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

The Easidew PRO I.S. is a rugged instrinsically safe 2-wire dew-point transmitter for trace moisture measurement in liquids and gases. It is certified for use in Class 1 Div 1 Groups A,B,C and D, EXII 1G EX ia IIC T4 and I.S. I 1 ABCD T4 (Ta = +60°C) hazardous area locations.

Highlights

- ±1°C / ±1.8°F accuracy
- Moisture in gases or liquids capability
- 2-wire connection
- Output configurable in ppm_V and ppm_W moisture content

Simple Operation

The Easidew Pro I.S. is easy to install and operate. It requires a 12 to 28 V DC supply and provides a linear 4-20 mA signal representing moisture content.

Moisture in Gases

The output can be configured by the customer, using simple software, to any range within -100 to +20°C, or -148 to +68°F dew point, or 0 - 3,000 ppm_V in gases. As the Easidew Pro I.S. responds to water vapour pressure in the gas sample, it will give the user an accurate determination of the actual dew-point at pressure up to 40 MPa/400 BarG (5802 psig). Flow rate is not critical to measurement accuracy (1 to 5 Nlmin / 2.1 to 10.5 scfh), though speed of response will be improved by operating a higher sample flow.

Moisture in Liquids

In addition to its moisture in gases capabilities the Easidew PRO I.S. can be used to monitor moisture in non-polar liquids.The Easidew PRO IS is factory programmed to provide an output in ppmw. This requires the saturation constants of the liquid to be programmed into the transmitter either at the factory or by the user, using the application software, available as a free download from www.michell.com

Technical Specifications

Performance

Measurement range (dew point)	-100 to +20°C / -148 to +68°F dew point
Accuracy (dew point)	±1°C / ±1.8°F dew point (+20 to -59.9°Cdp) / (+68 to -75.8°F) ±2°C / ±3.6°F dew point (-60 to -100°C) / (-76 to -148°F)
Response time	5 mins to T95 (dry to wet)
Repeatability	0.5°C / 0.9°F dew point

Electrical output/input

Output signal	4-20 mA (2-wire connection, current source). User configurable over range
Output	Dew point, moisture content for ppm_V, ppm_W
Output range	Dew point: -100 to +20°C / -148 to +68°F Moisture content in gas: 0-3000 ppm_V Moisture content in liquid: 0-3000 ppm_W
Supply voltage	12-28 V DC
Load resistance	Max 250 Ω @ 12 V; 500 Ω @ 24 V
Current consumption	Max 23 mA depending on output signal
Saturation constants (For moisture in liquids measurements only)	6-point look-up table for saturation constants up to 3000 ppm_W over the temperature range 0 to 50°C. Saturation constants for 8 common liquids can be programmed into the Easidew PRO I.S. via the application software. Alternatively the user can program saturation constants manually.

Operating conditions

Operating humidity	0–100% RH
Operating temperature	-40 to +60°C / -40 to +140°F
Operating pressure	45 MPa (450 barg / 6500 psi) max
Flow rate	1 to 5 Nl/min (2.1 to 10.5 scfh) mounted in standard sampling block; 0 to 10 m/sec (0 to 32.8 ft/sec) direct insertion

Mechanical specification

Hazardous Area Certificates	ATEX - Ex II 1G EX ia IIC T4 FM - I.S. I 1 ABCD T4 (Ta = +60°C) CSA - IS Class 1 Div 1 Groups ABCD T4 IECEx – EX ia IIC T4 (-20°C < Ta <+60°C)	
Ingress protection	IP66 in accordance with standard BS EN 60529:1992, and NEMA 4 in protection accordance with standard NEMA 250-2003	
Housing material	Stainless steel	
Filter	80 µm sintered guard HDPE Guard <10 µm (optional)	
Weight	1.27kg / 2.8lbs	
Electrical connections	Screw terminal, M20 x 1.5mm	
Fault 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 KFD2-CR-EX1.30200 KFD0-CS-EX1.50P KFD0-CS-EX2.50P KFD2-STC4-EX1.H MTL5041, MTL5040	

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Options and Accessories

Panel Meter An economical panel meter with digital display, analog outputs and dual alarm relays. Display and output configurable as dew point (°C or °F) or ppm moisture content. — **EA2-OL-100**

Easidew Sampler A self-contained sampling system, with filtration and flow control, for measurement of pressure or atmospheric dew point — **EA2-SAM**

Sample Block Stainless Steel sample block to contain Easidew Transmitter, with 1/8" NPT ports — **CSB**

Wall-mounting bracket Bracket to allow Easidew PRO I.S. to be mounted on a wall or plate — **EPR-BRK**

Optional HDPE Guard Pack of 10 HDPE Guards to replace sintered guard — **EA2-HDPE-10**

Galvanic Isolator KFDO-CS-ED1.50p galvanic isolator to allow connection of the Easidew PRO I.S. complying with ATEX, FM or CSA regulations — **9934042**

Replacement Sintered Guard Stainless Steel sintered guard, for protection of ceramic sensor — **9980237**

Easidew Communication Kit For connection to Easidew Transmitter and reconfiguration of range and output via Michell Configuration Software — **EA2-CK**
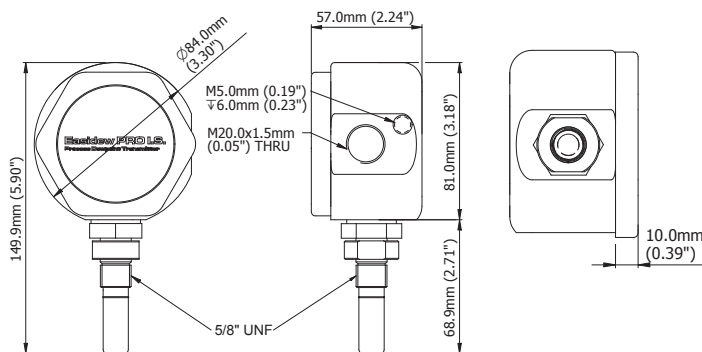
Cable Entry Adaptors To allow cable entry connection to ½" NPT or ½ BSP in brass or stainless steel.

M20 to ½" NPT Brass	**CEA-M20-NPT-B**
M20 to ½" NPT Stainless Steel	**CEA-M20-NPT-SS**
M20 to ½ BSP Brass	**CEA-M20-BSP-B**
M20 to ½ BSP Stainless Steel	**CEA-M20-BSP-SS**

Electrical Connections

4-20mA connections 2-wire	
Pin 1	4-20 mA
Pin 3	POWER

Dimensions

Order Codes

Order codes	Product description		
EPR-IS {W} {X} {Y}{Z}	Easidew PRO I.S. for gas		
	Order code	Description	
Non-standard ranges	W	Zero value	
	X	Full scale values	
	Y	Units (C= °Cdp; F= °Fdp; P= ppm$_v$)	
Pressure other than atmospheric	Z	Pressure for ppm$_v$ conversion in barg / psi.	
	Blank	0 barg / 0 psi	
EPR-LQ-IS {W} {X} {Y}{Z}	Easidew PRO I.S. for liquid		
	Order code	Description	
Non-standard ranges	W	Zero value	
	X	Full scale values	
	Y	Units (C= °Cdp; F= °Fdp; P= ppm$_v$)	
Saturation constants for	Z	1 = Ethylene	6 = Cyclopentane
		2 = Butane	7 = 2-Butene
		3 = Isobutene	8 = Isopentane
		4 = Pentane	9 = User Programmed
		5 = 1-Butene	

Ordering examples:

Standard product: EPR-IS
Non-standard product: EPR-IS -60 / 20°C: Easidew PRO I.S. with range -60 to +20°C @ 0 barg
EPR-IS -78 / 68°F: Easidew PRO I.S. with range -78 to +68°F @ 0 barg
EPR-LQ-IS-0/1000 P 2: Easidew PRO I.S. for moisture in liquids set to 0-1000 ppm$_w$ in butane

Please note: Michell Instruments adopts a continuous development program which sometimes necessitates specification changes without notice. Please contact us for latest version. Ref: **Easidew PRO IS_97208_V3.1_UK_0910**

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