



gomspace.com

NanoSense M315

Manual

Compact low noise magnetometer for high performance attitude determination systems

Product name: NanoSense M315

Document No.: 1018553

Revision: 1.3

Author: MABO

Approved by: MB

Approval date: 2019

Confidentiality Notice

This document is submitted for a specific purpose as agreed in writing and contains information, which is confidential and proprietary. The recipient agrees by accepting this document, that this material will not be used, transferred, reproduced, modified, copied or disclosed in whole or in part, in any manner or to any third party, except own staff to meet the purpose for which it was submitted without prior written consent.

GomSpace © 2019

1 Table of Contents

2	CHANGELOG	4
3	WHAT THIS DOCUMENT CONTAINS.....	5
4	OPERATION AND HANDLING	5
4.1	Usage.....	5
4.2	Installation.....	5
4.3	Calibration.....	5
5	DISCLAIMER	5

2 Changelog

Date	Revision	Author	Description
21 Nov 2016	1.0	MB	Initial release
25 Aug 2017	1.1	KLK	Document text, picture and layout update
2018	1.2	KLK	ISO9001. Disclaimer
28 May 2019	1.3	MABO	Changes the front page image

3 What this Document Contains

This manual gives an introduction on how to operate the NanoSense M315 sensor.

4 Operation and Handling

Warnings:



The *NanoSense M315* system employs components based on FETs and therefore requires anti-static handling precautions to be observed. Do not touch or handle the product without proper grounding!

4.1 Usage

The M315 requires only a 3.3 V supply and a I²C master device to interface it. The temperature sensor is a TI TMP100 (I²C add 0x48) and the magnetometer chipset (I²C add 0x20) is based on a PNI RM3100. For details on how to interface these devices both, please refer manufacturer datasheets.

This product is shipped with example driver code to ease integration. See “rm3100.h” and “rm3100.c” for example code.

If you are using the M315 together with a GomSpace ADCS system it comes fully software integrated.

4.2 Installation

The M315 is highly sensitive and it is therefore recommended to install it as far as possible away from magnetically noisy components. Systems that contain magnetic components like large inductors and iron content are examples of noisy systems. All subsystems that draw large amounts of current can be magnetically noisy. Some types of stainless screws can also have a magnetic residual and it can therefore be recommended to install the magnetometer with brass screws.

4.3 Calibration

It is highly recommended to perform both an on-ground and an in-orbit calibration of the magnetometer. As a minimum, calibrate for gain and offset.

If you are using the M315 together with a GomSpace ADCS system, a calibration software setup is included.

5 Disclaimer

The information in this document is subject to change without notice and should not be construed as a commitment by GomSpace. GomSpace assumes no responsibility for any errors that may appear in this document.

In no event shall GomSpace be liable for incidental or consequential damages arising from use of this document or the software and hardware described in this document.