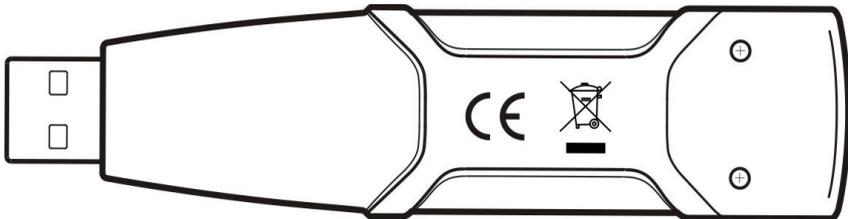


## 3-Axis G-Force Datalogger

### Model VB300



# ***Introduction***

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Congratulations on your purchase of the VB300 G-Force Datalogger. The Model VB300 can measure and record shock and vibration (acceleration) readings over its  $\pm 18g$  measurement range. This device will record 3-axis g-force and related peaks to provide a history of shock and vibration conditions. The real time clock provides time stamps for all data.

The user can easily configure the logging rate, high/low alarm and start-mode, and download the stored data by plugging the VB300 into a PC's USB port and running the PC software. Measurement data can be plotted, printed and exported for use with other applications such as word processors and spreadsheets. The data logger is supplied with a long-life 1000 hour lithium battery.

The VB300 memory uses a 4MB Flash device that can hold 168042 Normal recordings or 112028 Motion Detection recordings per axis.

This meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

# ***Features***

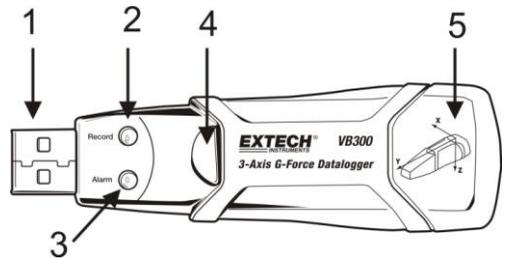
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- Records 3-axis g force shock and vibration
- Built-in accelerometer
- Measures static and dynamic acceleration
- Real time operation (time stamped data)
- Normal and Motion detection mode
- Real time FFT frequency analysis
- Manual and Automatic datalogger start modes
- Selectable data sampling rate
- Status Indication via Red and Green LEDs
- USB Interface for Set-up and Data Download
- User-Programmable motion thresholds
- Long battery life - 1000 hours

# Description

## Meter Description

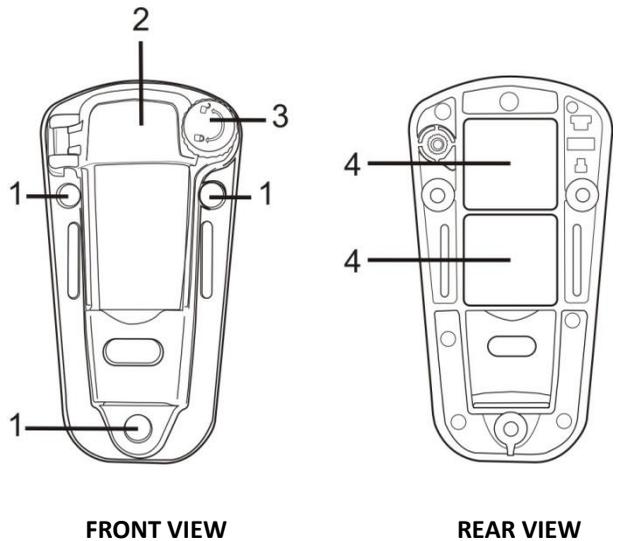
1. USB connector
2. RECORD LED
3. ALARM LED
4. Datalogger Start / Stop Button
5. Axis reference diagram



Note: Battery compartment access screws (2) located on rear of unit. Refer to the battery installation section for further details.

## Pedestal Mount Description

1. Mounting screw holes
2. Swivel latch
3. Swivel latch lock
4. Mounting magnets



## Mounting the VB300

The VB300 fits securely in the supplied mounting pedestal. Unscrew the pedestal latch and snap the VB300 into the pedestal. Secure the latch and follow one of the mounting methods below. There are three mounting methods for affixing the pedestal to the area under test:

1. Magnetically: Powerful magnets are built into the rear of the pedestal
2. Adhesive: Use glue (not supplied) to affix the pedestal to the area under test
3. Screws: Three mounting holes are provided on the pedestal for screw mounting (screws not supplied)

## LED Status Indication

LED		Description	Action
Record	Alarm		
		<b>LEDs not flashing</b> -No logging in process  -No battery found  -Battery completely discharged	- Install battery  - Replace the battery and download the data
		<b>Green single flash every 10 sec.</b> * -Logging, no alarm**	Press and hold the datalogger Start/Stop button on the VB300 until the red LED flashes four times to stop logging
		<b>Red single flash every 30 sec. *</b> -Low Battery	If the unit is datalogging it will stop automatically. The Data will NOT be lost. Replace battery
		<b>Red and Green alternating flashing every 60 seconds;</b> -Datalogger memory is full	-Download data

\* To save power, the VB300's LED flashing cycle can be changed via the supplied software.

\*\* To save power, alarm LEDs for temperature can be disabled via the supplied software.

NOTE: When the battery is low, all operations will be disabled automatically.

NOTE: Logging automatically stops when the battery weakens (logged data will be retained).

# ***Datalogging Software Program***

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## **INSTALLING THE DATALOGGER SOFTWARE**

Download the VB300 software from the [Extech.com/Software](http://Extech.com/Software) web page. Run ExtechInstaller.exe, to install the software and the USB driver.



Instructions for installing and using the Datalogger Software are contained in the Software HELP Utility available from the HELP menu in the software program. Please read the HELP Utility thoroughly in order to fully understand the software and the related functionality of the VB300.

## ***Basic Datalogger Operation***

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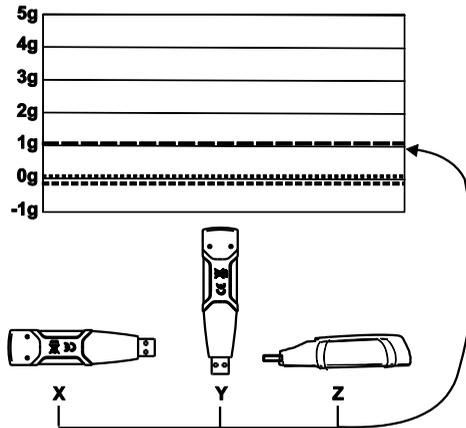
This section covers only the starting and stopping of the Datalogger's recording functions. All other information is provided in the HELP utility within the software program.

1. Configure the Datalogger's sample rate, motion detection threshold, record mode, LED flash cycle and more using the supplied software program. Refer to the instructions included in the software program's HELP utility to configure the datalogger and to otherwise use the software.
2. If AUTO start is selected in the software, the datalogger will begin logging data the moment the software window is closed. If MANUAL is selected, press and hold the datalogger start/stop button until the green LED flashes; the datalogger LED flashes periodically (flash interval time selectable in software) indicating that the datalogger is recording.
3. To stop datalogging, press and hold the start/stop button while the unit is datalogging. The red LED will quickly flash indicating that datalogging has stopped. Refer to the LED status table earlier in this manual for interpreting the LED flash information.
4. Refer to the software HELP utility for transferring the data from the logger to the PC.

**Note:** When the VB300 is connected to the USB port, its battery discharges at a higher rate than normal. To conserve battery life, do not leave the VB300 connected to the USB port for a prolonged period of time.

## 1g OFFSET

The axis (or combination of axis) parallel to the earth surface will indicate the 1g force related to gravitational force.



## Specifications

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<b>Acceleration</b>	Range: $\pm 18g$	Resolution: 0.00625g
<b>Accuracy</b>	$\pm 0.5g$	
<b>Frequency Range</b>	0 to 60Hz	
<b>Datalog Memory</b>	4MB Flash stores 168042 Normal recording records or 112028 Motion Detection records per axis.	
<b>Logging rate</b>	Selectable sampling interval: From 50ms up to 24 hours	
<b>Data format</b>	Time stamped peak acceleration and freefall; Average and Peak Vector sums	
<b>Computer PC interface</b>	USB	
<b>Hardware requirements</b>	8MB RAM; 2MB Hard Drive space for software program; USB jack	
<b>System requirements</b>	Windows software	
<b>Operating temperature</b>	32 to 104°F (0 to 40°C)	
<b>Storage temperature</b>	0 to 140°F (-10 to 60°C)	
<b>Battery type</b>	3.6V Lithium (1/2 AA) 1.0Ah (Saft LS-14250 or equiv)	
<b>Power consumption</b>	1mA (typical, while recording); < 15 $\mu$ A while idling	
<b>Battery life</b>	1000 hours approx.	
<b>Dimensions/Weight</b>	3.7 x 1.1 x 0.8" (95 x 28 x 21mm) / 6oz (172g)	

## Battery Replacement

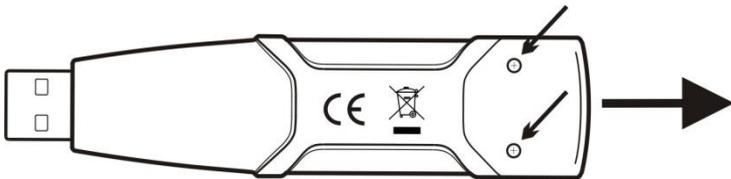
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The VB300 does not lose its stored readings when the battery expires or when the battery is replaced. The data logging process will however be stopped and cannot be re-started until the battery has been replaced and the logged data has been downloaded to PC.

The battery life is rated for approx. 1000 hours. If in doubt, replace the battery before logging critical data. Use only 3.6V lithium batteries. Before replacing the battery, remove the datalogger from the PC.

**Note:** When the VB300 is connected to the USB port, its battery discharges at a higher rate than normal. To conserve battery life, do not leave the VB300 connected to the USB port for a prolonged period of time.

1. Remove the two Phillips screws identified with the two smaller arrows in the diagram below.
2. Slide the battery compartment cover in the direction of the larger arrow.
3. Replace the battery with one of the same type (3.6V lithium, ½ AA 1.0Ah, Saft LS-14250 or equiv).
4. Close the battery compartment and tighten with the two screws.



**WARNING:** Handle lithium batteries carefully, observe warnings on battery casing. Dispose of in accordance with local regulations.

## ***Two-year Warranty***

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**Teledyne FLIR LLC warrants this Extech brand instrument to be free of defects in parts and workmanship for two years from date of shipment (a six-month limited warranty applies to sensors and cables). To view the full warranty text please visit: <http://www.extech.com/support/warranties>.**

## ***Calibration and Repair Services***

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**Teledyne FLIR LLC offers calibration and repair services** for the Extech brand products we sell. We offer NIST traceable calibration for most of our products. Contact us for information on calibration and repair availability, refer to the contact information below. Annual calibrations should be performed to verify meter performance and accuracy. Product specifications are subject to change without notice. Please visit our website for the most up-to-date product information: [www.extech.com](http://www.extech.com).

## ***Contact Customer Support***

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**Customer Support Telephone List:** <https://support.flir.com/contact>

**Calibration, Repair, and Returns:** [repair@extech.com](mailto:repair@extech.com)

**Technical Support:** <https://support.flir.com>

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