

RFP1 fringe probe

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Highly accurate structured light measurement probe for REVO-2

The REVO fringe probe (RFP1) is a non-contact structured light sensor for the REVO® system offering highly accurate measurement of surface topology on an infinite positioning, 5-axis CMM platform.

RFP1 increases the multi-sensor capability of the REVO system, which now offers interchangeable tactile scanning, touch-trigger, surface finish, non-contact structured light and vision probes.

The RFP1 probe is designed for inspection of free-form surfaces and complex geometry, rapidly delivering patches of surface data with a high point density. The probe projects a fringe pattern onto the part surface, capturing variations in the fringe pattern with the camera to build a point cloud of 3D surface data.

Automatic exposure controls compensate for different surface materials, colours and textures, ensuring optimal data results without the need for matt coatings.

Unlike other non-contact structured light systems, the RFP1 fringe probe does not require reference markers to stitch together data from different patches – this is done automatically by the REVO system.

Two new software tools provide easy-to-use inspection planning and digitising. The RFP inspection planner is a tool for path planning and generating DMIS part programs from CAD, whilst the RFP digitiser collects data from parts without CAD models as part of a reverse engineering process.



Key benefits

Multi-sensor system with unrivalled feature access

RFP1 data is automatically stitched together in one co-ordinate frame with no need for reference markers, and combined with data from all other REVO-2 sensors maximises part inspection capability on one CMM.

Automatic exposure compensation

Ensures optimal data results with automatic compensation for different materials, surface colours and textures without the need for matt coatings.

Easy-to-use inspection planning and digitising software

RFP inspection planner generates DMIS part programs from CAD quickly and easily, whilst the RFP digitiser collects data from parts without CAD models as part of a reverse engineering process.

Specifications

Field of view	50 mm x 50 mm	
Depth of field	20 mm	
Stand-off	160 mm	
Rotational capability	A-axis (from REVO-2)	+120° / -5°
	B-axis (from REVO-2)	Infinite positioning
XY point density (resolution)	65 µm	
Probe repeatability (plane)	4 µm (2σ)	
Probe accuracy (position error of a plane)	9 µm	
Measurement form error (plane)	15 µm RMS	
Equivalent scanning speed	50,000 pts/s	
Mounting	Magnetised coupling	
Sensor type	1/1.8" CMOS sensor	
Projector type	Fixed sinusoidal filtering grating	
Illumination	A wavelength of 450 nm blue LED	
Operating modes	3D Surface point capture 2D Vision measurement	
Probe head	REVO-2 only	
Rack port compatibility	VPCP	
Change rack	MRS2 recommended	
Software compatibility	UCCsuite 5.6 onwards MODUS 1.11 onwards	
Integration	I++ DME protocol	
Weight	530 g	
Operating temperature range	+10 °C to +40 °C	
Metrology specification range	20 °C ± 2 °C	
Storage temp range	-25 °C to +70 °C	
Operating humidity	0% to 80% (non-condensing)	
Calibration artefact	FA10	
Output	Point cloud data file (.xyz)	

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