GC61
Digital Pressure Gauge

Fluids and gases measurement
(Featuring stainless diaphragm)
※SUS316L diaphragm is available

Overview

Digital pressure gauge with high durability, incorporating high reliable proven Chemical Vapor-Deposited Semiconductor Strain Gauge (SS sensor), can be used for hydraulic and water pressure monitor and control. Feature of digital pressure indication, switch actuation, analog output, loop check and scaling are integrated in one compact design.

RoHS

CE

Features

- Selectable diaphragm materials depending on applications (SUS630 or SUS316L)
- IP65
- Switch operation (NPN or PNP)
- Analog output (Option)
- 6 internal time constant filters (OFF, 25・250ms, 2.5・5・10s)
- Loop check, Indication and analog output scaling (Maximum display 6000), Filter, Key lock, Peak and Bottom hold and One-touch zero adjustment function

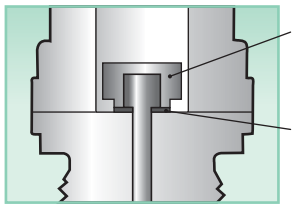
Features of sensor

Chemical Vapor-Deposited Semiconductor Strain Gauge (SS sensor)

Proven Chemical Vapor-Deposited Semiconductor Strain Gauge (SS sensor) achieves integral construction that semiconductor strain gauge, sensing part and fitting are all integrated without using any adhesive or corrosive materials to contributes to high durability and stability. This can be offered for various fluids and gases measurement.

SS Sensor

Diaphragm material can be selected from "SUS630" and "SUS316L".



Fully welded type

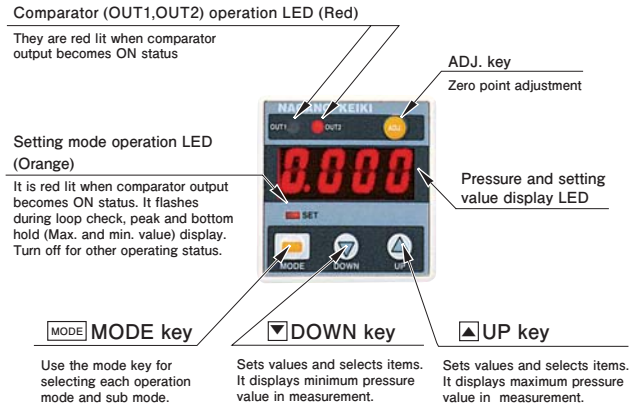
Integral safety construction body and fittings are fully welded

Sensor material

Selectable diaphragm material

	Diaphragm	Fitting	Corrosion resistant level*1	Pressure range	Proof pressure
General use	**SUS630**	SUS316	○	0 to 0.5MPa → 0 to 50MPa	200% of pressure range (35MPa or higher, 150%)
Corrosion resistant	**SUS316L**		◎*2	0 to 0.5MPa → 0 to 35MPa	150% of pressure range (In 3.5 to 35MPa range, 120%)

※There is a "LC" mark to identify the diaphragm is made of SUS316L on pressure port flats (Hexagonal).
*1 Diaphragm Material.
*2 Suitable for application that excellent corrosion and pitting resistance are required.



Specifications

Item		Description	
Media		Air, water, hydraulic fluids (Gases and fluids compatible with wetted parts)	
Installation environment		Install in location where no gases or liquids may exist that have the potential to become flammable or ignitable under normal operating condition	
Mounting		Vertical mounting or horizontal mounting	
Connection		R1/4	
Wetted parts		Diaphragm: SUS630 (17-4PH), Fitting: SUS316	Diaphragm: SUS316L, Fitting: SUS316L
Pressure range		0 to 0.5MPa → 0 to 50MPa, -0.1 to 0.5MPa → -0.1 to 2MPa	0 to 0.5MPa → 0 to 35MPa, -0.1 to 0.5MPa → -0.1 to 2MPa
Maximum allowable pressure		200% of pressure range (35 MPa range or higher: 150%)	150% of pressure range (3.5 to 35 MPa range: 120%)
Accuracy	Indication accuracy	±(1.0% F.S.+1digit) at 23℃	
	Temperature coefficient	±0.1%F.S./℃ (Zero, span)	
Display		4 digit, 8mm LED	
Display update rate		200ms	
Units of display		MPa	
Power source		12 to 24V DC ±10% (4 to 20mA: 15 to 24 V DC ±10%) ripple (P-P) not exceeding 10%	
Consumption current		NPN: 30mA or lower (4 to 20mA: 50mA or lower) PNP: 40mA or lower (4 to 20mA: 60mA or lower, Not included current comparator output)	
Signal output	Comparator output	Two-output type NPN open collector Output capacity 30 VDC 80 mADC maximum or Two-output type PNP open collector Output capacity 80 mADC maximum Response time: 5 ms or lower Deadband: Variable in the hysteresis mode 1%F.S. fixed in the window comparator mode On/Off pilot lamp Red LED remains lit when comparator is on.	
	Analog output (Option)	4 to 20mA DC (Load resistance 400Ω and under) or 1 to 5V DC (Load resistance 10kΩ and over) ※When 4 to 20mA DC is in use, power source should be 15V DC and over. Output accuracy: ±1.0%F.S. Response time: 50ms or lower	
Function	Scaling	Display values and analog output	
	Loop check	Comparator and analog outputs	
	Filter	25ms, 250ms, 2.5s, 5s, 10s (Time constant) The set value is reflected in both comparator and analog outputs	
	Error indication	Over pressure, Comparator overloaded, Outside of effective range for the zero adjustment	
	Hold	Peak and bottom hold display	
	Others	One-touch zero adjustment, key lock	
Circuit protection		Reverse power connection, comparator overcurrent protection.	
Operating temperature		-10 to 50℃ (Non-Freezing)	
Operating humidity		35 to 85%RH (Non-Condensing)	
Storage temperature		-20 to 60℃ (Non-Freezing)	
Enclosure		IP65 (With vent hole)	
Case materials		Front case: PC/ABS (UL-94, V0) Rear case: ADC12	
Cable		Length: 2m Cross-section area of conductor: 0.18mm^2	
Weight		Vertical mounting: Approx. 175 g (Including 2m cable) Horizontal mounting: Approx. 155 g (Including 2m cable)	
CE Compliance※		Applicable Directive: 2004/108/EC Applicable Standards: EN61326-1:2006;EN61326-2-3:2006 (EMI Class A / EMS Table 2)	
RoHS Compliance		EU RoHS Directive applicable	

※ Ensure wirings and connections to eliminate risk of oversupply of electric power due to lightening etc. Not allowed for the use as "Safety accessories".

Pressure range and maximum display value

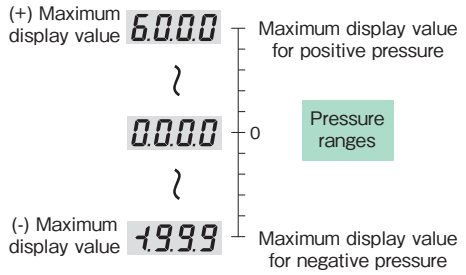
Pressure range (MPa)	Maximum display value MPa	Pressure range (MPa)	Maximum display value MPa
0 to 0.5, -0.1 to 0.5	0.500	0 to 10	10.00
0 to 1.0, -0.1 to 1.0	1.000	0 to 20	20.00
0 to 2.0, -0.1 to 2.0	2.000	0 to 35	35.0
0 to 3.5	3.50	0 to 50	50.0
0 to 5.0	5.00		

※ Negative sign (-) is displayed when the vacuum pressure is measured.
※ Diaphragm made of SUS316L can not be made for the range 0 to 50MPa.

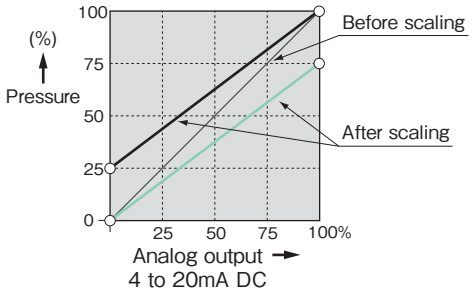
Seven Primarily Functions

1 Flexible rangeability with accurate pressure value indication and analog output scaling.

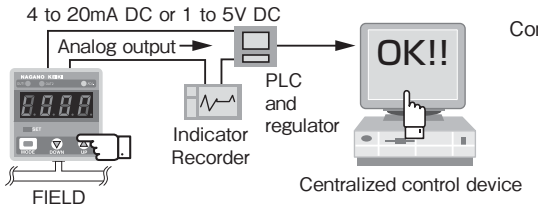
●Indication scaling function
Pressure value can be displayed arbitrarily within the maximum 4 digits (9999) display ability.



●Analog output scaling function※1
Analog output scaling value can be arbitrarily displayed based on minimum and maximum pressures within the rated differential pressure range and maximum display ability.



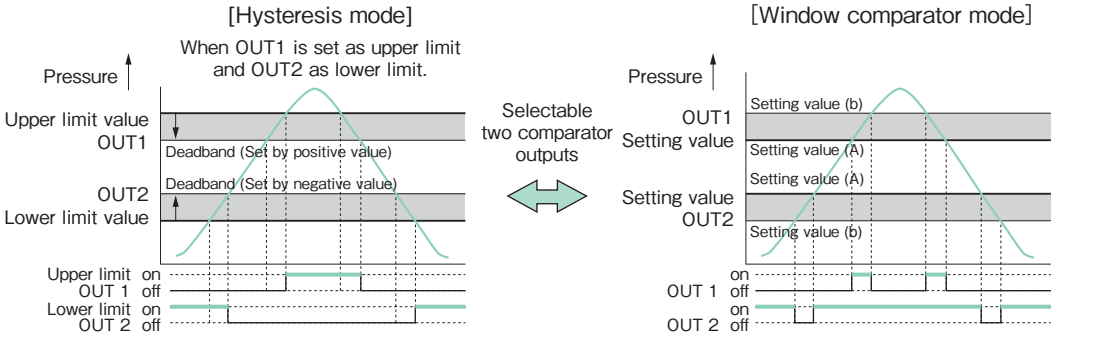
2 Loop check function allows user to check display indication, analog and comparator output manually by using up or down key without actually applying pressure to the unit suitable for checking proper wiring and other simulations.



Comparator operation can also be tested.

※1 With analog output option only

3 Selectable comparator switch operation



The upper limit (deadband set by positive value) and lower limit (dead band set by negative value) on OUT1 and OUT2 can be determined at any point.

The upper limit (A≦b) and lower limit (A>b) on OUT1 and OUT2 can be determined at any point.

ON/OFF delay time can also be set toward setting value.

4 Digital filter function is used when pressure fluctuations can result in erratic pressure indication (Select from: OFF, 25ms, 250ms, 2.5s, 5s, 10s)

5 Zero adjustment is easily available just pressing「ADJ」key greater than 3 seconds with both sides of pressure port open to atmosphere.

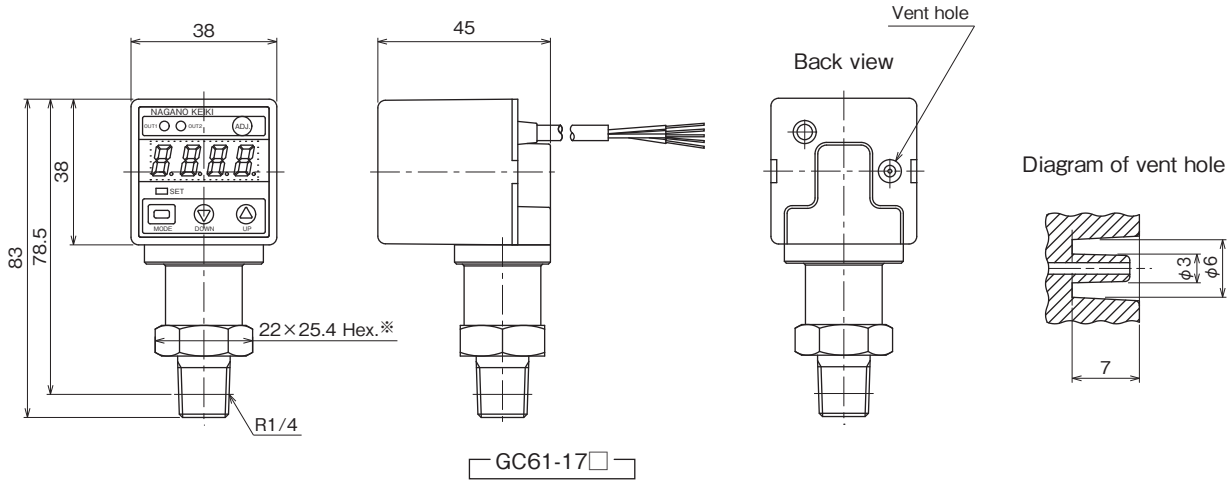
6 It keeps the maximum and minimum pressure in the internal memory. They are displayed while holding the up or down keys respectively.

7 Other features include key lock function to prevent inadvertent operation, error message indication when pressure is applied beyond rated pressure range or applied pressure is outside of allowable range during zero point adjustment.

Dimensions

Unit: mm

Vertical mounting



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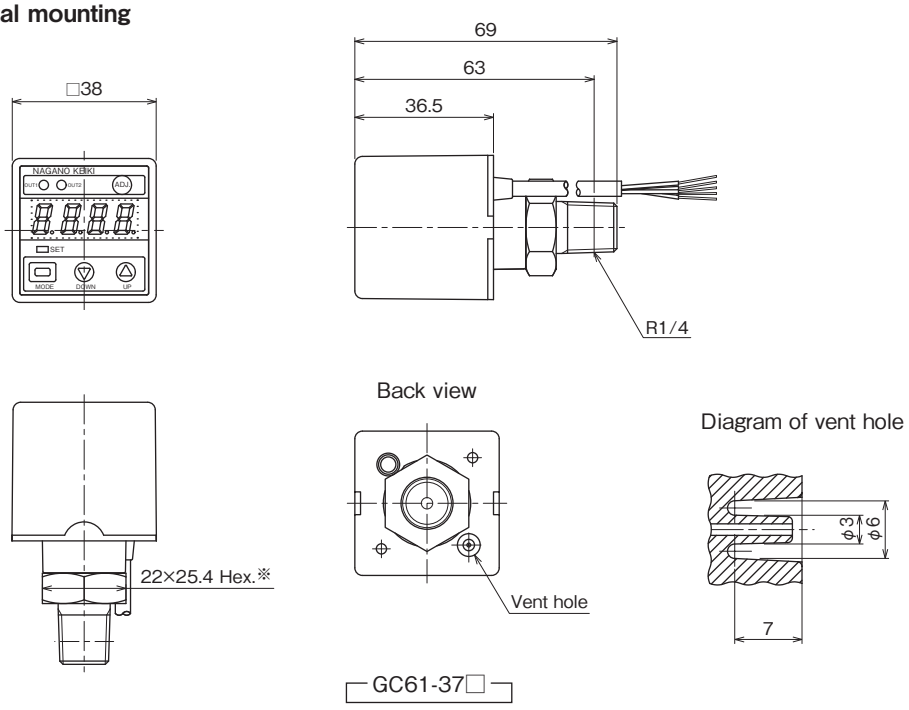
Horizontal mounting



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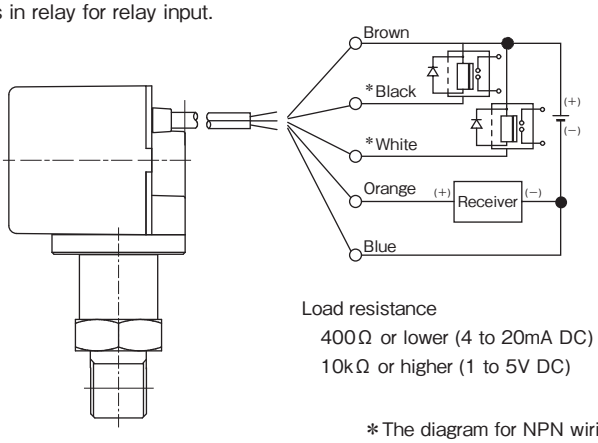
※There is a "LC" mark to identify the diaphragm is made of SUS316L on pressure port hexagonal flat.

Wiring

Put the transistor protective diodes in relay for relay input.



Load resistance
400Ω or lower (4 to 20mA DC)
10kΩ or higher (1 to 5V DC)

＊The diagram for NPN wiring

Cable wiring color

Brown···· Power source (+) 24V DC
Black····· Open collector (OUT1)
White····· Open collector (OUT2)
Orange··· Analog output (+) (Only in output option)
(4 to 20mA DC or 1 to 5V DC)
Blue····· Power source (−)

Cable Specification【Outline】

Conductor
・Construction: 0.18sq (7quantity/0.18mm)
・Coated outer diameter: 0.86mm
Sheath
・Outer diameter: 4±0.15mm

Model number configuration

Please specify the model number, each specs and the range for ordering.

Model

G	C	6	1	—	①	7	③	—	④	7	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮
Digital Pressure Gauge					Model number				Product specifications				Additional specifications (Optional)							

① Mounting	1	Vertical mounting
	3	Horizontal mounting
② Connection	7	R1/4
③ Wetted parts	4	Diaphragm: SUS630 (17-4PH) Fitting: SUS316
	G	Diaphragm: SUS316L Fitting: SUS316L
④ Pressure range (MPa)	1	-0.1 to 0.5, 1, 2
	2	0 to 0.5, 1, 2, 3.5
	3	0 to 5, 10
	4	0 to 20, 35
	5	0 to 50 (Diaphragm made of SUS316L is not available)
⑤ Indication accuracy	7	± (1.0%F.S.+1digit) at 23℃
⑥ Power source	N	12 to 24V DC±10%
	P	15 to 24V DC±10% (4 to 20mA DC only)
⑦ Comparator output	1	PNP open collector × 2 outputs (80mA max.)
	3	NPN open collector × 2 outputs (30V DC, 80mA max.)
⑧ Analog output	0	Not required
	1	4 to 20mA DC
	8	1 to 5V DC
⑨ Treatment	0	Not required
	1	Use no oil
	2	Use no water
	3	Use no oil & water
⑮ Documents	0	Not required
	1	Required (Documents available upon request) Datasheet (Drawing / Specifications) Instruction manual Inspection procedure Calibration test report (One-part one sheet) Inspection / Traceability certificate Calibration test report for pressure standard Strength calculation sheet Attending inspection

Please specify pressure range and unit of measure along with corresponding ordering code.

・Please select ZT60 to accommodate requirements that VCR, degree of cleanness and inner surface roughness are essential.

・Diaphragm seal type is also available

Treatment against wetted parts

■**Use no oil**
Oil used in manufacturing the gauges had been flushed out & no oil residue remained inside its wetted parts.

■**Use no water**
Water used in manufacturing the gauges had been flushed out & no water residue remained inside its wetted parts.

■**Use no oil & water**
Oil/Water used in manufacturing the gauges had been flushed out & no oil/water residue remained inside its wetted parts.

＊Specify code "X" to refer N/A