

OMP600 optical machine probe



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Specification

| Optical setting | | Modulated | Legacy |
|--|---------------------------------|---|--|
| Principal application | | Workpiece inspection and job set-up on all sizes of machining centres and small to medium multi-tasking machines. | |
| Transmission type | | 360° infrared optical transmission (modulated or legacy) | |
| Compatible interfaces | | OMI-2, OMI-2T, OMI-2H, OMI-2C or OSI with OMM-2 interface system | OMI, OMM with MI 12 |
| Operating range | | Up to 6 m (19.7 ft) | |
| Recommended styli | | High modulus carbon fibre, lengths 50 mm (1.97 in) to 200 mm (7.88 in) | |
| Weight without shank (including batteries) | | 1029 g (36.30 oz) | |
| Switch-on/switch-off options | | Optical on → | Optical off or timer off |
| | | Spin on → | Spin off or timer off |
| | | Shank switch on → | Shank switch off |
| Battery life (2 × AA 3.6 V lithium-thionyl chloride) | Standby life | 800 days maximum, dependent on switch-on/switch-off option. | |
| | Continuous use low power | 380 hours maximum, dependent on switch-on / switch-off option. | 410 hours maximum, dependent on switch-on / switch-off option. |
| Sense directions | | ±X, ±Y, +Z | |
| Unidirectional repeatability | | 0.25 µm (10 µin) 2σ – 50 mm (1.97 in) stylus length (<i>see note 1</i>) 0.35 µm (14 µin) 2σ – 100 mm (3.94 in) stylus length | |
| X, Y (2D) form measurement deviation | | ±0.25 µm (10 µin) – 50 mm (1.97 in) stylus length (<i>see note 1</i>) ±0.25 µm (10 µin) – 100 mm (3.94 in) stylus length | |
| X, Y, Z (3D) form measurement deviation | | ±1.00 µm (40 µin) – 50 mm (1.97 in) stylus length (<i>see note 1</i>) ±1.75 µm (70 µin) – 100 mm (3.94 in) stylus length | |
| Stylus trigger force (<i>see notes 2 and 5</i>) | | | |
| XY plane (typical minimum) | | 0.15 N, 15 gf (0.54 ozf) | |
| +Z direction (typical minimum) | | 1.75 N, 178 gf (6.03 ozf) | |
| Stylus overtravel force | | | |
| XY plane (typical minimum) | | 3.05 N, 311 gf (10.98 ozf) (<i>see note 3</i>) | |
| +Z direction (typical minimum) | | 10.69 N, 1090 gf (38.51 ozf) (<i>see note 4</i>) | |
| Minimum probing speed | | 3 mm/min (0.12 in/min) | |
| Sealing | | IPX8 (EN/IEC 60529) | |
| Operating temperature | | +5 °C to +55 °C (+41 °F to +131 °F) | |

Note 1 Performance specification is tested at a standard test velocity of 240 mm/min (9.45 in/min). Significantly higher velocity is possible depending on application requirements.

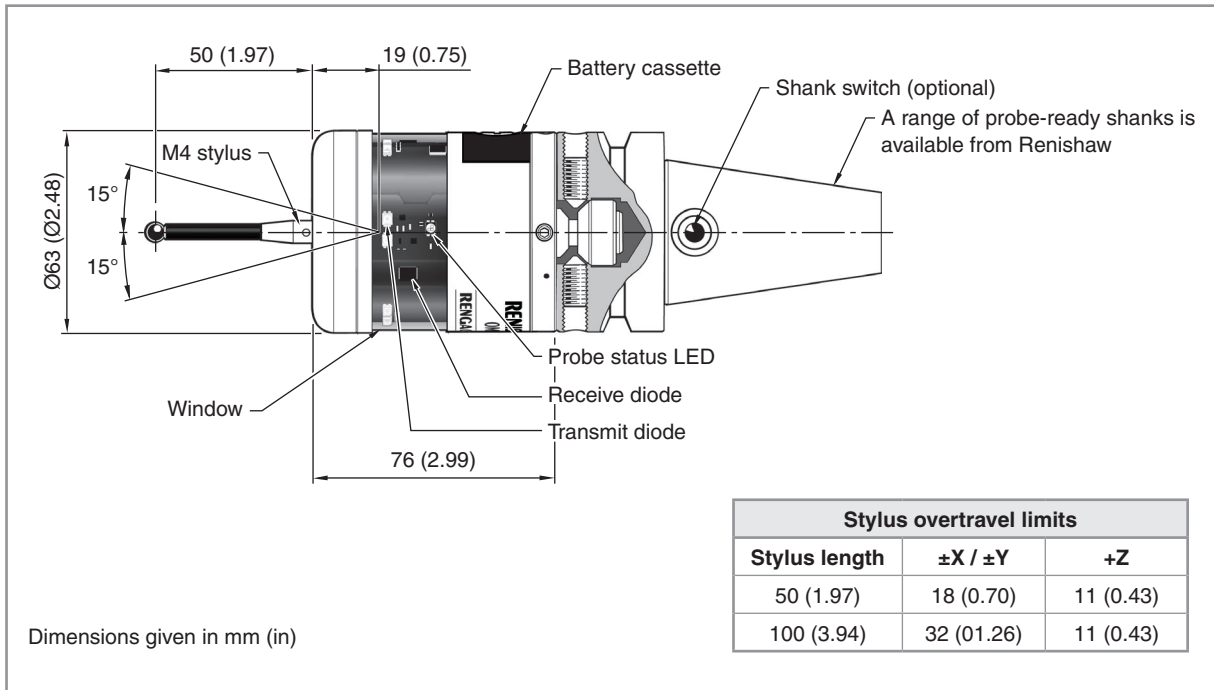
Note 2 Trigger force, which is critical in some applications, is the force exerted on the component by the stylus when the probe triggers. The maximum force applied will occur after the trigger point (overtravel). The force value depends on related variables including measuring speed and machine deceleration. RENGAGE™ equipped probes offer ultra low trigger forces.

Note 3 Stylus overtravel force in the XY plane typically occurs 126 µm after the trigger point and rises by 0.32 N/mm, 33 gf/mm (29.3 ozf/in) until the machine tool stops (in the high force direction and using a carbon fibre stylus).

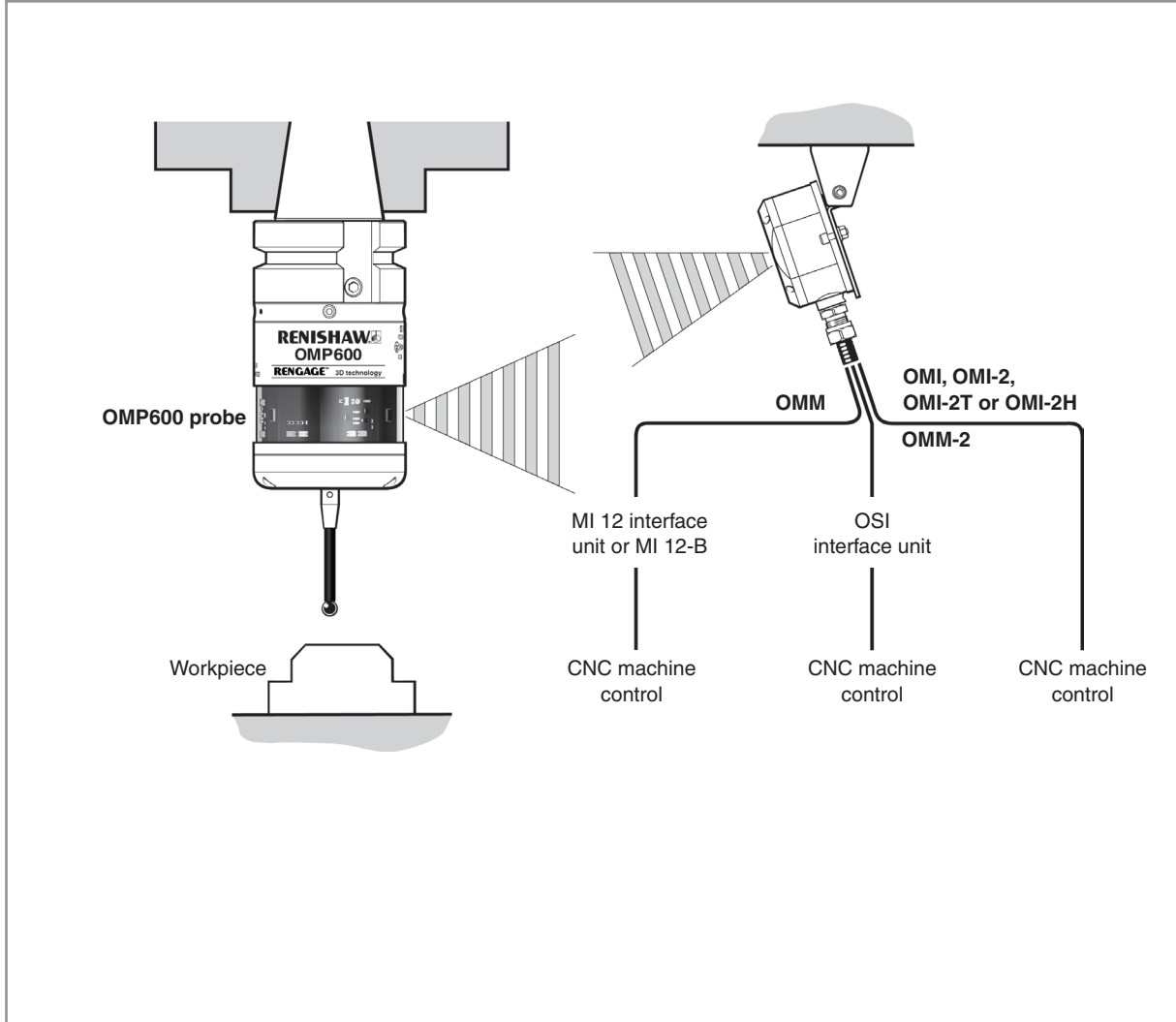
Note 4 Stylus overtravel force in the +Z direction typically occurs 50 µm after the trigger point and rises by 2.95 N/mm, 301 gf/mm (270 ozf/in) until the machine tool stops.

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

OMP600 dimensions



Typical optical probe system



OMP600 performance envelopes

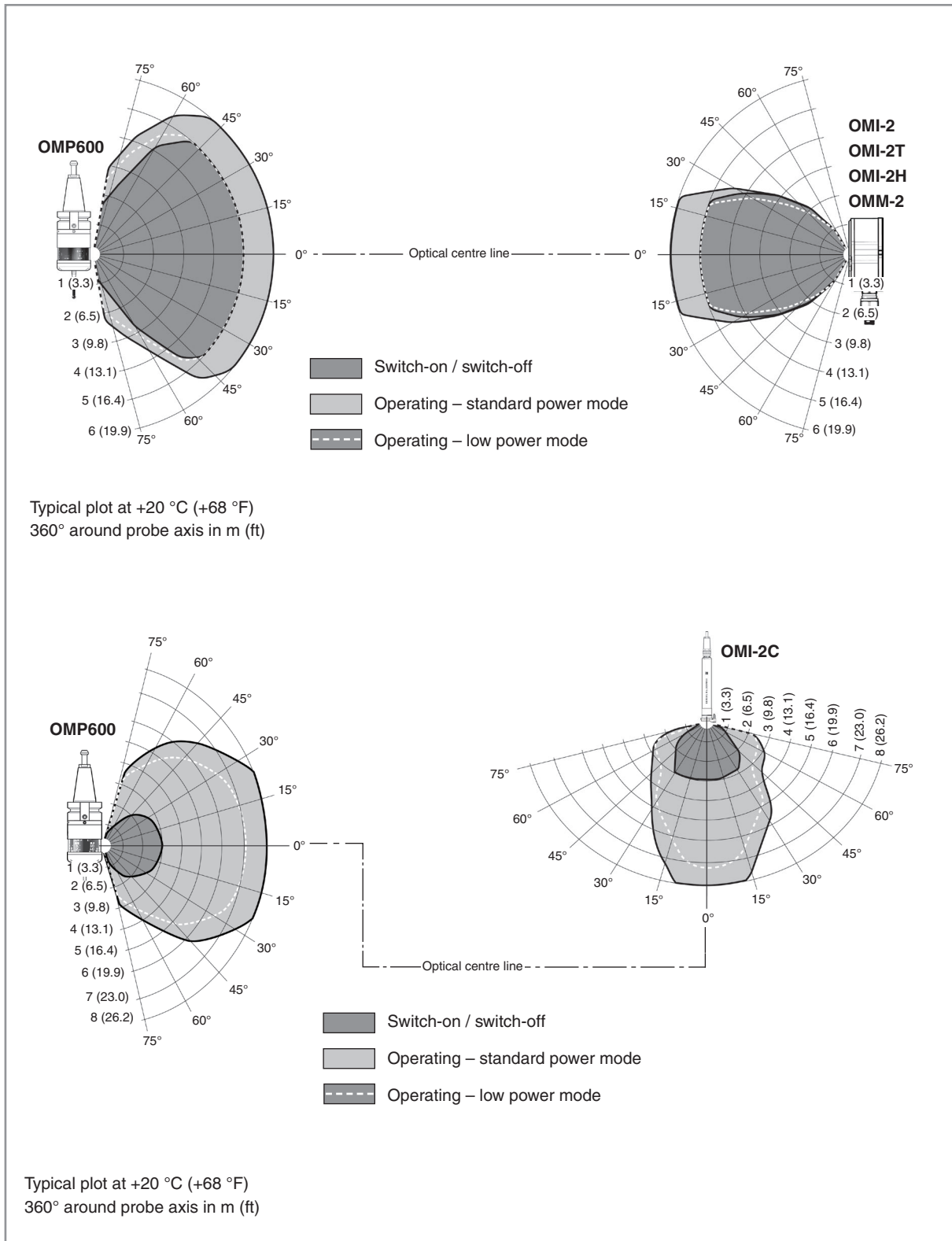
The OMP600 has a 360° transmission envelope over the ranges shown.

The probe system should be positioned so that the optimum range is maintained over the full travel of the machine axes.

The OMP600 and optical receivers may deviate from the optical centre line, provided opposing light cones always overlap, with transmitters and receivers in each other's field of view (line of sight).

Natural reflective surfaces within the machine may improve the signal transmission range.

Coolant residue accumulating on the receiver will have a detrimental effect on transmission performance. Wipe clean as often as is necessary to maintain unrestricted transmission.



Renishaw plc
New Mills, Wotton-under-Edge,
Gloucestershire, GL12 8JR
United Kingdom

T +44 (0)1453 524524
F +44 (0)1453 524901
E uk@renishaw.com
www.renishaw.com

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