

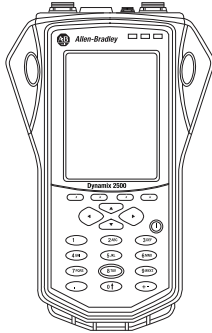
## **Portable Data Collectors Specifications**

Catalog Numbers 1441-DYN25, 1441-DYN25-Z, EK-00383

A portable data collector is designed for condition-monitoring data collection, analysis, and root cause correction in applications with rotating equipment, such as motors, pumps, fans, and gear boxes.

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## Dynamix 2500 Portable Data Collector



The Dynamix 2500 data collector is a real-time, multi-channel fast Fourier transformer (FFT) analyzer and data collector for predictive maintenance and machinery vibration diagnostics. It is capable of measuring, processing, displaying, and storing a wide range of analysis functions. It can operate as a standalone instrument or you can download your measurements to your software application for program analysis.

**Table 1 - Technical Specifications - Dynamix 2500 Portable Data Collector**

Attribute	1441-DYN25, 1441-DYN25-Z
Input channels	Four
Input sources	<ul style="list-style-type: none"> <li>• Acceleration, velocity, and displacement from hand-held or installed sensors or monitoring systems</li> <li>• AC/DC sensors</li> <li>• Pressure sensors</li> <li>• Temperature sensors</li> <li>• Keyboard entry measurements read from indicators or installed instruments entered in engineering units</li> <li>• Universal tachometer input accepts pulse inputs in the range <math>\pm 25V</math></li> <li>• Visual inspections added to measurement as coded notes or typed-in text notes</li> </ul>
Tachometer input parameters	<ul style="list-style-type: none"> <li>• TTL/analog programmable to <math>\pm 25V</math></li> <li>• RPM range 1...99,999</li> <li>• Dynamic range &gt; 90 dB (24-bit ADC sigma-delta)</li> </ul>
Input over-voltage protection	<ul style="list-style-type: none"> <li>• <math>\pm 50V</math> AC, peak</li> <li>• DC <math>\pm 50 V</math> DC</li> </ul>
Amplitude accuracy	• $\pm 5\%$
Resolution	Programmable 100, 200, 400, 800, 1600, 3200, 6400, or 25600 lines
Measurement windows	<ul style="list-style-type: none"> <li>• Hanning</li> <li>• Hamming</li> <li>• Flat top</li> <li>• Rectangular</li> </ul>
Multi-point automation	Up to 12 measurements can be linked for one-button automated data collection for each measurement location
Preprocessing	gSE and ESP enveloping (demodulator) with four selectable input filters for enhanced bearing and gear mesh fault detection
Input filters, gSE	<ul style="list-style-type: none"> <li>• 100 Hz</li> <li>• 200 Hz</li> <li>• 500 Hz</li> <li>• 1 KHz</li> <li>• 2 KHz</li> <li>• 5 KHz</li> </ul>
Input filters, ESP	<ul style="list-style-type: none"> <li>• 0.6...1.25 KHz</li> <li>• 1.25...2.5 KHz</li> <li>• 2.5...5 KHz</li> <li>• 5...10 KHz</li> <li>• 10...20 KHz</li> </ul>

**Table 1 - Technical Specifications - Dynamix 2500 Portable Data Collector**

<b>Attribute</b>	<b>1441-DYN25, 1441-DYN25-Z</b>
Nonroute frequency range	2 Hz...80 KHz
Offroute frequency range	0 Hz...80KHz (ICP coupled measurements limited to 0.16 Hz...80 KHz)  High pass: OFF (-0 Hz), 0.18 Hz, 0.36 Hz, 2 Hz, 2.67 Hz, 5.3 Hz, 10 Hz, 23.8 Hz, and 70 Hz Low pass: 1 Hz...80 KHz
Low-frequency cutoff	0.18...70 Hz
Averaging	Programmable from 1...4096 Spectral, synchronous time, peak hold, and continuous
Cursor	<ul style="list-style-type: none"> <li>• Fixed and cursor lock</li> <li>• Single, harmonic, and peak pick</li> </ul>
Trigger modes	<ul style="list-style-type: none"> <li>• Trigger: External or Laser Tach</li> <li>• Trigger Level: Fixed or Automatic</li> <li>• Ext Trig Slope: Amplitude and Slope</li> </ul>
Data Displays	Four-channel spectrum, four-channel time, phase table, orbit, process, cross channel phase, dual spectrum, time plots, and tri-axial plots <ul style="list-style-type: none"> <li>• Up to 12 bands (fixed or order base) downloadable from host software</li> <li>• Band alarms can be shown or hidden by user selection</li> <li>• Grid can be shown or hidden by user selection</li> </ul>
System operating system	Microsoft Windows CE
Processors	Microprocessor Marvell Xscale PXA320 at 806MHz DSP processor Motorola DSP56311
Communication	USB with MicroSoft ActiveSync
Internal memory	Internal RAM 128 MB Application and user data 64 MB
Memory card	Secure digital (SDHC) card up to 16GB
Battery	Rechargeable lithium ion, cat. no. 1441-PEN25-BAT
Weight, approx.	715 g (1.52 lb)
Dimensions, approx.	186 x 93 mm (7.32 x 3.66 in) narrowest point 186 x 134 mm (7.32 x 5.28 in) widest point
Casing	<ul style="list-style-type: none"> <li>• 80% High Impact ABS and 20% polycarbonate plastic</li> <li>• Hand strap fixing either side of unit</li> </ul>
Display	<ul style="list-style-type: none"> <li>• LCD, backlit color</li> <li>• 1/4 VGA (240 x 320)</li> <li>• 58 x 72 mm (2.28 x x 2.83 in) viewable</li> </ul>
Input connectors	<ul style="list-style-type: none"> <li>• Connector A and Connector B are 7-pin LEMO connectors</li> <li>• Trigger input is a 7-pin Fischer connector</li> <li>• Laser tachometer</li> <li>• DC power in is on POWER/USB/TRIGGER input connector. This connector cannot be used in hazardous locations.</li> </ul>
North American temperature code	T4A
IEC temperature code	T4

**Table 2 - Environmental Specifications - Dynamix 2500 Portable Data Collector**

Attribute	1441-DYN25, 1441-DYN25-Z
Temperature, operating	-10...50 °C (14...122 °F)
Temperature, storage	-20...60 °C (-4...140 °F)
Relative humidity	0...95% noncondensing
Vibration	2 g @ 10...500 Hz
Drop	2 m (to Mil-Std 810)
Sealing	IP65 (dust and water proof)
Emissions	Group 1, Class A

**Table 3 - Certifications - Dynamix 2500 Portable Data Collector**

Certification <sup>(1)</sup>	1441-DYN25	1441-DYN25-Z
cCSAus	CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations. See CSA file LR236028.	
CE	European Union 2004/108/IEC EMC Directive, compliant with: <ul style="list-style-type: none"> <li>• EN 61000-6-2; Industrial Immunity</li> <li>• EN 61000-6-4; Industrial Emissions</li> </ul>	
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions	
Ex	N/A	European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> <li>• EN 60079-11, Explosive Atmospheres, Protection "i"</li> <li>• EN 60079-0, General Requirements II 3 G Ex ic IIC T4 Gc</li> </ul>
IEC Ex	N/A	<ul style="list-style-type: none"> <li>• IEC 60079-11, Explosive Atmospheres, Protection "i"</li> <li>• IEC 60079-0, General Requirements II 3 G Ex ic IIC T4 Gc</li> </ul>

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

## Dynamix 2500 Accessories

The portable data collector is available individually (catalog number 1441-DYN25 or 1441-DYN25-Z) or as a kit (catalog number 1441-DYN25-2C or 1441-DYN25-Z-2C). The kit includes the data collector and the following accessories.

**Table 4 - Accessories Included in a Dynamix 2500 Kit**

Accessory	Catalog Number
Operating system and information CD	1441-DYN25-CD
Global power supply	1441-DYN25-PS
Battery	1441-PEN25-BAT
Transit case	1441-PEN25-CASE-T
Communication cable USB power splitter	1441-PEN25-COMS-US
Hand strap	1441-PEN25-HS
Rubber bump sleeve	1441-PEN25-RBS

Individual accessories include these items.

**Table 5 - Individual Dynamix 2500 Accessories**

Accessory	Catalog Number
Dust cap set for inputs	1441-DYN25-CAP
2-channel adapter cable	1441-DYN25-CBL2CH
Headset adapter cable	1441-DYN25-CBLHS
Operating system and information CD	1441-DYN25-CD
4-channel extension module	1441-DYN25-M4CH
2-plane balancing extension module	1441-DYN25-MBAL
Bump test extension module	1441-DYN25-MBMP
Frequency response extension module	1441-DYN25-MFRF
Time recorder extension module	1441-DYN25-MREC
Run up/coast down extension module	1441-DYN25-MRUC
Global power supply	1441-DYN25-PS
Spare battery	1441-PEN25-BAT
Transit case	1441-PEN25-CASE-T
Communication cable USB power splitter	1441-PEN25-COMS-US
Hand strap	1441-PEN25-HS
Neck strap	1441-PEN25-NS
Rubber bump sleeve	1441-PEN25-RBS
50 mV per G Zone II accelerometer kit	1441-PEN25-Z2-50
100 mV per G Zone II accelerometer kit	1441-PEN25-Z2-100

## 1441-PEN25-BAT Battery

**Table 6 - 1441-PEN25-BAT Specifications**

Attribute	1441-PEN25-BAT
Type	Rechargeable lithium ion, cat. no. 1441-PEN25-BAT
Capacity	2600 mAh
Power	18.7 Wh
Gauge	Battery capacity indicator, 8 hours
Rechargeable	In unit or via an off-the-shelf external DC power supply

## Accelerometers and Sensors

For standard accelerometers to use with the 1441-DYN25 data collector, see the 9000 Accelerometers Specifications Technical Data, publication [9000-TD001A](#).

When you select an accelerometer or sensor to use with the 1441-DYN25-Z data collector, make sure the device meets the hazardous certification requirements. For example, use one of these devices.

- Monitran accelerometer MTN/1100I, certificate BAS02ATEX1057X
- Wilcoxon accelerometer 793-35, certificate SIRA 03ATEX2109X
- Wilcoxon accelerometer 797-35, certificate SIRA 03ATEX2109X
- Compact instruments sensor MinVLSxxx/N, certificate BAS02ATEX3259X

## Enpac Ex Portable Data Collector



Enpac Ex portable data collector is specifically designed for hazardous areas requiring intrinsic safety. It is a single channel, ATEX II 1G, EEx ia IIC T4 certified data collector and analyzer that can be used in areas with high concentrations of acetylene, hydrogen, ethylene, or propane, often without obtaining a hot work permit.

**Table 7 - Technical Specifications - Enpac Ex Portable Data Collector**

Attribute	EK-00383
Input channels	One
Input sources	<ul style="list-style-type: none"> <li>• Accelerometers</li> <li>• Velocity transducers</li> <li>• Displacement probes</li> <li>• Photo-optical pickups</li> <li>• DC inputs</li> <li>• Keyboard entry</li> </ul>
Signal inputs	<ul style="list-style-type: none"> <li>• ICP (20V @ 3.5 mA)</li> <li>• AC signal</li> <li>• DC signal</li> <li>• Tachometer</li> </ul>
Measurement parameters	<ul style="list-style-type: none"> <li>• Acceleration</li> <li>• Velocity</li> <li>• Displacement</li> <li>• gSE</li> <li>• ESP</li> <li>• Temperature</li> <li>• Phase</li> <li>• Voltage</li> <li>• User specified</li> </ul>
Measurement types	<ul style="list-style-type: none"> <li>• Overall</li> <li>• Spectrum</li> <li>• Time waveform</li> <li>• Phase</li> <li>• Order normalized</li> <li>• Spectral band alarm</li> </ul>
Machine Identification	<ul style="list-style-type: none"> <li>• Plant</li> <li>• Train</li> <li>• Machine and point ID</li> <li>• Point description</li> <li>• Units</li> <li>• Alarm levels</li> <li>• Previous measurements,</li> <li>• Alarm types</li> </ul>
Input signal range	<ul style="list-style-type: none"> <li>• Non ICP <math>\pm 12</math> V or 0...24 V</li> <li>• ICP 0...20 V</li> </ul>
Transducer check	Bias voltage integrity
Signal	<ul style="list-style-type: none"> <li>• RMS</li> <li>• Peak</li> <li>• Peak to peak</li> <li>• True peak</li> <li>• True peak to peak</li> </ul>
Auto range	Yes
Dynamic range	85 dB typical (20-bit sigma delta ADC)
Frequency range, max	DC to 40 kHz
Integrated	2.5 Hz (5% by 10 Hz)
High pass filters	2 Hz hardware filter

**Table 7 - Technical Specifications - Enpac Ex Portable Data Collector**

<b>Attribute</b>	<b>EK-00383</b>
Bearing condition	<ul style="list-style-type: none"> <li>• gSE 100, 200, 500, 1000, 2000, 5000 Hz</li> <li>• ESP 0.6...1.25, 1.25...2.5, 2.5...5, 5...10, 10...20 kHz</li> </ul>
Real time rate	40 kHz
FFT resolution	100...12,800 lines
Time block length	256...16,384 samples
Averaging	Spectral, synchronous time, peak hold, and continuous
Alarms	<ul style="list-style-type: none"> <li>• Overall</li> <li>• Spectrum</li> </ul>
Note codes	100 note codes (select up to 6)
System operating system	Microsoft Windows CE
Processors	MIPS R400 DSP Motorola 56307
Communication	RS-232 (9-way, D-type plug)
Internal memory	Operating system and applications 16 MB User data 8 MB Internal RAM 8 MB
Memory card	Secure Digital (SD) card up to 16GB
Battery	Rechargeable lithium ion, catalog number EK-48624
Weight, approx.	850 g (1.6 lb)
Dimensions, approx.	186 x 93 mm (7.32 x 3.66 in) narrowest point 186 x 134 mm (7.32 x 5.28 in) widest point
Case	<ul style="list-style-type: none"> <li>• Faradex AX110 (ABS with stainless steel fibers)</li> <li>• Hand strap fixing either side of unit</li> </ul>
Display	<ul style="list-style-type: none"> <li>• LCD, backlit monochrome, touchscreen</li> <li>• 1/4 VGA (240 x 320)</li> <li>• 58 x 72 mm (2.28 x 2.83 in) viewable</li> </ul>
Connectors	<ul style="list-style-type: none"> <li>• Signal input 4-pin Fischer 102 type</li> <li>• Power in/battery charge 2-pin Fischer 102 type</li> <li>• Trigger input 3-pin Fischer 102 type</li> </ul>

**Table 8 - Environmental Specifications - Enpac Ex Portable Data Collector**

<b>Attribute</b>	<b>EK-00383</b>
Temperature, operating	-20...50 °C (-4...122 °F)
Temperature, storage	-20...60 °C (-4...140 °F)
Relative humidity	0...80% noncondensing
Vibration	2 g @ 10...500 Hz
Drop	1 m (to Mil-Std 810)
Sealing	IP65 (dust and water proof)
Emissions	Group 1, Class A



**Table 9 - Certifications - Enpac Ex Portable Data Collector**

<b>Certifications<sup>(1)</sup></b>	<b>EK-00383</b>
CE	European Union 2004/108/IEC EMC Directive, compliant with: <ul style="list-style-type: none"> <li>• EN 61000-6-2; Industrial Immunity</li> <li>• EN 61000-6-4; Industrial Emissions</li> </ul>
Ex	European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> <li>• EN 60079-11, Explosive Atmospheres, Protection "i"</li> <li>• EN 60079-0, General Requirements</li> <li>• IEC 60079-26, Equipment with EPL Ga, II 1G, I M1, Ga Ex ia IIC T4 (Ta = -20...50 °C (-4...122 °F)), Ma Ex ia I (Ta = 0...50 °C (32...122 °F))</li> </ul>
IEC Ex	<ul style="list-style-type: none"> <li>• IEC 60079-11, Explosive Atmospheres, Protection "i"</li> <li>• IEC 60079-0, General Requirements</li> <li>• IEC 60079-26, Equipment with EPL Ga, II 1G, I M1, Ga Ex ia IIC T4 (Ta = -20...50 °C (-4...122 °F)), Ma Ex ia I (Ta = 0...50 °C (32...122 °F))</li> </ul>

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

## Enpac Ex Accessories

**Table 10 - Enpac Ex Accessories**

<b>Accessory</b>	<b>Cat. No.</b>
50 mV/g accelerometer kit	EK-48622
100 mV/g accelerometer kit	EK-48635
RS-232 cable	1441-PEN25-COMS-RS
Accelerometer cable for BNC	EK-48634
Accelerometer cable for Fischer	EK-48626
Trigger cable Fischer	EK-48636
Stylus	EK-46217
Soft case	1441-PEN25-SCH
Service case	1441-PEN25-CASE-S
Neck strap	1441-PEN25-NS
Hand strap	1441-PEN25-HS
Accelerometer	EK-48623 EK-48620
Power supply (PSU-7)	EK-48624
Magnetic mount	EK-48629
Soft case	EK-48630

## Battery

**Table 11 - Enpac Ex Battery Specifications**

<b>Attribute</b>	<b>Enpac Ex Battery</b>
Type	Rechargeable NiMH pack
Capacity	1800 mAh
Power	18.7 Wh
Gauge	Battery capacity indicator, 8 hours
Rechargeable	Internal via power adapter

**Notes:**

## Important User Information

Solid-state equipment has operational characteristics differing from those of electromechanical equipment. Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls (publication [SGI-1.1](#) available from your local Rockwell Automation sales office or online at <http://www.rockwellautomation.com/literature/>) describes some important differences between solid-state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid-state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

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