

# SCOUT100EX Vibration Data Collector, Analyzer and Balancer

## Datasheet

Bently Nevada Machinery Condition Monitoring

323223 Rev. U



## Description

The SCOUT100EX Vibration Data Collector, Analyzer and Balancer is a portable hardware monitoring device that supports dual-channel vibration data collection, analysis, and balancing. Use the device to collect data from sensors on a route, for machine-side analysis and diagnosis, and on-site dynamic balance correction.

The SCOUT100EX is ATEX Zone 2 and IECEx Zone 2 compliant and safe for hazardous areas. It is both light and rugged. The neck strap includes an integrated Sensor Keeper that restrains your sensor while you walk or climb to reach other machines.

The device includes a complete suite of advanced recording and analysis capabilities, including 6Pack recordings, coast-down and long time waveform.

The SCOUT100EX offers plenty of storage and long battery life. The device comes with a five year warranty. It works with System 1 software.

### **The SCOUT100EX Vibration Data Collector, Analyzer and Balancer 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  $\geq 95$  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

Bently Nevada Technical Support provides calibration services for the SCOUT100EX. To obtain assistance from your nearest repair facility:

1. Visit **[bently.com/services](http://bently.com/services)**
2. Select **Repair, Spare and Replacement Parts**.
3. Under Inspection Technologies, choose Repair and Calibration Services.
4. Download the list of repair facility contacts.
5. Contact the facility nearest you for service.



## Specifications

### Sensors

Sensor input	Two Channels Simultaneous sampling
Compatible sensor types	Accelerometer, velocity, displacement, current
AC coupled range	16 V peak-peak Allows for $\pm 8$ V sensor output swing ( $\pm 80$ g)
DC coupled ranges	0 to 20 V -10 to 10 V -20 to 0 V  E.g. for reading prox-probe gap
Connectors	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 is triggered
Long time waveform	25 Hz to 40 kHz

Fmax	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	$\pm 0.1\%$
Output to drive strobe	Up to 140 Hz (8400 CPM) Typical Depends on strobe type Special cable required