SPL-D3

Multi Color Display

&

sound level logger

Manual

SPL-D3_200101_V1.0EN
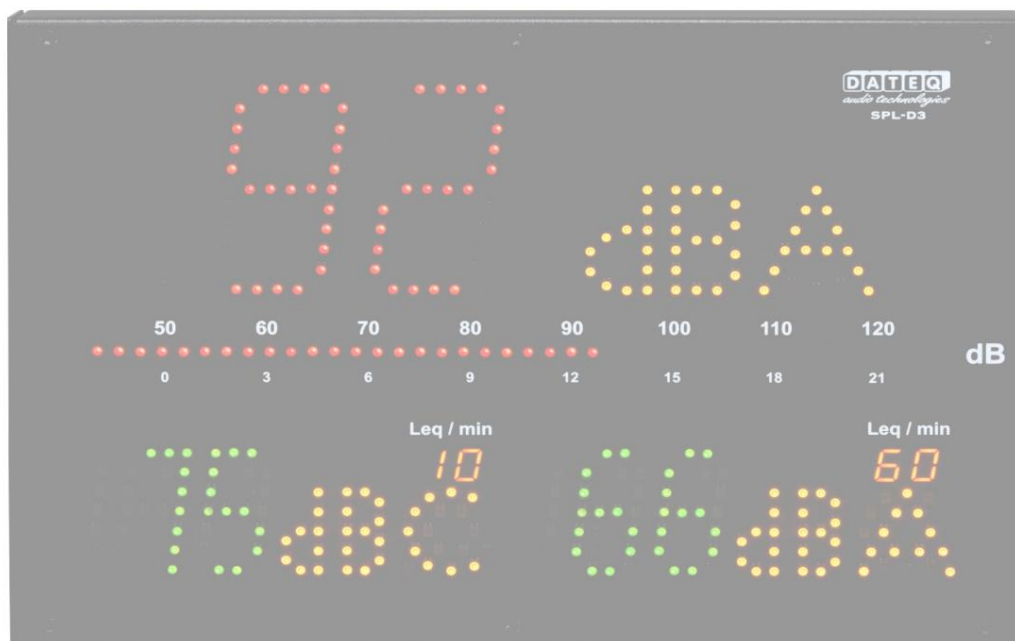
Due to the nature and functionality of this product, it should only be used and installed by professional and certified installers. It is not intended for use or resale by consumers. The manufacturer does not support consumer use.

Safety instructions

1. All safety instructions, warnings and instructions for use must be read first become.
2. All warnings marked on the device must be followed.
3. The instructions for use must be followed.
4. Keep the instruction manual for future reference.
5. The device should never be used in the immediate vicinity of water; prevent the possibility of ingress of water and moisture.
6. The appliance should only be placed or mounted in the locations recommended by the manufacturer manner.
7. The appliance must be placed or mounted in such a way that nothing hinders proper ventilation stands.
8. The device should never be placed in the immediate vicinity of heat sources such as parts of heating installations, stoves and other heat-producing equipment (including amplifiers) are placed.

9. Only connect the device to the correct mains voltage using the manufacturer's power supply recommended cables, as described in the user manual and/or stated on the connection side of the device.
10. The device may only be connected to a legally approved (edge) earthed mains connection.
11. The mains cable or the mains voltage cable must be laid in such a way that it cannot reasonably be walked on or that no objects can be placed on or against it that could damage the cable. Special consideration should be given to the point where the cable is attached to the appliance and where the cable is attached to the mains connection.
12. Prevent foreign objects and liquids from entering the device.
13. The appliance should be cleaned as recommended by the manufacturer.
14. The mains power cable or mains power cord should be used if the appliance is not used for a long period of time used, unplugged from the mains supply.
15. In all cases when after an incident there is a risk of unsafe operation of the device, such as:
    • after the mains cable or mains power cord has been damaged • after foreign objects or liquids (including water) have entered the device • after the device has been dropped or the housing has
    been damaged after noticing a change in the operation of the device, it must be checked by authorized technical personnel.

16. The user must not carry out any work on the device other than that described in the user manual.

Index

Introduction

The SPL-D3 is an advanced sound pressure meter that stores the sound clips for a minimum of twelve months. The sound clips can be viewed through the configuration software, or saved externally to a USB drive with a FAT32 file system. Other important data is also saved, such as start-up data, sanction data or any sabotage data.

The configuration software allows the SPL-D3 to be read and adjusted.
At the time of release, the device supports Windows 7 and newer.
Normally, users can only view settings and logs. To adjust the settings, an additional password and a license file are required. To connect to the SPL-D3 you need a Windows computer with USB support.

The SPL-D3 uses a measurement microphone to measure the actual sound level. If the measurements show that the noise level threatens to become too high, the display changes from green to orange. If the sound level actually becomes too high, the display turns red.

The special calendar functions allow you to allow different sound levels over the course of a day and a year.

With the special SRL-1 circuit breaker you can connect an external warning light to the main power supply, for example the DJ booth monitor. This way, sound can always be played at the maximum permitted sound level, without affecting the sound quality.

Installation

The SPL-D3 is installed separately from the audio source (for example, a mixing desk) and separately from the speakers and amplifier.

Image 1: Installing the SPL-D3

After the SPL-D3 is installed and calibrated, it displays all measured values in green, orange or red, with a deviation of +/- 1.5 dB.

Connections

microphone input; XLR 3 pin female

Pin	Function	Description
1	Earth	audio ground
2	Audio +	Supply and audio
3	Audio -	Supply and audio

Table 1: microphone connections

USB ports; USB B female

Pin	Function	Description
1	VCC +	Supply
2	Dates –	Dates
3	Dates +	Dates
4	GND	ground

Table 2: USB connections

network ports; RJ45 female

Pin	Function	Description
1	TX-D+	Dates
2	TX-D –	Dates
3	RX-D+	Dates
4		Not in use
5		Not in use
6	RX-D –	Dates
7		Not in use
8		Not in use

Table 3: Network connections

USB ports; USB-A female

Pin Function	Description
1 VCC +	Supply
2 Dates –	Dates
3 Dates +	Dates
4 GND	ground

Table 4: USB connections

Link;
Jack 3-pin female

Pin Function	Description
SL Ground	Data ground
Tip Data TX	Send data
Ring Data RX	receive data

Table 5: Display link connections

Microphone input

Connect the included measurement microphone here. You can extend the microphone cable with a standard microphone cable. Note the polarity of the cable. If the microphone is connected incorrectly, it will not work. The limiter then gives an error message and the volume is very low.

Install the microphone so that it 'hears' the sound from the loudspeakers and from the audience in the room. You can move the microphone closer to the speakers if the maximum allowed level is very low. For example, background noise has less effect.

Link

This is the data link to an optional SPL-5MK2, an optional SPL6, or an optional SRL1 stage relay. You will need a 6.3 mm stereo cable for this.

Usage

1. Display 1:
   shows the current measured dB value in green, orange or red.

2. Filter:
   shows the sound filter used in dBA, dBC or dB (no filter).

3. VU/Reduction Bar:
   shows the current fast PPM level in dB.
   When connected to the SPL-5MK2 or the SPL6, the VU meter can also be used to show the
   selected Leq or reduction level of the limiter.

4. Displays 2 and
   3: show the current measured dB value in green, orange or red.
   You can set a separate value/filter for both displays.

5. Leq/min:
   Shows the applied time frame for Leq. In this example it is 10 minutes for display 2 and 60
   minutes for display 3.

6. USB-A connection:
   allows you to export measurement data from the last 30 days to an external FAT32 drive.

7. Push
   button: Allows you to export measurement data to the external FAT32 disk or display or reset the IP
   address of the SPL-D3.

8. Seal:
   here you can seal the cable cover with two M4 screws and a cable seal.

Machine Translated by Google

9. Microphone:
   3-pin XLR connector for a DCM-5 microphone.

10. Link:
   Link connection for a data connection to an SRL-1 stage relay, an SPL-5MK2 or an SPL6.

11. USB:
   USB-B connection for configuration on a Windows computer.

12. Ethernet:
   Ethernet connection for an IP connection to an internal web server and a remote reporting server*
   *Ethernet
   connection is disabled in the initial firmware version. Check www.dateq.nl for firmware updates
   and the functions that are currently available.

13. Power:
   power supply, 24 volts, recommended: 1 A (24 watts) Normal
   use: 0.5 A (12 watts).

14. USB:
   USB-A connection for a data dump on an external FAT32 disk.

15. Control button:
   control button for making a data dump on an external FAT32
   disk with measurement data for 30 days.
   Future functionalities; View and reset IP address.

16. Seal:
   2x DIN-M4 sealing screws for sealing the cable cover.

17.VESA 50:
   standard VESA 50 bracket for wall mounting, M4, max. length 12 mm.

18.Standard:
   standard mounting bracket, supplied with the SPL-D3, M4, max. length 12 mm.
   standard mounting bracket for the M10-G hook. M4, max length 12mm

19.Safety mount:
   DIN-M5 screw for attaching an additional safety cable. max. screw length: 12
   mm

Technical specifications

Inputs Mic

(measurement microphone) XLR-3 female. Use only the original DCM-5 microphone.

General

Audio

> Frequency response 30 Hz...16 kHz @ -1.5 dB
> Signal-to-noise ratio >90 dB Memory 4

GB SDHC

> Sound

> pressure data for 365 days * (resolution 1 minute)

External memory

> FAT32 USB disk up to 32 Gb
> Sound pressure data for 30 days * (resolution 1 minute) when exported in .CSV format.

EU

> standard: Measuring chain built to work according to specifications of IEC-61672-1
> > class 2 France:

> Measuring chain built to work according to specifications of NFS 31-122-1-2017
> > en decrét 2017-1244 BE: Measuring chain

> built to work according to specifications by
> > VLAREM-II cat. 1, Cat. 2 and cat.3

> DE: Measuring chain built to work according to specifications of
> > DIN 61672, DIN 60651 and DIN 15905-5

Power

> supply Supply voltage 24 volts Power
> consumption (max.) 24 watts Power consumption
> (normal use) 12 watts

Dimensions and weight

> Front 282mm x 192mm
> Depth 55mm
> Weight 2.8 kg

**Sound data and log events are stored for up to 365 days, or fewer days if memory is full. The memory system will be the oldest delete and overwrite data first.

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Notes

Notes

Index

<u>Configuration introduction</u>

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<u>Installation</u>

The SPL-D3 configuration software is compatible with the following operating systems:

- Windows XP
- Windows 7
- Windows 8
- Windows 10

Apple OSX, Linux and other operating systems are not supported. Minimum screen resolution 1400 1050 * pixels.
Configuring the device, reading data and viewing reports via the web will only be supported in future firmware versions and is therefore not included in this manual.

Always use the latest software and firmware versions; these can be found at www.dateq.nl.

Configuration

This chapter explains the configuration and system settings of the SPL-D3. The settings are normally only changed during installation. You can save all settings in a backup file for later use or restore the original settings after changes.

Connecting the computer

You connect the display to a computer using a standard USB-A to USB-B cable. After connecting the SPL-D3 to your computer, the standard Windows drivers will be loaded. You do not need additional drivers, these are present in Windows.

Installing the standard Windows drivers the first time can take several minutes depending on your operating system.

<u>Configuration license</u>

You normally only use the configuration software to view settings and read audio logs. You do not need a license or password to view or export data. You do need a license and a password to adjust settings and for the first installation.

The installation license is only issued to authorized professional audio installers. If you have an SPL limiter and need to adjust settings, please contact your local distributor or installer. You can find the nearest supplier on the page with sales points on the Dateq website: www.dateq.nl.

Each installation license is linked to a specific installation company and is not transferable to third parties. The installation license contains all company and contact details; these are stored in the SPL limiter during configuration.

Unlock the limiter

Before you can make changes, you must enter the license password. The password is stored in the license file SPLD3.DSR.

The license file SPLD3.DSR must be copied to the folder containing the software.

If no valid license can be found, you will be notified in the software.
Note: You must install a valid license file before starting the software.

Live

The live view allows you to monitor current measurements on the SPL-D3.
These measurements are displayed in green, orange or red.

Display configuration

Manual configuration of sound parameters.

Displays

You can set different frequency responses, times and colors for all three displays.

Frequency filters:
  • A filter •

  C filter •

  unweighted filter (Z)

Response
  times: •   (125mS)
  Fast •   (1000mS)
  Slow • Leq   (1000mS ~ 60 minutes)

Colors:
  • Green •   30 – 110dB
  Orange •   70 – 130dB
  Red   70 – 130dB

The minimum and maximum settings of the
color change depend on the green/orange
and orange/red thresholds.

VU meter

The VU meter shows the current dB value, without weight (Z) and with a fast response time (125 ms). You can set the green, orange and red thresholds between:

  • Green •   30 – 110dB
  Orange •   70 – 130dB
  Red   70 – 130dB

Microphone

Microphone correction allows you to compensate for the location of the microphone and of the official measurement point.
Microphone correction -12 dB to +12 dB

brightness

You can adjust the brightness of the display from 10% to 100% or have it change automatically based on the ambient light. The brightness is set to 50% by default.

Time slots

Time slots allow you to set different dB values during a week. Three time slots per day are possible per display. In a time slot, the maximum allowed value is reduced by the set amount of dB.

Changes are saved automatically.

You set the time and date manually by synchronizing the time on the display with the time on the connected computer.

Circuit breaker You can
connect the SRL1 circuit breaker to the SPL-D3. This can
serve as a warning, or it can interrupt the current when the dB
value goes over the maximum. You can choose one of
three displays as the source for the dB value. The sanction value
is the maximum value, or the orange/red threshold value.
This can be the fast, slow or Leq-dB value depending on the
display settings.

The sanctions delay timer starts running as soon as the set
maximum dB value is exceeded. When this delay
timer is running, the warning light on the SRL-1 will illuminate. Once the timer expires, the penalty time begins and the SRL-1 switches off the main power relay. After the sanction, the main power relay is switched on again and the power supply is restored.

Calibration

Calibration allows you to test all display LEDs and calibrate the microphone.

LED test:

test all LEDs in green, orange and red.

Microphone:

First connect a normal, approved Class 2 calibrator to 94 dBA, then click Microphone. The microphone is now calibrated for the current reference source; the values are internally recalculated to mV/pA.

System

The system page allows you to update the firmware, backup and restore settings and read the serial number of the unit.

In future software and firmware releases support for language selection and IP settings will be added.

Firmware update:

Choose the latest firmware version and click Update. The system then searches for a valid update. If valid firmware is found, the large display shows E3 (bootloader mode) and the firmware is updated.

Note:
Some Windows versions do not fully support bootloader mode. If the progress bar does not start and the display is in E3 mode, disconnect and reconnect the USB cable. The update starts after you reconnect the cable.

Settings:

Save Settings allows you to back up the current device settings.
With 'Load settings' you can restore previously saved settings.
With 'Restore factory settings' you can restore all factory settings. All previous settings will be lost.

Device:

Displays the serial number of the device along with the physical hardware address (MAC address) of the Ethernet connection. These are programmed into the hardware and cannot be modified. The IP address will be added to this in a future update.

Language: Shows the current language of the software. Choose this option to change the language of the software.

History

The SPL-D3 keeps track of all measured values and stores them encrypted in its internal memory.
It is not possible to change sound data measured with the SPL-D3; attempts to do so result in a defective
unit that can only be repaired at the Dateq service desk.

Choose Date:
Allows you to choose the date you want to inspect.

Display Graph:
Allows you to select which metrics to view through a check box.

Zoom:
Here you can use the scroll wheel of your mouse to zoom in and out on the chosen measurement areas.

Print: Allows
you to print the graph that is displayed (including zoom) to your printer.

Export:
allows you to export all measurement data for the selected day to a comma-separated file.

Product Support

For questions about the limiters from the SPL series, accessories or other products, please contact Dateq at:

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