

OMP400 Optical machine probe

An unrivalled combination of size and accuracy

The OMP400 is Renishaw's new ultra compact probe for small to medium machining centres, successfully combining the miniaturisation of the popular OMP40 probe, with the high accuracy strain gauge technology of the MP700.

Utilising the same shank mounting arrangement as the OMP40, this new product gives existing users a simple upgrade path to the new technology.

The OMP400 probe can be used with either the new OMI-2 or the existing receiver interfaces (OMI, OMM, MI12).

The new OMI-2 offers a revised state-of-the-art modulated optical transmission method which enables the system to offer the highest levels of resistance to light interference. Compatibility with existing receiver/interfaces allows current optical system users the opportunity to upgrade to the new probe technology.

By using Renishaw's proven trigger logic, multiple turn on/off options are available to optimise the probe for specific machine applications. As always, the probe and interface are built to the highest of standards and will withstand the harshest of machine tool environments.

The OMP400 offers a truly unrivalled combination of size, accuracy, reliability and robustness that will benefit its users through reduced set-up times, reduced fixture costs, reduced scrap and improved process control.



Key benefits

Ultra compact

At only 40 mm in diameter and 50 mm in length, the OMP400 is the ideal solution for the growing family of small to medium sized machines that were previously unable to benefit from the high accuracy of strain gauge performance.

Robust and reliable

The OMP400 sets new standards for reliability and is designed to resist the harshest machine conditions. Solid-state strain gauge technology removes the effects of mechanical wear resulting in up to 10 times the life of traditional kinematic probes.

Highly repeatable

Strain gauge technology contributes to making OMP400 measurements not only very accurate, but highly repeatable.

Innovations

Resistance to optical interference

The OMP400 features Renishaw's new modulated transmission method, for use with the new OMI-2 receiver, offering increased resistance to light interference. OMP400 is also backward compatible with existing OMM/MI12 and OMI receivers.

Extremely accurate strain gauge technology

Using strain gauges, the probe is able to detect lower contact forces, resulting in less bending of the stylus, less pre-travel, and greater accuracy. Additional benefits of this are:

- Increased stylus lengths can be supported without a decrease in probe performance.
- Excellent 3D performance which allows probing of contoured surfaces whilst maintaining very high accuracy.

Specification - OMP400 probe

Principal application	Small to medium machining centres		
Dimensions	Length: 50 mm (1.97 in) Diameter: 40 mm (1.57 in)		
Weight (without shank in g)	with batteries	without batteries	
	262 g (9.24 oz)	242 g (8.53 oz)	
Transmission type	360° infra-red optical transmission		
Turn ON control	Machine 'M' code or Auto start		
Turn OFF control	Machine 'M' code or timer		
Operating range	Up to 4 m (13.1ft)		
Receiver/interface	OMI-2, OMI or OMM/MI12		
Sense directions	Omni-directional: ± X, ± Y, +Z		
Uni-directional repeatability	0.25 µm (0.000010 in) – 50 mm stylus length 0.35 µm (0.000014 in) – 100 mm stylus length		
2D lobing in X, Y	± 0.25 µm (50 mm stylus length) ± 0.25 µm (100 mm stylus length)		
3D Lobing in X, Y, Z	± 1.00 µm (50 mm stylus length) ± 1.75 µm (100 mm stylus length)		
Trigger force (XY plane factory set)	0.02 N, 2 gf (0.07 ozf)		
Trigger force (Z plane factory set)	0.15 N, 15 gf (0.53 ozf)		
Stylus overtravel	XY plane	+Z direction	
	± 11°	6 mm (0.23 in)	
Test conditions :	stylus length	50 mm (1.97 in)	
	stylus velocity	240 mm/min (9.45 in/min)	
	stylus force	Factory set	
Battery type	1/2 AA Lithium Thionyl Chloride (3.6 V) x 2		
Battery life (using LTC in low power mode)		LEGACY	MODULATED
	stand by	277 days	277 days
	5% usage	77 hours	71 hours
	continuous life	92 hours	85 hours
Sealing	IPX8		



Specification - OMI-2 interface/receiver

Principal application	Combined optical transceiver/interface, which conveys and processes signals between an inspection probe and the CNC machine control
Dimensions	Depth: 46.7 mm (1.84 in) Diameter: 84 mm (3.30 in)
Power supply	12 V to 30 V d.c.
Sealing	IPX8

More information

For further details on the products mentioned in this flyer, please visit www.renishaw.com and choose Machine tool products.

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