

RPS-401A-80P

Features

- Adjustable Zero & Span
- Sensing Range 8 - 80"
- Narrow Sensing Beam
- LED Strength Indicator
- Short Circuit Protected
- Wide Temperature Range
- Selectable Inverted & Non-Inverted Outputs
- Analog Current & Voltage Outputs
- Reverse Polarity Protected
- Self Contained Barrel Housing
- Input Voltage 20 - 30VDC
- RPS-401A in PVC Housing
- Chemical Resistance (PVC)

The RPS-401A-80P analog ultrasonic sensor is mounted in a PVC barrel housing and is completely self contained. It is powered by 20 - 30VDC and is reverse polarity protected. It also has a narrow beam angle which enables it to get into tight places. A flat target can tilt up to 10 degrees and still be detected.

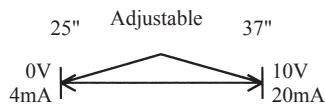
The RPS-401A-80P has two short circuit protected analog outputs, 4 - 20mA and 0 - 10VDC. These outputs can easily be inverted and can be scaled over almost any range by means of adjusting the zero (P1) and span control (P2).

For setup purposes an LED strength indicator is provided. The LED is green when not detecting a tar-



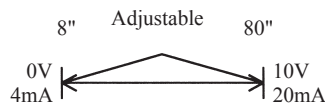
get. The color can vary from yellow to bright red when detecting a target depending on how strong the reflected signal is from the target. Yellow indicates a weak signal and bright red indicates a strong signal. The frequency of operation for the RPS-401A-80P is 135kHz.

The RPS-401A-80P is constructed of PVC. The barrel measures 30mm x 104mm. A standard 6 foot cable is provided, or a quick disconnect (QD) version is also available.



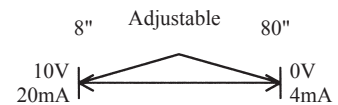
Minimum Analog Ranging

Minimum Analog Ranging is adjusting the span of the sensor to minimum of 12" for RPS-401A-80P sensor. The minimum span can be adjusted to occur over any part of the sensors range. For example the minimum span on the RPS-401A-80P could be adjusted to occur from 8 - 20" or 25 - 37". This is done by adjusting the two potentiometers on the sensor. P1 adjusts the near point and P2 adjusts the far point. Repeat the adjustment of P1 and P2 at least once to achieve the desired span. The analog output can be adjusted anywhere between the minimum and maximum span by adjusting P1 and P2.



Maximum Analog Ranging

Maximum Analog Ranging is adjusting the span of the sensor to maximum. For the RPS-401A-80P sensor the maximum span is 72". The maximum span will go from the sensors minimum sensing distance of 8" to the sensors maximum distance of 80". This is done by adjusting the two potentiometers on the sensor. P1 adjusts the near point and P2 adjusts the far point. Repeat the adjustment of P1 and P2 at least once to achieve the desired span. The analog output can be adjusted anywhere between the minimum and maximum span by adjusting P1 and P2.



Inverted Analog Outputs

The RPS-401A-80P sensor has the ability to invert the analog output, meaning that the current or voltage will decrease with distance. For the current output to be inverted the voltage output wire needs to be tied to the positive supply voltage wire for the sensor. This will invert the current output to 20mA - 4mA. For the voltage output to be inverted the current output wire needs to be tied to the positive supply voltage wire for the sensor. This will invert the voltage output to 10V - 0V. In the non-inverted configuration P1 adjusts the near point 4mA or 0V and P2 adjusts the far point 20mA or 10V. In the inverted configuration P1 adjusts the near point 20mA or 10V and P2 adjusts the far point 4mA or 0V.

Specifications:

Operational Range:	Adjustable 8 - 80"
Power Input:	20 - 30VDC Reverse Polarity Protected
Input Current:	90mA Maximum
Ambient Temperature:	-40 - 60°C or -40 - 140°F
Humidity:	0 - 95% Non-Condensing
Housing:	PVC Housing with a PVC sensing face
Outputs:	Current Sourcing Analog Output 4 - 20mA Inverted & Non-Inverted (Load 0 ohm to 500 ohm maximum) Analog Voltage Output 0 - 10V Inverted & Non-Inverted (Load 500 ohm to infinity) Short Circuit Protected
Transducer Frequency:	135kHz
Response Time:	35ms Typical
Weight:	Sensor only 4 ounces Sensor plus cable 9 ounces

Mounting Consideration:

The performance of this sensor can be influenced by direct metal contact.
This zone is 12mm/.50" measured from the sensor face. See Fig. G

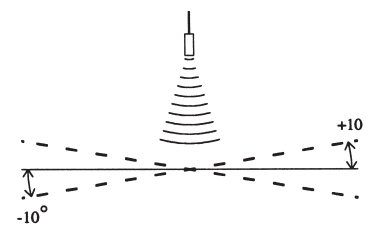


Fig. A

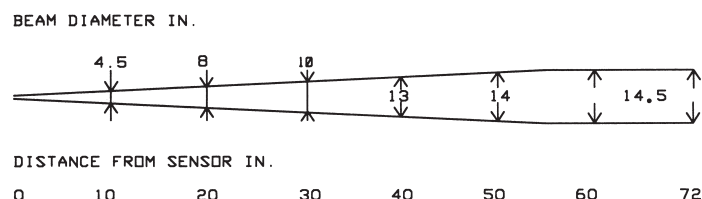


Fig. B

Current and Voltage Non-Inverted (Standard)

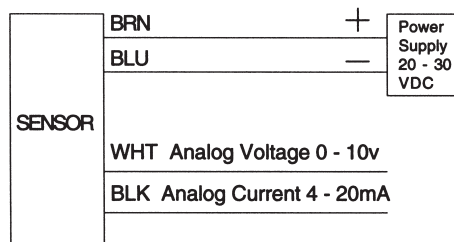


Fig. C

Current Inverted

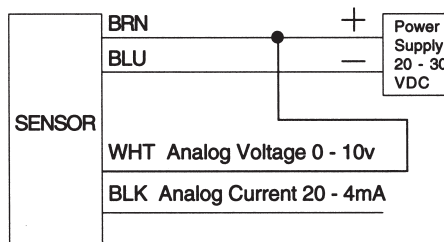


Fig. D

Voltage Inverted

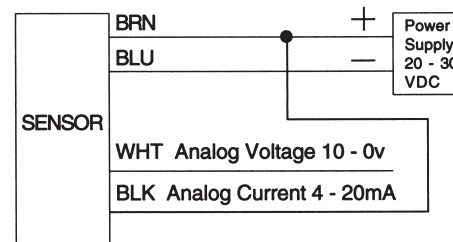
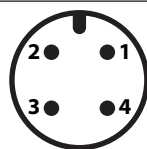


Fig. E

Figure:

- A - Angle of Tilt
- B - Beam Spread
- C - Wiring Diag. RPS-401A-80P Standard
- D - Wiring Diag. RPS-401A-80P Current Inverted
- E - Wiring Diag. RPS-401A-80P Voltage Inverted
- F - Conn. Diag. QD version M12 Male Plug
- G - Mounting Dimensions



- 1 = Brown
- 2 = White
- 3 = Blue
- 4 = Black

Fig. F

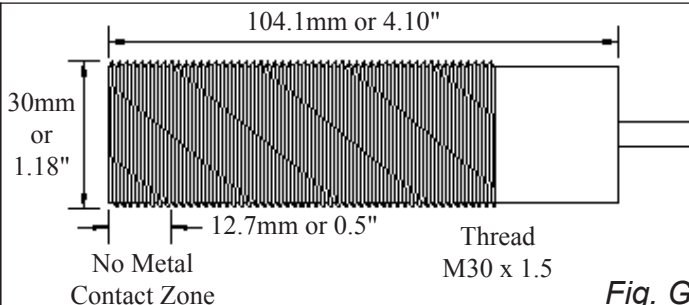


Fig. G

PART NUMBER	RANGE	OUTPUT / DESCRIPTION
RPS-401A-80P	8 - 80"	0 - 10VDC and 4 - 20mA Analog
RPS-401A-80PQD	8 - 80"	0 - 10VDC and 4 - 20mA Analog - Cable Sold Separately
F32-5001183		2 meter Cable for QD version, M12 4-Pin 22 AWG
F32-5001186		5 meter Cable for QD version, M12 4-Pin 22 AWG