

KA51 HIGH PRESSURE SENSOR
For Diesel Common-rail application



High Accuracy
Robust Design
High Durability

Technical Main features

Pressure sensor element :	Stainless steel, piezoresistive
Pressure connection :	Stainless steel, hermetically welded
Measuring pressure range :	0 ~ 200 MPa.
Pressure reference type :	Relative pressure
Supply voltage (Vs) :	5 VDC
Output signal :	10% to 90% Vs (VDC), ratio metric
Operating temperature range :	-40...140° C
Electrical protection :	Over voltage, reverse polarity, short circuit
Diagnostic features :	Failure diagnostics, Open, Short Circuit
EMI :	Conforming automotive standards, ISO-11452, ISO-10605

Specification

Pressure Input

Proof pressure	220MPa (in case of 180MPa as a full scale range)
Burst pressure	300MPa (in case of 180MPa as a full scale range)
Pressure reference type	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.
Over voltage protection	18 VDC

Electrical Output Signal

Output Voltage	0.1Vs ~ 0.9Vs (ratio metric)
Output Clip Voltage	0.91Vs ~ 0.93Vs
Output current Sink / Source	2mA DC Max.
Response time, 10% to 90% span	max. 1.0 ms
Total error @20...100°C	±1.5%F.S.
Total error @ -40 ~ 20°C, 100°C ~ 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 630(JIS))
Mounting torque	depends on pressure connection
Weight	approx. 60 g (depends on fitting design)
Mounting orientation	all directions

Ambient Conditions

Operating temperature range	-40 ~ 140°C
Storage temperature range	-40 ~ 140°C (150°C, 24h)
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 ² (33~1500Hz)
Shock proof	490 m/s ² (Less than 11 ms)

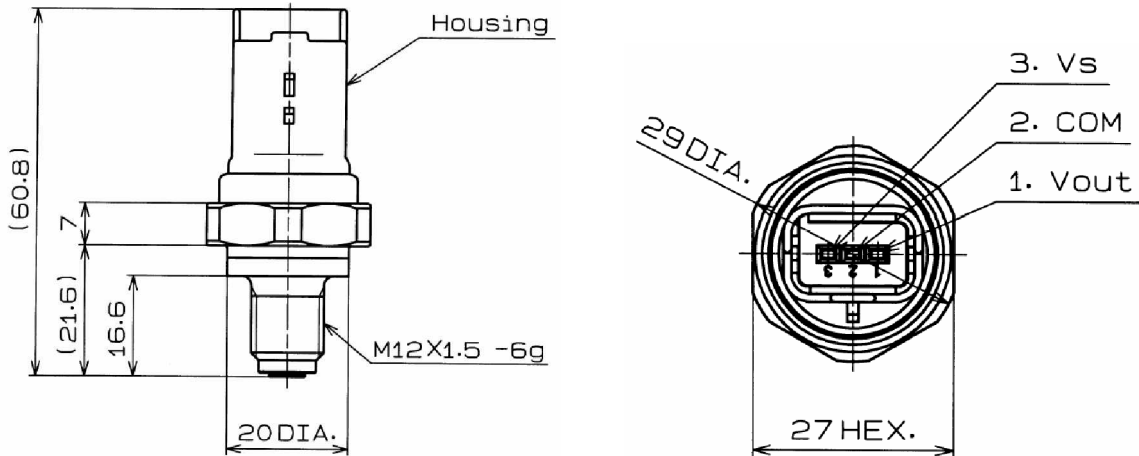
Remarks

*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, 180MPa, sealed reference, M12 x1.5, Hex27, SICMA

Options

Pressure connection	M12x1.5 male thread M18x1.5 male thread * Other pressure connections on request.
Wrench size	Hex 24 mm Hex 27 mm
Electrical connection	Bosch Compact, Code 2 VDA SICMA II * Other electrical connections on request.

Accessories

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

NAGANO KEIKI CO., LTD. reserves the right of product updates for technical reasons and innovation.

No warranty shall apply for any use of our products outside the released conditions or applications.

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