attoSENSORICS
Ultra Precision Sensors

IDS3010/SMF

Displacement Sensing for Industry & Synchrotron

Technical Specifications

Sensor	
sensor axes	3
working distance	0...5000 mm (depending on sensor head)
sensor resolution	1 pm
sensor repeatability	2 nm[1)]
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)

Interfaces	
analog interfaces	sin/cos (real-time)
digital interfaces	AquadB, HSSL (real-time)
field bus interfaces (on request)	EtherCAT, CANopen, Profinet, Profinet RT, Biss-C
interface bandwidth sin/cos	up to 25 MHz
interface bandwidth AquadB	up to 25 MHz
interface bandwidth HSSL	up to 25 MHz
interface bandwidth field bus systems	depending on field bus system
resolution sin/cos (inc.)	freely assignable; 1pm - 2^24 pm
resolution AquadB (inc.)	freely assignable
resolution HSSL (abs.)	8 - 48 bit
resolution field bus systems	depending on implemented protocol

Modes of Operation	
measurement modes	displacement
remote operation	integrated webserver
output signal: electronics	sin/cos, AquadB, HSSL, field bus systems (opt.)
output signal: displacement measurement	laser light (IR)
output signal: alignment laser	laser light (VIS)
sensor alignment	via integrated webserver
sensor initialization	via integrated webserver

Controller Hardware	
chassis	50 x 55 x 195 mm³
weight	730 g
power supply	12 V DC
power consumption	8 W
Measurement Laser	
laser source	DFB laser (class 1)
laser output power	400 µW
laser wavelength	1530 nm
wavelength stability	50 ppb
Alignment Laser	
laser source	fiber-coupled laser diode
laser output power	< 1 mW
laser wavelength	650 nm

Working Environment	
IDS3010 controller	ambient conditions
IDSH sensor heads	depending on specifications
IDS ECU	ambient conditions

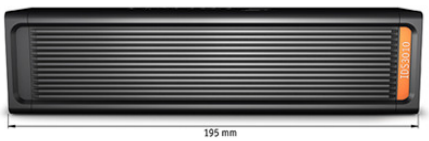
Article Numbers & Options	
IDS3010/SMF	1010623

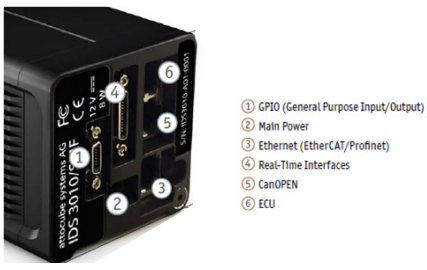
Software Drivers	
	no software drivers necessary as all functionality is accessible via integrated webserver

IDS Accessories
IDSH sensor heads
IDSMF single mode fibers
IDSVFT vacuum feedthroughs
IDS ECU

[1)] 2 nm repeatability @ 10 mm working distance in vacuum conditions

Drawings





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