Model 28959F/FV Portable accelerometer calibrator

Features

- Portable, rechargeable battery
- Ideal for in-situ end-to-end calibration
- Calibrates/tests accelerometer types:
  - Charge mode piezoelectric
  - Voltage mode piezoelectric
- Test range: up to 10 g’s, 10 Hz to 10 kHz
- Calibration traceable to NIST
- Integral printer provides handy record
- Internal memory for over 1600 tests
- RS-232 interface transfers field data
- 14-Point calibration report traceable to NIST included

Special features

- Displays and saves serial number and type, test parameters, date/time, and test results
- Calculates sensitivity automatically
- Hard copy record from built-in printer
- Verify accelerometer polarity
- Built-in charge convertor for charge mode devices
- Built-in constant current source for voltage mode devices (Isotron®, type)
- Battery-powered with built-in charger
- Help screens assist operator

Description

The Endevco® model 28959F/FV portable calibrator is designed to provide precision calibration for various types of accelerometers in the field. It is also perfect for test engineers and technicians needing on-site end-to-end calibration of their complete measurement chain.

Model 28959F/FV is a self-contained system which includes built-in vibration exciter, signal generator, computer-controlled amplifier/servo mechanism, reference accelerometer, thermal printer, RS-232 serial interface, LCD display screen, signal conditioners and all necessary connectors and mounting accessories. The unit can be powered by AC line voltage or its internal rechargeable batteries. The calibrator is very powerful yet user-friendly. Operation may be learned quickly by inexperienced operators.

Model 28959F/FV is designed to accept charge and voltage mode piezoelectric accelerometers directly. Test amplitude is adjustable up to 10 g’s over the frequency range of 10 Hz to 10 kHz. An internal reference accelerometer traceable to NIST serves as the comparison standard. Internal static RAM stores over 1600 test results. Sensitivity is supplied in English or metric engineering units. An automatic selftest feature provides measurement integrity at every power-up.

End-to-end system calibration

The following example depicts an end-to-end calibration of one vibration measurement channel:
Specifications

**Dynamic characteristics**
- **Calibration**
  - Traceable to NIST (USA) standard at 2g from 20 Hz to 10 kHz
- **Measurement uncertainty**
  - Acceleration:
    - 10 Hz to 2 kHz, ±0.3 dB
    - 2 kHz to 10 kHz, ±1 dB
- **Frequency range**
  - 10 Hz to 10 kHz
- **Frequency readout accuracy**
  - 0.001% ±1 count
- **Amplitude range**
  - Frequency vs maximum load:
    - 10 Hz to 100 Hz: ≤100g, ≤4g, ≤2g, ≤1g
    - 100 Hz to 1 kHz: ≤7g, ≤5g, ≤2g, ≤1g
    - 1 kHz to 10 kHz: ≤3g, ≤2g, n/a, n/a
- **Reference accelerometer output**
  - 50 mV/g, ±2% @ 100 Hz

**Report format**
- **Visual display**
  - 4 lines of 20 characters, 5x7 dots LCD display with backlight
- **Print-out**
  - 5x7 dot matrix integral thermal printer. Paper width: 2.3"

**Data storage / interface**
- **Internal memory**
  - 128K byte, store up to 1600 individual test results
- **Serial interface**
  - RS-232 with a DB-9 female connector

**Power requirements**
- **Battery powered with Auto Power Management. Operational during charging.**
- Built-in charger accepts 115VAC, 50/60Hz -28959F (220VAC option available -28959FV)

**Physical characteristics**
- **Dimensions**
  - 11” h x 10” w x 7” d (279 mm x 178 mm x 254 mm)
- **Weight**
  - 21 lbs. (9.6 kg)
- **Environmental**
  - Operational from +10°F to +120°F (-12°C to +50°C) @ 95% RH

**Accessories**

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EW1354</td>
<td>Power cord</td>
</tr>
<tr>
<td>EHM2006</td>
<td>Spanner wrench</td>
</tr>
<tr>
<td>EHM2007</td>
<td>Accelerometer mounting fixtures Various 1/4-28 mounting stud adaptors</td>
</tr>
<tr>
<td>EHM1476</td>
<td>TO 1/4-28 UNF stud</td>
</tr>
<tr>
<td>EHM1477</td>
<td>TO 10-32 UNF stud</td>
</tr>
<tr>
<td>EHM1478</td>
<td>TO 2-56 UNC threaded hole</td>
</tr>
<tr>
<td>EHM1479</td>
<td>TO 6-32 UNC threaded hole</td>
</tr>
<tr>
<td>EHM1480</td>
<td>TO 10-32 UNC threaded hole</td>
</tr>
<tr>
<td>3090CM50</td>
<td>Input cable, voltage mode</td>
</tr>
<tr>
<td>3090CM51</td>
<td>Input cable, voltage mode</td>
</tr>
<tr>
<td>EJ1118</td>
<td>Spare input connector</td>
</tr>
<tr>
<td>EHM2008</td>
<td>Printer paper (available in many office supply sources)</td>
</tr>
<tr>
<td>30279</td>
<td>Mounting fixture for PR/VC accelerometer</td>
</tr>
<tr>
<td>2988M4</td>
<td>Mounting fixture for adhesive-mounted accelerometers</td>
</tr>
<tr>
<td>31207</td>
<td>Serial interface software for PC compatible</td>
</tr>
<tr>
<td>2270M8</td>
<td>Transfer standard accelerometer for calibration of standards built into shakers</td>
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<tr>
<td>CS 830</td>
<td>14-Point calibration traceable to NIST, recommended yearly</td>
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</tbody>
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**Notes:**
1. Maintain high levels of precision and accuracy using Meggitt (San Juan Capistrano), Inc’s factory calibration services. Call Meggitt (San Juan Capistrano), Inc’s inside sales force at 800-982-6732 for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.

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