More Precision

interferoMETER IMS5600-DS10/90/VAC

- Absolute measurement with nanometer accuracy, suitable for the measurement of e.g. step profiles
- Easy integration in confined spaces
- Compact sensor for UHV and with right angle deflection
- Non-magnetic UHV version made of titanium, e.g. for use in strong magnetic fields
- Measuring rate up to 6 kHz for high speed measurements
- Ethernet / EtherCAT / RS422 /PROFINET / Ethernet/IP
- Robust controller with passive cooling
- Easy configuration via web interface

Model		IMS5600-DS10/90/VAC
Measuring range		1.5 mm
Start of measuring range		ca. 10 mm
Resolution [1]		< 30 pm
Measuring rate		continuously adjustable from 100 Hz to 6 kHz
Linearity [2]		< ±10 nm
Temperature stability	Sensor	Linearity: typ. 0.1 nm / K (without offset displacement)
	Controller	temperature compensated, stability < 10 ppm between +15 ... +35 °C
Light source		NIR-SLED, wavelength 840 nm; Pilot laser: laser LED, wavelength 635 nm
Laser class		Class 1 according to DIN EN 60825-1: 2015-07; Pilot laser: Class 1, power (< 0.2 mW)
Light spot diameter [3]		10 μm
Measuring angle [4]		±2°
Target material		Glass, reflecting or diffuse surfaces [5]
Supply voltage		24 VDC ±15 %
Power consumption		approx. 10 W (24 V)
Signal input		Sync in, trigger in, 2x encoders (A+, A-, B+, B-, index)
Digital interface		Ethernet / EtherCAT / RS422 / PROFINET [6] / EtherNet/IP [6]
Analog output		4 … 20 mA / 0 ... 10 V (16 bit D/A converter)
Switching output		Error1-Out, Error2-Out
Digital output		sync out
Connection	Optical	Plug-in fiber optic cable via E2000 socket (controller) and FC socket (vacuum feed-through); plug-in UHV fiber optic cable via FC socket (feed-through and sensor with vacuum capability); standard lengths 3 m, 5 m and 10 m; other cable lengths on request; bending radius: static 30 mm, dynamic 40 mm
	Electrical	3-pin supply terminal strip; encoder connection (15-pin, HD-sub socket, max. cable length 3 m, 30 m with external encoder supply); RS422 connection socket (9-pin, Sub-D, max. cable length 30 m); 3-pin output terminal strip (max. cable length 30 m); 11-pin I/O terminal strip (max. cable length 30 m); RJ45 socket for Ethernet (out) / EtherCAT (in/out) (max. cable length 100 m)
Mounting	Sensor	Clamping, mounting adapter (see accessories)
	Controller	Free-standing, DIN rail mounting
Temperature range	Storage	-20 ... +70 °C
	Operation	Sensor: +5 ... +70 °C / Controller +15 ... +35 °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)	Sensor	IP40
	Controller	IP40
Vacuum		UHV (cable and sensor)
Material	Sensor	Stainless steel; optional: titanium housing
	Controller	Aluminum housing, passive cooling
Control and indicator elements		Multifunction button: two adjustable functions and reset to factory settings after 10 s; web interface for setup: selectable presets, freely selectable averaging, data reduction, setup management; 6 x color LEDs for intensity, range, SLED, pilot laser, status and power; pilot laser: can be switched on for sensor alignment

[1] Measuring rate 0.5 kHz, moving average over 64 values, measured differentially between the front and back of a thin glass plate in the mid of the measuring range (2 sigma)
[2] Maximum deviation from reference system over the entire measuring range, measured on front surface of ND filter
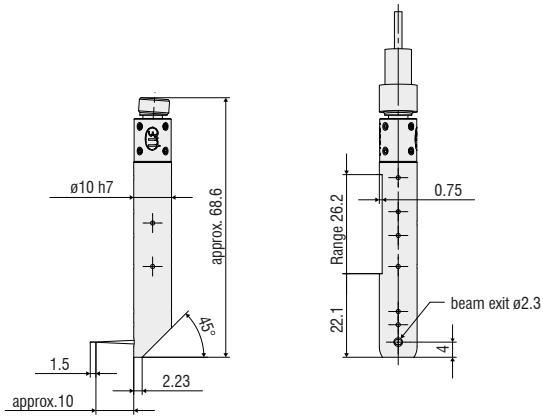[3] In the mid of the measuring range
[4] Maximum sensor tilt angle that produces a usable signal on polished glass (n = 1.5) in the mid of the measuring range. The accuracy decreases when approaching the limit values.
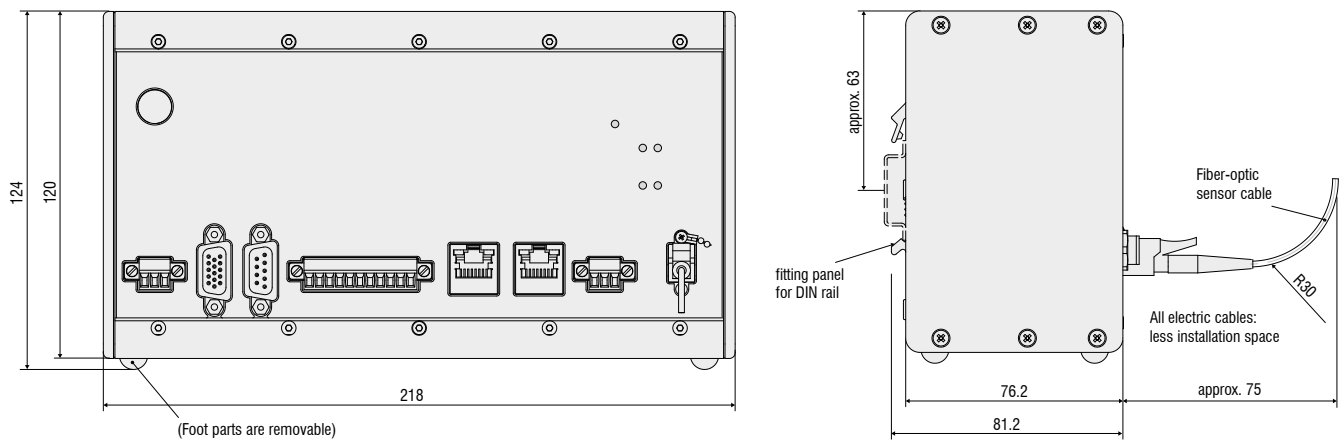[5] Non-transparent materials require optically dense surface at a wavelength of 840 nm
[6] Optional connection via interface module (see Accessories in the Confocal Catalog)

Sensor

ø10 h7

approx. 68.6

45°

1.5

2.23

approx.10

Range 26.2

0.75

22.1

beam exit ø2.3

4

Controller

124

120

218

(Foot parts are removable)

approx. 63

fitting panel
for DIN rail

76.2

81.2

Fiber-optic
sensor cable

R30

All electric cables:
less installation space

approx. 75

Sensor mounting adapter

ø8

ø4.5

4.4

8

10

M4

4x M4

0.5x45°

9

16

9

16

34

ø2.5

ø10

2

8

18

34

28