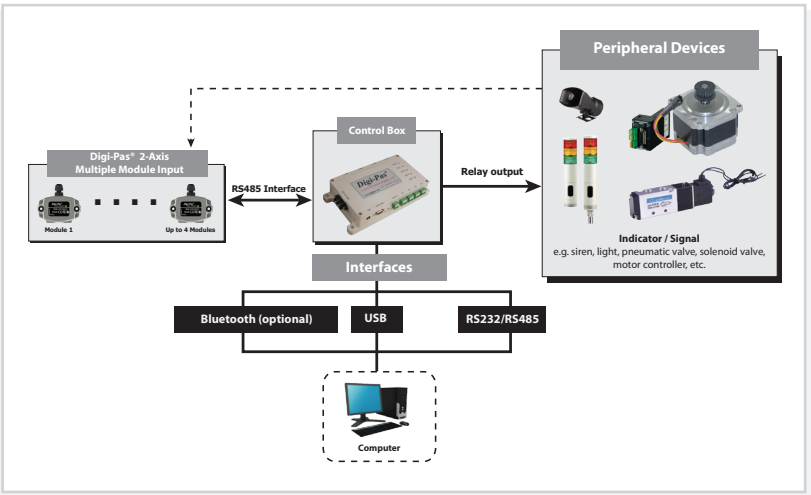
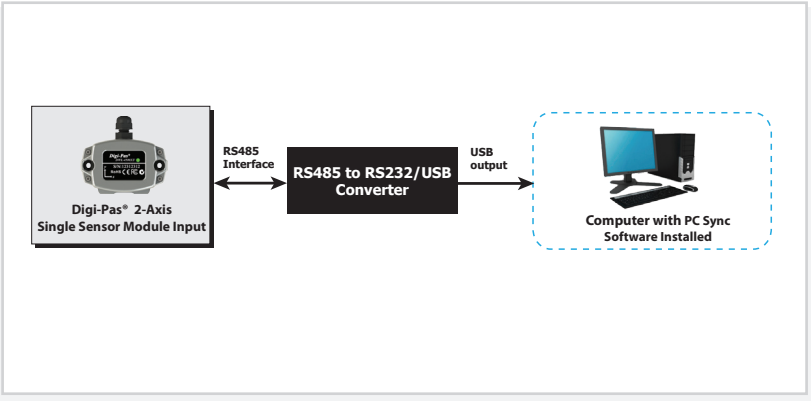


Application Diagram

Application diagram 1- Multiple sensor using control box



Application diagram 2- Single Sensor connection



PC System Requirements

User's PC is recommended the following items to be installed for using the PC Sync Software:

- Microsoft framework 3.5 for 32bit Windows OS or Microsoft framework 4.0 for 64bit Windows OS
- Windows 7 / Window 8 / Window 10

The following item are required:
At least 1 GB RAM, at least 100MB free disk space on hard drive, Microsoft Excel 2007 or above,
USB 2.0 Port or RS232 Port, Bluetooth adapter (for Bluetooth connection)

Applications :



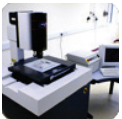
Offshore Platform



CNC



Robotic Arm



CMM



Industrial Printer



Satellite Dish

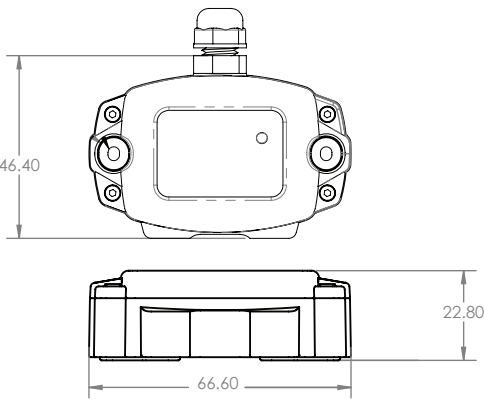


MRI Scanner

Software Features Comparison

Features	Pc Sync Free Edition	Pc Sync Pro Edition
Relay Contact Output		✓
SMART 2D BUBBLE®		✓
Single-Axis Angle Meter	✓	✓
Single-Axis Angle Graph	✓	✓
Dual-Axis Angle Graph		✓
Vibrometer Graph		✓
Self Calibration	✓	✓

Sensor Module Dimension (mm)



2022
MODEL

U.S. Pat. No: 9,459,121 B2

COMPACT, COST EFFECTIVE
& PROGRAMMABLE

2-Axis
Compact Sensor Module

Model : DWL-4000XY Series

RS232 RS485 Bluetooth USB

For 'Plug & Play' option, use Digi-Pas® Compact Sensor Module with Digi-Pas® Control Box & PC-Sync Pro Software.

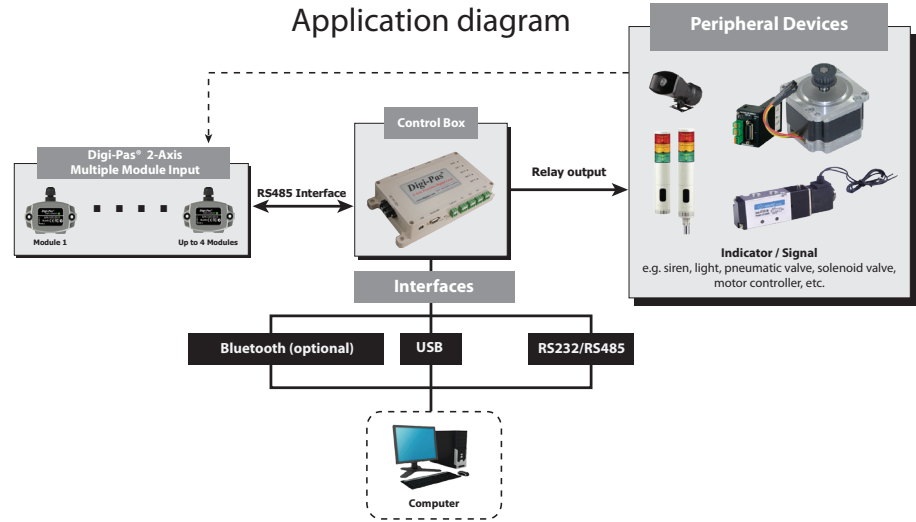
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ACCURACY:

DWL-4200XY	DWL-4500XY
± 0.02°	± 0.002°
±350 µm/M	±35 µm/M
±0.004 in/ft	±0.0004 in/ft



Application diagram



Digi-Pas® DWL-4200XY and DWL-4500XY are the most **Compact & Cost Effective** models yet of our iconic **2-Axis Inclination Sensor Modules** that are specifically designed to be integrated into machine/equipment/structure with less space needed. Come with the capability of real-time simultaneous monitoring of plane levelling position, 2D tilt angles, vibration measurement, and data logging function when used with the **'Plug and Play' PC Sync Software**. These compact intelligent modules are embedded with advanced MEMS sensor technology, developed for application engineers to ensure precision structural stability or angular position on any desired object.

These smart & compact inclination sensor modules are tough, durable, IP65 waterproof, have shock resistance, small footprint, and are enabled to communicate with external peripheral devices through various protocols such as **USB, RS232, RS485, & wireless Bluetooth.**

Innovation & Technology Driven™

Manufacturer
Representatives:

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info@digipas.com

Digi-Pas® Singapore
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info@digipas.com

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Products tested by TÜV SÜD, SGS accredited body to comply with CE, FCC & RoHS, calibrated traceable to UKAS, JIS, NIST & DIN, and manufactured under SGS certified ISO quality standards:



2-Axis Compact Sensor Module

Technical Specification

Model	DWL-4200XY	DWL-4500XY
Measurement Range (Single Axis Mode)	0.00° to ± 90.00°	0.000° to ± 10.000°
Measurement Range (Dual Axis Mode)	0.00° to ± 15.00°	0.000° to ± 5.000°
Resolution	0.01° (175 µm/M or 0.002 in/ft)	0.001° (18 µm/M or 0.0002 in/ft)
Accuracy	± 0.02° at 0° to 2.00°; ± 0.04° at other angles	± 0.002° at 0° to 2.000°; ± 0.004° at other angles
Repeatability	± 0.01° (175 µm/M or 0.002 in/ft)	± 0.001° (18 µm/M or 0.0002 in/ft)
Cross Axis Error	Negligible (± 0.0025°)	Negligible (± 0.00025°)
Vibrometer (Relative g)	1.0	2.0
Response time	10ms (milliseconds)	500ms (milliseconds)
Power Supply	9V DC	
IO communication protocols	RS485: 8 Data bits, no parity, 1 stop bits, 115200bps USB 2.0 or Wireless Bluetooth connectivity (optional)	
Sensor Module Waterproof Rating	IP65	
Sensor Module Base Material	Zinc Alloy	
Sensor Module Dimension (mm)	67(L) x 42(W) x 23(H)	
Sensor Module Weight (approx.)	400g	600g
Operating Temperature	-40°C to +85°C	

Note : Product Specification and appearance are subjected to change for product improvement without prior notice.

ACCREDITATION

DWL-4000XY Series Tilt Sensor Modules accuracy is verified by accredited 3rd party independent calibration & test bodies and National Metrology Centre traceable to SI standard and NIST, JIS, UKAS & DIN under CIPM MRA.

Advantages of Digi-Pas® 2-Axis Inclination Sensor Module

- **PLANAR & WIDE ANGLE RANGE MEASUREMENT**
Precision levelling and tilt angles measurement essentially involve simultaneous 2-dimensional planes rather than single-axis. Digi-Pas® 2-axis intelligent tilt sensor modules having high precision and wide measurement range are capable of providing real-time levelling & vibration readings that empower application engineers to continuously monitor machine/equipment/structure angular positional status precisely and speedily.
These small footprint MEMS driven 2-axis sensor modules effectively eliminate the limitations of using multiple single-axis sensors or bulky pendulum based sensors to achieve 2D levelling and planar angular measurements.
- **PROGRAMMABLE & USER-DEFINABLE SYSTEM**
Digi-Pas® 2-axis tilt sensor module system is designed to be integrated into precision machine/equipment/structure enabling application engineers to instantly access angular positional status without the need for tedious and time-consuming programming.
The angular measurement system enables user-defined settings to activate any external connected peripheral devices at ease.

Sensor Module Overview

- High accuracy of 2-axis angle/level measurement of 0.02° or 0.002° (depending on model)
- Built-in Vibrometer for real-time vibration measurement
- User-friendly Professional PC Sync Software to configure the tilt sensor modules (OPTIONAL)

Control Box Overview

- **Programmable Relay Contacts Outputs:**
Enables user-defined tilt angle/vibration range limits settings to trigger peripheral devices (e.g. siren/alarm, valve, motor, strobe lights, etc.)
- **Multiple I/O communication protocols**
i.e. USB, RS232, RS485 & Wireless Bluetooth connectivity (optional)

Professional PC Sync Software

The PC Sync Software is a 'plug & play' interface software (embedded with National Instrument software) that enables application engineers to remote access to multiple tilt sensor modules instantly via wireless Bluetooth connectivity/ USB cable/ RS232 for plane levelling, 2D tilt angles and vibration measurement. With the remote real-time data acquisition, logging & analysis features, the software offers a comprehensive solution without the need for tedious and time-consuming programming.

PC Sync Software Features

Relay Contact Output

- Enables user to define pre-set condition to activate any connected peripheral devices e.g. siren/alarm, valve, motor, strobe lights, etc.
- User-defined settings, real-time feedback of relay output status and tilt sensor module measurement readings can be seen at a glance on PC screen

SMART 2D BUBBLE®

- View and record real-time 2-axis angles readings from a selected tilt sensor module
- Simultaneous display of graphical bull's eye (with auto range feature) and numeric formats
- Plane surface's elevation point clearly indicated by Smart 2D Bubble®

Single-Axis & Dual-Axis Angle Graphs

- Distinctive line graph display and numerical readings of angle/levelling measurement from multiple tilt sensor modules
- Enables identification and comparison of real-time results among multiple connected tilt sensor modules
- Enables data saving in Excel format

VibroMeter Graph

- Numeric and graphical display of vibration magnitude and pattern/graph for effective vibration conditions assessment
- Simultaneous display of Vibrographs for multiple operating tilt sensor modules
- Fast sampling rate at 10ms (milliseconds) per data capture

Single-Axis Angle Meter

- Graphical and numerical display for real-time single-axis or dual-axis angle readings of multiple tilt sensor modules
- Large, easy-to-read display with units in degree(°), mm/M or In/Ft

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