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# RMP400 radio machine probe


www.renishaw.com/rmp400

## 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<br>Radio frequency 2400 MHz to 2483.5 MHz |
| **Radio approval regions** | | Australia, Brazil, Canada, Europe, India, Japan, Malaysia, Singapore, South Africa, USA |
| **Compatible interfaces** | | RMI or 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 → Radio off or timer off<br>Spin on → Spin off or timer off |
| **Battery life** (2 × ½ AA 3.6 V lithium-thionyl chloride) | **Standby life** | 230 days maximum, dependent on switch-on/switch-off option. |
| | **Continuous use** | 165 hours maximum, dependent on switch-on/switch-off option. |
| **Probe feedrate (minimum)** | | 3 mm/min (0.12 in/min) *(see note 6)* |
| **Sense directions** | | ±X, ±Y, +Z |
| **Unidirectional repeatability** | | 0.25 µm (10 µin) 2σ – 50 mm stylus length *(see note 1)*<br>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 *(see note 1)*<br>±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 *(see note 1)*<br>±1.75 µm (70 µin) – 100 mm stylus length |
| **Stylus trigger force** *(see notes 2 and 5)*<br>XY plane (typical minimum)<br>+Z direction (typical minimum) | | <br>0.09 N, 9 gf (0.32 ozf)<br>3.34 N, 341 gf (12.01 ozf) |
| **Stylus overtravel force**<br>XY plane (typical minimum)<br>+Z direction (typical minimum) | | <br>1.04 N, 106 gf (3.74 ozf) *(see note 3)*<br>5.50 N, 561 gf (19.78 ozf) *(see note 4)* |
| **Sealing** | | IPX8, BS EN 60529:1992+A2:2013<br>(IEC 60529:1989+A1:1999+A2:2013) |
| **Storage temperature** | | –10 °C to +70 °C (+14 °F to +158 °F) |
| **Operating temperature** | | +5 °C to +50 °C (+41 °F to +122 °F) |

Note 1 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.

Note 2 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 and machine deceleration. RENGAGE™ equipped probes offer ultra-low trigger forces.

Note 3 Stylus overtravel force in the XY plane typically 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).

Note 4 Stylus overtravel force in the +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.

Note 5 These are the factory settings, manual adjustment is not possible.

Note 6 Speeds below 3 mm/min commonly occur when manually moving the probe using the handwheel with a very fine feedrate.

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

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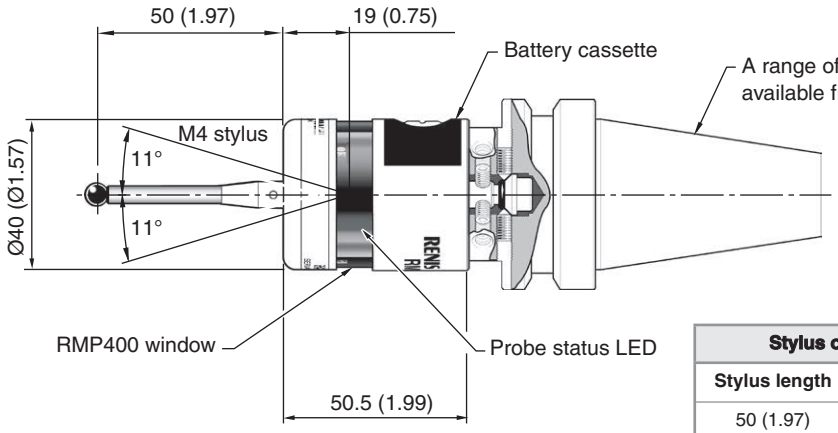
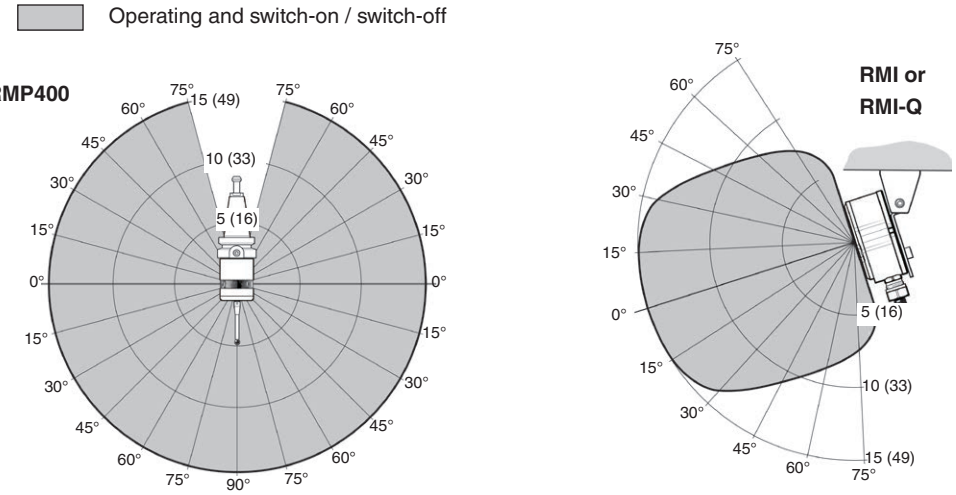
## RMP400 dimensions




| Stylus overtravel limits | | |
|---|---|---|
| **Stylus length** | **±X/±Y** | **Z** |
| 50 (1.97) | 12 (0.47) | 6 (0.24) |
| 100 (3.94) | 22 (0.87) | 6 (0.24) |

Dimensions given in mm (in)

## RMP400 performance envelope




Typical plot at +20 °C (+68 °F)
Transmission range in m (ft)

## Spare parts and accessories

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

**For worldwide contact details, please visit our main website at www.renishaw.com/contact**



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