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TECHNICAL DATA

VIBXPERT 3 Balancer

The VibXpert 3 Balancer is the next-generation smart machine balancing tool that improves user experience, speeds up field balancing workflow, and bolsters asset health.

How Vibration Measurement Helps Extend Asset Life

All rotating machinery vibrates, but excess vibration due to unbalance increases wear and reduces the performance and longevity of machines and their components. With the VibXpert 3 Balancer, teams can promote safety and extend machine life by measuring vibration regularly. Regularly tracking asset status lets teams embrace condition-based maintenance. So, rather than conducting interval based maintenance, they can adjust activities to align with actual asset needs. This can reduce downtime as well as labor and parts costs.

Solving Unbalance — Fast

Unbalance is an uneven distribution of mass around an axis of rotation. Bearings, seals, nozzles, couplings, and more wear much faster when machines are unbalanced. Unbalance is one of the most common reasons for unplanned machine downtime and costly damage. Correctly balanced machines sustain peak performance for much longer, with increased efficiency.

Today, operators are increasingly using machines on a variable speed basis, and at or near the equipments' engineered capacity. This increases the risk of resonant vibration. Well-balanced machine components reduce that risk.

The VibXpert 3 Balancer maximizes balancing efficiency through advanced software capabilities that streamline workflow and speeds up balancing procedures. This helps to minimize the number of steps involved, saving time for maintenance and service teams.

Fixing Machinery Unbalance Problems

Field balancing lets teams fix machinery unbalance on-site. This saves valuable time and resources while ensuring the smooth functioning of rotating assets.

Although field balancing is essential, the process can be challenging for maintenance and service technicians. Common challenges include:

- **Equipment complexity:**

  Some rotating assets are intricate, with many components. This makes it tough for personnel to identify rotational unbalance causes and apply correct balancing techniques.

- **Skill and experience requirements:**

  Proper field balancing requires skilled technicians with expertise in vibration analysis and machinery balancing techniques. Lack of experience can lead to improper balancing, making the issue worse.

- **Real-time adjustments:**

  Performing field balancing requires real-time adjustments to correct the unbalance. This requires a strong understanding of the equipment for an appropriate response to changing conditions.

- **Limited documentation:**

  Often, rotating assets lack sufficient documentation on their design or previous balancing procedures. This lack of information makes it challenging to determine the optimal balancing parameters.

- **Time constraints:**

  Field balancing must be done efficiently to reduce downtime, which can make the procedure more stressful and complex.

- **Environmental conditions:**

  Field balancing often happens in tough conditions like extreme temperatures, high humidity, or dusty areas. These conditions can impact measurement accuracy and technician safety.

Why Choose the VibXpert 3 Balancer

- **Maximized Efficiency – Designed with End Users in Mind**

  The VibXpert 3 Balancer optimizes the user experience for maximum efficiency and ease of use. It comes preconfigured with best-practice, customizable machine templates, enhancing the user's balancing, vibration measurement, and analysis processes.

- **Improved Overall User Experience – Usable by Everyone**

  The device reduces the complexities typically associated with the balancing process, ensuring that even non- experts can effectively correct machine unbalance faults. The VibXpert 3 Balancer's touch-screen user interface is intuitive and interactive, promoting a seamless and user-friendly experience. Additionally, its large touchscreen display is designed so that even technicians who infrequently balance can perform a balancing procedure and make quick and comprehensive measurements while delivering exceptionally reliable data.

- **Streamline Analysis and Data Management**

  The VibXpert 3 Balancer's insights feature further enhances the user experience by providing comprehensive data. All data points, including analysis tasks like vibration overalls, FFT spectra, phase, and time waveform are included in the results and streamlined in the same file with balancing data. This simplifies data management and analysis, making it easier for data transfer across teams or devices.

- **Faster Field Balancing**

  The VibXper 3 Balancer helps technicians achieve faster measurements. It can capture vibration data across as many as six machine measurement points, simultaneously, via six analog channels for vibration sensors. Combined with its modern data processing capability, it allows users to streamline the data collection process.

- **Get Better Insights – Full Machine Coverage**

  During the balancing process, users gain complete insights into machine vibration levels. Time waveforms, vibration overalls, FFT spectra, and phase information are all recorded simultaneously during the balancing routine across all measurement points. Users can compare overall vibration levels to industry standards or machine specification, and determine if other machine faults are impacting the balancing process.

- **Get Better Balancing Results – Optimized Calculations**

  The VibXpert 3 Balancer uses advanced software to minimize overall vibration levels simultaneously across all machine measurement points. This helps enhance balancing results – ensuring optimization of machine health.

- **Balancing Reports – Enhanced Reporting**

  The VibXpert 3 Balancer seamlessly generates comprehensive reports upon the completion of field balancing jobs. These balancing reports emcompass all the necessary information for users, including overall vibration levels, spectral graphs, polar plots, and machinery details, among others. This capability enables users to document and report on the enhancements in their asset condition before and after balancing.

- **Built to Last**

  It stands out with its durable and robust functionality. Making it highly reliable even in the most challenging environments. Its design is shockproof and drop-proof, and it's equipped with a scratch-resistant screen, ensuring it can withstand harsh environmental impacts without compromising performance. The device's extended battery capability allows a full 8-hour workday in full operating mode, providing technicians with uninterrupted productivity.

- **Environmental Protection**

  The device's IP-65 hardware ensures it remains protected in wet or dusty environments, maintaining optimal functionality.

- **Other Design Enhancements**

  The dual-redundant buttons on either side of the hardware lets users carry out balancing jobs whether they are left-handed or right-handed. The integrated shoulder strap makes handing the device easy and secure. Additionally, the mounting bracket for machine rails and ergonomic design further contribute to a seamless and user-friendly experience. Overall, the device's durable and robust features make it a reliable and indispensable tool, assuring top-notch performance, under any circumstances.

- **Early Fault Detection**

  The VibXpert 3 Balancer helps technicians detect machine and bearing problems at an early stage. It provides a comprehensive overview of the machine's condition and vibration levels. It enables users to gather machine overall vibration values, FFT spectral data, and bearing envelope spectra – this provides full insight into machinery health.

Let Our Experts Help You

Analyzing asset condition data and diagnosing problems — along with identifying their severity and the appropriate actions to take — all require some experience and expertise. In a competitive environment where in-house specialists aren't always feasible, external experts and consultants can provide that necessary guidance. Fluke Reliability has ISO CAT I-IV specialists whose vibration expertise is available to global customers. We offer the following services to help customers along their reliability journey.

Ask about our unique services and what's available in your region, including:

- **On-site troubleshooting and corrective services:** Expert field services including balancing and alignment
- **Training:** Onsite or remote options, and certification training available
- **Repair and calibration:** Product-related services including extended warranties
- **Technical support:** Product and mentoring support
- **Condition monitoring service:** Remote analysis and diagnosis of your most critical machines

VIBXPERT 3 Technical Data

Parameter	Details
Measure channels	
Number	6 synchronous analog channels 2 trigger points
Channel 1 to 6	(0 ... 50 kHz) –20 .. +20 V, input impedance: 78 kOhm IEPE Linedrive
Connector	1 and 4: Triaxial sensor, single Axial sensor and Vibcode 2,3,5,6: Single Axial sensor
Dynamic range	108 dB (total)
Sampling rate	up to 131 kHz per channel (Trigger 1048 kHz)
Signal processing	6 x 24 bit ADCs (Trigger 2 x 14bit)
Measure range/accuracy	Vibration acceleration: dependent on used sensor Shock pulse: –10 dBsv to 80 dBsv +/– 2 dBsv
RPM	10 ... 120 000 1/min / ±.01$^{0/00}$ or ± 1 1/min (the lower accuracy is applicable)
Certified standard	DIN ISO 2954:2012 (2–1 kHz, 10 Hz –1 kHz, 10–10 KHz)
Display	
Type	Capacitive touchscreen Optically bonded for high contrast and increased shock resistance
Active area	(220 x 137) mm (7 7/8" x 5 25/64") (1280 x 800 pixels)
Size	256 mm (10 5/64")
Color depth	16.7 million colors
Viewing angle	< 150°
Operation	Multi-touch — gesture control Glove-compatible
Illumination	Backlit, adjustable
Amber light sensor	Yes
Power supply	
Battery type	Lithium-Ion rechargeable battery
Nominal voltage	7.2 V
Energy density 72 Wh	72 Wh
Charge time (typical)	6.5 hrs (0 to 100% @ 25 °C / 77 °F) 3.5 hrs (0 to 80% @ 25 °C / 77 °F)
Charge temperature	10 °C to 40 °C (50 °F to 104 °F)
Operation time (typical)	8 hours (brightness 50%, Sensor measuring in preview mode)
Charger	100–240 V~, 50–60 Hz (input) 12 V 3 A (output)
Energy saving mode	Yes

Parameter	Details
Computer	
Processor	ARM 4 x Cortex-A53 1.6 GHz
Operating elements	Multi- touchscreen, ON/OFF button, 2 ENTER buttons
Memory	microSD card, 256 GB for measured data, permanently installed 4 GB
USB	1 x USB 2.0, device interface
RFID	RFID reader module for PRÜFTECHNIK transponder ALI 50.628-25 Complies with ISO 14443a and ISO 15693 Read distance: 2 – 3 cm / 25/32" – 1 3/16"
WiFi	IEEE 802.11a/b/g/n/ac Throughput: < 200 Mbps Security: WPA2
RF Frequency Range	2.400 – 2.4835 GHz 5.180 – 5.210 GHz 5.785 – 5.815 GHz
Maximum transmit power	802.11b: 18 dBm + 1.5 dB 802.11a/g/n/ac: 16 dBm + 1.5 dB
Transmit power classic Bluetooth	Class 2, Class 1, BR: 10 dBm +2 dB, EDR: 8 dBm + 2 dB
Transmit power BLE	EMMY-W161: 7.8 dBm + 2 dB
Stroboscope	Frequency range: 0.1 – 1000 Hz Resolution: 0.06 1/min. LEDs: Risk group 1 per IEC 62471
LED	1x RGB LED (display for battery and charge statuses)
Environment / General	
Connections	Charge socket for charger USB type C port for data cable 2 x plug-in connector (8-pole) for signal cable 4 x plug-in connector (3-pole) for signal cable 2 x plug-in connector (4-pole) for trigger
Housing	2-component housing: Premold: PC (LEXAN), black ; Overmold: TPE (Thermolast), black
Dimensions	326 x 210 x 56mm (LxWxH) [12.83 x8.27 x 2.2"]
Weight	2,2kg [77.6 oz]
IP Rating	IP65, dust-proof and spray water-protected
Temperature range	Operation: –10 °C to +50 °C (14 °F to 122 °F) Storage: –20 °C to +60 °C (–4 °F to +140 °F)
Humidity	0 ... 90 %, non-condensing
Certification	CE, RoHS, FCC, FCC/IC , UK CA
Camera	13 MP Camera with autofocus

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