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Описание на портативные виброанализаторы. Модель SCOUT100-Ex



BENTLY
Nevada

SCOUT100-Ex

Product Datasheet

Bently Nevada* Asset Condition Monitoring

Description



SCOUT100-Ex is a portable dual-channel vibration data collector, analyzer and balancer. You can use this device for on-route data collection, machine-side analysis and diagnosis, and on-site dynamic balance correction.

SCOUT100-Ex is ATEX Zone 2 and IECEx Zone 2 compliant and safe for hazardous areas. This instrument is light but rugged and includes a neck strap with an integrated Sensor Keeper. The integrated Sensor Keeper retains your sensor while you walk or climb to reach other machines.

SCOUT100-Ex comes with a full suite of advanced recording and analysis capabilities including 6Pack recordings, coast-down and long time waveform.

SCOUT100-Ex offers plenty of storage and long battery life. The device is backed by five years of warranty.

SCOUT100-Ex is one of Bently Nevada hardware monitoring assets that work with System 1* as well as Ascent* Level 2 software.

SCOUT100-Ex offers the following features:

- Up to two-channel, simultaneous on-route recordings
- Unique 6Pack recording system
- DC-coupled sensor support
- One GB memory plus virtually unlimited spectra and waveform storage
- Ten hours of battery life
- 6,400 lines FFT resolution
- 40 kHz Fmax
- Wide measurement range — 1,000 g, 25,000mm/s, 2,500mm
- Two-plane balancing
- Laser speed sensor for automatic capture of machine running speed
- Keyphasor tach mode



- dynamic range ≥ 95 dB
- USB host port for data transfer to external USB memory
- Excellent ergonomics for walk-around data collection
- High contrast, backlit and direct-sunlight readable LCD
- True left and right-handed operation
- Sensor cable self-test feature
- Lightweight, rugged IP65 rated case
- Five-year warranty on the instrument hardware
- ATEX and IECEx Zone 2 hazardous location certification
- Field-upgradable Proflash system and free firmware updates for five years

Calibration Service

Follow these steps to find the **Calibration Request Form**:

1. Go to www.GEmeasurement.com.
2. Select **Contact Us**.
3. Open the **How can we help?** pull-down menu and select **I need support or service for my GE product**.
4. Select **TECH SUPPORT & SERVICE DIRECTORY**.
5. The **Calibration Request Form** is listed under **Bently Nevada** column.

We also offer a calibration service for SCOUT100-Ex. To use this service, complete the **Calibration Request Form** or contact GE Bently Nevada Technical Support.



Specifications

Sensors

| | |
|------------------------------|---|
| Sensor input | Two Channels Simultaneous sampling |
| Compatible sensor types | Accelerometer, velocity, displacement, current |
| AC coupled range | 16 V peak-peak Allows for ± 8 V sensor output swing (± 80 g) |
| DC coupled ranges | 0 to 20 V -10 to 10 V -20 to 0 V E.g. for reading prox-probe gap |
| Connectors | 2 x BNC (CH1/CH2) Safety feature: Break-free inline connector |
| Analog to digital conversion | 24-bit ADC |
| Sensor excitation current | 0 mA or 2.2 mA (configurable), 24 V maximum 2.2 mA required power for IEPE/ICP-type accelerometer |
| Sensor detection | Warns if short circuit or not connected |

Waveform Display

| | |
|-----------------------------|---|
| Number of samples | 1024, 2048, 4096, 8192, 16,384 |
| Time scale | 10 ms to 256 seconds or orders based from 1 to 999 revs |
| Time synchronous averages | 1, 2, 4, 8, 16, 32, 64, 128 Only available when tachometer triggered |
| Long time waveform Fmax | 25 Hz to 40 kHz 20 kHz dual channel |
| Long time waveform duration | 14.7 million samples (total over channels) E.g. for Fmax 1 kHz Fsample = 2.56 kHz and Duration = 1.6 hrs |

Tachometer

| | |
|------------------------------|--|
| Sensor | Laser sensor with reflective tape Sensor triggers on beam reflection |
| Laser sensor range | 10 cm to 2 m nominal Range depends on size of reflective tape |
| Other sensor types supported | Contact, TTL Pulse, Keyphasor Instrument has optically isolated input |
| Power supply to sensor | 5 V, 50 mA |
| TTL pulse rating | 3.5 V (4 mA) min 28 V (5 mA) max Off-state 0.8 V |
| Keyphasor threshold | 7.7 \pm 0.5 V 13.2 \pm 0.8 V 18.5 \pm 1 V Nominally 8 V, 13 V, 18 V |
| Speed range | 10 RPM to 300,000 RPM (0.2 Hz to 5 kHz) Pulse width at least 0.1 ms |
| Accuracy | ± 0.1 % |
| Output to drive strobe | Up to 140 Hz (8400 CPM) Typical Depends on strobe type Special cable required |

Logging & Analysis

| | |
|------------------------|---|
| Output formats | LCD screen, Ascent, XML, System 1* |
| Data storage | Dual 1 GB non-volatile flash memories Database mirror copy on second flash memory |
| Data storage structure | Folders/machines/points/locations/routes No limits are applied 50 character names |
| Max folder size | 10,000 measurement locations |

Parameter Indication

| | |
|----------------------------|--|
| Maximum levels | <p>> 1000 g (10,000 m/s²) > 1000 in/sec (25,000 mm/s) > 100 in (2500 mm) > 10,000 Amps</p> <p>Effective limit is sensor sensitivity and output voltage</p> |
| Dynamic signal range | <p>> 95 dB typical at 400 line resolution</p> |
| Harmonic distortion | <p>Less than -70 dB typical Other distortions and noise are lower</p> |
| Units | <p>g or m/s² or adB in/s or mm/s or vdB mil or mm or μm amps</p> <p>0-peak, peak-peak or RMS Auto-scale by 1000x when required US and SI options for adB and vdB</p> |
| Magnitude & cursors | <p>Overall RMS value Waveform True pk-pk Dual cursors Harmonics</p> <p>Digital readouts on chart</p> |
| Base accuracy | <p>± 1% of readings approximately 0.1 dB</p> <p>For DC level — % of full scale For AC signal — % of reading</p> |
| High frequency attenuation | <p>≤ 0.1 dB 100 Hz to 10 kHz ≤ 3 dB >10 kHz to 40 kHz</p> <p>Attenuation tolerances are in addition to base accuracy.</p> |
| AC coupling attenuation | <p>≤ 0.1 dB 10 Hz to <100 Hz ≤ 3 dB 1 Hz to <10 Hz</p> |

| | |
|--------------------------------|--|
| Attenuation due to Integration | <p>≤ 0.1 dB 1 Hz to <100 Hz ≤ 1.5 dB 0.2 Hz to <1 Hz ≤ 0.1 dB 10 Hz to <100 Hz ≤ 1.5 dB 1 Hz to <10 Hz</p> <p>Low frequency mode: When Coupling = DC and Fmax ≤ 100 Hz</p> <p>Normal mode is applicable in all other cases.</p> <p>Values apply to single integration. (Acceleration to velocity)</p> <p>Double the values for double integration (Acceleration to displacement)</p> |
|--------------------------------|--|

Balancing

| | |
|----------------------|--|
| Planes | Up to 2 planes, 2 sensors |
| Speed range | 30 to 60,000 RPM |
| Measurement type | Acceleration, velocity, displacement |
| Weight modes | <p>Angle 0° to 360°, fixed position, circumference arc</p> <p>E.g. weights on fan blades, linear distance around circumference</p> |
| Remove trial weights | <p>Yes/No Automatic recalculation</p> |
| Manual data entry | <p>Yes Allows re-entry of previous balance jobs</p> |
| Storage | <p>Against machines in data structure No limits applied</p> |

Mechanical

| | |
|--------|--|
| Size | <p>9.9" W x 5.8" L x 2.4" H (252 x 148 x 60 mm)</p> |
| Weight | <p>2.7 lb (1.2 kg) Including battery and strap</p> |

Spectrum Display

| | |
|-----------------------------|---|
| Fmax ranges | 25, 50, 100, 125, 150, 200, 300, 400, 500, 600, 800, 1000, 1200, 1600, 2000, 2500, 3000, 4000, 5000, 6000, 8000, 10,000, 15,000, 20,000, 30,000, 40,000 Hz Or equivalent CPM values Or orders-based from 1X to 999X |
| Fmin possible range | 0 to Fmax Instrument zeroes all spectral lines below Fmin. |
| Resolution | 400, 800, 1600, 3200, 6400 lines 3200 lines max. for dual channel measurements |
| Frequency scale | Hz, CPM, Orders Linear scale with zooming |
| Amplitude scale | Acceleration, velocity, displacement or current Linear or log scales, auto or manual scaling |
| Window shapes | Hanning Rectangular |
| Overlap | (0, 12.5, 25, 37.5, 50, 62.5, 75, 87.5) % Depends on Fmax and number of lines |
| Number of averages | 1, 2, 4, 8, 16, 32, 64, 128 Increases sampling time proportionally |
| Averaging types | Linear, exponential, peak hold, synchronous types |
| Demodulation bandwidths | 23 bandwidth options From 125 Hz to 1250 Hz Up to 16 kHz to 20 kHz |
| 6Pack | Up to 40 kHz & 3200 lines (1 channel) Up to 20 kHz & 1600 lines (2 channels) Spectrum and waveform for low-frequency, high-frequency demodulation |
| Order tracking | Up to 6 kHz Fmax, orders-based Tachometer required Mounted on high-speed shaft |
| Order tracking - Distortion | Less than -65 dB Within 50% to 200% speed variation during recording |

Display & Communication

| | |
|-----------------------|--|
| Display | Graphic Grayscale LCD White LED Backlight |
| Resolution & size | 480 x 320 (HVGA), 5.5" (140 mm) Readable in direct sunlight |
| Supported Languages | English, French, Spanish, Portuguese, Russian, Chinese |
| Communication with PC | USB, Ethernet and Wi-Fi (optional USB dongle) Use PROFLASH to upgrade instrument firmware |
| USB host port | USB 2.0, supplying 5V, 250mA Save folders to USB flash drive |

Battery & Charger


| | |
|----------------|---|
| Battery type | Custom Lithium Ion pack, 7.4 V, 5000 mAh |
| Operating time | 10 hours Backlight on — 60 second timeout |
| Charger type | Internal charging, automatic control External power pack 12 V DC, 3 A output |
| Charge rate | 3 A nominal 3 hours for complete charge |

Environmental Limits

| | |
|--------------------------------|--|
| Operating temperature | 14 °F to 122 °F (-10 to 50) °C |
| Storage temperature & humidity | -4 °F to 140 °F (-20 to 60) °C, 95% RH Up to 95 F (35 C), 85% RH if storage exceeds 1 month |
| Ruggedness | 4' (1.2 m) drop onto concrete, IP65 Procedure: 26 drops following MIL-STD-810F-516.5-IV |

Hazardous Area Approvals

For the detailed listing of country and product specific approvals, refer to the **Approvals Quick Reference Guide**, document 108M1756, at www.GEmeasurement.com.

| | |
|------------------------------------|---|
| CSA/NRTL/C (Approval Option 05) | Class I, Division 1, Groups A, B, C, D |
| ATEX/IECEX (Approval Option 05) |  II 3 G Ex ic IIB T4 Gc T4 @ Ta = -10°C to +50°C |

Compliance and Certifications

| | |
|-------------------|--|
| EMC | Standards: EN 61326-1 EN 61326-2-3 European Community Directives: EMC Directive 2014/30/EU |
| Electrical Safety | Standards: EN 62133 European Community Directives: LV Directive 2014/35/EU |



Ordering Information

For the detailed listing of country and product specific approvals, refer to the **Approvals Quick Reference Guide**, document 108M1756, at www.GEmeasurement.com.

SCOUT100EX-AXX

A: Agency Approvals
05 ATEX / IECEx / CSA (Class 1, Zone 2)

SCOUT100-Ex Basic Kit

| Part Number | Description | Quantity |
|-------------|---|----------|
| 108M3239 | SCOUT100-Ex two-channel portable data collector | 1 |
| 108M4049-02 | SCOUT programmed USB thumb drive | 1 |
| ACCL0547 | Straight accelerometer | 1 |
| ACCL0561 | Right-angled accelerometer | 1 |
| 108M4044 | AC power adapter | 1 |
| CABB0560 | BNC to BNC Cable, 1 meter | 2 |
| CABU0213 | USB data transfer cable | 1 |
| CBCC0027 | Coiled cable | 2 |
| CBVB0032 | SCOUT instrument carrying bag | 1 |
| DCCA0041 | DC car adapter | 1 |
| MAGF0104 | Accelerometer magnetic base | 2 |
| MVBX0250 | Reference Guide | 1 |
| 109M2384-01 | Neck strap with Sensor Keeper | 1 |
| PLUS0230 | USA/Canada – Category A power plug | 1 |
| PLSA0241 | South Africa/India – Category D power plug | 1 |
| PLAU0228 | Australia/New Zealand / China – Category M power plug | 1 |
| PLHK0245 | Hong Kong/UK Category - G power plug | 1 |
| PLEU0229 | Europe – Category C power plug | 1 |
| 108M4045 | SCOUT quick start guide | 1 |
| TTL70259 | LEMO-BNC TTL Tach/Keyphasor cable | 1 |

Accessory Kits

Balancing Kit - 108M4050-AXX

A: Number of channels
02 Two channels
04 Four channels

| Part Number | Description | Quantity |
|-------------|------------------------------------|---|
| 113M5529-01 | Reflective tape One roll, 60 cm | 1 |
| LASA0315 | Laser Zone 2 rated | 1 |
| CBL50216 | Laser cable Five meters | 1 |
| MAGA0063 | Laser magnetic stand | 1 |
| CB5G0024 | Sensor Cable Five meters, green | 1 for two channel 2 for four channel |
| CB5R0025 | Sensor Cable Five meters, red | 1 for two channel 2 for four channel |
| CBBL0026 | Carrying case for the kit | 1 |

Zone 2 Laser Tach Kit - LASA0315

| Part Number | Description | Quantity |
|-------------|---------------------------|----------|
| 108M4064 | Laser Tacho Holder | 1 |
| 108M4066 | Circlips - 20Mm Stainless | 1 |
| 108M4067 | Arp115 Oring | 2 |
| 108M4069 | Laser Tach Zone 2 rated | 1 |

Software

| Part Number | Description |
|-------------|-----------------|
| 108M4052 | ASCENT* Level 2 |
| 3071/01 | System 1* |

Additional Accessories

Software Accessories

| Part Number | Description |
|-------------|---|
| DGLU0219 | Dongle for software seat/license mobility |
| CLK20399 | Additional L2 user activation |
| SUNW0401 | Network upgrade |

Accelerometers

| Part Number | Description |
|-------------|---|
| AS3100S2-Z2 | General purpose accelerometer 100mV/g +/- 5% Side (right angle) exit 80g peak acceleration range ¼-28 mounting thread 0.92 inch base Zone 0 |
| AM3100T2-Z2 | General purpose accelerometer 100mV/g +/- 5% Top (straight) exit 80g peak acceleration range ¼-28 mounting thread Zone 2 |
| AP3500T2-Z1 | Low frequency accelerometer 500mV/g +/- 5% Top (straight) exit 10g peak acceleration range Zone 0/1 |
| AP3500S2-Z1 | Low frequency accelerometer 500mV/g +/- 5% Side (right angle) exit 10g peak acceleration range Zone 2 |

Additional Miscellaneous Parts

| Part Number | Description |
|-------------|---|
| MAGM0064 | Accelerometer magnetic base Male connection |
| TTL70259 | Generic TTL Tach/Keyphasor cable, LEMO to BNC |
| BATT0575 | Battery pack ATEX |
| CABS0406 | Strobe cable |
| DTC70262 | Neoprene dust cover |
| KEY70258 | Keyphasor cable BNC to LEMO |
| VBMR0222 | Stainless safety rings (1 pair) |
| 100M5828 | SCOUT100-Ex hard case |
| DGWF0591 | USB Wi-Fi dongle Compatible with instrument SN 45000 or higher |

All accessories included in the basic kit may also be ordered separately.

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