

MDM300

Advanced Dewpoint Hygrometer

A high-speed dew-point hygrometer for repeatable, fast and accurate moisture content measurements in the field. This lightweight, portable instrument allows far more measurements per working hour than any other comparable product. Logged data can be downloaded wirelessly via a Bluetooth connection eliminating the need to carry connecting cables.



MDM300 with an external transmitter (optional)

MDM300

Highlights

- Repeatedly fast measurements in less than 10 minutes for T95 down to -70°C dp
- Long battery life: more than 48 hours of typical usage between charges
- Best in its class: 1°C dp accuracy
- External 4-20mA device input for dew-point, temperature or pressure transmitters
- Bluetooth connection for trouble-free download of data
- Built in sampling system to 300 bar with external options to 400 bar
- Lightweight: less than 1.5kg
- Easy operation: just switch on and measure

Applications

- Monitoring of desiccant dryers for compressed air or plastic moulding equipment
- Moisture measurement in high-voltage switchgear quench gas
- Dew point in natural gas, process and pipelines
- Industrial gas quality
- Medical gas quality
- Dew-point measurement in metallurgical applications
- And many more...

Michell MDM300

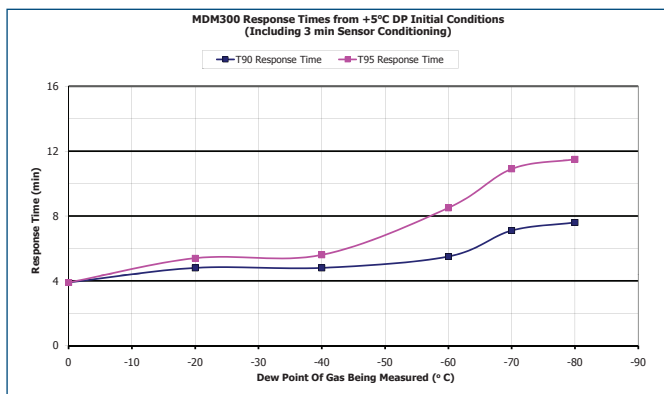
With more than 30 years' experience in moisture measurement Michell Instruments understands what is required by the user when it comes to spot check measurements of dew point or moisture content in the field.

The MDM300 includes all the features needed for efficient work. An extremely fast response and accurate, stable measurement is complemented by an instrument which is easy to use, has data-logging and built in sampling components as standard, and can be supplied with a range of accessories including a stand-alone sampling system and a professional carry case. It is IP66/NEMA 4 rated, and therefore suitable for demanding outdoor applications.

Features

Increased efficiency due to fast measurement

Faster response to low dew points reduces the waiting time for every measurement, not just the first of the day. This allows the user to make many more measurements each day, dramatically increasing work efficiency when compared to other instruments on the market. The MDM300 gives a measurement down to -70°C dp in less than 10 minutes for T95.



Long battery life for more productivity

Efficient batteries and power management circuitry provide the user with up to 48 hours of typical measurements in the field between charges. A flat battery can be re-charged to 90% of its potential within 20 minutes. Less waiting time means more measurement time in the field.

Best accuracy

Best-in-class accuracy of 1°C dew point gives the user better measurement confidence and workload coverage.

External sensor connection via 4-20mA loop-powered input

External sensors for the measurement of dew point, pressure or temperature can easily be connected to the MDM300 to display the values or further increase accuracy via pressure and temperature compensated measurements. In addition the MDM300 can be used to check and recalibrate Michell Easidew dewpoint transmitters, reducing downtime and calibration costs.



Bluetooth wireless connection

The MDM300 utilises the latest Bluetooth technology to provide wireless communications for instrument set-up and for downloading logged data. No missing cables means a more efficient and simple remote connection saving the user time and money.

Versatile sampling

The MDM300 offers versatile sampling arrangements ranging from simple fixed orifices for low pressure measurement to configurable high pressure sampling systems up to 400 barg widely used in natural gas or other demanding process environments. These in turn ensure an accurate measurement and provide the protection that will guarantee long term stability and sensor life.

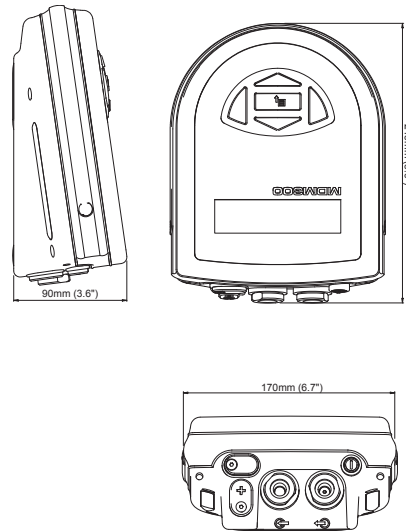


Simple to use

The menu-driven display, easily accessible gas connections and application software means that the user can quickly and easily set up the instrument and be taking measurements within minutes. All measurement parameters are available at a touch. The keys can be operated in rough environmental conditions where the operator may need gloved hands.



Dimensions in mm



Ordering Information

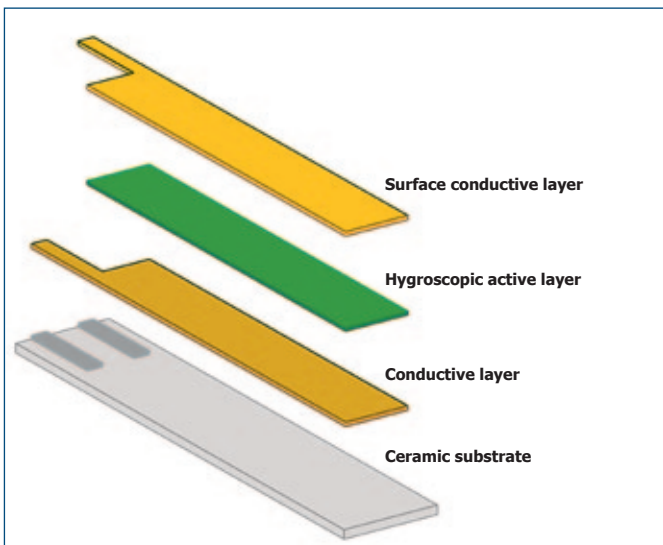
Order code	Description
MDM300 STD	MDM300 Advanced Dewpoint Hygrometer Standard version

Accessories available
Carry bag
Gas fittings – various sizes available
External dew-point sensor
Cable for external dew-point sensor – various lengths available
External temperature sensor – various cable lengths available
External pressure sensor – various cable lengths available
<i>Please contact us for a full list of accessories and spares with order codes and prices</i>

Technology

The MDM300 uses Michell’s highly developed ceramic impedance sensor, which is constructed using state-of-the-art thin and thick film techniques. Operation of the sensor depends upon the adsorption of water vapour into a porous non-conducting “sandwich” between two conductive layers built on top of a base ceramic substrate. The active sensor layer is very thin – less than one micron and the porous top conductor that allows transmission of water vapour into the sensor is less than one nano-metre.

The resulting sensor responds rapidly to changes in moisture – both in detecting moisture and also when being dried. It is very rugged and gives 1°C dew-point accuracy coupled with excellent long-term reliability and stability.



Michell ceramic sensor tile layers

Technical Specifications

Performance

Measurement Technology	Michell ceramic sensor
Accuracy	± 1°C from -60 to +20°C dew point ± 2°C from -100 to -60°C dew point ± 0.2°C temperature
Measurement Range	Calibrated -100/+20°C dew point Readings to +30°C dew point
Measurement Units	°C, °F, K dew point ppm _v , ppm _w for air, N ₂ , H ₂ , CO ₂ , SF ₆ Gas temperature: %RH, gm ³ , gkg ⁻¹ Option: active pressure (bara/g, psig, MPa, KPa)
Resolution (display)	0.1 for all dp derived units and autoranging where appropriate, e.g. ppm
Resolution (measurement)	0.01°C dew point
Typical Response Speed	T95 in ≤10 minutes to -70°C
Measurement System Repeatability	Better than 0.1°C
Measurement System Stability	0.1°C
Measurement System Hysteresis	0.05°C

Electrical input/output

Auxiliary Inputs	4-20mA loop-powered external input selectable as either dew point, temperature or pressure
Battery Type	NiMH 4.8V
Battery Operating Life	More than 48 hours of typical usage between charges
Battery Accessibility	Internally mounted only
Battery Charger	Intelligent charger (supplied)

Operating conditions

Operating Pressure Range	300 barg max (in high-pressure applications, up to 400 bar; external sampling systems with pressure regulator must be used)
Operating Environment	Outdoors 0 to +100% RH condensing
Operating Temperature	-20 to +50°C
Storage/ Transport Temperature	-40 to +70°C

Mechanical specification

Display	Blue LCD graphical display
Enclosure Type	Steel fibre-loaded high-impact polyamide 6
IP/NEMA Rating	IP66/NEMA 4
Gas Connections	1/8" NPT female (other options available)
Flow Across Sensor	0.2 to 2.0 NI/min
Filters	50 micron stainless steel sinter in the inlet port (other porosities available)
Gas Wetted Materials	AISI 316L stainless steel
Outline Dimensions	218mm x 170mm x 90mm (d x w x h)
Weight	1.3kg

General

Data Logging	8 megabytes; Log interval: 5 to 60 second; Logs per log file: Up to 10,000
Communications	(Wireless) Bluetooth™ range up to 5m (version 2.0)
Languages	English, French, German, Italian, Portuguese, Spanish

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Michell Instruments adopts a continuous development programme which sometimes necessitates specification changes without notice.
Issue no: MDM 300_97156_V2_UK_1209