

RMP400 high accuracy radio machine probe



Specification

Principal application	Workpiece inspection and job set-up on multi-tasking machines, machining centres and gantry machining centres.	
Transmission type	Frequency-hopping spread spectrum (FHSS) radio Radio frequency 2400 MHz to 2483.5 MHz	
Radio approval regions	UK, EU, EFTA, Japan and USA (China exempt). For details about other regions, contact Renishaw.	
Compatible interfaces	RMI and RMI-Q	
Operating range	Up to 15 m (49.2 ft)	
Recommended styli	High modulus carbon fibre, lengths 50 mm (1.97 in) to 200 mm (7.88 in)	
Weight (without shank)	including batteries	262 g (9.24 oz)
Switch-on / switch-off options	Radio on Spin on	Radio off or timer off Spin off or timer off
Probe feedrate (minimum)	3 mm/min (0.12 in/min) with auto-reset ¹	
Spindle speed (maximum)	1000 r/min	
Battery life (2 x ½AA 3.6 V lithium-thionyl chloride)	Standby life	230 days maximum, dependent on switch-on / switch-off option.
	Continuous life	165 hours maximum, dependent on switch-on / switch-off option.
Sense directions	±X, ±Y, +Z	
Unidirectional repeatability	0.25 µm (10 µin) 2σ – 50 mm stylus length ² 0.35 µm (14 µin) 2σ – 100 mm stylus length	
X, Y (2D) form measurement deviation	±0.25 µm (10 µin) – 50 mm stylus length ² ±0.25 µm (10 µin) – 100 mm stylus length	
X, Y, Z (3D) form measurement deviation	±1.00 µm (40 µin) – 50 mm stylus length ² ±1.75 µm (70 µin) – 100 mm stylus length	
Stylus trigger force ^{3,4} XY plane (typical minimum) +Z plane (typical minimum)	0.09 N, 9 gf (0.32 ozf) 3.34 N, 341 gf (12.01 ozf)	
Stylus overtravel force XY plane (typical minimum) +Z plane (typical minimum)	1.04 N, 106 gf (3.74 ozf) ⁵ 5.50 N, 561 gf (19.78 ozf) ⁶	
Environment	IP rating	IPX8, BS EN 60529:1992+A2:2013
	IK rating (typical)	IK01 (EN/IEC 62262: 2002) [for glass window]
	Storage temperature	-25 °C to +70 °C (-13 °F to +158 °F)
	Operating temperature	+5 °C to +55 °C (+41 °F to +131 °F)

¹ Speeds below 3 mm/min commonly occur when manually moving the probe using the handwheel with a very fine feedrate.

² Performance specification is tested at a standard test velocity of 240 mm/min (9.45 in/min) with a 50 mm (1.97 in) carbon fibre stylus. Significantly higher velocity is possible depending on application requirements.

³ Trigger force, which is critical in some applications, is the force exerted on the component by the stylus when the probe triggers. The maximum force applied will occur after the trigger point (overtravel). The force value depends on related variables including measuring speed, machine deceleration and latency. RENGAGE equipped probes offer ultra-low trigger forces.

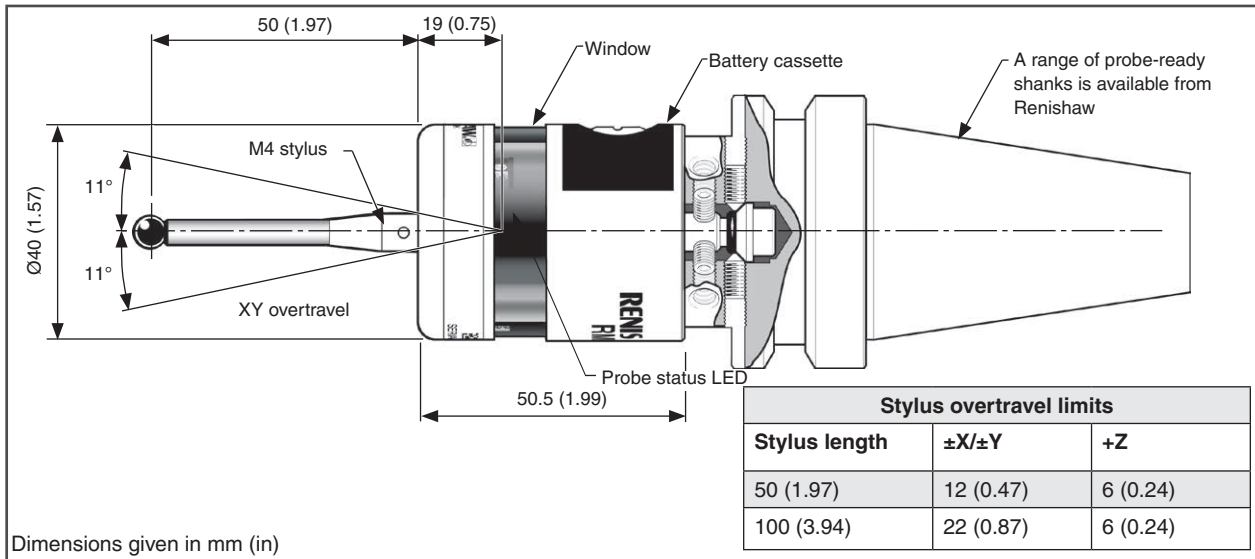
⁴ These are the factory settings, manual adjustment is not possible.

⁵ Stylus overtravel force in the XY plane occurs 70 µm (2755.91 µin) after the trigger point and rises by 0.1 N/mm, 10 gf/mm (9.1 ozf/in) until the machine tool stops (in the high force direction and using a 50 mm (1.97 in) carbon fibre stylus).

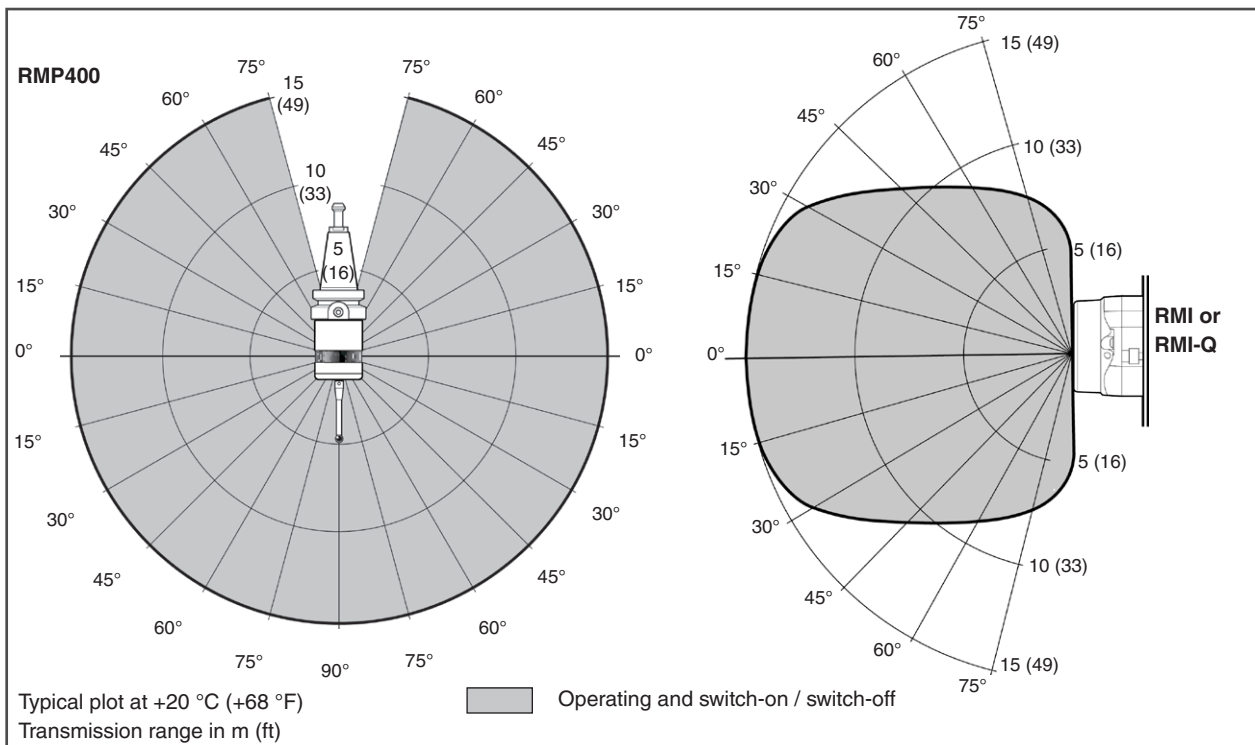
⁶ Stylus overtravel force in +Z direction occurs 1.0 µm (39.37 µin) after the trigger point and rises by 0.6 N/mm, 61 gf/mm (54.8 ozf/in) until the machine stops.

For further information and the best possible application and performance support, contact Renishaw or visit www.renishaw.com/rmp400

RMP400 dimensions



RMP400 performance envelope



Spare parts and accessories

A full range of spare parts and accessories is available. Contact Renishaw for a full list.

www.renishaw.com/rmp400

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Part no.: H-6570-8200-01-B
Issued: 07.2023