

LOCCIONI

Mexus 4.0 shot-to-shot flowmeter for alternative fuels

test instrument

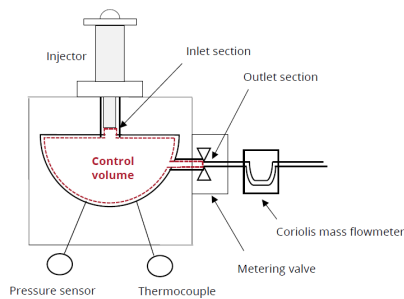


Loccioni Mexus is an integrated, multifunctional injection measurement instrument that measures both the injected fuel quantity and the injection rate of every single shot.

The Alternative Fuels Mexus is designed specifically to characterize alternative fuels such as ammonia, methanol and ethanol.

THE SYSTEM

The measurement principle is based on the constant-volume method: the injector injects into a fixed volume, and the resulting pressure rise is proportional to the quantity of fuel delivered.



MAIN FEATURES

The system can fully characterize any type of fuel injector by measuring the following parameters:

- > shot-to-shot mass flow for AFI injectors
- > instantaneous injection rate
- > electrical functional test
- > shot-to-shot mass flow for GDI and MPI injectors

1. Measurement concept

Main Description	
Measured parameters	•Quantity injected •Injection rate •Opening and closing delays •Pintle measurement
Statistical values	•Instantaneous values •Mean, max, min and standard deviation
Characteristics	
Measuring range	5 to 8000 mg/stroke (*)
Resolution	0.05 mg/shot
Injection frequency	5 – 50 Hz
Injections per cycle	1 – 10
Nozzle back pressure	2 – 21 bar(a) (**)
Test fluids	• ISO 4113, Divinol, methanol, ethanol, ammonia,
Performance	
Number of cycles acquired	1 – 3000
Measurement window per cycle	Up to the complete cycle period
Acquisition frequency	1 MHz

* The range can be customized on request
** Tests with other fluids must be evaluated case by case

THE SOFTWARE

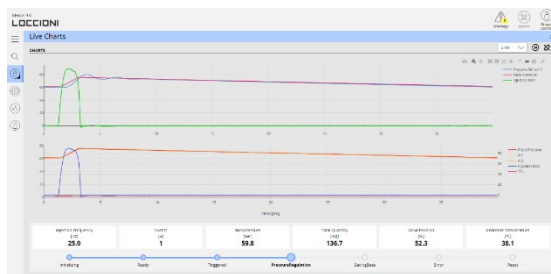
The software is based on Loccioni Aulos.
The HMI is web-based and communicates over the standard TCP/IP protocol.

Application features:

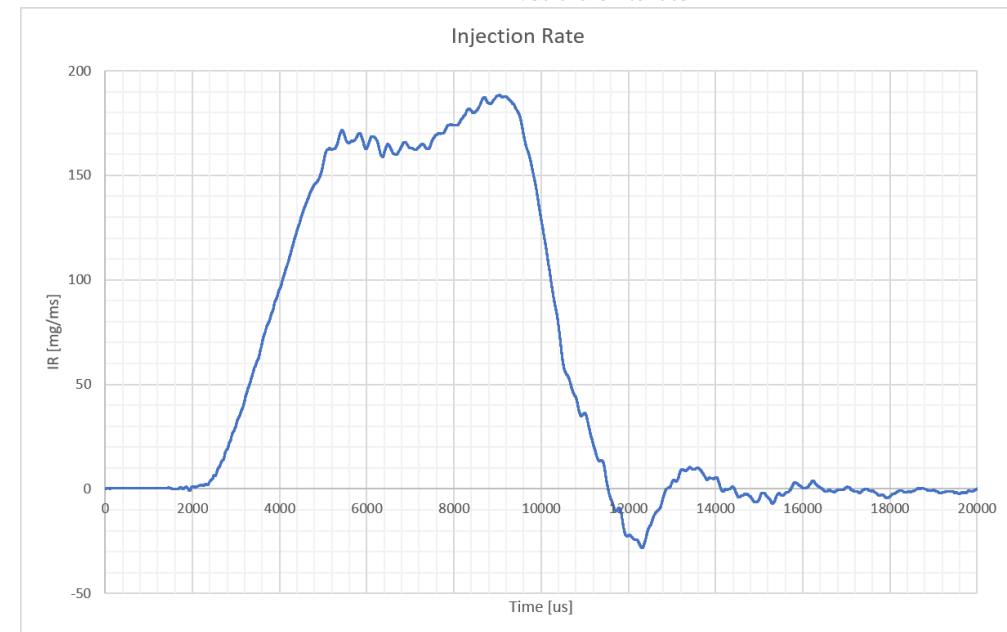
- > User access configuration
- > Hardware monitoring and calibration
- > Instrument management
- > Program editor
- > Program execution
- > Automatic cycling
- > Result analysis



3. Mexus mechanical unit



4. Software interface



5. Example results

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