

2-Axis Ultra Precision Inclinometer

Model : DWL-8500XY



**Accuracy
1 arcsec. or 5µm/M**

Digi-Pas® DWL-8500XY is a **2-Axis Ultra Precision Inclinometer** with built-in Vibrometer, having resolution and **accuracy of 1 arcsec (5µm/M)** and **wide measuring range of 14400 arcsec** for ultra-precision levelling, angle, surface flatness and vibration measurements. It is capable of real-time wireless Bluetooth measuring & data logging when used with PC Sync Software/ Mobile Sync App.

This instrument is exceptionally engineered to greatly simplifying the task of professionals in installation, set-up and maintenance of very large-sized CNC machine, surface geometry profiling, analysis, characterization of precision machine, test/measuring instruments and alignment-sensitive equipment.



2-Axis Ultra Precision Inclinometer

Instrument Overview

- 2-Axis colour graphic simultaneous display of leveling reading & surface geometry profile measurements
- Accuracy of 1 arcsec ($\leq 5\mu\text{m/M}$)
- Built-in Vibrometer for real-time vibration measurement
- Real-time digital & analogue display
- Wireless Bluetooth/USB connectivity for remote data logging & analysis
- 3-points contact base for stable surface-to-surface contact to prevent "rocking"

Instrument Features



3D SURFACE GEOMETRY PROFILE GRAPH

Enable user to perform 3D surface flatness geometry measurement in 3-Dimensional visual graph when in synchronization with PC using Professional PC Sync software.



ANGLE METER

Real-time colour graphic display for single/dual-axis digital & analogue angle measurements, data acquisition & logging on device LCD screen or PC monitor.



VIBRO METER

Real-time colour graphic display for vibration measurement and data logging on device screen or PC monitor.



ALTERNATE ZERO SETTING

Enable user to measure relative angles at a common plane with respect to a reference angle set to zero.



ABSOLUTE LEVEL SETTING

Enables user to perform absolute symmetry readings for both "front" & "reverse" (180 degrees) positions of any measurement angle to determine zero datum with reference to center of gravity.



WIRELESS SYNC

Bluetooth wireless sync to computer/tablet/smartphone for remote measurement, data acquisition, logging & analysis.



TEMPERATURE COMPENSATED

The instrument/device is temperature compensated for the entire specified operating temperature range.

Technical Specification – DWL-8500XY

Measurement Range (Single Axis Mode)	0.0 to 14400 arcsec (0.0000° to ± 4.0000°)
Measurement Range (Dual Axis Mode)	0.0 to 7200 arcsec (0.0000° to ± 2.0000°)
Resolution	1 arcsec ($\leq 5\mu\text{m/M}$)
Accuracy	± 1 arcsec. at 0 ~ 1080 arcsec; ± 3 arcsec. at other angles.
Repeatability	1 arcsec ($\leq 5\mu\text{m/M}$)
Measurement Speed	≤ 5 Sec.
Vibrometer (Relative g)	2.0
Display	Colour TFT LCD
Power Supply	4 x AAA 1.5V Batteries / USB Power source
Material	PC ABS / Cast Iron / Titanium
Connectivity	Bluetooth Industrial Class 1 (≤ 30 metres) & USB 2.0 Cable (≤ 5 metres)
PC SYNC Software	Professional Edition (included)
Operating Temperature	+10°C to +40°C (Calibrated for the entire temperature range)
Storage Temperature	-20°C to +60°C
Dimension (mm)	188 x 62 x 37
Nett Weight (Approximate)	1150 gram

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

Accreditation

DWL-8500XY instrument 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 2-Axis Ultra Precision Inclinometer

SPEED, PRECISION & EFFECTIVENESS

Precision levelling, angle measurement/alignment and surface flatness profiling tasks essentially involve **2-dimensional planes** rather than single-axis. Thus, 2-axis simultaneous display of surface plane angles readings are required to effectively guide engineers in adjusting precision object/machine to a targeted position accurately and speedily.

Digi-Pas® pioneered world's-first 2-axis simultaneous angles display instrument (U.S. patented) embedded with vibrometer which offers superior performance. It empowers engineers in **eradicating constraints** associated with using traditional single-axis 'bubble' or digital levels that require them to conduct those time-consuming tasks 'one axis at a time' with tedious trial-and-error iterations.

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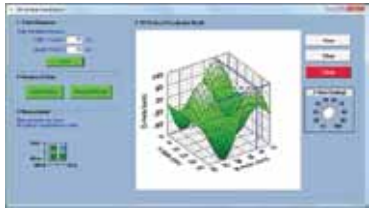


Professional PC Sync Software

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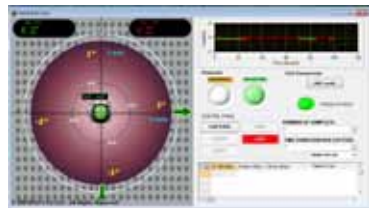
Digi-Pas® Professional PC Sync is a 'plug & play' user-friendly interface software (embedded with National Instrument software) specifically designed for **ultra-precision application** to enable **remote real-time measurement, user-definable data acquisition & logging** through **wireless Bluetooth connectivity/USB cable** with DWL-8500XY 2-Axis Ultra Precision Inclinometer.

PC Sync Software Features



3D Surface Flatness Graph

- Enable 3D surface flatness geometry measurement, profiling and characterization
- 3D visual graph and numeric data can be saved in Excel file



SMART 2D BUBBLE®

- Simultaneous graphical bull's eye (with auto range feature) and numeric display of 2-axis angle/levelling measurement
- Clear indication of a plane surface's elevation point simplifies 2D alignment tasks



Single-Axis & Dual-Axis Angle Graphs

- Line graph display and numerical readings for single-axis or dual-axis angle/levelling measurement
- Enables recording of machine's levelling status changes over a period of time



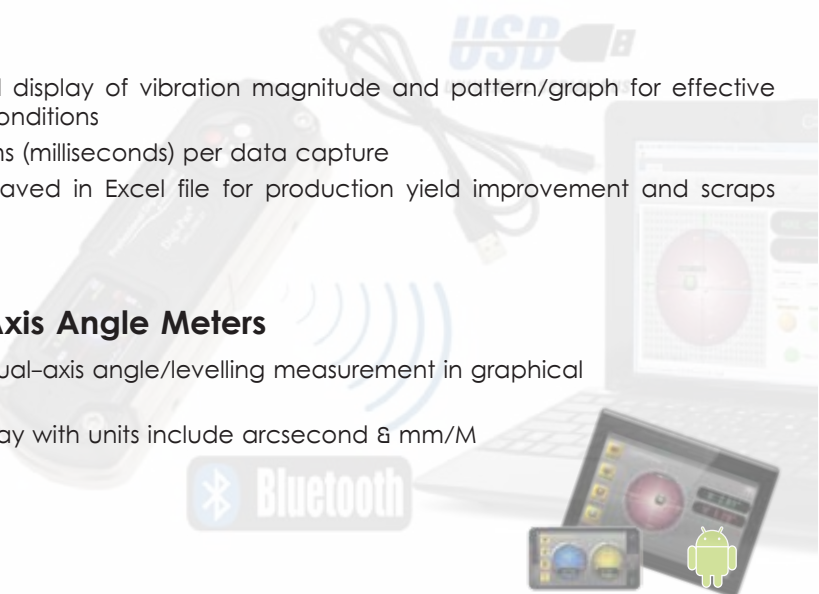
VibroMeter Graph

- Numerical and graphical display of vibration magnitude and pattern/graph for effective assessment of vibration conditions
- Fast sampling rate at 10ms (milliseconds) per data capture
- Vibration data can be saved in Excel file for production yield improvement and scraps reduction analysis



Single-Axis & Dual-Axis Angle Meters

- Real-time single-axis or dual-axis angle/levelling measurement in graphical and numerical display
- Large, easy-to-read display with units include arcsecond & mm/M

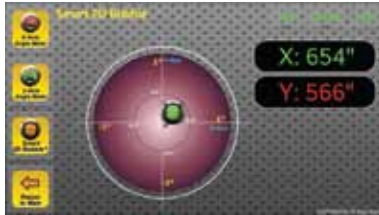


Professional Mobile Sync Apps

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The user-friendly **Digi-Pas® Level Mobile Sync Apps** can be easily installed in smartphone or tablet to fully utilize the **remote wireless Bluetooth mobile connectivity** to the Digi-Pas® DWL-8500XY 2-axis Ultra Precision Inclinator, providing amazing user experience of **'one-man-operation'** for machine installers to perform remote 2-axis simultaneous levelling & alignment task conveniently and speedily.

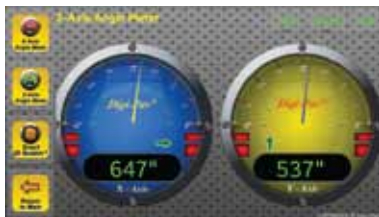
Android Apps Features



SMART 2D BUBBLE®

This feature enables user to view 2-axis angle/levelling measurement simultaneously in graphical bull's eye (with auto range feature) and numeric formats in arcsec & mm/M units.

Quality and productive works can be achieved by completely eliminating the hassles of levelling one-axis-at-a-time (trial-and-error) experienced when using conventional single-axis levels.



Single-Axis & Dual-Axis Angle Meters

This feature enables user to view single-axis or dual-axis angle/levelling measurement in numerical and graphical display i.e. arcsecond & mm/M units.

Features comparison

Features	Pc Sync Pro Edition	Mobile Sync Pro Edition	Mobile Sync Free Edition
3D Surface Flatness Graph	✓		
SMART 2D BUBBLE®	✓	✓	
Single-Axis Angle Meter	✓	✓	✓
Dual-Axis Angle Meter	✓	✓	
Single-Axis Angle Graph	✓		
Dual-Axis Angle Graph	✓		
Vibrometer Graph	✓		
USB Connectivity	✓		
Bluetooth Connectivity	✓	✓	✓

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 XP service pack 3 / Windows Vista / Windows 7

The following item are required:

- At least 1 GB Ram
- At least 100MB free disk space on hard drive
- Microsoft Excel 2007 and above
- USB 2.0 Port
- Bluetooth adapter (For Bluetooth Connection)

Supported Android Versions

- Android 2.2 Froyo
- Android 2.3 Ginger Bread
- Android 3.0 Honeycomb
- Android 4.0 Ice Cream Sandwich
- Android 4.1 Jelly Bean

note: check the latest available version at DigiPas website



Applications :



Biomedical & Pharmaceutical



CNC Machine Alignment



CMM Levelling (Metrology)



Research Laboratory



Semiconductor Production Machines



Aerospace & Defence



Railway & Transportation System

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