EACS

Engine Altitude Conditions Simulator

CONTROL SISTEM

AUTOMOTIVE TESTING SOLUTIONS

EACS

PATENTED

FEATURES

EACS is an innovative machine that allows to test internal combustion engines in a wide range of ambient conditions, from sea level up to 5500 m altitude.

In order to test an engine in different ambient pressures, the commonly used procedure is to use a special test cell able to maintain a low pressure inside.
A test cell having this characteristic is very expensive because it needs a very robust wall structure able to resist to a force of over 5000 kg/m^2.

The EACS system overtakes these limitations maintaining the possibility to perform any kind of stationary or transient test thanks to a very fast and reliable regulation system, able to maintain the set pressure level in any engine working condition, simulating also climbing or down hill roads.

In order to obtain very stable pressure conditions during transient tests (fast variations of intake air, exhaust gas and fuel flow rates), the solution consists in producing the desired pressure levels within a single volume, from which the engine draws the flow of intake air and into which it introduces the flow of exhaust gas.

The intake air can be regulated in temperature and humidity, and high precision sensors allow to monitor working conditions continuously.
The EACS system can be delivered in different configurations in order to adapt itself to different engine sizes, from small gasoline car engines to big heavy duty diesel engines.

The precise configuration of the system is determined each time by means of a simulation software that allows to adapt not only the components, but also their distribution in the test cell in order to optimize the space usage.

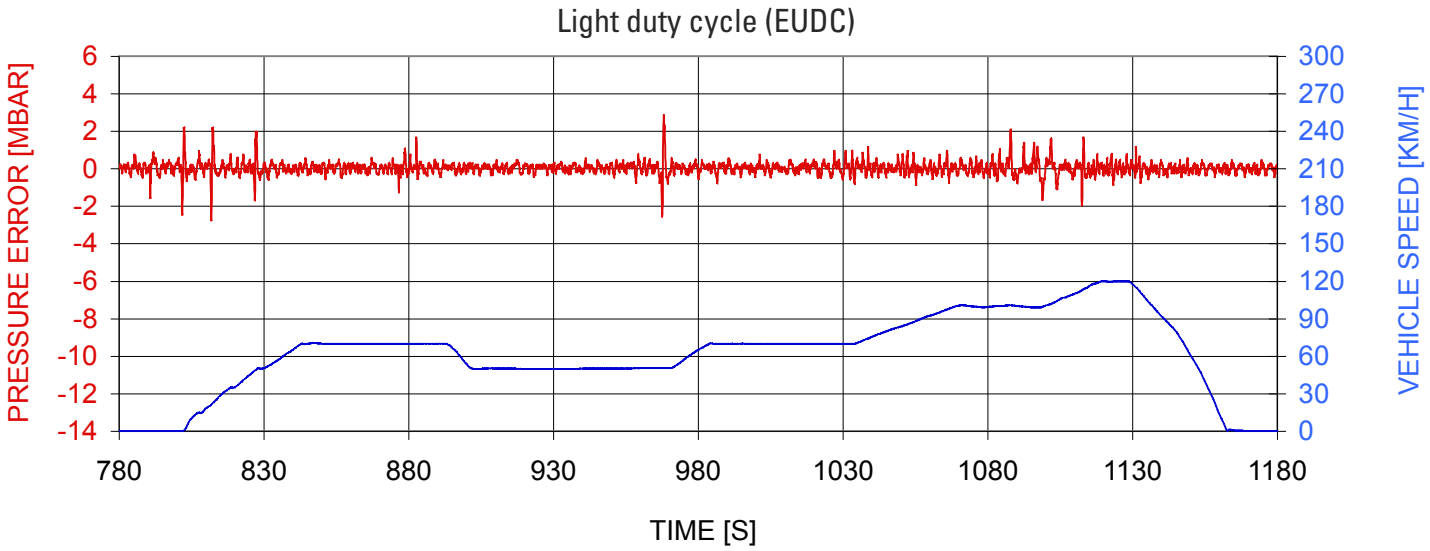
TECHNICAL SPECIFICATIONS

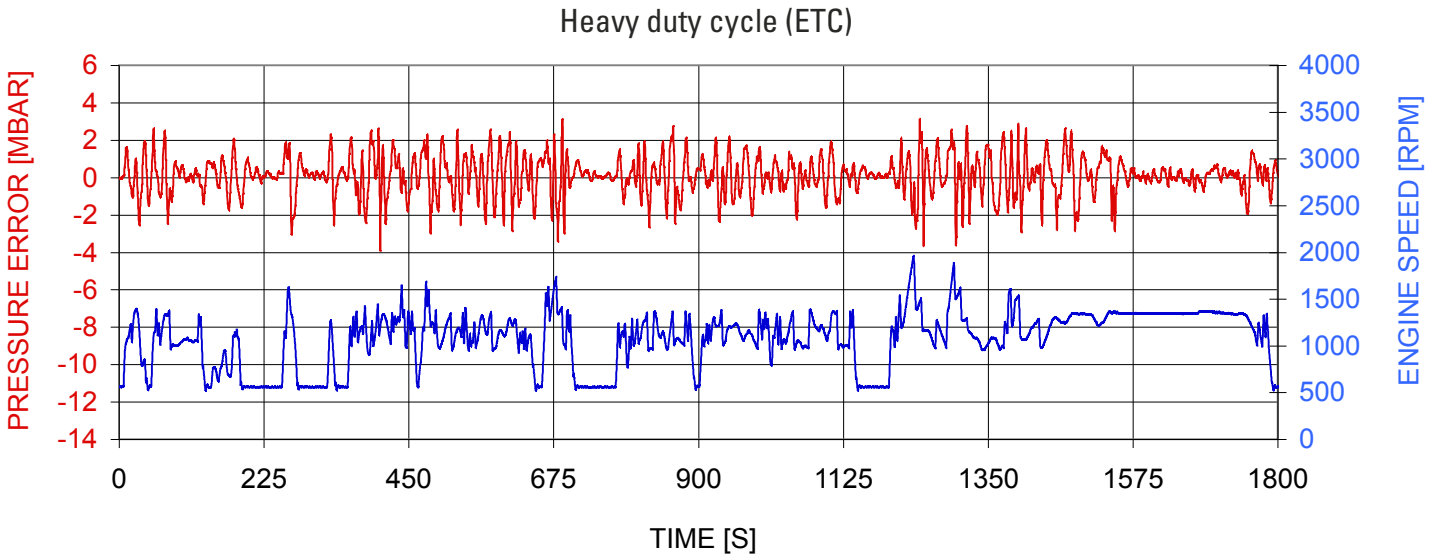
Maximum intake air flow rate	8000 Kg/h
Minimum pressure	- 500 mbar (about 5500 m over sea level)
Maximum pressure	+100 mbar (about 800 m under sea level)
Pressure regulation precision	± 1 mbar
Pressure stability	from ± 1 mbar to ± 5 mbar (depending on working condition)
Altitude variation speed	3000 m/min
Relative humidity range	from 5% to 95%
Relative humidity stability	±2%
Temperature range	from -30°C to 50°C
Temperature stability	±1°C
Remote control	AK protocol

ADVANTAGES

- Possibility to perform transient tests
- Possibility to simulate both higher and lower altitudes
- Very low power consumption thanks to the use of regenerative inverters
- Installable in existing test cells
- Possibility to distribute components in different rooms
- Personalized design
- User friendly software
- Full control through AK protocol

REGULATION ACCURACY





CONTROL SISTEM

Expert engineering, flexible deployment.

Control Sistem is a leading producer of Testing Facility solutions for the Automotive sector providing all-round service and extensive specialization across the vehicle testing spectrum: Engine Testing Cells, Components Testing Rigs, Powertrain & Gearbox Testing Solutions.
Control Sistem also develops in-house complete dedicated management Software that is a key feature of the entire test process alongside the other elements in the Testing chain.

The high-level technical and entrepreneurial capacity acquired in over 20 years experience in the Automotive sector enables Control Sistem to deliver cutting-edge solutions comprising latest-generation technology as well as sophisticated Hardware and Software systems.
Proven expertise in the sector has enabled the Company to collaborate with top automakers both in Italy and worldwide with consistently excellent results.

Control Sistem's real strength is its highly flexible ability to design and produce solutions tailored to customer specifications or developed in conjunction with customers themselves – a versatility that has become a fundamental market plus in the development of each project.

Distributor:

ms4 ANALYSENTECHNIK

D-35519 Rockenberg
Am Sandberg 20

Postfach 47 00
D-35517 Rockenberg

Tel.: +49 (0)6033 / 92 35 - 0, Fax: +49 (0)6033 / 92 35 -19, www.ms4.info / office@ms4.info