Digital Probes and the Orbit Network

Application Story

Check Disk Drive components

The Challenge

Disk Drives for computers and memory storage have continually increased in capacity, but shrunk in size and price. Still, the disk drive components, such as the base plate, are smaller, more delicate, yet demand tighter tolerances for the highest quality. For measurement checks, gauging sensors much be precise and flexible, yet cost effective, as the profit margins for these products is quite low.

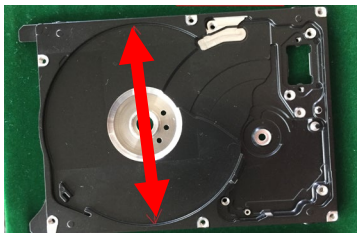
3mm probes checking ridges

The Solution

Solartron Metrology Digital Sensors can meet the demands of gauging Disk drive components, with a wide variety of probes that have low tip forces, small sizes, and special configurations.

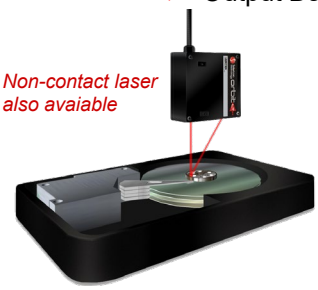
- **Ultra High Accuracy, Resolution and Repeatability:** Solartron sensors have accuracy as high as 0.05% F.S., resolution as high as **0.01 µm** and repeatability as high as **0.05 µm**.
- **Low Tip Forces:** Solartron offers probes with tip forces as low as 0.05N. Nylon and ruby tips are also available. This ensures that delicate surfaces will not be scratched or damaged.
- **Specialized Sensors:** Solartron offers probes with **3mm and 6mm** diameters, giving the ability to check tiny dimensions or a large number of points in a small area. Solartron also offers **Block Gauges** and **Flexures**, for more awkward measurements.
- **Lower costs:** Solartron probes can be set up quickly and easily for gauging in tight spaces. This means faster, repeatable measurements with minimal downtime that will provide long term cost savings.
- **Robust Network:** Up to 200 Sensors - Contact, Non Contact, and 3rd party - can easily be connected via the Solartron Orbit® Network
  - Output to PC via USB, Ethernet TCP/IP, or PLC via Ethernet/IP®, Profinet®, EtherCAT®, Modbus TCP/IP or Modbus (serial). CC Link coming soon.
  - Output Data to Excel Sheets or any SPC software

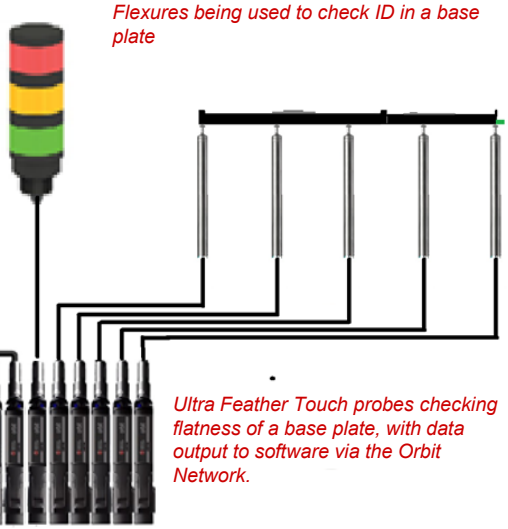
Ultra Feather Touch Probes checking a small area where a laser was too bulky



Flexures being used to check ID in a base plate

Non-contact laser also avaiable





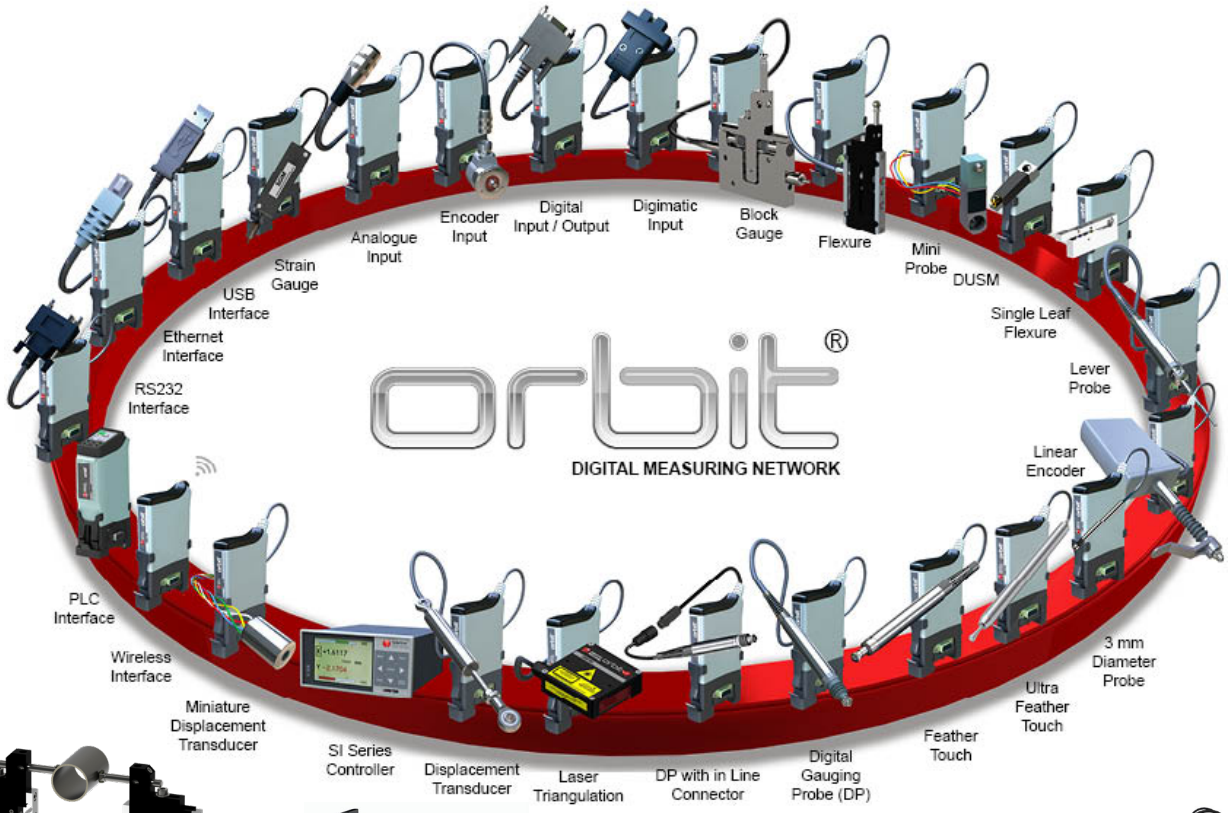
Ultra Feather Touch probes checking flatness of a base plate, with data output to software via the Orbit Network.

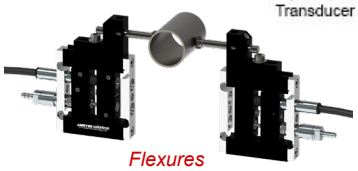
AMETEK®
ULTRA PRECISION TECHNOLOGIES

Solartron Metrology

Orbit® – The Total Measurement System from Solartron Metrology

The Solartron Orbit® Digital Measurement System, provides a limitless set of measuring system solutions, with numerous different interfaces to computers and PLC's.





Flexures

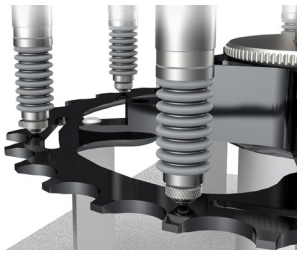
Block Gauges

Displacement

Multi Channel Wireless Gauge

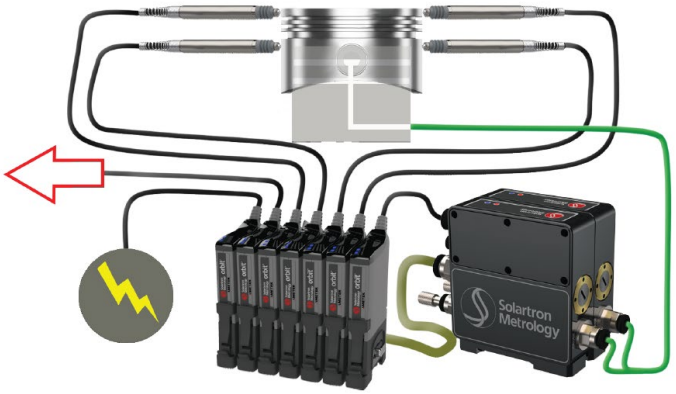
G-Type (With signal conditioning mounted at the end)

Bore Gauging



Gauging Flatness of a Bicycle Gear

Orbit GCS Software



Measurement of Piston with Air Gauging checking ID, and connected to Orbit with the Air Gauge Module. OD Checked with Digital Probes.