

Easidew PRO I.S.

Intrinsically Safe Moisture Transmitter

The Easidew PRO I.S. transmitter is a reliable and accurate 2-wire dew-point transmitter for trace moisture measurement in a wide range of gas and liquid process applications. Tough and durable, with global certifications and approvals, it is suitable for natural gas, petrochemical, and refinery applications.



Highlights

- Measurement range -110 to +20°Cdp (-166 to +68°Fdp)
- ATEX, IECEx, cCSAus, FM, TR CU Ex certified
- Accuracy $\pm 1^\circ\text{Cdp}$ ($\pm 1.8^\circ\text{Fdp}$)
- 2-wire 4–20 mA output
- Traceable 13-point calibration certificate
- 450 barg (6526.7 psig) pressure rating
- Alternative process connections available
- Material certification to BS EN 10204 3.1
- Moisture in gases and liquids
- Service exchange program
- Oxygen Service cleaned

Applications

- Natural gas production and processing
- Pipeline drying
- Fiscal metering of gas
- LNG production processing and receiving terminals
- Petrochemical process liquids
- Catalyst protection
- Polymer production
- CNG drying
- Metallurgical furnace blanket gas
- Compressed air in hazardous areas



Easidew PRO I.S.

The Durable Intrinsically Safe Dew-Point Transmitter

The Easidew PRO I.S. is designed to measure moisture in demanding process and refinery applications in either gases or liquids. The transmitter offers a wide measurement range of -110 to +20°Cdp (-166 to +68°Fdp), is easily integrated into existing systems and has global certifications for use in hazardous areas.

The unit's robust housing protects the electronics from harsh environmental conditions. Based on Michell's ceramic metal-oxide moisture technology, the Easidew PRO I.S. gives long-term stability and a fast response to changes in moisture.

With high-volume manufacturing capacity, the Easidew PRO I.S. is suitable for use by OEMs and systems integrators, who require short and consistent lead times.

Ease of Installation

With an industry standard process connection, the Easidew PRO I.S. is quick to install and easy to maintain.

Installation features:

- 5/8" process connection and G1/2", 3/4" UNF adaptors
- Electrical connection via M20 gland
- 316 stainless steel transmitter sample block (optional)
- Transmitter mounting bracket (optional)

Global Certifications

The Easidew PRO I.S. dew-point transmitter has global hazardous area certification and traceable calibration to national standards.

Hazardous area approvals:

- IECEx
- ATEX
- cCSAus (US & Canada)
- FM
- TR CU Ex
- CRN

Calibration approval:

- UKAS
- NIST

Optional cleaning for enriched oxygen service

Moisture in Gases or Liquids

The Easidew PRO I.S. is configurable for measuring moisture in both gases and hydrocarbon liquids.

Moisture in gases

The signal from the dew-point transmitter can be scaled to parts per million by volume (ppm_v) in gases in hazardous area applications.

Measurement in ppm_v requires a fixed pressure input of up to 40 MPa which has to be programmed into the

transmitter to accurately compensate gas stream pressure (if different than atmospheric) to determine the true ppm_v of water vapor in the measurement gas.

Factory programmed standard setting is: 0–3000 ppm_v.

Moisture in liquids

The signal from the dew-point transmitter can be scaled to parts per million by weight (ppm_w) in liquids in hazardous area applications.

Measurement in ppm_w requires 6-point saturation constants of the liquid at various temperatures, these need to be programmed into the transmitter to determine precise ppm_w of water vapor in the measurement liquid.

0 to 1000 ppm_w capability – factory configured to customer-required range and application.

Factory programmed common liquids:

- Butane
- Isobutane
- Pentane
- Methane
- Propane
- Ethane
- 1-Butene
- Propylene
- Cyclopentane
- Ethylene

Flexible Configuration

The Easidew PRO I.S. can be programmed to the following standard settings:

- Dew-point range: -110 to +20°Cdp (-166 to +68°Fdp) or -100 to +20°Cdp (-148 to +68°Fdp)
- Moisture content: 0–3000 ppm_v or 0–1000 ppm_w
- Pressure: 0 to 400 barg (0 to 5801.5 psig)
- Temperature: °C or °F
- Saturation constant value (factory programmed common liquids as above)

Non-standard settings are also available and may be requested at the time of order or alternatively, modified by using the Easidew PRO I.S. communication kit and software (see order codes).

Speed of Supply

The transmitter is manufactured within Michell's world-leading high-volume moisture transmitter manufacturing center in the United Kingdom, which ensures reliability and repeatability of delivery and field supported by a network of Michell's global service centers.

- Calibration manufacturing system is traceable to NPL and NIST standards

System Customization

If your application requires a customized sensor solution, we have a specialized design and manufacturing facility to cover your requirements.

Technical Specifications

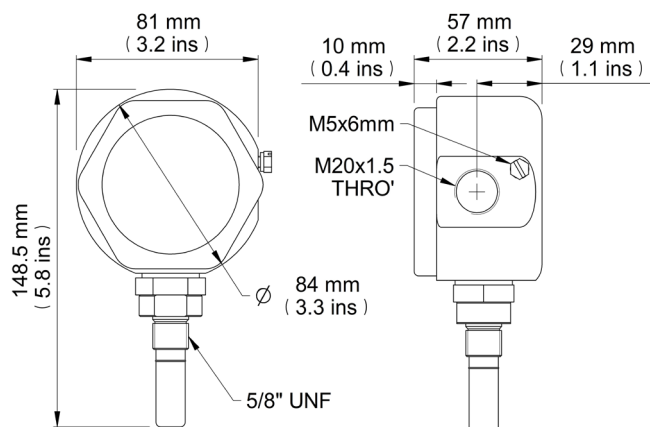
| Product | Easidew PRO I.S. for Gases | | Easidew PRO LQ I.S. for Liquids | |
|--|---|-----------------|---|-----------------|
| Performance Specifications | | | | |
| Measurement range | -110 to +20°C (-166 to +68°F) dew point -100 to +20°C (-148 to +68°F) dew point | | 0 to 1000 ppm _w capability – factory configured to customer-required range and application | |
| Accuracy | ±1°C (±1.8°F) dew point (+20 to -60°C / +68 to -76°F) ±2°C (±3.6°F) dew point (-60 to -110°C / -76 to -166°F) | | | |
| Response time | 5 mins to T95 (dry to wet) | | | |
| Repeatability | 0.5°C (0.9°F) dew point | | | |
| Calibration | Traceable 13-point calibration and certificate | | | |
| Electrical Specifications | | | | |
| Output signal | 4–20 mA (2-wire connection, current source); User configurable over range | | | |
| Output | Dew point or moisture content | | Moisture content | |
| Analog output scaled range | Dew point: -110 to +20°C (-166 to +68°F) or -100 to +20°C (-148 to +68°F) Moisture content in gas: 0 to 3000 ppm _v Non-standard: mg/m ³ , lbs/MMSCF natural gas | | Moisture content in liquid: 0 to 1000 ppm _w capability – factory configured to customer-required range and application | |
| Supply voltage | 12–28 V DC | | | |
| Load resistance | Max 250 Ω @ 12 V (500 Ω @ 24 V) | | | |
| Current consumption | 23 mA max, depending on output signal | | | |
| Saturation constants (for moisture in liquids measurements only) | 6-point look-up table for saturation constants up to 1000 ppm _w over the temperature range 0 to +50°C (32 to +122°F); saturation constants for 10 common liquids can be programmed into the Easidew PRO LQ I.S. via the application software; alternatively the user can program saturation constants manually | | | |
| CE conformity | Approved | | | |
| Operating Specifications | | | | |
| Operating temperature | -40 to +60°C (-40 to +140°F) | | | |
| Compensated Temperature Range | -20 to +50°C (-4 to +122°F) NOTE: The transmitter accuracy statement is only valid for the temperature range: -20/+50°C (-4/+122°F) | | | |
| Storage Temperature | -40 to +60°C (-40 to +140°F) | | | |
| Operating pressure | 45 MPa (450 barg / 6526.7 psig) maximum | | | |
| Flow rate | 1 to 5 NI/min mounted in standard sampling block 0 to 10 m/sec direct insertion | | 0.1 to 0.3L/min through Easidew sample block 0.1 to 1m/s direct insertion | |
| Mechanical Specifications | | | | |
| Ingress protection | IP66 in accordance with standard BS EN 60529:1992; NEMA 4 protection in accordance with standard NEMA 250-2003 | | | |
| Intrinsically safe area certificates * | ATEX: II 1 G Ex ia IIC T4 Ga (–20°C to +70°C) IECEx: Ex ia IIC T4 Ga (–20°C to +70°C) TR CU: 0Ex ia IIC T4 Ga (–20°C to +70°C) FM: Class I, Division 1, Groups A B C D, T4 cCSAus: Class I, Division I Groups A B C D, T4 | | | |
| Russian pattern approval | Russia (GOST-R), Kazakhstan (GOST-K) | | | |
| Canadian pressure vessel cert | C.R.N. – 11 Canadian provinces | | | |
| Oxygen service | Optional: cleaned for enriched oxygen | | | |
| Housing material | 316 stainless steel | | | |
| Filter (sensor protection) | Standard: Stainless steel sintered guard (for protection against fine particulate >80µm) Optional: HDPE guard (for protection against fine particulate >10µm) | | | |
| Process connection and material | 316 stainless steel 5/8" – 18 UNF with bonded seal, G1/2" and 3/4" UNF adaptors available (material certificate to BS EN 10204 3.1 – see ‘accessories and spare parts’ on product order codes) | | | |
| Weight | 1.27kg (2.8lb) | | | |
| Electrical connections | Screw terminal via female M20 x 1.5mm gland | | | |
| Diagnostic conditions (factory programmed) | Condition Sensor fault Under-range dew point Over-range dew point | | Output 23 mA 4 mA 20 mA | |
| Approved galvanic isolators | KFD2-CR-EX1.20200 | KFD0-CS-EX2.50P | MTL5040 | KFD0-CS-EX1.50P |
| | KFD2-CR-EX1.30200 | KFD2-STC4-EX1.H | MTL5541 | MTL5041 |

* The end user has a responsibility to ensure that when installed in the Hazardous Area, the system is compliant with relevant local and international installation Standards for the use of equipment in explosive atmospheres.

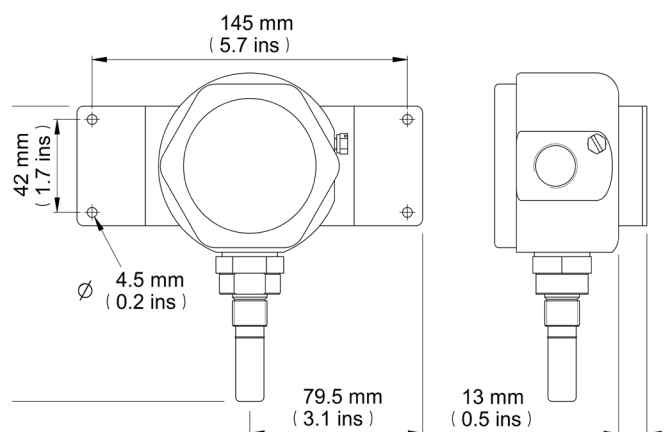
Easidew PRO I.S.

Product Dimensions

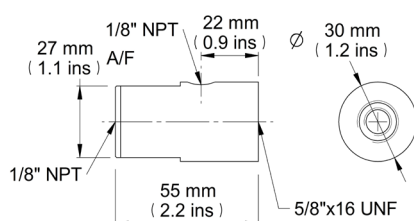
Easidew PRO I.S.



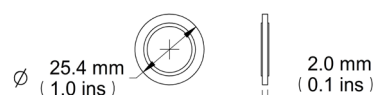
Easidew PRO I.S. with wall mounting bracket



Optional Sample Block



Bonded Seal



Related Process Products



Easidew PRO XP
Explosion-Proof
Moisture Transmitter



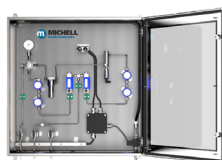
MDM300 I.S. Portable
Dew-Point Hygrometer



Minox i
Intrinsically Safe Oxygen
Transmitter



QMA601
Process Moisture Analyzer



ES70
Sampling System



TDL600
Process Moisture Analyzer



Promet EEExd
Process Moisture Analyzer



XTP601
Oxygen Analyzer

Michell Instruments Ltd, Rotronic Instruments Corp. 135 Engineers Road, Suite 150, Hauppauge NY 11788
Tel: 631 427 3898, Email: us.info@michell.com, Web: www.michell.com/us

Michell Instruments adopts a continuous development programme which sometimes necessitates specification changes without notice.
Issue no: Easidew PRO IS_97208_V10.1_US_1020