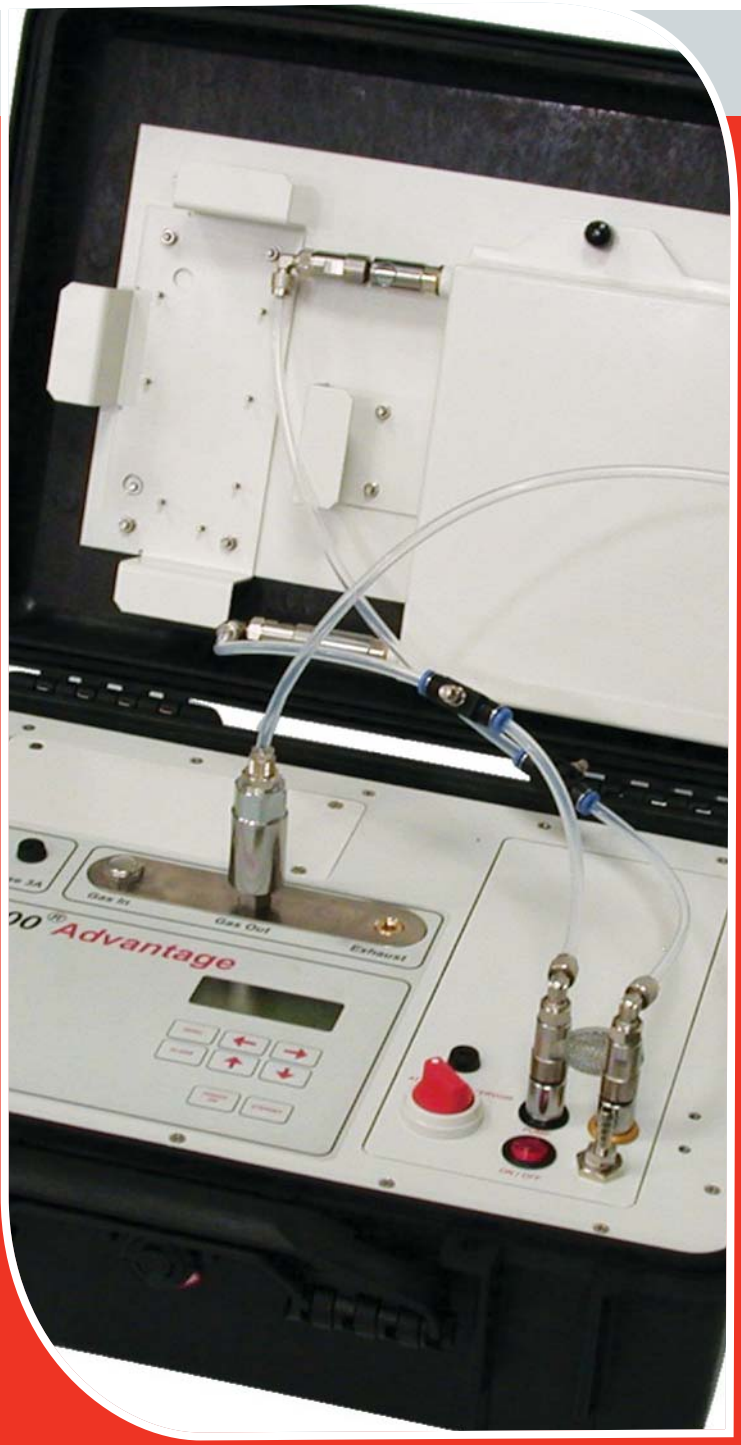
NEPS1000

Dry gas purging system

The **NEPS1000 PUMPED** is the latest development for improving the effective and efficient use of dry gas purging for electronic, optical, high voltage, laser systems and equipment requiring gas drying.

High humidity and water vapour can have a deleterious impact on the use, operation and long-term reliability of instruments and systems.



BROWNELL LIMITED

SPECIALIST PURGING TECHNOLOGY

Moisture Protection Technology

KEY FEATURES & BENEFITS

- Fully Self Contained for Portable use
- Easy to Use Single Connection Purging
- Dewpoint and Pressure Readout
- Remote Dewpoint Sensing Option
- Portable and Robust
- User Programmable
- Automatic Purging Operation
- Dewpointstat Gas Control
- Dewpoint Display from +20ºC to -80ºC
- Maintainable Online
- NATO Approved

The Complete Purging System

The NEPS1000 PUMPED is designed to maximise the dry gas purging process for humidity removal. A host of capabilities and functionality for effective and efficient control during the purging operation.

Easy Operation

NEPS1000 PUMPED is fully self-contained. Simply connect the equipment to be processed to the purge connection and the NEPS 1000 PUMPED is ready to operate.

Economic Gas Use

One of the NEPS 1000 PUMPED benefits is its use of the purge gas used for purging. By using a single pipe connection the purge gas is controlled and dispersed throughout the instrument or system being purged. During the depressurisation phase of purging the purge gas is isolated.

User Friendly

The NEPS1000 PUMPED has easy to use selectable programming which can be set to view process control values and display dewpoint measurements in ºC or ºF with pressure in Kpa or psi. Highly visible liquid displays provide constant information and readouts during the operation and use of the NEPS1000 PUMPED.

Equipment Leak Testing

The NEPS1000 PUMPED comes with a selection of four in built leak testing capabilities to verify the sealing standard of the equipment to be purged. Pressure testing can be conducted at pressures from 10.3 Kpa (1.5 psi) to 34.4 Kpa (5.0 psi). Pressure leakrate display resolution is 0.01 psi.

Gas Quality Testing

The dryness of the gas is important to the effectiveness of the purging operation and the NEPS1000 PUMPED dewpoint monitor can be used to check the dryness of the gas prior to commencing the purging operation.

Universal Voltage

The NEPS1000 PUMPED can be operated from global country voltages and frequencies ranging from 100 to 230 VAC at 50-60 Hz. There is also a 24VDC version available.

Single Point Purging

Traditional conditioning with dry nitrogen, gas or air depends on the flow of gas from an entry connection to an outlet port. In this mode, the gas will follow the simplest and easiest path to the outlet connection. This can often lead to “pockets” of unconditioned gas.

Using the NEPS1000 PUMPED, the mode of operation changes to a more efficient single connection purging process, which also uses a choice of three selectable pressure cycles to ensure the dry gas influences all the space volume within an equipment.

During the purge process, the NEPS1000 PUMPED monitors the pressure. When the pre-selected setting is achieved the supply gas is isolated and an internal control valve allows the gas to flow to the exhaust port where the dewpoint of the mixed air/gas is measured. The purging process then continues until the desired dewpoint protection has been achieved.

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BROWNELL OFFERS A COMPREHENSIVE RANGE OF PURGING INSTRUMENTS FOR MOISTURE REMOVAL IN EQUIPMENTS AND SYSTEMS TO PREVENT CONDENSATION AND HUMIDITY DAMAGE.

NEPS1000 PUMPED APPLICATIONS

- Optical Instruments
- LASER Systems
- SF6 Switch Gear
- Printed Circuit Board Conditioning
- Double Glazing Cavities
- Electronic Housings
- Workstations
- Storage Containers
- Surveillance Instruments
- Underwater Equipment
- Thermal Imaging
- Image Intensifiers

What is dewpoint?

The temperature to which air or gas must be cooled for the formation of condensation or frost.

This means dewpoint is ideal for stating the quality control requirement for purging an instrument or enclosure.

Why Purge?
Modern systems that use printed circuit boards, wires, electronic components, rubbers and plastics in their construction will have potentially significant amounts of moisture. The amount of in built moisture often described as “hygroscopic moisture” can be significant in comparison to the moisture (water vapour) contained within the air.

Why Choose NEPS 1000 PUMPED?

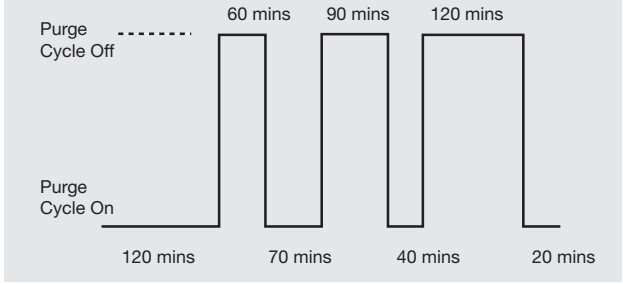
To maintain the flexibility and portability of NEPS1000 PUMPED three models are available fitted with a self contained pump and moisture adsorbing molecular sieves. All the operating functions of the Standard NEPS1000 Advantage are available with the pumped version and no additional gas supply is required.

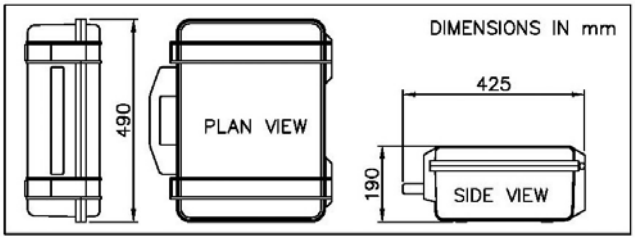
The moisture adsorber can be readily exchanged when it is saturated and requires replacement. The NEPS1000 PUMPED contains one kilo of moisture adsorber, molecular sieves which are capable of adsorbing more than 20% of its own weight in moisture vapour before it is saturated. The NEPS1000 PUMPED is ideally suited if bottled dry gas is not available or cannot be handled or transported to the point of use.

What is the Dewpointstat function?

The Dewpointstat function of the NEPS1000 PUMPED is able to monitor and control the removal of in built hygroscopic moisture within a system or equipment.

Hygroscopic Removal Phase





NEPS1000 PUMPED Dewpointstat

The Dewpointstat feature of the NEPS1000 PUMPED enables users to determine the amount of moisture contained within an equipment and to implement an optimised gas and purging procedure for production control.

Using the remote dewpoint sensor option, the NEPS1000 PUMPED monitors the progress of the dewpoint dryness within the equipment being purged and switches off and isolates the dry gas when the selected dewpoint is achieved. A data logger can be used to monitor the dewpoint degradation time, this allows the water vapour transmission rate (WVTR) to be calculated. The rate of water removal (hygroscopic loading) can also be determined during the initial purging phase.

NEPS1000 PUMPED used with to single point purge a telescopic sight to a dewpoint of –40ºC as part of a routine maintenance schedule.

TECHNICAL SPECIFICATIONS

Selectable Pressure Ranges	10.3 Kpa (1.5 psi) 17.2 Kpa (2.5 psi) 34.4 Kpa (5.0 psi)
Display Range Pressure	0 to 34.4 Kpa (0-5.0 psi)
Display Range Dewpoint	(Selectable) +20ºC to -80ºC dewpoint +68ºF to -94ºF dewpoint
Resolution	0.1ºC dewpoint
Accuracy	+/- 2ºC dewpoint
Data Output Pressure	0 - 5 Volts
Data Output Dewpoint	0 - 5 Volts
NSN:	
NP240	**4440-99-912-6628**
NP110	**4440-99-404-2677**
NP24	**6625-99-821-5023**

Power	230 volt 50 hz-60 hz 100 volt 50 hz-60 hz 24 volt DC
Power Consumption	3 amps
Dimensions	490W x 425D x 190H (closed)
Weight	15 kilograms
Ingress Protection	IP54 (Closed Case)
Operating Temp	-10ºC to +50ºC
Storage Temp	-50ºC to + 65ºC
Flowrate (typical)	20 litres per minute
Optional extras	See NEPS Accessories
Order Code:	**NP 240** **NP110** **NP24**

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