Sensor-Test Kit

Accuracy check for all IMES sensor types

The main components of the easy to mount test-kit are the hydraulic pressure pump including manometer, the sensor check-box and the visualisation software.

Sensor Check Report

Company, ship name or power plant:	IMES, Cogeneration plant
Engine:	MAN
Engine number:	123456789
Operator:	Stefan Neumann
Date:	08.11.2018

Sensor Type:	CPS-01CA
Serial Number:	5952-17-1273-0

Evaluation (Temperature: 23°C)

Offset	Current:	4.1508mA
	Pressure:	2.8bar
	Deviation:	3.77% (referenced to 4.0000mA)
	Result:	within specification
Span	Current (measured):	8.0091mA
	Pressure (entered):	150.0bar
	Current (norm. to 300.0bar):	16.0182mA
	Pressure (normalized):	300.3bar
	Deviation:	0.11% (referenced to 16.0000mA)
	Result:	within specification
Total result:	approved	

Read out Sensor Operation Data

Operation time (powered):	1h
Operation time (engine running):	1h
Maximum pressure:	183.4bar
Maximum temperature:	82.6°C

Pressure Pump		Checkbox	
Model:	SIKA Ref-E2	H/W Serial number:	366935883436
Serial number:	1225TG0	Calibration date:	17.09.2018
Calibration date:	16.10.2018		

Signature:

IMES Sensor Check Version 1.0.1.0

All data will be displayed in a sensor evaluation report and the measured data of ***sensor offset and -span*** will be compared with the sensor specification.

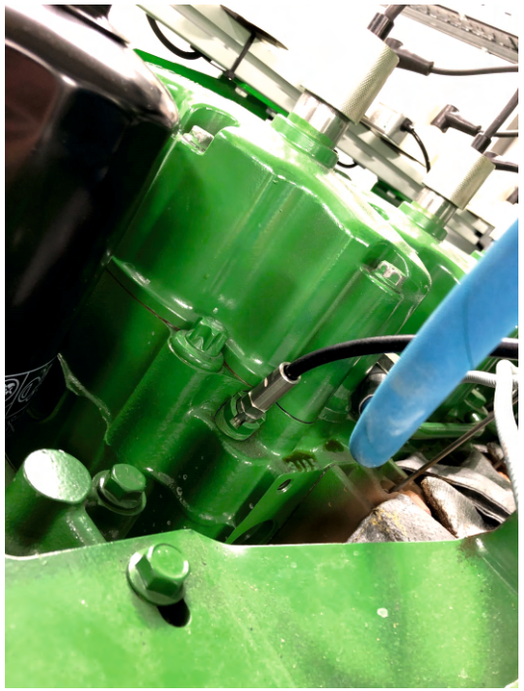
The software is reading out stored ***maximum pressure, maximum temperature, and engine operating hours.***

Future fuel resistant sensor types

For more than 25 years we are specialised in the field of combustion engine cylinder pressure and data acquisition systems. Our sensors, electronic pressure indicators and combustion control and monitoring systems are employed on a wide range of diesel-, gas- and dual-fuel engines on ships and locomotives and in power and cogeneration plants and pipeline compressor stations all around the world.

Actually our sensors are installed on various hydrogen engines worldwide for long-time operation tests.

For H_2 application the sensors have to fulfill special material characteristics to withstand corrosion and embrittlement. As all our sensors they have a very good thermodynamic performance and they are extreme robust against high dp/dt.



CPS-03 installed on a hydrogen engine

You are welcome to contact us at any time for further information and support.

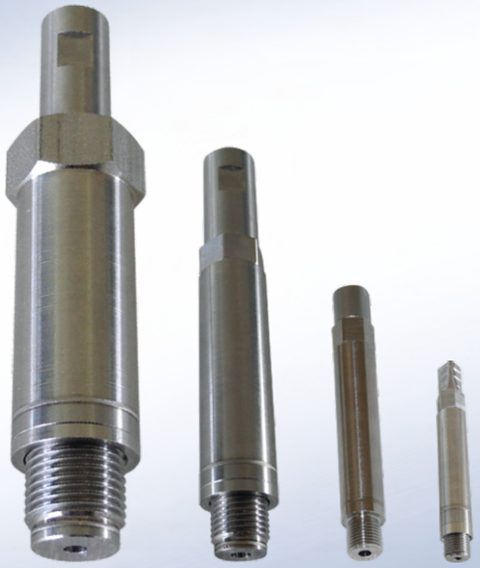
IMES GmbH
Email: sales@imes.de
Phone: +49 8341 9661730

imes
the cylinder pressure people

ready for

Future Fuels

Cylinder Pressure Sensors



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Cylinder pressure sensor types

Specification and technical data	HTT-06	CPS-03	SPS-01	PCS-01	HTT-05
					
	On-line combustion control on diesel- and gas engines for increasing engine performance and optimised engine control. Extreme robust against high dp/dt and against vibration. Protection class IP69.	On-line combustion control on diesel- and gas engines for increasing engine performance and optimised engine control. Extreme robust against high dp/dt and against vibration. Protection class IP69.	Small pressure sensor for continuous measurement of combustion on diesel- and gas engines.	Small pressure sensor for continuous measurement of combustion on diesel- and gas engines as well as for pre-chamber pressure.	Compression pressure sensor for real time pressure inputs from the compressor cylinders, e.g. indicated HP, rod load, volumetric efficiencies. Received approval for hazardous area Class I, Division 1, Group A-D and Class I, Division 2, Group A-D.
Application	Closed loop control on diesel-, gas- and dual fuel engines.	Closed loop control on internal combustion engines.	Closed loop control on diesel-, gas- and dual fuel engines.	Closed loop control on diesel-, gas- and dual fuel engines.	Pressure measurements on compressors.
Measuring range	0...300 bar (others on request)	0...300 bar (others on request)	0...300 bar (others on request)	0...300 bar (others on request)	0...300, 600, 1000, 1500, 3000, 5000 psi
Over pressure static	1200 bar and 1600 bar	1200 bar and 1600 bar	1200 bar and 1600 bar	1200 bar and 1600 bar	3000, 4000, 10000 psi
Electrical connector	Plug DIN M12 / MIL-C-26482	Plug DIN M12 / MIL-C-26482	Plug DIN M12 / MIL-C-26482	Plug DIN M12	MIL-C-26482
Thread and material of sensor membrane	M14 x 1,25 17-4PH	M10 x 1 17-4PH	M8 x 0,75 17-4PH	M5 x 0,5 17-4PH	1/2" NPT (others on request) 17-4PH
Certification	DNV, Bureau Veritas, ABS, Class Nk, Lloyd's Register, Korean Register, RINA, SGS	DNV, Bureau Veritas, ABS, Class Nk, Lloyd's Register, Korean Register, RINA			SGS

All sensors offer

signal rangeOutput	Frequency range	Accuracy error	max. temperature measuring cell	Thermal shock 1500 RPM pmi = 10 bar
4...20 mA option 0,5...4,5 V	2 or 10 kHz (others on request)	≤ 1% Full scale	300°C (short time 1 min. 350°C)	< +/- 0,5 bar