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

The Easidew PRO I.S. is a rugged intrinsically 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 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°Cdp, 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). Flow rate is not critical to measurement accuracy (1 to 5 Nl/min), though speed of response will be improved by operating at a higher sample flow.
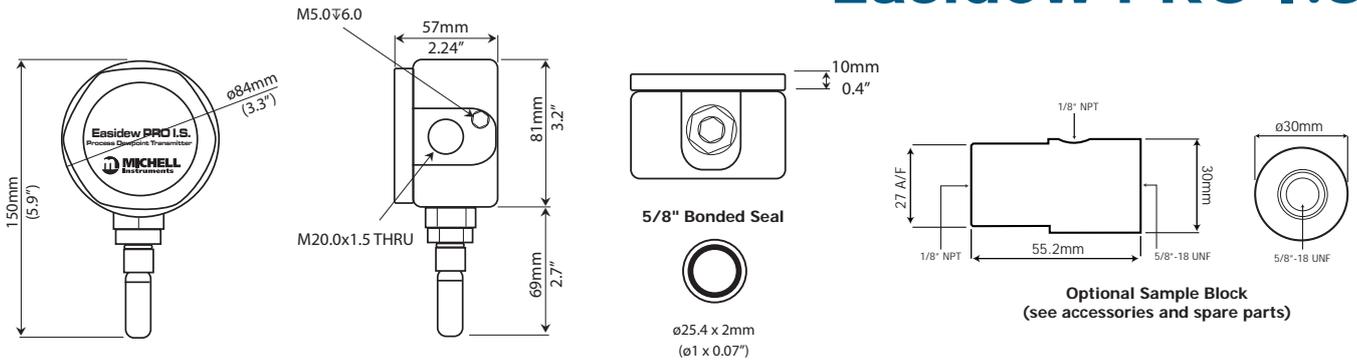
Moisture in Liquids

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

Technical Specifications

Performance

Measurement range	-100 to +20°C dew point
Accuracy	±1°C dew point (+20 to -60°C) ±2°C dew point (-60 to -100°C)
Response time	5 mins to T95 (dry to wet)
Repeatability	0.5°C dew point
Calibration	Traceable 13 point calibration

Electrical Specifications

Output signal	4-20 mA (2-wire connection, current source) User configurable over range
Output	Dew point, moisture content for ppm_v, ppm_w
Analog output scaled range	Dew point: -100 to +20°C Moisture content in gas: 0-3000 ppm_v Moisture content in liquid: 0-3000 ppm_w Non-standard available upon request
Supply voltage	12 to 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 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
CE marked	Certified

Operating Specifications

Operating temperature	-40 to +70°C
Operating pressure	45 MPa (450 barg) maximum
Overpressure rating	x2 operating pressure 90 MPa (900 barg)
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 in protection accordance with standard NEMA 250-2003
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)
Housing material	316 stainless steel
Dimensions	L=150mm x ø84mm (without cable gland/adapter)
Filter (sensor protection)	Standard: 316 stainless steel<80µm sintered guard Optional: <10µm HDPE Guard
Process connection and material	5/8" - 18 UNF 316 stainless steel
Weight	1.27kg
Interchangeability	Fully interchangeable transmitter
Electrical connections	Screw terminal, M20 x 1.5mm

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
KFD2-CR-EX1.30200		KFD2-STC4-EX1.H
KFD0-CS-EX1.50P		MTL5041, MTL5040

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Dimensions

Easidew PRO I.S.

M5.0↧6.0

57mm
2.24"

ø84mm
(3.3")

81mm
3.2"

150mm
(5.9")

69mm
2.7"

M20.0x1.5 THRU

5/8" Bonded Seal

10mm
0.4"

ø25.4 x 2mm
(ø1 x 0.07")

1/8" NPT

27 A/F

1/8" NPT

55.2mm

5/8"-18 UNF

30mm

ø30mm

5/8"-18 UNF

Optional Sample Block
(see accessories and spare parts)

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}

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 @ 500 psig

Electrical Connections

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

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 bar/psi, 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		

Accessories and Spare Parts

Sensor Protectors	Stainless steel sintered guard replacement for protection against fine particulate <80µm	**SSG**
Connection Adaptors	Pack of 10 particulate filter cartridges (for protection against fine particulate <25µm (for Sampler kits))	**SSF-PF-10PK**
	3/4" UNF to 5/8" UNF adapter	**APT-PAN**
	G1/2" BSP to 5/8" UNF adaptor	**APT-GEI**
	1/2" NPT to 5/8" UNF thread adapter	**APT-TSO**
Sampling Blocks	5/8" 316 stainless steel sample block (with 1/8" NPT inlet & outlet ports)	**CSB**
	5/8" Sampler kit- for atmospheric or pressure dp measurements (145 psig / 10 barg max)	**EA2-SAM**
	5/8" HP (high pressure) Sampler kit – for atmospheric or pressure dp measurements (2900 psig / 200 barg max)	**EA2-SAM-HP**
Other Parts	KFD0-CS-EX1.50P galvanic isolator (for Easidew I.S. - Pepperl & Fuchs)	**GI-PF-01**
	PTFE sample tube – 6mm outside diameter, thick-walled (for sampler kit) (if more than the standard 0.5mm is required)	**PTFE-xx**
	Additional/replacement transmitter labels (2 labels)	**GEN-LABEL**
	5/8" Bonded Seal for process connection (pack of 5)	**BS-58-PK5**
	Sensor connector	**EPR-SC**
	Communications kit for Easidew PRO I.S. (includes EPR-CK-ADT adapter)	**EPR-CK**
	Adapter for use with EPR-IS	**EPR-CK-ADT**
	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**
	Adapter for use with EPR-IS	**EPR-CK-ADT**

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