

NanoTorque Z-axis Internal

Datasheet

Internal magnetorquer for nano-satellites

1 Changelog

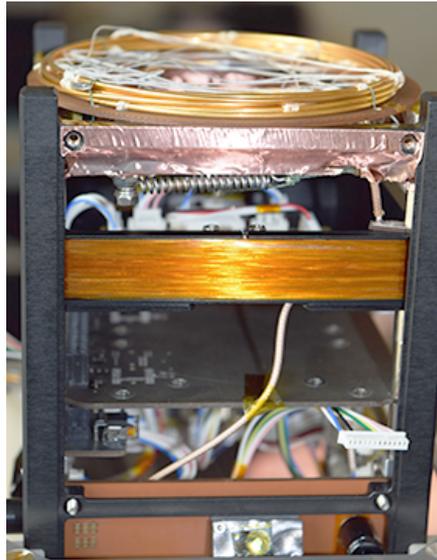
Date	Revision	Author	Description
7-10-2016	1.0	KLK	First release

2 Overview

A magnetorquer is used with a satellites ADCS. The GomSpace NanoTorque Z-axis Internal is made for nano-satellites. It has flown on several satellites and performed perfectly. The size is fitted for standard PC104 size.

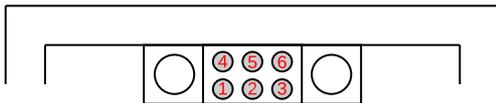
The top of the Z-axis Internal is defined as shown on the front-page picture.

Below is a picture of the Z-axis Internal integrated into the top of the GOMX-3 satellite.



3 Connector

Harwin M80-5100642



Pin	Description	Pin	Description	Pin	Description
4	VCC -	5	Not connected	6	VCC +
1	VCC -	2	Not connected	3	VCC +

4 Absolute maximum ratings

Stresses above those listed under Absolute Maximum Ratings may cause permanent damage to the Z-axis Internal. Exposure to absolute maximum rating conditions for extended periods may affect the reliability.

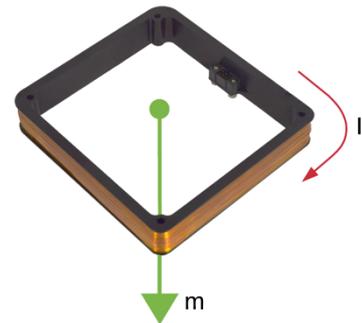
Symbol	Description	Min.	Max.	Unit
VCC	Supply voltage	0	3.4	V
T	Operating Temperature	-50	85	°C

5 Electrical and Magnetorque Characteristics

Values are for a 20°C system.

Symbol	Description	Value	Unit
VCC	Supply voltage	3.3	V
R	Total resistance	148	Ω
ρ	Temperature coefficient	0.571	$\Omega/^\circ\text{C}$
m	Dipole moment	139	mAm^2

The direction of the magnetic field is shown in the drawing on the right. Notice it is viewed from the top.



6 Physical Characteristics

Description	Value	Unit
Mass	106	g
Size	90.5 x 96.9 x 17.2	mm

7 Connecting with other PCB's

To place the Z-axis Internal correctly within the PC104 stack, the magnetic field vector points the same direction as the stack connector. Align the holes of the PCB with the Z-axis Internal, as shown in the drawing below.

Notice the Z-axis Internal is viewed from the bottom.

