

HYGROGEN2

HUMIDITY AND TEMPERATURE GENERATOR FOR THE CALIBRATION OF ALL TYPES OF RH INSTRUMENTS

BASED ON AIRCHIP DIGITAL TECHNOLOGY

TRANSPORTABLE RH AND TEMPERATURE CALIBRATION LABORATORY

- Generates stable humidity and temperature conditions
- Transportable calibration solution
- Humidity equilibrium typically in 3 minutes
- Calibrate up to five RH probes simultaneously
- Integrated touch screen PC and USB hub
- External heated sample loop for reference hygrometer connection
- Easy-to-use graphical user interface



SECOND GENERATION HYGROGEN: A NEW LEVEL OF HUMIDITY CALIBRATION

Since its launch, HygroGen has become the benchmark for transportable RH and temperature calibrators. Hundreds of users worldwide have identified that this tool for rapid generation of fixed humidity and temperature conditions can save significant amounts of time when performing RH and temperature calibrations.

The pharmaceutical industry especially has embraced the HygroGen's capability to calibrate over an instruments working range to satisfy the stringent demands of Quality and Compliance regulations. The ability to transport the HygroGen to the installation location means that a complete system qualification is possible.

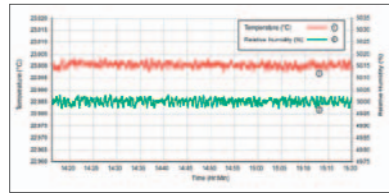
The second generation HygroGen builds on the excellence of the first series with higher specifications, additional features and improved design. Using a state-of-the-art embedded controller with touch screen user interface has been developed to provide the user with simplified setup and configuration tools. This includes a programmer function so that multiple set-point changes can be user defined. The embedded platform also provides additional features such as an integrated nine port USB hub, external DVI monitor connection, integrated data acquisition and calibration adjustment software.

The design objective was to create the perfect balance of form and function - precise generation of stable conditions, whilst being easy-to-use and maintain.

The new HygroGen2

Standard Features:

- HygroGen2 has a control range of 0...60 °C. Improved mechanical design provides better thermal performance in terms of speed of response, control stability and temperature gradients. Temperature control stability at equilibrium is better than or equal to ± 0.05 K.



- External heated sample points for connection of a chilled mirror reference hygrometer are standard. This allows the user to precisely verify the calibration of the HygroClip control probe at any time, or to reduce overall calibration uncertainty.



- Touch screen interface
- Easy to use
- LC display

- Humidity generation is by a piezoelectric element with digital PID control allowing optimised response across the temperature range. At equilibrium RH control is better than or equal to ± 0.1 %rh.

- Integrated USB ports for the connection of peripheral devices such as a mouse and keyboard. Rotronic probes with USB cables can also be connected.

- The HygroGen manual includes an uncertainty framework to allow users to derive their own calibration uncertainty.

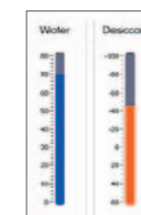
- User programmable set-points allow automatic changes of temperature and humidity set-points with pre-defined dwell times. Once set, this ramp/soak function that instruments can be calibrated at multiple points without further user intervention.



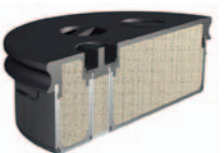
- Integrated Rotronic HW4 data acquisition and calibration software provides automatic collection of measured values and digital adjustment of compatible probes.



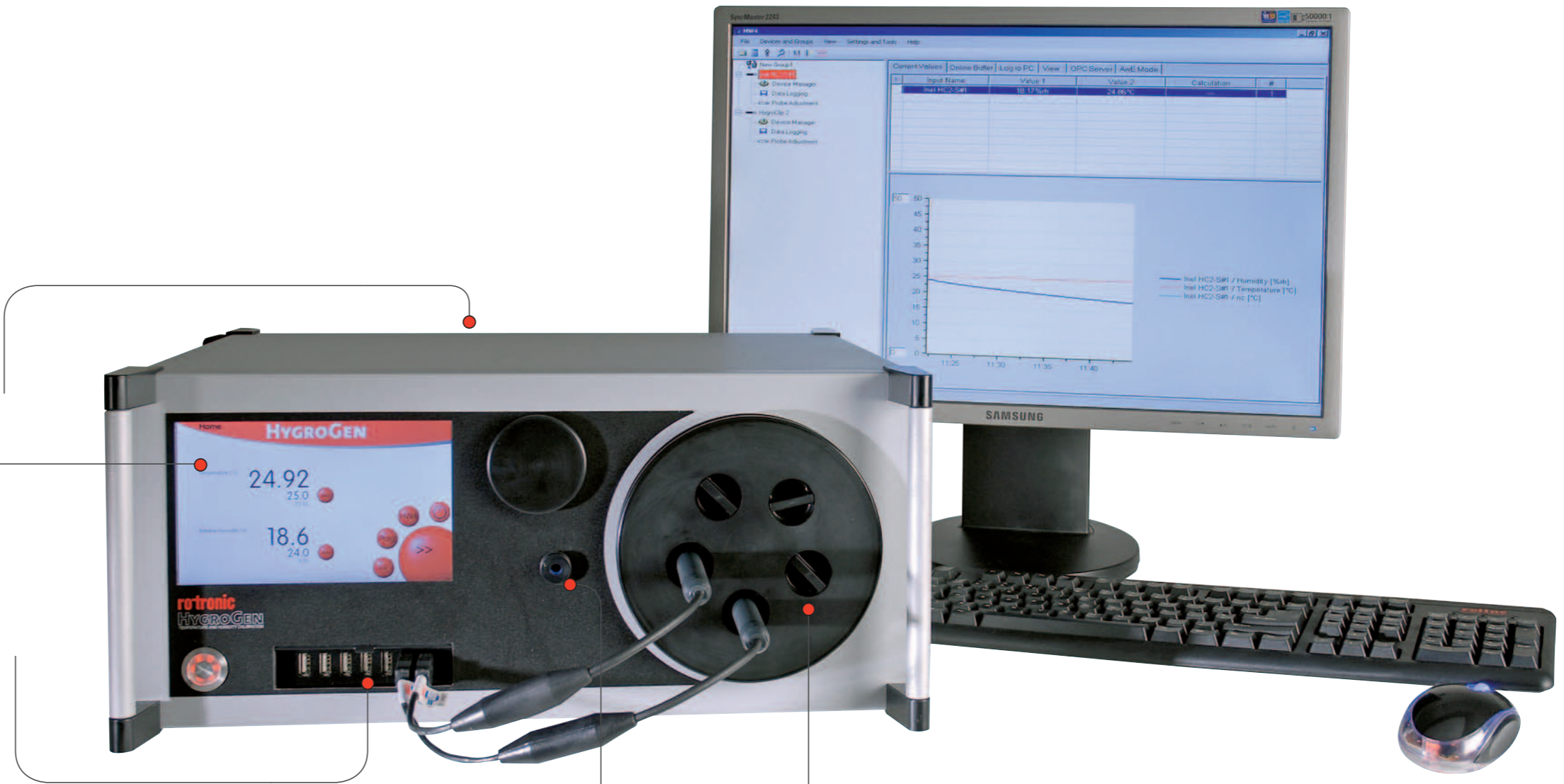
- The internal water reservoir now incorporates on-screen level monitoring so the user can monitor and control the water level for the duration of a calibration.
- An integrated UV Sterilisation system within the water reservoir eliminates any issues caused by water borne contaminants.



- A new door design with increased insulation and secure locking mechanism. Flexible probe insertion ports with sleeves for almost any prob diameter are available.



- Dry air is supplied from an internal desiccant cell that has integrated condition monitoring so the user can identify when the desiccant needs to be regenerated or replaced.



TECHNICAL INFORMATION.

| HygroGen2 Specification | Relative Humidity | Temperature |
|------------------------------------|---|---|
| Control | | |
| Sensor | HygroClip2-S, capacitive RH sensor, Pt100 temperature sensor | |
| Type | Embedded multiple input PID controller, touch screen graphical user interface | |
| Range | 5...95 %rh | 0...60 °C |
| Stability at Equilibrium | <0.1 %rh | <0.01 °C |
| Chamber temperature gradients | <0.05 °C (15...50 °C), <0.1 °C (5...60 °C), ±0.15 at 0 °C | |
| Generation method | Mixed flow with desiccant dryer cell and piezoelectric humidifier | Peltier thermoelectric element with radial chamber mixing fan |
| Performance | | |
| Response time | 3 mins (35 to 80 % change) | 5 mins (20 to 30 °C change) |
| Control probe specification | ±0.8 %rh (23 °C ±5) ±2 %rh (0...60 °C) | ±0.1 K (23 °C ±5) ±0.3 K (0...60 °C) |
| Typical calibration uncertainty | ±1.5 %rh (k=2) at 23 °C | ±0.15 °C (k=2) 15...50 °C |
| Standard Features | | |
| Water level | Low and high alarm, bar graph status indication | |
| Water quality | UV sterilisation, auto time cycling | |
| Desiccant condition | Condition monitored during control operation | |
| USB ports | 7 front, 2 rear | |
| Reference connection | Temperature controlled outlet and inlet, 6mm fittings | |
| Programmer function | 20 user program memory, up to 200 set-point changes per program | |
| Mechanical & Electrical | | |
| Chamber volume | 2 litres, effective working volume 1.5 litres | |
| Power | 110...240 VAC 50/60 Hz, 3A | |
| Enclosure | Powder coated aluminium, IP20, 450 x 406 x 205mm (Max.) | |
| Weight | 13 kg | |
| CE | Safety: EN 61010-1:2001 EMC: EN 61326-1:2006EN 61326-1:2006 & EN 61000-6-1:2007 | |

Ordering Information:

For the full range of options and current pricing, please contact Rotronic or your local distributor ([details at www.rotronic-humidity.com](http://www.rotronic-humidity.com))

| Order code: | Description |
|---------------------|---|
| HG2-S | HygroGen with touch screen user interface, set-point control and programmer function, heated sample loop, 1x desiccant cell, 1x fill syringe, embedded HW4-P software. Order chamber door separately. |
| | Doors & Fittings |
| HG2-D-11111 | HG2 door 5x15 mm ports (for 5 HygroClips) with 5 bungs, order specific B1 sleeves for smaller probe diameters |
| HG2-D-88888 | HG2 door 5x30 mm ports with 5 bungs, order specific B8 sleeves to suit smaller probe diameters |
| HG2-D-HFW | HygroGen probe door for HF3 wall mount transmitters |
| HG2-DP-00000 | HG2 clear acrylic door (no ports) for instruments with displays |
| HG2-D-xxxxx | HG2 fully custom door for >30 mm, see xx diameter codes |
| HG2-B1 | 15 mm Bung |
| HG2-B1-xx | B1 probe sleeves (15 mm external, internal probe diameter see xx codes) |
| HG2-B8 | 30 mm Bung |
| HG2-B8-xx | B8 probe sleeves (30 mm external, internal probe diameter see xx codes) |
| | Spares |
| HG2-DC | Additional desiccant cell, pre-filled with molecular sieve |
| HG2-FILL | Fill tube and syringe |
| HG2-DES-3 | Molecular sieve desiccant (3 kg) |
| | Accessories |
| HG2-AUTOCAL | HG2 embedded HygroClip2 auto calibration adjustment module |
| HG2-TB | Transit bag, lightweight |
| HG2-TC | HygroGen heavy-duty transit case |
| HG2-MON | DVI monitor and lead |

AirChip3000 technology is integral to the whole ROTRONIC product range. Its technical excellence paired with the worlds leading RH sensor means ROTRONIC provide the very best humidity measurement - whatever the application.

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LEADING IN HUMIDITY MEASUREMENT

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