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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 IS Class 1 Div 1 Groups A,B,C and D, Ex II 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 (-148 to +68°F) dp, or 0-3,000 ppm_V in gases. As the Easidew PRO I.S. responds to water vapor pressure in the gas sample, it will give the user an accurate determination of the actual dew-point at pressure up to 45 MPa (450 barg / 6500 psig). Flow rate is not critical to measurement accuracy (1 to 5 Nl/min (2.1 to 10.5 scfh)), though speed of response will be improved by operating at 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. It is factory programmed to provide an output in ppm_W. 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

Issue No: Easidew PRO IS_97208_V5.1_US_0312

Technical Specifications

Performance

Measurement range (dp)	-100 to +20°C (-148 to +68°F) dew point
Accuracy (dp)	±1°C (±1.8°F) dp (+20 to -60°C (+68 to -76°F)) ±2°C (±3.6°F) dp (-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 psig) max
Flow rate	1 to 5 Nl/min (2.1 to 10.5 scfh) mounted in sampling block; 0 to 10 m/sec (0 to 32.8 fps) direct insertion

Mechanical specification

Hazardous Area Certificates	ATEX - II 1 G Ex ia IIC T4 (-20°C ≤ Ta ≤ +70°C) FM - IS / I / 1 / ABCD / T4 Ta = +70°C CSA - IS Class 1 Div 1 Groups ABCD T4 IECEx - Ex ia IIC T4 (-20°C ≤ Ta ≤ +70°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	80µm sintered guard HDPE Guard <10µm (optional)	
Mounting Thread	5/8" - 18 UNF	
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	

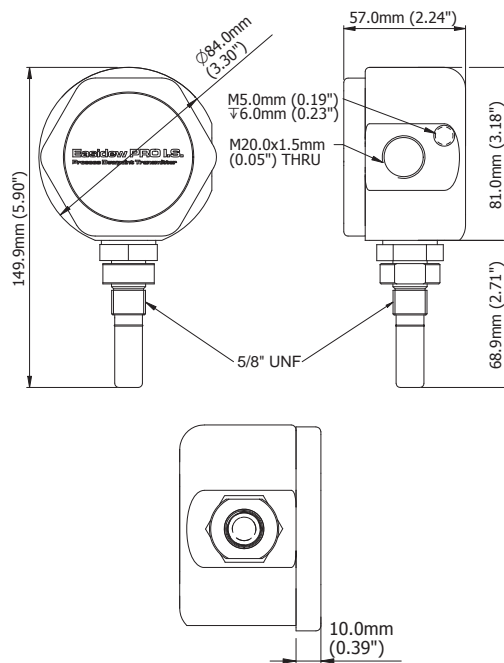**MICHELL Instruments**

Easidew PRO I.S.

Electrical Connections

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

Accessories and Spare Parts

Wall mounting bracket for Easidew PRO I.S.	**EPR-BRK**
Cable entry adapter M20 to 1/2" NPT, brass	**CEA-M20-NPT-B**
Cable entry adapter M20 to 1/2" NPT, SS	**CEA-M20-NPT-SS**
Cable entry adapter M20 to 1/2" BSP, brass	**CEA-M20-BSP-B**
Cable entry adapter M20 to 1/2" BSP, SS	**CEA-M20-BSP-SS**
Hazardous area cable gland, brass ø3-8mm cable	**CG-M20-B**
Hazardous area cable gland, SS ø3-8mm cable	**CG-M20-SS**
SS sintered guard replacement	**SSG**
KFD0-CS-EX1.50P galvanic isolator (for Easidew PRO I.S. - Pepperl & Fuchs)	**GI-PF-01**
SS sample block (5/8" UNF thread with 1/8" NPT ports)	**CSB**
3/4"-16 UNF to 5/8" UNF male adapter, SS (Panametrics thread)	**APT-PAN**
G 1/2" to 5/8" UNF male adapter, SS (E&H or GEI thread)	**APT-GEI**
1/2" BSP to 5/8" UNF thread adapter	**APT-BSP**
Easidew communications kit	**EA2-CK**
Adapter for EA2-CK for use with Easidew PRO I.S.	**EPR-CK-ADT**
Easidew Sampler (see Accessories Section for details)	**EA2-SAM**
10 pk particulate filter cartridges (for SS filter unit (9996061))	**SSF-PF-10PK**

Dimensions

Ordering Codes

To construct the order code, select the relevant feature from the tables below, starting with the base model, which is {Feature A} and then add on options to create a string: {Feature A}+{Feature B}+{Feature C}

Order example: EPR-IS+0/2P-500PG
Easidew PRO I.S Transmitter, ATEX Certified, 2-wire, ATEX certified, with 0 - 2 ppm_V output range at 500 psig

EPR-IS	0/2P-500PG

EPR-LQ-IS	0/3000	01

Base Model - for measurements in gas {Feature A}	
Easidew PRO I.S Transmitter, ATEX certified with sintered guard	EPR-IS

Range {Feature B}	
-100 to +20°C (-148 to +68°F) dp range	100
Non-standard measurement range: v = zero value, w = full scale value, x = unit (C = °Cdp, F=°Fdp, P=ppm_V) y = Pressure for ppm_V conversion in barg/psig, z = pressure unit (PG=psig, PA=psia, BG=barg, BA=bara) blank = 0 barg/0 psig)	v/wx-yz

Base Model - for measurements in liquids {Feature A}	
Easidew PRO I.S Transmitter, ATEX certified with sintered guard	EPR-LQ-IS

Range {Feature B}	
0-3000 ppm_W (standard)	0/3000
Programmed user-supplied range (y = ppm_W zero value, z = ppm_W full scale value)	y/z

Liquid {Feature C}			
Programmed user-supplied CS values	00	Butane	06
Methane	01	Isobutane	07
Propane	02	Pentane	08
Ethane	03	1-Butene	09
Propylene	04	Cyclopentane	10
Ethylene	05		

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