MICRO-EPSILON

More Precision

boreCONTROL Sensor // Non-contact inspection of bore holes

Non-contact inspection of bore holes

boreCONTROL Sensor

- *Non-contact measurement*
- *Measurement of a wide variety of materials, also sensitive surfaces*
- *High precision and detailed statements about dimensions and quality of interior walls*
- *Short measurement cycles due to high sampling rate*
- *Large measuring ranges*
- *Fast setup*

Non-contact measurement of diameter in cylindrical geometries

The boreCONTROL sensor is designed for non-contact diameter measurement and surface assessment. The sensor is easy to set up and configure, providing high precision statements about the quality of bore holes or cavities in the diameter range from 4mm up to 16mm.

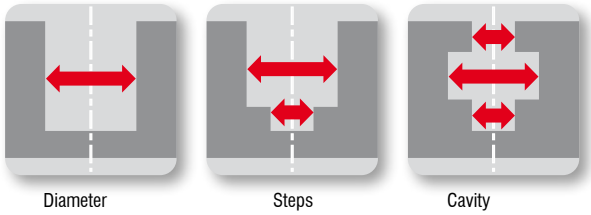
Measuring procedure

The underlying confocal chromatic measuring principle offers the following advantages:

- Non-contact measurement with small light spot
- High resolution in radial & axial direction
- High dynamics (sampling rate up to 25kHz)
- Applicable for most diverse materials

Applications

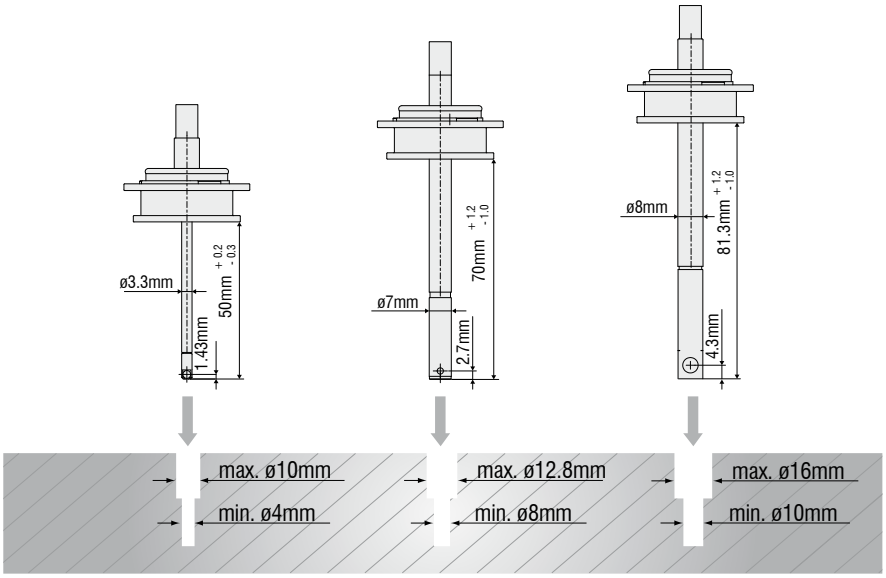
- Measurement of rivet holes in aircraft construction
- Surface assessment & defect detection
- For numerous applications in the automotive industry, aircraft industry, medical engineering and in machine building

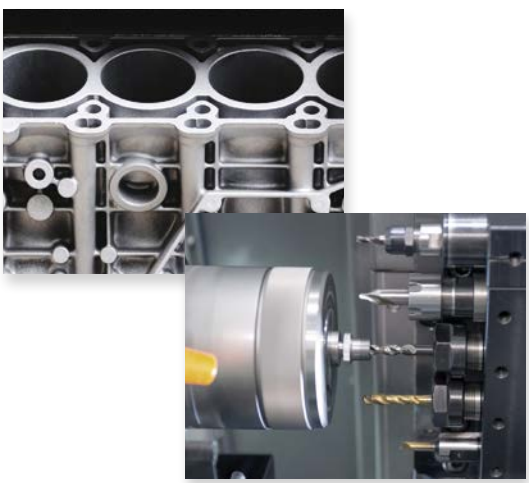


Measurement device	boreCONTROL Sensor
Power supply	24VDC ±15%
Accuracy of rotation unit	0.04°
Temperature range	10°C … 40°C
Rotation frequency	0.1Hz … 10Hz

Sensor lance	BCS2412-4/10	BCS2412-8/12,8	BCS2413-10/16
Measurable diameters	4 - 10mm	8 - 12.8mm	10 - 16mm
Sampling rate	max. 25kHz	max. 25kHz	max. 25kHz
Measurement spot diameter [1]	approx. 40µm	approx. 30µm	approx. 30µm
Dynamic repeatability [2]	± 1µm	± 1µm	± 1µm
Linearity [2] Ø	± 5µm	± 5µm	± 5µm

[1] In the midrange
[2] Specified accuracy to the following general conditions: min. sampling rate 1kHz; 60 rotations (repetitions) within 1 min; temperature drift: <1K/h; calibration ring (DIN 2250C), accuracy of center position ±50µm;
As the accuracy varies with different surfaces and their properties, we recommend you contact us directly.
We will be pleased to check the technical feasibility of your measurement task.





System Components

The boreCONTROL sensor consists of a rotating unit with exchangeable sensor lance, motor controller and sensor controller. The rotary drive is operated by the motor controller. The sensor controller serves for set-up and signal processing.

Via the Ethernet interface of the controller, boreCONTROL provides a data package with distance, angle and intensity figures. For customer software development, a SDK is included.

IFC2461(002) sensor controller	BCC2410 motor controller	BCM2410 rotating unit	BCS241x sensor lance
			
Parameter set up and signal processing Data output via Ethernet	Controls the rotating unit Provides the sensor controller with angle information	Rotates the sensor lance in the interior wall	Detects the geometry of an interior wall Available for different diameters

Software:

boreCONTROL SDK	Software Development Kit for customer software integration (included in scope of supply)

Accessories:

C2400/PT-x	Optical-fiber cable (3m,5m,10m, customer-specific length up to 25m; optionally suitable for use with robots)
PC2410-x	Power supply and signal cable (3m, 5m,10m, customer-specific length up to 25m, optionally suitable for use with robots)
SC2410-0,5	Synchronization cable (0.5m)
One-Click-Cleaner	Cleans the optical connections

Optional accessories:

BCS2412-4/10 Dummy sensor	For customer simulation of z movement during machine or robot setup
BCS2412-8/12.8 Dummy sensor	For customer simulation of z movement during machine or robot setup
BCS2413-10/16 Dummy sensor	For customer simulation of z movement during machine or robot setup
MA2400-45	Mounting adapter for rotating unit
Y adapter cable for encoder	Cable for encoder signal input of customer-specific linear axis (z movement of sensor) into the IFC2461 controller
PS2020	Power supply 24V / 2.5A

MICRO-EPSILON

MICRO-EPSILON Headquarters
Koenigbacher Str. 15 · 94496 Ortenburg / Germany
Tel. +49 (0) 8542 / 168-0 · Fax +49 (0) 8542 / 168-90
info@micro-epsilon.com · **www.micro-epsilon.com**