

TP200/TP200B modular probes

The TP200 and TP200B are electronic probes using strain gauge technology which gives higher accuracy than kinematic touch-trigger probes. They combine outstanding metrology performance with superior functionality to produce a highly versatile DCC CMM probing system with excellent productivity.

The TP200 system components are:

- TP200 probe body – the standard model
- TP200B probe body – a variant model with increased vibration tolerance
- TP200 stylus module – choice of fixed overtravel forces: 'SF' (standard force) or 'LF' (low force)
- PI 200 probe interface
- SCR200 stylus changing rack



TP200 probe body

The TP200 probe incorporates micro strain gauge transducers delivering excellent repeatability and accurate 3D form measurement even with long styli. The sensor technology gives sub-micron triggering performance and eliminates the lobing characteristics encountered with standard probes. The solid state ASIC electronics within the probe ensure reliable operation over millions of trigger points.

TP200B probe body

The TP200B probe uses the same technology as TP200 but has been designed to have a higher tolerance to vibration. This helps to overcome the problem of 'air' trigger generation which can arise from vibrations transmitted through the CMM or when using longer styli with faster positioning speeds. Please note that we do not recommend the use of TP200B with the LF module or cranked/star styli.

Measuring performance			TP200	TP200B
Principal application			DCC CMM where high accuracy measurement is required	As TP200 but where 'air' * trigger events occur
Sense directions			6-way: ±X, ±Y, ±Z	6-way: ±X, ±Y, ±Z
Unidirectional repeatability (± μm)	Trigger level 1	Q 4 μm (0.00016 in)	Q 4 μm (0.00016 in)	Q 4 μm (0.00016 in)
	Trigger level 2	Q 5 μm (0.00020 in)	Q 5 μm (0.00020 in)	Q 5 μm (0.00020 in)
XY (2D) form measurement deviation	Trigger level 1	±0.8 μm (0.00032 in)	±1.0 μm (0.00040 in)	±1.2 μm (0.00047 in)
	Trigger level 2	±0.9 μm (0.00036 in)	±1.2 μm (0.00047 in)	±1.4 μm (0.00056 in)
XYZ (3D) form measurement deviation	Trigger level 1	±1.0 μm (0.00040 in)	±2.5 μm (0.00100 in)	±4.0 μm (0.00160 in)
	Trigger level 2	±1.4 μm (0.00056 in)	±4.0 μm (0.00160 in)	±1.0 μm (0.00040 in)
Repeatability of stylus change		With SCR200 Manual	±0.5 μm (0.00020 in) max ±1.0 μm (0.00040 in) max	±0.5 μm (0.00020 in) max ±1.0 μm (0.00040 in) max
Trigger force	XY plane	All modules	Q 02 N	Q 02 N
	Z axis	All modules	Q 07 N	Q 07 N
Overtravel force (@ 0.5mm displacement)	XY plane	SF/EO module	Q 2 N - Q 4 N	Q 2 N - Q 4 N
		LF module	Q 1 N - Q 15 N	Q 1 N - Q 15 N
	Z axis	SF/EO module	4.9 N	4.9 N
		LF module	1.6 N	1.6 N
Weight (probe sensor + module)			22g (0.8oz)	22g (0.8oz)
Max. extension (f on PH10 series head)			300g (11.8oz)	300g (11.8oz)
Max. recommended stylus length (M2 stylus range)	SF/EO module	50mm (1.97 in) steel - 100mm (3.94 in GF)	50mm (1.97 in) steel - 100mm (3.94 in GF)	50mm (1.97 in) steel - 100mm (3.94 in GF)
	LF module	20mm (0.79 in) steel - 50mm (1.97 in GF)	20mm (0.79 in) steel - 50mm (1.97 in GF)	20mm (0.79 in) steel - 50mm (1.97 in GF)
Probe mounting method			M8 thread	M8 thread
Suitable interface			PI 200	PI 200
Stylus module changing rack (automatic)			SCR200	SCR200
Stylus module storage rack (manual)			MSR1	MSR1

The above data applies for test conditions as follows:

Stylus length 50mm (1.97 in)
Stylus velocity 480mm/min (1.57 ft/min)

* Air trigger (or false trigger). The TP200B reduces triggers that may be caused by vibrations.