

S904

Humidity Calibrator



The S904 is a completely stand-alone and transportable calibrator for humidity sensors, requiring no external services other than mains power. The calibration chamber features 5 interchangeable ports to accommodate virtually any brand, type or model of sensor. This calibrator is ideal for companies or organizations looking to calibrate large numbers of probes in a laboratory or field setting.

The environment within the insulated calibration chamber is temperature controlled using a 4-zone fan-assisted Peltier arrangement for maximum stability, and minimum temperature gradient. The humidity of the circulating air is precisely regulated using a closed-loop control system that functions by proportionally mixing flows of dry and saturated air.

Two highly visible LED panels on the front of the S904 display the current humidity and temperature within the calibration chamber. The response time to a humidity or temperature step change is typically less than 10 minutes, so a simple 3-point calibration can be carried out in under an hour.

With the S904D version, the humidity and temperature set points of the chamber can be controlled with the supplied PC application software, enabling the operator to create completely automated calibration profiles for unattended laboratory operation. The software also gives the ability to monitor, chart and log data from the connected probes and calibration reference on a PC for later analysis. Alternatively, the set points can be controlled manually with the front panel controls - making the S904 ideal for field calibrations where a PC is not available.

The S904 is easy to maintain. The desiccant changes color to indicate when it needs to be recharged and this is visible through a clear window on the front of the unit. Recharging the desiccant is simply a matter of heating it in a conventional oven at +150°C (+302°F) for 3 hours. The water reservoir at the front of the unit shows the current saturator fill level, and makes it easy to top-up with distilled water when required. The only external service required is a single phase power supply.

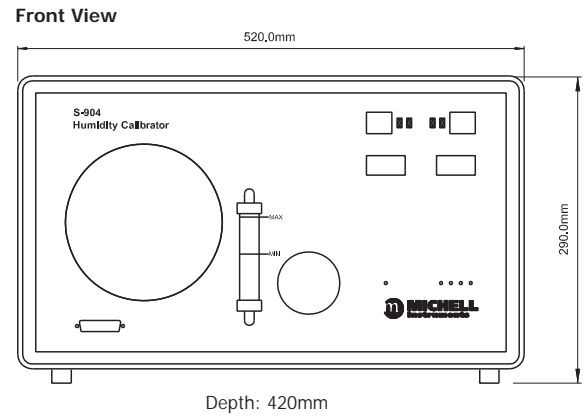
Highlights

- Simple operation and maintenance
- Excellent chamber stability and uniformity
- Manual control or optional straightforward automated set point programming
- Optional in-built data-logging for reference probe and probes under calibration

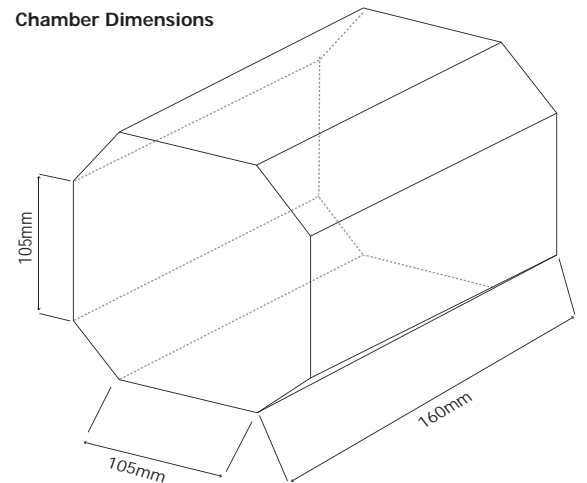
Technical Specifications

Humidity	
Generation range	10–90% RH
Accuracy	≤±1% RH (10–70% RH)
control element	≤±1.5% RH (70–90% RH)
Stability	±0.2% RH (20–80% RH)
Temperature	
Generated range	+10 to +50°C (+50 to +122°F) (lowest T set point = 10°C (18°F) below ambient)
Accuracy	±0.1°C (±0.2°F)
Stability	±0.1°C (±0.2°F)
Chamber	
Ramp rate from	
+20 to +40°C (+68 to +104°F)	1.5°C / minute (2.7°F / minute)
+40 to +20°C (+104 to +68°F)	0.7°C / minute (1.2°F / minute)
Control element	Removable relative humidity sensor
General	
Probe ports	up to 5 – sensor body diameters 5 to 25mm (0.2 to 0.98") accommodated by port adapters
Chamber volume	2000cm ³ (122.1in ³)
Chamber dimensions	105 x 105 x 160mm (4.13 x 4.13 x 6.3") (h x w x d)
Instrument dimensions	290 x 520 x 420mm (11.4 x 20.5 x 16.5") (h x w x d)
Set point resolution	0.1 for humidity and temperature
Displays	3 digit LED, 10mm (0.39") characters
Supply	85 to 264 V AC, 47/63 Hz, 150 VA
Weight	20kg (44lbs)

Dimensions



Chamber Dimensions



Issue No: S904_97200_V3_UK_0613

Please note: Michell Instruments adopts a continuous development program which sometimes necessitates specification changes without notice. Please contact us for latest version.

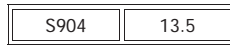
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S904 Humidity Calibrator Order Codes

To construct the order code, select the relevant feature from the tables below, starting with the base model, which is {Feature A} and then add on options to create a string: {Feature A} + {Feature B}

Ordering Example: S904 + 13.5

Base unit, S904, Relative Humidity and Temperature Generator for Humidity and Temperature Calibrations with Port adapter 13.5mm (0.53")



Type {Feature A}	
Base unit, S904, Relative Humidity and Temperature Generator for Humidity and Temperature Calibrations	S904
Base unit - with RS232/USB interface (data-logging software for PC - 6 channel data-logger)	S904-D

Adaptor {Feature B}	
Port adapter 12mm (0.47")	12
Port adapter 13.5mm (0.53")	13.5
Port adapter 14mm (0.55")	14
Port adapter 15mm (0.59")	15
Port adapter 18.5mm (0.73")	18.5
Port adapter 19mm (0.75")	19
Port adapter 24mm (0.94")	24
Port adapter 25mm (0.98")	25

Accessories and Spare Parts

Item	Product / Description
Doors and Door Ports	
A000266	Door with clear window - no ports
A000268	Door without ports
A000263	Door kit with 5 ports. 5 adapters to be specified
A000264	Door kit with 5 ports and 25 adapters (5 x ø19mm (0.75"), 4 x ø12mm (0.47"), ø13.5mm (0.53"), ø15mm (0.59"), ø18.5mm (0.73"), ø24mm (0.94") - and blind stops. Adapter tool included
A000269	Door kit for use with MI Optidew. (Optidew dew-point sensor port adapter, PRT port adapter and 4 x ø19mm (0.75") adapters. Adapter tool included)
A000273	Polymer port adpt ø18.5mm (0.73") to ø3mm (0.19") (for Optidew probe)
A000290	M30x1 Molded polymer port adpt & blind stop (to be modified by customer)
A000290X	Polymer port adpt ø client specific & blind stop
A000291	Polymer port adpt for ø12mm (0.47") probe, blind stop (M30x1)
A000292	Polymer port adpt for ø13.5mm (0.53") probe, blind stop (M30x1)
A000293	Polymer port adpt for ø14mm (0.55") probe, blind stop (M30x1)
A000294	Polymer port adpt for ø15mm (0.59") probe, blind stop (M30x1)
A000295	Polymer port adpt for ø18.5mm (0.73") probe, blind stop (M30x1)
A000296	Polymer port adpt for ø19mm (0.75") probe, blind stop (M30x1)
A000297	Polymer port adpt for ø24mm (0.95") probe, blind stop (M30x1)
A000298	Polymer port adpt for ø25mm (0.98") probe, blind stop (M30x1)
A000277	Blind stop for Optidew adapter
A000278	Blind stop for PRT adapter
A000200	ø18.5mm (0.73") Blind stop
A000265	Tool for changing the port adapters
Miscellaneous	
A000240	Drying module
A000242	Water bottle
A000171	0.25kg (0.55lbs) desiccant (orange)
HT961T00	Control sensor
OAL-TC	Transport Case for OptiCal and S904

Issue No: S904 Order Codes_97200_V1_UK_0613

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