

3M Occupational Health and Environmental Safety Division
3M™ The Edge Personal Noise Dosimetry



The Edge
Quick Start Guide



Edge Display and Keypad






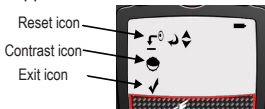
Turning on





1. Turn on the Edge by pressing and releasing the  key.

Resetting

Resetting (or clearing the data) is performed by either using the 3M™ Detection Management Software DMS when downloading or setting up parameters. Another option is from the Edge's shortcut reset menu.



- To reset from the keypad ensure the Edge is off, then:
 1. Press  key.
 2. Press and hold  and  keys when the splash screen appears. The shortcut menu will appear (see below).



3. Press the up arrow until the reset icon  is selected.
4. Press and hold the  key until it shows the files were deleted.
 - A 3, 2, 1 countdown and a shaded bar indicates reset.
5. To exit, press down arrow until  icon is selected. Press  key.

Calibrating

A calibration may be performed before and/or after a dosimetry test.


1. Remove the windscreen while the Edge is turned on and stopped.
2. Slide the Edge into the cavity of the calibrator, ensuring the adapter ring is inserted into the calibrator.
3. Turn on the calibrator. Set the calibrator to 114 dB and 1000 Hz (if applicable).
4. "CAL" will flash on the Edge display automatically detecting the calibration screen.
5. Press the  key to trigger the calibration screen.
6. To adjust the calibration value on the display, repeatedly press the up/down arrows to match 114.0 dB.
7. Press  key to exit.





Viewing and/or navigating data

1. Press the the up/down arrow keys to navigate through the measurements and parameters.

Setting up the Edge



All the Edge parameters are setup via 3M™ Detection Management Software DMS in the Instrument Communication panel or  button from the DMS start screen.

Running a study


1. Once the Edge is turned on, press and hold the  button.
 - A 3, 2, 1 countdown will appear. Then, a run indicator  will appear on the top of the display. Also the LED will flash green unless this was disabled in the DMS via the heartbeat field.



Ending a study

1. While running a study, press and hold the run/stop  button.
 - A 3, 2, 1 countdown will appear and the  indicator will appear on the top of the display.

Turning off

1. Press and hold the on/off enter  button for the count down.

Charging

When the battery is fully discharged, allow approximately 3 to 4 hours to recharge your Edge.

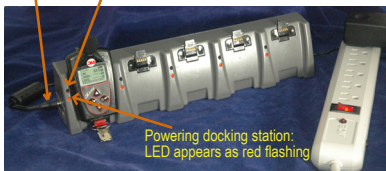
- **Tip:** to quickly check battery power remaining on the Edge, press the up/down arrow key to view the battery power symbol and hours on the display. (See user manual for customizing display if it does not appear.)



Battery power: 48 hours and 52 minutes remaining

1. To charge, plug in the power adapter to the EdgeDock.
 - The EdgeDock's lower LED will appear solid amber when powered on.
2. Slide the Edge downward onto the hook of the EdgeDock until it clicks. It should be fully seated.
 - The top LED will appear as red flashing if charging or solid green when fully charged.

Power adapter Charging status: upper red flashing LED



Downloading data and DMS



1. To communicate with DMS and the Edge, turn on the Edge and plug in the USB cable from the edge to the pc. Then, open 3M™ Detection Management Software DMS.

Communicating








DMS start screen



2. Click on the  Download button. The instrument communications panel will appear. Select the Edge instrument and model from the dosimetry family.
3. Click on the Edge(s) check boxes in the EdgeDock-5 section and then select the  Download button.
 - DMS will state Download completed. Select the Data Finder tab to view your data (if not automatically selected.)

Locking/unlocking

1. Turn the dosimeter on and press the  button to start measuring.
2. To enable the lock, press  button. Then press  three consecutive times, within one second intervals.
3. To unlock, press the  button within one second intervals and then press  button.

Common noise dosimeter terms

Criterion Level (CL) - expressed in decibels (dB), it is the maximum allowable accumulated noise level that results in 100% dose. Regional noise standards specify criterion level.

Dose - expressed in percent, it is the percent of the maximum exposure that has accumulated over the run time. 100% is the maximum allowable exposure. 100% dose occurs for an average sound level equal to the criterion level for an 8 hour period.

Exchange Rate (Doubling Rate) (ER) - the decibel level that would double or halve the sound exposure. For instance with a 3 dB exchange rate the sound exposure doubles with every 3 dB increase, and the sound exposure is halved every 3 dB decrease. Regional noise standards specify the exchange rate.

Lavg - stands for "level average" and is the average sound level measured over the run time.

Leq - stands for "level equivalent" and is the average sound level measured over the run time but is calculated with a 3 dB exchange rate with no threshold.

Max Level - the highest weighted sound level that occurred, also allowing for the response time that the meter is set to. If the meter is set for A weighting with Slow response then the Max level is the highest A weighted sound that occurred applying the Slow response time.

Peak level - the highest instantaneous sound level that the microphone detects. Unlike the Max Level, the peak is detected independently of the slow or fast response time the unit is set for.

Response Time (Fast, Slow, Impulse) - how quickly the circuitry responds to changing noise levels. These are ANSI/IEC defined response times. Most occupational noise standards require slow response time.

Threshold Level (Cut Off) - noise levels below the threshold are integrated as zero decibels. This will affect Lavg, Leq, TWA, and Dose values. Most regional noise standards specify the threshold level, if any.

TWA (Time Weighted Average) - takes the noise exposure accumulated in the run time and applies an eight hour time period. If the meter was in run for 5 minutes, the TWA takes that 5 minutes of noise input and averages it into an 8 hour run time. The TWA in this case would be much lower than the Lavg.

Weighting (A,C,Z) - frequency filters that cover the frequency range of human hearing. A weighting greatly attenuates high and low frequency noise to mimic how the human ear hears noise. C weighting also attenuates high and low frequency noises, but not nearly as much as A weighting. Z weighting does not apply any attenuation, or weighting, to any frequency. Most regional noise standards require a weighted measurements.



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