

Snapshot™ for Windows® CE

Bently Nevada™ Asset Condition Monitoring

Description

The Snapshot™ for Windows® CE handheld portable data collection and analysis instrument is intended for periodic manual collection of data in a predictive maintenance program. It has been specifically designed for use by both machinery specialists and operations personnel, and provides features specific to portable data collection and analysis applications, such as:



- Two fully functional channels support data acquisition.
- A separate dedicated channel supports phase and speed input
- Lightweight design that allows single-handed use for extended periods of time with minimal physical effort.
- IP54 rating permits use in harsh environments.
- Removable lithium ion battery provides a minimum usage of 10 hours between charges.
- Polycarbonate/ABS case design provides high impact resistance and durability.
- Quarter-size VGA display (backlit) and integral touchscreen provide a convenient user interface in a compact package.
- Ergonomically designed keypad permits simple operation with either the left or right hand, even with gloves on.
- Intuitive user interface provides ease of use.
- 32 MB of standard on-board memory accommodates large data collection schedules.
- Optional Snapshot Balance software provides on-board one- and two-plane balancing.
- Integrated communications provides high speed Ethernet remote data exchange with System 1®
- Unit supports a wide variety of measurement types and signal processing options including:
 - Proximity probes
 - Velocity transducers
 - Accelerometers
 - Temperature measurements
 - Numeric data
 - Manually keyed notes
 - User-configurable dynamic inputs
 - REBAM® transducers

The Snapshot for Windows® CE data collector uses System 1 host software (refer to System 1 Specifications and Ordering Information, p/n 145146-01) for permanent storage of all collected data and for system configuration functions. For detailed performance specifications refer to data sheet p/n 147934-01.

Specifications

Operating System

Microsoft Windows®CE

System Features

Battery Power:

10 hours minimum, in use

Battery Type:

Lithium Ion

Memory:

32 MB on board.

Local Display Plots Supported

Current value/bar graph
Trend
Direct and Filtered Orbit/Timebase
Direct and Filtered Timebase
Direct and Filtered Orbit
Full spectrum
Half spectrum
1/1 and 1/3 Octave Filter

Spectrum configurations

Frequency resolution, user-selectable from 100, 200, 400, 800, 1600, 3200, 6400 lines

Frequency span, user-selectable ranges between 0-25Hz and 0-40 kHz.

Inputs Supported

Proximity transducers
REBAM transducers
Velocity Seismoprobe® transducers
Velomitor® transducers
Accelerometers

Optical and Proximity Phase
Infrared (IR) Temperature Probe (optional item)
Proportional Voltage
Dynamic inputs

Note: Internal transducer power is available for -24Vdc and constant current devices.

Measurements Supported

mm/s², g – 0-pk, rms
mm/s, in/s – 0-pk, rms
µm, mil – pp
Enveloping
Integrated Velocity
Integrated Displacement
Direct Amplitude
1X & 2X Vectors
REBAM (rotor region and prime spike filters)
Gap
Temperature
Proportional Voltage
Speed (10 to 100,000rpm)
Phase
User-definable low-, high- and band pass filters.

Note: The above measurements can be applied to user-configurable dynamic data within an input range of ± 10 volts or 0 to -24 Vdc

Environmental Limits

Operating Temperature:

-20°C to +55°C (-4°F to +131°F)

Relative Humidity:

To 95%, non-condensing

Electro magnetic compatibility:

Complies with EN50081-2 (emission) and EN50082-2 (susceptibility)

Rating:

IP54

Physical**Length:**

250 mm (10.0 in)

Width:

163 mm (6.4 in)

Depth:

60 mm (2.3 in)

All values are specified over the full operating temperature range unless stated otherwise. All voltages are specified with respect to 0V.

Environmental Specification**Temperature & Humidity**

Operating Temperature range:

-20 to +55 °C (-4 to +131 °C)

Storage Temperature Range:

-30 to +85 °C (-22 to +185 °C)

Relative humidity:

95 % condensing.

Ingress Protection

The Snapshot has been designed and tested to meet the requirements of IP54.

Mechanical Shock & Vibration**Unpackaged shock:**

EN 68000-2-27

Unpackaged Vibration:

EN 68000-2-6

Unpackaged Random Vibration:

BS 2011 Pt. 2.1

Packaged Shock:

ISTA 1 & 1A (April 1996)

Packaged Vibration:

ISTA 1 & 1A (April 1996)

Packaged Random Vibration:

BS 2011 Pt. 2

Drop test – free fall

IEC 68-2-32

Impact test

BS 50021

Electromagnetic Compatibility**Emissions:**

EN 50081-2

Immunity:

EN 61000-6-2

Hazardous Area Approvals**CSA/NRTL/C:**

Class 1, Division 2
Groups A, B, C & D, T4

External Power Input and Battery**Power Input**

Nominal Input Voltage:

+15 Vdc ± 2 %

Specifications and Ordering Information
Part Number 143338-01
Rev. N (03/07)

Maximum
Current Draw:

2250 mA

Connector:

2.1 mm Jack, center positive

Battery

Type:

ME202 Li-ion

Capacity:

4500 mAh

Time Between
Charges:

8 Hrs.

Charge Time:

2 Hrs.

Transducer Power Supplies

Point ID +5 V Power

Voltage:

4.725 to 5.100 Vdc

Current:

0 to 440 mA

Phase Reference Power +5 V

Voltage:

4.731 to 5.100 Vdc

Current:

0 to 120 mA

Phase Reference Power, Transducer Power Channel A & Channel B -24 V

Voltage:

-23.160 to -25.725 Vdc

Current:

0 to 25 mA

Velomitor® & Constant Current Transducers

Power Channel A & Channel B

Voltage:

-19.17 to -22.10 Vdc

Current:

2.44 to 4.97 mA

Signal Inputs

Displacement

Input
Impedance:

122.5 kΩ

Input Voltage
Range:

0 to -24.25 V

Analysis
Application OK
Limits:

-4.15 to -16.75 V

DC Accuracy:

± 50 mVdc

AC Accuracy:

Minimum: [100 – Filter
attenuation (see p. 7)] % of input
signal amplitude

Maximum: [101 % of input signal
amplitude + noise offset (see
below)] / Scale Factor

AC Accuracy (1X
& 2X Vectors):

Note: These specifications apply over the
valid input frequency range of the Phase
Reference (10-100,000 rpm).

Minimum: 98 % of input signal
amplitude for inputs greater/
equal to 0.2 Vpp.
95 % of input signal amplitude for
inputs less than 0.2 Vpp.

Maximum: 102 % of input signal
amplitude + 1.2 mV

Noise Offsets:

Minimum noise offsets in all cases are zero. All values are based on Snapshot operating from its own battery.

Frequency Range	Displacement
5 to 5,000 Hz	4.0 mV pk
10 to 10,000 Hz	5.6 mV pk

Velomitor & Other Constant Current Velocity Transducers

Input

Impedance:

10 MΩ minimum

Input Voltage

Range:

0 to -19.17 V

Analysis

Application OK

Limits:

-4.15 to -19.85 V

AC Accuracy

(Non-

Integrated):

Minimum: [100 – Filter Attenuation (see p. 7)] % of input signal amplitude

Maximum: [101 % of input signal amplitude + noise offset (see below)] / Scale Factor

AC Accuracy

(Integrated, for signals \geq 10Hz):

Minimum: [100 – 4 – Filter attenuation (see p. 7)] % of signal amplitude.

Maximum: 102 % of input signal amplitude + noise offset (see below)

AC Accuracy (1X & 2X Vectors)

Note: These specifications apply over the valid input frequency range of the Phase Reference (10-100,000 rpm).

Minimum: 98 % of input signal amplitude for inputs greater/equal to 0.2 Vpp.

95 % of input signal amplitude for inputs less than 0.2 Vpp.

Maximum: 102 % of input signal amplitude + 1.2 mV

Noise Offsets:

Minimum noise offsets in all cases are zero. All values are based on Snapshot operating from its own battery.

Frequency Range	Non-Integrated	Intg mil & μ m pp 100 mV/in/s transducer
3 to 3,000 Hz	4.6 mV pk	0.33 mil (8.38 μ m)
5 to 5,000 Hz	4.6 mV pk	0.23 mil (5.84 μ m)
10 to 10,000 Hz	5.4 mV pk	0.23 mil (5.84 μ m)

9200, 147633 and Other Seismoprobe

Input

Impedance:

122.5 kΩ

Input Voltage

Range:

-10.1 to + 10.2 V

Analysis

Application OK

Limits:

\pm 4.00 V

AC Accuracy

(Non-

Integrated):

Minimum: [100 – Filter attenuation (see p. 7)] % of input signal amplitude

Maximum: [101 % of input signal amplitude + noise offset (see below)] / Scale Factor

AC Accuracy

(Integrated, for signals \geq 10Hz):

Minimum: [100 – 4 – Filter attenuation (see p. 7)] % of signal amplitude.

Maximum: 102 % of input signal amplitude + noise offset (see below).

AC Accuracy (1X & 2X Vectors):

Note: These specifications apply over the valid input frequency range of the Phase Reference (10-100,000 rpm).

Minimum: 98 % of input signal amplitude for inputs greater/equal to 0.2 Vpp.
95 % of input signal amplitude for inputs less than 0.2 Vpp.

Maximum: 102 % of input signal amplitude + 1.2 mV

Maximum: [101 % of input signal amplitude + noise offset (see below)] / Scale Factor

AC Accuracy (Integrated, for signals \geq 10Hz):

Minimum: [100 – 4 – Filter attenuation (see p. 7)] % of signal amplitude.

Maximum: 102 % of input signal amplitude + noise offset (see below).

AC Accuracy (1X & 2X Vectors):

Note: These specifications apply over the valid input frequency range of the Phase Reference (10-100,000 rpm).

Minimum: 98 % of input signal amplitude for inputs greater/equal to 0.2 Vpp.
95 % of input signal amplitude for inputs less than 0.2 Vpp.

Maximum: 102 % of input signal amplitude + 1.2 mV

Noise Offsets:

Minimum noise offsets in all cases are zero. All values are based on Snapshot operating from its own battery.

Frequency Range	Non-Integrated	Intg mil & μ m pp 500 mV/in/s transducer
3 to 3,000 Hz	3.2 mV pk	0.07 mil (1.78 μ m)
5 to 5,000 Hz	3.2 mV pk	0.03 mil (0.76 μ m)
10 to 10,000 Hz	3.9 mV pk	0.03 mil (0.76 μ m)

Noise Offsets:

Minimum noise offsets in all cases are zero. All values are based on Snapshot operating from its own battery.

Accelerometer

Input Impedance:

122.5 k Ω

Input Voltage Range:

0 to -24.25 V.

Analysis Application OK Limits:

-2.75 to -15.05 V

AC Accuracy (Non-Integrated):

Minimum: [100 – Filter attenuation (see p. 7)] % of input signal amplitude

Frequency Range	Non-Integrated	Intg in/s & mm/s pk 100 mV/g transducer
5 to 5,000 Hz	4.0 mV pk	0.05 in/s (1.16 mm/s)
10 to 10,000 Hz	5.6 mV pk	0.05 in/s (1.16 mm/s)
20 to 20,000 Hz	6.4 mV pk	0.02 in/s (0.58 mm/s)
30 to 30,000 Hz	6.4 mV pk	0.02 in/s (0.58 mm/s)
40 to 40,000 Hz	9.5 mV pk	0.02 in/s (0.58 mm/s)

Constant Current Acceleration Transducer

Input Impedance:

10 M Ω minimum

Input Voltage Range:

0 to -19.17 V

Analysis Application OK Limits:

-2.75 to -15.05 V

AC Accuracy (Non-Integrated):

Minimum: [100 – Filter attenuation (see p. 7)] % of input signal amplitude

Maximum: [101 % of input signal amplitude + noise offset (see below)] / Scale Factor

AC Accuracy (Integrated, for signals \geq 10Hz):

Minimum: [100 – 4 – Filter attenuation (see p. 7)] % of signal amplitude.

Maximum: 102 % of input signal amplitude + noise offset (see below).

AC Accuracy (1X & 2X Vectors)

Note: These specifications apply over the valid input frequency range of the Phase Reference (10-100,000 rpm).

Minimum: 98 % of input signal amplitude for inputs greater/equal to 0.2 Vpp.
95 % of input signal amplitude for inputs less than 0.2 Vpp.

Maximum: 102 % of input signal amplitude + 1.2 mV

Noise Offsets:

Minimum noise offsets in all cases are zero. All values are based on Snapshot operating from its own battery.

Frequency Range	Non-Integrated	Intg in/s & mm/s pk 100 mV/g transducer
5 to 5,000 Hz	3.8 mV pk	0.06 in/s (1.47 mm/s)

10 to 10,000 Hz	6.9 mV pk	0.04 in/s (1.12 mm/s)
20 to 20,000 Hz	3.1 mV pk	0.02 in/s (0.56 mm/s)
30 to 30,000 Hz	4.6 mV pk	0.02 in/s (0.56 mm/s)
40 to 40,000 Hz	6.1 mV pk	0.02 in/s (0.56 mm/s)

Temperature

Input Impedance:

122.5 k Ω

Input Voltage Range:

-10.1 to + 10.2 V

DC Accuracy:

\pm 10 mV for inputs between \pm 2 Vdc

Generic Vibration \pm 10 V, 0 to -24 V

Input Impedance:

122.5 k Ω

Input Voltage Range:

-10.1 to + 10.2 V (\pm 10 V)
0 to -24.25 V. (0 to -24 V)

Analysis Application OK Limits:

\pm 10V, 0 to -24V

DC Accuracy:

\pm 80 mVdc (\pm 10 Vdc)
 \pm 80 mVdc (0 to -24 Vdc)

AC Accuracy:

Minimum: [100 – Filter attenuation (see p. 7)] % of input signal amplitude

Maximum: [101 % of input signal amplitude + noise offset (see below)] / Scale Factor

AC Accuracy (1X & 2X Vectors)

Note: These specifications apply over the valid input frequency range of the Phase Reference (10-100,000 rpm).

Minimum: 98 % of input signal amplitude for inputs greater/ equal to 0.2 Vpp.
95 % of input signal amplitude for inputs less than 0.2 Vpp.

Maximum: 102 % of input signal amplitude + 1.2 mV.

Noise Offsets:

Minimum noise offsets in all cases are zero. All values are based on Snapshot operating from its own battery.

Frequency Range	± 10 V Input Range	0 to -24 V Input Range
5 to 5,000 Hz	3.5 mV pk	4.0 mV pk
10 to 10,000 Hz	4.2 mV pk	5.6 mV pk
20 to 20,000 Hz	3.8 mV pk	4.8 mV pk
30 to 30,000 Hz	4.6 mV pk	5.6 mV pk
40 to 40,000 Hz	6.4 mV pk	8.4 mV pk

Process Variable (± 10 V)

Input Impedance:

122.5 kΩ

Input Voltage Range:

-10.1 to + 10.2 V

DC Accuracy:

± 80 mV

Process Variable (0 to -24 V)

Input Impedance:

122.5 kΩ

Input Voltage Range:

0 to -24.25 V

DC Accuracy:

± 80 mV

Phase Reference Input

Input Impedance:

122.5 kΩ

Input Voltage Range:

-24 to + 10.0 V

Minimum Input Amplitude:

2.0 Vpp

Minimum Input Pulse Width:

1 % or 50 ms, whichever is greater.

Speed Response:

10 to 100,000 rpm

Speed Accuracy:

± 1 rpm or 0.1 % whichever is greater

Threshold Voltage Accuracy:

Hysteresis Setting Accuracy:

-865 mV, +861 mV

0.348 V Max (0.25 V)

0.693 V Max (0.5 V)

1.878 V Max (1.25 V)

3.684 V Max (2.5 V)

RMS Measurements

Snapshot uses two methods to perform RMS measurements. The choice of method depends on the low pass filter used, as does the performance of the measurement.

For configurations where the low pass filter is not greater than 7.5 kHz the RMS performance meets the ac accuracy specifications stated earlier.

For configurations where the low pass filter is greater than 7.5 kHz the RMS performance is as follows:

AC Accuracy:

Minimum: [100-15-filter attenuation] % of input signal amplitude.

Maximum: [115 % of input signal amplitude + Noise offset]/ Scale Factor

-2.665 to -3.356 dB for Frequencies above 50 Hz
0 to -8.9 dB for Frequencies below 50 Hz

RMS Measurements:

-1.050 to -5.520 dB for frequencies greater than 7.5 kHz
-2.665 to -3.356 dB for frequencies from 50 Hz to 7.5 kHz
0 to -8.9 dB for frequencies below 50 Hz

Passband Attenuation:

≤1.5 % of input signal amplitude max.
(Input frequency < 0.55 * Corner Frequency).

For configurations where the low pass filter is disabled, the passband frequencies (≤1.5 % attenuation) are 30 kHz for synchronous or integrated measurements and 40 kHz for other measurements.

Signal Conditioning

Filter Specifications

High Pass Filters

Type:

4 Pole, Butterworth

Attenuation at corner Frequency:

-2.665 to -3.356 dB for Frequencies above 50 Hz (& RMS with low pass 7.5 kHz or less)

0 to -8.9 dB for Frequencies below 50 Hz

RMS Measurements:

-1.050 to -5.520 dB for frequencies above 50 Hz

(With low pass greater than 7.5 kHz)

0 to -13.6 dB for frequencies below 50 Hz

Passband Attenuation:

≤1.5 % of input signal amplitude max.
(Input frequency > 2.10 * Corner Frequency)

Low Pass Filters

Type:

4 Pole, Butterworth

Attenuation at corner Frequency:

Passband Attenuation.

The passband attenuation is not additive for each filter. The attenuation is ≤1.5% at 2.1 x the high pass filter corner frequency and also at 0.55 x the low pass corner frequency. As the signal approaches midband the attenuation is reduced. The minimum low pass corner allowable is 4 x high pass corner which ensures that the passband attenuation is ≤1.5 % at the midband

The midband frequency = $\sqrt{F_{HP} \times F_{LP}}$

Vector Measurements.

1X Vector Phase Accuracy:

±3° for speeds up to 50,000 rpm

1X Vector Phase Accuracy:

±5° for speeds from 50,000 to 100,000 rpm

2X Vector Phase

Accuracy:

± 6° for speeds up to 50,000 rpm

2X Vector Phase

Accuracy:

± 10° for speeds from 50,000 to 100,000 rpm

Minimum 1X &

2X Rejection:

30 dB

Frequency Spectrum

Snapshot provides a simple frequency spectrum display to aid with machinery condition evaluation. Cursors allow the user to determine the amplitude and frequency of any particular vibration component.

Frequency Resolution:

Spectrum Frequency Span /
Number of lines

Frequency Accuracy:

± 0.01 %

Amplitude Accuracy:

± 2 % of input signal amplitude
(For input signal frequency =
Cursor frequency ± 5 % of
frequency resolution)

Signal to noise ratio (SNR):

30 dB minimum (Signals > 10 mV pk)

Octave Filtering

Snapshot provides an Octave plot display to aid with machinery condition evaluation. These plots include 1/1 Octave bands (1 band per octave) and 1/3 Octave bands (3 bands per octave) calculated using the Base 2 system. Cursors allow the user to determine the amplitude and frequency of any octave band in the plot.

The octave filtering bands are designed to meet the British Standard: "Electroacoustics - Octave-band and fractional-octave-band filters" (EN 61260:1995 +

A1:2001 E). Snapshot meets the Filter Class 0 specifications for amplitude and frequency accuracy for amplitudes above the noise floor.

Signal to noise ratio (SNR):

30 dB minimum (Signals > 10 mV pk)

Accuracy Calculation Example

Configuration:

Velomitor, Integrated mm pp, Low Pass = 5,000 Hz, High Pass = 5 Hz

Signal frequency:

10.5 Hz (630 rpm)

Error Below Nominal

[100 – 4 – Filter Attenuation] % of input signal amplitude (filter attenuation = 1.5 %)

94.5 % of input signal amplitude.

Error Above Nominal

102 % of input signal amplitude + Noise offset

102 % of input signal amplitude + 14.9 mm pp

Therefore the accuracy for this configuration is: Signal Amplitude – 5.5 % / + (2 % + 14.9 mm pp)

Ordering Information

Snapshot for Windows® CE

PDC550-AXX-BXX-CXX

A: Accessory Package:

- 00** Snapshot for Windows®CE with Cable Kit (See notes 1 and 2 for list of components)
- 01** Snapshot for Windows®CE with Accelerometer Kit (See notes 1, 2 and 4 for list of components)
- 02** Snapshot for Windows®CE with Velomitor® Kit (See notes 1, 2 and 3 for list of components)

Specifications and Ordering Information
Part Number 143338-01
Rev. N (03/07)

- 04 Snapshot TIM Tester* with Cable Kit (See notes 1, 2 and 5 for list of components)
- 05 Snapshot TIM Tester* with Accelerometer Kit (See notes 1, 2, 4 and 5 for list of components)
- 06 Snapshot TIM Tester* with Velomitor Kit (See notes 1, 2, 3 and 5 for list of components)
- 20 Snapshot for Windows®CE with Velomitor and Accelerometer Kits (See notes 1 through 4 for list of components)
- 30 Snapshot TIM Tester* with Velomitor and Accelerometer Kits (See notes 1 through 5 for list of components)
- 99 Snapshot for Windows®CE only (See note 1 for list of components)

B: Approvals

- 00 No approvals
- 01 CSA/NRTL/C, IEC79-15

C: Language

- 01 English

* For details about Snapshot TIM Tester refer to data sheet p/n 162514-01.

Snapshot Balance Software

PDC200-AXX-BXX-CXX

A: License

- 01 Single user license

B: Language

- 01 English

C: Installation

- 01 User installation
- 02 Factory installed. (Option is valid only when ordering a Snapshot)

For details about Snapshot Balance software refer to data sheet p/n 147933-01.

Notes:

1. PDC550-99 components list:
 - Snapshot for Windows®CE Assembly
 - Battery & Power Adapters
 - Manual & (3) Stylus
 - RS232 Lap-link & Ethernet Cable
2. Snapshot Cable Kit

- Transport Case
- (3) BNC Cable
- (3) Proximitor® Cable
- (2) 330500 Velomitor Cable
- (2) 330400 Accelerometer Cable
- (3) Banana Adapter
- (3) Test Clip Adapter
- (1) Stereo Plug Adapter
- Optical tachometer

3. Snapshot Velomitor Kit: *

- (2) 330500 Velomitor
- (2) 330500 Velomitor Cable
- (2) Magnetic Base
- (1 each) Long & Short Stinger
- (2) Quick Connection Adapter
- (2) Stud Adapter 1/4-28

4. Snapshot Accelerometer Kit: *

- (2) 330400 Accelerometer
- (2) 330400 Accelerometer Cable
- (2) Magnetic Base
- (1 each) Long & Short Stinger
- (2) Quick Connection Adapter

5. Snapshot TIM Tester Kit:

- TIM Utilities Manual
- (1) TIM Tester Cable
- (1) TIM Tester Loopback Tester
- (3) TIM Tester Splice
- (3 each) Pro TIM-C,-R Connector
- (3) Flexi-TIM, Legacy TIM Connector

* Parts are added if they are not already part of an ordered Kit.

Accessories

140867-01

Snapshot for WindowsCE Quick Start Guide

01800000

Spare battery

02200210

Spare mains adapter (for bench-top use without battery)

02200253

External battery charger

140870-01

Transport Case

147892-01

Snapshot protective bag

Specifications and Ordering Information
Part Number 143338-01
Rev. N (03/07)

143307-01		Handheld Infrared Thermometer	
	Snapshot replacement hand strap	BNC to stereo adapter	
143308-01		143310-01	
	Snapshot shoulder strap	3300, 8mm Proximator Kit	
143309-01		3300XL 5 meter Proximator	
	Snapshot belt kit	3300XL probe	
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Interface Kits			
141663-01		143311-01	
Accelerometer Starter Kit		3300 REBAM 1V/mil Kit	
	(2) 330400 Accelerometers	3300 REBAM Proximator	
	(2) Magnetic Bases	3300 REBAM probe	
	Long Stinger	3300 extension cable	
	Short Stinger		
	(2) 330400 Accelerometer Interface Cable		
141664-01		147922-01	
Velomitor® Starter Kit		Snapshot to printer interface kit, for use with Snapshot Balance only.	
	(2) 330500 Velomitor	Serial to parallel converter	
	(2) Magnetic Bases	Snapshot printer interface cable	
	Long Stinger		
	Short Stinger		
	(2) 330500 Velomitor Interface Cable		
141665-01		166812-01	
Strobe Kit, 110Vac		2m Laser Speed Sensor Kit	
	110Vac handheld strobe	Laser optical speed sensor	
	BNC to stereo adapter	Mounting bracket for laser sensor	
		2m Snapshot to laser sensor cable	
141687-01		166813-01	
Strobe Kit, 220Vac		5m Laser Speed Sensor Kit	
	220Vac handheld strobe	Laser optical speed sensor	
	BNC to stereo adapter	Mounting bracket for laser sensor	
		5m Snapshot to laser sensor cable	
141666-01		<hr/>	
IR Thermometer Kit		Data Collection Accessories	
		02270181	
			Optical Tachometer

145474-01

Mounting bracket for optical tachometer.

BNC-to-Test Clip Adapter

Cables

02200375

Quick Connect Stud w/ 1/4-28 UNF thread to machine

02200283

RS232 10ft Laplink Cable.

145473-01

1/4-28 UNF set screw to attach Quick Connect Stud to machine

02200230

CAT-5 6ft Ethernet Cable.

02200508

Quick Connect Stud w/ M8x1 thread to machine

02180060

2-Pin Mil-C Cable, for Velomitor®, Coiled.

145472-01

M8x1 set screw to attach Quick Connect Stud to machine

02180061

3-Pin Mil-C Cable, for 330400 accelerometer, Coiled.

02200371

Magnetic Base

145518-01

2-Pin Mil-C Cable, for Velomitor®, Straight.

02200374

Quick Connect Base (for transducer)

145519-01

3-Pin Mil-C Cable, for 330400 accelerometer, Straight.

141259-01

Short Stinger (for transducer)

145520-01

BNC Straight cable.

141260-01

Long Stinger (for transducer)

147856-01

Proximitor Straight Cable.

141686-01

BNC-to-Stereo Adapter

162491

2m Snapshot to Laser Sensor cable, Straight.

01609137

BNC-to-Banana Adapter

166814

5m Snapshot to Laser Sensor cable, Straight.

01600123

Graphs and Figures

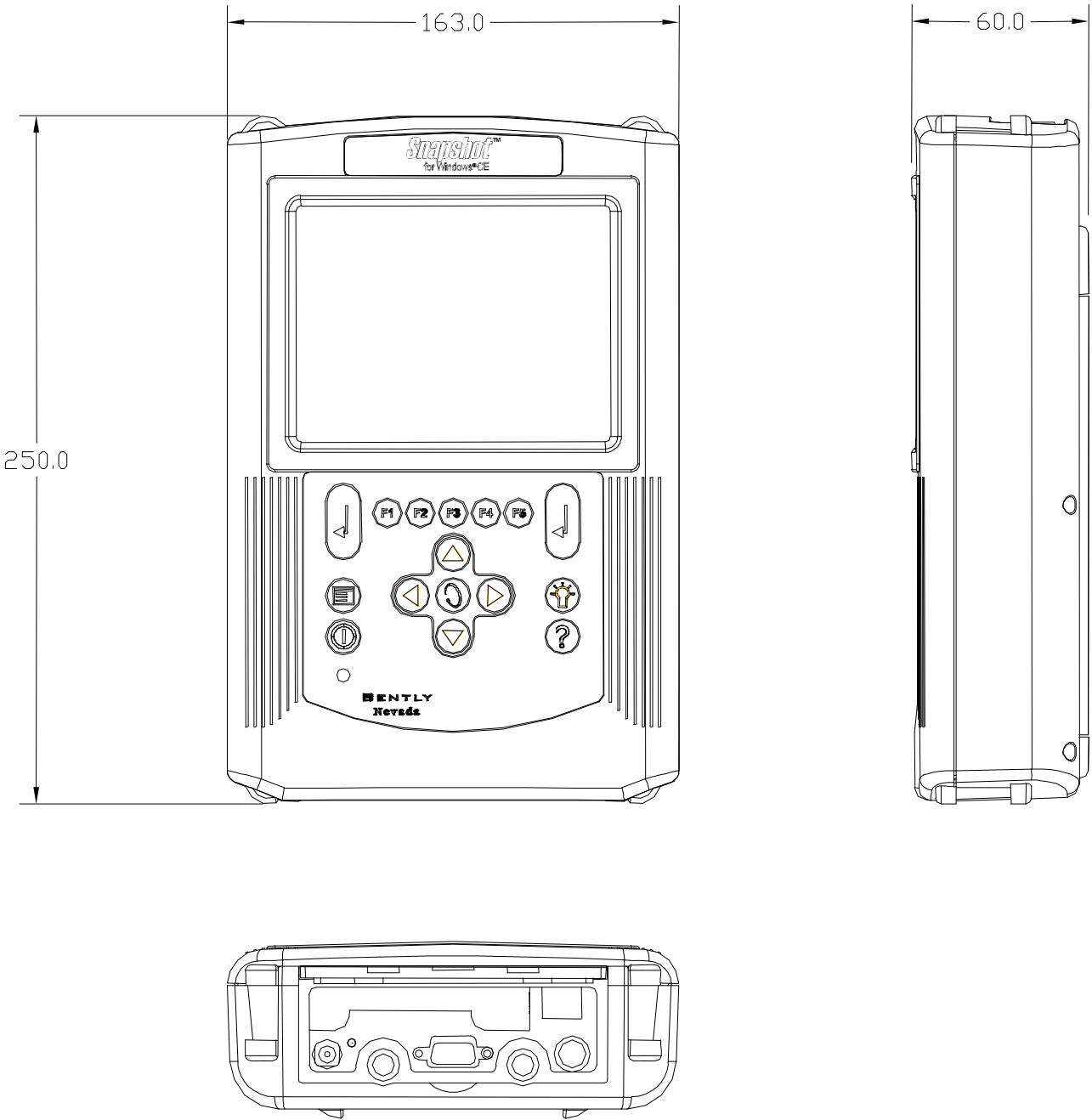
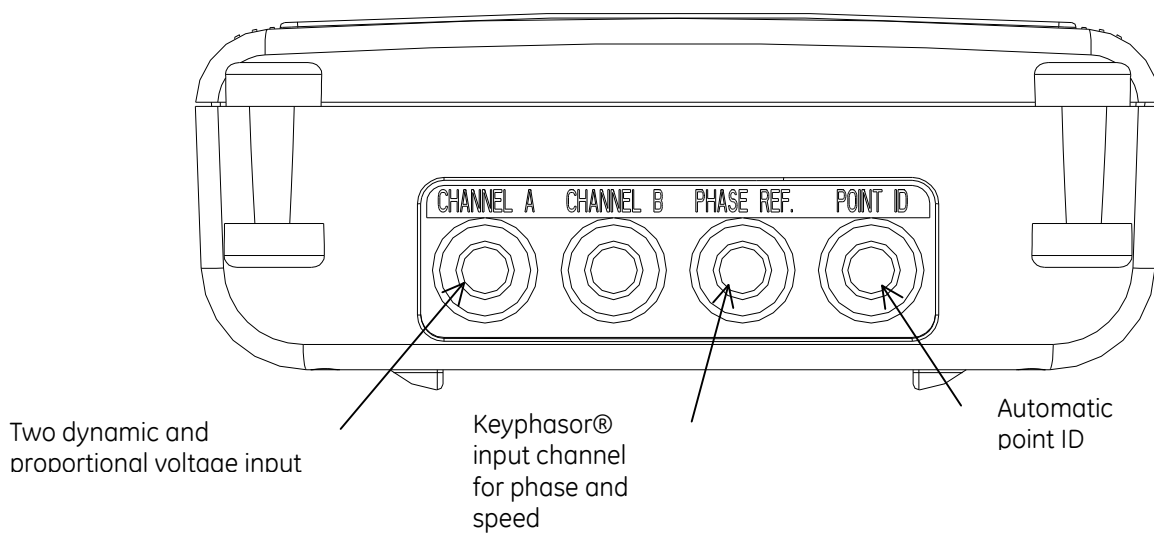
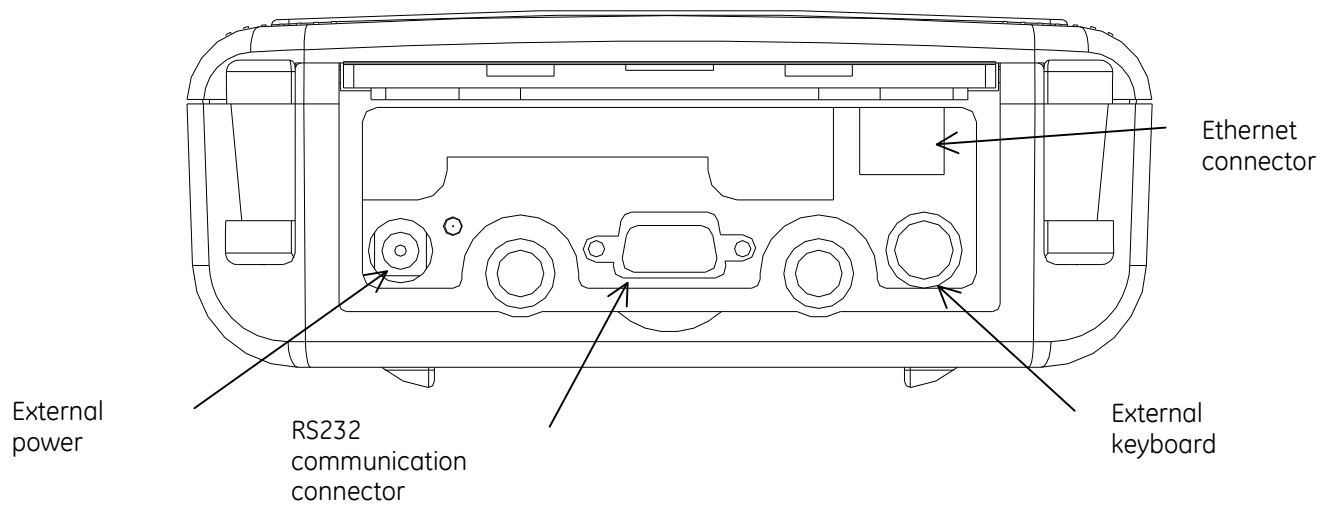


Figure 1 Snapshot for Windows®CE physical dimensions



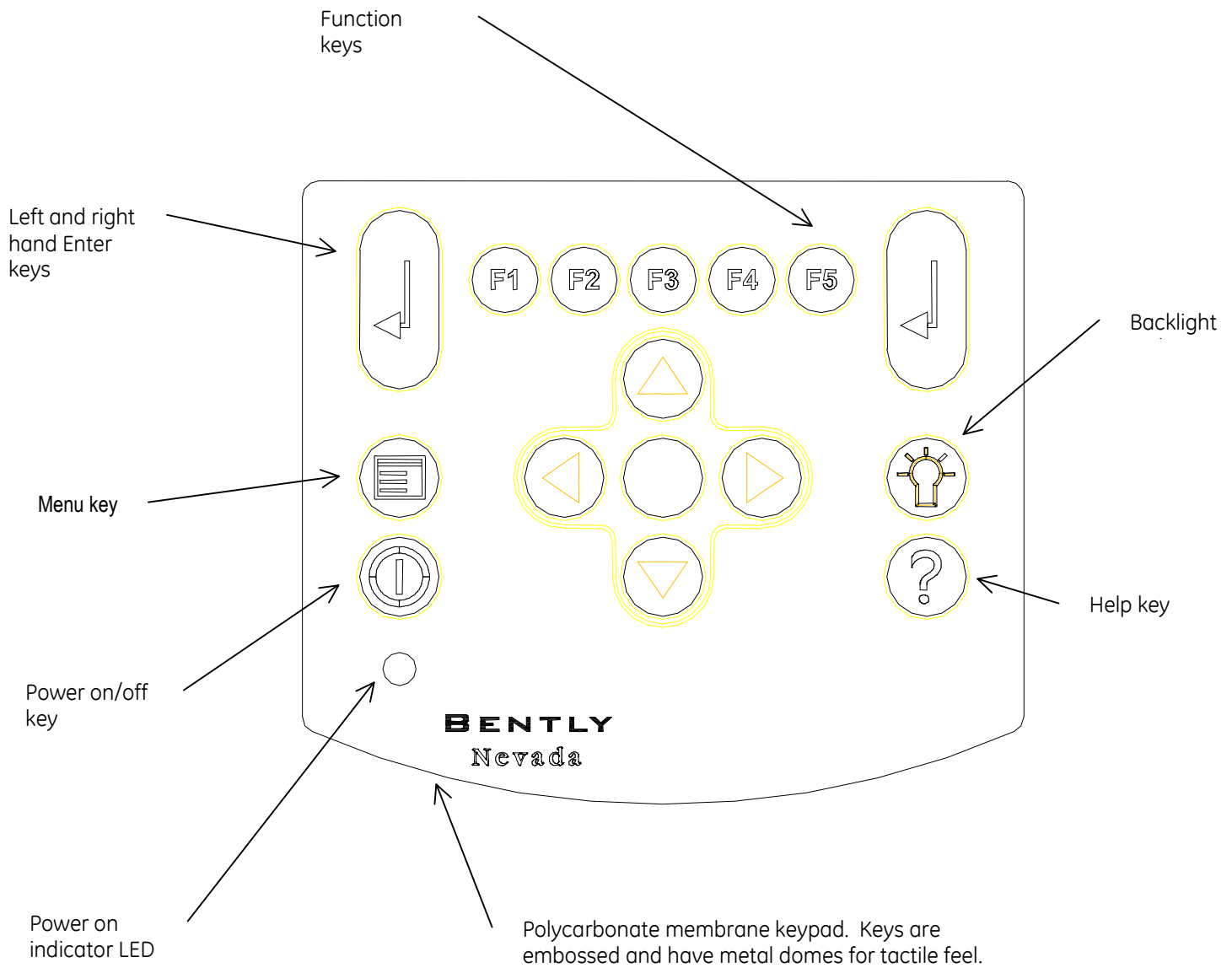


Figure 3 Snapshot for Windows®CE membrane keypad details

Snapshot Connector

Cable Connector

Snapshot Connector

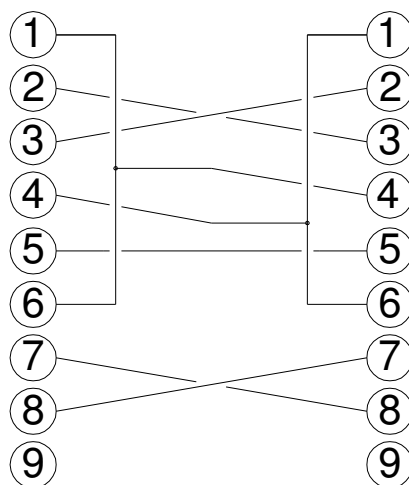
Cable Connector



Pin #	Channel A	Channel B	Phase Ref	Point ID*
1	-Vt	-Vt	-Vt	COM
2	COM	COM	+5V	COM
3	COM	COM	COM	COM
4	ICP(X)	ICP(X)	NC	TIM COM
5	ICP(Y)	NC	NC	TIM SIG+
6	ICP(Z)	NC	NC	TIM SIG-
7	COM	COM	COM	+5V PWR
8	SIG	SIG	SIG	RxD IN
9	NC	NC	ENCODER 1	TxD OUT
10	NC	NC	ENCODER 2	SEL uM
11	N/A	N/A	N/A	SEL TT
12	N/A	N/A	N/A	TIM PWR

*Point ID connection is only used with the Snapshot TIM Tester

Serial Communications Cable Pin Assignments.



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