DPS Series

DPS-10
DPS-12

USER'S MANUAL

Audio/Video Subwoofer System

Velodyne®

IMPORTANT SAFETY INSTRUCTIONS

Caution

To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

The lightning flash with arrowhead symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the subwoofer.

1. **Read Instructions —** All safety and operating instructions should be read before the product is operated.
2. **Retain Instructions —** The safety and operating instructions should be retained for future reference.
3. **Heed Warnings —** All warnings on the product and in the operating instructions should be adhered to.
4. **Follow Instructions** — All operating and use instructions should be followed.
5. **Water and Moisture** — The product should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool or the like.
6. **Carts and Stands —** The product should be used only with a cart or stand recommended by the manufacturer.
7. **Wall or Ceiling Mounting** — The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. **Ventilation** — The product should be situated so that its location or position does not interfere with its proper ventilation. For example, the product should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or placed in a built-in installation such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. **Heat** — The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products that produce heat.
10. **Power Sources** — The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
11. **Grounding or Polarization —** This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
12. **Power-Cord Protection —** Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point at which they exit from the product.
13. **Cleaning** — The product should be cleaned only as recommended by the manufacturer.
14. **Nonuse Periods** — The power cord of the product should be unplugged from the outlet when left unused for a long period of time.
15. **Object and Liquid Entry** — Care should be taken so that objects do not fall and liquids are not spilled onto the enclosure.
16. **Damage Requiring Service —** The product should be serviced by qualified service personnel when:
    a. The power-supply cord or plug has been damaged.
    b. Objects have fallen or liquid has been spilled into the product.
    c. The product has been exposed to rain.
    d. The product does not appear to operate normally or exhibits a marked change in performance.
    e. The product has been dropped or damaged.
17. **Servicing —** The user should not attempt to service the product beyond what is described in the operating instructions. All other servicing should be referred to qualified service personnel.
18. **Lightning** — For added protection for the product during a lightning storm or when it is left unattended and unused for long periods of time, unplug it from the wall outlet.
19. **Overloading —** Do not overload wall outlets, extension cords or integral convenience receptacles as this can result in a risk of fire or electric shock.

CAUTION: To prevent electrical shock, match wide blade of plug to wide slot, fully inserted.

Table of Contents

Congratulations

Congratulations on your purchase of a Velodyne Digital Power Slot™ (DPS) subwoofer system. This system represents the state-of-the-art in low frequency reproduction. Read and follow the instructions below to insure safe and proper system operation.

Warning!

To prevent fire or shock hazard, do not expose this equipment to rain or moisture. To avoid electrical shock, do not open speaker enclosure or amp chassis cover. Please observe all warnings on the equipment itself. There are no user serviceable parts inside. Please refer all service questions to your authorized Velodyne dealer.

Prior to Installation

Please unpack the system carefully. Please save the carton and all packaging materials for future use. Record the serial number in the space provided on the warranty card for future reference.

Product Features and Controls

- Microprocessor-controlled
- Four selectable presets for customized listening mode
- Selectable option to activate Auto-on/off feature
- Night-mode setting
- Built-in 185 watt (RMS) power amplifier (DPS-10)
- Built-in 200 watt (RMS) power amplifier (DPS-12)
- Adjustable (40 to 120 Hz) low-pass crossover with Subwoofer Direct setting
- Speaker-level inputs and outputs
- Line-level inputs
- Variable volume control
- Selectable phase control (0 or 180 degrees)
- Dual staggered low-pass crossover; 12 dB/octave initial, 24 dB/octave ultimate
- Anti-clipping circuit
- Over excursion protection
- Slot loaded design

Installation

Your new subwoofer system provides for a number of installation options. Read all the installation information below in order to determine which installation option is best for your system. Remember to perform all installation procedures with system power turned off.

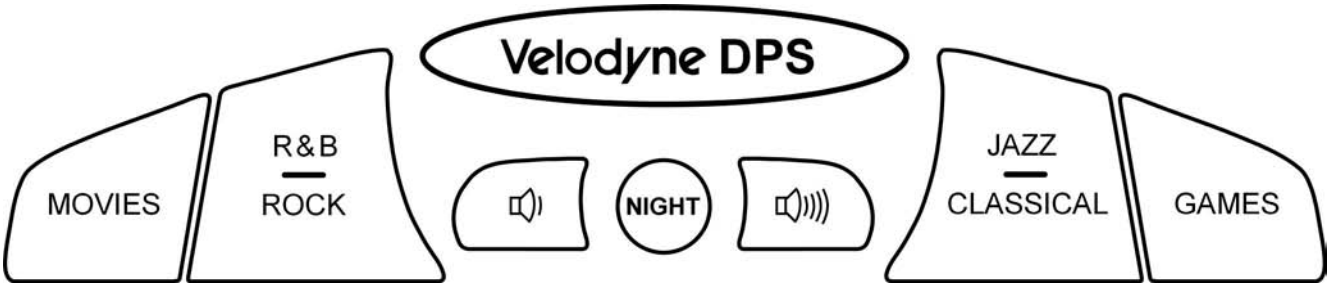

Figure 1. Front Panel Display

Front Panel Display

Figure 1 shows the front panel display, which is located on the top of your subwoofer.

Presets

There are four presets, consisting of Movies, R&B — Rock, Jazz — Classical, and Games. Whichever preset you choose is illuminated with a blue LED. The presets provide the following characteristics for bass reproduction:

Movies:	Maximum output and impact for explosions and other action adventure movie content.
R&B — Rock:	Provides the driving bass found in today's rock music.
Jazz — Classical:	The tightest, cleanest, lowest distortion bass.
Games:	Maximum loudness available for the impact of video games.

Each preset has its own characteristic with respect to subsonic filter, volume differential, and a single equalizer (EQ) in order to optimize the listening mode for the preset.

The following table indicates musical style and which preset is recommended for it.

Musical Style	Suggested Preset
Action Adventure Movies	Movies
Alternative Rock	Jazz — Classical
Blues	Jazz — Classical
Broadway and Vocalists	Jazz — Classical
Children's Music	Jazz — Classical
Christian and Gospel	Jazz — Classical
Classic Rock	R&B — Rock
Classical	Jazz — Classical
Country — Rock	R&B — Rock
Country — Soft	Jazz — Classical
Dance and DJ	R&B — Rock
Folk	Jazz — Classical
Hard Rock and Metal	R&B — Rock
Indie Music	R&B — Rock
Latin Music	R&B — Rock
Miscellaneous	Jazz — Classical
Movies — Non-Action Adventure	Jazz — Classical
New Age	Jazz — Classical
Opera and Vocal	Jazz — Classical
Pop	R&B — Rock
R&B	R&B — Rock
Rap and Hip-Hop	R&B — Rock
Rock	R&B — Rock
Soundtracks	R&B — Rock or Jazz — Classical
Video Games	Games

The following table shows the settings for various presets:

Preset	Subsonic Filter Frequency	EQ Frequency	EQ Level	Volume Differential
Movies	24 Hz	37 Hz	+4 dB	+8 dB
R&B – Rock	27 Hz	52 Hz	+3 dB	+5 dB
Jazz – Classical (Reference)	24 Hz	N/A	N/A	N/A
Games	34 Hz	62	+4 dB	+4 dB

RESTORE DEFAULTS – This feature allows you to restore default settings for your DPS subwoofer. By pressing the presets in EXACTLY the following order on the front panel display, the unit's power light will blink three times indicating that you have restored defaults.

1. Movies
2. R&B – Rock
3. Jazz – Classical
4. Games
5. Games
6. Jazz – Classical
7. R&B – Rock
8. Movies

When you press the presets in the above order, the power light will blink three times indicating that you have restored defaults. The default preset is Jazz-Classical, and the unit's volume is reset to level 35 (out of 100).

Night Mode

Night mode limits the maximum output of the subwoofer for late night listening or to be more considerate of close neighbors. Press the NIGHT button to turn the night mode feature on or off. Engaging the night mode causes the LED lights to burn less brightly. Night mode does not universally diminish the volume, rather, on louder passages, the maximum output of the unit is limited. It may be that you will hear little or no difference in the output of the woofer when night mode is activated. However, when an explosion or other loud transient is played, you should notice less ouput.

VOLUME Control

This control allows you to balance the output from the subwoofer to the main speakers in your system. This control should be set to achieve similar volume level from between both the main speakers and subwoofer. When pressing volume up or down, the speed at which the power light blinks indicates subwoofer volume - the faster the blinking, the louder the unit plays. After the volume is changed (up or down), there will also be two sets of center LED blinks. Slower blinks represent tens and faster blinks represent ones. If the LED blinks three times, pauses, then blinks six times, this means that the volume is set at 36. The volume range is from 1 to 99.

IMPORTANT NOTE: *Some manufacturers preset their receivers with the Sub-Out channel signal at a minimum level. It is very important to verify that your receiver Sub-Out channel is set to the same output level, or higher, as your front right and left channels. Refer to your receiver manual for the individual channel level adjustment procedure.*

WARNING: If your receiver Sub-Out channel is set too low, the subwoofer may appear to have a weak output, it may sound noisy or distorted, and the Auto-On/Off feature may not work properly.

Auto-On/Off Feature

The auto-on/off feature allows the subwoofer to turn itself off when not in use. On the top front panel display; press both the left button (Movies) and right button (Games).

NOTE: *When pressing both the Movies and the Games buttons, the timing is critical - both buttons must be depressed at exactly the same time for the feature to work.*

- If the center LED blinks for approximately five seconds, the auto-on/off feature is activated. If activated, the subwoofer will monitor its input, and if there is no signal present for approximately 15 minutes, it will shut down and go into standby mode. As soon as a signal is present again, the subwoofer will immediately turn itself back on.

- If the center LED blinks for approximately two seconds, the auto-on/off feature is bypassed. The subwoofer will remain on until the power switch is turned off.

WARNING: *If the Sub-Out channel signal level from your receiver is too weak, this feature will not operate properly. See VOLUME CONTROL section.*

Light Control Function

If you wish, you can deactivate the blue front panel lights on your DPS unit. To do this, press both the volume up and volume down buttons simultaneously — the power and preset lights should turn off. To reactivate the lights, press both volume buttons again.

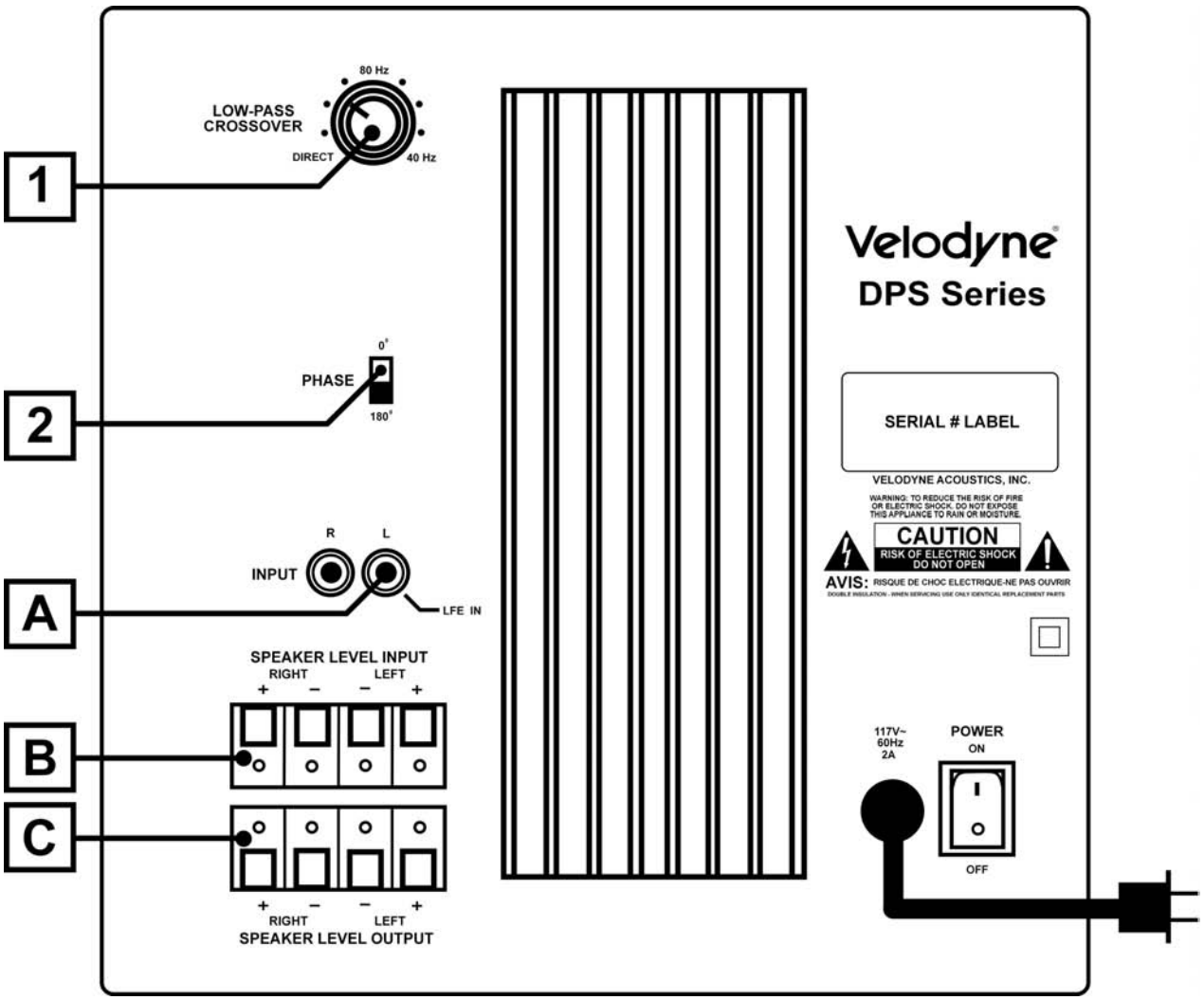

Figure 2. DPS Rear Panel Connections

Rear Panel Connections

Figure 2 shows the connections on the rear panel of the DPS. Following are brief descriptions of the connections described in Figure 2. More detail on these connections can be found on the next page.

(1) LOW-PASS CROSSOVER
Use this knob to select the high-frequency range at which you wish to cut off the signal to the subwoofer. When the knob is turned all the way to the left, the Subwoofer Direct feature is invoked and the subwoofer plays all frequencies up to 200 Hz.

(2) PHASE Switch
Allows you to optimize the subwoofer performance for the location and your listening position. Select the switch position at which you hear more bass.

(A) LINE INPUT/LFE Input
Connect these jacks to the LINE OUT preamp output, LFE output or subwoofer output jack(s) of your receiver/processor. If using the LFE output from your receiver or processor, plug the single cable into the "L" — LFE input.

(B) SPEAKER LEVEL INPUT Terminals
Connect these input terminals to the speaker output terminals of your amplifier or receiver. If you use this method of connection, when you go to the receiver speaker set up menu, make sure you select the large speaker option.

Note: Do not use both the LINE INPUT/LFE INPUT connections and SPEAKER LEVEL INPUT connections simultaneously.

(C) SPEAKER LEVEL OUTPUT Terminals
Sends a speaker-level signal to the front speakers.

Caution!!!
To avoid damage to your main amplifier, be sure to maintain correct polarity when making all connections. Red (positive) to red, and black (negative) to black. Be sure that all connections are tight, and that there are no loose strands or frayed wires.

Power Switch
The master power switch is located on the lower right half of the unit. This rocker style switch is the main on/off for the unit. This switch should be set to position 1 for on (up), 0 for off (down).

Rear Panel Connections - Detailed Explanation

Your new subwoofer is equipped with both speaker-level and line-level inputs. Use the RCA/Phono type "INPUT" jacks when connecting your subwoofer to a pre-amp, signal processor, or line-level crossover. The "SPEAKER LEVEL INPUT" jacks connect directly to the speaker outputs of an integrated amplifier or receiver. Your amplifier section will notice no additional loading effects when you use these inputs because of their high impedance.

Low-Pass Crossover
Both sets of inputs sum the left and right channels together and the resulting signal is passed through an adjustable low-pass crossover before being amplified. The crossover control allows you to adjust the upper limit of the subwoofer's frequency response from 40 to 120 Hz. The subwoofer's response will begin rolling off above the frequency you set this control to. You should set the crossover frequency to obtain a smooth and seamless transition from the subwoofer to the main speakers in your system. If your main speakers are smaller units with limited low frequency output, you may wish to choose a higher frequency (such as 100-120 Hz) than you would with larger speakers which have greater low frequency output. With larger speakers, you might start with this control set lower, such as 80 Hz.

Subwoofer Direct
Subwoofer Direct is a setting on the low-pass crossover knob and will allow frequencies up to 200 Hz into the subwoofer. If you are not using an external crossover, we recommend that you use the one provided within the DPS unit for optimum performance.

Phase Adjustment - 0°/180°
This control allows you to "reverse" the phase of the subwoofer's output signal 180° to correct for any possible mismatch and resulting cancellation between the subwoofer and your main speakers. To adjust, simply listen to the system with music playing. Then move the switch from one position to the other and listen for a change in low frequency output. The correct position will have a greater amount of apparent low frequency output.

Speaker Level Output

When connected in this fashion, your satellite speakers will be fed the same input signal as the subwoofer. This removes the lower bass from your satellites, enabling them to do a better job reproducing high frequencies and giving your receiver's amp more headroom (up to 50% more power). You may also connect your satellites directly to your receiver or amplifier along with the subwoofer if you wish to bypass this crossover.

Caution!!!

To avoid damage to your main amplifier, be sure to maintain correct polarity when making all connections. Red (positive) to red, and black (negative) to black. Be sure that all connections are tight, and that there are no loose strands or frayed wires.

A Word About Your Receiver's Crossover and the DPS Crossover

Your Velodyne DPS subwoofer is designed to operate using the full range audio signal for input when using the built-in crossover (controlled by the dial on the back panel). Many home theater processors/receivers (Dolby Digital®, DTS®, THX®) have a "subwoofer out" jack that performs this same function and are designed to be used with a powered subwoofer. In these installations, you may want to bypass the crossover in either the processor or the Velodyne subwoofer. In some cases, you may want to use BOTH crossovers. To do this, you can use both your processor's crossover and the one internal to the Velodyne sub. You should stagger the frequencies (i.e., 120 Hz subwoofer, 80 Hz processor) for best results. To bypass the subwoofer's internal crossover when the unit is being fed a low pass signal from another crossover, simply locate the knob marked "LOW-PASS CROSSOVER" on the rear panel of the subwoofer and turn it counterclockwise to the "DIRECT" position. This will eliminate the internal crossover from the signal path.

Note: *If not using an external crossover, you should use the built-in crossover for optimal performance. When using a single RCA sub out from the processor, it does not matter which line level input (L/R) is used.*

Interconnect Cables

When installing your new Velodyne subwoofer using the line-level connections, you should always use shielded phono cables. There are many decent cables available today, most any of which will work perfectly well. We do recommend that you keep the length of cable as short as possible to avoid any potential noise problems. When using speaker level connections, use a decent quality speaker cable that mates well with the connectors (at least 14 gauge). Be very careful to avoid any loose or frayed strands that could result in a short, causing a dangerous condition and possible damage to your unit. Cables of extremely large size are typically not required. Extremely large gauge wire may not properly fit in the binding posts, resulting in a poor connection and possible short circuits.

Placement

True subwoofers operate at extremely low frequencies, which are primarily omni-directional. While it is recommended that the subwoofers be placed on the same plane as the satellite speakers, room and system conditions often dictate otherwise. Keep in mind that frequency response and output level can be drastically influenced by placement, depending on the acoustic properties of your listening room. Typically, the optimum location for a subwoofer is in a front corner of your listening room. This location will usually offer the greatest output levels and optimum low frequency extension. The worst location for a subwoofer is typically far away from any walls, close to the center of your room and near an opening or door way. Avoid these locations when possible. When using a pair of Velodyne subwoofers in stereo, it is preferable to place each subwoofer near the satellite of the same channel. Typically, a minimum distance of one to two feet from your TV to the subwoofer will be adequate to avoid any magnetic interference.

Caution!

This subwoofer has electronics built into the cabinet. Do not place the cabinet next to sources of heat such as furnace registers, radiators, etc. Do not place the unit near sources of excessive moisture, such as evaporative coolers, humidifiers, etc. The power cord should be routed in such a way that it will not be walked on, pinched, or compressed in any way that could result in damaging the insulation or wire.

Care of Your Subwoofer

Do not use any harsh detergents or chemicals to clean the cabinet. Abrasives, detergents, or cleaning solutions will damage the finish on the cabinet. We recommend using a damp cloth to clean the front, back and sides. Use a soft cloth with a good quality furniture polish to clean the hand-rubbed, black lacquer, painted top. During normal conditions, the subwoofer may be left on continuously without any problems. If you plan to leave the unit unused for an extended period of time, we recommend that you turn off the unit by the master power switch on the rear panel.

Troubleshooting and Service

Before seeking service for your amplifier or subwoofer, please re-check all systems. Following is a simple troubleshooting guide to assist you.

1. Verify that the unit is plugged in and power outlet used is active.
2. Is the power switch on?
3. Is the unit receiving an input signal from your source?
4. Have all controls (volume, crossover, phase, etc.) been properly set?
5. If the unit has been running at high levels, one of the protection circuits may be engaged. Has the amplifier overheated?
6. Make sure binding posts are tightened.

If the protection circuitry is active, the unit may cycle on and off until operating parameters return to normal. Under more serious conditions, the unit may shut off completely. Normal operation should return upon cooling, but you may be required to turn the power off and then on again to reset the unit.

The following conditions require service by a qualified technician:

1. The power cord has become damaged
2. The unit does not appear to operate normally or exhibits a marked change in performance
3. The unit has been exposed to water
4. Some part of the chassis or circuitry is physically damaged

Thank You for Purchasing a Velodyne!

SPECIFICATIONS

Specifications	DPS-10	DPS-12
Driver	10" forward firing (8.2" piston diameter)	12" forward firing (9.9" piston diameter)
Amplifier (Class A/B)	375 watts Dynamic/ 185 watts RMS Power	400 watts Dynamic/ 200 watts RMS power
Frequency Response	28 Hz — 120 Hz (+/-3 dB)	25 Hz — 120 Hz (+/-3 dB)
Low-Pass Crossover	40 Hz — 120 Hz (12 dB/octave, 24 dB ultimate)	
Inputs	Line-level and speaker-level	
Outputs	Speaker-level	
Magnet	40 oz. (2.5 lbs)	55 oz. (3.5 lbs)
Voice Coil	2" four-layer copper	2" four-layer copper
Warranty	Three years (electronics - parts and labor), Five years (drivers - parts and labor)	
Cabinet (H/W/D) (cm)	16.25" x 14.5" x 17" 41.3 x 36.8 x 43.2	18.25" x 14.5"x 19" 46.4 x 36.8 x 48.3
Shipping Weight (approx.)	51 lbs. (23.2 Kg)	58 lbs. (26.4 Kg)

Specifications are subject to change without notice.

120V

DD® Series
DD-10
DD-12
DD-15
DD-18
Digital Drive 1812 Signature Edition

DLS™-R Series
DLS-3500R
DLS-3750R
DLS-4000R
DLS-5000R

DPS™ Series
DPS-10
DPS-12

MicroVee™
MiniVee®
MiniVee® 10

SMS™-1

SPL™-R Series
SPL-800R
SPL-1000R
SPL-1200R
SPL-1500R

SubContrator™ Series
SC-1250
SC-8
SC-10
SC-12
SC-15
SC-IW
SC-IF/IC

VRP Series
VRP-1000
VRP-1200

VX™ Series
VX-10

230V

DD® Series
DD-10
DD-12
DD-15
DD-18
Digital Drive 1812 Signature Edition

CHT-R Series
CHT-8R
CHT-10R
CHT-12R
CHT-15R

SMS™-1

SPL-800i

SPL™-R Series
SPL-800R
SPL-1000R
SPL-1200R
SPL-1500R

SubContrator™ Series
SC-1250
SC-8
SC-10
SC-12
SC-15
SC-IW
SC-IF/IC

FOR YOUR RECORDS. . .

Date Puchased_____

Dealer_____

Serial #_____

**NOTE: Please complete and return your warranty card within ten (10) days or*

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LIMITED WARRANTY

VELODYNE ACOUSTICS, Inc. ("VELODYNE") warrants all electronics for a period of three years, drivers for a period of five years, and full range speakers for a period of five years. All VELODYNE products have a warranty from the date of purchase against defects in materials and workmanship subject to the following conditions:

1. VELODYNE is not responsible for defects which result from the use of an amplifier or controller other than the one originally supplied with the unit (subwoofer) or defects which result from modifications or repairs made by any component of the system by anyone other than a VELODYNE factory authorized service representative.
2. This warranty is void if any repairs or service covered by the terms of this warranty are made to any component of the system by anyone other than a VELODYNE factory authorized service representative.
3. VELODYNE is not responsible for damage caused by accidents, abuse, misuse, natural or personal disaster or unauthorized modification. The VELODYNE products are not intended for professional or commercial use and VELODYNE is not responsible for damage resulting from such use.
4. The VELODYNE product warranty is limited to units that are purchased from authorized VELODYNE dealers and finalized within authorized dealer locations.
5. This warranty is nontransferable under any condition.

TO OBTAIN SERVICE

Information regarding service may be obtained from the dealer from whom you purchased the unit, or by contacting VELODYNE customer service. Warranty service must be performed by a VELODYNE factory authorized service representative within the warranty period set forth above. If VELODYNE determines the unit is defective, VELODYNE will, at VELODYNE's option, repair or replace the product at no charge if the product is forwarded prepaid to a factory authorized service representative. Products forwarded to the factory authorized service representative should be shipped securely and properly packaged, insured and freight prepaid.

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