Handy Calibrator

Multi-functional Hand-held Calibrator

- Highly accurate within 0.02% of the DC voltage range for source and measure
- Source and measurement can be performed simultaneously.
- Vertical body with large-screen display
- Loop power supply function (24 VDC at a load of max 22 mA)
  It is possible to measure current in the mA range while supplying power.
- Sink function
- Sweep functions that allow 3 types of continuous outputs:
  Step sweep function
  Linear sweep function
  Program sweep function
CA150

Multi-functional and high-precision calibrator that can be used to calibrate and test industrial process devices and various electronics equipment

Functions/Features

- **Vertical hand-held calibrator**
  Easy-to-hold vertical body is designed to make it intuitively easy to operate, as individual functions are accessed directly by pressing assigned keys.
  Using the main body case (model No. 93027) (sold separately), you can hang CA150 to your body or a handrail to keep it handy.

- **Simultaneous source and measurement for process devices**
  In conventional calibration applications, multiple devices such as a standard generator, dial resistor and multi-meter were required. Now with a single CA150 unit, it is possible to perform operation check at regular inspection and maintenance of thermocouples, RTDs and instruments, as well as maintenance and equipment diagnosis of process devices such as transmitters, thermostats and signal converters.

- **Loop power supply function**
  It is possible to measure generated current signals while supplying loop power 24 VDC from a two-wire type transmitter (up to 22 mADC).

Two-wire Type Transmitter Applications

- **Two-wire type transmitter (measurement function) application**
  ○ **Loop check function**
    Measures mADC signals output while supplying transmitter power at 24 VDC.

- **Two-wire type transmitter (source function) application**
  ○ **Sink function**
    Receives current (Sink) from the power supply at voltages of up to 28 VDC and transmits mADC signals to the loop.

Memory Functions

- **Setting memory**
  This function saves/load setting conditions.
  Up to 21 data items can be stored.
  Settings for (source/measurement) functions, ranges, generated values/measured values as well as setting mode conditions can be stored.

- **Data memory**
  This function saves source and measure values displayed.
  Up to 100 data items can be stored.
  Storage date/time, (source/measurement) functions, ranges and generated values/measured values can be stored.
  Stored data can be checked on the display of the main unit as well as via communication.

Convenient Functions Useful in Field Tests

Sweep Functions (Automatic Output Functions)

- **Step sweep function**
  This function changes the output in a staircase (step) pattern at fixed intervals.

- **Linear sweep function**
  This function increases (or decreases) the output linearly with respect to the generated value.

- **Program sweep function**
  This function outputs source setting values stored by the data memory function sequentially in the order they are stored in the memory.
### Specifications

#### Source Unit

**General Specifications**

- **Memory functions**
  - Number of data items that can be stored: 21 set
- **Source unit**
  - Temperature coefficient: Accuracy above x (1/10°C)

#### Measurement Unit

**Accuracy** (% of reading + uV, mV, mA, µA, Ω and °C) at 23°C ± 5°C

<table>
<thead>
<tr>
<th>DC voltage</th>
<th>Resolution</th>
<th>Source range</th>
<th>Accuracy</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>500mV</td>
<td>100mV</td>
<td>0 to 500.00 mV</td>
<td>±(0.02% + 50uV)</td>
<td>Input resistance: 1000 MΩ or more</td>
</tr>
<tr>
<td>3V</td>
<td>1V</td>
<td>0 to 3.0000 V</td>
<td>±(0.02% + 5mV)</td>
<td>Input resistance: Approx. 1 MΩ</td>
</tr>
</tbody>
</table>

**Temperature coefficient**
- Accuracy above x (1/10°C)

#### Thermocouple *3*

**K**
- Between input terminal and output terminals: 350 VAC, 1 minute
- Temperature coefficient: Accuracy above x (1/10°C)

**RTD *1**
- Maximum step setting: 100 data
- Accuracy = (% of setting + 1V, 0.5V, 0.1V, ±3°C)

### Common source specifications

- **Power supply**: 6 AAA size alkaline batteries
- **AC adapter** (sold separately) or dedicated NiMH battery (sold separately)
- **Battery life**
  - **Continuous use**: Approx. 10 hours
  - **Single button**

### Specifications common to source unit

- **Source unit response time**: Approx. 300 ms only ranges 1V, 10V, 50mV (excitation current 1mA) and RTD (excitation current 1mA) response time is approx. 300 ms
- **Source unit voltage limiter**: Approx. 32 V
- **Output polarity switching**: enable
- **Output short-circuit protective function**: enable

### Specifications Loop Power Supply

- **Maximum load**: 22 mA DC or less
- **Maximum output**: 10 mA, output resistance: Approx. 30 mA

### General Specifications

- **Operating temperature/humidity range**: 0 to 40°C, 20 to 80%RH (no condensation)
- **Storage temperature range**: -20 to 60°C/90%RH or less (no condensation)
- **External dimensions**
  - Approx. 251 x 124 x 70 mm
- **Weight**
  - Approx. 1000 g (with Batteries)
- **Conforming Standards**
  - MIL-STD-1346 C
  - MIL-STD-188-114

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**Specifications**

**DC voltage**
- 500mV
- 3V

**DC current**
- 100mA
- 1mA

**RTD *1**
- PT100
- J
- E
- N
- L
- U
- B
- T
- R
- S

**Frequency / pulse**
- 1kHz
- 10kHz

**Measurement display refresh rate**: 350 VAC, 1 minute

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- **Battery life**
  - **Continuous use**: Approx. 10 hours
  - **Single button**
With the main body case (model name: 93027) (sold separately) installed
Includes strap and accessory storage case

The main body case is designed to make it easy to hold with one hand.

**Supplied Accessories**

<table>
<thead>
<tr>
<th>Product name</th>
<th>Lead cable for source</th>
<th>Lead cable for measurement</th>
<th>Carrying case</th>
<th>Terminal adapter</th>
</tr>
</thead>
<tbody>
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</table>

**Optional Accessories (sold separately)**

<table>
<thead>
<tr>
<th>Product name</th>
<th>AC adapter</th>
<th>RJ sensor</th>
<th>Accessory storage case</th>
<th>NiMH battery</th>
<th>Main body case</th>
<th>Lead cable for measurement</th>
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<tbody>
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**Model Name**

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<td>Handy Calibrator</td>
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**External Dimensions**

<table>
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<tr>
<td>Width: 124 mm</td>
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<tr>
<td>Height: 96 mm</td>
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<tr>
<td>Depth: 35 mm</td>
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**Notice**

Before using the product, read the instruction manual carefully to ensure proper and safe operation.