

Wireless Trinity & Trinity[™] probe comparison

| Patent protected

Our machine tool Inspection and Analyzer series offer a range of measurement systems to provide peace of mind by guaranteeing your machine is within specification. The Position and Rotary INSPECTOR and ANALYZER series employ IBS Precision Engineering's patented wireless Trinity & Trinity[™] probe systems for linear and rotary axis measurement. Unlike other systems the Trinity systems' unique design enables the execution of non-contact X, Y and Z measurements simultaneously with exceptional measurement speed and accuracy.

How does the probe measure?

A single masterball or linear array is placed on the table and the probe is mounted in the spindle. The path of the probe, representing the Tool Centre Point (TCP), is measured relative to the master ball, representing the workpiece for 3-, 4-, 5- or 6-axis movements. In this way the errors in the cutting path are directly measured and visualized in X, Y and Z directions.

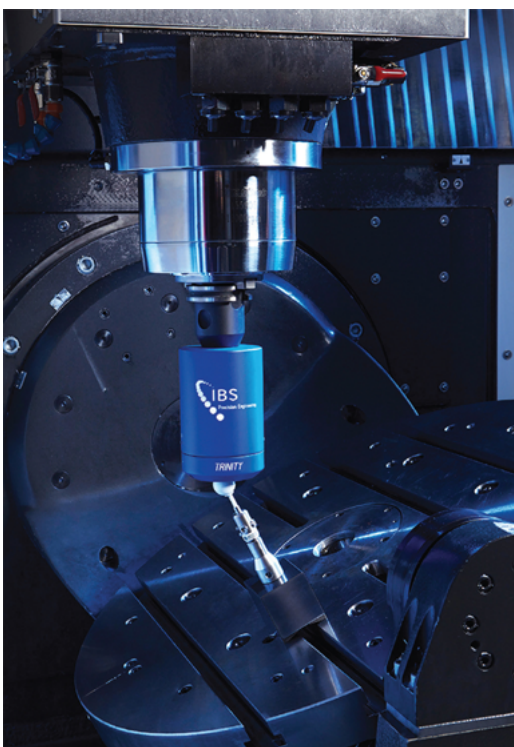
Trinity or Trinity[™] probe

Both probe types allow for simultaneous dynamic or static measurement of up to 6-axis systems in under 1 minute. Pivot line, squareness and linearity errors are shown instantaneously.

Controller settings, dynamic instabilities or bearing performance issue are made visible with a measurement uncertainty <1µm. Wake-up functionality allows full autonomous operation.

Due to the reduced footprint of the probe, the Trinity[™] can be used in smaller machines. It also offers an increased accuracy (export controlled). The battery life has been extended due to power saving. For enhanced safety, an optional E-stop is available.

The Trinity offers a greater measurement range which may be suitable for larger machines and wifi connection (versus Bluetooth). For a full comparison see below.



The Trinity & Trinity[™] probe systems consists of:



Trinity

- Calibrated Trinity probe
- Wireless access point
- Wireless USB receiver
- Master balls
- Mounting magnet + extension kit
- 4 batteries (3100 mAh) including charger & adapter
- Travel case



Trinity[™]

- Calibrated Trinity[™] probe
- Bluetooth dongle
- Master balls
- Mounting magnet + extension kit
- Wireless charging station
- E-stop (optional)
- Travel case

Specifications Probe

	Trinity	Trinity[™]
Measuring range	3.50mm	2.00mm
Resolution	0,25 µm	0,2 µm
Sampling rate	2 kHz	2 kHz
Measuring uncertainty	$U_{10} < 1,0 \mu\text{m}$ (within 1mm range)	$U_{10} < 1,0 \mu\text{m}$ (full range)
Measuring time continuous	17 hours	13 hours
Lifetime sleep mode	42 hours	100 days
Wireless details PSK	2,4 GHz frequency, 802.11b/g/n standard, WPA2 - security	2,4 GHz frequency, Bluetooth 5.0, dedicated bonding, 6-digit PIN security
Probe mounting shaft	ø= 16mm	ø= 10mm
Dimensions	Length: 135mm; Diameter: 80 mm; Weight: 770 grams	Length: 60mm; Diameter: 80 mm; Weight: 325 grams

Specifications Masterball

Diameter (normal)	22 mm
Length	75 mm