

FPS1010

high-precision, real-time interferometric sensor

Technical Specifications

Modes of Operation

measurement modes	displacement, vibrometry
remote operation	USB2.0, ethernet port optional
output signal: electronics	USB, ethernet ¹⁾ , AquadB, HSSL
output signal: displacement measurement	laser light
sensor alignment	semi-automated via USB
sensor initialization	fully automated, turnkey

FPS1010 - displacement measurement

sensor axes	1
working distance	0...3000 mm (depending on sensor head)
sensor resolution	1 pm
sensor repeatability	2 nm ²⁾
max. target velocity	2 m/s
measurement bandwidth	10 MHz
signal stability (WD: 20 mm)	0.286 nm (2 σ)
signal stability (WD: 50 mm)	0.530 nm (2 σ)
signal stability (WD: 100 mm)	1.035 nm (2 σ)

Working Environment

FPS1010 controller	ambient conditions
FPS sensor heads	depending on specifications
FPS ECU	ambient conditions
FPS AMS	depending on specifications of used sensor heads

Software Drivers

Windows	stand-alone application for Windows 7™, 8™ DLL LabVIEW™ Epics (ethernet required)
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Interfaces

realtime interfaces	AquadB, HSSL
interface bandwidth USB	100 kHz
interface bandwidth AquadB	25 MHz
interface bandwidth HSSL	25 MHz
resolution USB (abs.)	64 bit
resolution AquadB (inc.)	freely assignable
resolution HSSL (abs.)	8 - 48 bit

Controller Hardware

chassis	21.4 x 21.4 x 4.5 cm ³
weight	1.9 kg
power supply	100/115/230 V, 50..60 Hz
power consumption	max. 100 W
laser source	DFB laser (class 1)
laser power	150 μ W
laser wavelength	1530 nm
wavelength stability	50 ppb

Article Numbers & Options

FPS1010	1007419
Axis upgrade (from one to two or three axes)	1007181
/SYNC option (activation code)	1007182

FPS Accessories

FPSH sensor heads
FPSMF single mode fibers
FPVFT vacuum feedthroughs
FPS ECU
FPS AMS
FPS Data Marker
FPCW cables & wiring

¹⁾ upgrade option /SYNC

²⁾ 2 nm repeatability @ 10 mm working distance; 5 nm repeatability @ 100 mm working distance; in vacuum conditions

Drawings

