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> S2GO\_3D\_TLI493DW2BW-A0

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# S2GO\_3D\_TLI493DW2BW-A0



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### Overview

XENSIV(TM) - Shield2Go equipped with TLI493D-W2BW-A0 - XENSIV™ 3D magnetic sensor

**TLI493D-W2BW Description:** The Infineon XENSIV™ is a device for industrial and consumer applications: the TLI493D-W2BW. It uses our latest 3D Hall generation and is housed in an extremely small wafer-level package. With an 87 percent smaller footprint and 46 percent thinner than previous comparable products, the sensor paves the way for completely new design options. Due to the small WLB-5 package (1.13 mm x 0.93 mm x 0.59 mm) and the low current consumption of 7 nA in power-down mode, the magnetic sensor is also suitable for use in applications that previously used resistor-based or optical solutions.

**Description S2GO\_3D\_TLI493D-W2BW-A0:** Infineon's new XENSIV™ S2GO\_3D\_TLI493D-W2BW-A0 boards offer a unique customer and evaluation experience – the boards are equipped with one TLI493D-W2BW-A0 magnetic sensor and come with a ready to use Arduino library. Customers can now develop their own system solutions by combining Shield2Go boards together with Infineon My IoT adapters. My IoT adapters are gateways to external hardware solutions like Arduino and Raspberry PI, which are popular IoT evaluation platforms. All this enables the fastest evaluation and development of IoT system on the market! It can be used together with XMC2go platform (plugged on top as depicted below: the sensor is placed above the USB connector). The hardware can be also connected remotely to any 3.3V compatible development kit. Attention: Do not connect the shield directly to Arduino UNO platforms which are operating at 5V!

### Summary of Features

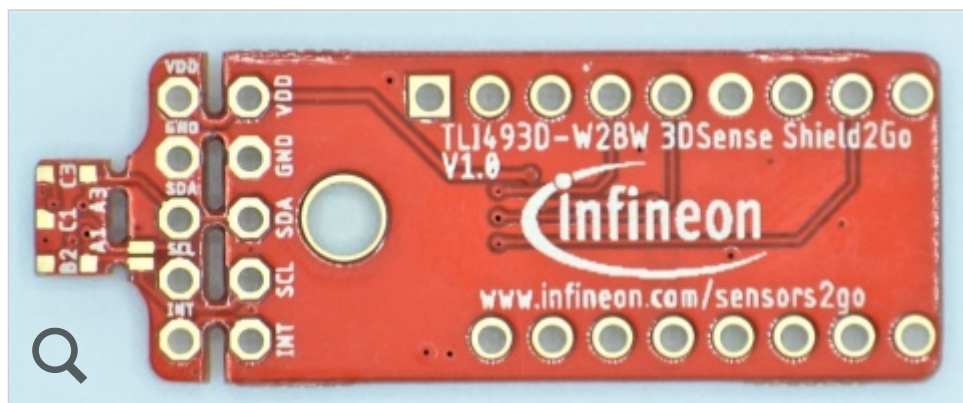


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- 3D (X, Y, Z) magnetic flux density sensing of  $\pm 160$  mT
- Programmable flux resolution down to typ.  $65 \mu\text{T}$
- Extremely small form factor: typ.  $1.13 \text{ mm} * 0.93 \text{ mm} * 0.59 \text{ mm}$
- X-Y angular measurement mode
- Power down mode with 7 nA (typ.) power consumption
- 12-bit data resolution for each measurement direction plus 10-bit temperature sensor
- Variable update frequencies and power modes (configurable during operation)
- Temperature range  $T_j = -40^\circ\text{C} \dots 125^\circ\text{C}$ , supply voltage range = 2.8 V...3.5 V
- Triggering by external microcontroller possible via I2 C protocol
- Interrupt signal to indicate a valid measurement to the microcontroller

### Potential Applications

- Anti tempering protection in smart meters
- Joysticks e.g. for medical equipment, cranes, CCTV-control, game consoles
- Control elements e.g. white goods multifunction knobs
- Industrial joysticks
- Ergonomic push- and control buttons on domestic appliances and power tools
- Position control in robotic



## Parametrics

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|                     |  |
|---------------------|--|
| Applications        | Anti tempering protection in smart meters ; Joysticks e.g. for medical equipment, cranes, CCTV-control, game consoles ; Control elements e.g. white goods multifunction knobs ; Industrial joysticks ; Control elements e.g. white goods multifunction knobs ; Ergonomic push- and control buttons on domestic appliances and power tools ; Position control in robotics |
| Family              | 3D Magnetic Sensor   |
| Product Description | Shield2Go equipped with TLI493D-W2BW-A0 - XENSIV™ 3D magnetic sensor   |
| Qualification       | Consumer, Industrial   |
| Type                | Demo Board   |

## Documents

+ Expand all

## — Data Sheets



XENSIV™ – TLI493D-W2BW Low power 3D Hall sensor with I2 C interface and Wake-Up function (/dgd/Infineon-TLI493D-W2BW-DataSheet-v01\_00-EN.pdf?

fileId=5546d46273a5366f0173b9bc938d2e1d)

> EN (/dgd/Infineon-TLI493D-W2BW-DataSheet-v01\_00-EN.pdf?

fileId=5546d46273a5366f0173b9bc938d2e1d)

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## + Product Brief





XENSIV™ – 3D magnetic sensor family TLE/TLI/TLV493D family (/dgd/Infineon-

[3D\\_Magnetic\\_Sensors\\_ProductBrief-v04\\_00-EN.pdf?fileId=5546d46261d5e6820161e7571b2b3dd0](#)[> Home \(/cms/en/Products \(/cms/en/product/\)\) - Evaluation Boards \(/cms/en/product/evaluation-boards/\)](#)[> S2GO\\_3D\\_TLI493DW2BW-A0 \(/cms/en/product/evaluation-boards/s2go\\_3d\\_tli493dw2bw-a0\)](#)  
[> EN \(/dgd/Infineon-3D\\_Magnetic\\_Sensors-ProductBrief-v04\\_00-EN.pdf?fileId=5546d46261d5e6820161e7571b2b3dd0\)](#)[Share](#)

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## + Getting Started



XENSIV(TM) - TLI493D-W2BW Shield2Go Quick Start Guide (/dgd/Infineon-TLI493D-W2BW\_Shield2Go-GettingStarted-v01\_00-EN.pdf?

fileId=5546d462737c45b9017395f019797123)

[> EN \(/dgd/Infineon-TLI493D-W2BW\\_Shield2Go-GettingStarted-v01\\_00-EN.pdf?fileId=5546d462737c45b9017395f019797123\)](#)

fileId=5546d462737c45b9017395f019797123)

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## + User Manual



XENSIV™ – TLI493D-W2BW User Manual for 3D Hall Sensor (/dgd/Infineon-TLI\_493D-W2BW-UserManual-v01\_00-EN.pdf?fileId=5546d46273a5366f0173be229e1b1512)

[> EN \(/dgd/Infineon-TLI\\_493D-W2BW-UserManual-v01\\_00-EN.pdf?fileId=5546d46273a5366f0173be229e1b1512\)](#)

fileId=5546d46273a5366f0173be229e1b1512)

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01\_00 | 2020-08-05 | pdf | 964 KB

### Order

|                             |                               |
|-----------------------------|-------------------------------|
| <b>Sales Product Name</b>   | <b>S2GO_3D_TLI493DW2BW-A0</b> |
| <b>OPN</b>                  | S2GO3DTLI493DW2BWA0TOBO1      |
| <b>Product Status</b>       | active and preferred          |
| <b>Package name</b>         | --                            |
| <b>Order online</b>         |                               |
| <b>Completely lead free</b> |                               |



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|                           |                               |
|---------------------------|-------------------------------|
| <b>Sales Product Name</b> | <b>S2GO_3D_TLI493DW2BW-A0</b> |
| <b>Halogen free</b>       |                               |
| <b>RoHS compliant</b>     | no                            |
| <b>Packing Size</b>       | 1                             |
| <b>Packing Type</b>       | CONTAINER                     |
| <b>Moisture Level</b>     |                               |
| <b>Moisture Packing</b>   | NON DRY                       |

## Tools & Software

### + Software



XENSIV(TM) - TLx493D generic library software (/dgdl/Infineon-3D\_Magnetic\_Sensors\_TLx493D\_Library-Software-v01\_03-EN.zip?fileId=5546d462689a790c01692a3fa52e4fff)

> EN (/dgdl/Infineon-3D\_Magnetic\_Sensors\_TLx493D\_Library-Software-v01\_03-EN.zip?fileId=5546d462689a790c01692a3fa52e4fff)

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GUI for 3D Magnetic Sensor 2Go (/dgdl/Infineon-Software-for-3D-Magnetic-Sensor-2Go incl. out-of-shaft\_05\_06-Software-v05\_20-EN.zip?fileId=5546d4626102d35a01614626f9644e4e)

> EN (/dgdl/Infineon-Software-for-3D-Magnetic-Sensor-2Go incl. out-of-shaft\_05\_06-Software-v05\_20-EN.zip?fileId=5546d4626102d35a01614626f9644e4e)

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05\_20 | 2020-01-21 | zip | 29.1 MB

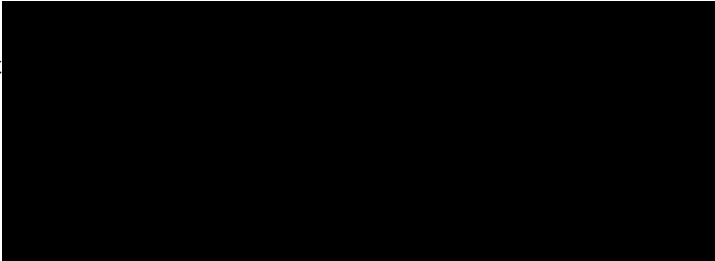
## Videos

Kits, Shields, Evaluation Boards 3D Magnetic Sensors  
Direction indicator for 3D Hall 2GO kits and Shield2Go



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The Infineon XENSIV™ Direction Indicator can be mounted on all 3D magnetic sensor 2GO kits and 3D magnetic sensor Shield2Go. The Direction Indicator itself comes with a pre-mounted magnet and can be easily combined with the 2GO kits and Shield2Go mentioned above in order to simulate and evaluate 9 different positions (3x3 position matrix) as used in automotive direction indicators.

Power Drill Trigger for 3D Hall 2GO kits and Shield2Go



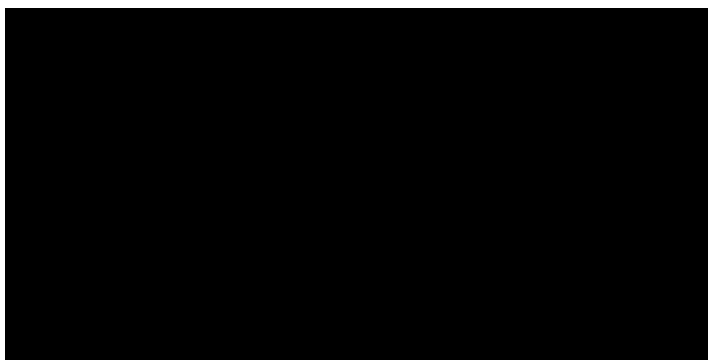
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Our XENSIV™ linear control trigger can be mounted on all 3D magnetic sensor 2GO Kits and 3D magnetic sensor Shield2Go. The Linear control trigger itself comes with a pre-mounted magnet and can be easily combined with the 2GO Kits and Shield2Go mentioned above in order to simulate and linear movements. A feather is part of this adapter allowing the simulation of control triggers as used in power tools like for

example gardening tools. Compared to the linear slider, the linear control trigger offers just one dimensional movements without allowing to adjust the air-gap.

## HMI Mini Control for 3D Hall 2GO kits and Shield2Go



The Infineon Mini Control can be mounted on all 3D magnetic sensor 2GO Kits and 3D magnetic sensor Shield2Go. The Mini Control itself comes with a pre-mounted magnet and can be easily combined with the 2GO Kits and Shield2Go mentioned above in order to simulate and evaluate the movements of control buttons within 4 different direction (left vs. right and forward vs. backward). In addition, the Mini Control allows a full 360° rotation offering full flexibility to precisely measure rotational movements of control buttons used in automotive, consumer and industrial environments.

## Support

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In order to enable us to process your inquiry as efficiently as possible and ensure your case is duly reported, we kindly ask you to submit your request via the following support form:

**<https://www.infineon.com/tac> (<https://www.infineon.com/tac>)**

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## Package information

The package information is available on our homepage at **<https://www.infineon.com/packages> (<https://www.infineon.com/packages>)**. Please note, that they are divided into the subcategories "Leaded and through-hole", "Surface Mounted Devices" and "Special Packages". You will find all relevant package information at the option that applies.

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## Notes on processing

Information regarding reflow profile, soldering temperature, soldering profile and further processing notes for most of the discrete products are mentioned in the Application Note.

Please visit **<https://www.infineon.com/packages> (<https://www.infineon.com/packages>)** and refer to the document "General Recommendations for Assembly of Infineon Packages" under Downloads....





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