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OSP60 / OSI-S / OMM-S



Specification

System principal application	High-speed scanning system for on-machine process control.		
OSP60 (probe)	Analogue scanning probe for machine tools, capable of both 3D scanning and 3D discrete point measurements.		
OMM-S (receiver)	Optical receiver specific to the OSP60 probe.		
OSI-S (interface)	Interface that processes data from the OMM-S and provides input/output communication with the machine tool.		
Transmission type	Infrared optical transmission: up to 1000 3D points per second.		
Probe transmission range	360°. Up to 4.5 m (14.7 ft) with one receiver, or up to 9 m (29.5 ft) with two receivers.		
Probe turn-on time	Less than 0.5 seconds		
Probe weight without shank (including batteries)	1080 g (38.1 oz)		
Battery type	3 × CR123 3 V lithium-manganese dioxide		
Battery life typical at 20 °C Full power Low power (⅛)	**Standby** 121 days 121 days	**5% usage** 320 hours [1] 620 hours [1]	**Continuous life** 16 hours 31 hours
Scanning measurement range [2]	±X, ±Y, ±Z 0.50 mm (0.020 in)		
Sensor type	Full 3D (simultaneous XYZ data output)		
Sense directions	Omnidirectional ±X, ±Y, ±Z.		
Unidirectional repeatability [3 4]	±0.25 µm (10 µin) 2 σ		
3D lobing in X, Y, Z [3 5]	±1.00 µm (40 µin)		
Sensor resolution (µm/digit) [3]	0.025 µm (0.9843 µin)		
Maximum speed [6]	Scanning up to rapid (G0) feedrate, dependent on machine tool performance and application.		
Stylus length range	75 mm to 150 mm (2.95 in to 5.90 in) recommended.		
Stylus ball diameter range	2 mm to 8 mm (0.078 in to 0.31 in) typical.		
Stylus type	Straight styli only. OSP60-specific styli recommended. For further information, see the information leaflet *Styli recommendations for OSP60 scanning probes* (Renishaw part no. H-5465-8102).		
Stylus force XY (typical) Z (typical)	**Spring rate** [3] 0.8 N/mm (4.57 lb/in) 1.5 N/mm (8.57 lb/in)	**Measuring force** [3 7] 0.1 N 10 gf (0.4 ozf) 0.2 N 20 gf (0.7 ozf)	
Sealing OSP60/OMM-S OSI-S	BS EN 60529:1992+A2:2013 (IEC 60529:1989+A1:1999+A2:2013). IPX8 IP20		
Operating temperature	+5 °C to +55 °C (+41 °F to +131 °F)		
OMM-S cable	The OMM-S is supplied with a 15 m (49 ft) cable. Cable specification: Ø6.1 mm, 8-core, twisted pair, screened cable, each core 7 × 0.146 mm. Maximum cable length 30 m (98 ft).		
Mounting OMM-S OSI-S	A mounting bracket is available allowing directional setting. DIN rail or alternative mounting screws.		

Specification (continued)

OSI-S supply	18 Vdc to 30 Vdc 500 mA @ 24 V nominal 4 A peak. Supply must conform to BS EN 60950-1:2006+A2:2013 (IEC 60950-1:2005+A2:2013).
OSI-S output signal	Voltage-free solid state relay (SSR) output, configurable normally open or normally closed. 'On' resistance = 50 Ω max. Load voltage = 50 V max. Load current = 60 mA max.
OSI-S input/output protection	Power input is protected by a 1.85 A resettable fuse. Turning on the power supply will reset the OSI-S.
Controller compatibility	Contact Renishaw for system compatibility requirements.

[1] Calculated value.

[2] Maximum allowed distance between the nominal scan line and the actual scan line. Full 3D performance on a vertical machining centre with a 75 mm stylus. In some applications, this range can be extended. Contact your local Renishaw representative for more information.

[3] Typical for a 100 mm stylus.

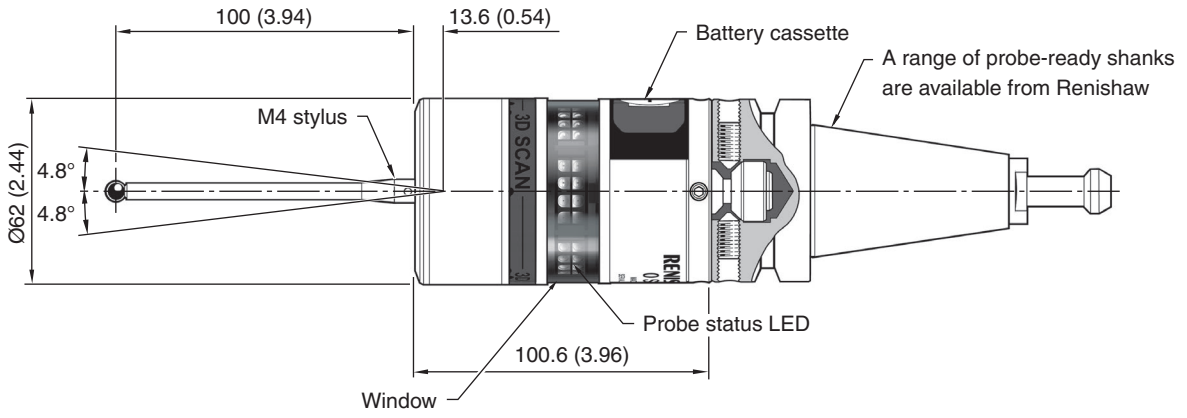
[4] Productivity+ discrete point measurement on a DMG Mori DMU40.

[5] Productivity+ 100 point 3D sphere discrete point measurement on a DMG Mori DMU40.

[6] Maximum feedrate for over deflection protection is F40000 in Z and F60000 in XY.

[7] Force at which the status signal changes for touch trigger. Assumes a trigger threshold of 0.125 mm (0.0049 in).

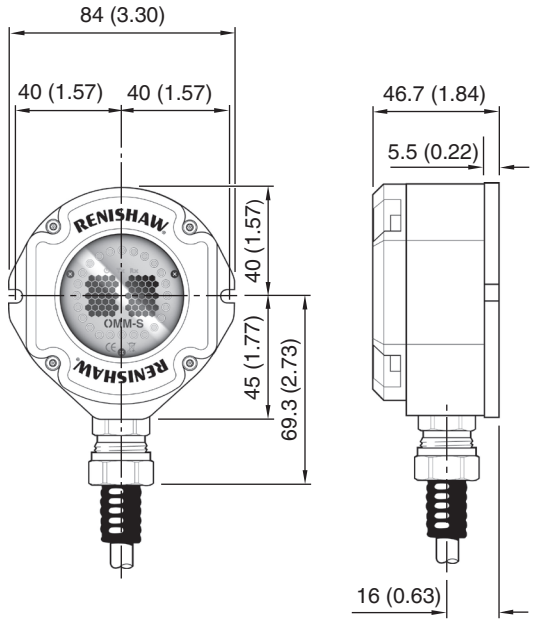
OSP60 dimensions



Stylus overtravel limits			
Stylus length	**±X / ±Y**	**+Z**	**–Z**
75 (2.95)	7 (0.28)	6 (0.24)	2.2 (0.09)
100 (3.94)	9 (0.35)	6 (0.24)	2.2 (0.09)
150 (5.91)	13.5 (0.53)	6 (0.24)	2.2 (0.09)

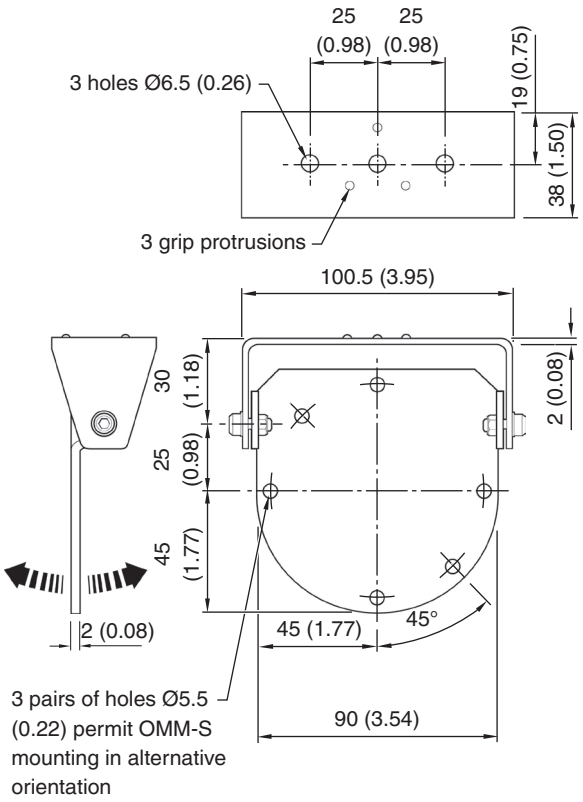
Dimensions given in mm (in)

OMM-S dimensions



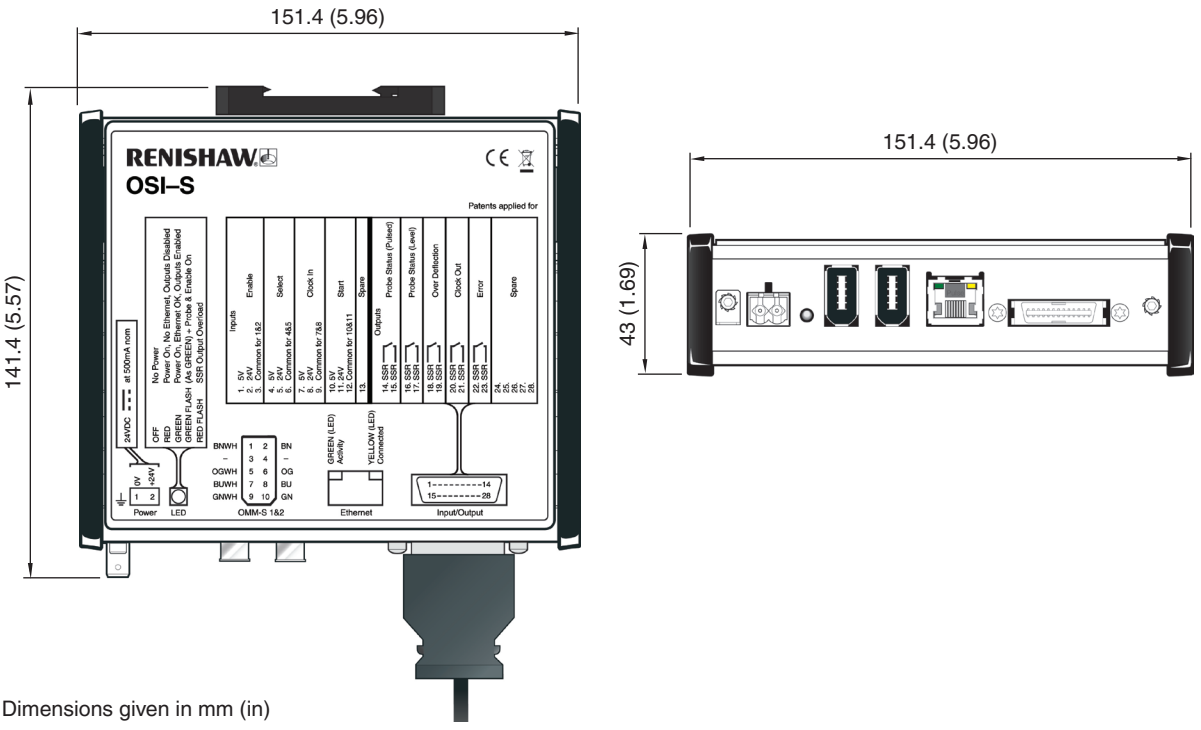
Dimensions given in mm (in)

OMM-S mounting bracket (optional)



Dimensions given in mm (in)

OSI-S dimensions



Dimensions given in mm (in)

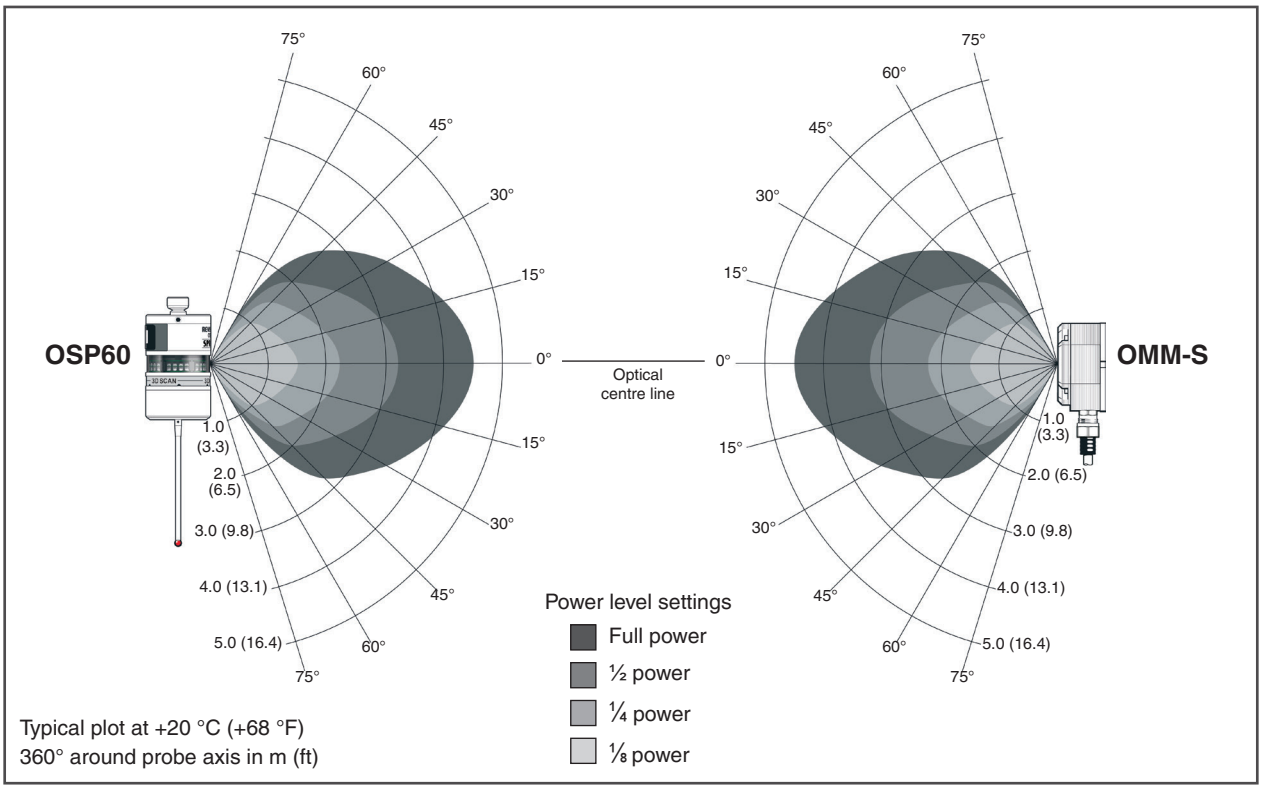
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Transmission performance envelope

The system performance envelope and range is shown below.

The system components should be positioned so that the optimum range can be achieved over the full travel of the machine's axes, taking into account likely part positions on a moving machine table. The system uses optical infrared transmission and requires line-of-sight.

When possible, the optical power of the probe can be reduced to maximise battery life and the optical power of the receiver can be reduced to prevent interference with systems on adjacent machines.



Spare parts and accessories

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

www.renishaw.com/contact **#renishaw**

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