

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 $+20^{\circ}\text{Cdp}$ (-166 to $+68^{\circ}\text{Fdp}$)
- ATEX, IECEx, cCSAus, FM, TC TR 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 pressure rating
- Alternative process connections available
- Material certification to BS EN 10204 3.1
- Moisture in gases and liquids
- Service exchange program

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 $+20^{\circ}\text{Cdp}$ (-166 to $+68^{\circ}\text{Fdp}$), 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 moisture sensing 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
- TC TR Ex
- CRN

Calibration approval:

- UKAS
- NIST

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.

Factory programmed standard setting: 0–1000 ppm_w .

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 $+20^{\circ}\text{Cdp}$ (-166 to $+68^{\circ}\text{Fdp}$) or -100 to $+20^{\circ}\text{Cdp}$ (-148 to $+68^{\circ}\text{Fdp}$)
- Moisture content: 0–3000 ppm_v or 0–1000 ppm_w
- Pressure: 0 to 400 barg / 5801 psig
- Temperature: $^{\circ}\text{C}$ or $^{\circ}\text{F}$
- Saturation content 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.

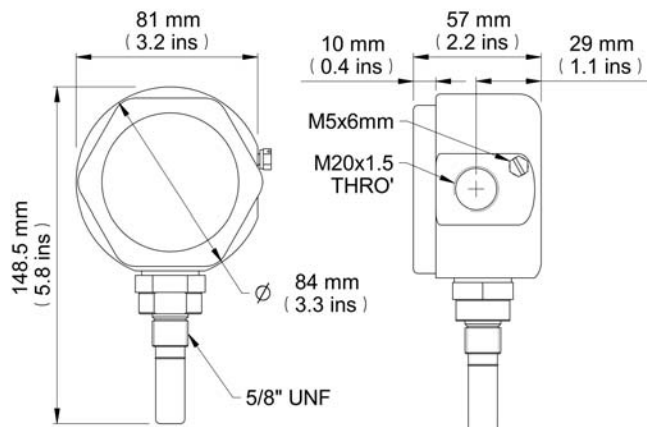
Technical Specifications

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	
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 ideal gas basis		Moisture content in liquid: 0 to 1000 ppm _w Non-standard available upon request	
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 user can program manually	
CE conformity	2004/108/EC, 94/9/EC ATEX, 2006/95/EC			
Operating Specifications				
Operating temperature	−40 to +70°C (−40 to +158°F)			
Operating pressure	45 MPa (450 barg / 6526 psig) maximum			
Flow rate	1 to 5 Nl/min mounted in standard sampling block 0 to 10 m/sec direct insertion			
Temperature coefficient	Temperature compensated across operating temperature range			
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 (−4°F to +158°F))			
	IECEX: Exd ia IIC T4 Ga (−20°C to +70°C (−4°F to +158°F))			
	TC TR Ex: 0Ex ia IIC T4 Ga (−20°C to +70°C (−4°F to +158°F))			
	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			
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 (2.8lbs)			
Electrical connections	Screw terminal via female M20 x 1.5mm gland			
Diagnostic conditions (factory programmed)	Condition	Output		
	Sensor fault	23 mA		
	Under-range dew point	4 mA		
	Over-range dew point	20 mA		
Approved galvanic isolators	KFD2-CR-EX1.20200	KFD0-CS-EX2.50P	MTL5040	
	KFD2-CR-EX1.30200	KFD2-STC4-EX1.H	MTL5541	
	KFD0-CS-EX1.50P	MTL5041		

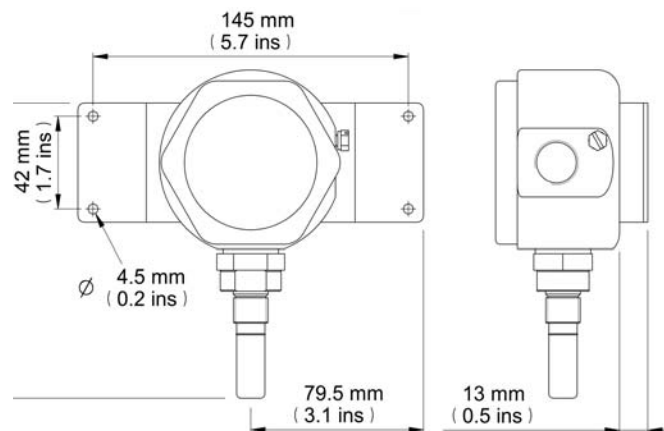
Easidew PRO I.S.

Product Dimensions

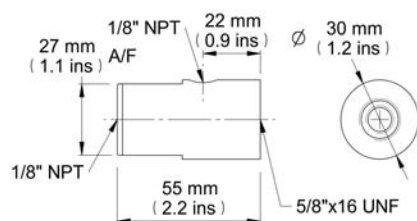
Easidew PRO I.S.



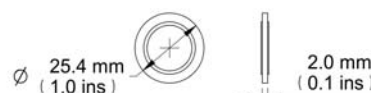
Easidew PRO I.S. with wall mounting bracket



Optional Sample Block



Bonded Seal



Related Process Products



I.S. Field Display
Local monitor



Easidew PRO XP
Explosion Proof
Moisture Transmitter



MDM300 I.S. Portable
Dew-Point Hygrometer



XTP601
Oxygen Analyzer



ES20
Compact Sampling System

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Michell Instruments adopts a continuous development programme which sometimes necessitates specification changes without notice.
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