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RCS O-PK1 optical robot probe

Designed for industrial automation

The RCS P-series O-PK1 probe is a robust optical probe, specifically designed for use on industrial robots. It enables precise alignment of part frames allowing you to set up and recover robot cells efficiently and reliably. The RCS O-PK1 provides a wireless probe option where line of sight is achievable.

Built using proven Renishaw metrology expertise, the RCS O-PK1 probe is compatible with the RCS OMI-2 interface and receiver, offering a high level of resistance to light interference. It has two simple mounting solutions; the RCS O-PK1 F ISO bracket mounting option, and the RCS O-PK1 S with shank adaptor for spindles.

Ensure a perfect part every time, reducing the need for time consuming manual intervention and robot reteaching. Integrate a Renishaw robot probe as part of any standard robot cell for improved productivity and high levels of accuracy you can rely on.

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Features and benefits

- **Increase throughput** — remove the need for manual robot reteaching after cell relocation, maintenance, or collision. Resulting in less robot downtime.
- **Easy mounting** — features a direct robot mount to easily fix the probe to a robot. With an ISO 9409 bracket or shank mount for spindle fixtures.
- **Robot specific** — Renishaw's first line of probes designed for use on robots, suitable for harsh environments and conforming to IPX8 rating.
- **Value for money** — offers our most affordable wireless probing solution for robots.
- **Optical transmission** — provides a reliable and trustworthy connection type for easier set up and reduced loss of transmission.
- **Reduce waste** — calibrated probes produce more accurate product resulting in less waste and support lean manufacturing.
- **Custom macros** — pairs with a Renishaw RCS RPU that uses custom macros to enable highly accurate routines for probe and robot calibration, including easy part alignment.

Specification

Recommended styli		M4 50 mm to 100 mm stylus. Material of the stylus depends on the application. Use of an in-line break stem is advised.
Weight	**With bracket mount**	RCS O-PK1 F: 490.8 g
	With shank mount	RCS O-PK1 S: 445.3 g
Tranmission type		360° infrared optical transmission (modulatedor legacy).
Switch-on methods		Optical on.
Switch-off methods Optical off or timer off		Optical off or timer off.
Spindle speed (maximum)		1,000 r/min
Operating range		Up to 5 m (16.4 ft)
Receiver/interface		RCS OMI-2
Sense directions		Omni-directional ±X, ±Y, +Z
Unidirectional repeatability maximum 2σ value in any direction		1.00 µm (40 µin) 2σ
Stylus trigger	**Radial low force**	0.50 N, 51 gf (1.80 ozf)
	Radial high force	0.90 N, 92 gf (3.24 ozf)
	Axial direction	5.85 N, 597 gf (21.04 ozf)
Stylus overtravel limits radial plane		±12.5°
Stylus overtravel limits axial plane		6 mm (0.24 in)
Environment	**IP rating**	IPX8, BS EN 60529:1992+A2:2013
	Storage temperature	–10 °C to +70 °C (14 °F to +158 °F)
	Operating Temperature	+10 °C to +40 °C (+41 °F to +131 °F)

Mounting option



ISO Bracket



Shank

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