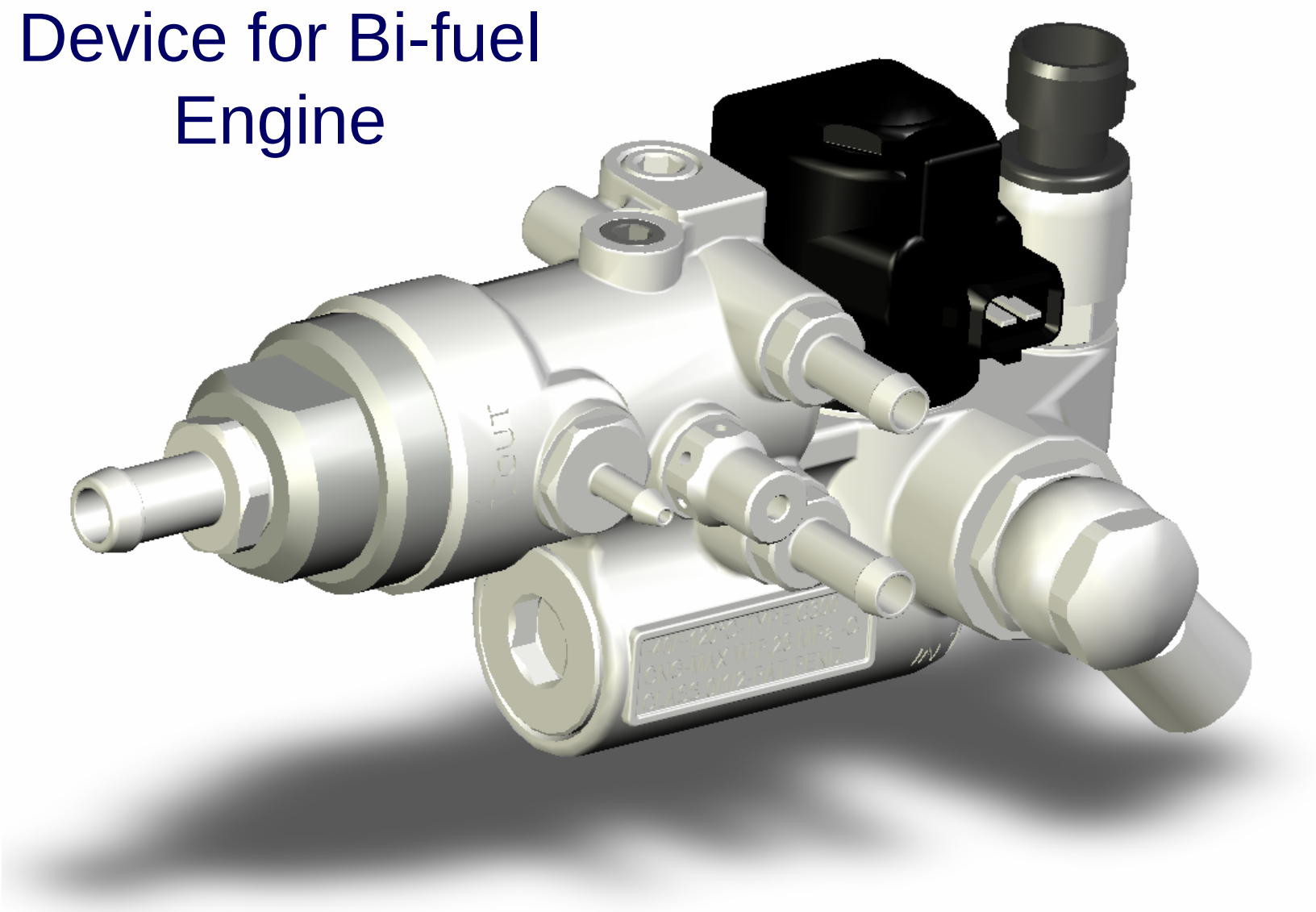
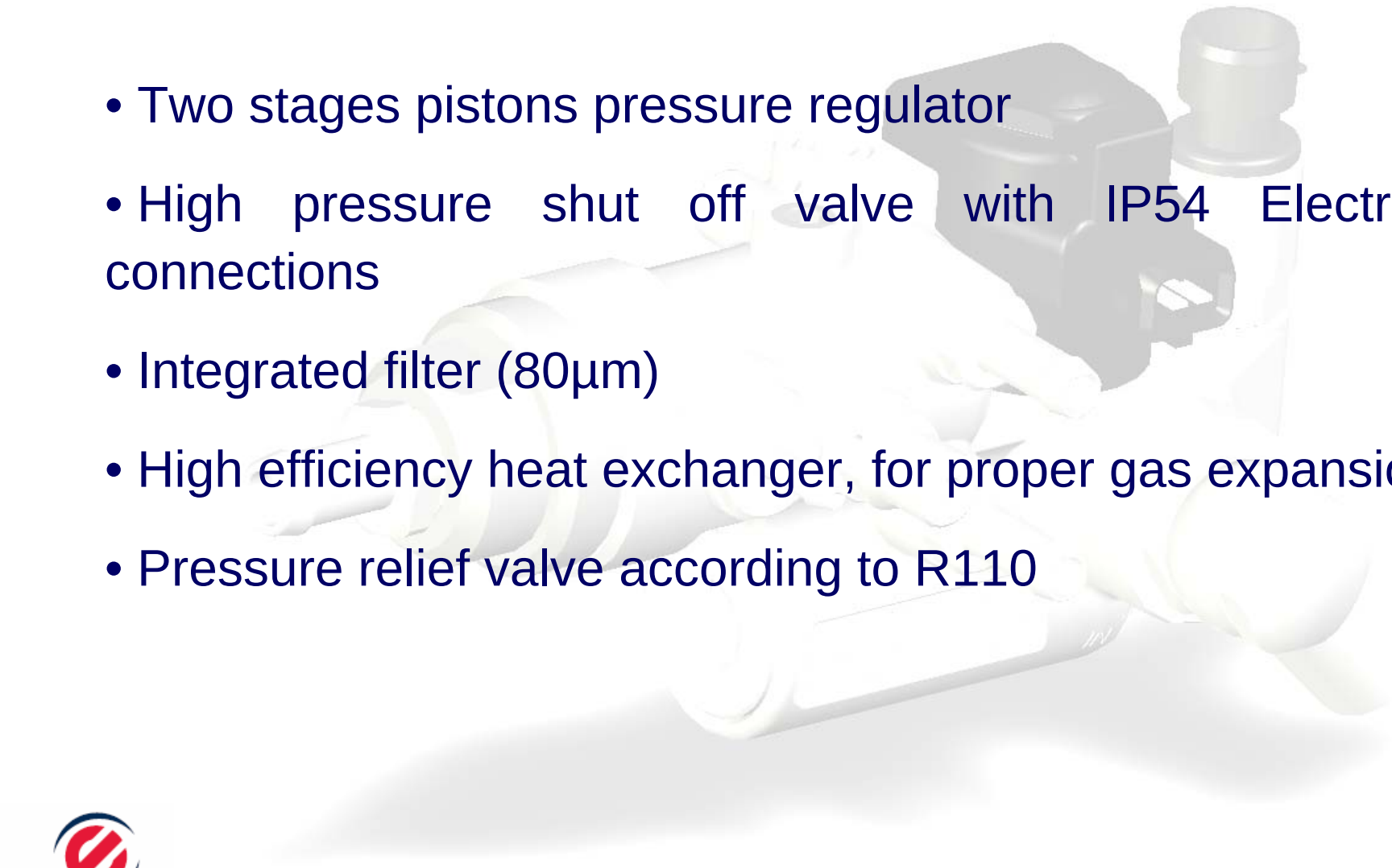
CNG Pressure Control Device for Bi-fuel Engine



Main Features



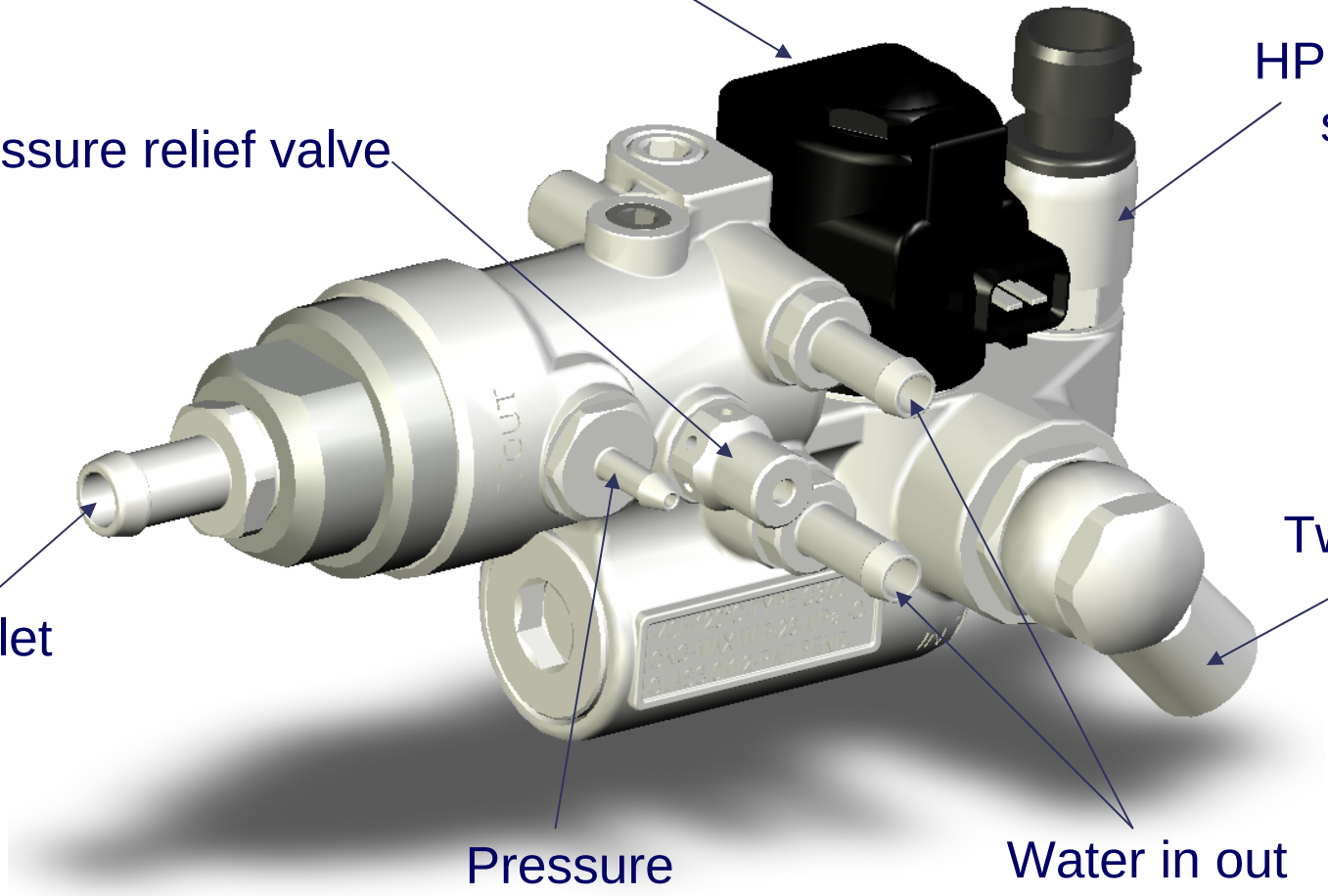
- Two stages pistons pressure regulator
- High pressure shut off valve with IP54 Electrical connections
- Integrated filter (80µm)
- High efficiency heat exchanger, for proper gas expansion
- Pressure relief valve according to R110

Main Features

COMPONENTS	SPECIFICATIONS	STRONG POINT
EXTERNAL DIMENSIONS [mm]	151,5 x 97 x 72	Very small and compact
WEIGHT [Kg]	BRASS BODY: 1,80 ALUMINIUM BODY: 0,90 (Available on december 2008)	Reduced weight
PISTONS MATERIAL	AISI 303 stainless steel. Components relized in one part only.	No coaxiality problems Tougher material
SOLENOID COIL	Absorption: 1A (13W at 12V) IP54 elettrical connection	Low absorption Low heating Optimized external dimensions Water proof coil and connector
INLET/OUTLET GAS CONNECTIONS	Aisi 303 stainless steel / Aluminium	Easier for fittings installation Better resistance to atmosphere
FIXING TO VEHICLE FRAM	Nr 3 threaded fastening points.	Optimized fastening to the vehicle
1st - 2 nd STAGE CONNECTION	Overlapped	Reduced external dimensions
TIGHTNESS	Materials homologated DGM, ECE R110, ISO 15500, ANSI/AGA NGV 3.1	Temperature range: -40°C/+120°C Materials tested on other Emer products
PISTON SPRINGS	- DISK SPRING (High press stage)	No vibrations during working

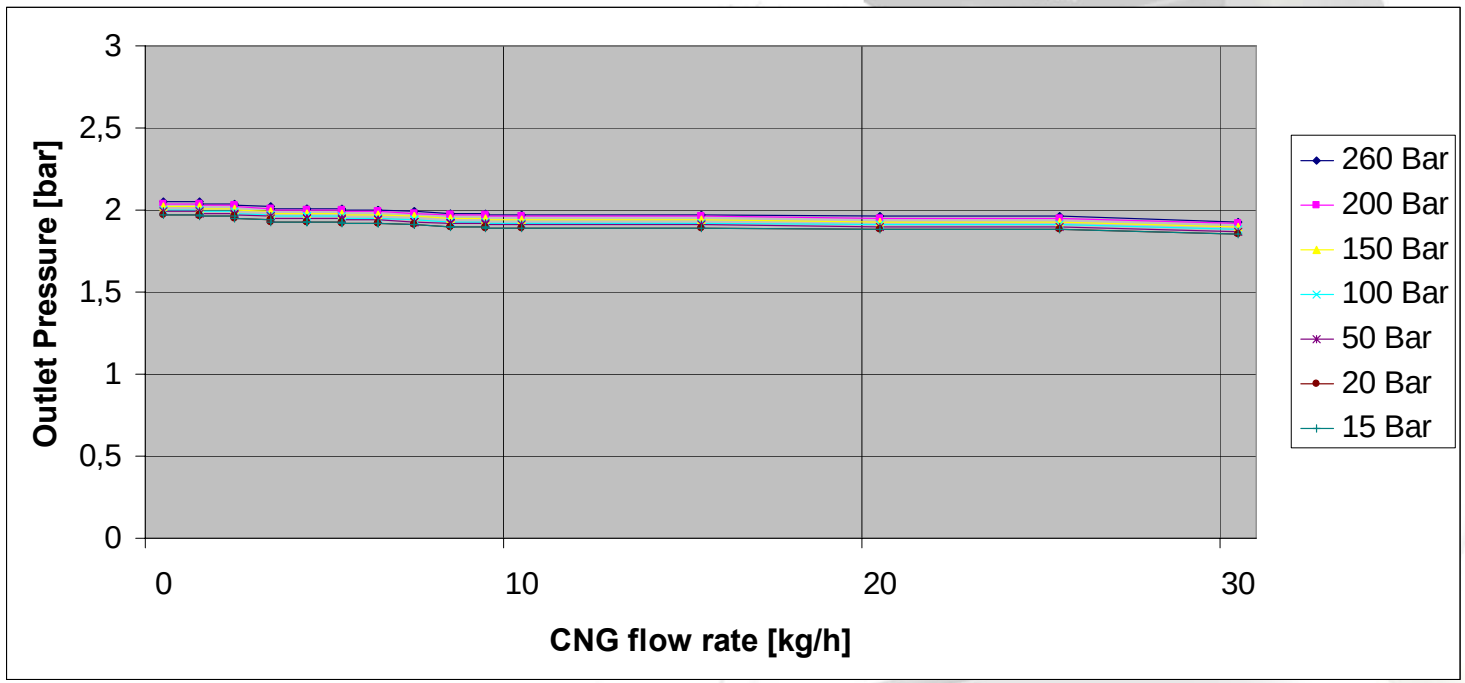
INLET P [bar]	2° STAGE PRESSURE OUTLET [bar]	OUTLET ΔP [bar]
10-250	ADJUSTABLE (2 bar to 10 bar)	± 5%

PCD Interfaces



- **PCD pressure stability: Pout vs Qcng**
- **Transient response**
- **Pressure Hysteresis**

1. PCD pressure stability: Pout vs Qcng

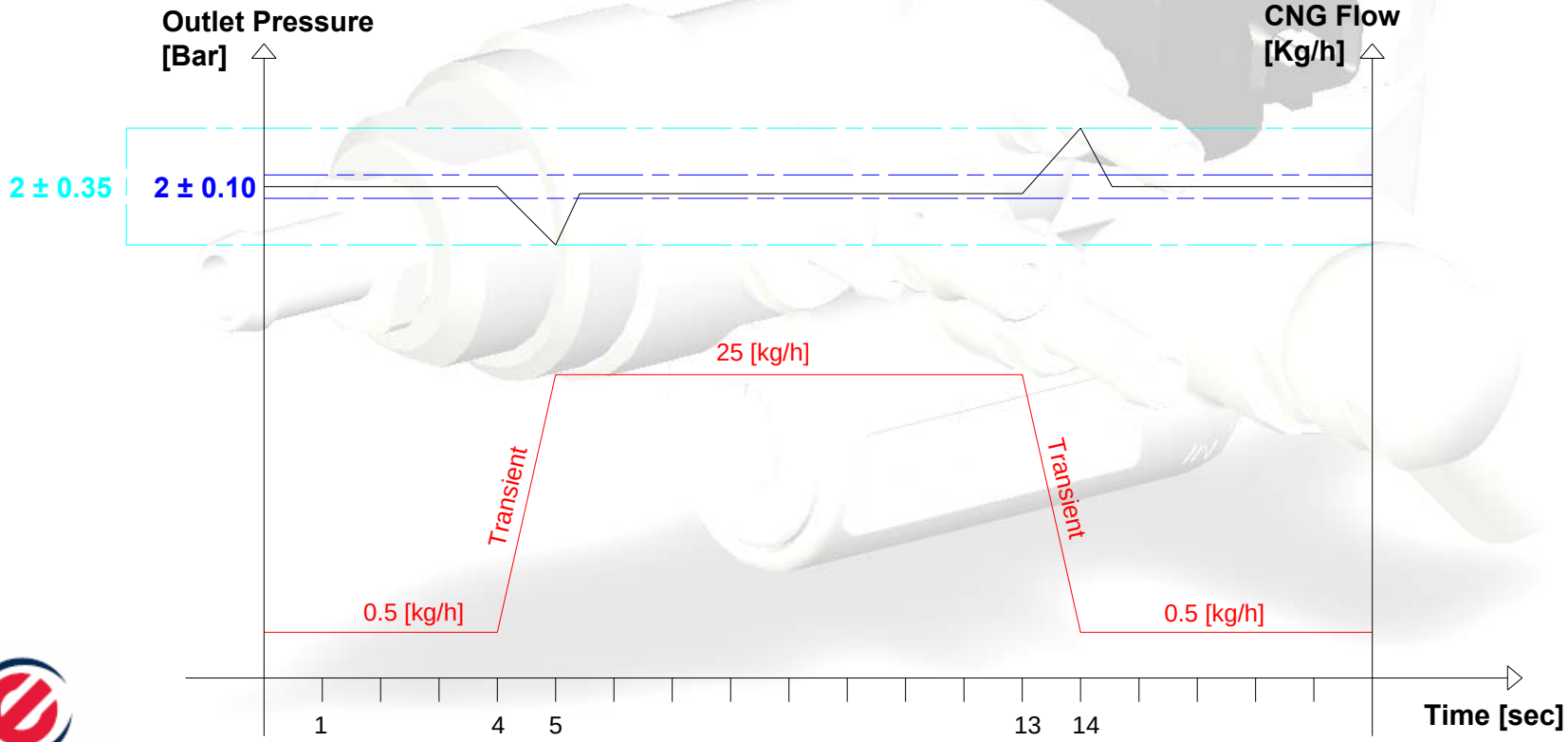


Emer PCD guarantees a constant pressure supply to the engine, for different rpm , loads and tank pressure.

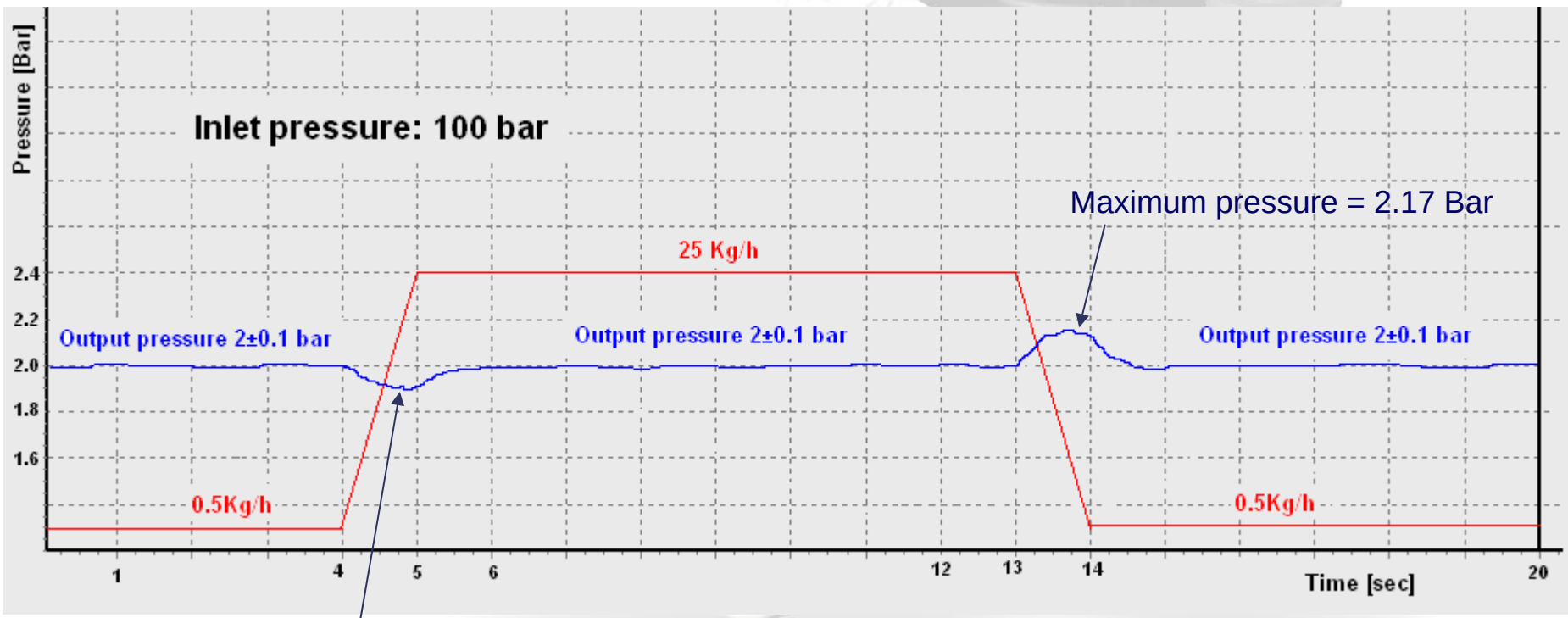
- PCD pressure stability: Pout vs Qcng
- **Transient response**
- Pressure Hysteresis

2. Transient response

At transient from 0.5 Kg/h to 25 Kg/h within 1 second, the outlet pressure vary not more +/- 0.35 bar before stabilized to set point pressure



2. Transient response



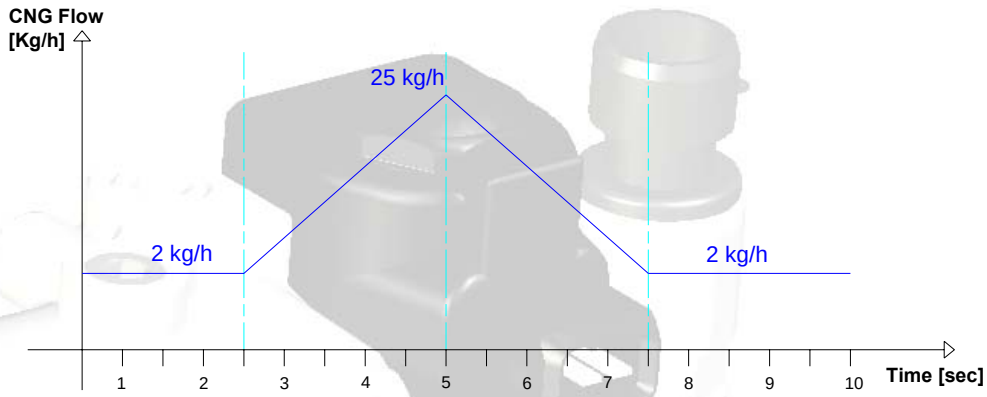
Maximum pressure = 2.17 Bar

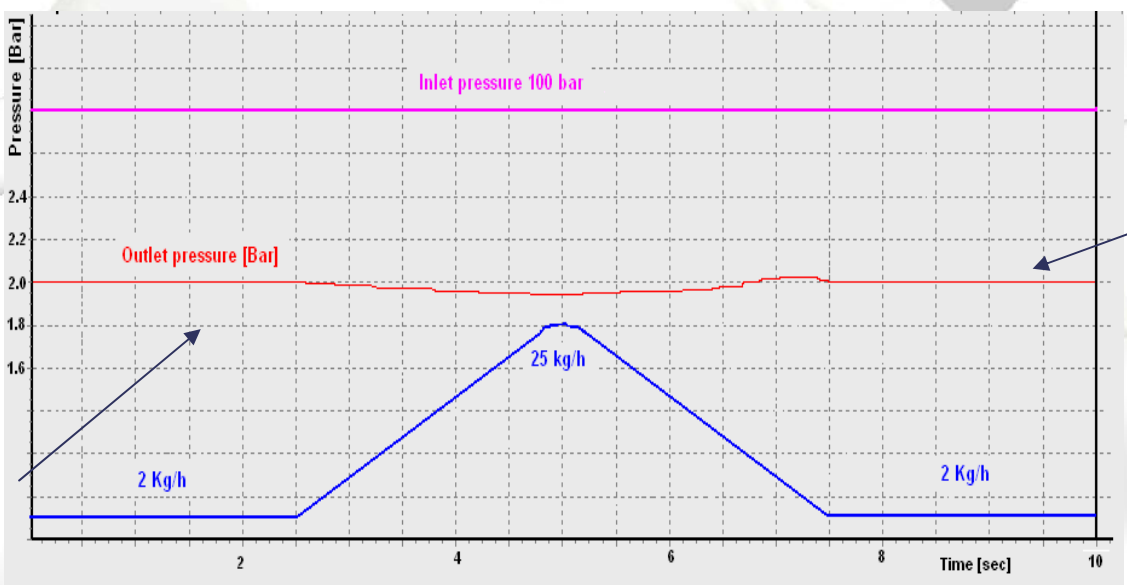
Minimum pressure = 1.91 Bar

- PCD pressure stability: Pout vs Qcng
- Transient response
- **Pressure Hysteresis**

3. Pressure Hysteresis

At a flow of 2.0 kg/h the hysteresis is not exceed +/- 2.5% of the set point pressure

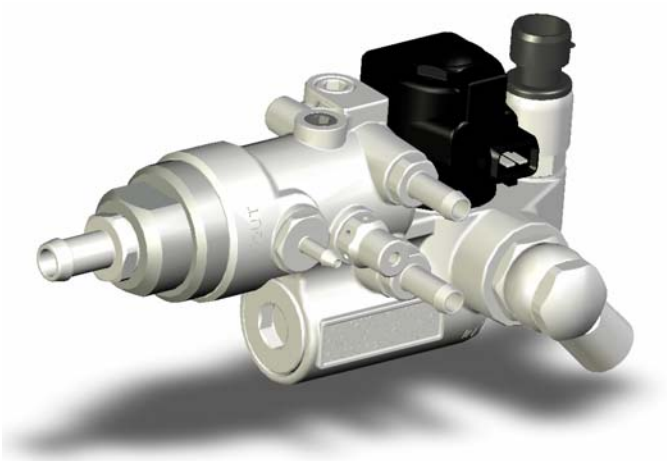




Pressure after flow droop = 2.02 Bar

Pressure before flow droop = 1.99 Bar

CNG regulator



- Pressure sensor on board
- Two stages pressure regulation
- Extremely stable outlet : ± 5% P_{nom}
- Reduced dimensions
- Integrated overpressure safety valve
- Very efficient heat exchanger
- Excellent comfort, top driving performances
- Quick installation, easy maintenance