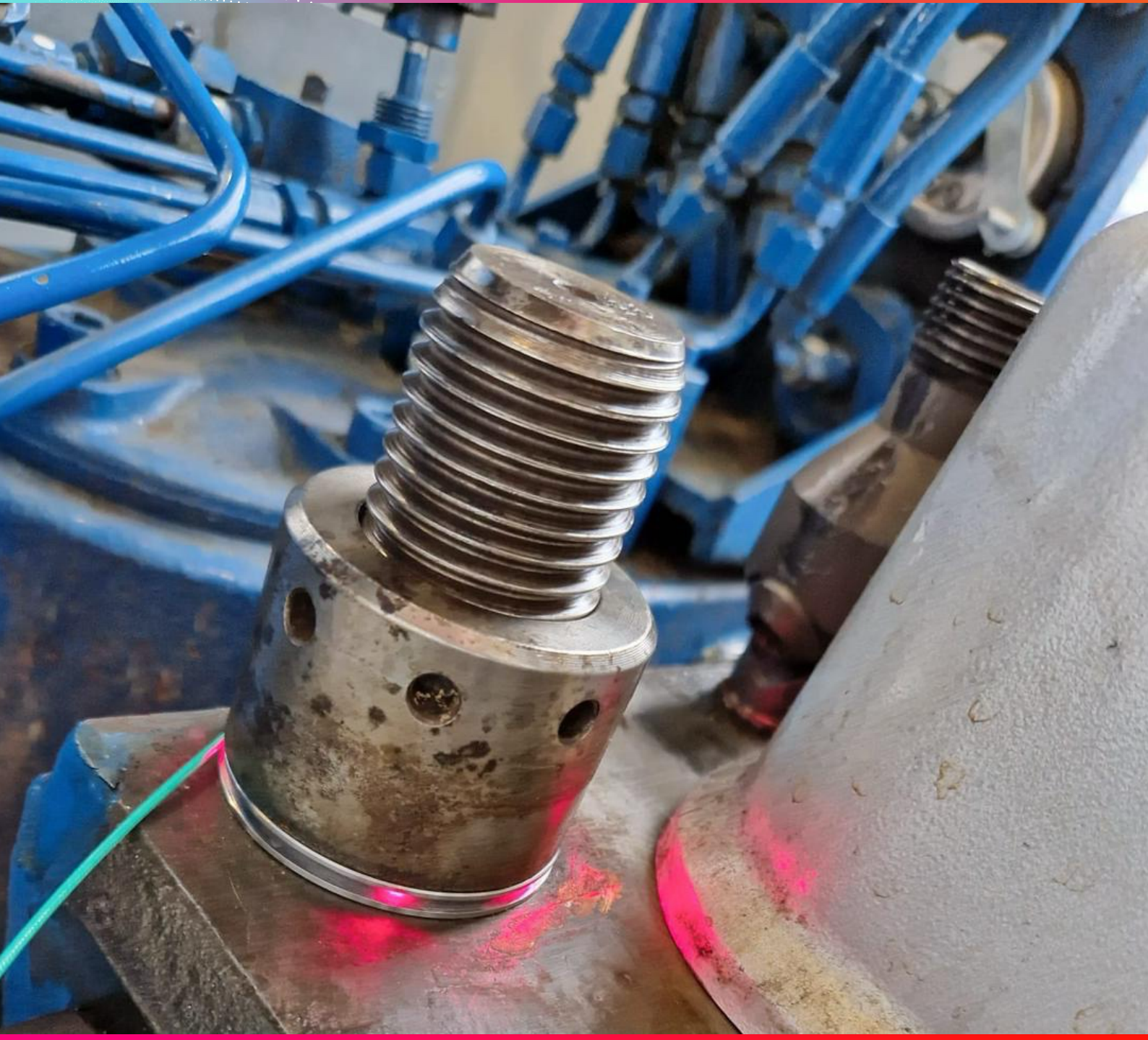


SENSING 360

LumiSens Combust

Non-invasive cilinder pressure monitoring for engines

The Sensing360 Lumisens Combust

Product Optimization

For manufacturers seeking to push the boundaries of performance. Lumisens Combust provides the critical data you need for cylinder pressure and timing measurement, ensuring your product is optimized for peak efficiency.

Health Monitoring

For engine operators who cannot afford downtime, LumiSens Combust is a complete sensor-to-platform solution. Transform the engine into a self-reporting asset, increasing site safety while reducing maintenance overhead.

Exact Timing

For injection control seeking to optimize performance. Lumisens Combust provides the critical timing data of pressure and timing measurement, ensuring you can time the injection perfectly also during transient events.

Why Choose the Sensing360 Solution?

Multiple sensor: pressure, temperature, speed, vibration all in one.

Bolt-in installation: Retrofitted directly under the cylinder head bolt. No engine modifications, no downtime headaches.

Measurement dynamic where it matters: as close to combustion as you can get, without opening the chamber and with sampling of 24 kHz to capturing all dynamics

No temperature drift: we measure optically also temperature, long term stable

Real cylinder pressure data: not modeled, not estimated. Actual bolt load curves directly related to cilinder head pressure, per cylinder, per cycle.

Timing precision: detect misfires, knock, and deviations before they become issues.

Built for harsh environments: engineered to survive the temperature, pressure, and vibration conditions of real-world operation.

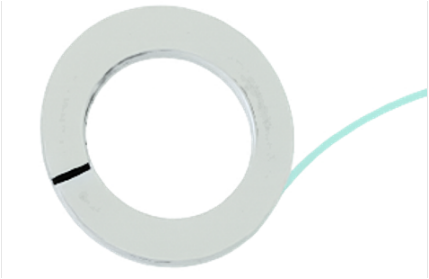
Actionable output: clean data use to tune, validate, and optimize.

Suited for gas combustion: Explosive save, non-intrusive without any adjustment suited for LNG, (bio) fuel, H_2 and

Early Problem Detection: Identify emerging engine issues before they escalate into costly failures or safety hazards.

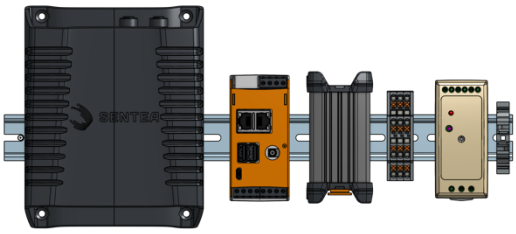
Eliminate Manual Inspections: Move from labor-intensive periodic checkups to an automated, "set-and-forget" monitoring system.

Real-Time Alerts: Receive instant warnings when performance deviates from the norm, allowing for targeted intervention.



Fiber Optic Sensor Washer

Stand-alone Solution



Top-box Solution

LumiSens Combust

The system includes a Fiber Optical Sensor Washer and a data processing module.

The Fiber Optical Sensor Washer is robust to environmental influences.

The Data Processing Unit provides a local data log or an optional local data feed. Additionally, frequency data is periodically captured for the purpose of condition monitoring.

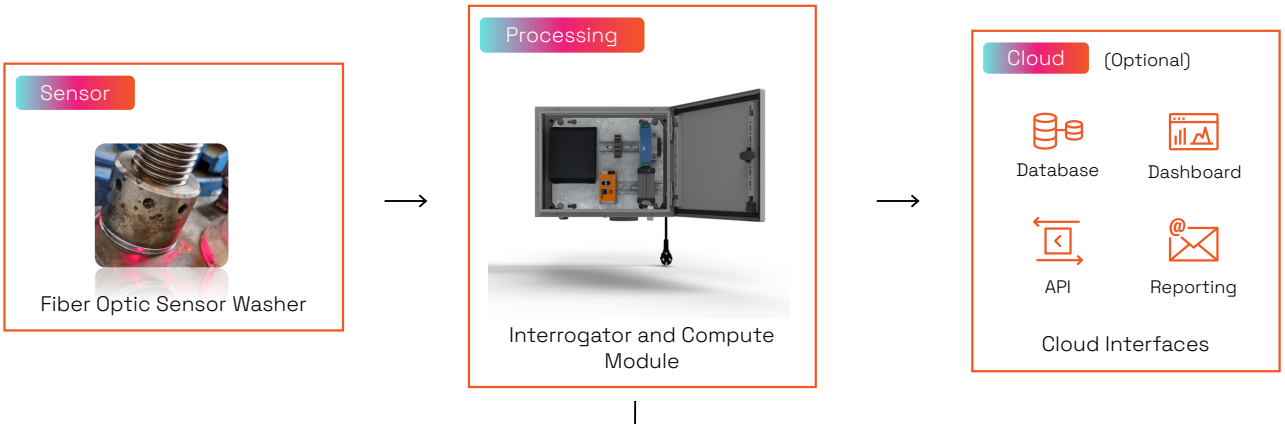
The Data Processing Unit is available as a cabinet mounted stand-alone solution with 230 V power supply or a top-box solution, requiring a 24 V DC supply.

Features

- Fiber optic sensor washer
- Local logging
- Robust to environmental influences
- Remote connectivity
- Stand-alone or top-box solution

Optional cloud connectivity provides:

- Cloud portal
- Dashboard
- API
- Reporting



Common features

Optical Sensor Washer	
Number of FBGs	1-4
Connector	LC/APC
Dimensions	M16 and above
Operating temperature	-25 °C to +150 °C
Local logging	
Data	Strain[1]
Protocol	Ethernet[2]
Sampling interval	Up to 25kHz
Interrogator	
Type	Sentea DM-4120
Channels	4[3] - up to 12 washers
Data processing unit	
Type	RevPi Connect 5
Connectivity	
Antenna type	SMA connector

Top-box version

Cabinet	
Mounting	DIN-rail NS 35/ 7,5 ZN
Dimensions	500 mm × 150 mm × 150 mm
Power supply	24 V DC
Operating temperature	-25 °C to +55 °C between 5% and 95% humidity (no condensation)

Stand-alone version

Cabinet	
Mounting	Wall mounting
Protection	IP65
Power supply	Multi-voltage power supply 100 V to 240 V / 50 Hz to 60 Hz / 50 W
Dimensions	380 mm × 380 mm × 210 mm
Operating temperature	-25 °C to +55 °C between 5% and 95% humidity (no condensation)

[1] Other processed data feeds on request
[2] Custom data feeds on request
[3] Systems with more channels on request

Specifications

Performance	
Capacities	Pressure, temperature, speed, Vibrations
Pressure range	Up to 250 bar
Accuracy	1% Full Spectrum
Repeatability	1 %
Speed sensing	50 – 3600 rpm ±
Temperature sensing	0 – 150 °C ± 0.5%
Vibration analysis	FTT, order analysis
Mechanical	
Bolt range	M12-M54
Thickness	>2.5 mm
Material	Harded steel HRC>53
Interface	
Output	Modbus (TCP/IP), Ethernet
Sample rate	Up to 24 kHz
Supply	24 Vdc or 220 Vac
Environment	
Protection	Up to IP68
Temperature range	-50 - 150°C
Safety	ATEX zone 0