

# Easidew PRO XP

## Explosion Proof Moisture Transmitter

The Easidew PRO XP transmitter is designed to reliably and accurately measure dew point or moisture content in a wide variety of gas or liquid process applications. The robust mechanical design minimises installation time and provides a robust and reliable transmitter for all global explosion and flameproof applications.



### Highlights

- Measurement ranges -110 up to +20°Cdp
- Global explosion / flameproof certification
- Accuracy  $\pm 1^\circ\text{Cdp}$
- 2-wire 4-20 mA output
- Traceable 13-point calibration certificate
- 450 bar pressure rating
- 3/4" UNF industry standard process connection
- EN 10204 3.1 material certification
- Moisture in gases and liquids

### Applications

- Natural gas processing / transmission
- Polymer production
- Biomethane gas production
- Hydrogen coolants
- LNG & LPG production
- Inert & bulk gases
- CNG production
- Hydrocarbon refinery processing
- Heat treating furnaces



## Easidew PRO XP

### The Global Explosion Proof Transmitter

For OEM system integrators and process refineries, there is a critical need to have one rugged transmitter in stock which covers all their explosion proof system needs, irrespective of their worldwide location.

The Easidew PRO XP moisture transmitter is ATEX, CSA, IECEx, GOST globally certified within a single design for use in any North American, European or Asian zone, minimizing cost of stock ownership.

The transmitter has a wide dew-point measurement range of -110 to +20°Cdp with industry-standard process and electrical connections, ensuring low installation costs.

The Easidew PRO XP incorporates the latest Michell advanced ceramic technology providing stable and reliable measurements for all new and replacement moisture applications.

### Ease of Installation

Our in-house design team have developed the product mechanics to ensure the unit can be quickly and economically installed.

- Electrical industry standard process housing with dual conduit entry
- US Industry Standard 3/4" UNF Viton® o-ring process connection
- On-site re-ranging and diagnostic communications tool
- 316 stainless steel transmitter sample block
- Transmitter mounting bracket
- 316 stainless steel housing for offshore applications (ATEX, IECEx)

### Global Certifications

The Easidew PRO XP uniquely has worldwide explosion and flameproof certifications to ensure a single unit has global acceptability.

- Explosion proof approval -  $cCSA_{US}$  (US and Canada)
- Flameproof approval - ATEX
- Flameproof approval - IECEx
- Flameproof approval - GOST
- Canadian pressure vessel approved (CRN)
- EMC/RFI - 2004/108/EC EN 61326-1:2006

### Safety and Integrity

The mechanical design considers the health and safety requirements of the end user offering an ultra-high process pressure barrier, along with meticulous levels of product traceability and quality.

- High performance 450 bar process media barrier
- No process media entry into the process housing
- Gas wetted parts EN 10204 3.1 material certified
- 13 point calibration certificate
- ISO 9001 quality system

### Measurement Performance

The transmitter uses Michell's market leading ceramic measurement technology coupled with the latest generation sophisticated microcontroller electronics to provide accurate and stable measurement across the Easidew PRO XP product life.

- Accuracy  $\pm 1^{\circ}\text{Cdp}$
- Fast response to moisture changes

### Flexibility of Ownership

The Easidew PRO XP has a secondary RS485 communication system, which gives customers the opportunity to re-range and rescale a unit for a variety of gas and non polar liquid moisture measurements.

- Re-ranging 4-20 mA within the -110 to +20°Cdp range
- Moisture scaling - dew point,  $\text{ppm}_v$ ,  $\text{ppm}_w$

### 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 capability to cover your requirements.

## Technical Specifications

Product	Easidew PRO XP for Gases	Easidew PRO XP LQ for Liquids
<b>Performance Specifications</b>		
Measurement range	-110 to +20°C dew point -100 to +20°C dew point	0 to 300 ppm <sub>W</sub> Non-standard available upon request
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	
<b>Electrical Specifications</b>		
Output signal	4-20 mA (2-wire connection, current source); User configurable over range	
Output	Dew point, moisture content in ppm <sub>v</sub>	Moisture content in ppm <sub>W</sub>
Analog output scaled range	Dew point: -110 to +20°C Moisture content in gas: 0-3000 ppm <sub>v</sub> Non-standard available upon request	Moisture content in liquid: 0-300 ppm <sub>W</sub> Non-standard available upon request
Supply voltage	14 to 28 V DC	
Load resistance	Max 250 Ω @ 14 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 300 ppm <sub>W</sub> over the temperature range 0 to +50°C Saturation constants for 8 common liquids can be programmed into the Easidew PRO XP LQ via the application software. Alternatively the user can program saturation constants manually	
CE conformity	2004/108/EC, 94/9/E ATEX directive	
<b>Operating Specifications</b>		
Operating temperature	-20 to +70°C	
Operating pressure	45 MPa (450 barg) maximum	
Flow rate	1 to 5 NI/min mounted in standard sampling block; 0 to 10 m/sec direct insertion	
Temperature coefficient	Temperature compensated across operating temperature range	
<b>Mechanical Specifications</b>		
Ingress protection	IP66 in accordance with standard BS EN 60529:1992; NEMA 4 protection in accordance with standard NEMA 250-2003	
Explosion and flameproof area certificates	<p><b>ATEX:</b> II 2 GD Exd [ia] IIC T6 Gb Ex tb IIIC T80°C Db IP66 Tamb -20°C to +70°C</p> <p><b>IECEx:</b> Exd [ia] IIC T6 Gb Ex tb IIIC T80°C Db IP66 Tamb -20°C to +70°C</p> <p><b>CSA<sub>US</sub>:</b> CLS I, Div1, GRPS ABCD CLS II &amp; III, Div1, GRPS EFG CLS I, Zone 1 AEx/Exd [ia] IIC T6 Zone 21, AEx/Ex tb IIIC T80°C Tamb = -20°C to +70°C IP66</p> <p><b>TC TR EX-Certificate:</b> Pending</p>	
Russian pattern approval	[GOST-R, pending]	
Canadian pressure vessel cert	C.R.N. - all Canadian provinces	
Housing material	<p><b>Standard:</b> Aluminium powder epoxy coated / polyurethane RAL 5009</p> <p><b>Optional:</b> 316 stainless steel (Housing supplied with EN10204 3.1 material cert. if option F2 requested)</p>	
Filter (sensor protection)	<p><b>Standard:</b> Stainless steel sintered guard (for protection against fine particulate &gt;80µm)</p> <p><b>Optional:</b> HDPE guard (for protection against fine particulate &gt;10µm)</p>	
Process connection and material	3/4" - 16 UNF with recessed Viton® o-ring 316 stainless steel	
Weight	Aluminium: 1.6kg, 316 stainless steel: 2.4kg	
Electrical connections	Dual 3/4" NPT gland	
Diagnostic conditions (factory programmed)	<p><b>Condition</b></p> <p>Sensor fault</p> <p>Under-range dew point</p> <p>Over-range dew point</p>	<p><b>Output</b></p> <p>23 mA</p> <p>4 mA</p> <p>20 mA</p>

# Easidew PRO XP

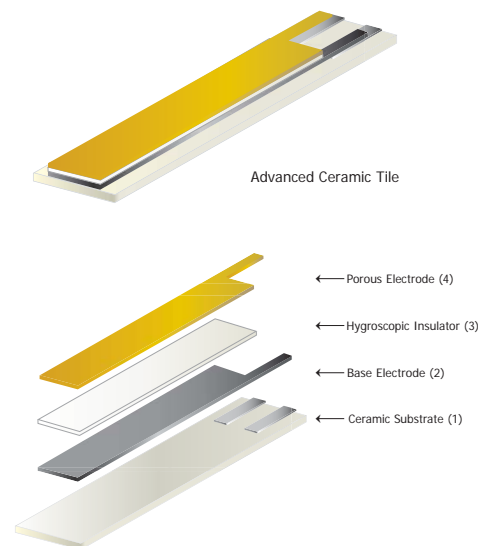
## Advanced Ceramic Sensing Technology

The Easidew transmitter is based on Michell Instruments' advanced ceramic sensor tile. The tile is constructed using state of the art thin-film and thick-film technology and behaves like a parallel-plate capacitor.

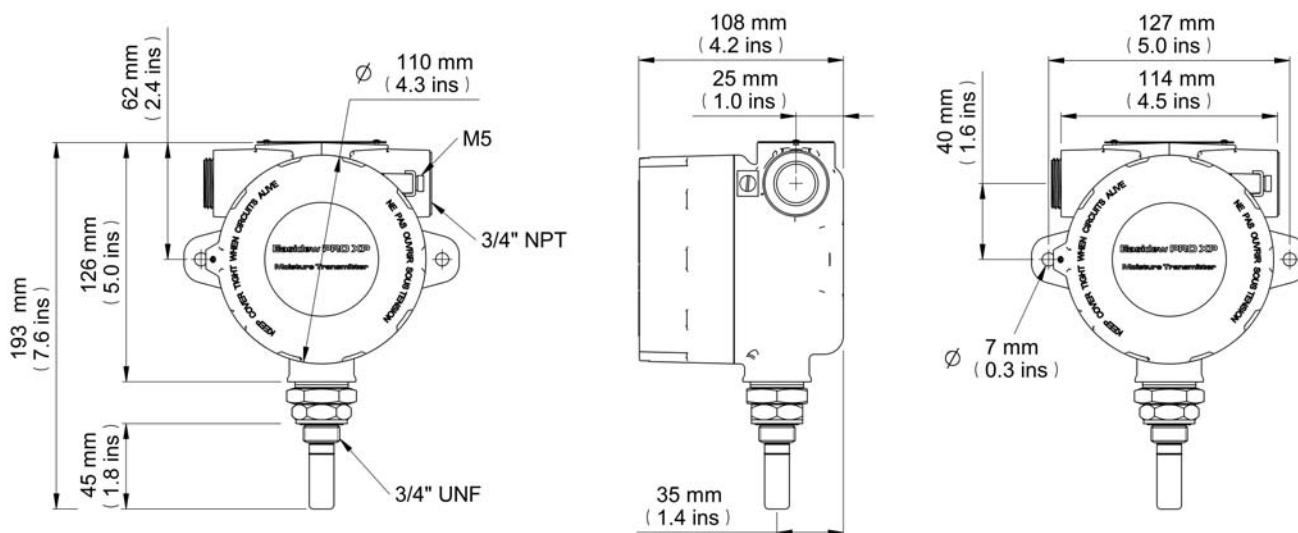
- The first layer that is deposited onto the ceramic substrate (1) is a conductive electrode (2) which forms the base plate of the capacitor.
- The second, active layer is a porous, hygroscopic insulator (3) which forms the dielectric of the capacitor.
- The third layer is a porous, conductive electrode (4) which forms the top plate of the capacitor.

Moisture is easily detected due to the high dielectric strength of water molecules, compared to the low dielectric strength of the hygroscopic active layer, and of the background gas. When water molecules are absorbed or desorped from the active layer, the capacitance increases or decreases respectively.

The films that make up the porous / active layers are precisely engineered to be very thin to enable the sensor to respond rapidly to changes in dew point.



## Product Dimensions



## Related Process Products



Easidew PRO I.S.  
I.S. Dew-Point Transmitter



MDM300 I.S. Portable  
Dew-Point Hygrometer



Promet EExd  
Process Moisture Analyzer



XTP601  
Oxygen Analyzer



ES20  
Compact Sampling System



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



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Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.