Minebea

SPECIFICATIONS

Digital Strain Indicator

PSD-704

Spec. No.EN382704-H 1/5

1. General

The instrument is a measuring instrument for the measurement on strain and strain gage applied transducer (Load cell, Pressure transducer and TMB type torque transducer) and so on.
Output value of strain gage applied transducer (zero balance, output) can be checked instantly with the unit of mV/V (range ±3.5000 mV/V). Moreover, it is available to measure resistance value and input/output resistance value for strain gage applied transducer and also available to check the resistance value (insulation) between the main body and every cable.
Besides, the instrument prepares Ni-Cd battery as a standard specification, so about 10 hours of measurement can be provided through the rapid charge of approx.1(one) hour.

2. Specifications

2-1. Specifications for analog section

- Bridge power supply: Within DC2 V±0.02 V, 35 mA
- Target for measurement: Strain measurement, Measurement on the output of strain gage applied transducer, Measurement on resistance value
- Measuring method: Deflection method (under measuring on strain or output of strain gage applied transducer.)
- Effect due to temperature variation
  - Zero point: $\pm 0.2 \times 10^{-6}$ strain /℃
  - Sensitivity: ±0.01 %F.S./℃
  - (After 15 min. of warming up time with the range of ×1)
- Effect due to time variation
  - Zero point: $\pm 0.2 \times 10^{-6}$ strain/8 h
  - Sensitivity: ±0.01 %F.S./8 h
  - (Temperature variation width is within ±2 ℃ with the range of×1)
- A/D sampling: 4 times/s

2-2. Specifications for digital section

- Display section: Dot matrix type liquid crystal display(With back lit LED type)

2-3. Function on setting program

- Coefficient: ±0.001 to±9.999
- Unit: 24 kinds, such as mV/V, μST, N, kg and so on.
- Decimal point: Non, 10^1, 10^2, 10^3 and 10^4

2-4. RS-232C Interface (Installed as a standard)

- Baud rate: Select from 1 200, 2 400, 4 800, 9 600 and, 19 200 bps.
- Data bit length: Select from 7 bits and 8 bits.
- Parity bit: Select from Non, Even number and Odd number.
- Stop bit: Select from 1 bit and 2 bits.
- Terminator: CR+LF
- Transmission method: Half-duplex
- Synchronous method: Start-stop synchronous method
- Transmitting data: ASCII code

- Function: Reading out measured data
  Change of measurement mode
  Change of the kinds of sensor
  Writing coefficient
  Change of unit
  Error code for communication

3. Specifications for strain measurement

- Measuring method: 1 gage 2 wire method
  Strain gage : 120 Ω, 240 Ω, 350 Ω
  1 gage 3 wire method
  Strain gage : 120 Ω, 240 Ω, 350 Ω
  2 gage method
  Strain gage : 60 Ω to 1 000 Ω
  4 gage method (Strain gage applied transducer)
  Strain gage : 60 Ω to 1 000 Ω
- Measuring range: ×1 range : ±40 000 × 10^{-6} strain
  4GH range : ±3.500 0 mV/V (±7 000.0 × 10^{-6} strain)
  (4 gage method, only for strain gage applied transducer)
- Resolution: ×1 range : 1 × 10^{-6} strain
  4GH range : 0.000 1 mV/V (0.1 × 10^{-6} strain)
  (4 gage method, only for strain gage applied transducer)
- Accuracy: ×1 range : ±0.08 %F.S. ±1 digit
  4GH range : ±0.08 %F.S. ±2 digits
  (4 gage method, only for strain gage applied transducer)

4. Specifications for the measurement on resistance

4-1. Measurement on low resistance

- Measuring method: Constant current method
- Measuring range: ×1 range
  0.0 Ω to 2 400.0 Ω
  ×10 range
  0 Ω to 24 000 Ω
- Resolution: ×1 range
  0.1 Ω
  ×10 range
  1 Ω
- Accuracy: ±0.1 %F.S. ±2 digits

4-2. Measurement on high resistance

- Measuring method: Constant current method
- Measuring range: 0.0 MΩ to 500 .0 MΩ
- Resolution: 0.1 MΩ
- Accuracy: ±5 %F.S.(0.0 MΩ to100.0 MΩ)
  ±20 %F.S. (100.0 MΩ to 500.0 MΩ)

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5. General specifications

- Operating temperature/humidity range
  - Temperature 0 ℃to50 ℃
  - Humidity Less than or equal to 90 %R.H.(Non condensing.)
- Power supply
  - Power supply voltage AC90 V to 264 V (With the application of AC adapter.) or battery drive through Ni−Cd battery.
  - Power supply frequency 50/60 Hz
  - Power consumption Approx.8 VA (When AC adopter is used.)
- Insulation resistance Between power supply line and the case :DC500 V 100 MΩ or more
- Withstand voltage Between power supply line and the case :AC1 500 V , 1 min
- Earthquake resistance 3 m/s^2
- Resist to impact 5 m/s^2
- Outline dimensions(W×H×D) 210 mm×148.5 mm×40 mm (Excludes protruding parts.)
- Weight Approx. 1.7 kg

6. Specifications for standard shipment

- Measurement Strain gage applied transducer (Load cell,Pressure transducer and TMB type torque transducer)
- Measuring method 4 gage method
- Unit mV/V
- Power supply
  - Power supply voltage AC90 V to 264 V(When AC adopter is used.) or Battery drive through built−in Ni−Cd battery.
  - Power supply frequency 50/60 Hz

7. Accessories

- Instruction manual 1 piece
- AC adaptor 1 piece (PW−024A−1Y160KU: Power Win Technology)
- Tester pole 1 piece
- Midget fuse(2 A) 1 piece

8. Options

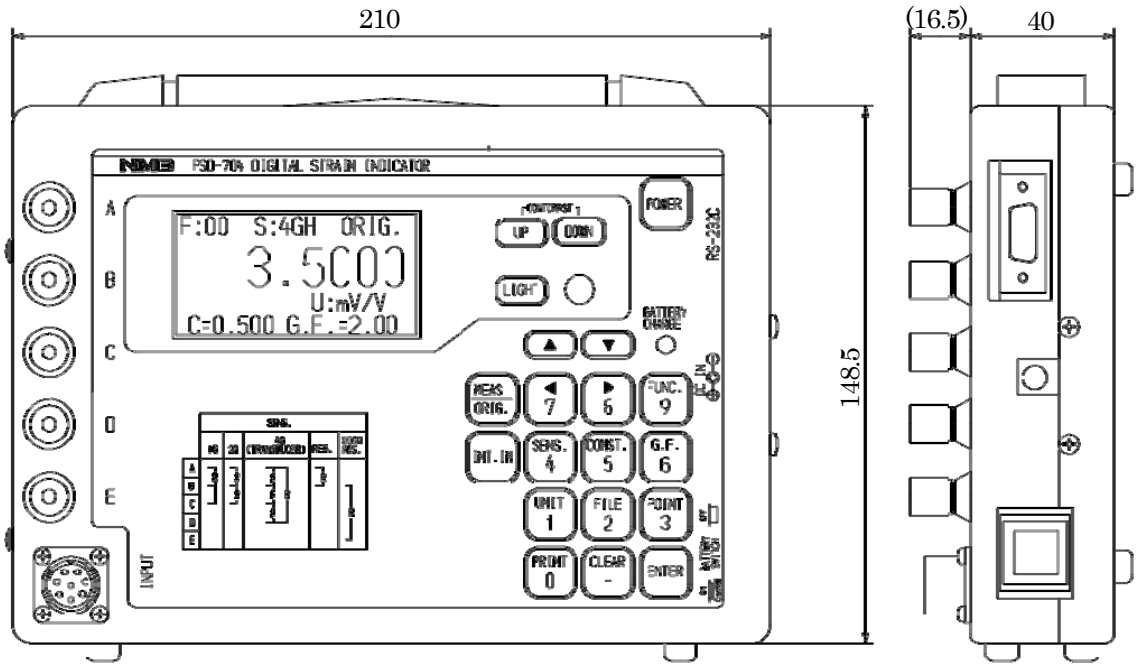
8-1. Hard case

- P/N PSD704−P93

9. Recommended printer for external connection

- Made by Seiko Instruments(P/N : DPU−201GS)

10. Outline dimensions



Unit:mm

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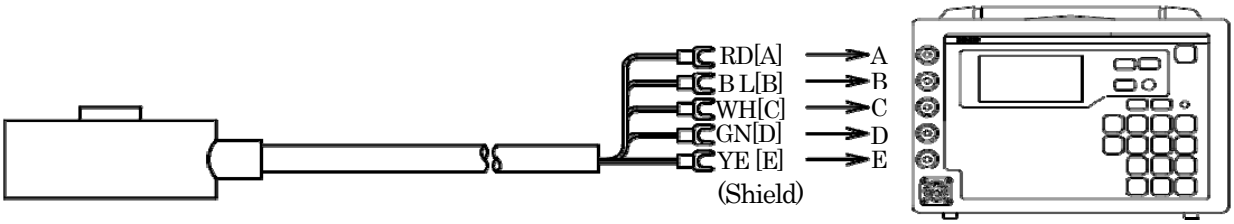
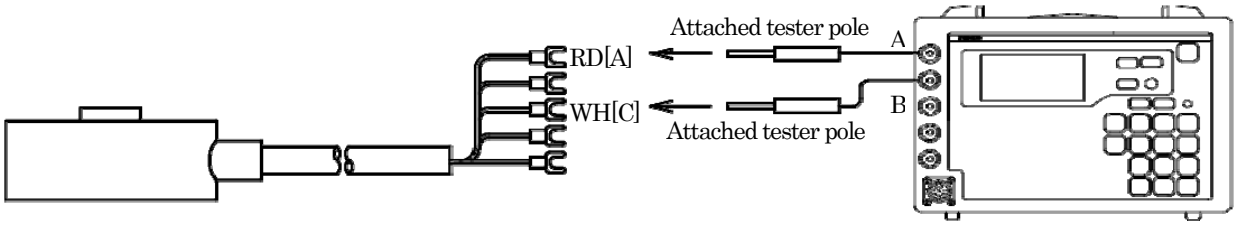
11. Connecting diagram

11-1. In case of check on the output of load cell (Zero balance, rated output)

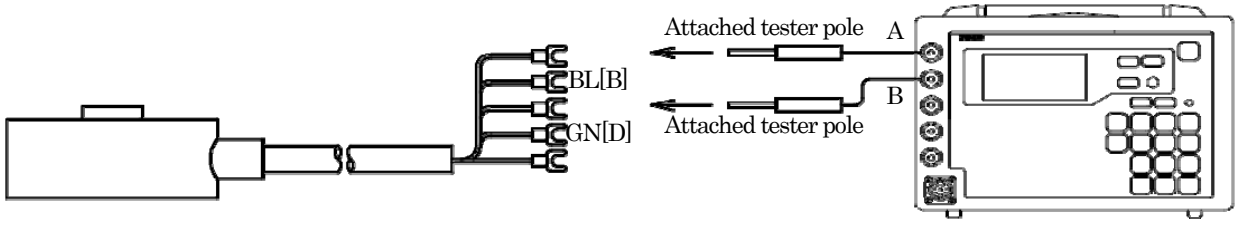


11-2. In case of check on the resistance value for input/output of load cell

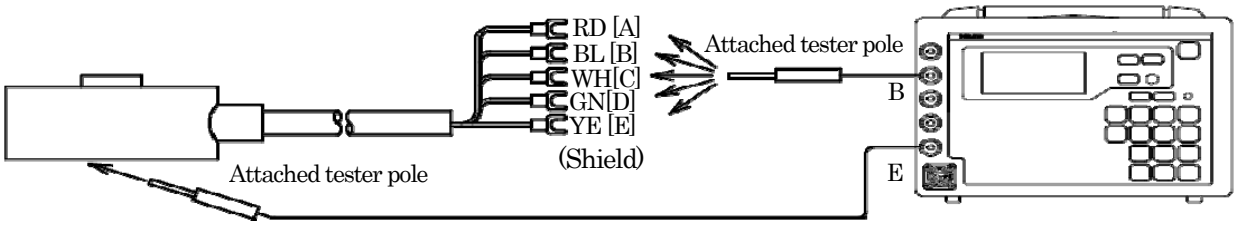
1) Check on resistance value for input side of load cell.



2) Check on resistance value for output side of load cell.



11-3. Check on resistance value between main body of load cell and each cable



※ Specifications and outline dimensions and so on which have printed may subject to change for the purpose of improvement without notice.