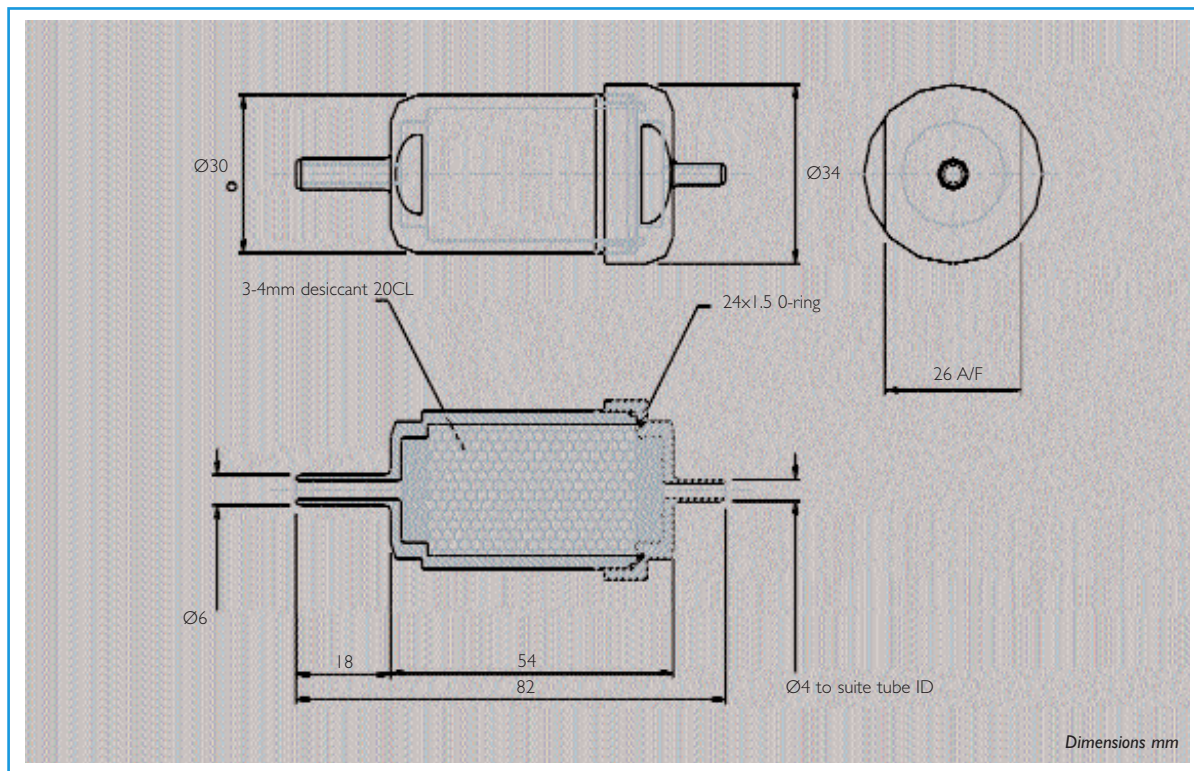
| | Response time, with desiccator (minutes) | Response time, without desiccator (minutes) | % improvement |
|-------------------------|--|---|---------------|
| -60 °C dew point | | | |
| T ₉₀ | 10 | 14 | 30% |
| T ₉₅ | 15 | 31 | 50% |
| T ₁₀₀ | 22 | 140 | 85% |
| -70 °C dew point | | | |
| T ₉₀ | 25 | 33 | 25% |
| T ₉₅ | 37 | 93 | 60% |
| T ₁₀₀ | 63 | >240 | >75% |

From the Impedance Range

Technical Specifications

| | |
|-----------------------|---|
| Body | 316L stainless steel |
| Connection to Easidew | Push fit into Easidew inlet fitting |
| Gas in connection | Push fit 6mm OD flexible pipe (PTFE) |
| Desiccant | Standard 4Å mol sieve |
| Other gas whetted | Stainless mesh, viton O-ring seal parts |
| Size | 82mm x 34mm |
| Weight | 0.15Kg |

Dimensions



Easidew Desiccator - Ref: ED-05-01