

GC55 Digital Differential Pressure Gauge

Liquid and/or Gas
(Incorporating stainless diaphragm pressure sensor)

Overview

The GC55 is a digital differential pressure gauge that senses relatively high differential pressures in gas or liquid. Equipped with pressure/differential pressure display/alarm and analog output (optional) functions, the GC55 is ideal for a wide variety of applications.

Features

- Three types of data can be acquired based on the following condition: High pressure side, low pressure side and differential pressure. Switch contacts and analog output can be set among high pressure side, low pressure side or differential pressure.
- Easy to install because a three-way valve is unnecessary.
- Specifications of allowable maximum pressure have been improved.
(GC55-168: 4MPa, (100kPa: 2MPa))



GC55-168



GC55-160

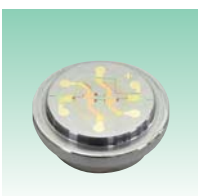
Features of sensor

Stainless steel seal diaphragm sensor



This pressure transmitter utilizes sealed-type pressure sensor made of SUS316L for all its wetted parts. MEMS sensor element built in the sensing part can measure absolute and low pressure with SUS316L diaphragm sensing part enclosing silicone oil for intermediary liquid. Suitable for high stable and accurate pressure measurement for gases and liquids measurements requiring high corrosion resistance.

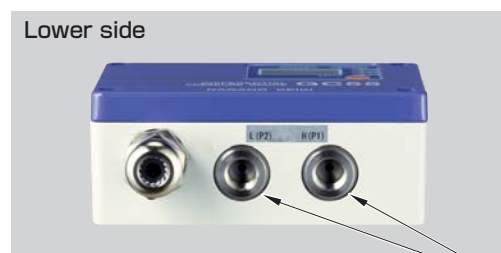
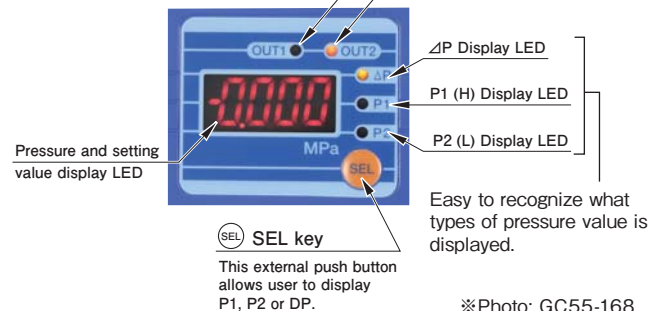
Semiconductor evaporated type (SS) Sensor



The semiconductor evaporated type (SS) sensor is proven in various industries that has the integral structure the semiconductor strain gauge, sensing part and connection are all welded without using glue or corrosive material. This makes it suitable for various process media measurements including liquids and gases with high durability and stability.

Function

Comparator (OUT1, OUT2) Operation LED (Red)
The light comes ON when signal become ON.



Two sensor design is well suited for high DP ranges

Specifications

Item		Description		
		Semiconductor evaporated type (SS) Sensor	Stainless steel seal diaphragm sensor	
Model number		GC55-160	GC55-168	
Media		Gas or Liquid (Compatible with wetted material)		
Operating pressure range		0 to 1MPa (P1, P2)	0 to 100, 200, 500kPa, 0 to 1, 2MPa	
Allowable maximum pressure		2MPa	4MPa (100kPa range: 2MPa)	
Power source Current consumption	For voltage output	12 to 24V DC / 60mA or less	12 to 24V DC / 45mA or less	
	For current output	18 to 24V DC / 80mA or less	18 to 24V DC / 60mA or less	
Accuracy ※1	Display	ΔP	±(1.0%F.S. + 1digit)	
		P1, P2	±(0.5%F.S. + 1digit)	
	Temperature characteristics (Temperature coefficient)	ΔP	Zero-point	±0.1% F.S./°C
			Span	±0.1% F.S./°C
P1, P2		Zero-point	±0.05% F.S./°C	
		Span	±0.05% F.S./°C	
Display		Display method	3 1/2-digit LED (Digit size: 10mm)	
		Display period	0.2sec.	
Output ※2	Comparator output	Number of contacts	2 outputs Photo relay	
		Response time	20ms or less	
		Output capacity	40V DC 200mA max.	
		Deadband	Hysteresis: Variable	
		Delay	Window comparator: 1% F.S. fixed 0 to 2.00s (For both ON and OFF)	
	Analog output (Optional)	Type	1 to 5V DC or 4 to 20mA DC	
		Output accuracy	ΔP	±1.5%F.S.
			P1, P2	±1.0% F.S.
		Temperature characteristics	±0.05% F.S./°C (Zero, Span)	
		Response time	20ms or less	
Resolution	Voltage: Approximately 10mV DC or less Current: Approximately 0.04mA DC or less	Voltage: Approximately 2mV DC or less Current: Approximately 0.008mA DC or less		
Load resistance	Voltage: 10kΩ min. Current: 500Ω max.			
Operating temperature range		-10 to 50°C (Non-freezing)		
Operating relative humidity range		35 to 85%RH (Non-freezing or condensing)		
Storage temperature range		-20 to 60°C (Non-freezing or condensing)		
Enclosure rating		Indoor use (IP64)※3		
Pressure connection size		Rc1/8		
Materials	Wetted parts	Element	SUS630 (17-4PH)	
		Joint	SUS304	
Case		ADC12		
Weight		Approx. 490g		
CE compliance		EN61326-1:2013 EN61326-2-3:2013		
RoHS directive		RoHS directive compatible		

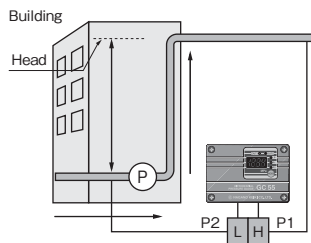
※1 Including linearity, hysteresis, and repeatability at 23±2°C

※2 Open the front case when setting, adjusting, or scaling the output.

※3When front case is closed.

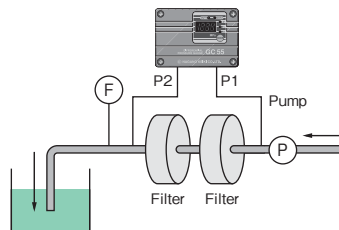
Applications example

○For factory facilities



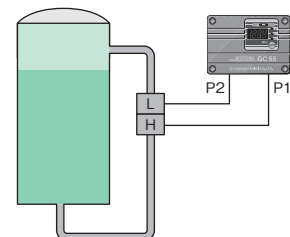
- Monitoring the differential pressure of a heating / cooling water pump header for air conditioning.

○For mandatory recording required by power-saving related laws



- By installing GC55 before and after the air dryer strainer, an alarm will be on when clogging is monitored.
- By installing GC55 before and after the cutting machine oil filter, an alarm will be on when clogging occurs.
- Monitoring of filter clogging for chemicals and purified water.

○For level measurement of large-size closed tank



- Level measurement of a tank 10m or more in depth.

○Others

- As a differential pressure transmitter for high DP range.

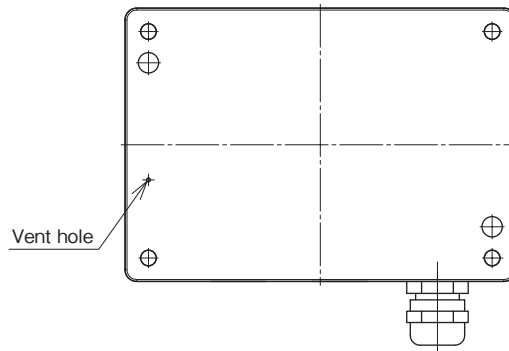
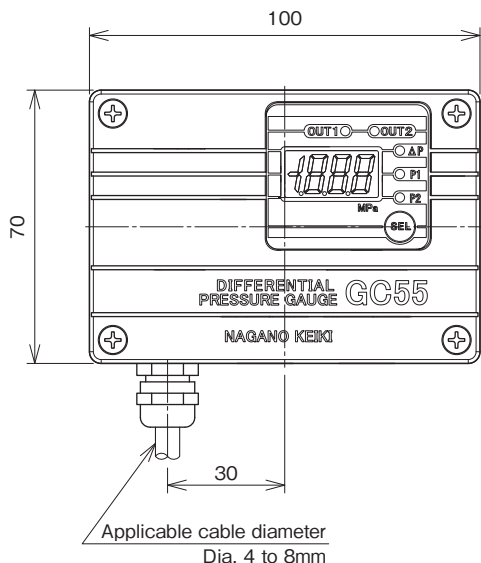
GC55

Digital Differential Pressure Gauge

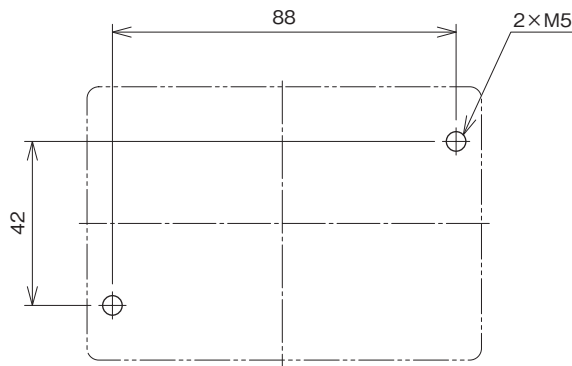
Dimensions 1

GC55-160 (Semiconductor evaporated type (SS) Sensor)

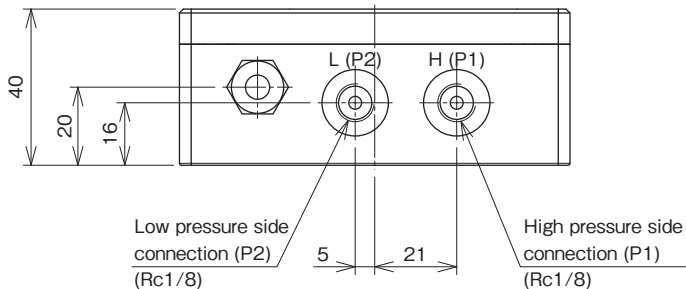
Unit: mm



Dimension for installation



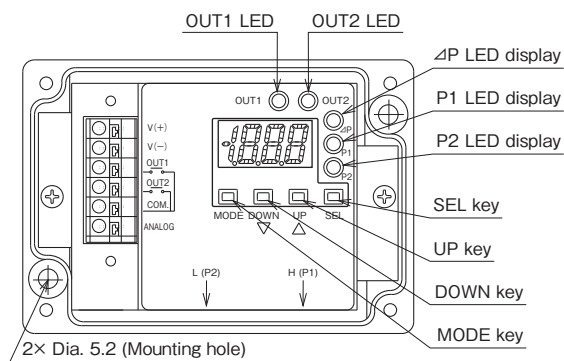
※Use two M5 fixing screws from the main unit side.



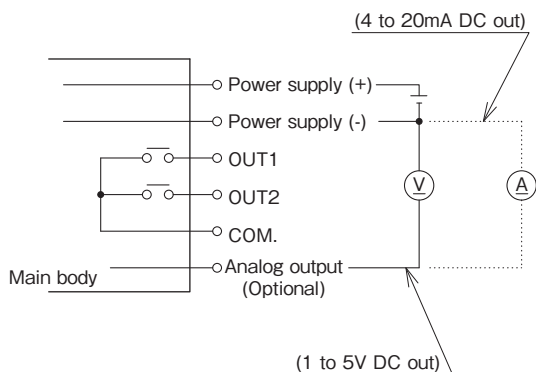
Differential pressure range, Max. display value

Differential pressure range	Max. display value
0 to 1MPa	1.000 (MPa)

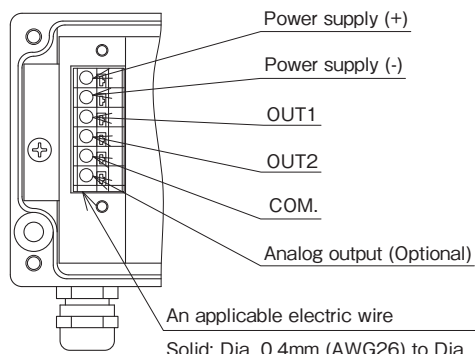
Inside of a panel



Wiring



Terminals wire



Solid: Dia. 0.4mm (AWG26) to Dia. 1.2mm (AWG16)
 Stranded: 0.3mm² (AWG22) to 1.25mm² (AWG16)

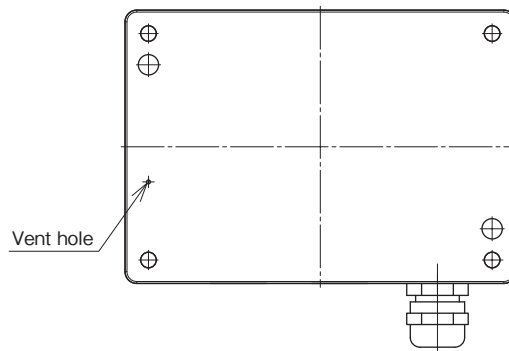
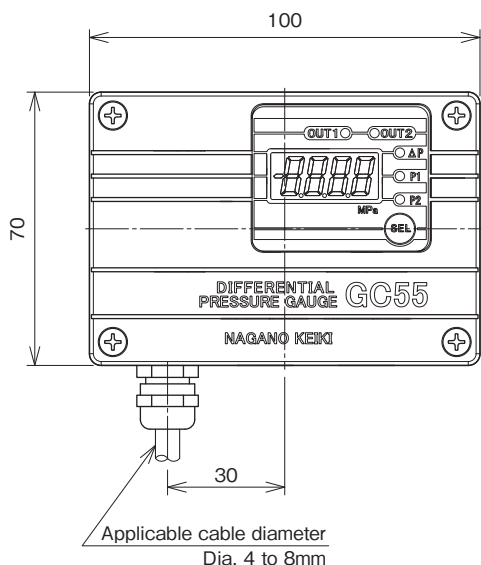
GC55

Digital Differential Pressure Gauge

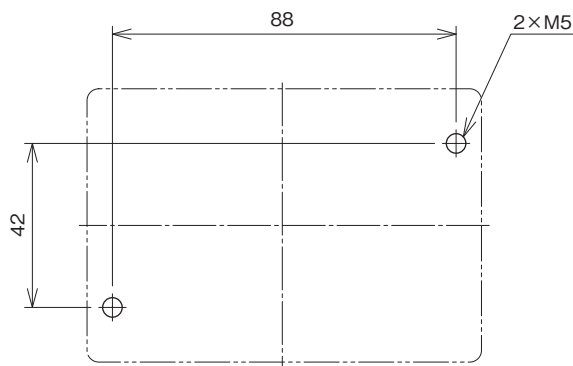
Dimensions 2

GC55-168 (Stainless steel seal diaphragm sensor)

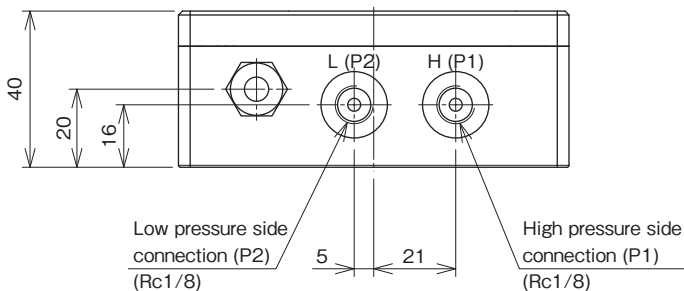
Unit: mm



Dimension for installation



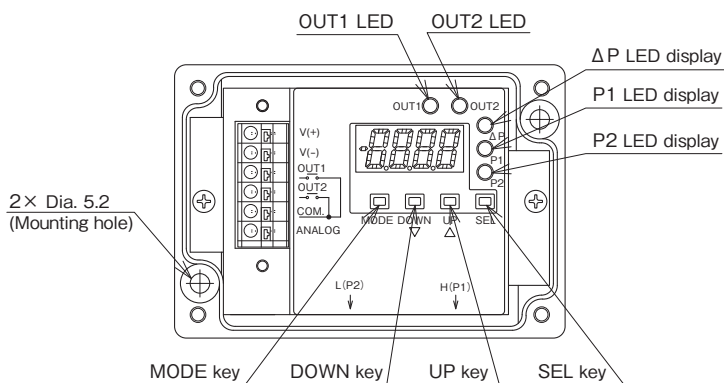
※Use two M5 fixing screws from the main unit side.



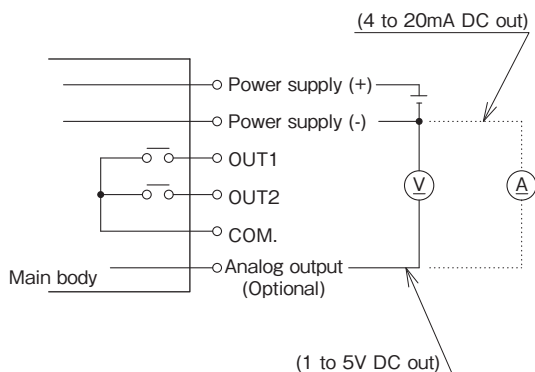
Differential pressure range, Max. display value

Differential pressure range	Max. display value
0 to 100kPa	100 (kPa)
0 to 200kPa	200 (kPa)
0 to 500kPa	500 (kPa)
0 to 1MPa	1.000 (MPa)
0 to 2MPa	2.000 (MPa)

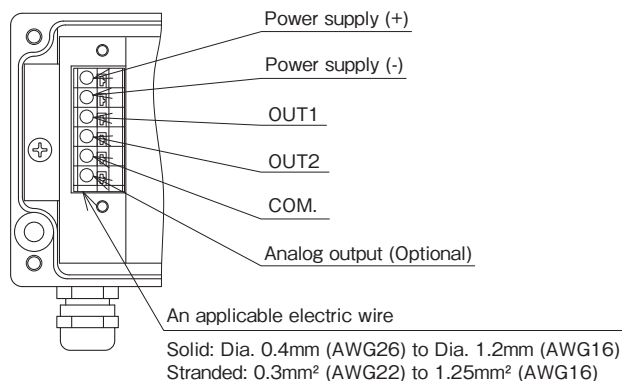
Inside of a panel



Wiring



Terminals wire



Semiconductor evaporated type (SS) Sensor



Model number configuration 1

Please specify the model, each requiring specification and differential pressure range to order.

Model																	
G C 5 5			1 6 0			G 7 B						X	X	X	X		
Digital Differential Pressure Gauge			①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮
Model number						Product specifications				Additional specifications (Optional)							
① Model	1		Sensors incorporated														
② Pressure connection	6		Rc1/8														
③ Wetted parts	0		Diaphragm: SUS630 Fitting: SUS304														
④ Differential pressure range	G		0 to 1MPa				Allowable maximum pressure: 2MPa										
⑤ Accuracy	7		$\pm (1.0\%F.S. + 1 \text{ digit}) : \Delta P$														
⑥ Power supply	N		12 to 24V DC														
	U		18 to 24V DC * 4 to 20mA use														
⑦ Comparator output	B		Photo relay output $\times 2$ (40V DC, 200mA)														
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														
⑩ Other additional spec.	0		Not required														
	1		Required * Other options as required														
⑮ Documents	0		Not required														
	1		Required (Documents available upon request) Datasheet (Drawing / Specifications) Calibration test report (One-part one sheet) Instruction manual Inspection / Traceability certificate														

This product is a conventional model.
Also consider GC55-168, which has high pressure resistance.
(Next page)

Note) About pressure connection
Specify a conversion joint (FJ) separately to accommodate nonstandard connection.

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

Stainless steel seal diaphragm sensor



Model number configuration 2

Please specify the model, each requiring specification and differential pressure range to order.

Model

GC55 — 168 — 7 B — — — — × × × ×

Digital Differential Pressure Gauge ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

Model number		Product specifications	
① Model	1	Sensors incorporated	
② Pressure connection	6	Rc1/8	
③ Wetted parts	8	Diaphragm: SUS316L Fitting: SUS304	
④ Differential pressure range	A	0 to 100kPa	Allowable maximum pressure: 2MPa
	B	0 to 200kPa	
	E	0 to 500kPa	Allowable maximum pressure: 4MPa
	G	0 to 1MPa	
	J	0 to 2MPa	
⑤ Accuracy	7	± (1.0%F.S. + 1digit): ΔP	
⑥ Power supply	N	12 to 24V DC	
	U	18 to 24V DC * 4 to 20mA use	
⑦ Comparator output	B	Photo relay output × 2 (40V DC, 200mA)	
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	
⑩ Other additional spec.	0	Not required	
	1	Required * Other options as required	
⑮ Documents	0	Not required	
	1	Required (Documents available upon request) Datasheet (Drawing / Specifications) Calibration test report (One-part one sheet) Instruction manual Inspection / Traceability certificate	

Note) About pressure connection
Specify a conversion joint (FJ) separately to accommodate nonstandard connection.

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