



# RMP400 (QE) high-accuracy radio machine probe



## Specification

<b>Principal application</b>		Workpiece inspection and job set-up on multi-tasking machines, machining centres and gantry machining centres.
<b>Weight without shank</b> (including batteries)		262 g (9.24 oz)
<b>Transmission type</b>		Frequency-hopping spread spectrum (FHSS) radio Radio frequency 2400 MHz to 2483.5 MHz
<b>Radio approval regions</b>		UK, EU, EFTA, Japan and USA (China exempt). For details about other regions, contact Renishaw.
<b>Compatible interfaces</b>		RMI-Q or RMI-QE combined interface and receiver unit.
<b>Operating range</b>		Up to 15 m (49.2 ft)
<b>Recommended styli</b>		High modulus carbon fibre, lengths 50 mm (1.97 in) to 200 mm (7.88 in)
<b>Switch-on / switch-off options</b>		Radio on  Radio off or timer off Spin on  Spin off or timer off
<b>Probe feedrate</b> (minimum)		3 mm/min (0.12 in/min) <sup>1</sup>
<b>Battery life</b> (2 × ½AA 3.6 V lithium-thionyl chloride)	Standby life	37 months maximum, dependent on switch-on / switch-off option.
	Continuous life	230 hours maximum, dependent on switch-on / switch-off option.
<b>Sense directions</b>		±X, ±Y, +Z
<b>Unidirectional repeatability</b>		0.25 µm (10 µin) 2σ – 50 mm stylus length <sup>2</sup> 0.35 µm (14 µin) 2σ – 100 mm stylus length
<b>X, Y (2D) form measurement deviation</b>		±0.25 µm (10 µin) – 50 mm stylus length <sup>2</sup> ±0.25 µm (10 µin) – 100 mm stylus length
<b>X, Y, Z (3D) form measurement deviation</b>		±1.00 µm (40 µin) – 50 mm stylus length <sup>2</sup> ±1.75 µm (70 µin) – 100 mm stylus length
<b>Stylus trigger force</b> <sup>3</sup> XY plane (typical minimum) +Z plane (typical minimum)		0.07 N, 7 gf (0.25 ozf). Trigger filter (Level 2) 1.02 N, 104 gf (3.67 ozf). Trigger filter (Level 3)
<b>Stylus overtravel force</b> XY plane (typical minimum) +Z plane (typical minimum)		2.8 N, 285 gf (10.07 ozf) typical minimum <sup>4</sup> 9.8 N, 999 gf (35.25 ozf) typical minimum <sup>5</sup>
<b>Stylus overtravel</b>		XY plane ±15° +Z plane 11 mm (0.43 in)

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

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

<sup>3</sup> 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 system latency. RENGAGE equipped probes offer ultra-low trigger forces when probing at low feedrates. Tested at the lowest recommended feedrate of 3 mm/min (minimum).

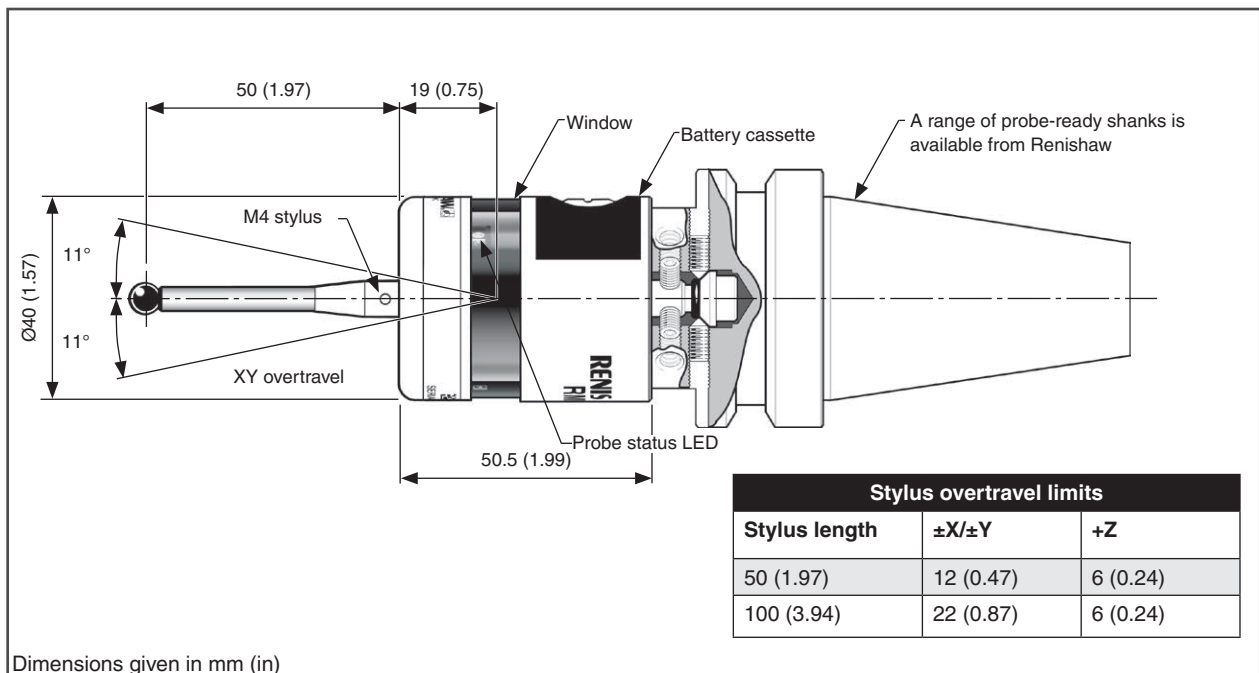
<sup>4</sup> Stylus overtravel force in the XY plane occurs 70 µm (2755.91 µin) after the trigger point and rises by 0.1 N/mm, 10 gf/mm (9.1 ozf/in) until the machine tool stops (in the high force direction and using a 50 mm carbon fibre stylus).

<sup>5</sup> 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 tool stops.

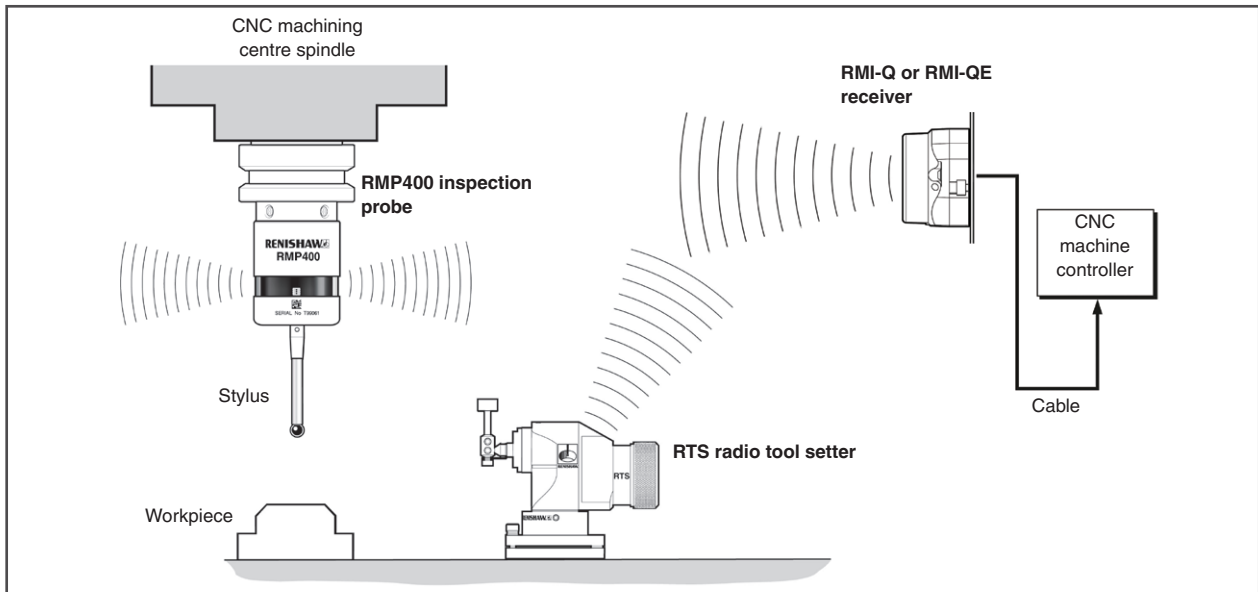
## Specification (continued)

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)
	Indoor/outdoor use	Indoor use
	Altitude	<3000 m
	Relative humidity	5% to 95%
	Wet location	Yes, water/oil/coolant
	Pollution degree	Level 2

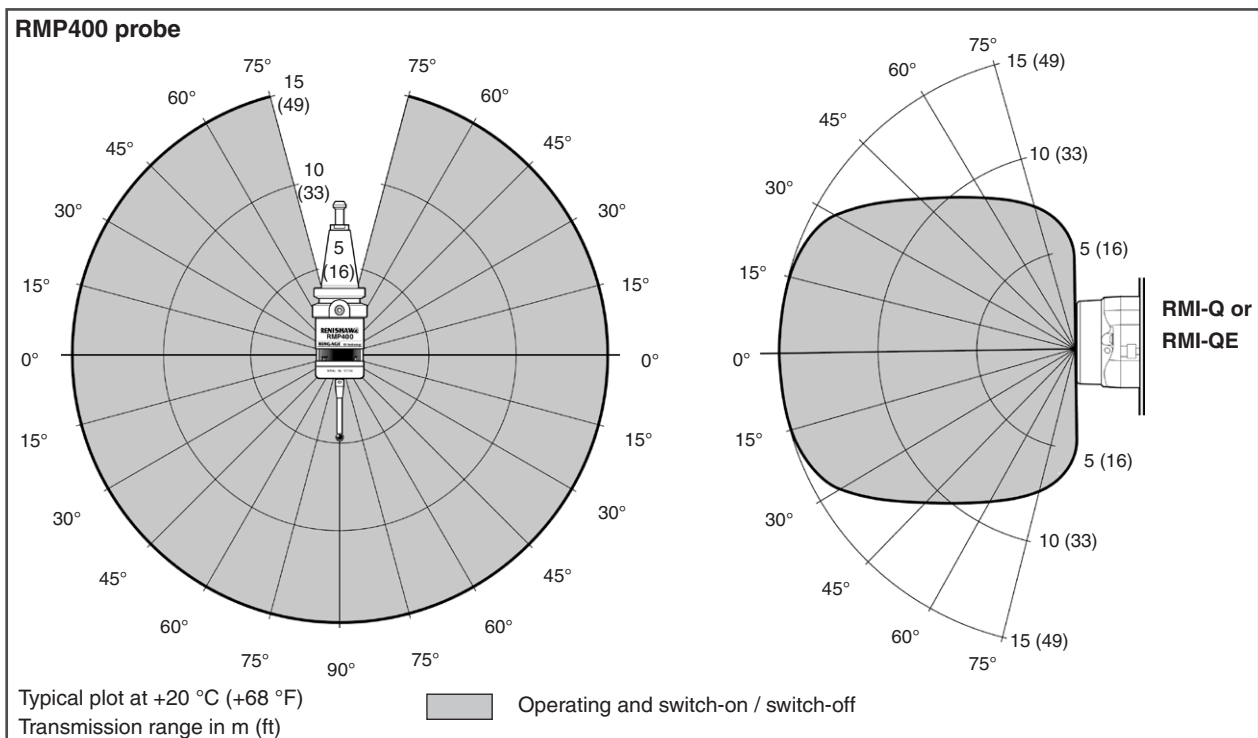
## RMP400 dimensions



## Installing the RMP400 with a RMI-Q or RMI-QE



## 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](http://www.renishaw.com/rmp400)

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Part no.: H-6586-8200-01-C

Issued: 04.2025