



Sherbourn

PA 7-350

7-CHANNEL AMPLIFIER

USER MANUAL

Important Safety Precautions and Explanation of Symbols



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important installation, operation, and service instructions in this manual.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltages within the enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to the user.

Please read this Installation and Operation Manual thoroughly before attempting to install, configure, or operate the PA 7-350. After successful installation and configuration of the PA 7-350, be sure to retain this manual in a safe place for future reference.

Safety is a key component to a long lasting and trouble free installation. Please read and follow all instructions and heed all warnings on the PA 7-350 and in this manual. The vast majority of the subsequent safety precautions are common sense. If you are not comfortable with the installation of audio/video entertainment equipment, you should seek the services of a qualified installation professional or call us for help.



WARNING: To prevent the risk of fire or electric shock, do not use the PA 7-350 near water or in wet locations and do not expose it to rain or moisture. Doing so may result in damage to the PA 7-350 and the risk of electric shock, which may result in bodily injury or death.



WARNING: To reduce the risk of electric shock, do not remove the cover from the PA 7-350. There are no user-serviceable parts inside the PA 7-350. Refer all service to qualified service personnel.



WARNING: Dangerous voltages may be present at the speaker output terminals of high powered amplifiers. To reduce the risk of electric shock, do not touch uninsulated areas of terminals or speaker wires unless the amplifier is turned off.

To reduce the risk of electrical damage, verify that no short circuits are present between terminals and / or speaker wires before applying power.

Do not install the PA 7-350 near any heat sources such as radiators or heating vents. Avoid installing the PA 7-350 directly above other heat-producing equipment unless sufficient ventilation or forced-air cooling is provided.

Do not install the PA 7-350 in locations without proper ventilation. The PA 7-350 should not be operated on a bed, sofa, rug, or similar surface that may block vents. The PA 7-350 should not be installed in an enclosed location such as a bookcase, cabinet, or closed equipment rack unless sufficient forced-air ventilation is provided.

Connect the PA 7-350 only to power sources of the correct voltage (as shown in this manual and on the PA 7-350). Ensure that the Input Voltage selector switch on the rear of the PA 7-350 is set to the appropriate voltage.

Protect power supply cables from being pinched, walked on, or otherwise damaged.

Only connect the PA 7-350 to an electrical outlet or extension cord of appropriate type and rating. DO NOT defeat the safety purpose of a grounding or three-pronged plug by removing ground pins or using unsafe adapters. If you replace the PA 7-350 power cord, only use one of similar type and equal or greater current rating.

The power cable for the PA 7-350 should be unplugged from the outlet during severe electrical storms, or when unused for a long period of time.

Only replace the fuse in the PA 7-350 with a fuse of proper value and voltage rating.



WARNING: Under some operating conditions, the PA 7-350 may cause a fuse or circuit breaker in your breaker panel to open, which indicates that the PA 7-350 is attempting to draw more current than your circuit can safely supply. If this occurs, DO NOT replace the breaker or fuse with one of higher rating. Doing so may result in the possibility of fire or electric shock, which may result in serious injury or death.

The PA 7-350 should only be cleaned as directed in the Installation and Operation Manual. Avoid spraying liquids directly onto the PA 7-350 and NEVER spray liquids into the vents. Care should be taken so that small objects do not fall into the inside of the PA 7-350.



You should seek service for your PA 7-350 by qualified service personnel if any of the following occur:

1. The power-supply cord or the plug has been damaged
2. Objects or liquid have fallen or spilled into the vents
3. The PA 7-350 has been exposed to rain
4. The PA 7-350 exhibits a marked change in performance
5. The PA 7-350 has been dropped, or its enclosure or chassis is damaged.



WARNING: The PA 7-350 is VERY HEAVY. The PA 7-350 should be lifted by two people, or by one person with mechanical assistance. The PA 7-350 should only be placed on tables, stands, shelves, or mounted in racks with a load capacity of AT LEAST 150 pounds.

PA 7-350

Seven-Channel Power Amplifier

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Introduction

Thank you for choosing the PA 7-350 Seven-Channel Power Amplifier.

The PA 7-350 combines the superb sound quality necessary to satisfy the most discerning audiophile with a virtually limitless store of power and the flexibility and reliability demanded by professional installers. Thanks to Sherbourn's Soft Switch™ Class H technology, the PA 7-350 is very efficient, which minimizes both power requirements and waste heat. The result is a power amp that is easy to install and configure, sounds great, and will continue to deliver trouble-free performance for many years to come.

Sincerely,

The Sherbourn Team

The PA 7-350

The PA 7-350 is a seven-channel power amplifier that can deliver all the clean power you need for a truly stunning home theater experience. It is very conservatively rated to deliver 350 watts into 8 ohms and 550 watts into 4 ohms *per channel*, and has the massive power reserves necessary to ensure that the most extreme musical dynamics are delivered cleanly and with no hint of strain or distortion.

Each channel in the PA 7-350 has independently selectable balanced (XLR) and unbalanced (RCA) inputs, a front panel status indicator, and two speaker outputs - to accommodate bi-wiring (via sets of high-quality gold-plated and clear acrylic five-way binding posts). The PA 7-350 also includes a trigger input and output and is rack mountable.

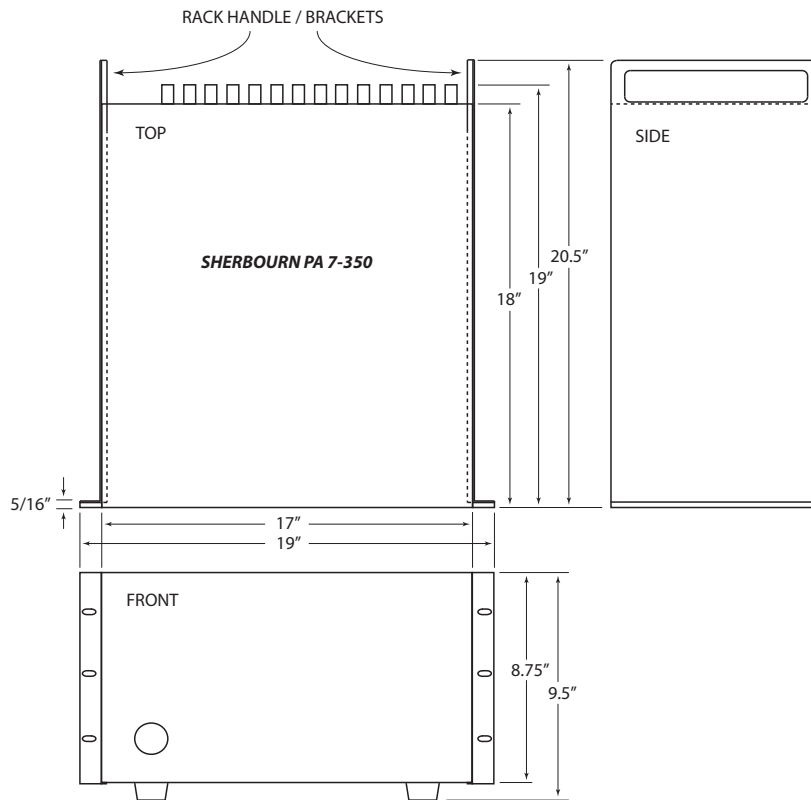
The PA 7-350, with its huge 3.3 kVA toroidal power supply and highly-efficient Soft Switch™ Class H design, delivers massive amounts of clean, dynamic, uncolored, audiophile-quality power, and does so silently - with no need for noisy cooling fans. Even the front panel status display can be switched off for true "stealth" operation.

About This Manual

This manual will provide you with all the information you need to install and configure the PA 7-350 Seven-Channel Power Amplifier to achieve its optimum potential. The manual also includes a brief summary of the features offered by the PA 7-350 and a short description of how the controls work and how to perform common operations.

You may wish to record serial numbers or other purchase information on the Notes page at the back of this manual.

Mechanical and Environmental



Dimensions: 17" wide x 9.5" high x 19" deep (includes feet, binding posts, no rack ears)

Weight: 98.8 lbs / 44.8 kg (unboxed); 112.3 lbs / 51 kg (boxed)

Rack mountable: Yes, with optional Rack Handles / Brackets

Power requirements:

115 VAC or 230 VAC +/- 10% @ 50 / 60 Hz (selectable by rear-panel switch)

Power consumption: up to 4000 watts under maximum load

Note: We **STRONGLY** recommend that the PA 7-350 be attached to a dedicated power circuit. Under real-world conditions, with typical loads, playing music, the PA 7-350 will deliver full dynamic power when attached to a single dedicated 115 VAC 20 A circuit! If the PA 7-350 is to be used for demanding commercial applications or under laboratory conditions, a dedicated 230 VAC 30 A circuit is **REQUIRED**. Please contact Sherbourn Technical Support if you require more information.

Ventilation and cooling:

Even though the PA 7-350 is very efficient, it still produces heat; to avoid overheating, be sure to provide adequate clearance and ventilation. Never remove the feet of the amplifier or block the ventilation openings! Allow at least 1.75" above the unit for proper cooling!

Inputs and Outputs

Analog inputs (each channel):

Independent balanced (XLR) and unbalanced (RCA) input; switch selectable

Input sensitivity (for full output into 8 ohms):

1 V

Speaker outputs (each channel):

5-way binding posts (gold-plated with clear acrylic); two sets per channel to facilitate bi-wiring

Minimum recommended load impedance:

4 ohms (one 4 ohm load or two paralleled 8 ohm loads per channel)

Trigger and control:

Trigger input (mono 1/8"), trigger output (mono 1/8")

Front panel controls and indicators:

Power / Standby (large push button); toggles standby mode

Power / Standby LED (1); RED indicates Standby mode, BLUE indicates Power On (Operate)

Channel Status LEDs (7); status LEDs flash RED at startup, light solid BLUE in operation;

on fault condition, faulted channel LED will flash RED, others will extinguish

(and unit will shut down)

Rear panel controls and indicators:

Power (rocker switch); switches mains power

Line Voltage (protected slide switch); selects 115 or 230 VAC line voltage

Channel Status indicator On / Off (turns off front panel status indicators)

Input Selector (7); independently selects balanced (XLR) or unbalanced (RCA)

input for each channel

AC power input:

IEC C19/C20 (20 A) type inlet and power cord

Note: Potentially lethal voltages are present inside this unit and at the speaker terminals during operation. There are NO user serviceable fuses inside the PA 7-350. The PA 7-350 cover should ONLY be opened by qualified service personnel.

Installation Tips

Inputs and outputs

Balanced (XLR) audio interconnects usually provide better noise immunity, and are preferable - especially for long cable runs or in noisy environments. Be sure to select the correct input for *each* channel using the appropriate rear panel switches.

Rack mounting

The PA 7-350 is VERY heavy. Only place the PA 7-350 on racks, stands, or shelves rated to support at least 150 pounds. We recommend using the (optional) Sherbourn Rack

Ear / Bracket assemblies, which securely support the unit and provide convenient lifting handles at the rear and also protect the rear panel binding posts from damage.

Ventilation and cooling

Even though the PA 7-350 is very efficient, it still produces significant heat; to avoid overheating, be sure to provide adequate clearance and ventilation. Overheating adversely affects performance and shortens component life. We suggest locating components that produce the most heat towards the top of your rack, if practical, and leaving at least 1U (1.75") of rack space between components. Space between components can be left open for ventilation, filled with a spacer, or used to house a forced-air cooling solution.

The Sherbourn C-12 Flex Rack™ Cooling System uses whisper quiet, high capacity variable speed fans to provide over 100 CFM of forced air cooling for rack installations. The C-12 offers a variety of air-flow options (including external ducting), includes professional features like triggered operation and thermostatic control, and takes up only 2U of rack space.

AC power source

The PA 7-350 uses an IEC C19/C20 (20 A) type power cord, and requires an appropriate matching AC outlet.



We STRONGLY recommend that the PA 7-350 be attached to a dedicated power circuit. Under real-world conditions, with typical loads, playing music, the PA 7-350 will deliver full dynamic power when attached to a single dedicated 115 VAC 20 A circuit! If the PA 7-350 is to be used for demanding commercial applications or under laboratory conditions, a dedicated 230 VAC 30 A circuit is REQUIRED. Please contact Sherbourn Technical Support if you require more information.

If you plan to operate the PA 7-350 from a power strip or power distribution system, ensure that it is capable of delivering sufficient current. Even heavy extension cords, if of excessive length, may cause sufficient voltage drop to impair performance or cause unsafe operating conditions, and we do not recommend their use. Most power strips are NOT rated to carry sufficient current to power the PA 7-350.

Configuration

- Verify that the PA 7-350 is configured for the correct operating voltage for your area. (Voltage is set via the Input Voltage switch on the rear panel of the PA 7-350).
- Verify that all rear panel Input Selector switches are set correctly for each input.
- Verify that the rear panel Channel Status switch is set to On if you want the front panel status LEDs to be active.

Note: Only one input (balanced OR unbalanced) on each channel is active at once.

Performance Specifications

Analog inputs (each channel):

Independent balanced (XLR) and unbalanced (RCA) input; switch selectable

Input sensitivity (for full output):

1 V (8 ohm load)

Speaker outputs (each channel):

5-way binding posts (gold-plated with clear acrylic); two sets per channel (to facilitate bi-wiring)

Minimum recommended load impedance:

4 ohms (which equals one 4 ohm load or two paralleled 8 ohm loads per channel)

Real World power

In the real world (unlike in a lab), a home theater amplifier is called upon to deliver power dynamically. Even though peak output may only be required for a short period of time and maybe only for a few channels, it's important that it be delivered at high quality, without compression or distortion. Otherwise, musical peaks will sound strained and harsh instead of effortless and solid. That's why we offer both standard continuous power ratings and meaningful dynamic power ratings – so you know that our amplifiers will still sound superb, even when delivering massive short-term power peaks. It's also why you can count on a Sherbourn amp to sound more powerful – with more muscle and impact – than other similarly rated “ordinary” amps.

Power output [rated power]:

350 watts/channel RMS; *ALL* channels driven; into 8 ohms (at 0.1% THD)

550 watts/channel RMS; *ALL* channels driven; into 4 ohms (at 0.1% THD)

500 watts/channel RMS; 3 channels driven; into 8 ohms (at 1% THD)

850 watts/channel RMS; 3 channels driven; into 4 ohms (at 1% THD)

600 watts/channel RMS; 1 channel driven; into 8 ohms (at 1% THD)

1200 watts/channel RMS; 1 channel driven; into 4 ohms (at 1% THD)

S/N ratio:

> 105 dB (A-weighted)

Frequency response:

20 Hz to 20 kHz + / - 0.075 dB at 1 watt (- 2.0 dB at 80 kHz)

Trigger and control:

Trigger input: 5 - 12 V DC

Trigger output: 12 V DC 120 mA max

Protection:

The PA 7-350 is protected against excessive operating temperature, shorted speaker connections, ground faults, and other common fault conditions. If a fault occurs, the PA 7-350 will automatically power down and the front panel status LEDs will indicate the faulty channel(s).

Features

The PA 7-350 Seven-Channel Power Amplifier combines the latest cutting edge technology with solid engineering and high quality components to deliver superior sound quality, performance, and features. Some of the more important features of the PA 7-350 include:

- True audiophile grade sound quality
- The most powerful seven channel amp in its class
- High-efficiency Soft Switch™ Class H design
- All the power you need for a truly dynamic home theater experience
- 7 x 350 watts at 8 ohms; all channels driven
7 x 550 watts at 4 ohms; all channels driven
(completely stable into 4 ohms)
- Massive 3.3 kVA toroidal power supply
- Convection cooled; no noisy fans
- High quality components used throughout
- Independent balanced (XLR) and unbalanced (RCA) inputs for each channel
- Audiophile grade gold-plated and clear acrylic speaker terminals (5 way binding posts)
- Audiophile grade gold-plated (Tiffany style) RCA connectors
- Trigger input and output
- Intelligent protection from electrical faults
- Intelligent protection from thermal faults and overheating
- Stealth mode (front panel indicator LEDs can be disabled)
- Rack mountable
- 10-year Limited Warranty

Operation

Turning on the AC power

The AC mains power on the PA 7-350 is controlled by the Power rocker switch located on the rear panel above the power cable. Once the AC power is turned on, the PA 7-350 will remain in Standby mode until the Standby / Power push button on the front panel is pressed, or the Trigger input is activated.

Operating the PA 7-350

When the AC power switch is On, the PA 7-350 will remain in Standby mode until activated. In Standby mode, front panel channel status LEDs will be off, and the Power LED will be lit RED.

Pressing the Power / Standby push button on the front panel or raising the Trigger input will switch the PA 7-350 into Operating mode. When the PA 7-350 is switched into Operating mode, the Power LED will switch from RED to BLUE. Each channel status LED will in turn light RED, then switch to BLUE. Under normal operation, with no faults, and with the Channel Status switch on the rear panel set to On, all LEDs will be lit BLUE. If the Channel Status switch is set to Off, then only the Power LED will be illuminated, and it will be BLUE in normal operation with no fault conditions.

Resetting a fault

If a fault exists, one or more channel status LEDs (the fault channels) will flash RED, while the rest extinguish. If this happens, remove the fault and switch the unit into Standby and then back to Operate - by pressing the Power / Standby push button twice (or turn the rear panel Power switch Off and On again). If the fault indication remains, please refer to the Troubleshooting section for more options.

Periodic Maintenance

The PA 7-350 requires no periodic maintenance.

Cleaning the PA 7-350

- If necessary, the PA 7-350 should be cleaned gently with a soft rag.
- If something sticky gets on the front panel or case of the PA 7-350, it should be cleaned with a mild cleaning solution applied to a soft rag, followed by wiping with a clean rag dampened with plain water, and drying with a soft dry rag or cloth.

Note: DO NOT spray water or cleaning solution directly onto the PA 7-350 or into the vents.

Troubleshooting

If problems occur, the first step should be to verify that the PA 7-350 is set to the proper line voltage for your AC power source, and that your power source is operating correctly and is of sufficient capacity to power the PA 7-350.

Problem: Everything is working fine, but the front panel channel status LEDs do NOT light

- Switch the status LEDs back on using the rear panel Channel Status switch (located above the power cord receptacle)

Problem: No sound is heard from any channel (the Power LED is NOT LIT)

You have no AC power

- Verify that the rear panel Power switch is On
- Verify that your circuit is live
- Verify that the line cord on the PA 7-350 is fully inserted and is tight

Problem: No sound is heard from any channel (the Power LED is lit RED)

The PA 7-350 is in Standby mode

- Press the Power / Standby button (or activate the Trigger input)

Problem: No sound or distorted sound is heard from one or more channels (the Power LED is lit BLUE and ALL channel status LEDs are lit BLUE)

The PA 7-350 is On and is not indicating a fault

- Verify that the Balanced / Unbalanced switch for the quiet channel(s) is set to the correct position
- Check your source
- Check your input cabling
- Check your speakers and speaker connections

Problem: No sound is heard from one or more channels (one or more channel status LEDs are FLASHING RED; all other LEDs are NOT lit)

The PA 7-350 is indicating a fault on one or more channels (the flashing LEDs correspond to the channels where faults have been detected)

- Verify that the speaker cable and speaker terminals are not shorted
- Verify that the speaker itself is not shorted or damaged (try the speaker on another channel and see if the fault “moves”)
- Verify that the source is not faulty (try that input cable on another input and see if the fault “moves”)
- Disconnect all inputs and outputs and reset the PA 7-350 (press the front panel Power / Standby push button twice to clear the fault condition and return the PA 7-350 to Operate mode)

If the fault condition persists after all inputs and outputs have been disconnected and the fault has been reset by pressing the Power / Standby push button twice, AND the Voltage Select switch is in the proper position, please contact Sherbourn Technical Support.

Sherbourn Technologies, LLC Ten-Year Limited Warranty

What does this warranty cover? Sherbourn Technologies, LLC (“Sherbourn”) warrants its products against defects in materials and workmanship. This warranty is subject to revision at any time.

How long does this coverage last? This warranty commences on the date of retail purchase by the original retail purchaser and runs for a period of ten (10) years thereafter, with the following exceptions: (1) receivers (including the SR-8100, SR-8200, and SR-120), preamp/processors (including the PT-7030, PT-720C4, and PT-7020), preamplifiers (including the PRE-1), and the CD-1 CD Player (with the exception of the slot load CD engine) are covered by this warranty for five (5) years from the date of retail purchase by the original purchaser; and (2) electromechanical components, including the slot load CD engine on the CD-1 CD Player, and all fans (including the C-12 Cooling Unit), are covered by this warranty for three (3) years from the date of retail purchase by the original retail purchaser. This warranty is transferrable, upon written notification to Sherbourn, to any person that owns the warranted product, however, if ownership is transferred, the Term shall be no longer than five (5) years from the date of purchase by the original purchaser. Sherbourn warrants any replacement product or part furnished hereunder against defects in materials and workmanship for the longer of the following: (i) the amount of time remaining under the original warranty, or (ii) 120 days from your receipt of the repaired or replaced product. The duration described in the previous 3 sentences is hereinafter referred to as the “Term”. TO THE FULLEST EXTENT PERMITTED BY LAW, ALL IMPLIED WARRANTIES RELATED TO THE ORIGINAL PRODUCT AND ANY REPLACEMENT PRODUCT OR PARTS (INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) ARE EXPRESSLY LIMITED TO THE TERM OF THIS LIMITED WARRANTY. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. A claim under this warranty must be made by you within the Term. A claim shall not be valid (and Sherbourn has no obligation related to the claim) if it is not made within the Term and if it is not made in strict compliance with the requirements of the “How do you get service?” section.

What will Sherbourn do? Sherbourn will, at its option, either: (i) repair the product, or (ii) replace the product with a new consumer product which is identical or reasonably equivalent to the product. Sherbourn may provide you with a refund of the actual purchase price of the product in the event (i) Sherbourn is unable to provide replacement and repair is not commercially practicable or cannot be timely made, or (ii) you agree to accept a refund in lieu of other remedies hereunder. When a product or part is repaired or replaced, any replacement item becomes your property and the replaced item becomes Sherbourn’s property. When a refund is given, the product for which the refund is provided must be returned to Sherbourn and becomes Sherbourn’s property.

What is not covered by this warranty? This warranty does not apply: (i) to damage caused by use with non-Sherbourn products, where the non-Sherbourn product is the cause of the damage; (ii) to damage caused by service or maintenance performed by anyone who is not a representative of Sherbourn; (iii) to damage caused by accident, abuse, misuse, flood, fire, earthquake or other external causes; (iv) to a product or part that has been modified after its retail purchase, where the modification caused or contributed to the damage; (v) to consumable parts, such as batteries; (vi) normal wear tear; or (vii) if any Sherbourn serial number has been removed or defaced and Sherbourn cannot otherwise confirm that you are the original retail purchaser or authorized transferee. SHERBOURN SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM OR RELATED TO ANY DEFECTS IN OR DAMAGES TO ITS

PRODUCTS. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY.

How do you get service? In order to make a claim under the warranty, you must:

1. Call a customer service representative ("CSR") of Sherbourn at (1-877-366-8324). Provide the CSR with a description of your problem and the serial number of the product for which the warranty claim is being made.
2. The CSR will provide you with a returned material authorization number ("RMA").
3. Ship the product to Sherbourn at the following address, with the RMA written in large, bold letters on the outside of the box, and with the letters "RMA" written before the number. Parcels arriving without a RMA number on the outside of the box will be refused.

Sherbourn Technologies, LLC
Attn: Repair Department
131 Southeast Parkway Court
Franklin, TN 37064

How does state law apply? This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. CERTAIN STATES HAVE ENACTED LAWS WHICH PRECLUDE THE WAIVER OF CONSEQUENTIAL AND INCIDENTAL DAMAGES AND/OR PRECLUDE THE WAIVER/LIMITATION OF IMPLIED WARRANTIES. TO THE EXTENT YOUR STATE HAS ENACTED A LAW WHICH PROHIBITS SUCH A WAIVER/LIMITATION, ALL SUCH WAIVERS/LIMITATIONS CONTAINED IN THIS WARRANTY ARE INAPPLICABLE TO YOU. CERTAIN STATES HAVE ENACTED LAWS WHICH REQUIRE THE DURATION OF A WARRANTY TO BE EXTENDED (INCLUDING BUT NOT LIMITED TO DURING PERIODS OF REPAIR). TO THE EXTENT YOUR STATE HAS ENACTED A LAW OF THIS NATURE, THEN THE DURATION OF THIS WARRANTY WILL BE EXTENDED AS REQUIRED BY APPLICABLE LAW.

Notes



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