



## RPS-409A-IS2

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

### Features

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

ANZEx

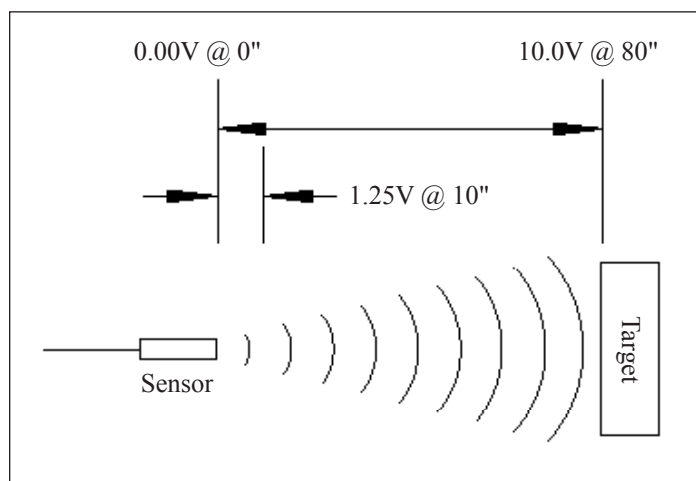


IECEx

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.

# Specifications:

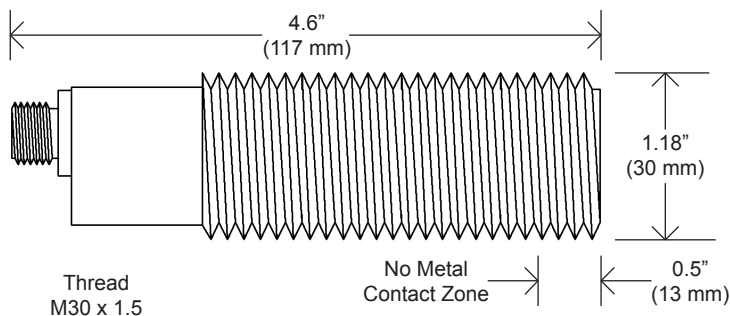
Model	Sensor	Transducer	Response	Volts
Number:	Range:	Frequency:	Time:	Per Inch:
RPS-409A-40-IS2	4 - 40"	175kHz	85ms	0.250
RPS-409A-80-IS2	6 - 80"	135kHz	85ms	0.125
RPS-409A-144-IS2	10 - 144"	70kHz	175ms	0.069
RPS-409A-216-IS2	12 - 216"	70kHz	175ms	0.046

Entity Parameters:	See Control Drawing No. Ex05021114
Power Input:	16 - 30VDC Reverse Polarity Protected (A minimum of 24VDC must be applied to the safety barrier)
Input Current:	24mA maximum with 24VDC applied to the safety barrier
Output:	Analog Voltage Output 0 - 10V (Load 100k Ohms to infinity) Short Circuit Protected
Ambient Temperature:	-40 to +60°C or -40 to +140°F
Humidity:	0 - 95% Non-Condensing
Enclosure Material:	Polyphenylene Sulfide (PPS) Enclosure with PPS and PTFE sensing face
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  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

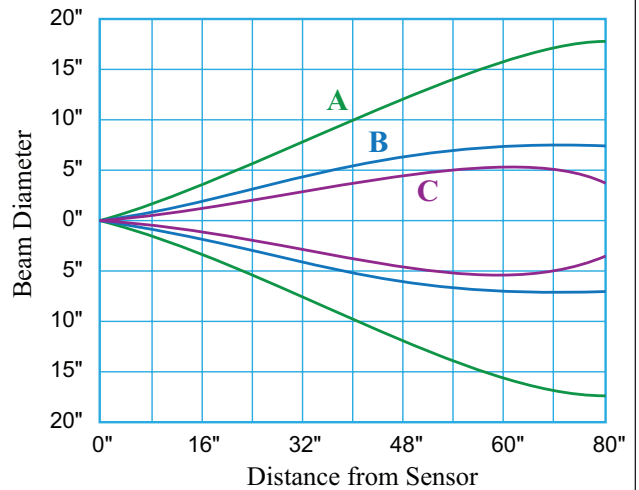
## Mounting Consideration

The performance of this sensor can be influenced by direct metal contact.  
This zone is 13 mm / 0.50" measured from the sensor face.

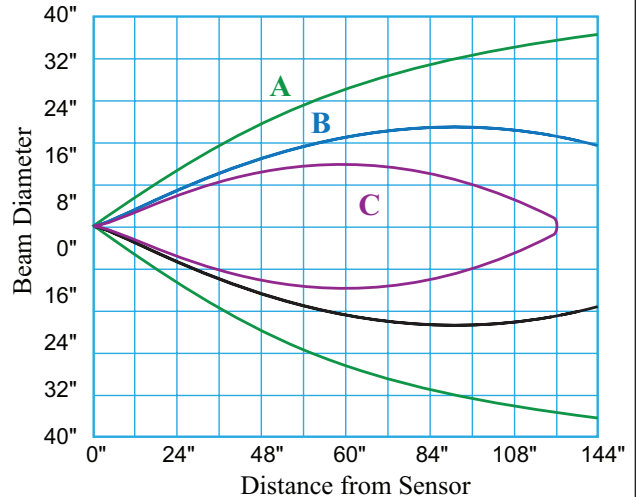
## Mounting Dimensions



Typical Beam Pattern for RPS-409A-40/80-IS2



Typical Beam Pattern for RPS-409A-144/216-IS2



## Beam Pattern Legend

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

## 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

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	10 - 144"	0 - 10VDC Analog Output
RPS-409A-216-IS2	12 - 216"	0 - 10VDC Analog Output
F32-5496302		2 meter Cable, M12 4-Pin IP67 18 AWG - Sold Separately
F32-5496305		5 meter Cable, M12 4-Pin IP67 18 AWG - Sold Separately
F50-9240905		ZSB-409A Safety Barrier - Sold Separately
F33-5441504		DIN Rail Grounding Block - Sold Separately



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