GEO Calibration

Model 2000 SP

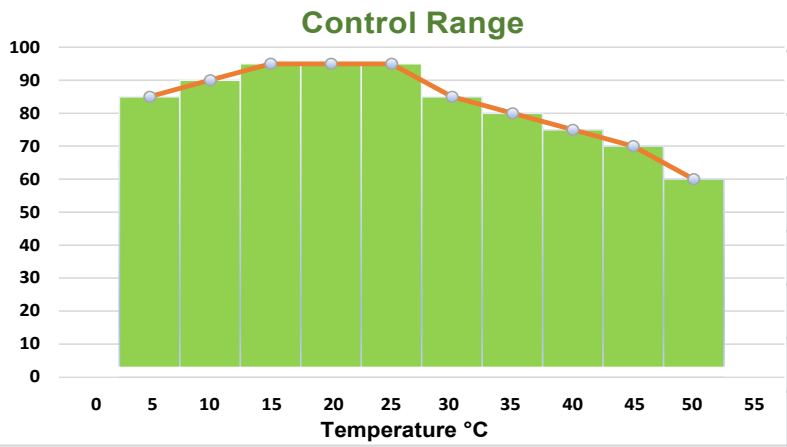
Extended Range

PRODUCT OVERVIEW

GENERAL SPECIFICATIONS

CALIBRATION TO (17025 TRACEABLE TO NIST)	TRANSFER STANDARD	No Charge	
	CERTIFICATE	17025 Validation (Additional Fees Apply)	
OPERATING AMBIENT CONDITIONS	TEMPERATURE	18 °C to 28 °C	
	HUMIDITY	Up to 80 % RH	
STORAGE CONDITIONS	TEMPERATURE	-20 °C to 50 °C	
	HUMIDITY	0 % to 95 % RH (non-condensing)	
ALTITUDE	2000 m		
CALIBRATION SYSTEM ACCURACY	TEMPERATURE	± 0.10 °C Or Better Typically ± 0.05 °C	*Based on Probe Accuracy
	HUMIDITY	± 1.00 % RH Or Better Specially tuned systems can be as good as ± 0.60 %	*Based on Probe Accuracy
	CONTROLLER TYPE	PID Controller	
UNIFORMITY	TEMPERATURE	0.10 °C Or Better Typically ± 0.05 °C	
	HUMIDITY	0.30 % RH @ 18 °C to 28 °C Or Better Typically ± 0.25 %	
STABILITY	TEMPERATURE	0.05 °C	
	HUMIDITY	0.15 % RH @ 18 °C to 28 °C	
WARM-UP PERIOD	AMBIENT CONDITIONS	30 Minutes Maximum	
	COLD	30 Minutes	

RESOLUTION	DISPLAY	Temperature	0.01 °C
		Humidity	0.01 % RH
		Dew Point	0.01 °C (Calculated)
	USB	Temperature	0.01 °C
		Humidity	0.01 % RH



RAMP / SOAK RATE OF CHANGE
*Depends on ambient and desiccant conditions

TEMPERATURE	High → Low	1.50 °C / minute *Typical
	Low → High	5.00 °C / minute *Typical
HUMIDITY	High → Low	5.00 % RH / minute *Typical
	Low → High	10.00 % RH / minute *Typical

CONTROL RANGE***Extended Range (See Page 3)**

TEMPERATURE	5 °C to 55 °C		
HUMIDITY@ 18°C	5 % to 95 % RH	HUMIDITY@ 35°C	5 % to 80 % RH
HUMIDITY@ 23°C	5 % to 95 % RH	HUMIDITY@ 40°C	5 % to 75 % RH
HUMIDITY@ 30°C	5 % to 85 % RH	HUMIDITY@ 50°C	5 % to 60 % RH

CONSUMABLES

WATER	RESERVOIR	200 ml
	SPILL RESISTANT	Yes
	REQUIRED FLUID	Distilled Water Only
	EST. REFILL PERIOD	15 Days to 1 Month (Typical) *Depends on Usage
	FILL INDICATOR	Floating Ball
DESICCANT	TYPE	Molecular Sieve
	REPLACEMENT	When Indicating Desiccant is 3/4 Used
	REPLACEMENT FREQUENCY	Depends Entirely on User Workload
	LOCATION	Left Side Mounted
	FASTENER	Desiccant Mounting Bracket Provided
RECALIBRATION	FREQUENCY	Depends on User Uncertainty Requirements
		Once Per Year Recommended

**Information subject to change, please visit our website for updates at www.geocalibration.com.

MECHANICAL

GENERATOR DIMENSIONS	**Measurement Type**	**Width**	**Depth**	**Height**
	Metric	55.33 cm	40.65 cm	24.65 cm
	English	21.78 in	16.02 in	9.70 in
CHAMBER DIMENSIONS	**Measurement Type**	**Diameter**	**Depth**	
	Metric	14.50 cm	20.00 cm	
	English	5.71 in	7.87 in	
WORKING DIMENSIONS AND VOLUME	**Measurement Type**	**Diameter**	**Depth**	
	Metric	12.50 cm	10.90 cm	
	English	4.92 in	4.29 in	
	Volume	1.5 Liter Effective Working Volume		
WEIGHT	Unit Only	Metric	15.5 kg	
		English	34.0 lb	
POWER SUPPLY		12 Volt DC @ 1A		
STANDARD PORT QUANTITY	Depends on doors	Availability: 6 Ports, 5 Ports, 4 Ports, 2 Ports		
CHILLED MIRROR PORTS	In and Out			
			Probe Range	**Actual Unit Range**
PROBE ANALOG OUTPUTS AVAILABLE	0 - 1 Volt	Temperature	- 40.00 to + 60.00 °C	+ 5.00 to + 60.00 °C
		Humidity	0 to + 100.00 %	+ 5.00 to + 95.00 %

*** Extended Ranges for Temperature and Humidity

Upon users request GEO is Offering the extended ranges for both Temperature and Humidity which are as following:

EXTENDED CONTROL RANGE			
TEMPERATURE	2 °C to 58 °C (Normal is 5 °C to 55 °C)	**HUMIDITY@ 35°C**	2 % to 80 % RH (Normal is 5% to 80%)
HUMIDITY@ 18°C	2 % to 95 % RH (Normal is 5% to 95%)	**HUMIDITY@ 40°C**	2 % to 75 % RH (Normal is 5% to 75%)
HUMIDITY@ 23°C	2% to 98% RH(Normal is 5% to 95%)	**HUMIDITY@ 50°C**	2 % to 60 % RH (Normal is 5% to 60%)
HUMIDITY@ 30°C	2 % to 85 % RH (Normal is 5% to 85%)		

1.The Temperature ranges are not guaranteed if the environment Temperature is not controlled to 23 °C. User will see stable and extended results if environmental temperature is controlled at 23 °C or 72 °F. The normal temperature working ranges in Model 2000SP are 18 °C to 28 °C for different Humidity ranges. The Extended Ranges can help the user to test Hygrometers for lower or higher temperature values, although for Rh it may not be a great use at the extended temperature ranges.

2.The Humidity ranges are affected by the temperature especially for the high humidity above 70%. On high humidity if the temperature drops, it can go to Dew Point and can form the Condensation. To prevent condensation, user must bring the temperature to desired value first and then bring the Humidity to desired value. The extended Rh ranges are offered for the Hygrometers that needed to be calibrated below 5% or above 95%. It will not get the best calibration tolerances because the probe goes out of linear range.
Note: To go to the lower Rh, such as 2%, user must make sure the Desiccant is reasonably good. For high Rh, such as 98%, user have to use the insulated door only.

3.The following table shows the order how user should set the set points to get the best results without getting the Dew Point condition or Condensation , avoiding the unnecessary use of Desiccant and make the system more efficient.

Table Temperature vs Humidity relationship and how to get the best result:

Temperature	**Humidity**
NO Change	Set Rh Hi/LO within Specification Range
Low to High	Set Rh Hi/LO within Specification Range
High to Low	If Rh is Higher than 70%, Set Rh to 70% first. Set the temperature to desired value and then Set Rh to desired value within Specification Range

* Complete Accessory List is Available at www.geocalibration.com

**Information subject to change, please visit our website for updates at www.geocalibration.com.

GEO Calibration

Humidity Control Company

Proudly Made in the USA

Email: Sales@GeoCalibration.com **Website:** www.GeoCalibration.com

Rev A