

Title of Change:	Close Range Accuracy Improvements
Changed Material First Ship Date:	05/12/2022
Current Material Last Order Date:	TBD
Current Material Last Delivery Date:	TBD
Product Category:	Sensor
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Sample Availability Date:	05/16/2022

Change Category	Type of Change
Firmware	Firmware was updated to improve accuracy of close range measurements

Description and Purpose:

A ranging inaccuracy was discovered that was tied to specific calibration values. The firmware update corrects this inaccuracy for all possible calibration values.

Changed Item	Before Change Description	After Change Description
Firmware	Discontinuities of up to 4cm can be present in the range between approximately 20cm and 50cm. For example, if the sensor is ranging 28cm and the target is moved 1cm further from the sensor, the new range could then be reported as 32cm. The sensor will never report ranges in between these two values. The sensor will range smoothly on either side of this discontinuity.	Sensor will range smoothly between ranges regardless of the calibration values.

Reason / Motivation for Change:	A ranging inaccuracy has been found that can affect certain MaxBotix XL-WR sensors for close range targets. Only one such range can exist per sensor and the jump will always occur at the same distance on any given sensor. The exact range will vary from sensor to sensor. This cannot cause a false negative detection, only an inaccuracy in the reported range. This issue only affects sensors with specific factory calibration values.
Anticipated impact on fit, form, function, reliability, product safety, electrical characteristics, or manufacturability:	Improved accuracy of close range measurements regardless of calibration values.

List of Affected Parts:

Part Number	New Firmware Version Number
7040-1XX	1.8
7040-2XX	1.7
7040-3XX	1.8
7040-4XX	1.7
7040-5XX	1.7
7040-6XX	1.7
7040-7XX	1.7
7052-1XX	3.0
7052-3XX	3.0
7060-1XX	2.2
7060-3XX	2.2
7070-1XX	2.2
7070-3XX	2.2
7092-1XX	3.0
7092-3XX	3.0
7137-1XX	1.7
7137-2XX	1.7
7137-3XX	1.7
7137-4XX	1.7
7137-5XX	1.7
7137-6XX	1.7
7137-7XX	1.7
7138-1XX	3.2
7138-3XX	3.2
7139-1XX	2.2
7139-2XX	2.2
7139-3XX	2.2
7139-4XX	2.2
7139-5XX	2.2
7139-6XX	2.2
7139-7XX	2.2
7150-1XX	1.4
7150-3XX	1.4
7155-1XX	1.2



7155-3XX	1.2
MB7125 (Custom)	3.1
MB7149 (Custom)	1.1
MB7159 (Custom)	2.2