



# Hidria Advancetec Hidria Dieseltec

Cylinder  
Pressure Sensor  
Pressure Sensor  
Glow Plug

**Hidria**

# Hidria Pressure Sensor innovative design

HIDRIA's innovative in-cylinder pressure sensing technology integrated in the glow plug, enables extremely high accuracy real time measurement of pressure during combustion process. The pressure information, amplified, calibrated and filtered by exclusive integrated ASIC is transmitted to the engine control unit to enable engine closed loop control, bringing improved fuel burn and reduced engine out emissions.



## ■ Innovative concept

- New generation of pressure sensor technology
- Exclusive solution developed and patented by Hidria
- Modular design with Metallic or Ceramic heater
- Full in house production on automatic assembly lines
- Suitable for EURO6 & EURO7 emissions standards

## ■ Additional functionalities

Many additional functionalities and benefits are also enabled by this technology:

- calculation of combustion parameters,
- cylinder balancing,
- combustion control,
- load pressure regulation,
- compensation for different fuel qualities,
- injector drifts corrections,
- removal of some sensors (as upstream NOx),
- easier and more robust engine calibration, improvement of cold start, engine acoustics optimization.

## ■ Modular design for Metallic or Ceramic heater

The Hidria PSG can be supplied with:

- long life metallic heating element suitable for automatic Start&Stop powertrains
- high temperature silicon nitride ceramic heating element.

## Sensor – electrical key functions



**Calibration:** Each sensor is calibrated at the end of the production line. Calibration value and date code are stored in the sensor.



**Immunity to ground offset:** Better than 60 dB rejection over whole signal bandwidth.



**Programmable low pass filtering functions.**



**On board diagnostic** according to OBD2 automotive standard.

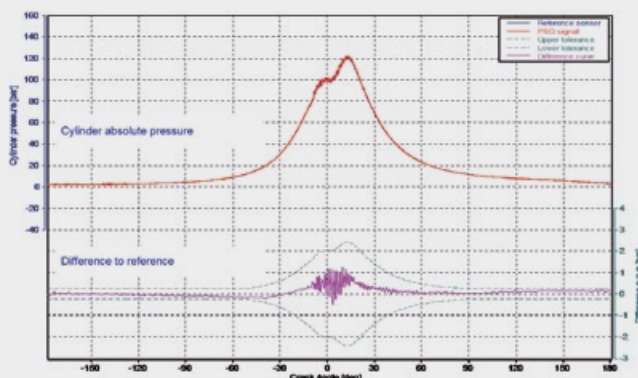
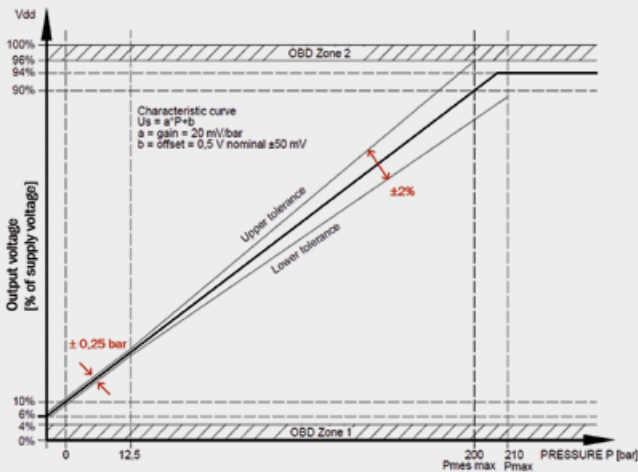


**Time delay:** Sensor signal processing function generates a constant time delay of the output (typ. 40  $\mu$ s).



**ESD / EMC:** According to Automotive standard (8 kV, 200 V/m ...).

### Performance



### Technical characteristics

<b>Operating temperature:</b>	-40 °C / +150 °C
<b>Pressure range:</b>	0 – 300 bars, programmable
<b>Supply voltage:</b>	5V $\pm$ 0,5 V
<b>Output:</b>	analog, ratiometric to supply
<b>Bandwidth:</b>	CPS: >20 kHz PSG: 8 kHz
<b>Lifetime Accuracy:</b>	$\pm 2$ % of the reading; $\pm 0,25$ bar at low pressure
<b>Starting time:</b>	< 50 ms
<b>Reliability:</b>	Engine lifetime, 1 billion pressure cycles

# Innovative and fast response pressure sensing solution.



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