Cermet II

Hygrometer

Technical Specifications

SENSOR

Gas wetted parts	316 stainless steel
Mounting thread	5/8" UNF (parallel)
Sensor body	Stainless steel
Ingress protection	IP54 (NEMA12) with standard connector, (IP66 NEMA 4X with optional moulded connector)
Range	Calibrated from -100 to +20°C dew point
Operating temperature	-40 to +60°C (compensated over -20 to +40°C)
Accuracy	±1°C from -59 to +20°C dew point; ±2°C from -100 to -60 °C dew point
Resolution	0.1°C from -80 to +20°C dew point; 1.0°C from -100 to -80°C dew point

INSTRUMENT

Measurement units	°C, °F dew point; ppm_V with user selectable range and resolution; Lb/mmscf range dependent on pressure (natural gas); gm^{-3} (natural gas)
Secondary measurement variable	Pressure via external transducer 0-30 MPa (300 Barg). Completely user configurable for any industry standard transducer. Automatic compensation for ppm_V, Lb/mmscf and gm^{-3} ranges
Power supply	Universal 85 to 265 V AC; 95 to 370 V DC
Ingress protection	IP54 (NEMA 12); IP66 (NEMA 4X) for front panel only with optional cover
Operating temperature	-20 to +50°C
Relays	2 off 10 A/240 V c/o fully user configurable: can accommodate full range for selected engineering unit + sensor fault alarm functions
Outputs: analogue	4-20 mA fully user configurable and scaleable for range
digital	RS232: provides 2-way communication - full data access to user and total availability of all set-up

OPTIONS

Power supply	18 to 36 V AC; 9 to 60 V DC
Relays	1 or 2 further 5 A relays (max 4 in total) n/o type fully user configurable: can accommodate full range and full unit choice and sensor fault alarm functions
Outputs: analogue	0-10 V fully user configurable and lscaleable for range
digital	RS485: provides 2-way communication - full data access to user and total availability of all set-up and configuration
Cable	Standard 2 metres (1200 metres max)

Dimensions

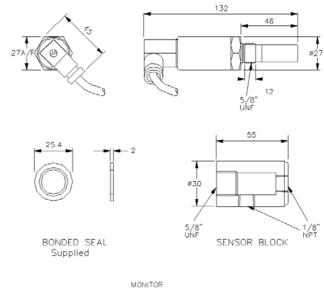

SENSOR

132
46
45
27A/F
ø27
12
5/8" UNF

25.4
2

BONDED SEAL
Supplied

55
ø30
5/8" UNF
1/8" NPT
SENSOR BLOCK

MONITOR

96
5
48
CERMET II Hygrometer
Setup

116
22
40
43
88
MINIMUM CLEARANCE

92
45

PANEL CUTOUT

MICHELL
Instruments

Please note: The accuracy stated represents the typical variation between the instruments under test and a calibrated and corrected reference.

Please contact us for latest version: Cermet II: Ref: CT2-GP-0707

Cermet II

Cermet II

Hygrometer

A full specification on-line hygrometer for the measurement of dew point in air and process gases, with wide operating range and multiple display options

Cermet II

Features

→ Wide measurement range

→ ±1°C accuracy

→ Analogue and digital output

→ Pressure sensor input

→ Up to 4 alarm relays

→ User selectable measurement units

→ Clear and easy to read display

Applications

→ Industrial gases

→ Compressed air dryers

→ Welding gases

→ Glove boxes

→ Medical gases

→ High voltage switchgear (SF_6)

→ ... and many more

MICHELL Instruments

Cermet II
Hygrometer

Complete On-Line Dew Point Measurement

Cermet II is the intelligent choice for reliable on-line measurement of moisture in virtually any gas, across many applications. Cermet II combines Michell's Advanced Ceramic Moisture Sensor and a monitor unit that can be sited up to 1200 metres apart. Whilst Cermet II is so simple to use, it has such flexibility that it can be applied to almost any humidity measurement application. The instrument can display measurement units in °C or °F dew point, ppm_V, Lb/mmscf or gm^{-3} across the measurement range -100 to +20°C dp at pressures up to 40 MPa (400 Barg) and allows active pressure compensation by means of a pressure signal input via the pressure transducer (supplied as an optional extra).

Cermet II Monitor

The Cermet II Monitor is a fully self-contained display system in an 1/8 DIN panel mounting case that indicates the measured humidity parameter and performs pressure compensation (if required). Cermet II also provides current and digital outputs and two 10 A alarm relays. It is protected to IP54 (NEMA 12) and can be supplied to special order with a front panel giving an IP66 (NEMA 4X) rating. Its operating temperature range is -20 to +50°C.
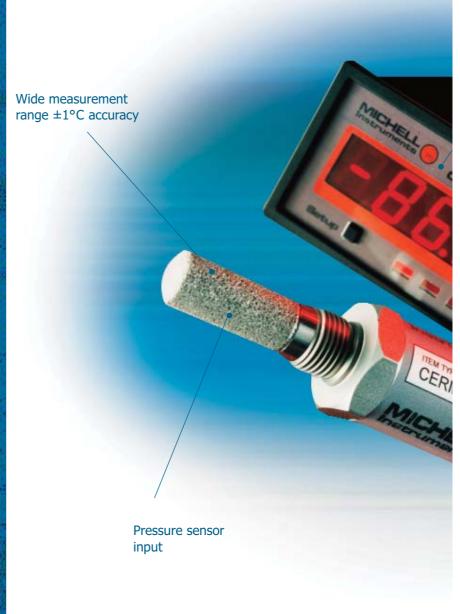
Cermet II Sensor

The Cermet II Sensor uses Michell's Advanced Ceramic Moisture Sensor technology with embedded intelligence. This smart sensor has a measurement range of -100 to +20°C dp at pressures up to 40 MPa (400 Barg) and offers a startling measurement accuracy of better than 1°C dp from -59 to +20°C dp. From -60 to -100°C the accuracy is ±2°C dp. The inclusion of an on-board processor in the sensor electronics enables excellent performance, reliability and interchangeability of sensors. Cermet II's sensor is designed to perform in harsh environments. Constructed in stainless steel, the sensor is also protected to IP65 (NEMA 12) and has an operating temperature range of -40 to +60°C dp.
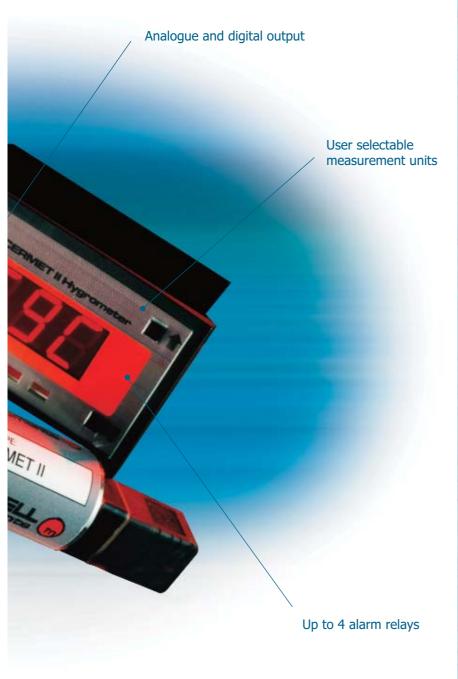
www.michell-instruments.com

Wide measurement range ±1°C accuracy

Pressure sensor input

Easidew Online   Cermet II I.S.

MICHELL
Instruments

Analogue and digital output

User selectable
measurement units

Up to 4 alarm relays

Cermax

Optidew

Extreme Flexibility

The dew point of any gas will vary with its line pressure. Cermet II can compensate for these variations either by the use of a live pressure transducer input, or by the use of a pressure factor calculation input via the instrument front panel.

For control of external devices Cermet II is supplied as standard with two 10 A/240 V c/o, fully user configurable, alarms. These can be set over the full operating range of the instrument, with variable hysteresis for any chosen engineering unit. The alarms can also be configured to flag sensor or cable fault conditions. A further two alarms can be added if required.

Also as standard, Cermet II is supplied with a 4-20 mA output, which is fully configurable for range and scale. In addition a 2-way RS232 digital signal is provided which gives full data access to the user. Optionally a 0-10 V configurable analogue output can be specified, as can an RS485 2-way digital port.

Intrinsically Safe Version*

The Cermet II Monitor is the ideal solution for measurement and display of dew point in a hazardous gas. The Cermet II Monitor must be located in a designated safe area.

Applications

Cermet II can provide the solution to both energy management and quality assurance in the supply of compressed air from heat regenerative, adsorption dryers. The durability of the Advanced Ceramic Moisture Sensor comes to the fore in applications such as pipeline drying using vacuum and dry gas purging techniques.

Peterhead Power Station

*See separate datasheet Ref: CT2-IS-0707