



## P1000 Handy Strain Gage Indicator



### Features:

- Strain gage or SG base transducer indicator
- $\pm 1$  micro-strain resolution at Gage Factor = 2
- Quarter, half and full bridge circuitry
- Built-in bridge completion 120  $\Omega$  , 350  $\Omega$  dummy gages
- Automatic zero-balancing and calibration
- Actual load calibration or sensitivity registration calibration capability
- Gage resistance measuring for Quarter bridges connection
- Lead wire line resistance measuring for 3-wire Quarter bridges
- Enable reading in over 70 engineering unit
- Friendly intuitive, menu-driven operations
- Keypad operable
- Rugged, handy and lightweight
- Operates on 2 pieces of AA size dry cell or AC power adaptor
- Option 16-Bits analog output
- Option EIA-RS-232C or datum link

### Applications:

- Material Test
- Strain Indicator
- Stress Indicator
- Material Elasticity Indicator
- Load Cell Indicator
- Force Indicator

- Torque Indicator
- Pressure Indicator
- Acceleration Indicator
- Micro-Resistance Indicator
- Semiconductor Strain Gage Indicator
- Strain/Stress Analysis

### Description:

P1000 Strain Gage Indicator is an economical instrument with high accuracy and multiple functions.

It is a Strain Gage Indicator and also function as a Strain Gage Transducer Indicator.

As a Strain Gage Indicator, it can support 10 types of bridges and dummies. While if used as a Strain Gage Transducer Indicator, there are 24 bits A/D converts to make the measurement.

#### P1000 Data Logger RS-232

- Connect to maximum 8 units P1000.
- EIA-RS-232C datum link.
- Real Time Chart.
- Save Data File to Excel \*.csv format.
- Free operating software.





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### Specification:

- **Hardware Specifications**

All specifications nominal or typical at +23° C unless otherwise noted

  - **Inputs**

Highly reliable terminal accept independent bridge inputs.  
Accommodates 16-30 AWG ( 1.5 to 0.14 mm diameter ) wire.  
(Option) D-Sub 9-pin terminal accept independent bridge or transducer inputs.
  - **Bridge Configurations**

Quarter-, half-, and full-bridge circuits.  
Internal bridge completion provided for 120  $\Omega$  and 350  $\Omega$  on quarter-bridges; 60  $\Omega$  to 2 k  $\Omega$  on half- or full-bridge
- **Display**

Full dot-matrix structure with 2 Row X 8 characters dots FSTN positive, gray translucence LCD with backlight.  
Display update is once per second.
- **Data Conversion**

24-Bits high-resolution sigma-delta converter.  
60 Hz and 50 Hz noise rejection.
- **Measurable Range**

$\pm 20,000 \mu\epsilon$  (  $\pm 1 \mu\epsilon$  resolution )  
at Gage Factor = 2.000
- **Accuracy**

$\pm 0.1\%$  of reading  $\pm 3$  counts. ( Normal mode operation at Gage Factor = 2.000 )
- **Gage Factor Settings** : Range 0.500 to 8.000
- **mV/V Settings** : Range 0.500 to 10.000
- **Balance**

Single key operation to initiate automatic software balance
- **Bridge Excitation** : 1.25VDC  $\pm$  0.04%.
- **Option Analog Output**

16-Bits DAC, Output 1.25 VDC  $\pm$  1.25V, Data rate 1 / 4.5 / 10 Hz.
- **Option Communication Interface**

EIA-RS-232C Serial Bus with D-type connector.  
Used for data and firmware transferring.
- **Calibration**

Shunt calibration across each dummy resistor to simulate 5000  $\mu\epsilon$  (  $\pm 0.1\%$  ).  
Remote calibration supported via accessible switch contacts at input female D-sub.  
Gage resistance measuring for Quarter bridges connection  
Lead wire line resistance measuring for 3-wire Quarter bridges
- **Power Requirement**

AA size dry cell  $\times$  2 or Optional AC-Power Adaptor (PN: P1000-ADP).
- **Dimension & Weight**
  - 6.3" X 3.4" X 1.2" ( 160 mm X 85 mm X 30 mm )
  - 0.65 Lb ( 280g ) without batteries.
- **Operational Environment**
  - Operating temperature: -10° C  $\sim$  50° C.
  - Storage temperature: -15° C  $\sim$  55° C.
  - Humidity: Below 95% RH, non-condensing
- **Firmware Features**
  - Display Update Rate: 1 readings per second.
  - Scaling  
Automatic scaling for micro-strain, based upon gage factor, with non-linearity correction based upon bridge type.  
Automatic calculation of mV/V.  
Linear scaling for other engineering units
  - Units  
Strain, Stress, Weight, Force, Pressure, Torque, Length, Accelerator, Angle, Temperature, Resistance
  - Bridge Types
    - Quarter-bridge
    - Half-bridge, adjacent arms, equal and opposite strains
    - Half-bridge, opposite arms equal strains
    - Shear bridge, 2 active arms
    - Poisson half-bridge
    - Full-bridge 4 fully active arms
    - Shear bridge, 4 active arms
    - Full-bridge, Poisson gages in opposite arms
    - Full-bridge, Poisson gages in adjacent arms
    - Undefined full-bridge
    - Undefined half-bridge; quarter-bridge
  - Bridge Balance
    - Automatic
    - Manual offset adjustment
    - Disabled