

*SD card real time data recorder  
4 to 20 mA output*

# **SOUND LEVEL DATA RECORDER**

Model : MSL-388SD

*ISO-9001, CE, IEC1010*



*The Art of Measurement*

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**FEATURES**

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| * Frequency and Time weighting are designed to meet IEC 61672 class 2.   |
| * A & C weighting networks comply with standards.  |
| * LCD is dot-matrix with backlight and easy reading.   |
| * Data-logger and Sound level meter.   |
| * 0.5" standard microphone head.   |
| * Time weighting (Fast & Slow) dynamic characteristic modes.   |
| * Condenser microphone for high accuracy & long-term stability.  |
| * Memory function to store the Max. & Min. value.  |
| * Hold functions.  |
| * Real time Datalogger<br>Records device of an external memory device (SD memory card) ,Real time Datalogger, it Built-in Clock and Calendar, real time data recorder, sampling time set from 5,10,30,60,120,300,600,1800,3600 seconds.  |
| * PEAK Hold functions.   |
| * Innovation and easy operation, computer is not need to setup extra software, after execute datalogger, just take away the SD card from the meter and plug in the SD card into the computer, it can download the all the measured value with the time information ( year/month/date/ hour/minute/second ) to the Excel directly, then user make the further data or graphic analysis by themselves. |
| * SD card capacity : 1 GB to 16 GB.  |
| * Can default auto power off or manual power off.  |
| * 4-20 mA analog output.   |
| * Microcomputer circuit, high accuracy.  |
| * Power by UM4/AAA ( 1.5 V ) x 6 batteries or DC 9V adapter.   |
| * RS232/USB PC COMPUTER interface.   |
| * Heavy duty & compact housing case.   |

**SPECIFICATIONS**

|                             |  |                 |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
|-----------------------------|--|-----------------|----|-----------------|----|----|-----------------|-----|----|-----------------|-----|----|-----------------|-----|----|-----------------|-----|----|-----------------|-----|----|-----------------|-----|----|-----------------|-----|----|-----------------|
| Circuit                     | Custom one-chip of microprocessor LSI circuit.   |                 |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| Display                     | LCD size : 50 mm x 30 mm<br>LCD with backlight ( ON/OFF ).   |                 |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| Measurement Type            | SPL : Sound pressure level   |                 |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| Measurement Range           | SPL : 30-80,50-100,80-130 , Auto 30 - 130 dB.  |                 |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| Resolution                  | 0.1 dB.  |                 |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| Function                    | dB ( A & C frequency weighting ) ,<br>Time weighting ( Fast, Slow ) ,<br>Data hold,PEAK HOLD ,<br>Record ( Max., Min. ) .  |                 |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| Accuracy (23 ± 5 °C)        | Characteristics of " A " frequency weighting network meet IEC 61672-1-2013 class 2.<br>Under 94 dB input signal, the accuracy are :<br><table border="1" style="margin-left: 20px;"> <tr><td>31.5</td><td>Hz</td><td>reading ±3.0 dB</td></tr> <tr><td>63</td><td>Hz</td><td>reading ±2.0 dB</td></tr> <tr><td>125</td><td>Hz</td><td>reading ±1.5 dB</td></tr> <tr><td>250</td><td>Hz</td><td>reading ±1.5 dB</td></tr> <tr><td>500</td><td>Hz</td><td>reading ±1.5 dB</td></tr> <tr><td>1 K</td><td>Hz</td><td>reading ±1.0 dB</td></tr> <tr><td>2 K</td><td>Hz</td><td>reading ±2.0 dB</td></tr> <tr><td>4 K</td><td>Hz</td><td>reading ±3.0 dB</td></tr> <tr><td>8 K</td><td>Hz</td><td>reading ±5.0 dB</td></tr> </table> | 31.5            | Hz | reading ±3.0 dB | 63 | Hz | reading ±2.0 dB | 125 | Hz | reading ±1.5 dB | 250 | Hz | reading ±1.5 dB | 500 | Hz | reading ±1.5 dB | 1 K | Hz | reading ±1.0 dB | 2 K | Hz | reading ±2.0 dB | 4 K | Hz | reading ±3.0 dB | 8 K | Hz | reading ±5.0 dB |
| 31.5                        | Hz   | reading ±3.0 dB |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| 63                          | Hz   | reading ±2.0 dB |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| 125                         | Hz   | reading ±1.5 dB |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| 250                         | Hz   | reading ±1.5 dB |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| 500                         | Hz   | reading ±1.5 dB |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| 1 K                         | Hz   | reading ±1.0 dB |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| 2 K                         | Hz   | reading ±2.0 dB |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| 4 K                         | Hz   | reading ±3.0 dB |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| 8 K                         | Hz   | reading ±5.0 dB |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| Frequency Weighting Network | Characteristics of A & C.<br>A weighting :<br>The characteristic is simulated as "Human Ear Listening" response. Typical, if making the environmental sound level measurement, always select to A weighting.<br><br>C weighting :<br>The characteristic is near the "FLAT" response. Typical, it is suitable for checking the noise of machinery (Q.C. check) & knowing the sound pressure level of the tested equipment.  |                 |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| Data hold                   | To freeze the measurement value.   |                 |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |
| PEAK Hold                   | To Keep the peak (max.) measurement value.   |                 |    |                 |    |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |     |    |                 |

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| Time weighting (FAST & SLOW)           | Fast - t = 125 ms<br>* "Fast" range is simulated the human ear response time weighting.<br>Slow - t = 1 s<br>* "Slow" range is easy to get the average values of vibration sound level.  |
| Function selector SPL                  | range :<br>30-80dB, 50-100dB, 80-130dB<br>Auto range : 30~130dB.   |
| Frequency                              | 31.5 to 8,000 Hz.  |
| Microphone type                        | Electric condenser microphone.   |
| Microphone size                        | Out size, 12.7 mm DIA. ( 1/2 inch).  |
| Calibration VR                         | Build in external calibration ( key ), easy to calibrate on 94 dB level by key button.<br>* Calibrated via external SOUND CALIBRATOR ( SC-941, SC-942, optional ).   |
| Calibrator                             | B & K (Bruel & kjaer), MULTIFUNCTION ACOUSTIC CALIBRATOR Type 4226.  |
| Datalogger Sampling Time Setting range | Auto 5,10,30,60,120,300,600,1800, 3600 seconds.  |
| Memory device                          | external memory device :<br>SD memory card. 1 GB to 16 GB.   |
| Advanced setting                       | * Set clock time ( Year/Month/Date,Hour/Minute/ Second )<br>* Set sampling time<br>* Auto power OFF management<br>* Set beep Sound ON/OFF<br>* Decimal point of SD card setting<br>* SD memory card Format   |
| Over Indication                        | Show " - - - - "   |
| Data Hold                              | Freeze the display reading.  |
| Memory Recall                          | Maximum & Minimum value.   |
| Sampling Time of Display               | Approx. 1 second.  |
| Data Output                            | RS 232/USB PC computer interface.<br>* Connect the optional RS232 cable, UPCB-02 will get the RS232 plug.<br>* Connect the optional USB cable, USB-01 will get the USB plug.   |
| Power off                              | Auto shut off (Approx. 10 Minutes ) saves battery life or manual off by push button.   |
| Operating Temperature                  | 0 to 50 °C.  |
| Operating Humidity                     | Less than 85% R.H.   |
| Power Supply                           | * Alkaline or heavy duty DC 1.5 V battery ( UM4, AAA ) x 6 PCs, or equivalent.<br>* DC 9V adapter input. ( AC/DC power adapter is optional ).  |
| Power Current                          | Normal operation ( w/o SD card save data and LCD Backlight is OFF ) :<br>Approx. DC 8.1 mA.<br>When SD card save the data but and LCD Backlight is OFF ) :<br>Approx. DC 22 ~ 34 mA.<br>* if LCD backlight on, the power consumption will increase approx. DC 2.4 mA.              |
| Weight                                 | 230 g/ 0.51 LB. (without battery)  |
| Dimension                              | 132 x 80 x 32 mm.<br>( 5.2 x 3.1 x 1.3 inch ).   |
| Accessories Included                   | * Instruction manual.....1 PC<br>* Plug of 4 to 20 mA output ( SKT-AS385 )..... 1 PC<br>* Microphone with clip..... 1 PC<br>* AC to DC 9V adapter..... 1 PC  |
| Optional Accessories                   | * Sound calibrator ( 94 dB ), SC-941.<br>* Sound calibrator ( 94/114 dB ), SC-942.<br>* Sound wind shield ball, SB-01<br>* SD Card.<br>* USB cable, USB-01.<br>* RS232 cable, UPCB-02.<br>* Data Acquisition software, SW-U801-WIN.<br>* Excel data Acquisition software, SW-E802. |

\* Appearance and specifications listed in this brochure are subject to change without notice.