



Features

- ★ Standard DIN size.
- ★ High-speed sampling (2000 times per second).
- ★ Original function 'SPC' (Section point compare) is useful to compare intermediate pressure on process of pressure increasing (caulking).
- ★ Built in excitation (sensor power supply) 5V, 10V selectable.
- ★ 2 setpoints comparative output.

Ordering code

ASG - 158 - -

| Code | Power supply |
|------|---------------|
| 1 | 90 to 110Vac |
| 2 | 180 to 220Vac |

| Code | Output |
|------|---------------------------|
| 1 | None |
| 2 | BCD (Open collector) |
| 3 | BCD (TTL) |
| 5 | RS-232C |
| 6 | Analog output (4 to 20mA) |
| 7 | Analog output (0 to 10V) |

| Code | Comparative output |
|------|--------------------|
| 1 | Relay |
| 2 | Photo coupler |

| Code | Built in excitation (sensor power supply) |
|------|---|
| 3 | 5V |
| 4 | 10V |

Specifications

◆ General specifications

■ Measurement specifications

| | |
|--|--|
| Operating method | Sequential comparison method |
| Accuracy | ±(0.15% of FS +1 digit) (23±5°C) |
| Sampling rate | 2000 times per second |
| Display | Main display : Red 7 segment LED (height 14.2mm) Comparative setting display : Green 7 segment LED (height 8mm) |
| Temperature coefficient | ±(0.005% FS of reading + 0.5 digit) per °C |
| Polarity | '-' is displayed automatically at negative polarity |
| Over range display | When input exceeds the maximum display, 'o.L.' or '-o.L.' |
| Zero display | Leading zero suppression |
| Monitor display | Peak hold (PH), Digital zero (DZ), Digital zero backup (ME) |
| Applicable sensor | Strain gauge method each type sensor (350Ω) |
| Built in excitation (Sensor power supply) | 5Vdc±10% 60mA or 10Vdc±10% 30mA selectable |
| Zero adjustment range | -3 to +2.0mV/V |
| Gain adjustment range | 1.0 to 3.0mV/V |
| Minimum input sensitivity | At Built in excitation 5Vdc : 0.5μV/digit At Built in excitation 10Vdc : 1.0μV/digit |
| Maximum input voltage | 3.0mV/V |
| Maximum display | 9999 (4 digits) |
| Decimal point | Able to set to any digit (Switches by key switch) |

■ External control specifications

| | |
|-------------------------------------|--|
| Hold | Short COM terminal and S/H terminal at logic '0' level |
| Start | Open COM terminal and S/H terminal at logic '1' level |
| Digital zero | Short COM terminal and DZ terminal, memorize the value and display the display value |
| Peak hold / Peak valley hold | The type of peak hold by the each comparative 1 to 4's setup. (Switches by front key SW) |
| Pattern select | Able to set 4 patterns in the combination of COM terminal and P.SEL terminal 0, 1 |
| Comparative number | Short the COM terminal and comparative terminal C1, C2, C3, C4 or '0' LEVEL. |
| Clear | Release the comparative result etc. at '0' level and short |

■ Comparative output specifications

| Control method | Microcomputer calculation method | | | | | | | | |
|---|--|-----------------------|--------|---|----|---|----|---|----|
| Setup range | Lower setup '-9999 to +9999' above including the polarity | | | | | | | | |
| Comparative operation | The continuous comparison by comparative No.1 or one point comparison by comparison No.1 to 4 | | | | | | | | |
| Comparative condition | <table border="1" style="width: 100%;"> <thead> <tr> <th>Comparative condition</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Measurement value > Upper limit set value</td> <td>HI</td> </tr> <tr> <td>Upper limit set value ≥ Measurement value ≥ Lower limit set value</td> <td>GO</td> </tr> <tr> <td>Lower limit set value > Measurement value</td> <td>LO</td> </tr> </tbody> </table> | Comparative condition | Result | Measurement value > Upper limit set value | HI | Upper limit set value ≥ Measurement value ≥ Lower limit set value | GO | Lower limit set value > Measurement value | LO |
| Comparative condition | Result | | | | | | | | |
| Measurement value > Upper limit set value | HI | | | | | | | | |
| Upper limit set value ≥ Measurement value ≥ Lower limit set value | GO | | | | | | | | |
| Lower limit set value > Measurement value | LO | | | | | | | | |
| Comparative relay | Contact volume 120Vac 0.5A Resistive load Contact volume 28Vdc 1A Resistive load | | | | | | | | |
| Photocoupler output (NPN type) | Voltage MAX 30V electric current MAX 20mA Less than 1.2V at setting output saturated voltage 20mA | | | | | | | | |
| Hysteresis | Configurable from 1 to 999 digit in each comparative setup (only comparative No.1) | | | | | | | | |

◆ Common specifications

| | |
|------------------------------|--|
| Memory backup | Keep the setup data for about 10 years at EEPROM |
| Operating temperature | -5 to 50°C |
| Operating relative humidity | 35 to 85% (non-condensing) |
| Storage temperature/humidity | -10 to 70°C 60%RH or less |
| Power supply | 100Vac ±10% or 200Vac ±10% (50/60Hz) |
| Power consumption | 7VA max. at 100Vac |
| Dimensions | 96mm(W) x 48mm(H) x 144mm(D) DIN size |
| Weight | Approx. 550g |
| Dielectric strength | 500VAC per 1 min. : Between Input terminal - Comparative output Between Input terminal - Output COM terminal (BCD : D.COM, ANALOG OUT : -, RS-232C :SG) 1500VAC per 1 min. : Between Power supply terminal - Input terminal, case, comparative output 1500VAC per 1 min. (Power supply 100Vac specification), 2100VAC per 1 min. (Power supply 200Vac specification) : Between Power supply terminal - Output COM terminal (BCD : D.COM, ANALOG OUT : -, RS-232C :SG) |
| Insulation resistance | 500Vdc, 100MΩ or more on the above terminals |
| Noise immunity | Power supply terminal normal / common mode ±1500V rising 1ns square wave noise range 500ns |
| Accessory | Instruction manual / terminal cover |

◆ Input / output specifications

■ BCD data output specifications

TTL

| | |
|-------------------------|---|
| Measurement data | Tristate parallel BCD positive logic latch output |
| Polarity signal | [1] level at negative display |
| Over signal | [1] level at over display |
| Printing command signal | Positive pulse at a certain period in each measurement completion basis (by sampling speed) |
| Above signal | TTL level fan out = 2 5V CMOS compatible. Negative logic available |

Open collector (NPN type)

| | |
|--------------------------|---|
| Measurement data | At the negative logic 'logic 1', transistor 'ON' |
| Polarity signal | At the negative display, transistor 'ON' |
| Over signal | At the OVER signal, transistor 'ON' |
| Printing command signal | After completed the measurement in a certain period, setting transistor 'ON' (by the same sampling rate.) |
| Transistor output volume | Voltage MAX 30V, Electric current MAX 15mA Less than 1.2V at setting output saturated voltage '15mA' |
| Output response | 750μs |

★ ENABLE input

Short between Enable terminal and D.COM terminal or setting '0' level, the data output will be high impedance.

■ RS-232C output specifications

| | |
|--------------------------------|-----------------------------------|
| Electric characteristic | In conformity with EIA RE-232C |
| Synchronization scheme | Start-stop synchronization method |
| Communication system | Full duplex |
| Transmission speed | 2400 / 4800 / 9600 / 19200 bps |
| Start bit | 1 bit |
| Data length | 7 bit |
| Error detection | Even parity |
| Stop bit | 2 bit |
| Delimiter | CR/LF |
| Character code | ASCII code |
| Transmission control procedure | 750μs |

■ Analog output specifications

Able to set any display range of analog output,

| | |
|-------------------------|---------------------|
| Resolution | Equivalent to 14bit |
| Temperature coefficient | ±200ppm per °C |
| Output response | 700μs (10% to 90%) |

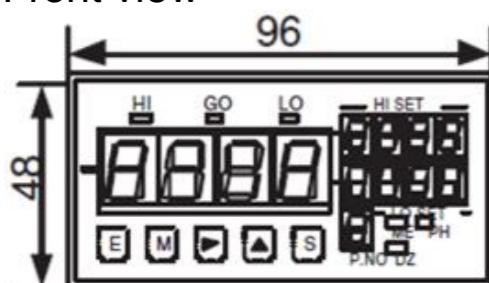
| Analog output | Load resistance | Accuracy | Ripple |
|---------------|-----------------|---------------|--------|
| 0 to 10V | 10kΩ or more | ±(0.5% of FS) | 50mV-p |
| 4 to 20mA | 0 to 270Ω | | 25mV-p |

Accuracy is when (23±5°C 45 to 75%RH)

4 to 20 ripple is when Load resistance 250Ω, Current 20mA

Dimensions

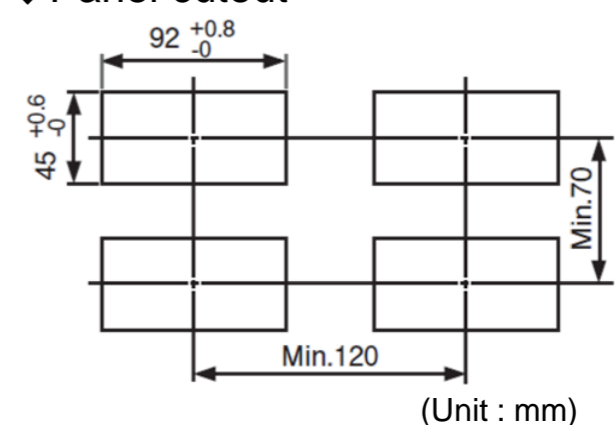
◆ Front view



◆ Back view

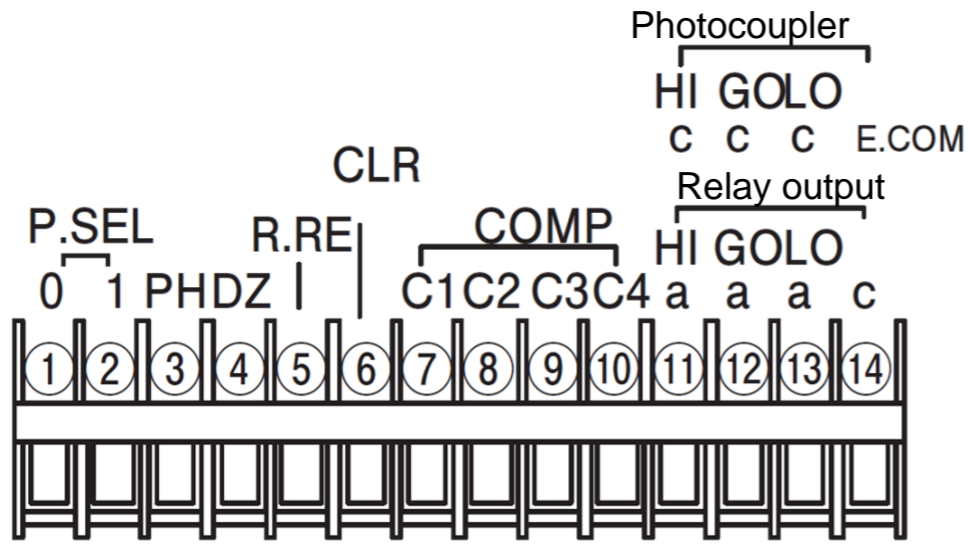


◆ Panel cutout

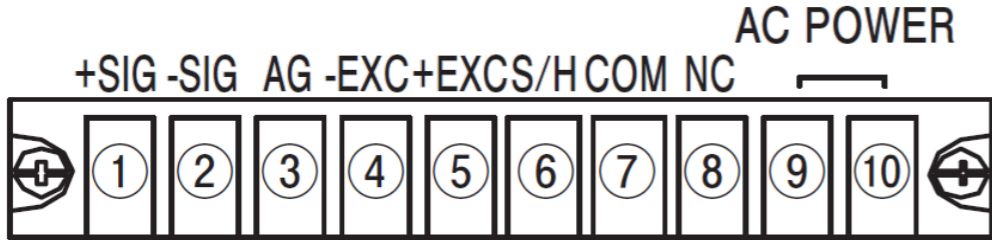


Terminal connections

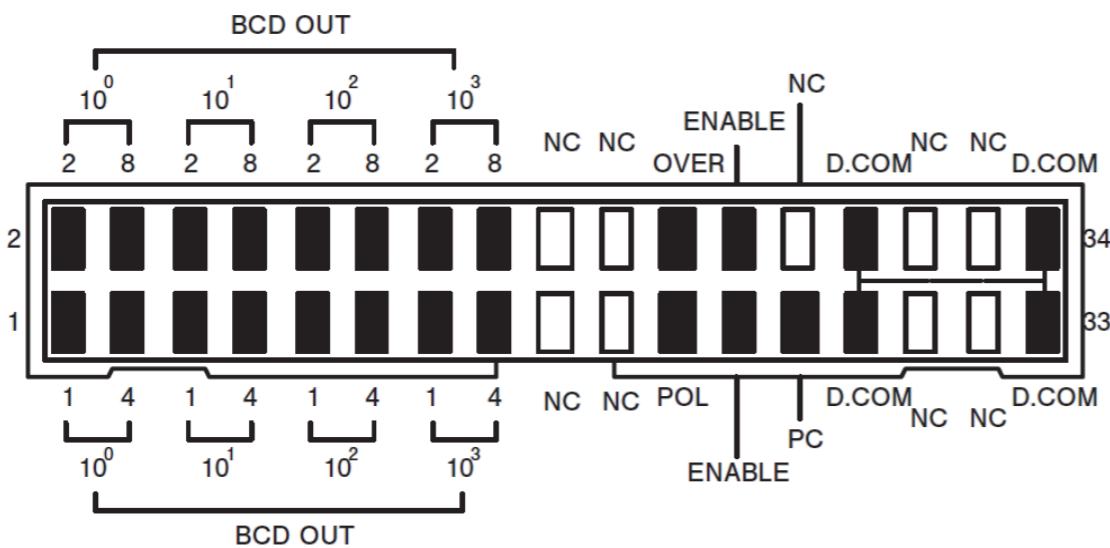
◆Upper side screw terminal



◆Lower side screw terminal



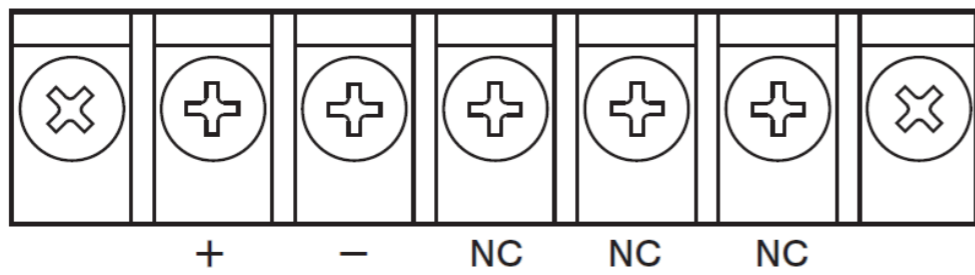
◆BCD output



(MIL standard conformity connector)

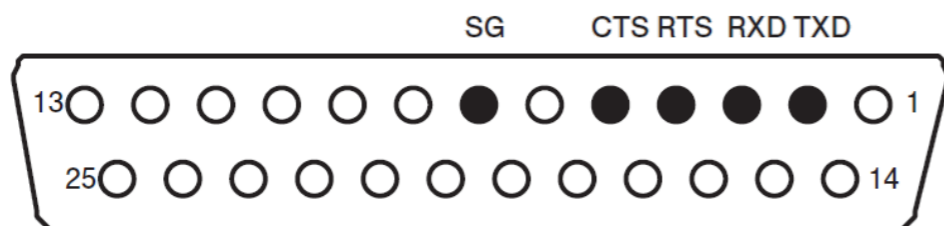
Notes : Unable to use NC terminal as intermediate terminal.

◆Analog output



Notes : Unable to use NC terminal as intermediate terminal.
In case analog output model, either 4-20mA or 0-10V is available.

◆RS-232C D-sub



Applicable connector 17 JE-23250-02 (OSA) (DDK company made).

Notes : Unable to ○ terminal as intermediate terminal.