

# The **DEETER** Group®

## RPS-409A-IS

### Self-Contained Ultrasonic Sensor

Intrinsically Safe for use in Hazardous (Classified) Locations when used with approved Safety Barriers. UL Listed: File # E226209



#### Features

- Intrinsically Safe
- UL Listed
- Input Voltage 24VDC
- Reverse Polarity Protected
- Analog Voltage Output
- Short Circuit Protected
- Sync/Tx Input Line
- Various Sensing Ranges
- Wide Temperature Range
- Temperature Compensation
- LED Indicator
- Self Contained Sensor
- PVC Housing
- Quick Disconnect Connector

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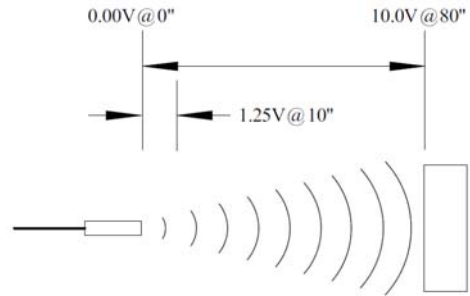


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## RPS-409A-IS Self-Contained Ultrasonic Sensor

The RPS-409A-IS is an intrinsically safe, analog ultrasonic sensor. It is a self contained sensor in a 30mm PVC barrel housing. It is powered by 20-30VDC with reverse polarity protection. The RPS-409A-IS has a short circuit protected analog 0-10VDC output. The analog voltage is a fixed volts per inch based on the maximum range of the unit. For example using the RPS-409A-80-IS, the output is a linear 0.125 volts per inch. A target placed 10 inches from the sensor will result in an output signal of 1.25 volts or a target placed at 80 inches from the sensor will result in an output of 10 volts.



For set up purposes an LED indicator is provided. The LED is Green when not detecting and changes to Red when a target moves into place. The sensor is completely sealed and the connection is made by way of IP and NEMA rated cables. Besides the input and output lines there is a sync / enable line provided. This can be used for connecting multiple sensors together to prevent cross talk, or to fire the sensor at a particular time. The RPS-409A-IS is designed to take advantage of today's PLC and computer analog input cards. The analog card chosen will determine the resolution of the system. The numerical values that are programmed into the PLC or computer will determine the zero and span. If a set point or set points are required in the application, please refer to the SPC-701, SPC-704, or M-1000 control products. Both the SPC-704 and M-1000 can also provide excitation power to drive the sensor. The RPS-409A-IS has temperature compensation built in to provide accurate readings throughout the entire operating temperature range.

### Specifications:

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

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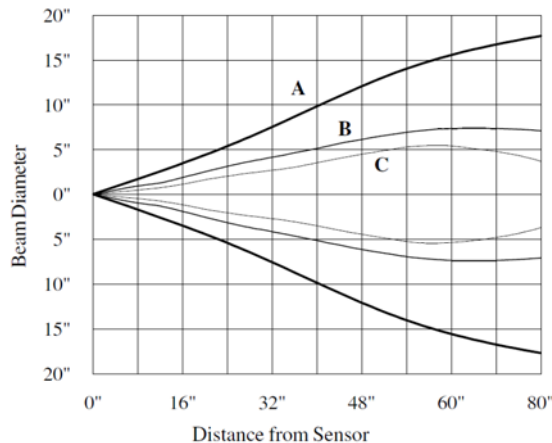
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Power Input	16 - 30VDC Reverse Polarity Protected (A minimum of 24VDC must be applied to the power barrier)
Input Current	24mA maximum with 24VDC applied to the power barrier
Ambient Temperature	-40 - 60°C or -40 - 140°F
Humidity	0 - 95% Non-Condensing
Housing	PVC Housing with PVC sensing face
Output	Analog Voltage Output 0 - 10V (Load 100k Ohms to infinity) Short Circuit Protected
Weight	Sensor 4 ounces

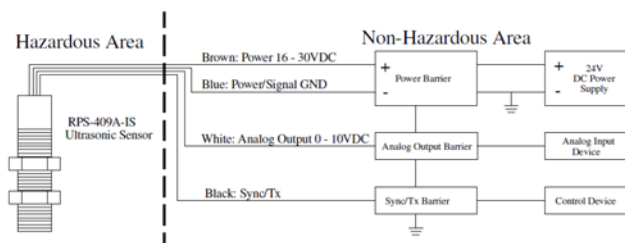
Typical Beam Pattern for RPS-409A-40-IS and RPS-409A-80-IS



### Beam Pattern Legend

- A- 4" x 4" Flat Target Perpendicular to Beam
- B- 3" Diameter Rod
- C- 0.625" Diameter Rod

Fig. A



UL listed Intrinsically Safe For use in Hazardous (Classified) Locations when used with approved Intrinsically Safe Barriers.

- Class I Division 1 Groups A, B, C, and D
- Class II Division 1 Groups E, F, and G
- Class III Division 1

Fig. B

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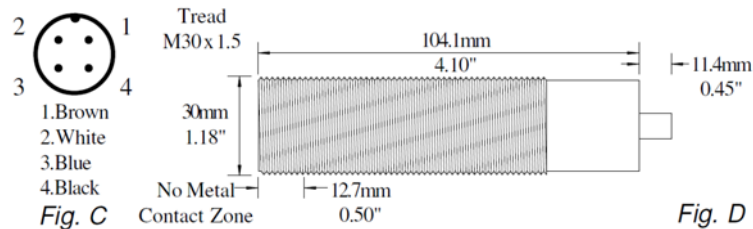
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## RPS-409A-IS Self-Contained Ultrasonic Sensor



### Figure:

- A - Beam Spread
- B - Wiring Diag. RPS-409A-IS
- C - Connector Diagram
- D - Mounting Dimensions

**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-IS	4 - 40"	0 - 10VDC Analog Output
RPS-409A-80-IS	6 - 80"	0 - 10VDC Analog Output
RPS-409A-144-IS	12 - 144"	0 - 10VDC Analog Output
RPS-409A-216-IS	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
F33-5007728		Power Safety Barrier - Sold Separately
F33-5007764		Analog Output & Sync/Tx Safety Barrier - Sold Separately

**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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