

**KA51 HIGH PRESSURE SENSOR**  
*For Gasoline direct injection application*



***High Accuracy***  
***Robust Design***  
***High Durability***

**Technical Main features**

<b>Pressure sensor element :</b>	Stainless steel, piezoresistive
<b>Pressure connection :</b>	Stainless steel, hermetically welded
<b>Measuring pressure range :</b>	0 ~ 25 MPa (Available any full scale range from 10MPa to 25MPa)
<b>Pressure reference type :</b>	Relative pressure
<b>Supply voltage (Vs) :</b>	5 VDC
<b>Output signal :</b>	10% to 90% Vs (VDC), ratio metric
<b>Operating temperature range :</b>	-40...140° C
<b>Electrical protection :</b>	Over voltage, reverse polarity, short circuit
<b>Diagnostic features :</b>	Failure diagnostics, Open, Short Circuit
<b>EMI :</b>	Conforming automotive standards, ISO-11452, ISO-10605

**Specification**

**Pressure Input**

<b>Proof pressure</b>	35MPa (in case of 25MPa as a full scale range)
<b>Burst pressure</b>	60MPa (in case of 25MPa as a full scale range)
<b>Pressure reference type</b>	to atmospheric pressure (sealed reference)

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#### **Power Supply**

Supply Voltage (Vs)	4.75V ~ 5.25V DC
Supply current	10 mA DC max.
Overvoltage protection	18 V DC

#### **Electrical Output Signal**

Output Voltage	0.1Vs ~ 0.9Vs (ratio metric)
Output Clip Voltage	Low:6% ~ 8%Vcc, High:92% ~ 94%Vcc
Output current Sink / Source	2mA DC Max.
Response time, 10% to 90% span	4.0 ms Max. (From 90% to 10% of Full Scale Output)
Total error @ -10 ~ 100°C	±1.5%F.S.
Total error @ -40 ~ -10°C, 100 ~ 140°C	±2.5%F.S. *1)
Durability	More than 10 million cycles (10 ~ 100% F.S. repeating pressure)

#### **Mechanical Properties**

Wetted parts	Stainless steel (SUS 304(JIS))
Mounting torque	depends on pressure connection
Weight	approx. 50 g (depends on fitting design)
Mounting orientation	all directions

#### **Ambient Conditions**

Operating temperature range	-40 ~ 140°C
Storage temperature range	-40 ~ 140°C
Insulation resistance	min. 10M ohm *2)
ESD	+/-8kV (H. B. Model)

#### **EMI**

BCI	200mA@1MHz...1GHz
TEM CELL	200 V/m@1MHz...1GHz
Protection class	IP66 (Defined with a mating connector)
Vibration proof	196 m/s <sup>2</sup> (33~1500Hz)
Shock proof	490 m/s <sup>2</sup> (Less than 11 ms)

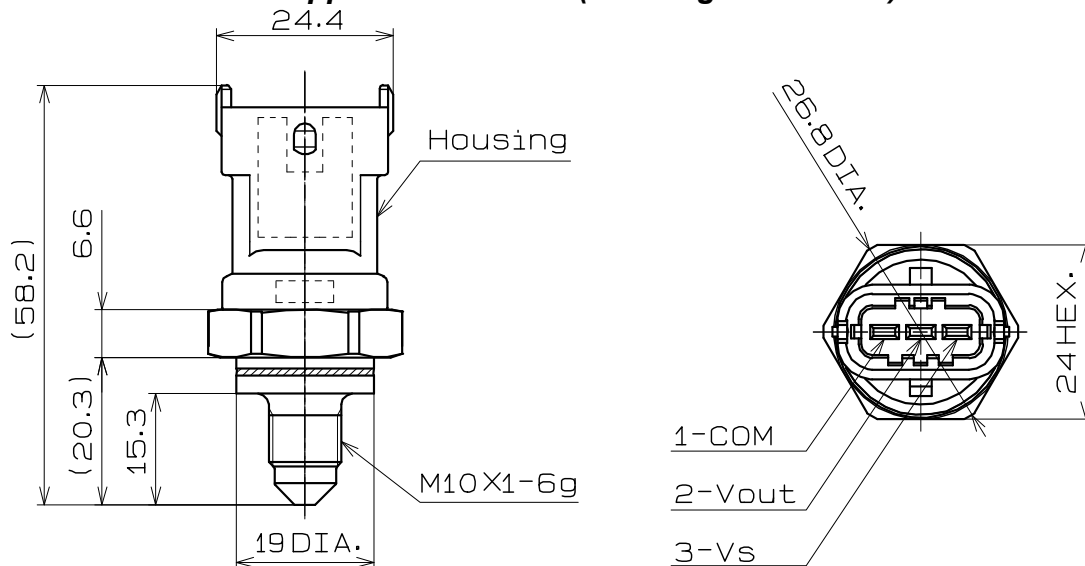
#### **Remarks**

\*1) Includes repeatability, hysteresis, non linearity (TBL), calibration, ratio metric and temperature effects. (To be discussed for more detailed accuracy definition with the customer)

\*2) Measured between each pin and housing using 50 VDC for one minute.

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*Example for Dimensions and Application Circuit (as design reference)*



Please ask for pin assignment which is depending on the chosen connector.

**Ordering Information**

**Model No.:** Measuring range, Pressure connection, Wrench size, Electrical connection

**Example:** KA51, 25MPa, sealed reference, M10 x1, Hex24, Bosch Compact, Code II

**Options**

Pressure connection	M10x1 male thread M12x1.5 male thread <b>* Other pressure connections on request.</b>
Wrench size	Hex 24 mm Hex 27 mm
Electrical connection	Bosch Compact, Code II VDA SICMA II <b>* Other electrical connections on request.</b>

**Accessories**

Mating parts for electrical connection, pressure damping elements, O-ring sealings etc. on request.  
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