



**SABLE SYSTEMS INTERNATIONAL**

*By Scientists, for Scientists*

## DG-4 HUMIDITY/ DEWPOINT GENERATOR



- Control dewpoint to to 0.1 °C
- Control relative humidity (RH) to 1%
- Stable RH - even when temperature varies
- Standalone or computer-controllable
- Record and display any humidity/dewpoint profile\*\*

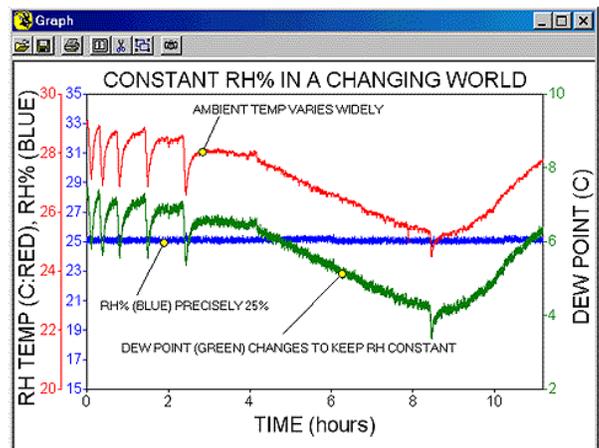
**PRECISE CONTROL** Our DG-4 dew point generator/relative humidity controller can produce any dew point over the range of 0 to 40 °C. More than that - the DG-4 system can control the relative humidity of its airstream at a distant location while compensating for temperature. (Control unit shown at left). Sable Systems pioneered this technology that now gives you easy operation and accurate regulation of relative humidity at the point where it's needed. This development is both economical and environmentally responsible - no messy chemical drying or disposal is needed.

**MANY APPLICATIONS.** The DG-4 uses a library of built-in, proprietary 32-bit mathematical routines derived from NIST physical data. The algorithms have been exhaustively verified.

**CONVENIENCE:** Apart from generating a controlled-humidity air stream with myriads of applications in research and industry, the DG-4 can also be used for calibrating humidity and other water vapor sensors simply, accurately and economically.

**THE DG-4 CONTINUOUSLY CALCULATES** the dew point that will cause the water vapor pressure at that ambient temperature to yield the desired RH. You can see this principle in operation in the picture to the right. The ambient temperature (red) fluctuates, but the humidity (blue) remains constant because the dew point (green) is continuously controlled to yield a constant, tightly regulated RH of 25%.

\*\* Graph produced with optional DG software



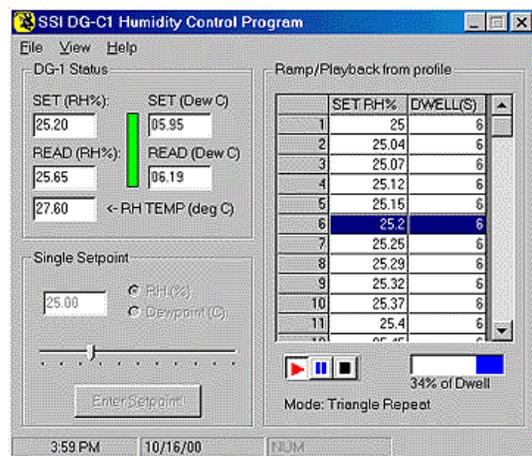
**ADVANTAGES.** The DG-4 generates and controls dewpoint and relative humidity using a *primary physical standard*, the dew point of a controlled air stream. Flow water-saturated air through the condenser unit, and air at a precise dew point emerges. A condenser, rather than the traditional water bubbler and temperature-controlled water bath, allows for faster, compact, reliable control and gives you the real-time agility required to track ambient temperature changes and regulate humidity. The alternatives, saturated salt solutions or ordinary dew point generators will not accomplish this task; they could involve tedious calculation, a location that is temperature-controlled to within a small fraction of a degree, or use costly, disposable, toxic chemicals. The DG-4 eliminates the need for mistake-prone calculations and gives you unmatched flexibility in the control of RH.

**DG-4 SPECIFICATIONS:**

- Technology:** Solid state heat pump (Peltier effect)
- Dewpoint Range:** 1-45 degrees C, in 0.1 °C increments
- Relative Humidity Range:** At 25 °C target temperature, approximately 20 - 95+ RH% attainable; settable from 0-100%RH in 0.1%RH increments
- Water Vapor Pressure Range:** 0.65 kPa - 9.6 kPa, in 0.01 kPa increments
- Accuracy and Resolution:** Dewpoint accuracy 0.25 C, resolution 0.01 C
- Regulation:** PID (Proportional Integral Derivative), dewpoint deviation < 0.05 C RMS typical
- Flow Rate:** 25 ml/minute to 3 liters/minute
- Condensate removal:** Miniature diaphragm pump, user-settable actuation from 1/minute to 1/30 minutes, actuation duration user-settable from 1 sec to 30 seconds
- Analog Output:** Multi-range for relative humidity, dewpoint or water vapor pressure; 0-5V output with 16 bit resolution
- Serial Data Output:** Comma delimited ASCII string of all measured parameters, standard RS-232 serial, polled or auto-sent at user definable intervals from 0.5 - 600 seconds.
- Internal A/D Conversion:** 16 bits
- User Interface:** Intuitive menu system backed by nonvolatile memory of user settings
- Panel Display:** Digital 2-line alphanumeric LCD, simultaneous display of set and read values
- Tubing Fittings:** Nickel plated barb fittings for 1/8" (3 mm) i.d. flexible or semi-rigid tubing; other fittings available by special order
- Power Requirements:** 12 VDC at 8A. Universal Input (90-240 VAC power adapter supplied)
- Operating Temperature:** 5 - 35 °C, relative humidity non-condensing

DG-C1 SOFTWARE is available for Windows 98 and up (or fully compatible) and requires an RS-232 serial port or USB-serial port adapter. It is not required for operation of the DG-4.

- SET either humidity or dewpoint from the computer; setpoint value and actual status updated continuously.
- Two modes are available, single setpoint or ramp/playback. A calculated profile is shown at right.
- Output log with both setpoint value and actual value for documentation purposes.



**Three Year Warranty  
Free, Lifetime Technical Support**