

DG-1, DG-2, DG-3, DG-4 Dew Point Generators

The DG range of dew point generators provides flexibility and control at a competitive price. Based on the volumetric mixing of dry and wet gases, the instruments can be controlled either manually or automatically to suit a wide range of calibration applications.



DG-4

Benefits

- Operation range of -75 to 20Cdp suiting the vast majority of calibration requirements
- Simple to use via manual selection, push button or computer control
- Flexibility in generating precise target dew point temperature
- Fast response time
- Stable humidity generation

Applications

- Calibration standard laboratories
- Research and Development
- Aerospace & shipping industries
- Industrial gas producers
- Instrument manufacturers

DG Series

Proven Michell Technology for Dew Point Generators

The DG dew point generators are based on the volumetric mixing of dry and wet gases. The mixing is either controlled by flow metering valves for a manual control of the target dew point or automated using a bank of pre-set electromagnetic metering valves to select the wet-dry mixing ratios.

A dry gas source is fed to the generator and split into two streams. One stream is saturated with water vapour at a controlled temperature and pressure whilst the other remains dry. The two gas streams are then mixed at atmospheric pressure, in a single or two-stage process to generate the target humidity level.

Highest Calibration Confidence and Traceability

Our DG humidity generators are tested and calibrated using three independent methods – initially via calibrated flow meters, followed by inter-comparison to Michell's in-house calibration systems and finally by fine tuning against our UKAS traceable chilled mirror hygrometer. This provides the highest level of user confidence and traceability to International Humidity Standards.

High Accuracy Calibration System

Michell Instruments recommends using the DG series in combination with our chilled mirror products to provide the highest measurement certainty. Michell Instruments offers a range of hygrometers depending on the accuracy and the measurement range requirements.

DG-1, DG-2 for modularity

The product has two possible configurations. The DG-1, single-stage mixing, provides dew points ranging from -40 to +20°Cdp.



Drier dew points, down to -75°Cdp, can be reached by the DG-2 which has a second stage of gas-flow mixing. The great strengths of the DG-2 are its ease of use and its flexibility in manually generating an accurate target dew point by fine tuning the gas mix via its flow metering valves. Infinite mixing is achievable within its working range.

DG-3 for simple operation

The DG-3 is our entry-level, single-stage mixing humidity generator. It is operated by manually mixing the two gas streams using flow control valves. The DG-3 provides flows up to 5nlmin⁻¹ and generates dew points ranging from -40 to +20°Cdp. Infinite mixing is achievable within its working range.



DG-4 for maximum flexibility

The DG-4 is a two-stage push-button dew-point generator which operates in the range of -75 to +20°Cdp. It can be delivered with between 3 and 10 factory-set dew point settings, selectable from the front panel keypad. Its RS232 communication port enables further automation, particularly when used in conjunction with a UKAS certified hygrometer. The DG-4 offers maximum flexibility via its pre-set values combined with the mixing ability of the DG-3.



Ordering Codes

Order codes	Product description
DG-{1}-{2}	Dew point generator for manual operation

Suffix:	Order code	Description	Range
{1} - DG configuration	1	1 stage mixing manual operation 3 flow meters and metering valves	-40 to +20 °C
	2	2 stage mixing manual operation 5 flow meters and metering valves	-75 to +20 °C
	3	Single stage mixing manual operation 2 vernier metering valves	-40 to +20 °C
	4	Solenoid operation. Controlled from front panel keypad or through RS232 comms. 3 set points (max 10) in addition to full dry and saturated points. Set points to be specified at time of order	-75 to +20 °C
	4SP	Additional generation points - maximum of 10 set points. DG4 only	
{2} - Power supply configuration	110	90/120 VAC power supply	
	240	220/260 VAC power supply	

Please note: the DG series excludes air compressors and air dryers. Michell Instruments supplies pressure swing dryers (PSD-2 & PSD-4) separately, depending on the measurement range of interest.

Technical Specifications

	DG-1	DG-2	DG-3	DG-4
Mixing stages	1 stage	2 stage	1 stage	2 stage
Humidity range	-40 to +20°Cdp	-75 to +20°Cdp	-40 to +20°Cdp	-75 to +20°Cdp
Gas supply	6lmin ⁻¹ air at 0.075MPag and -75°Cdp	8lmin ⁻¹ air at 0.075MPag and -75°Cdp	6lmin ⁻¹ air at 0.075MPag and -75°Cdp	8lmin ⁻¹ (max) at 0.075MPag and -75°Cdp
Gas output	1 to 5lmin ⁻¹ air at 0.5 to 1barg			
Filter	Particulate filter			
Saturator	Polycarbonate and porous polyethylene sinter			
Heating	Finned heating elements, 500 watts, fan circulation	Finned heating elements, 300 watts, fan circulation	Finned heating elements, 500 watts, fan circulation	Finned heating elements, 500 watts, fan circulation
Power supply	220/240V, 50Hz or 100/120V; 60Hz			
Storage temperature	+5 to +40°C (with saturators empty)			
Operating temperature	+18 to +24°C			
Enclosure size	19" sub-rack x 6U high x 340 deep	19" sub-rack x 12U high x 400 deep	19" sub-rack x 6U high x 340 deep	19" sub-rack x 12U high x 340 deep
Weight (approx)	20 kg		9 kg	25 kg

Michell Instruments

Michell Instruments is the international leader in the field of gas analysis, moisture and humidity measurement solutions.

With over 30 years' experience, Michell designs and manufactures a wide range of transmitters, instruments and system solutions capable of measuring trace moisture and relative humidity, as well as traces and percentages of oxygen, in diverse applications and industries including compressed air, power generation, process, oil and gas, HVAC, pharmaceutical and many more.

With a fast-growing international subsidiary and distribution network, the Michell Group provides solutions in moisture, humidity and gas analysis for the most demanding applications world-wide.

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**Please note: Michell Instruments adopts a continuous development programme which sometimes necessitates specification changes without notice.
Contact us for latest version. Ref: DG-1108**