

The **DEETER** Group®

RPS-409A-IS2

Self-Contained Ultrasonic Sensor

Intrinsically Safe ultrasonic sensor with ANZEx, ATEX, cUL, & IECEx approvals for use in Hazardous (Classified) Locations



Features

- Intrinsically Safe
- Analog Voltage Output
- Sync/Tx Input Line
- Various Sensing Ranges
- Wide Temperature Range
- Temperature Compensation
- LED Indicator
- PPS Enclosure



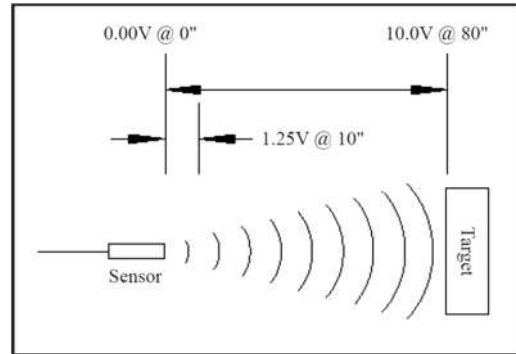
THORNE &
DERRICK
INTERNATIONAL

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The RPS-409A-IS2 is an intrinsically safe analog ultrasonic sensor available in a variety of ranges. The RPS-409A-IS2 sensors can be used in hazardous gas or dust environments classified as Zone 0, 1, 2, 20, 21, or 22 for ATEX/IECEX, and Class I, II, or III for UL/cUL when used with approved intrinsic safety barrier(s). See the RPS-409A-IS2 User Manual and Control Drawing No. Ex05021114 for further information on installation in hazardous locations.



The sensor is self-contained in a 30mm barrel style enclosure, and is powered by 16 – 30 V dc with reverse polarity protection.

The RPS-409A-IS2 has a short circuit protected 0 - 10 V dc analog output. The analog voltage is a fixed volts per inch based on the maximum range of the unit. For example when using the RPS-409A-80-IS2, the output is a linear 0.125 V per inch. A target placed 10 inches from the sensor will result in an output of 1.25 V or a target placed at 80 inches from the sensor will result in an output of 10 V.

The RPS-409A-IS2 has built-in temperature compensation to provide accurate readings throughout the entire operating temperature range.

An LED indicator is provided. The LED is green with no target detected and changes to red when a target is detected. The sensor is completely sealed and connection must be made with a cable having a rating of IP67 or greater.

In addition to the analog output line the sensor also has a Sync/Tx line. This line can be used for connecting multiple sensors together (Sync) to prevent cross talk, or to control when the sensor transmits (Tx).

The RPS-409A-IS2 is designed to take advantage of today's PLC and computer analog input cards. The numerical values that are programmed into the PLC or computer will determine the zero and span of the sensor.

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Specifications:

| Model Number: | Sensor Range: | Transducer Frequency: | Response Time: | Volts Per Inch: |
|------------------|---------------|-----------------------|----------------|-----------------|
| RPS-409A-40-IS2 | 4-40" | 175kHz | 85ms | 0.250 |
| RPS-409A-80-IS2 | 6-80" | 135kHz | 85ms | 0.125 |
| RPS-409A-144-IS2 | 10-144" | 70kHz | 175ms | 0.069 |
| RPS-409A-216-IS2 | 12-216" | 70kHz | 175ms | 0.046 |

| | |
|---------------------|--|
| Entity Parameters | See Control Drawing No. Ex05021114 |
| Power Input | 16 - 30VDC Reverse Polarity Protected (A minimum of 24VDC must be applied to the power barrier) |
| Input Current | 24mA maximum with 24VDC applied to the power barrier |
| Ambient Temperature | -40 - 60°C or -40 - 140°F |
| Humidity | 0 - 95% Non-Condensing |
| Enclosure Material | Polyphenylene Sulfide (PPS) Enclosure with PPS and PTFE sensing face |
| Output | Analog Voltage Output 0 - 10V (Load 100k Ohms to infinity) Short Circuit Protected |
| Approvals | Australia and New Zealand - ANZEx 13.3010X Ex ia I Ma, Ex ia IIC T4 Ga, Ex ia IIIC T101°C Da Canada and USA - UL/cUL File # E226209 CL I, GPS A,B,C,D; CL II, GPS E,F,G; and CL III Europe (CENELEC) - DEMKO 12 ATEX 1103028X Ex I M1 / II 1 GD IECEX - IECEX UL 12.0001X Ex ia I T4 Ma, Ex ia IIC T4 Ga, Ex ia IIIC T101°C Da |

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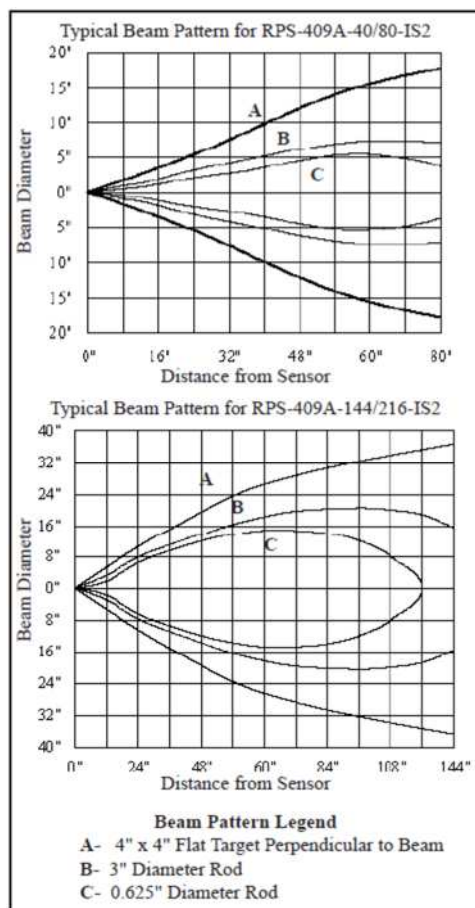
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**M12 Receptacle
Pin Out**
(shown with European
Color Code)



Pin 1 - Brown - Power
Pin 2 - White - Analog Output
Pin 3 - Blue - Ground
Pin 4 - Black - Sync/Tx

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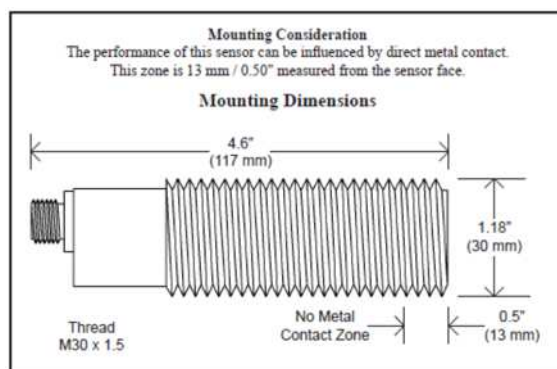
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Mounting Consideration: The performance of this sensor can be influenced by direct metal contact. This zone is 12mm/0.50" measured from the sensor face. See Fig. D

Ordering Code

| Part Number | Range | Output/Description |
|------------------|-----------|--|
| RPS-409A-40-IS2 | 4 - 40" | 0 - 10VDC Analog Output |
| RPS-409A-80-IS2 | 6 - 80" | 0 - 10VDC Analog Output |
| RPS-409A-144-IS2 | 12 - 144" | 0 - 10VDC Analog Output |
| RPS-409A-216-IS2 | 12 - 216" | 0 - 10VDC Analog Output |
| F32-5496302 | | 6' Cable, 4-PIN, IP68 / NEMA-6P, 18 AWG - Sold Separately |
| F32-5496305 | | 16' Cable, 4-PIN, IP68 / NEMA-6P, 18 AWG - Sold Separately |
| ZSB-409A | | 3-Channel DC Positive Polarity Zener Safety Barrier |

All electrical equipment should be installed by a qualified/certified electrician.

The Deeter Group follows a policy of continual development of its products and reserves the right to change specifications and/or features without notice



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