Power Supply Filter, MB7961

MaxBotix Ultrasonic Sensors Power filter

The power supply filter kits includes a 10ohm resistor, a 100ohm resistor, and a 100uF capacitor. The power supply filter is recommended for environments with unclean power or electrical noise, also called noisy power. Electrical noise may cause unstable range readings on MaxSonar products. The power supply filter helps clean unstable or noisy power supplies that may cause a MaxSonar sensor to have unstable range reports.

Features

- Includes components to connect to MaxSonar sensors

Benefits

- Helps stabilize range data
- Helps clean sensor's input power

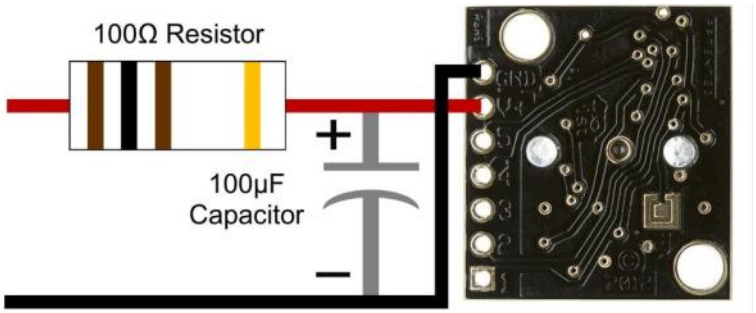
Applications and Uses

- UAV's, multi-copters, robots
- Environments with known dirty power
- Environments with electrical noise

Wiring Diagram

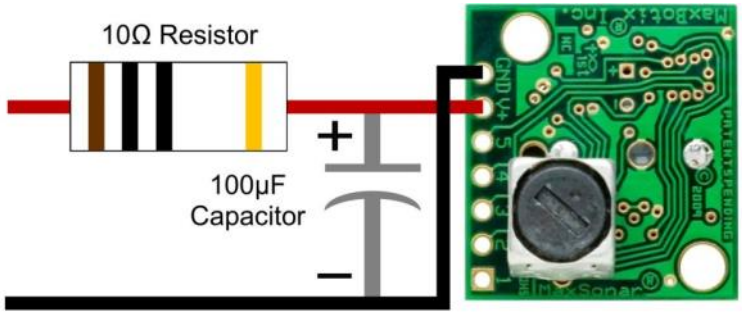
LV-MaxSonar-EZ, LV-ProxSonar-EZ, HRLV-MaxSonar-EZ

The recommended components for use with the LV-MaxSonar-EZ, LV-ProxSonar-EZ, and HRLV-MaxSonar-EZ ultrasonic sensors is a 100ohm resistor and a 100µF capacitor. Please use the diagram below for connecting the 100ohm and 100µF to the ultrasonic sensor.



XL-MaxSonar-EZ, XL-MaxSonar-AE, I2CXL-MaxSonar-EZ

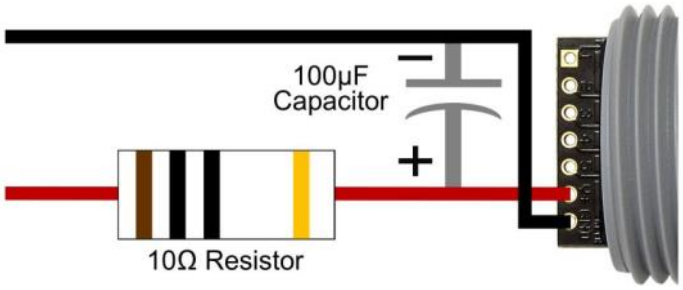
The recommended components for use with the XL-MaxSonar-EZ, XL-MaxSonar-AE, and I2CLV-MaxSonar-EZ ultrasonic sensors is a 10ohm resistor and a 100µF capacitor. Please use the diagram below for connecting the 10ohm and 100µF to the ultrasonic sensor.



Wiring Diagram Con't

MaxSonar-WR, MaxSonar-WRC

The recommended components for use with the XL-MaxSonar-WR, XL-MaxSonar-WRC, I2CXL-MaxSonar-WR, I2CXL-MaxSonar-WRC, HRXL-MaxSonar-WR, and HRXL-MaxSonar-WRC ultrasonic sensors is a 10ohm resistor and a 100µF capacitor. Please use the diagram below for connecting the 10ohm and 100µF to the ultrasonic sensor.

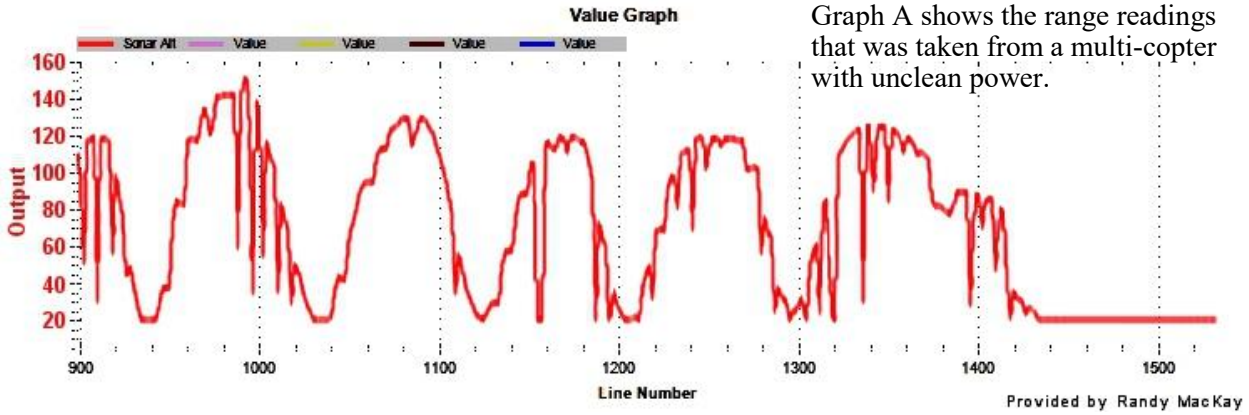


Power Supply Filter Importance

Supplying clean power to the sensor is required for best sensor performance. Conversely unclean power can negatively effect the sensor's range readings. Users with unclean power, can use the "Power Supply Filter" to help clean and stabilize the power supplied to the MaxBotix Inc., ultrasonic sensors.

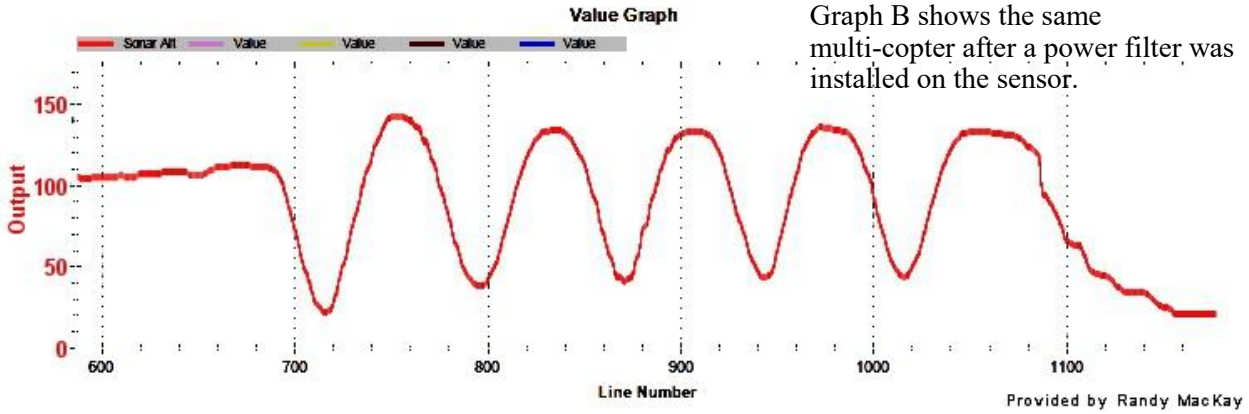
Graph A below shows the sensor output, when supplied with unclean power, while Graph B shows the same sensor with the Power Supply Filter installed. Hence, for this user, the "Power Supply Filter" cleaned up the supplied power, and allowed to the range outputs to function as intended.

Graph A



Graph A shows the range readings that was taken from a multi-copter with unclean power.

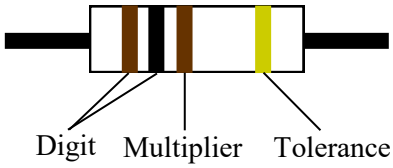
Graph B



Graph B shows the same multi-copter after a power filter was installed on the sensor.

Reading Resistors

Resistor's values are marked on the body of the resistor using a color coding. This can be beneficial when looking for a resistor value that is not in original packaging. To read a resistor please use the diagram below.



Digit		Multiplier		Tolerance	
Black	0	Black	1	Brown	1%
Brown	1	Brown	10	Red	2%
Red	2	Red	100	Gold	5%
Orange	3	Orange	1000	Silver	10%
Yellow	4	Yellow	10000		
Green	5	Green	100000		
Blue	6	Blue	1000000		
Violet	7	Gold	0.1		
Grey	8	Silver	0.01		
White	9				

The resistor above has 1 as the first digit, 0 as the 2nd digit, with a multiplier of 10. Using the chart above the digits are 10, multiply that by 10 and you get a resistor value of 100ohm. The tolerance on this resistor is 5%, this means the resistor may report a resistance between 95 and 105 ohms when read with a multi-meter.
The last band on a resistor before the tolerance band, is always the multiplier. All bands that are before the multiplier will be digits.

Have the right MaxSonar® for your application?

Check out our MaxSonar® Product Lines

Indoor Use
(or protected environments)

1 mm Resolution
HRLV-MaxSonar-EZ

1 in Resolution
LV-MaxSonar-EZ
LV-ProxSonar-EZ

1 cm Resolution
XL-MaxSonar-EZ
XL-MaxSonar-AE
XL-MaxSonar-EZL
XL-MaxSonar-AEL
I2CXL-MaxSonar-EZ

1 mm Resolution
HRUSB-ProxSonar-EZ
1in Resolution
USB-ProxSonar-EZ

Outdoor Use
(or rugged environments) IP67

1 mm Resolution
HRXL-MaxSonar-WR
HRXL-MaxSonar-WRT
HRXL-MaxSonar-WRM
HRXL-MaxSonar-WRMT
1 cm Resolution
XL-MaxSonar-WR
XL-MaxSonar-WRL
XL-MaxSonar-WRA
XL-MaxSonar-WRLA
I2CXL-MaxSonar-WR

1 mm Resolution
HRXL-MaxSonar-WRC
HRXL-MaxSonar-WRCT
1 cm Resolution
XL-MaxSonar-WRC
XL-MaxSonar-WRCA
I2CXL-MaxSonar-WRC

F-Option Available for all WR models. For additional protection when necessary in hazardous chemical environments.

Accessories

More information available online

MB7954 - Shielded Cable

The MaxSonar Connection Wire is used to reduce interference caused by electrical noise on the lines. This cable is a great solution to use when running the sensors at a long distance or in an area with a lot of EMI and electrical noise.

MB7950 - XL-MaxSonar-WR Mounting Hardware

The MB7950 Mounting Hardware is selected for use with our outdoor ultrasonic sensors. The mounting hardware includes a steel lock nut and two O-ring (Buna-N and Neoprene) each optimal for different applications.

MB7955 / MB7956 / MB7957 / MB7958 / MB7959 - HR-MaxTemp

The HR-MaxTemp is an optional accessory for the HR-MaxSonar. The HR-MaxTemp connects to the HR-MaxSonar for automatic temperature compensation without self heating.

MB7962 / MB7963 / MB7964 / MB7965 - Micro-B USB Connection Cable

The MB7962, MB7963, MB7964, and MB7965 Micro-B USB cables are USB2.0 compliant and backwards compatible with USB 1.0 standards.

MB7961 - Power Supply Filter

The power supply filter is recommended for environments with unclean power or electrical noise.