How to keep recording videos at high altitudes?

Airborne Video Recorders have the ability to record surveillance videos during military missions. However, when the level of humidity is high and the temperature drops, the internal components may be affected. For example, the video tape can stick to the head drum of the video recorder damaging the equipment. To avoid this kind of inconvenience, the environment inside the video recorder must be kept dry and there should be approximately 10°C temperature difference between the ambient temperature and the dewpoint temperature.

Brownell's desiccators provide protection against corrosion, dampness and contamination on the internal components of the recorder. To reduce the existing or incoming moisture to acceptable levels, the tubular body of desiccators is filled with a powerful adsorbing agent, such as **silica gel**. **Breather Desiccators** usually incorporate a relative humidity indicator in order to allow visual indication of the saturation level of the desiccant. The humidity indicator is blue when the desiccant is dry and turns pink when saturated. This shows that the cartridge should be replaced.

The breather desiccator **BLD2233** is commonly used on airborne equipments, which experience pressure differentials from atmospheric or altitude changes. The pressure differential generates an inward flow that has to be dried in order to ensure that the internal humidity remains within the requirements. If the pressure differential is reversed, the direction of the airflow is also reversed until **pressure equalisation** is achieved.

In case of rapid changes of pressure commonly experienced by the airborne equipment, we recommend to install also a **two-way pressure relief valve** on the Video Recorder.

A polytetrafluoroethylene (PTFE) coated wire mesh placed on the inlet prevents ingress of dust and other small containments. The weather shield located above the inlet offers added protection.

The desiccator life can be prolonged if the equipment has been dry gas purged to remove **hygroscopicity** before use. Periodical purging operations are highly recommended to remove the hygroscopic moisture. For this application, Brownell developed **NEPS1000**, a single-point nitrogen purge system, where the nitrogen enters and exits the component through the same port. The cavity is flooded with pressurised ultra-dry nitrogen with dewpoint lower than –30°C in order to create a benign environment. This will prevent a change of state of the water vapour and create a perfectly dry environment inside the video recorder.

Nitrogen is widely used for moisture protection because of its limited reactive capability with other gases. Unlike oxygen, nitrogen is a stable and safe gas.

The product is currently available in **three portable versions**, of which NEPS1000 ADVANTAGE is the original version and benefits of nitrogen purging.

NEPS1000 PUMPED and NEPS1000 DUAL VOLTAGE instead, have been designed for those situations in which bottled dry gas is not available. These versions are equipped with a self-contained pump and moisture adsorbing molecular sieves. The difference between these two versions lies in the double power socket installed in the NEPS1000 DUAL VOLTAGE suited for both field and workshop environment.