



RPS-401A

Features

- Adjustable Zero & Span
- Analog Current & Voltage Outputs
- Various Sensing Ranges
- Inverted & Non-Inverted Outputs
- Narrow Sensing Beam
- Self Contained Barrel Housing
- LED Strength Indicator
- Input Voltage 20 - 30VDC
- Short Circuit Protected
- RPS-401A in Plastic Housing
- Reverse Polarity Protected
- RPS-426A in Stainless Steel Housing

The RPS-401A analog ultrasonic sensors are enclosed in a barrel housing and are completely self contained. They are powered by 20 - 30VDC and are reverse polarity protected. The sensors have a narrow beam angle which enables them to get into tight places. A flat target can tilt up to 8 degrees and still be detected. The RPS-401A have two short circuit protected analog outputs, 4 - 20mA and 0 - 10VDC. These outputs can easily be inverted and scaled over almost any range by means of adjusting the near point P1 and far point P2. For setup purposes a LED strength indicator is provided. The LED is green when not detecting a target. The color can vary from yellow to bright red when detecting a target depending on how strong the reflected signal is from

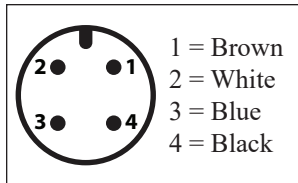
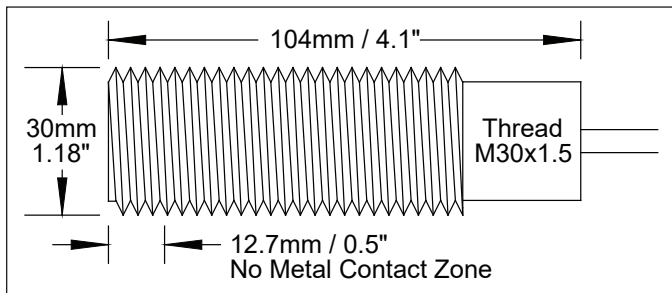


the target. Yellow indicates a weak signal and bright red indicates a strong signal. The transducer frequency for the RPS-401A is 175kHz for the 4 - 40" range and 150kHz for the 8 - 80" range. The RPS-401A housing is constructed of PVC plastic. See the RPS-426A data sheet for the Stainless Steel version. The housing measures 30 mm x 104 mm. A standard 6' cable is provided, or a quick disconnect (QD) version is also available.

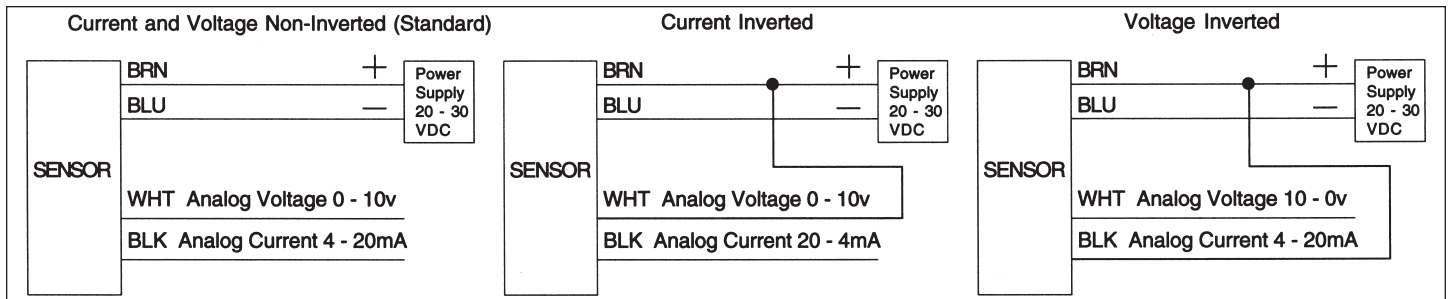
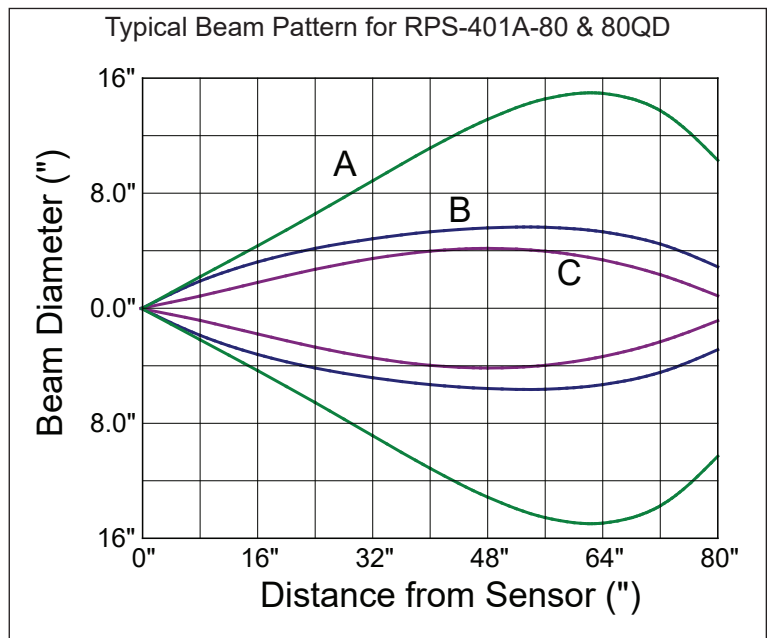
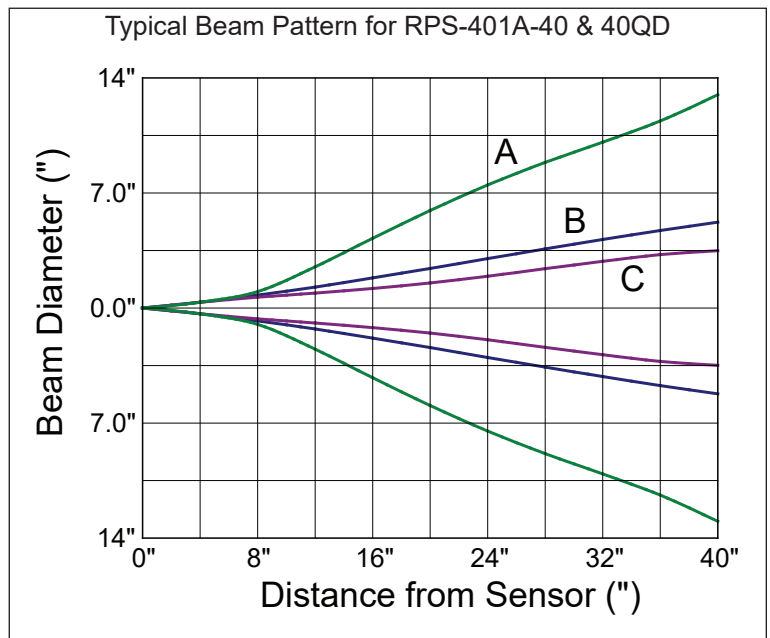
<p>40" Range 10" Adjustable 15" 80" Range 12" Adjustable 24"</p> <p>Minimum Analog Ranging</p> <p>Minimum Analog Ranging is adjusting the span of the sensor to minimum. 5" for sensors with a 40" range and 12" for sensors with an 80" range. The minimum span can be adjusted to occur over any part of the sensors range. For example the minimum span on an RPS-401A-40 could be adjusted to occur from 10 - 15" or 25 - 30". 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.</p>	<p>40" Range 4" Adjustable 40" 80" Range 8" Adjustable 80"</p> <p>Maximum Analog Ranging</p> <p>Maximum Analog Ranging is adjusting the span of the sensor to maximum. 36" for sensors with a 40" range and 72" for sensors with an 80" range. The maximum span will go from the sensors minimum sensing distance 4" to 40" for sensors with a 40" range and 8" to 80" for sensors with an 80" range. 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.</p>	<p>40" Range 4" Adjustable 40" 80" Range 8" Adjustable 80"</p> <p>Inverted Analog Outputs</p> <p>The RPS-401A sensors have 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.</p>
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Specifications:

Range: Adjustable 4 - 40" or 8 - 80"
Power Input: 20 - 30VDC Reverse Polarity Protected
Input Current: 90mA, Maximum
Ambient Temperature: 0 - 60°C or 32 - 140°F
Humidity: 0 - 95% Non-Condensing
Housing: PVC with a PVC sensing face
Outputs:
Analog Current Analog Current Sourcing Output
 4 - 20mA Inverted & Non-Inverted
 Load 0 Ohms to 500 Ohms
Analog Voltage Analog Voltage Output
 0 - 10V Inverted & Non-Inverted
 Load 500 Ohms to Infinity
 Short Circuit Protected
Transducer Frequency: 4 - 40" 8 - 80"
 175kHz 150kHz
Response Time: 4 - 40" 8 - 80"
 16ms 35ms
Weight:
 RPS-401A 9 ounces
 RPS-401A-QD 5.5 ounces



Beam Pattern Legend
 A = 4" x 4" Flat Target,
 Perpendicular to Beam
 B = 3" Diameter Rod
 C = 0.625" Diameter Rod



PART NUMBER	RANGE	OUTPUT / DESCRIPTION
RPS-401A-40	4 - 40"	0 - 10VDC and 4 - 20mA Analog
RPS-401A-80	8 - 80"	0 - 10VDC and 4 - 20mA Analog
RPS-401A-40QD	4 - 40"	0 - 10VDC and 4 - 20mA Analog - Cable Sold Separately
RPS-401A-80QD	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

