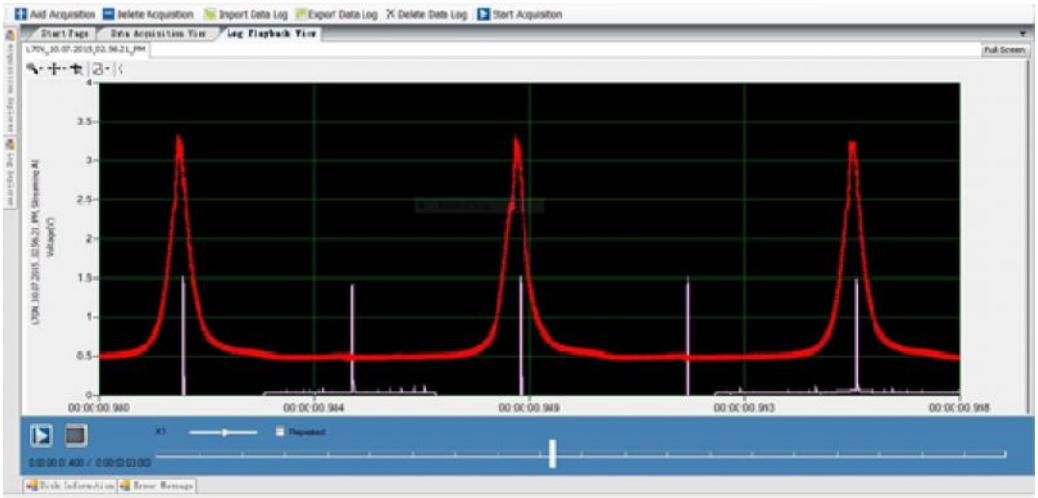
COMBUSTION ANALYSIS

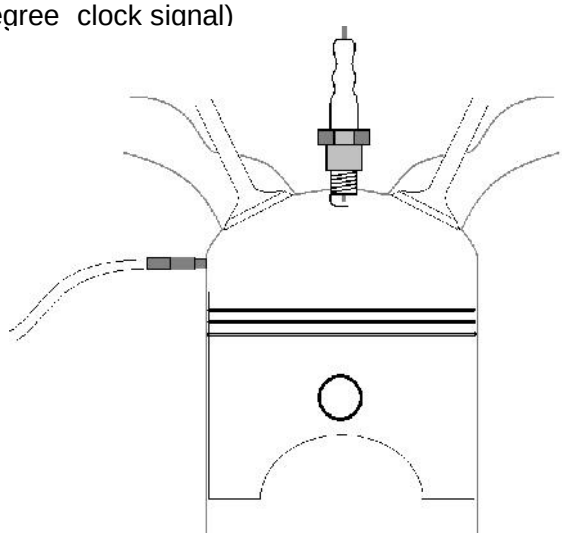
Model CAS-5



This combustion analysis system consists of an in-cylinder pressure transducer and amplifier, crank angle encoder with TDC trigger and data acquisition unit (DAQ) to capture the combustion pressure. The pressure transducer is an optical type sensor (at right) measuring diaphragm deflection to calculate cylinder pressure. This type of sensor gives very stable and consistent signal, unlike the piezo-electric sensor which will drift over time. The DAQ is clocked by the encoder crank angle signal, where each pressure data point corresponds to a particular crank angle. This allows much easier data processing than the time based DAQ.

FEATURES

- Optics diaphragm deflection detection give stable and consistent pressure signal
- Crank angle based data acquisition greatly simplified combustion data processing (only 360 data points for each engine revolution, using 1 degree clock signal)
- Small M5 Sensor
- Free computer software to capture data
- 1 Year Warranty Included



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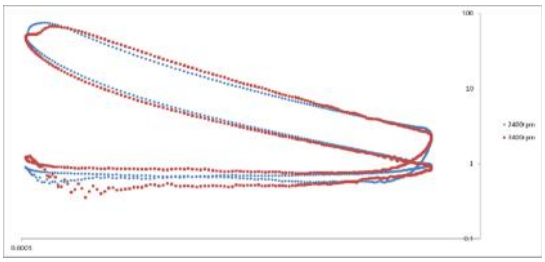
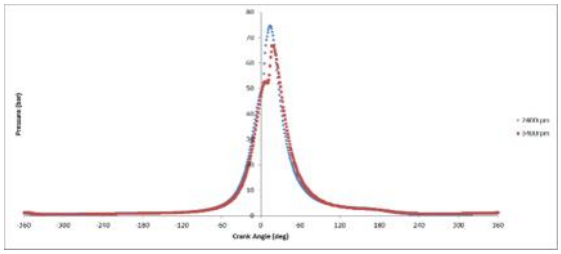
COMBUSTION ANALYSIS

Model CAS-5



PV diagrams



Cylinder pressure vs crank angle

SPECIFICATIONS

MAINS POWER

Voltage: 120/240VAC
Frequency: 50/60Hz
Current Draw: 1A max

PRESSURE TRANSDUCER

Pressure: 0 to 200 bar (optional up to 2000 bar)
Signal: 0 to 4.5V DC

ENCODER

Pulse per revolution: 360 (optional up to 720)

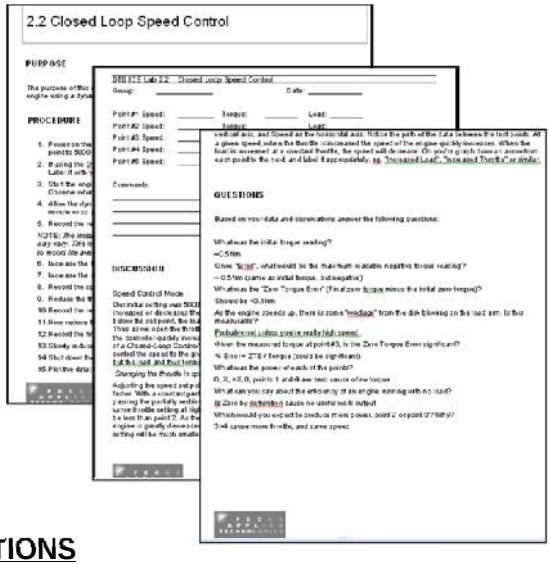
DATA ACQUISITION UNIT

Sampling rate: 200,000 sample per second

ENVIRONMENTAL

Temp:10 to 40° C Operational
0 to 50° C Non-Operational
Humidity:5 to 90% Non-condensing
Shock/Vibe:<10g

The combustion analysis system is widely used by student laboratories in Universities and Polytechnics and for Research and Development on alternative fuels, fuel blending, HCCI and etc. Laboratory exercises are available, including sample data, physical explanations and quiz questions and answers. The DAQ system provides separate Pressure output and Indexer signals for separate recording and measurement if required.



OPTIONS

- 10kW Bench Dynamometer
- Internal Combustion Engine (gasoline or diesel)
- Digital Fuel Scale for ICE
- Electronic controlled fuel injection system
- Extensive seminars on Combustion Analysis are also available

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