







# GC8□ Digital Indicators & GC9□ Digital Meter Relay



## OUTLINE

Model GC8□ has been designed exclusively for indication. Model GC9□ is equipped with a comparator like a relay and is applied to a pressure monitor and control. These indicator and meter relay receive a industrial common signal of 4 mA to 20 mA and 1 V to 5 V and indicate pressure, etc., eliminating individual reading errors.

A transducer driving 5 V power source or transmitter driving 24 V power source is built in, making wiring work easier.

Model	GC82	GC84	GC87	GC92	GC94	GC96・97
Style						
Indication	3 <sup>1</sup> / <sub>2</sub> digit LED display (Height of letter:14.2mm)	3 <sup>1</sup> / <sub>2</sub> digit, 4 <sup>1</sup> / <sub>2</sub> digit LED display (Height of letter:8mm)	3 <sup>1</sup> / <sub>2</sub> digit LCD display (Height of letter:12.7mm)	3 <sup>1</sup> / <sub>2</sub> digit LED display (Height of letter:10.2mm)	3 <sup>1</sup> / <sub>2</sub> digit LED display (Height of letter:14.2mm)	4 digit LED display (Height of letter:8mm)
Power source	24V DC 100V AC/200V AC 110V AC/220V AC	5V DC	By input current signal	24V DC 100V AC, 110V AC 200V AC, 220V AC 12V DC	24V DC 100V AC, 110V AC 200V AC, 220V AC	24V DC
Input signal	4 ~ 20mA DC 0 ~ 5V DC 1 ~ 5V DC Transducer input*	4 ~ 20mA DC 0 ~ 5V DC 1 ~ 5V DC Transducer input*	4 ~ 20mA DC	4 ~ 20mA DC 0 ~ 5V DC 1 ~ 5V DC 60 ± 25mA DC 70 ± 25mA DC	4 ~ 20mA DC 0 ~ 5V DC 1 ~ 5V DC Transducer input*	4 ~ 20mA DC 0 ~ 5V DC 1 ~ 5V DC
Output	Analog output 4 ~ 20mA DC, 1 ~ 5V DC	Comparator output Open collector output Analog output Voltage output for indicated value	—————	Comparator output Relay output	Comparator output Relay output Open collector output Analog output 4 ~ 20mA DC 1 ~ 5V DC 0 ~ 5V DC	Comparator output Relay output
Power output	5V DC 24V DC (At DC power source)	5V DC	—————	5V DC	5V DC 24V DC	24V DC

\* Calibrated by the combination with our KH, ZT or XR series. (except model KH27 and KH64)

# GC82 Digital indicator

## SPECIFICATION

### Power source:

- 24V DC  $\pm 10\%$  (150 mA or less),
- 100/200V AC  $\pm 10\%$  (5VA or less),
- 110/220V AC  $\pm 10\%$  (5VA or less)

### Input signal (Internal resistance):

- 4 ~ 20mA DC (51 $\Omega$ ), 0 ~ 5V DC (100k $\Omega$ ),
- 1 ~ 5V DC (100k $\Omega$ ), Pressure transducer\* (100M $\Omega$ )

### Accuracy:

- $\pm 0.2\%$  of rdg+1 digit (23  $\pm 5^\circ\text{C}$ )

### Temperature coefficient:

- $\pm (200\text{ppm of rdg}+0.3 \text{ digit})$

### Polarity indication:

- It indicates "-" only at the time of minus

### Over scale indication:

- When it exceeded  $\pm 1999$ , Indication shows on and off.

### Sampling speed:

- 2.5 times/second

### The operating temperature and humidity:

- 0 ~ 50 $^\circ\text{C}$ , 20 ~ 80%RH (Prohibited dew condensation)

### Scaling range:

- Zero -1000 ~ +1000, Span 100 ~ 1999

### Power source for transducer:

- Output voltage 5V DC  $\pm 10\%$  (3mA max.)
- Temperature coefficient  $\pm 100\text{ppm}/^\circ\text{C}$  max.

### Analog output (Load resistance):

- 0 ~ 5V DC (10k $\Omega$  min.), 4 ~ 20mA DC (250 $\Omega$  max.)

### Output accuracy

- $\pm 0.5\%$ F.S.

### Temperature coefficient

- $\pm 500\text{ppm}/^\circ\text{C}$

### Indicator:

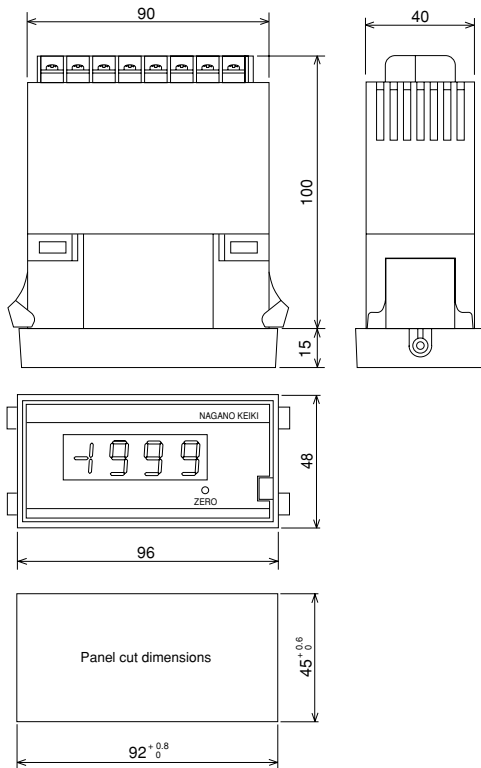
- 3 $\frac{1}{2}$  digit Red LED (Letter height: 14.2mm)

### Weight:

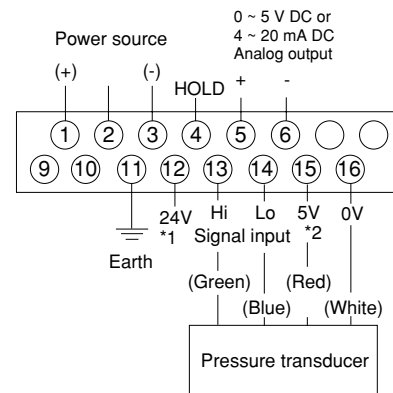
- Approx.600g

- \* Calibrated by the combination with our KH, ZT or XR series. (except model KH27 and KH64)

## DIMENSIONS

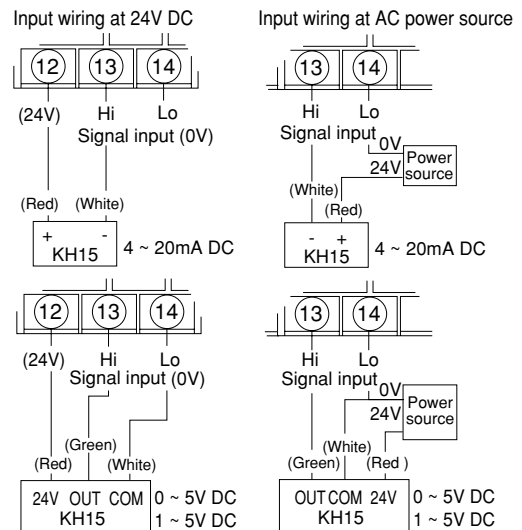


## WIRING

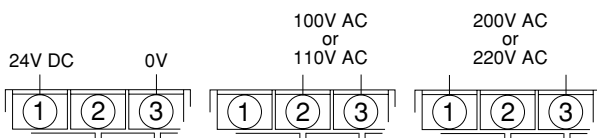


- \* 1: Output is only available at 24V DC power source. (Terminal 1 and 12 are connected inside.)

- \* 2: 5V DC power source for transducer.



## POWER SOURCE WIRING



- Power source: Between power source (24V DC) and signal input, analog output is not insulated.
- Terminal 3, 6 and 14 are connected inside.

# GC84 Digital indicator

## SPECIFICATION

Power source:  
5V DC 85mA (GC84-1D□), 120mA (GC84-2D□)

Input signal:  
4 ~ 20mA DC, 0 ~ 5V DC, 1 ~ 5V DC  
Pressure transducer\*

Accuracy:  
±0.2% of rdg+1 digit (23±5°C)

Temperature coefficient:  
±(100ppm of rdg+0.1 digit)

Polarity indication:  
It indicates "-" only at the time of minus

Over scale indication:  
When indicated value exceeded ± 1999, max. digit of 4 digits indicates "1" or "-1"

Sampling speed:  
2.5 times / second

The operating temperature and humidity:  
0 ~ 55°C, 20 ~ 85%RH (Prohibited dew condensation)

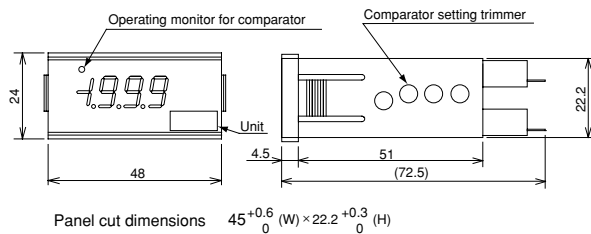
Comparator output:  
Open collector output (HI setting or LO setting)  
30V DC, 100mA max. (Photo coupler isolation)

Analog output:  
Voltage for indicated value (Within 0 ~ ±2V DC)

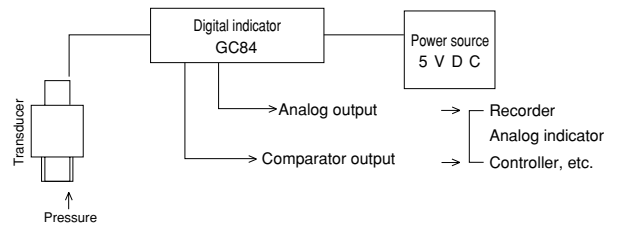
Indicator:  
3<sup>1</sup>/<sub>2</sub> digit LED (Letter height: 8mm)  
4<sup>1</sup>/<sub>2</sub> digit LED (Letter height: 8mm)

Weight:  
Approx.50g  
\* Calibrated by the combination with our KH, ZT or XR series.  
(except model KH27 and KH64)

## DIMENSIONS



## WIRING



# GC87 digital indicator

## SPECIFICATION

Power source:  
By input current signal

Input signal:  
4 ~ 20mA DC

Internal resistance:  
145Ω (20mA DC)

Accuracy:  
±0.2% of rdg+1 digit (23±5°C)

Temperature coefficient:  
±0.3 digit/°C

Sampling:  
2.5 times/second

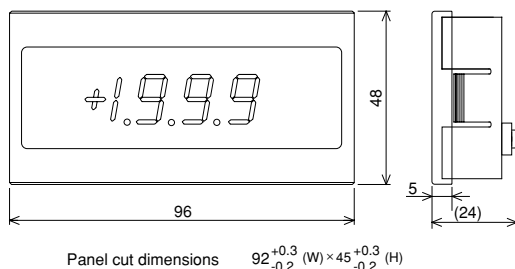
The operating temperature and humidity:  
0 ~ 50°C, 35 ~ 85%RH (Prohibited dew condensation)

Over scale indicator:  
When the input signal exceeds max. indication, max. digit shows "1" and last 3 digits to be off.

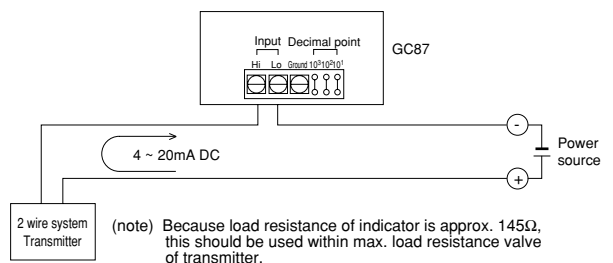
Indicator:  
3<sup>1</sup>/<sub>2</sub> digit LCD (Letter height: 12.7mm)

Weight:  
Approx. 55g

## DIMENSIONS



## WIRING



# GC92 Digital meter relay

## SPECIFICATION

### Power source:

12V DC, 24V DC, 100V AC, 110V AC, 200V AC, 220V AC

### Input signal (Internal resistance):

4 ~ 20mA DC (20Ω), 0 ~ 5V DC (1MΩ),  
1 ~ 5V DC (1MΩ), 60 ± 25mV DC (10MΩ),  
75 ± 25mV DC (10MΩ)

### Scaling range:

Zero -1000 ~ +1000, Span 100 ~ 1999

### Consumption of electric current (DC Power source):

Less than 100 mA (At normal) 24V DC, At 1888 display  
Less than 150 mA (At normal) 12V DC, At 1888 display

\* Because the consumption of electric current is too big at stanting, need a current capacity more than 0.2A per 1 set of GC92.

### Power consumption (AC power source):

Approx. 3.5VA

### Measurement accuracy:

± (0.15% of rdg+1 digit) (23±1 °C)

### Temperature drift:

4 ~ 20mA DC, 0 ~ 5V DC, In case of 1-5 V DC input ± / °C within

Within ± (100ppm of rdg+0.2digit)/°C

In case of pressure transducer input

Within ± (100ppm of rdg+0.3digit)/°C

### Sampling speed:

2.5 times / second

### Operating temperature and humidity:

0 ~ 55°C, 20 ~ 85%RH (Prohibited dew condensation)

### Comparator output:

Transfer contact

30V DC • 2A, 250V AC • 0.2A (Resistance load)

Setting system Setting by a digital switch

Setting range 0 ~ ±1999

Hysteresis 6 digit ⇔ 1 digit Refresh is possible

\* Except standard sampling speed or hysteresis, please contact us.

### Comparison condition & operation

Measured value ≥ HI set value: HI relay to be ON

HI set value > Measured value > LO set value: GO relay to be ON

Measured value ≤ LO set value: LO relay to be ON

### Life of contact

Electric: More than 100,000 times

(30V DC • 1A, 250V AC • 0.1A)

Mechanical: More than 20,000,000 times

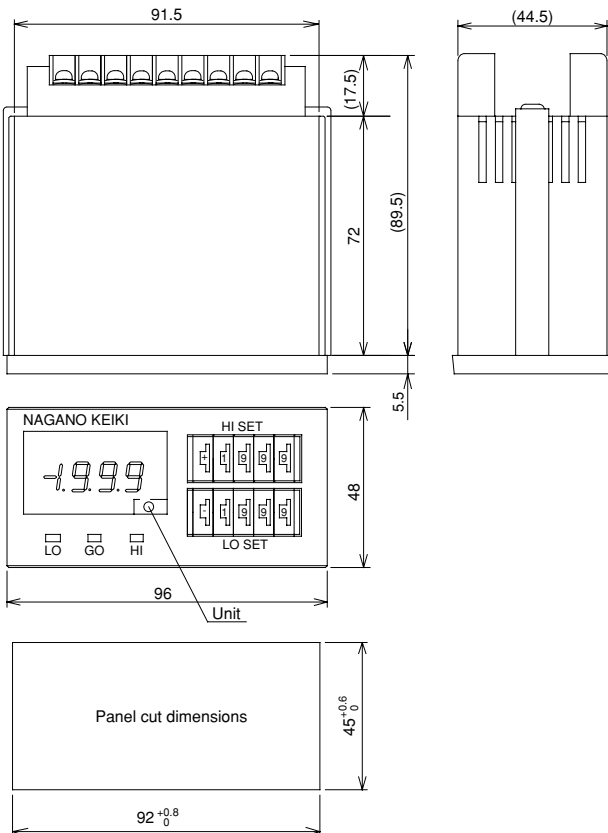
### Display:

3 1/2 digit LED (Letter height: 10.2 mm)

### Weight:

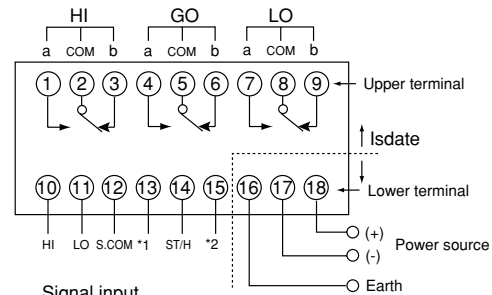
Approx. 365g

## DIMENSIONS

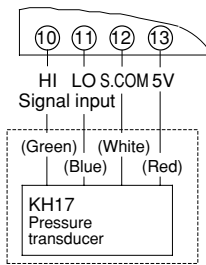
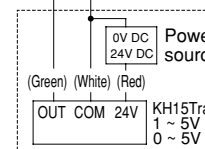
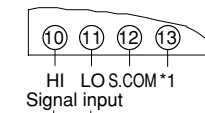
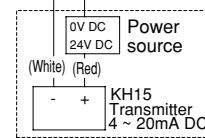


## WIRING

KH17, KH15 cable type is connected as connection example.



### Signal input



\* 1: A terminal for transducer power source 5V DC  
Pressure transducer made by NKS KH17, KH18, ZT, SU17, etc.

\* 2: Input terminal for option  
Input terminal for forced zero, peak-hold or bottom-hold as option.

# GC94 Digital meter relay

## SPECIFICATION

### Power source:

24V DC, 100V AC, 110V AC, 200V AC, 220V AC

### Input signal (Internal resistance):

4 ~ 20mA DC (20Ω), 0 ~ 5V DC (1MΩ),  
1 ~ 5V DC (1MΩ), Pressure transducer\*1 (20MΩ)

### Consumption electric current:

AC Power source 7VA or less  
DC Power source 170 mA or less (At 24V DC)

### Withstand voltage:

Between input and output 1500V AC 1 minute  
Between power source and input 1500V AC 1 minute  
Between power source and output 1500V AC 1 minute

### Accuracy: \*2

±(0.15% of rdg+1 digit) (23±5°C)

### Temperature coefficient: \*2

±(100ppm of rdg+0.3 digits)/°C

### Polarity indication:

Indicates "-" only at the time of minus

### Over scale display:

When it exceeds ± 1999, max. digit of 4 digits shows "1" or "-1".

### Sampling speed:

2.5 times / second

### Operating temperature and humidity:

0 ~ 55°C, 20 ~ 85%RH (Prohibited dew condensation)

### Power source for transducer: (Prohibited of pressure transducer input)

Output power source 5V DC±5% (5mA max.)  
Temperature coefficient Approx.±50ppm /°C

### Power source for a transmitter: (At the time of pressure transmitter input)

Output power source 24V DC±5% (25mA max.)  
Temperature coefficient Approx.±250ppm /°C

### Comparator output:

#### Output contents

Relay output 250V AC 0.2A, 30V DC 2A (Resistance load)  
Open collector output 30V DC 100mA  
Comparator system Analog comparator  
Setting system By front trimmer  
Number of setting Upper limit 1 point, lower limit 1 point  
Hysteresis 1 ~ 15 digits (Adjustable)  
Setting accuracy ±5 digits  
Operating speed Approx. 50ms

### Analog output:

Output signal 4 ~ 20mA DC (400Ω max.),  
(Load resistance) 0 ~ 5V DC (1kΩ min.),  
1 ~ 5V DC (1kΩ min.)  
Output accuracy ±0.5%F.S.  
Temperature coefficient ±200ppm /°C

### Display:

3½ digit Red LED (Letter height: 14.2 mm)

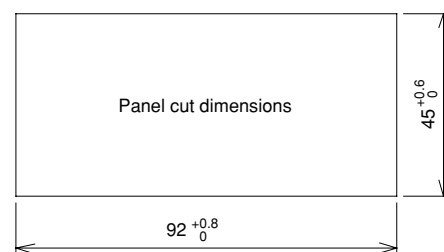
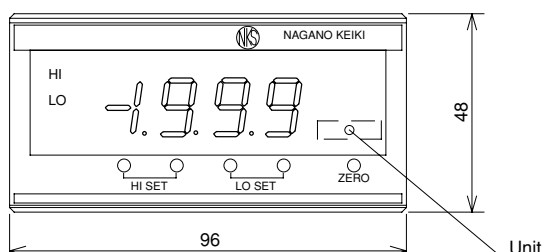
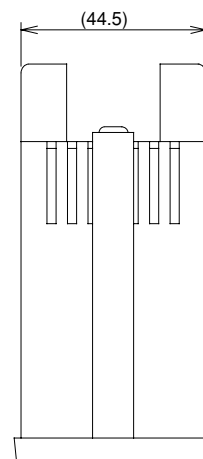
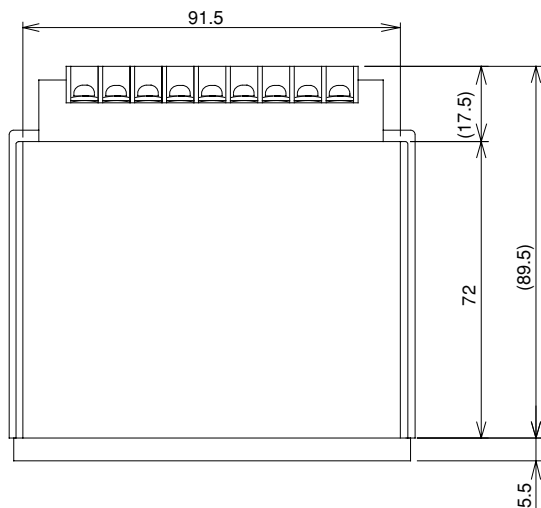
### Weight:

Approx.400g

\*1 Calibrated by the combination with our KH, ZT or XR series.  
(except model KH27 and KH64)

\*2 Transmitter or transducer to be combined is excluded.

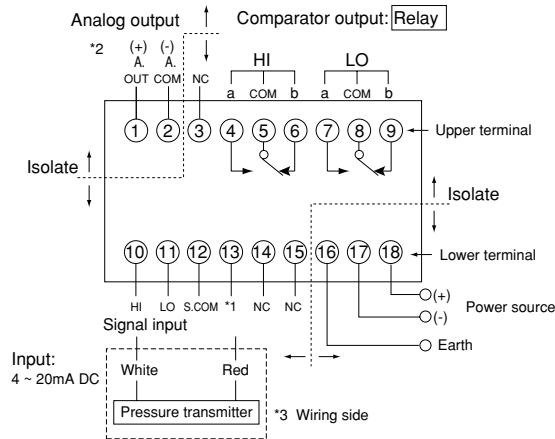
## DIMENSIONS



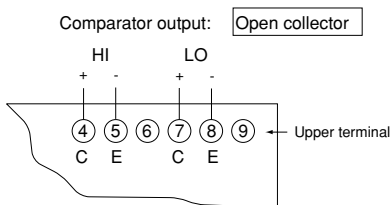
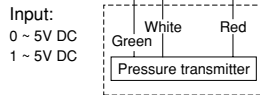
# GC94 Digital meter relay

## WIRING

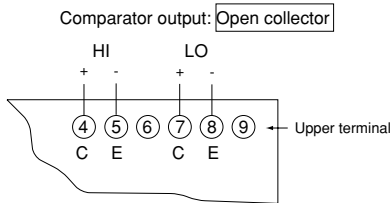
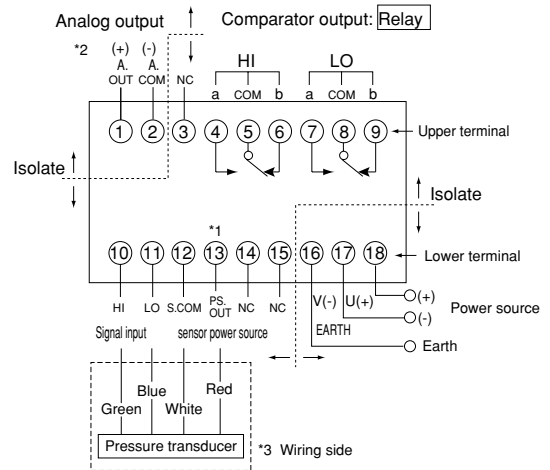
### 1) Input signal 4 ~ 20mA DC, 0 ~ 5V DC, 1 ~ 5V DC



or



### 2) Input signal Pressure transducer



- \* 1: Terminal for transducer power source 5V DC 5mA
- \* 2: Analog output 0 ~ 5V DC, 1 ~ 5V DC, 4 ~ 20mA DC
- \* 3: KH17 cable type is connected as wiring example.

- \* 1: Terminal for transmitter power source 24V DC 25mA
- \* 2: Analog output 0 ~ 5V DC, 1 ~ 5V DC, 4 ~ 20mA DC
- \* 3: KH15 cable type is connected as wiring example.

# GC96 • 97 Digital meter relay

## SPECIFICATION

**Model:**

- GC96 Digital pressure indicator
- GC97 Digital meter relay

**Power source:**

24V DC (18 ~ 30V DC), 150mA

**Input signal:**

4 ~ 20mA DC, 0 ~ 5V DC, 1 ~ 5V DC

**Range:**

- GC96 0 ~ 0.3MPa to 0 ~ 100 MPa (Compound range is available)  
(Max. indication: 2000 )
- GC97 Within max. span 3300 digits

**Accuracy:**

± (0.15% of rdg +1digit) (23±5°C)

**Temperature coefficient:**

±(100ppm of rdg+0.2 digits)/°C

**Over scale indication:**

When less than -10%F.S. or more than 110%F.S. of input value, display shows ON/OFF.

**Operating temperature and humidity:**

0 ~ 55°C, 20 ~ 85%RH (Prohibited dew condensation)

**Power source for a transmitter:**

Output power source 24V DC ± 10% (25mA max.)

Temperature coefficient Approx.± 250ppm /°C

**Comparator output:**

**Output contents**

Relay output (HH or LL is available)

125V AC 0.5A, 30V DC 1A

Comparator system Digital comparator

**Display:**

4 digit Red LED (Letter height: 8mm)

**Input check function:**

Indicate the input value from transmitter

**Unit change:**

GC96 MPa and kgf / cm<sup>2</sup>

GC97 Nil

**Unit seal:**

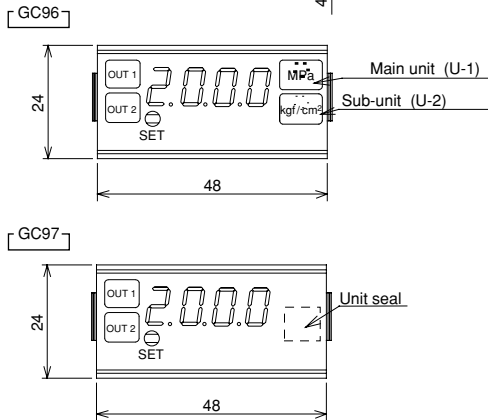
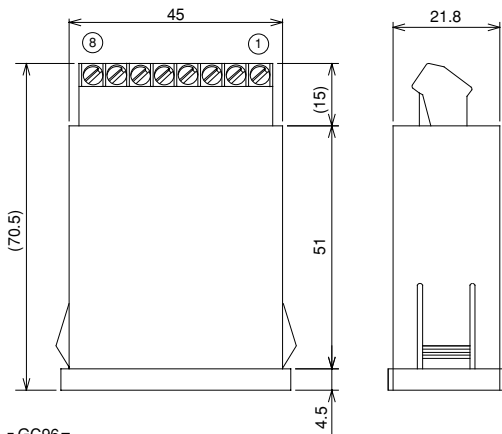
GC96 Nil

GC97 Pa, hPa, kPa, MPa, abs., °C, K, g, kg, t, mm, cm, m, N, kN, %, l, kl, m<sup>3</sup>, x10

**Weight:**

Approx.65g

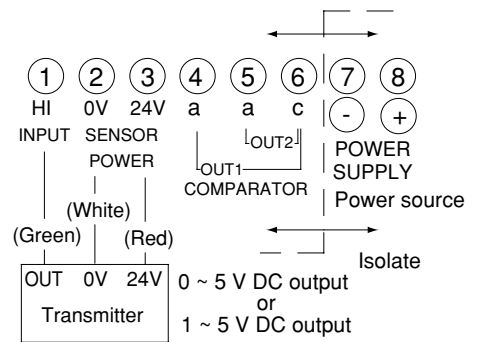
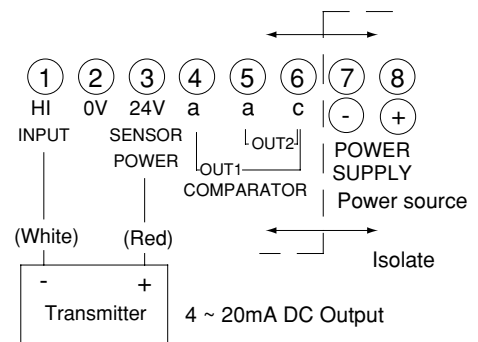
## DIMENSIONS



Panel cut dimension: W45<sup>+0.6</sup> × H22.2<sup>+0.3</sup> (mm)

Panel board thickness: 0.5 ~ 4mm

## WIRING



# Digital indicator

Type No. constitution Please specify Type No., each specification and range when ordering.

Note: For this Model, there is no applicable item for the figures X, but please specify X when ordering.

Digital indicator

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

G C 8 2 - 1

Type No.

2 Power source

1	24V DC
F	100V AC/200V AC
G	110V AC/220V AC

3 Input signal

1	4 ~ 20mA DC
6	0 ~ 5V DC
8	1 ~ 5V DC
9	Pressure transducer

4 Analog output

1	4 ~ 20mA DC
6	0 ~ 5V DC

Additional spec. (Option)

15 Document

0	Nil
1	Please specify your requirement Drawing one sheet, Instruction manual, Inspection procedure, Mill sheet, Test report

Digital indicator

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

G C 8 4 - D

Type No.

1 Number of figures

1	3 1/2
2	4 1/2

2 Power source

D	5V DC
---	-------

3 Input signal

1	4 ~ 20mA DC
6	0 ~ 5V DC
8	1 ~ 5V DC
9	Pressure transducer

4 Comparator output

0	Open collector output
---	-----------------------

5 Analog output

0	Voltage output for indicated value
---	------------------------------------

Additional spec. (Option)

15 Document

0	Nil
1	Please specify your requirement Drawing one sheet, Instruction manual, Inspection procedure, Mill sheet, Test report

Digital indicator

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

G C 8 7 - 0 0 1

Type No.

Additional spec. (Option)

15 Document

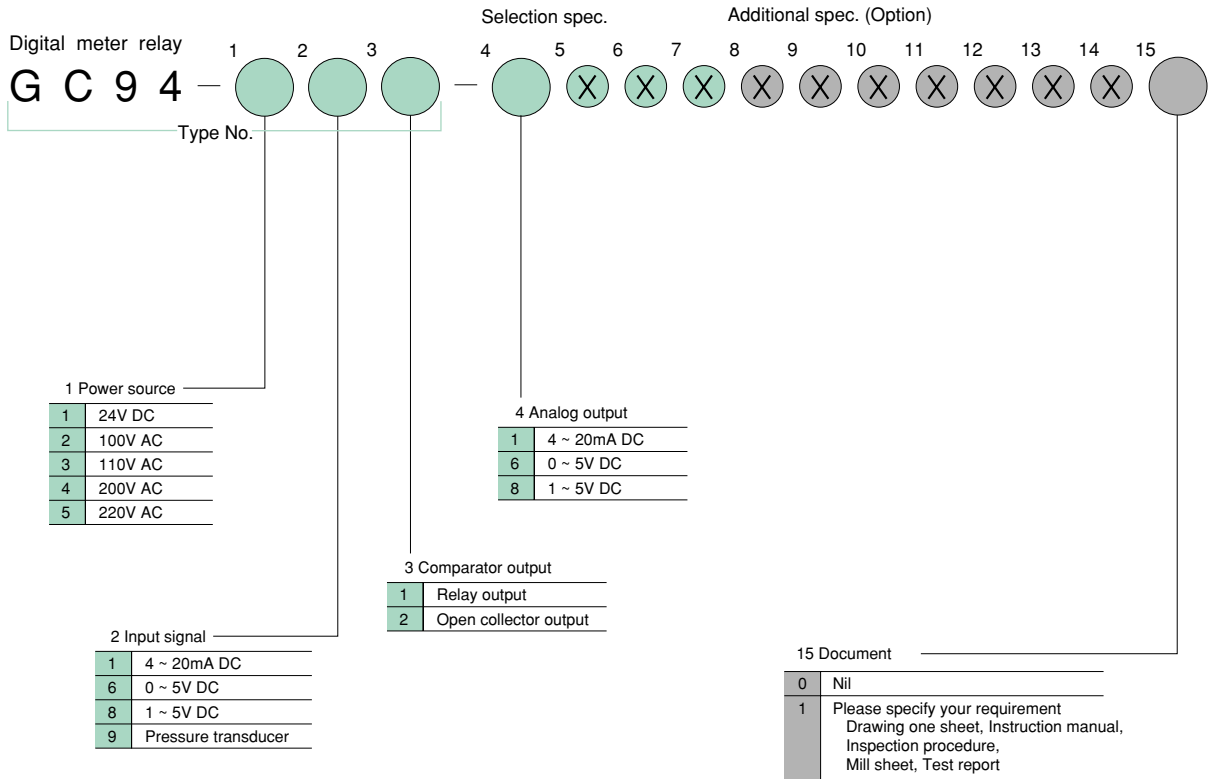
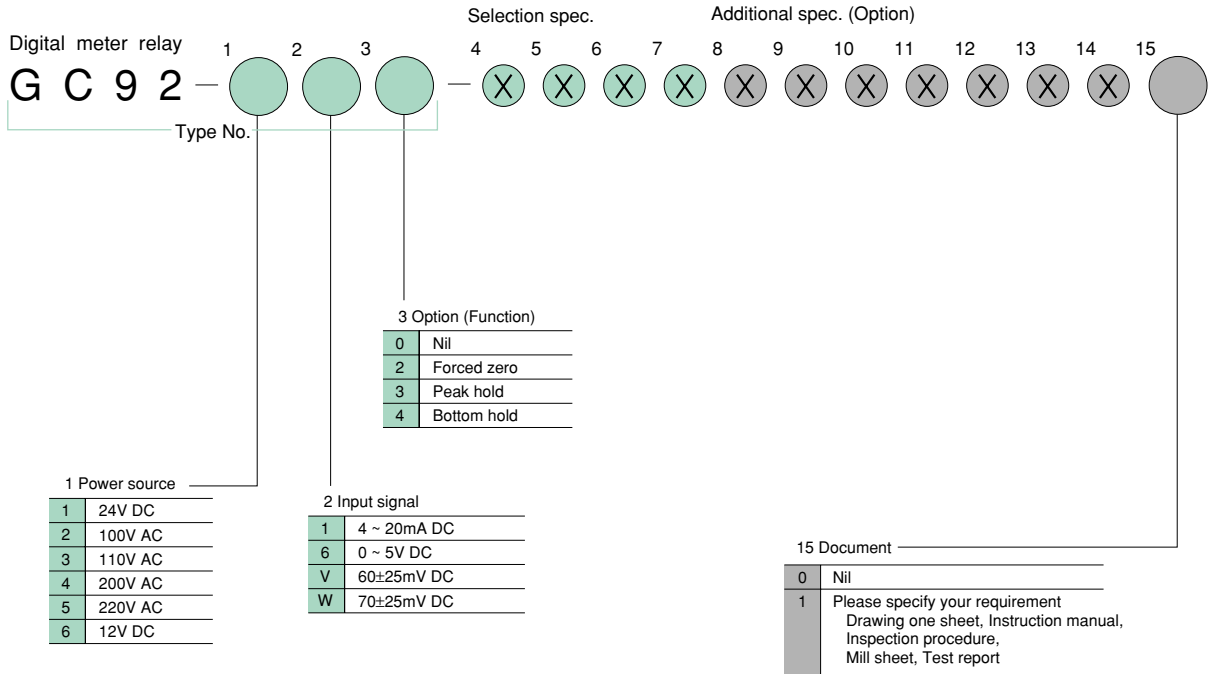
0	Nil
1	Please specify your requirement Drawing one sheet, Instruction manual, Inspection procedure, Mill sheet, Test report



# Digital meter relay

Type No. constitution 1 Please specify Type No., each specification and range when ordering.

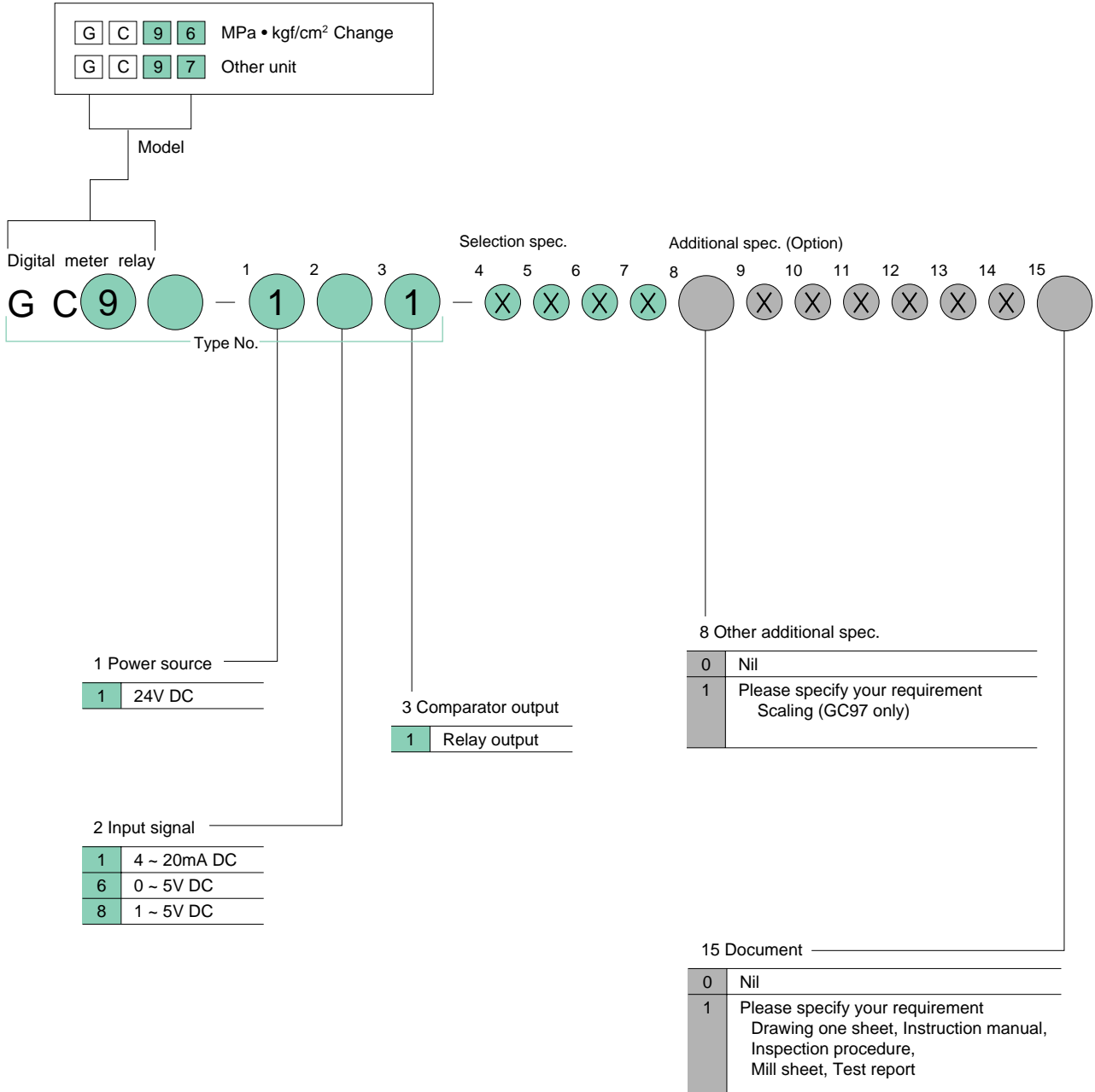
Note: For this Model, there is no applicable item for the figures X, but please specify X when ordering.



# Digital meter relay

Type No. constitution 2 Please specify Type No., each specification and range when ordering.

Note: For this Model, there is no applicable item for the figures X, but please specify X when ordering.



The contents in the catalogue are subject to change without notice.

**NKS NAGANO KEIKI CO., LTD.**



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