

**EASIDEW 2-WIRE TRANSMITTER  
with Current Source Output**

**INSTALLATION, OPERATION AND  
MAINTENANCE MANUAL**

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## **EASIDEW TRANSMITTER**

The EASIDEW Transmitter is a continuous on-line 4-20mA transmitter for the measurement of moisture content in air and other non-corrosive gases.

Key features are:

- Operating range -100 to +20 °C dewpoint
- Operating pressure range up to 5000 PSIG
- Powered by any dc source from 12 to 28 volts
- Linear 4 - 20mA signal
- 2-wire or 3-wire operation
- Backward-compatible with existing EASIDEW TRANSMITTER
- Output configurable for dewpoint or ppm(v)

## **FACTORY CALIBRATION**

EASIDEW is fully factory-tested and calibrated prior to delivery and is supplied with its own Calibration Certificate, providing direct traceability to the National Institute of Standards and Technology. The sensor is certified at thirteen dewpoint levels across its operating range against a certified reference hygrometer, using a mass-flow humidity generator system as a source of reference calibration gas.

Periodic recalibration is recommended in order to maintain the highest quality of measurement in your application. Kahn recommends that you have your EASIDEW Transmitter recalibrated annually, unless it is used in a mission-critical application or in a dirty or contaminated environment, in which case the calibration interval should be reduced accordingly. Kahn can offer a variety of re-calibration and exchange sensor programs to suit your specific needs. We will be pleased to provide detailed, custom advice.

## PREPARATION FOR USE

On delivery, please check that all the following standard components are present in the packing box:

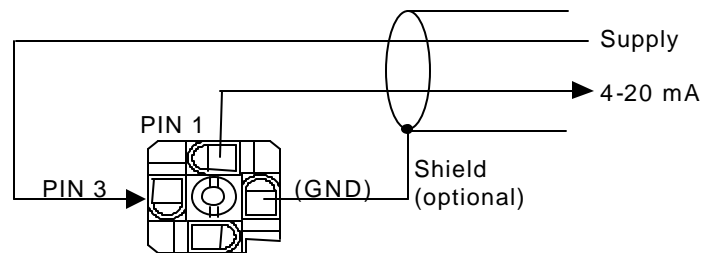
- i) EASIDEW Transmitter
- ii) Sensor Seal
- iii) Certificate of Calibration
- iv) Connector

The sensor is protected with the main packaging while in transit by the inclusion of a small red cap covering the sensor connector, and a small desiccant capsule installed inside of the plastic protective cover. Neither of these items is required for the operation of the sensor.

### Sensor Cable (available as an option from Kahn Instruments)

Connection to the sensor is made via the removable connector, whereby removing the central screw enables the terminal block to be removed by using a small screwdriver. Caution: When removing the central screw ensure that the small sealing O-ring is retained on the screw and is present during re-installation. When reinstalling the connector, and to ensure that full ingress protection is achieved, the securing screw must be tightened to a minimum torque setting of 2.5 lbs/in. The sensor cable used must be minimum diameter of .181 inch to maintain the ingress protect. The diagram below shows the identity of the terminals.

2 wire connection. View showing rear of connector terminal block



When replacing a 3-wire sensor with a 2-wire sensor, NO changes to the wiring configurations are required. See specification listing for cable details.

## Easidew Transmitter Installation

Just prior to installation of the Transmitter, unscrew and remove the protective plastic cover and retain for future use. Take care to prevent any contamination of the Transmitter before installation (only handle the HDPE guard by the black part).

The Easidew can be mounted in to either a flow-through sensor sample block (optional extra) or directly inserted into a pipe or duct and can be operated at pressures up to 5000 PSIG when used with the bonded seal provided.

**NOTE:** Place the bonded seal over the 5/8"-18 UNF mounting thread and assemble into the sampling location **by hand** using the wrench flats only. **DO NOT grip and twist the sensor cover when installing the sensor.** When installed, fully tighten using a wrench until the bonded seal is fully compressed and to a minimum torque of 22.50 ft lbs.

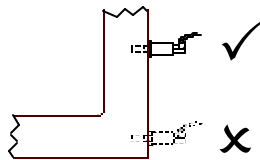
The recommended gas flow rate when mounted in the (optional) sampling block is 2 to 10 SCFH. However, for direct insertion applications, gas flow can be from static to 30 feet per second.

## OPERATION

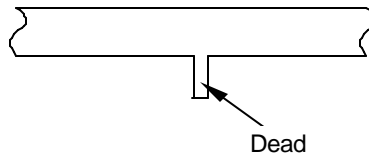
Operation is very simple assuming the following installation techniques are adhered to.

### Sampling Hints

Be Sure the Sample is Representative of the Gas Under Test: The sample point should be as close to the critical measurement point as possible. Also, never sample from the bottom of a pipe as entrained liquids may be drawn into the sensing element.



Minimize Dead Space in Sample Lines: Dead space causes moisture entrapment points, increased system response times and measurement errors, as a result of the trapped moisture being released into the passing sample gas and causing an increase in partial vapor pressure.

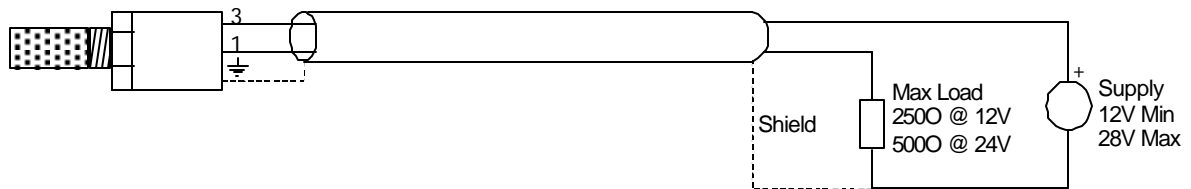


Remove Any Particulate Matter or Oil from the Gas Sample: Particulate matter at high velocity can damage the sensing element and similarly at low velocity, they may "blind" the sensing element and reduce its response speed. If particulate, such as degraded desiccant, pipe scale or rust is present in the sample gas, use an in-line filter.

Use High Quality Sample Tube and Fittings: We recommend that wherever possible, stainless steel tubing and fittings should be used. This is particularly important at low dew points since other materials have hygroscopic characteristics and adsorb moisture on the tube walls, slowing down response and in extreme circumstances, giving false readings. For temporary applications, or where stainless steel tubing is not practical, use high quality, thick-walled PTFE tubing.

## ELECTRICAL CONNECTION

### 2 wire connection details



The shield should be connected for optimum performance

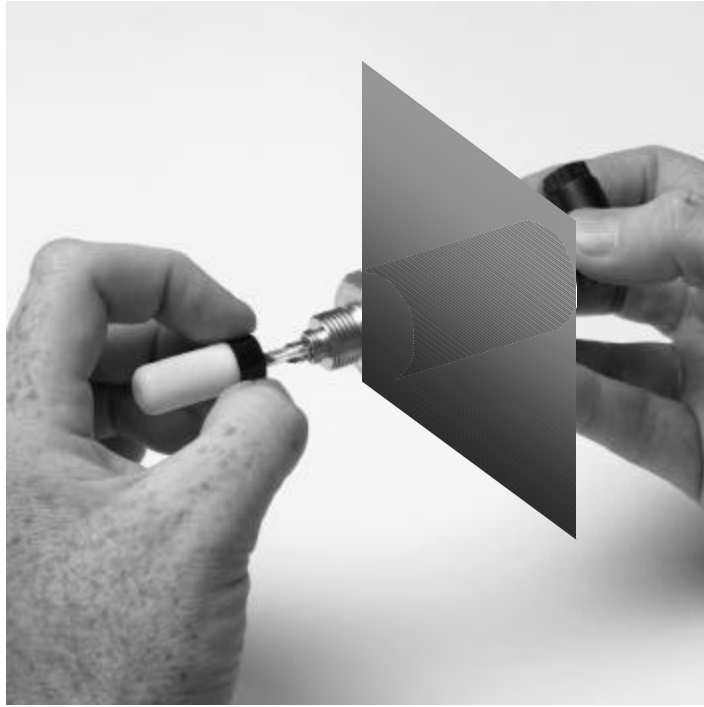
## **MAINTENANCE**

Routine maintenance of the Easidew is confined to regular re-calibration by exposure of the Easidew to sample gases of known moisture content to ensure that the stated accuracy of the Easidew is maintained. Calibration services traceable to the National Institute of Standards and Technology (USA) are provided by Kahn Instruments.

## **HDPE Guard**

The HDPE Guard provides protection to the dewpoint sensor. It is designed to show any contamination and the guard should be changed if the white surface becomes discolored.

When replacing the HDPE guard, care should be taken to handle the guard on the black part only. Replacement guards can be provided. Please contact Kahn.



## APPENDIX 1

## TECHNICAL SPECIFICATIONS

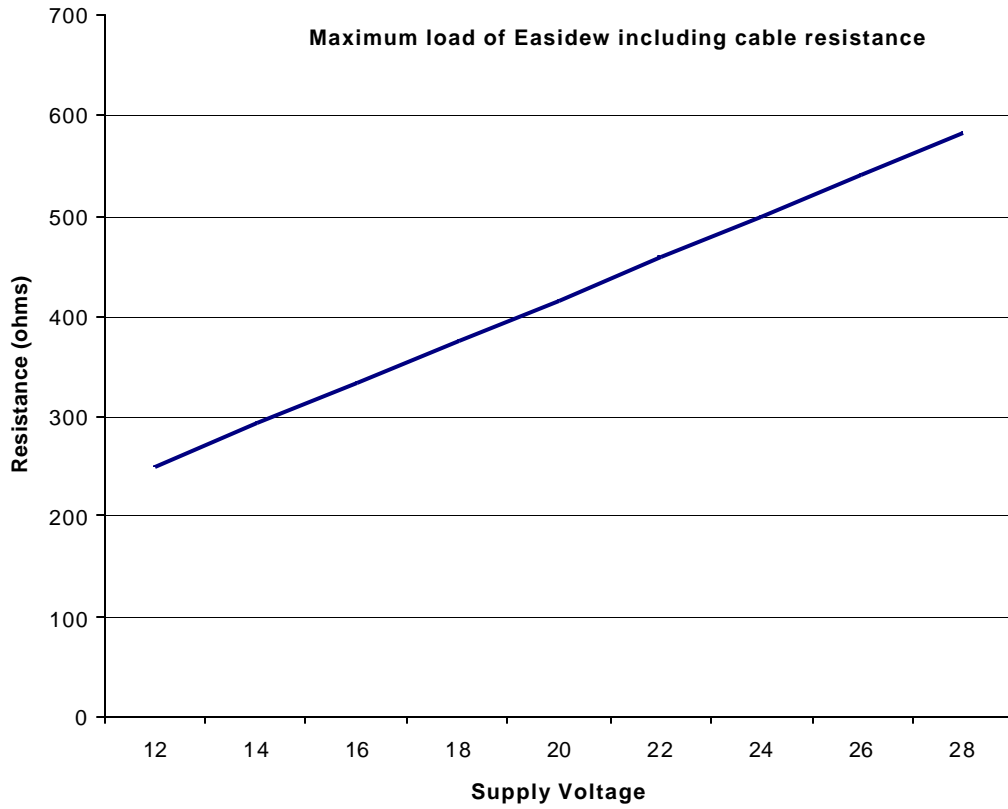
<b>Type:</b>	Kahn Ceramic Sensor									
<b>Sensor Torque Loading:</b>	Minimum 22.5 ft-lb									
<b>Calibration range:</b>	-148°F to +68 °F dew point. Extrapolated to -185°F & +86°F dew point.									
<b>Power supply:</b>	12 to 28 V DC									
<b>Output Range:</b>	4-20mA over a user settable range of dewpoints and ppm(v), with maximum limits of -186° to +86°F dewpoint and 0 to 3000 ppm(v) respectively. Software to alter the range and error conditions is available from <a href="http://www.kahn.com">www.kahn.com</a> as a free download.									
<b>Dewpoint accuracy:</b>	+3.6 °F or equivalents, across the whole range									
<b>Gas temperature:</b>	-40° F to +140° F									
<b>Operating environment:</b>	-4° F to +122° F									
<b>Storage temperature:</b>	-40° F to +167° F									
<b>Operating pressure:</b>	10 <sup>-6</sup> Bar a vacuum to 5000 PSIG									
<b>Flow rate:</b>	2 to 10 SCFH mounted in standard sampling block 0 to 30 feet/second direct insertion									
<b>Traceable certification:</b>	-103° F to +68 °F dewpoint traceable to NIST [For dewpoints <-130°F: Direct reference to a fundamental cooled mirror dewpoint meter]									
<b>Environmental protection:</b>	Water and Dust Ingress Protection is in accordance with standard IEC 60529:2001 and is conformance tested to IP66 in accordance with standard BS EN 60529:1992, and NEMA Type 4 in accordance with standard NEMA 250-2003.									
<b>Weight:</b>	0.33 lbs									
<b>Fault conditions:</b>	<table><thead><tr><th><u>Condition</u></th><th><u>Output</u></th></tr></thead><tbody><tr><td>Sensor fault</td><td>3 mA</td></tr><tr><td>Under range dew point</td><td>3 mA</td></tr><tr><td>Over range dew point</td><td>21 mA</td></tr></tbody></table>	<u>Condition</u>	<u>Output</u>	Sensor fault	3 mA	Under range dew point	3 mA	Over range dew point	21 mA	} Factory default
<u>Condition</u>	<u>Output</u>									
Sensor fault	3 mA									
Under range dew point	3 mA									
Over range dew point	21 mA									

User selectable via configuration software.

**Note:** The current output range and the fault conditions are user programmable. Re-ranging or changing the fault conditions of the Easidew transmitter require the use of a Communications Kit and Configuration Software. Configuration software is accessible using factory set password 7316. Customer may change password after initial access. Contact Kahn Instruments Customer Service Department for details.

**Sensor cable:** Copper braid shielded cable; two stranded 22 AWG tinned copper conductors, minimum OD 0.181 inch, Max length 2600 feet.

**Max. load:** 250  $\Omega$  at 12 V, 500  $\Omega$  at 24 V.



Dimensions:

