



HYGROGEN2

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

BASED ON AIRCHIP DIGITAL TECHNOLOGY



PORTABLE RH AND TEMPERATURE CALIBRATION LABORATORY

- Generates stable humidity and temperature conditions
- Calibration solution for the laboratory and on-site
- Humidity equilibrium typically in 5 minutes
- Calibrate up to six RH probes simultaneously
- **NEW** «AutoCal» automated calibration (optional)
- Standard ranges 5...95 %rh, 0...60 °C
- **NEW** Extended Ranges 2...99 %rh, -5...60 °C (optional)
- Integrated touch screen PC with 9 USB ports
- Integrated FDA 21CFR part II compliant Rotronic HW4 software
- External heated sample loop for reference hygrometer connection
- Easy-to-use graphical user interface



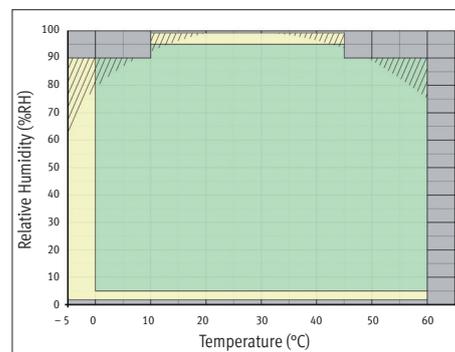
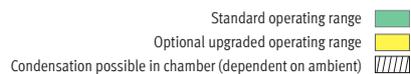
HYGROGEN2: THE BENCHMARK FOR HUMIDITY CALIBRATION

Since its launch, HygroGen has defined the standard for portable humidity and temperature calibration systems. Hundreds of users worldwide have identified that this tool for rapid generation of stable temperature and humidity conditions can save significant amounts of time in performing calibrations of all types of humidity instruments. The HygroGen2 further satisfies the stringent demands of quality and compliance regulations with its ability to calibrate instruments over their full working range, and is embraced throughout the pharmaceutical industry as the leading instrument in its class. Being portable and robust, it can be set up at the installation location allowing for complete system qualification.

HygroGen2

Standard Features:

- HygroGen2 has a temperature control range of 0...60 °C and humidity range of 5...95 %RH. Temperature gradients are less than 0.1 °C across the full range and it has a temperature control stability at equilibrium better than ± 0.02 K with humidity control stability better than 0.1 %RH. Speed of response is such that equilibrium is established typically within 5 minutes.



- 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
- LCD 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 HygroGen2 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 enables instruments to be calibrated at multiple points without further user intervention.



- Integrated FDA 21CFR part II compliant Rotronic HW4-P data acquisition and calibration software provides automatic collection of measured values and digital adjustment of compatible probes.



HYGROGEN2

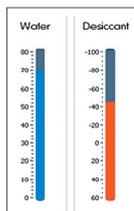
NOW WITH EXTENDED RANGES AND FULL AUTOMATION

The HygroGen2 builds on the excellence of the first series with higher specifications, additional features and improved design. The embedded controller with touch screen interface allows for simplified set up and configuration, including a programmer function so that multiple set-point changes can be defined. A built-in 9-port USB hub allows for the connection of Rotronic devices to the integrated HW4 data acquisition and calibration software.

The HygroGen2 is now available with optional extended ranges and the unique AutoCal automated calibration and adjustment function, which generates a PDF calibration certificate and option to adjust for each probe under test.



- 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 effects caused by waterborne contaminants.

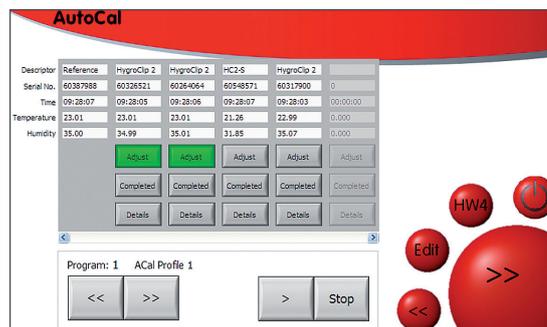


ENHANCED FEATURES

AutoCal

Automated calibration of up to 6 HC2 probes connected via AC3001 USB adaptor:

- Option to automatically adjust 1 temperature and 10 humidity points
- Creates a PDF calibration certificate for each probe under test
- 20 user programs (up to 200 set-points per program)



Range Extensions

- Low temperature range extension -5...60 °C (Standard 0...60 °C)
- Humidity range extension 2...99 %RH (Standard 5...95 %RH)

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



- Dry air is supplied via 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	HC2-S, capacitive RH sensor, Pt100 temperature sensor	
Type	Embedded multiple input PID controller, touch screen graphical user interface	
Range	5...95 %RH (2...99 %RH with range extension option)	0...60 °C (-5...60 °C with range extension option)
Stability at equilibrium	<0.1 %RH	<0.02 °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 %RH 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, automatic time cycling	
Desiccant condition	Condition monitored during control operation	
USB ports	7 front, 2 rear	
Reference connection	Temperature controlled outlet and inlet, 6 mm fittings	
Programmer function	20 user program memory, up to 200 set-point changes per program	
Optional Features	AutoCal / Humidity and Low Temperature Range Extensions	
Mechanical & Electrical		
Chamber volume	2 litres, effective working volume 1.5 litres, Ø 110 mm, 145 mm deep	
Power	110...240 VAC 50/60 Hz, 3A	
Enclosure	Powder coated aluminium/steel, IP20, 450 x 406 x 205mm (Max.)	
Weight	13 kg	
CE	Safety: EN 61010-1:2001 EMC: EN 61326-1:2006 EN 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.com)

Order code	Description
HG2-S	HygroGen with touch screen user interface, set-point control and programmer function, heated sample loop, 1 x desiccant cell, 1 x 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-DP-00000	HG2 clear acrylic door (no ports) for instruments with displays
HG2-D-xxxxx	HG2 fully customised 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
	Accessories
HG2-AC3001-L/050	HygroClip2 calibration cable, 50 cm, HC2 to USB
HG2-TB	Transit bag, lightweight
	Optional Features
HG2-AutoCal-Code	HG2 AutoCal function, activation code
HG2-TempExt-Code	HG2 Low Temperature Extension -5...60 °C, activation code
HG2-HumiExt-Code	HG2 Humidity Extension 2...99 %RH, activation code
HG2-AutoC/RangeE-C	HG2 AutoCal, Low Temperature and Humidity Range Extensions, activation code bundle



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