

**DX3.5-20FQ**

**Installation & User Manual**

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Modell Number DX3.5-20FQ  
Monitoring Connector Version v3.3.670  
Manual Version 103\_US  
FCC ID 2A04RDX3520FQ

Made in Germany

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## 2. DX3.5-20FQ General Information and Specifications

The DX3.5-20FQ is a movement monitoring device about the size of a Flash drive. It is capable of recording a vast range of data. The recorded data can be easily exported into a useable format for independent analysis. Control of and interaction with the DX3.5-20FQ (data recording, data transfer, battery charging) is enabled through usage of the Monitoring Connector software.

### **Dimensions** [LxWxH mm]

- Size: 60x20x10mm
- Weight: < 15g

### **Battery**

- Lithium-Polymer

### **Battery Capacity** [mAh]

- 240

### **Charging** [via USB standard (< 500mA)]

- full charge < 4hrs
- 80% charge from empty < 2hrs

### **Measurement Time**

- > 15 hrs @125Hz Sample Rate
- > 10 hrs @250Hz Sample Rate

### **Memory Storage**

- 512Mbyte
- > 200 hrs @125Hz Sample Rate (lossless compressed)
- > 100 hrs @250Hz Sample Rate (lossless compressed)
- Measurement stops on charging, continues after charging.

### **Storage Format**

- Proprietary lossless compression format (DCM)
- Allows bit accurate unpack. Export to standard CSV formats possible for scientific applications.
- Data Rates:
  - 2.5Mbyte / hrs. @125Hz (lossless compressed)
  - 5.0Mbyte / hrs. @250Hz (lossless compressed)

### **External Connections**

- USB (for data transfer and charging)

### **Sensors**

- 3D acceleration (+/- 16g with 16bit resolution)
- 3D gyroscope (+/- 2000deg/sec with 16bit resolution)
- 3D magnetic (+/- 1.5 milli Tesla with 16bit resolution)
- Barometric Pressure with +/- 1m height resolution, if weather corrected (optional, not in waterproof housing)
- System temperature in deg C

### **Housing**

- 3D printing ABS housing for textile integration:
  - Standard waterproof up to 2m
  - Non waterproof version including barometric pressure for ADL

### **Humotion Monitoring Connector**

- Version: 3.3.670
- Required Disk space: 5 MB
- System requirements:
  - Operating system: Windows 7 32bit / 64bit or higher
  - Plugins: Microsoft .NET Framework v4.0 or higher

### **USB Cable**

- Length: 30cm

### 3. Safety Instructions

Non-compliance with this safety information may lead to fire, electric shocks or other injuries, or may lead to damage of system components.

Do not drop the DX3.5-20FQ and do not dismantle, open, break, bend, deform, drill through, crush, burn or paint it. Do not heat in a microwave and do not insert foreign objects into the device.

When connecting the DX3.5-20FQ to your computer, we recommend using the supplied USB cable to protect your computer from humidity and dirt. If you need to attach the sensor directly make sure there is no moisture or dirt on the sensor! Do not try to dry the measuring equipment with an external heat source such as a microwave or a hot air blower.

Never try to repair the measuring device yourself.

### 4. Information on Disposal and Recycling

You must dispose of the DX3.5-20FQ properly according to the legally valid environmental directives and legislation. Since the DX3.5-20FQ contains electronic components and a battery, the device may not be disposed of as normal domestic waste. If you want to dispose of your measuring device, you can consult your local authority regarding disposal and recycling options.

## 5. Installation of Humotion Monitoring Connector

The Humotion Monitoring Connector software is either supplied on an USB stick, or you will be given access details for the Humotion download server. To install the Humotion Monitoring Connector software on your computer:

1. Plug the supplied USB stick into your computer's USB port or download the installation file.
2. Run the file "SetupMonitoringConnector\_3.3.670.msi".
3. The Humotion Monitoring Connector Setup Wizard will open. Follow the on-screen instructions.

A window with a security warning will open during installation, since the software is not digitally signed. Please click "run" to continue the installation.

**NOTE:** The software depends on Microsoft .NET Framework version 4.0 or higher. Please make sure that an up-to-date Microsoft .NET Framework has been installed on your computer before starting with the installation of Humotion Monitoring Connector. Further information can be found here: <https://www.microsoft.com/en-us/download/details.aspx?id=55170>

## 6. Usage of Humotion DX3.5-20FQ

### 6.1 Data Recording

To record data a measurement has to be started and/or stopped on the Humotion DX3.5-20FQ. To start and stop a measurement:

1. Plug the USB cable into your computer's USB port. Plug the other end into the Humotion DX3.5-20FQ USB port.
2. Humotion Monitoring Connector will automatically recognize and display information about the connected Humotion DX3.5-20FQ.
3. Unplug the USB cable from the Humotion DX3.5-20FQ USB port when field "Status" in tab "Overview" switches to "OK: ready to measure".
4. A measurement has been started and data is recorded on the Humotion DX3.5-20FQ.
5. To stop the measurement plug the USB cable into the USB port of the Humotion DX3.5-20FQ.

**NOTE:** Please make sure that Humotion Monitoring Connector is running when connecting the Humotion DX3.5-20FQ with your computer. You can access the software by clicking on the Humotion systray icon.

**NOTE:** The Humotion DX3.5-20FQ requires a minimum voltage of 3.8 V for recording measurement data. Do not start any measurement when the battery voltage is lower than 3.8 V. Charge status of the battery is shown in the bottom left of the Humotion Monitoring Connector software.

## 6.2 Data Transfer

Each time a measurement is stopped by connecting the Humotion DX3.5-20FQ with your computer's USB port recorded data is transferred automatically to your computer.

Progress of current data transfer is shown in tab "Files to upload" in the Humotion Monitoring Connector software.

Once the data transfer is completed, recorded data can be accessed in directory `Users\[User Name]\Documents\Humotion Monitoring Connector\Data` on our computer.

**NOTE:** Do not unplug the USB cable from the Humotion DX3.5-20FQ USB port before data has been transferred completely. Unplugging during an active data transfer may lead to permanent loss of recorded data on the Humotion DX3.5-20FQ.

## 6.3 Battery Charging

Each time the Humotion DX3.5-20FQ is connected with your computer's USB port (e. g. to start or stop a measurement) the battery of the Humotion DX3.5-20FQ is charged automatically if required.

The Humotion DX3.5-20FQ requires a minimum voltage of 3.8 V for proper operation. Charge status of the battery is shown bottom left in Humotion Monitoring Connector software.

**NOTE:** To charge the Humotion DX3.5-20FQ always use the supplied USB cable with a USB port of your computer.

## 6.4 Troubleshooting

A defect of the Humotion DX3.5-20FQ is deemed to have occurred when the built-in LED flashes with high frequency (ca. 1-2x / 1 sec, color can either be red and/or green) and / or the device is not recognized after connecting it to your computer.

**NOTE:** In case of any defect please immediately contact our customer support. Never try to repair the DX3.5-20FQ yourself as it may result in a fire, electric shocks or other injuries, or may lead to damage to the system components.



## 7. Regulatory Notices

### 7.1 USA: Federal Communications Commission (FCC) Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.