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
- ATEX, IECEx, cCSAus, FM, TC TR Ex certified
- Accuracy ±1°Cdp
- 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
- 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

MICHELL Instruments

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, 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 consistant 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
- cCSAus (US & Canada)
- TC TR Ex
- ATEX
- FM
- 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.

Factory programmed standard setting: 0–1000 ppm_W.

Factory programmed common liquids:

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

Flexible Configuration

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

- Dew-point range: −110 to +20°Cdp or −100 to +20°Cdp
- Moisture content: 0–3000 ppm_V or 0–1000 ppm_W
- Pressure: 0 to 400 barg
- Temperature: °C or °F
- Saturation contant 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.
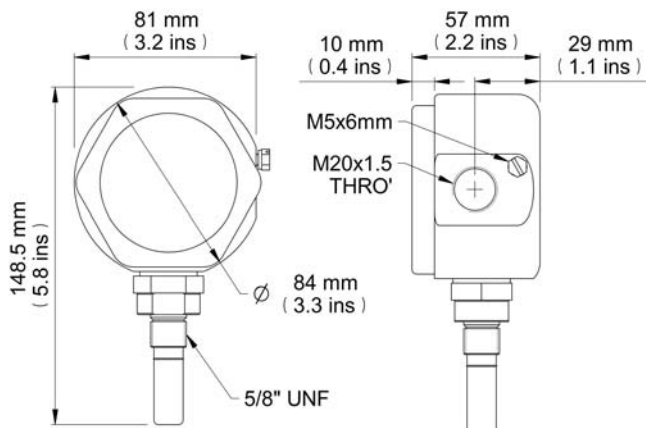
Technical Specifications

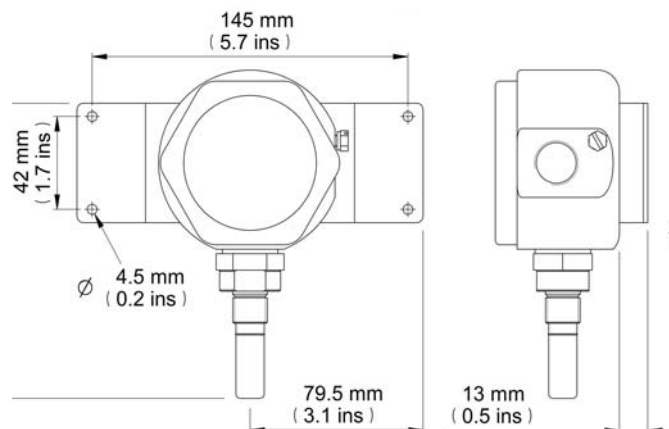| Product	Easidew PRO I.S. for Gases	Easidew PRO LQ I.S. for Liquids
Performance Specifications		
Measurement range	−110 to +20°C dew point −100 to +20°C dew point	0 to 1000 ppm$_W$
Accuracy	±1°C dew point (+20 to −60°C) ±2°C dew point (−60 to −110°C)	
Response time	5 mins to T95 (dry to wet)	
Repeatability	0.5°C 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 or −100 to +20°C **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$_W$ 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; 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	
Compensated Temperature Range	-20 to +50°C NOTE: The transmitter accuracy statement is only valid for the temperature range: -20/+50°C	
Storage Temperature	-40 to +60°C	
Operating pressure	45 MPa (450 barg) maximum	
Flow rate	1 to 5 Nl/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) **TC TR:** 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	
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

MICHELL Instruments

Easidew PRO I.S.

Product Dimensions
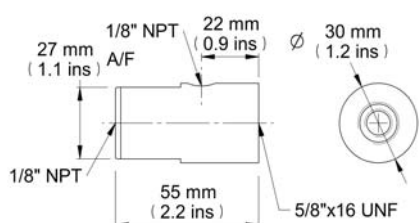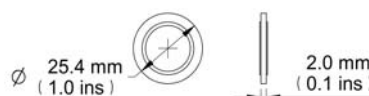
Easidew PRO I.S.

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

ES70
Sampling System