Handy Calibrators

CA51/CA71

- Source and measure operations can be performed at the same time.
  (Select from the following source signal and measurement signal options: voltage, current, resistance, thermocouple (TC), resistance temperature detector (RTD), frequency, pulse).
- AC voltages, including supply voltage, can be measured.
- Includes a wide array of additional functions.
- Easy operation.
- Compact size and Lightweight
Simultaneous signal source and measurement capability

The CA71 lets you handle regular tests on TCs, RTDs and various other types of sensors and instruments, as well as operation checks when a problem has occurred. By itself it can source signals for input to equipment, and check output signal from equipment. With the CA71, you don't need to worry about synchronizing operations with other setting devices. (TC and RTD measurement functions are CA71 only.)

A wide array of useful functions

- **Source**
  Values set in steps of 4–20 mA
  24V DC Power Supply to Transmitter
- **Divided output (n/m) function**
  Output settings are divided, eliminating the need for bothersome calculations for percentage output.
- **Autostep function**
  Changes the output value in step form based on the setting from the divided output (n/m) function. Changes can be sourced automatically every 10% or 25%.
- **Online communication (CA71 only)**
  RS-232C-compliant optically isolated interface
- **Sweep function**
  Linearly increases or decreases the output. The increasing/decreasing time can be set to either 16 or 32 seconds.
- **Memory function**
  Source values and measurements forming individual value sets can be saved to or read from the Handy Calibrator's internal memory (maximum 50 value sets).
- **Temperature monitor function**

AC voltage (including supply voltage) measurement capability

In cases where numerous signal converters and other devices are mounted on a rack or panel, the Handy Calibrator can be used to check the input and output signals of each device, while simultaneously checking the power supply. There is no need for a separate multimeter to measure supply voltage.

Easy operation

The Handy Calibrator incorporates rotary switches for simple handling. Just open the carrying case cover and connect the cables, and you’re ready to take measurements.
1. Measurement range setting rotary switch
2. Terminal adapter 99021
3. Output terminals for signal generation
4. Signal generation range setting rotary switch
5. POWER key
6. Up/Down keys for generated signal setting
7. LIGHT key
8. TEMP key

**Spare parts**

<table>
<thead>
<tr>
<th>Product</th>
<th>Source signal lead cable</th>
<th>Measurement lead cable</th>
<th>Carrying case</th>
<th>Terminal adapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>98020</td>
<td>RD031</td>
<td>93016</td>
<td>99021</td>
</tr>
<tr>
<td>Remarks</td>
<td>One set, including one red cable and two black cables. Length: approximately 1.7 meters</td>
<td>One set, including one red cable and one black cable. Length: approximately 1.0 meter</td>
<td>The carrying case can hold the source signal and measurement lead cables, terminal adapter, four spare batteries, fuses, AC adapter, and user’s manual.</td>
<td>Used in temperature measurement (for CA71).</td>
</tr>
</tbody>
</table>

**Optional accessories (sold separately)**

<table>
<thead>
<tr>
<th>Product</th>
<th>AC adapter</th>
<th>RJ sensor</th>
<th>Accessory carrying case</th>
<th>Communication cable (RS232)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>94013</td>
<td>B9108WA</td>
<td>B9108XA</td>
<td>91017</td>
</tr>
<tr>
<td>Remarks</td>
<td>120 V AC power supply adapter</td>
<td>For reference junction compensation</td>
<td>Can hold lead cables, RJ sensor, etc.</td>
<td>D-sub 9-pin (female)</td>
</tr>
</tbody>
</table>

**Handy Calibrator main unit**

<table>
<thead>
<tr>
<th>Product</th>
<th>CA71 Handy Calibrator</th>
<th>CA51 Handy Calibrator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>CA71</td>
<td>CA51</td>
</tr>
<tr>
<td>Standard accessories</td>
<td>All of the following are included: Source signal lead cables (one red, two black): 98020 Measurement lead cables (one red, one black): RD031 Carrying case: 93016 Terminal adapter for CA71: 99021 User’s manual: IM CA71-E Four AA alkaline batteries: A1070EB ×4</td>
<td></td>
</tr>
</tbody>
</table>

**Related product**

<table>
<thead>
<tr>
<th>Product</th>
<th>Pressure Calibrator</th>
<th>Handy Calibrator</th>
<th>Process Multimeter</th>
<th>Process Clamp Meter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>CA700</td>
<td>CA150</td>
<td>CA450</td>
<td>CL420</td>
</tr>
<tr>
<td>Remarks</td>
<td>Multi-functional Hand-held Calibrator Source and measurement can be performed simultaneously. Loop power supply function Sink function</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Signal sourcing unit range and accuracy (for both CA51 and CA71)**

Parameter | Reference | Range (V) | Accuracy (% of range) | Resolution | Remarks |
---|---|---|---|---|---|
DC voltage | 100 mV to 20–500.0 V | ±0.02% + 0.1 V | ±0.1% | ±0.1 V | TC \*1<br>TC temperature accuracy does not include RU sensor accuracy.<br>RU sensor specs. 1.0 %<br>Other than the above: ±1 %

**AC voltage** | 100 mV to 20–500.0 V | ±0.1% | ±0.1 V | TC \*1<br>TC temperature accuracy does not include RU sensor accuracy.<br>RU sensor specs. 1.0 %<br>Other than the above: ±1 %

**Measuring unit range and accuracy (for both CA51 and CA71)**

Parameter | Reference | Range (V) | Accuracy (% of range) | Resolution | Remarks |
---|---|---|---|---|---|
DC voltage | 20 mV to 20–500.0 V | ±0.05% + 3 µA | ±0.1% | ±0.1 µA | TC \*1<br>TC temperature accuracy does not include RU sensor accuracy.<br>RU sensor specs. 1.0 %<br>Other than the above: ±1 %

**AC voltage** | 20 mV to 20–500.0 V | ±0.5% + 5 µA | ±0.1% | ±0.1 µA | TC \*1<br>TC temperature accuracy does not include RU sensor accuracy.<br>RU sensor specs. 1.0 %<br>Other than the above: ±1 %

**Specifications**

**General specifications** (for both CA51 and CA71)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal generating unit current limit</td>
<td>Approximately 25 mA</td>
</tr>
<tr>
<td>Signal generating unit maximum input voltage</td>
<td>30 V peak</td>
</tr>
<tr>
<td>Measuring unit maximum input voltage</td>
<td>200 V AC</td>
</tr>
<tr>
<td>Measuring unit output current</td>
<td>10 mA</td>
</tr>
<tr>
<td>Storage temperature and humidity ranges</td>
<td>0–50°C, 20–80% RH (no condensation)</td>
</tr>
<tr>
<td>External dimensions (W x H x D)</td>
<td>Approximately 190 x 120 x 55 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 750 g (including batteries)</td>
</tr>
</tbody>
</table>

**Advisories**

- All of the following are included: Signal generating load cables (one red, two black) X9020<br>Measuring load cables (one red, one black) R9021<br>Carrying case: 93016<br>AC adapter: 901013 (24 V DC power supply) <br>Optional accessories: RU sensor: B9108WA (For reference junction compensation) <br>Carrying case: B9109A (For reference junction compensation) <br>Communication cable: 91017 <br>Terminal adapter: 99021<br>Carrying case: 99021

**Notice**

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

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**Measurement unit (temperature: CA71 only) range and accuracy**

Parameter | Reference | Range (V) | Accuracy (% of range) | Resolution | Remarks |
---|---|---|---|---|---|
TC | 100.0–1372.0°C | ±0.05% + 0.1 V | ±3 µV | ±0.3 µV | TC \*1<br>TC temperature accuracy does not include RU sensor accuracy.<br>RU sensor specs. 1.0 %<br>Other than the above: ±1 %