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More Precision.

confocalDT IFD2410 // Next-generation confocal sensor system








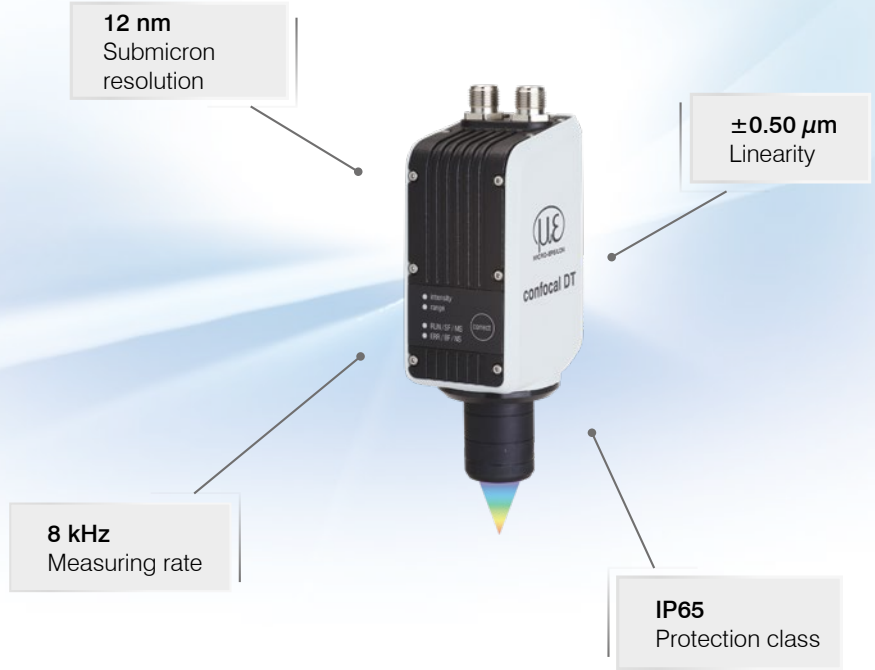
Confocal chromatic sensor system with integrated controller

confocalDT IFD2410



Integrated fieldbus for direct connection to PLC

-  All-in-One: sensor and controller in one compact housing (IP65)
-  Excellent price/performance ratio
-  Easy integration, no optical fiber required
-  Direct PLC connection due to Industrial Ethernet
-  Micron-precise measurement of distance and thickness



All-in-One: compact confocal sensor with optimal price/performance ratio

The confocalDT IFD2410 is an innovative confocal sensor with integrated controller. The space-saving IP65-housing enables fast integration into plant equipment and machines as no optical fiber is required. This makes the IFD2410 ideally suited to high precision distance and thickness measurements in industrial series applications. The active exposure regulation of the CCD line enables fast and accurate compensation of varying surfaces even in dynamic measurement processes up to 8 kHz. Based on its excellent price/performance ratio, the confocalDT IFD2410 sets a new benchmark in precise confocal measurement technology.

Fast, precise and compact

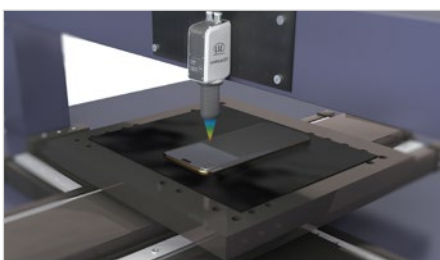
Its high performance and compact housing make this sensor ideally suitable for series applications in production lines and machines. These include inline inspection and coordinate measuring machines, inline thickness monitoring of flat glass and container glass as well as testing electronic components.

Intelligent technology meets high performance and user-friendliness

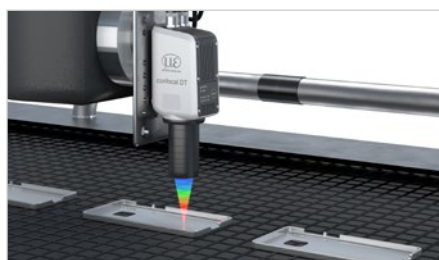
In Ethernet mode, the confocalDT IFD2410 can be set via the intuitive web interface. Industrial Ethernet ensures that the settings are automatically applied to the PLC environment. This eliminates time-consuming setting efforts in the programming environment.



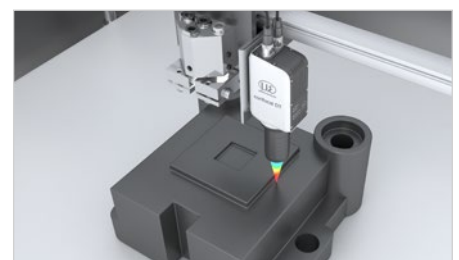
Simple parameter set up via integrated web interface



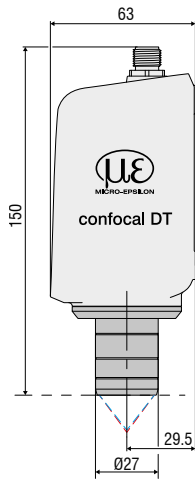
Measurement of smartphones in coordinate measuring machines



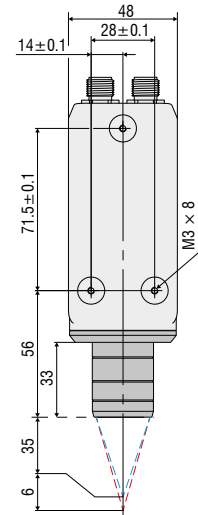
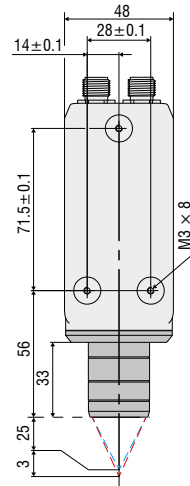
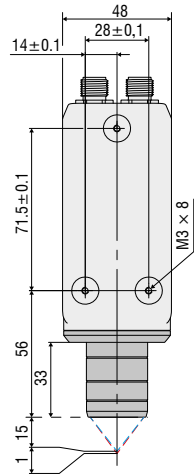
Inline measurement of smartphone housings



Displacement and distance measurement in 3D printing



Dimensions in mm,
not to scale.



Model		IFD2410-1	IFD2410-3	IFD2410-6
Measuring range	Distance	1.0 mm	3.0 mm	6.0 mm
	Min. thickness	0.05 mm	0.15 mm	0.3 mm
Start of measuring range	approx.	approx. 15 mm	approx. 25 mm	approx. 35 mm
Resolution	static ¹⁾	< 12 nm	< 36 nm	< 80 nm
	dynamic ²⁾	< 50 nm	< 125 nm	< 250 nm
Measuring rate		continuously adjustable from 100 Hz to 8 kHz		
Linearity ³⁾	Displacement and distance	< ±0.5 μm	< ±1.5 μm	< ±3.0 μm
	Thickness	< ±1.0 μm	< ±3.0 μm	< ±6.0 μm
Light source		internal white LED		
Permissible ambient light		30,000 lx		
Light spot diameter ⁴⁾		12 μm	18 μm	24 μm
Measuring angle ⁵⁾		±25°	±19°	±10°
Numerical aperture (NA)		0.45	0.35	0.18
Target material		reflective, diffuse as well as transparent surfaces (e.g. glass)		
Supply voltage		24 VDC ± 10 %		
Power consumption		< 5 W (24 V)		
Signal input		2x encoders (A+, A-, B+, B-, index) 2x HTL/TTL multifunction inputs: trigger in, slave in, zero setting, mastering, teach; 1x RS422 synchronization input: trigger in, sync in, master/slave, master/slave alternating		
Digital interface		EtherCAT / RS422 / Ethernet (via tunnel)		
Analog output		4 ... 20 mA / 0 ... 5 V / 0 ... 10 V (16 bit D/A converter)		
Switching output		Error1-Out, Error2-Out		
Digital output		sync out		
Connector		12-pin. M12 plug for supply, encoder, Ethernet and sync 17-pin M12 plug for I/O analog and encoder optional extension to 3 m / 6 m / 9 m / 15 m (see accessories for suitable connection cables)		
Mounting		radial clamping, threaded hole, mounting adapter (see accessories)		
Temperature range	Storage	-20 ... +70 °C		
	Operation	+5 ... +50 °C		
Shock (DIN EN 60068-2-27)		15 g / 6 ms in XY axis, 1000 shocks each		
Vibration (DIN EN 60068-2-6)		2 g / 20 ... 500 Hz in XY axis, 10 cycles each		
Protection class (DIN EN 60529)		IP65 (front)		
Material		Aluminum housing, passive cooling		
Weight		490 g	490 g	490 g
Control and indicator elements		Correct button: interfaces selection, two adjustable functions and reset to factory settings after 10 s; 4x color LEDs for Intensity, Range, RUN and ERR		

All data at constant ambient temperature (24 ± 2 °C)

¹⁾ Average from 512 values at 1 kHz, in the mid of the measuring range onto optical flat

²⁾ RMS noise relates to mid of measuring range (1 kHz)

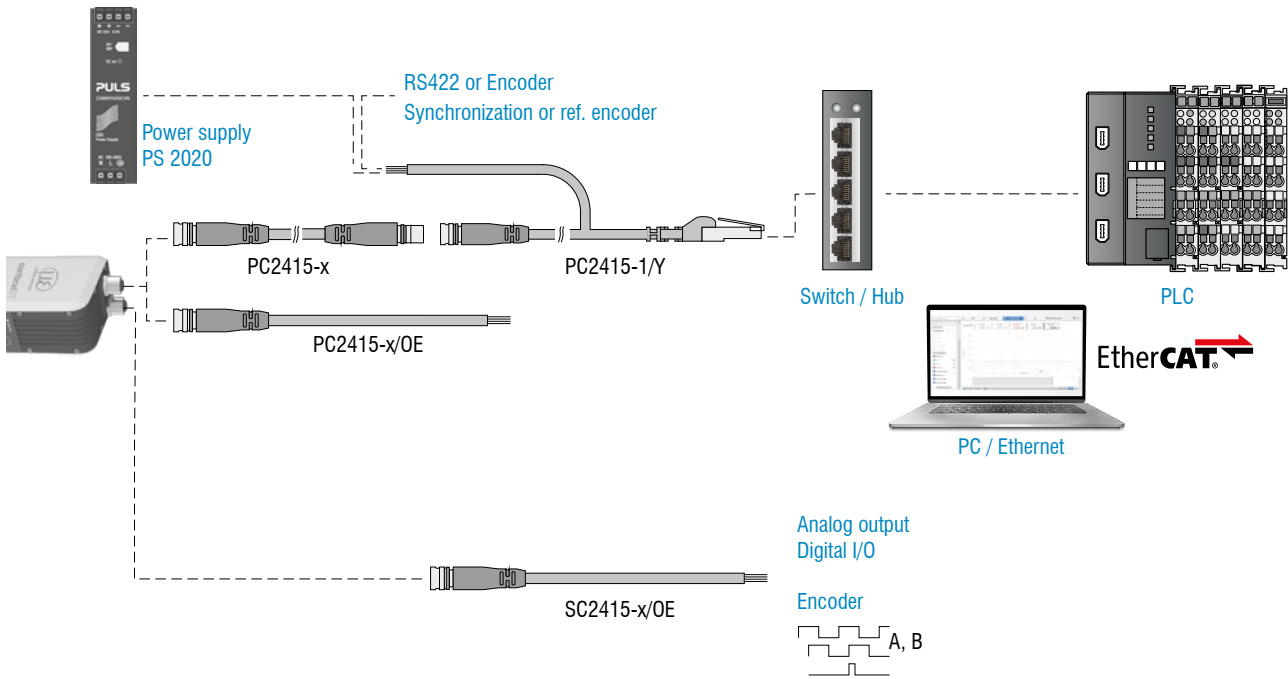
³⁾ Maximum deviation from reference system over the entire measuring range, measured on front surface of ND filter

⁴⁾ In the mid of the measuring range

⁵⁾ Maximum sensor tilt angle that produces a usable signal on polished glass (n = 1.5) in the mid of the measuring range. The accuracy decreases when approaching the limit values.

Cable concepts for every application

The connection options are diverse and can be adapted to your plant or machine concept.



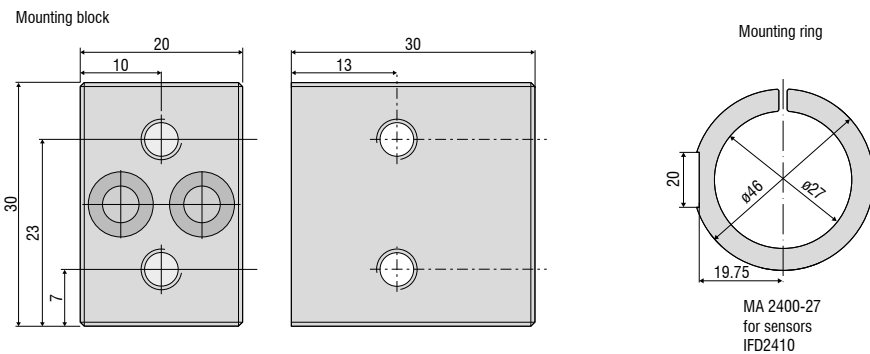
PC2415-x / PC2415-x/OE	
Minimum bending radius (mm)	static R55
	dynamic R55
	drag chain R88
Length	3 m/6 m/9 m/15 m

PC2415-1/Y	
Minimum bending radius (mm)	static R55
	dynamic R55
Length	1 m

SC2415-x/OE	
Minimum bending radius (mm)	static R35
	dynamic R70
	drag chain R83
Length	3 m/6 m/9 m/15 m

Accessories: Sensor mounting adapter

MA2400 for IFD2410 sensors (consisting of mounting block and mounting ring)



Dimensions in mm, not to scale



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