Moisture Measurement in Naval and Military Applications

There are many processes and applications within the armed forces which require accurate measurement and control of moisture content, humidity or dew point.

Cockpit breathing air

Breathing air for aircraft pilots is stored in pressurised cylinders. High pressure air must be dry in order to prevent freezing of the components and supply when the air is expanded.
A Michell Instruments Easidew Portable or MDM300 can be used to measure the dew point of the air supply prior to use, in order to confirm the air is within specifications for dryness.

Missile launch systems

Most modern naval (and commercial) seagoing vessels utilise compressed air dryers to provide dry air for numerous uses. High pressure air must be dry to prevent freeze-up of valves and components when the high pressure (typically 3000-5000 psig) air is expanded. Low pressure air must be dry to prevent condensation and resultant component damage.

Calibration

Where large numbers of dew-point or RH transmitters are used, it is often required, for standards purposes, that they are verified regularly against a calibrated fundamental reference. The OptiCal Humidity calibrator or S8000 Integrale are both suitable for this task, providing easy comparison with the accuracy and repeatability of cooled mirror measurements.

Dry Air Supplies

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An Easidew Transmitter, complete with Monitor and/or ES10 Sampling system, provides full online measurement, including an additional current output and two alarms for triggering of external systems when the dew point of the air leaves a user defined range.
Spot check measurements at points of use for full peace of

mind about the gas supply can be facilitated by either an Easidew Portable Hygrometer, or by the fully featured MDM300 Dew-Point Hygrometer – which has the facility to log up to 8000 measurements.

Periscope purge gas

Dry inert gas or dry air is used to ensure that the complex lens systems in submarine periscopes do not mist.
To insure this, the MDM300 and Optidew have been used in a number of naval vessels to regularly check the state of the purge gas after servicing and maintenance, and during on-board use.

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