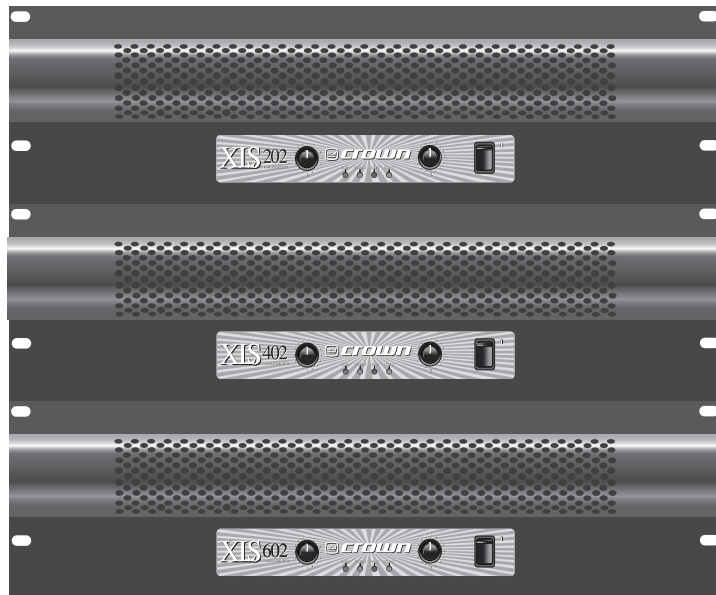




## XLS Series

Operation Manual



**XLS 202**

**XLS 402**

**XLS 602**

**Obtaining Other Language Versions:** To obtain information in another language about the use of this product, please contact your local Crown Distributor. If you need assistance locating your local distributor, please contact Crown at 574-294-8000.

This manual does not include all of the details of design, production, or variations of the equipment. Nor does it cover every possible situation which may arise during installation, operation or maintenance.

The information provided in this manual was deemed accurate as of the publication date. However, updates to this information may have occurred.

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**Some models may be exported under the name Amcron.®**

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**H** A Harman International Company

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## Important Safety Instructions

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with a dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.



- 12) Use only with a cart, stand, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 15) To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.



**CAUTION**  
RISK OF ELECTRIC SHOCK  
DO NOT OPEN

TO PREVENT ELECTRIC SHOCK DO NOT REMOVE TOP OR BOTTOM COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

**AVIS**  
RISQUE DE CHOC ÉLECTRIQUE  
N'OUVREZ PAS

À PRÉVENIR LE CHOC ÉLECTRIQUE N'ENLEVEZ PAS LES COUVERCLES. IL N'Y A PAS DES PARTIES SERVICEABLE À L'INTÉRIEUR. TOUTES RÉPARATIONS DOIT ÊTRE FAIRE PAR PERSONNEL QUALIFIÉ SEULEMENT.



### IMPORTANT

The XLS Series amplifiers require Class 2 output wiring.



### MAGNETIC FIELD

**CAUTION!** Do not locate sensitive high-gain equipment such as preamplifiers or tape decks directly above or below the unit. Because this amplifier has a high power density, it has a strong magnetic field which can induce hum into unshielded devices that are located nearby. The field is strongest just above and below the unit.

If an equipment rack is used, we recommend locating the amplifier(s) in the bottom of the rack and the preamplifier or other sensitive equipment at the top.

### WATCH FOR THESE SYMBOLS:



The lightning bolt triangle is used to alert the user to the risk of electric shock.



The exclamation point triangle is used to alert the user to important operating or maintenance instructions.

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<b>XLS 202</b>	*1 kHz Power
2-ohm Stereo (per channel)	<b>250W</b>
4-ohm Stereo (per channel)	<b>200W</b>
8-ohm Stereo (per channel)	<b>145W</b>
*1 kHz Power: refers to maximum average power in watts at 1 kHz with 0.1% THD.	

<b>XLS 402</b>	*1 kHz Power
2-ohm Stereo (per channel)	<b>570W</b>
4-ohm Stereo (per channel)	<b>400W</b>
8-ohm Stereo (per channel)	<b>260W</b>
*1 kHz Power: refers to maximum average power in watts at 1 kHz with 0.1% THD.	

<b>XLS 602</b>	*1 kHz Power
2-ohm Stereo (per channel)	<b>840W</b>
4-ohm Stereo (per channel)	<b>600W</b>
8-ohm Stereo (per channel)	<b>370W</b>
*1 kHz Power: refers to maximum average power in watts at 1 kHz with 0.1% THD.	

## 1 Welcome

The XLS Series of power amplifiers from Crown represents a new era in affordable, quality power amplification. The line consists of three models in a uniform, rugged chassis, incorporating the best of tried-and-true design principles and innovative features.

Modern power amplifiers are sophisticated pieces of engineering capable of producing extremely high power levels. They must be treated with respect and correctly installed if they are to provide the many years of reliable service for which they were designed.

In addition, XLS Series amplifiers include a number of features which require some explanation before they can be used to their maximum advantage.

Please take the time to study this manual so that you can obtain the best possible service from your amplifier.

### 1.1 Features

- Simple, reliable design incorporates many popular features.
- Selectable high-pass filter on each channel enables amplifier to work more efficiently when full band-width is not required (eg: two- or three-way systems).

- Pair of linear optocoupler clip limiters protects loudspeakers from being overdriven.
- Housed in a rugged, all-steel 3U chassis.
- Efficient forced-air fan prevents excessive thermal buildup.
- Electronically balanced XLR inputs and touch-proof binding post outputs.
- Features precision detented level controls, power switch, and four LEDs, which indicate clip for each channel, power and fault conditions.

### 1.2 Unpacking Your Amplifier

Please unpack and inspect your amplifier for any damage that may have occurred during transit. If damage is found, notify the transportation company immediately. Only you can initiate a claim for shipping damage. Crown will be happy to help as needed. Save the shipping carton as evidence of damage for the shipper's inspection.

We also recommend that you save all packing materials so you will have them if you ever need to transport the unit. **Never ship the unit without the factory pack.**

## 2 How to Use This Manual

This manual provides you with the necessary information to safely and correctly setup and operate your amplifier. It does not cover every aspect of installation, setup or operation that might occur under every condition. For additional information, please consult Crown's *Amplifier Application Guide* (available online at [www.crownaudio.com](http://www.crownaudio.com)), Crown Tech Support, your system installer or retailer.

We strongly recommend you read all instructions, warnings and cautions contained in this manual. Also, for your protection, please send in your warranty registration card today. And save your bill of sale—it's your official proof of purchase.

### 3 Setup

#### 3.1 Unpack Your Amplifier

YOU WILL NEED (not supplied):

- Two input wiring cables
- Two output wiring cables
- Rack for mounting amplifier (or a stable surface for stacking)



**WARNING:** Before you start to set up your amplifier, make sure you read and observe the Important Safety Instructions found at the beginning of this manual.



#### 3.2 Voltage Selection

**CAUTION:** Before use, your amplifier must be set to the correct operating voltage for your local supply. Typically, units are shipped from the factory with voltage already set with the correct setting, but this setting should be verified before first using the amplifier.

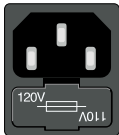


Figure 3.1 Voltage Selection

The selected voltage is displayed on the top, left side of the fuse drawer (see Figure 3.1). To change the voltage setting; disconnect the power source, then gently pry out the fuse casing from the fuse drawer. Replace with the correct voltage positioned to display on the top left side.

Be sure to operate your amplifier from a power supply within  $\pm 10\%$  of the rated voltage (i.e., 108-132V for 120V supply).

#### 3.3 Mount Your Amplifier



**CAUTION:** Before you begin, make sure your amplifier is disconnected from the power source, with power switch in the "off" position and all level controls turned completely down (counterclockwise).

Use a standard 19-inch (48.3 cm) equipment rack. See Figure 3.2 for amplifier dimensions.

You may also stack amps without using a cabinet.

NOTE: When transporting, amplifiers should be supported at both front and back.

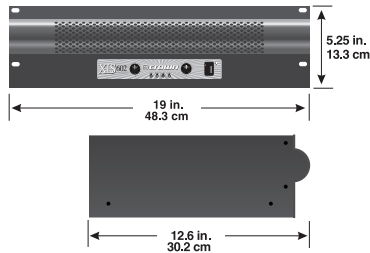


Figure 3.2 Dimensions

#### 3.4 Ensure Proper Cooling

When using an equipment rack, mount units directly on top of each other. Close any open spaces in rack with blank panels. DO NOT block side or front air vents.

Figure 3.3 illustrates standard amplifier airflow.

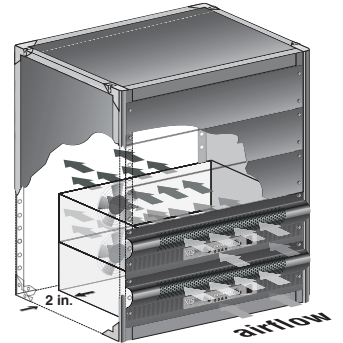


Figure 3.3 Airflow

**3 Setup**

**3.5 Choose Input Wire and Connectors**

Crown recommends using pre-built or professionally wired, balanced line (two-conductor plus shield), 22-24 gauge cables and connectors. You should use 3-pin male XLR cable ends at the amplifier inputs. Unbalanced line may also be used but may result in noise over long cable runs.

Note: Male XLR signal links are also provided on the amplifier to allow daisy-chaining of the audio signal.

Refer to Figure 3.4 for correct XLR connector pin assignments.



**NOTE: Custom wiring should only be performed by qualified personnel.**

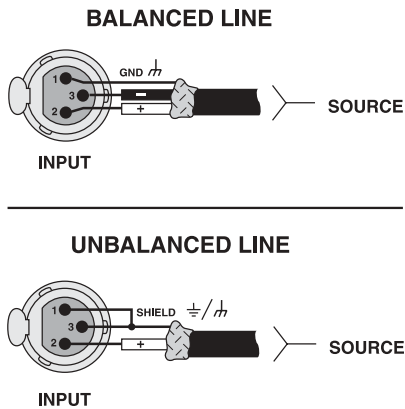


Figure 3.4. Input Connector Wiring

**3.6 Choose Output Wire and Connectors**

Crown recommends using pre-built or professionally wired, high-quality, two- or four-conductor, heavy gauge speaker wire and connectors. You may use banana plugs, spade lugs or bare wire for your output connectors (see Figure 3.5). To prevent the possibility of short-circuits, wrap or otherwise insulate exposed loudspeaker cable connectors.

Using the guidelines below, select the appropriate size of wire based on the distance from amplifier to speaker.

Distance	Wire Size
up to 25 ft.	16 gauge
26-40 ft.	14 gauge
41-60 ft.	12 gauge
61-100 ft.	10 gauge
101-150 ft.	8 gauge
151-250 ft.	6 gauge



**CAUTION: Never use shielded cable for output wiring.**

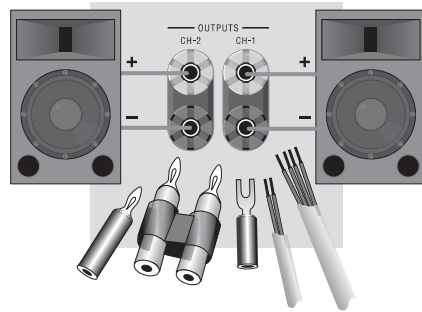


Figure 3.5. Output Connector Wiring

### 3 Setup

#### 3.7 Wire Your System

##### 3.7.1 Stereo Mode

Typical input and output wiring is shown in Figure 3.6.

INPUTS: Connect input wiring for both channels.

OUTPUTS: Maintain proper polarity (+/-) on output connectors.

Connect Channel 1 positive (+) speaker load to Channel 1 positive (red) terminal of amp; repeat for negative (-). Repeat Channel 2 wiring as for Channel 1.

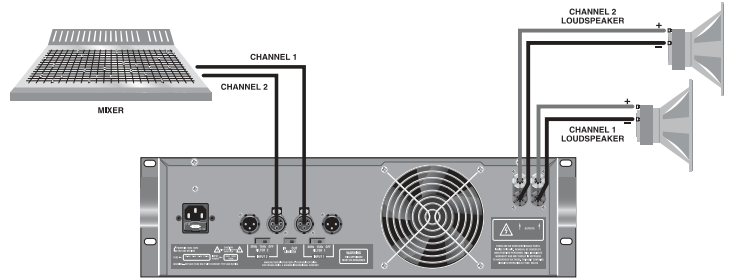


Figure 3.6. System Wiring, Stereo Mode

##### 3.7.2 Bridge-Mono Mode

Typical input and output wiring is shown in Figure 3.7.

INPUTS: Use a custom "Y" adapter cable, wired to split the signal and invert the polarity for the Channel 2 amplifier input as shown in Figure 3.8. We recommend you label the ends of the Y adapter to help make sure to connect the correct end to each amplifier input.

Connect the Y adapter between the signal source and each amplifier input.

NOTE: Crown provides a reference of wiring pin assignments for commonly used connector types in the *Crown Amplifier Application Guide* (Section 1.21.) available at [www.crownaudio.com](http://www.crownaudio.com).

OUTPUTS: Connect the speaker across the red binding post of each channel. Do not use the black binding posts when the amp is being operated in Bridge-Mono mode.

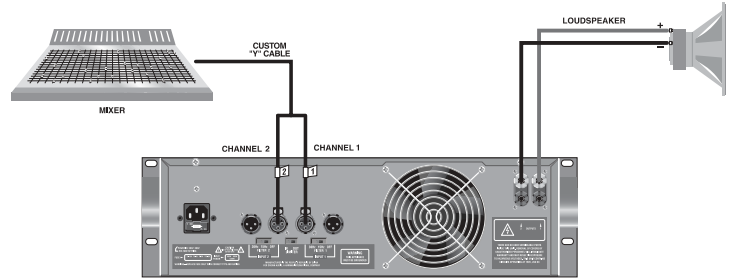


Figure 3.7. System Wiring, Bridge-Mono Mode



**NOTE: The Channel 1 and 2 level controls MUST be set to identical settings when operating the XLS amplifier in Bridge-Mono mode.**

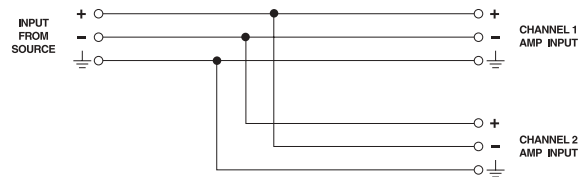


Figure 3.8. Custom Input Cable for Bridge-Mono Mode

### 3 Setup

#### 3.8 Connect to AC Mains

Connect your amplifier to the AC mains power source (power outlet) with the supplied AC power cordset. First, connect the IEC end of the cordset to the IEC connector on the amplifier; then, plug the other end of the cordset to the AC mains.

NOTE: The third prong of this connector (ground) is an important safety feature. Do not attempt to disable this ground connection by using an adapter or other methods.

Amplifiers don't create energy. The AC mains voltage and current must be sufficient to deliver the power you expect. You must operate your amplifier from an AC mains power source with not more than 10% variation above or below the amplifier's specified line voltage and within the specified frequency requirements (indicated on the amplifier's back panel label). If you are unsure of the output voltage of your AC mains, please consult your electrician.

#### 3.9 Startup Procedure

Use the following procedure when first turning on your amplifier:

1. Turn down the level of your audio source.
2. Turn down the level controls of the amplifier.
3. Turn on the "Power" switch. The Power indicator should glow.
4. Turn up the level of your audio source to an optimum level.
5. Turn up the Level controls on the amplifier until the desired loudness or power level is achieved.
6. Turn down the level of your audio source to its normal range.

If you ever need to make any wiring or installation changes, **don't forget to turn off the amplifier and disconnect the power cord.**

**For help with determining your system's optimum gain structure (signal levels) please refer to the *Crown Amplifier Application Guide*, available online at [www.crownaudio.com](http://www.crownaudio.com).**



### 4 Operation

#### 4.1 Precautions

Your XLS Series amplifier is protected from internal and external faults, but you should still take the following precautions for optimum performance and safety:

1. Before use, your amplifier first must be configured for proper operation, including input and output wiring hookup. Improper wiring can result in serious operating difficulties. For information on wiring and configuration, please consult the Setup section of this manual or, for advanced setup techniques, consult Crown's *Amplifier Application Guide* available online at [www.crownaudio.com](http://www.crownaudio.com).
2. Use care when making connections, selecting signal sources and controlling the output level. The load you save may be your own!
3. Do not short the ground lead of an output cable to the input signal ground. This may form a ground loop and cause oscillations.
4. **Never connect the output to a power supply, battery or power main. Electrical shock may result.**
5. Tampering with the circuitry, or making unauthorized circuit changes, may be hazardous and invalidates all agency listings.
6. **Never** operate the amplifier with the red Clip LEDs constantly flashing.
7. **Do Not** overdrive the mixer, which will cause a clipped signal to be sent to the amplifier. Such signals will be reproduced with extreme accuracy, and loud-speaker damage may result.
8. **Never** operate the amplifier with less than the rated load impedance. Due to the amplifier's output protection, such a configuration may result in premature clipping and speaker damage.
9. XLS Series amplifiers feature a built-in Anti-Clip Limiter which, when selected, will provide a high degree of protection against amplifier clipping. Crown recommends activating the limiter whenever sensible operation of the system cannot be ensured.



*Remember: Crown is not liable for damage that results from overdriving other system components.*



## 4 Operation

### 4.2 Front Panel Controls and Indicators

#### A. Cooling Vents

Front-to-rear forced airflow.

#### B. Level Controls

Two black rotary level controls, one for each channel.

#### C. Clip Indicators

Two red LEDs, one for each channel, illuminate when the channel's output signal is being overdriven.

#### D. Power Indicator

Green LED indicates amplifier has been turned on and AC power is available.

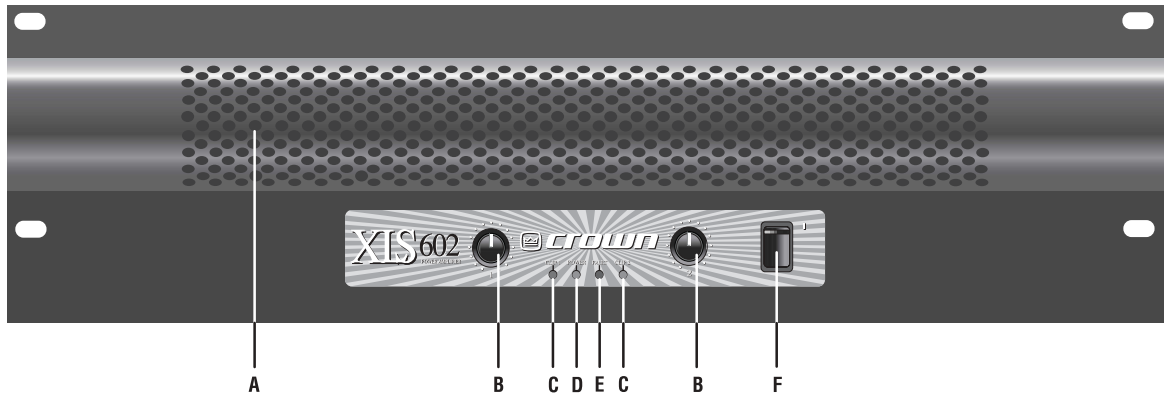
#### E. Fault Indicator

Yellow LED illuminates when amplifier is in protect mode. Also illuminates briefly during normal power-up when amplifier is first switched on.

#### F. Power Switch

Amplifier is on when the switch is in the UP position.

Figure 4.1 Front Panel Controls and Indicators



## 4 Operation

### 4.3 Back Panel Controls and Connectors

#### G. Power Connector

#### H. Fuse

Provides overload protection.

#### I. Voltage Selector

Two-position switch is factory-set to country-specific voltage. **WARNING: Do not operate your amplifier with an incorrect voltage selected or amplifier damage may result.**



#### J. Male XLR Signal Links

One per channel; male XLR connectors are provided for daisy-chaining to other amplifiers.

#### K. Balanced XLR Inputs

One per channel; three-pin female XLR input connectors are provided.

#### L. Filter Switches

One per channel; three-position switch sets the internal high-pass filter frequency. Frequency setting is 30 Hz when switch is in left position; 15 Hz when switch is centered; and bypassed when switch is in right position.

#### M. Limiter Switch

Offers loudspeaker protection against moderate amplifier clip when set to the "IN" position.

#### N. 5-Way Binding Post Output Jacks

One pair per channel; accept banana plugs, spade lugs or bare wire. Note: Binding post outputs on European models come with safety plugs installed to prevent banana plugs from being inserted. Note that it is possible to lever the caps out of the binding posts, but this will invalidate the product safety approvals in some territories. The side entry positions for these connectors should therefore be used if possible.

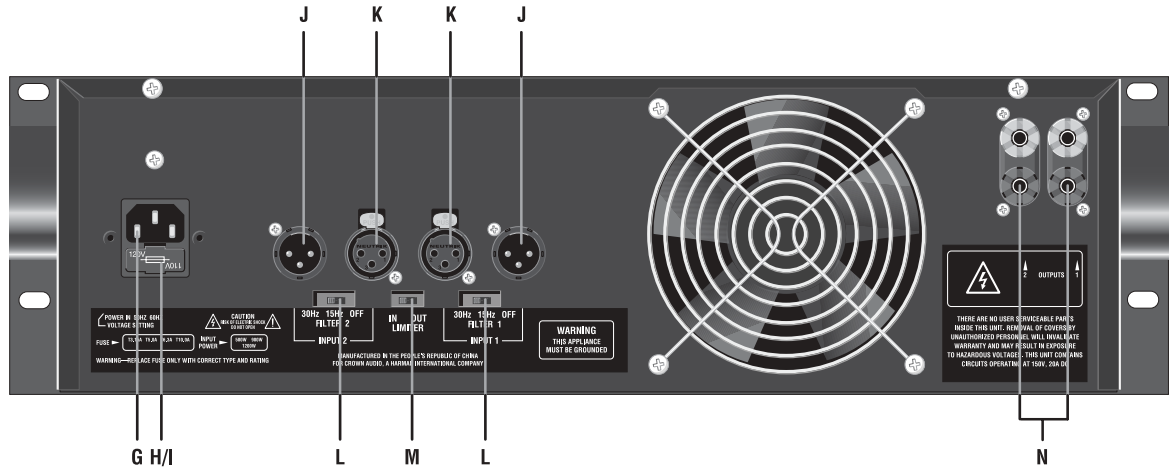


Figure 4.2 Back Panel Controls and Connectors

## 5 Advanced Features and Options

**NOTE:** For detailed information about these Crown amplifier features, please consult the *Crown Amplifier Application Guide*, available on the Crown website at [www.crownaudio.com](http://www.crownaudio.com).

### 5.1 Protection Systems

Your Crown amplifier provides extensive protection and diagnostic capabilities, including built-in anti-clip limiters, switchable high-pass filters, output current limiting, DC protection, fuses, and special thermal protection for the unit's transformers.

#### 5.1.1 Anti-Clip Limiters

Your Crown amplifier has built-in Anti-Clip Limiters which offer a degree of protection to your loudspeakers. The Anti-Clip Limiters work by dynamically reducing the amplifier gain if the output stage is driven into clip, thereby reducing potentially damaging distortion to moderate levels.

While some audio systems may already contain protective limiters preceding the amplifier in the system, additional use of the Anti-Clip Limiters generally will not noticeably affect output quality. For systems without additional protection, use of the Anti-Clip Limiters can enhance your system's output quality and prevent catastrophic damage to your speakers.

Regardless of whether or not the Anti-Clip Limiters are enabled, your amplifier should never be operated at a level which causes the front-panel Clip LEDs to illuminate constantly. While the Anti-Clip Limiters help to prevent damage due to signal distortion, your speakers can still be damaged by excess power dissipation.

The Anti-Clip limiters are enabled by moving the rear-panel Limiter switch to the "IN" position (see Figure 5.1).

#### 5.1.2 High-Pass Filters

Very low frequency signals contain no useful musical energy, waste valuable amplifier power and headroom, and can be damaging to



Figure 5.2 High-Pass Filter switch

your speakers. Your Crown amplifier provides switchable high-pass filters to remove these signals from each channel's output.

For each channel, a back-panel, three-position switch provides optional settings of 30 Hz (left), 15 Hz (center), or OFF (right) (see Figure 5.2). The 30 Hz setting is suitable for all full-range and low-frequency applications. The 15 Hz setting may be selected when the amplifier is being used to drive a sub-bass program; use only with speakers that provide a useful frequency response below 30 Hz. The OFF setting provides bypass of the high-pass filters, for use when subsonic protection is provided elsewhere in the system.

#### 5.1.3 Output Current Limiting

Output Current Limiting circuitry protects the amplifier output stage from damage caused by short circuit loads.

#### 5.1.4 DC Protection

DC Protection disconnects the loudspeaker load in the event of an output DC offset exceeding 2V. In such an event the yellow Fault LED will illuminate (see Figure 5.3) and both amplifier channels will be muted. In the majority of cases, DC protection is indicative of a faulty amplifier channel, and will be accompanied by an illuminated Clip LED, even with no input connected and level controls set at minimum. If this is the case, contact your dealer or service center.

#### 5.1.5 Fuse

The high-voltage power supplies of your Crown amplifier are protected by a fuse. The fuse rating varies depending on model and supply voltage as follows.

	230V	120V
XLS202	T6.3A	T6.3A
XLS402	T6.3A	T10A
XLS602	T6.3A	T10A



Figure 5.4 Amplifier fuse rating

The fuse rating for your amplifier will also be indicated on the amplifier back panel label below the power connector (see Figure 5.4).

Crown amplifiers do not blow their fuses unless something is wrong. Repeated fuse failure typically indicates problems with the amplifier or installation which should be corrected immediately.

Should the fuse need to be replaced, take care to follow these precautions:

1. Remove power before replacing.
2. Never replace the fuse with a higher rating than specified; **this could result in a fire hazard.**
3. **IMPORTANT:** The orientation of the fuse drawer determines the operating voltage of your amplifier. Should the fuse need to be replaced, take care to replace the fuse drawer so that the voltage numbers displayed on the top, left corner of the drawer are correct for your local supply.



#### 5.1.6 Thermal Protection

The Thermal Protection circuit will activate should the internal heatsink temperature exceed proper operating temperatures (194 degrees F, 90 degrees C). When the heatsink temperature has fallen to a safe level, this protection circuit will automatically be reset. Principle causes of thermal protection are: 1) Inadequate ventilation of the equipment rack; 2) Incorrect load impedance; 3) Output cable short circuit; 4) Blocked air vent; 5) Heatsinks in need of cleaning; 6) Cooling fan failure.

The cause of your amplifier's thermal protection state should be determined and corrected as soon as possible. Without correction, the Thermal Protection circuit will typically reactivate.



Figure 5.1 Anti-Clip Limiter switch

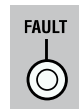


Figure 5.3 Fault indicator

**6 Troubleshooting**

CLIP 1	POWER	FAULT	CLIP 2	<p><b>CONDITION: Normal operation.</b></p> <p>POSSIBLE REASON:</p> <ul style="list-style-type: none"> <li>This is normal operation for your amp.</li> </ul>

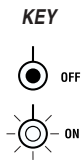
CLIP 1	POWER	FAULT	CLIP 2	<p><b>CONDITION: No power to the amplifier.</b></p> <p>POSSIBLE REASON:</p> <ul style="list-style-type: none"> <li>The amplifier's "power" switch is off.</li> <li>The amplifier is not plugged into the power receptacle.</li> <li>The amplifier's high-voltage power supply fuse has blown. Refer to the Advanced Features and Options section of this manual for instruction on fuse replacement.</li> </ul>

CLIP 1	POWER	FAULT	CLIP 2	<p><b>CONDITION: Distorted sound.</b></p> <p>POSSIBLE REASON:</p> <ul style="list-style-type: none"> <li>Input signal level is too high. Enable "anti-clip" Limiter switch. If Clip indicators continue to illuminate frequently, turn down your amplifier level controls. NOTE: Your amplifier should never be operated at a level which causes the Clip LEDs to illuminate constantly.</li> </ul>

CLIP 1	POWER	FAULT	CLIP 2	<p><b>CONDITION: No sound.</b></p> <p>POSSIBLE REASON:</p> <ul style="list-style-type: none"> <li>The amplifier has just been turned on and is still in the 4-second turn-on delay.</li> <li>The amplifier is in "fault" mode. A Fault status can be triggered when one of the amplifier's protection circuits is activated. First disconnect your speakers from the affected channel(s) one by one to determine if one of the loads is shorted. If the indicators return to normal status, then try a different speaker or cable to determine where the short is occurring. If no short can be found, turn off the amp and allow the amp to cool. If indicators do not return to normal after restarting your amp, check the fuse and replace if necessary, or return amp to Crown or an authorized Crown Service Center for servicing.</li> </ul>

---

CLIP 1	POWER	FAULT	CLIP 2	<ul style="list-style-type: none"> <li>No input signal.</li> <li>Input signal level is very low.</li> <li>Level controls are turned down.</li> <li>Speakers not connected.</li> </ul>



## 7 Specifications

Minimum Guaranteed Power (watts)	XLS202	XLS402	XLS602
<b>120 VAC, 60 Hz Units, per channel, both channels driven</b>			
<b>1 kHz with 0.1% THD</b>			
Stereo, 2 ohm (per ch.)	250	570	840
Stereo, 4 ohm (per ch.)	200	400	600
Stereo, 8 ohm (per ch.)	145	260	370
<b>240 VAC, 50 Hz Units, per channel, both channels driven</b>			
<b>1 kHz with 0.1% THD</b>			
Stereo, 2 ohm (per ch.)	260	610	880
Stereo, 4 ohm (per ch.)	225	445	670
Stereo, 8 ohm (per ch.)	155	275	400
Performance	XLS202	XLS402	XLS602
<b>Sensitivity (volts RMS) for full rated power at 4 ohms</b>			
	0.725	1.025	1.26
<b>Frequency Response (at 1 watt) 20Hz - 20kHz</b>			
	± 0.75 dB	± 0.75 dB	± 0.75 dB
<b>Phase Response (degrees at 1 watt)</b>			
at 10 Hz	-10	-10	-10
at 20 kHz	+19	+19	+19
<b>Signal to Noise Ratio (20 Hz to 20 kHz)</b>			
A-weighted, below rated power	> 100 dB	> 100 dB	> 100 dB
No weighting, below rated power	> 97 dB	> 97 dB	> 97 dB
<b>Total Harmonic Distortion (THD) at full bandwidth power, from 20 Hz to 1 kHz</b>			
	< 0.15%	< 0.15%	< 0.15%
<b>Intermodulation Distortion (IMD) 60 Hz and 7 kHz at 4:1, from full rated output to -40 dB</b>			
	< 0.3%	< 0.3%	< 0.3%
<b>Damping Factor (8 ohm) 10Hz to 400Hz</b>			
	> 200	> 200	> 200
<b>Crosstalk, below rated power</b>			
at 1 kHz	-82 dB	-82 dB	-82 dB
at 20 kHz	-58 dB	-58 dB	-58 dB
<b>Input Impedance nominally balanced, nominally unbalanced</b>			
	20 k ohms, 10 k ohms	20 k ohms, 10 k ohms	20 k ohms, 10 k ohms
<b>Load Impedance (rated)</b>			
Note: Safe with all types of loads.			
Stereo	2-8 ohms	2-8 ohms	2-8 ohms
Bridge-Mono	8 ohms	8 ohms	8 ohms
<b>Voltage Gain (at maximum output)</b>			
	31 dB	31 dB	31 dB
<b>AC Line Voltage and Frequency Configurations Available (±10%)</b>			
	120 VAC/60 Hz and 230 VAC/50 Hz	120 VAC/60 Hz and 230 VAC/50 Hz	120 VAC/60 Hz and 230 VAC/50 Hz

## 7 Specifications

Construction		All Models		
Ventilation		Flow-through ventilation from front to back.		
Cooling		Internal heat sinks with forced-air cooling for rapid, uniform heat dissipation.		
Air Volume Requirements (per minute per unit)		80.15 ft <sup>3</sup> (2.27 m <sup>3</sup> )		
Dimensions				
Width		EIA Standard 19-inch rack mount (EIA RS-310-B);		
Height		5.25 inch (13.3 cm)		
Depth (behind mounting surface)		12.6 inch (32.0 cm).		
Weight		XLS202	XLS402	XLS602
Net Weight		30 lbs. (13.6 kg)	31 lbs. (14.0 kg)	33 lbs. (15.0 kg)
Shipping Weight		37 lbs. (16.8 kg)	38 lbs. (17.2 kg)	42 lbs. (19 kg)

## 8 Service

Crown amplifiers are quality units that rarely require servicing. Before returning your unit for servicing, please contact Crown Technical Support to verify the need for servicing.

This unit has very sophisticated circuitry which should only be serviced by a fully trained technician. This is one reason why each unit bears the following label:



**CAUTION: To prevent electric shock, do not remove covers. No user serviceable parts inside. Refer servicing to a qualified technician.**

### 8.1 Worldwide Service

Service may be obtained from an authorized service center. (Contact your local Crown/Amcron representative or our office for a list of authorized service centers.) To obtain service, simply present the bill of sale as proof of purchase along with the defective unit to an authorized service center. They will handle the necessary paperwork and repair.

Remember to transport your unit in the original factory pack.

### 8.2 US and Canada Service

Service may be obtained from the factory. It is important that you have your copy of the bill of sale as your proof of purchase.

#### 8.2.1 Factory Service

To obtain factory service, fill out the service information page found in the back of this manual and send it along with your proof of purchase and the defective unit to the Crown factory.

For warranty service, we will pay for ground shipping both ways in the United States. Contact Crown Factory Service or Technical Support to obtain prepaid shipping labels prior to sending the unit. Or, if you prefer, you may prepay the cost of shipping, and Crown will reimburse you. Send copies of the shipping receipts to Crown to receive reimbursement.

Your repaired unit will be returned via UPS ground. Please contact us if other arrangements are required.

#### Factory Service Shipping Instructions:

1. Before sending a Crown product to the factory for service, first call the Crown Service Department for a return authorization (RA) number.
2. Be sure to fill out the service information form that follows and enclose it with your shipment, either inside the box or in a packing slip envelope securely attached to the outside of the shipping carton. Do not send the service information form separately.
3. To ensure the safe transportation of your unit to the factory, ship it in an original factory packing container. If you don't have the original carton, you may obtain a product service foam-in-place shipping pack from the Crown Factory Service Department at the number listed below. For non-warranty service, you may also provide your own shipping pack. Minimum recommended requirements for materials are as follows: 275

P.S.I. burst test Double-Wall carton that allows for 2-inch solid Styrofoam on all six sides of unit or 3 inches of plastic bubble wrap on all six sides of unit; securely seal the package with an adequate carton sealing tape. Do not use light boxes or "peanuts." Damage caused by poor packing cannot be covered under warranty.

4. Do not ship the unit in any kind of cabinet (wood or metal). Ignoring this warning may result in extensive damage to the unit and the cabinet. Accessories are not needed—do not send the product documentation, cables and other hardware.

If you have any questions, please call or write the Crown Technical Support Group.

#### Crown Customer Service Technical Support / Factory Service

Plant 2 SW, 1718 W. Mishawaka Rd.,  
Elkhart, Indiana 46517 U.S.A.

**Telephone:** 574-294-8200  
800-342-6939 (North America,  
Puerto Rico, and Virgin Islands only)

**Facsimile:**  
574-294-8301 (Technical Support)  
574-294-8124 (Factory Service)

**Internet:**  
<http://www.crownaudio.com>



## 9 Warranty



### UNITED STATES & CANADA

#### SUMMARY OF WARRANTY

Crown International, 1718 West Mishawaka Road, Elkhart, Indiana 46517-4095 U.S.A. warrants to you, the ORIGINAL PURCHASER and ANY SUBSEQUENT OWNER of each NEW Crown product, for a period of three (3) years from the date of purchase by the original purchaser (the "warranty period") that the new Crown product is free of defects in materials and workmanship. We further warrant the new Crown product regardless of the reason for failure, except as excluded in this Warranty.

#### ITEMS EXCLUDED FROM THIS CROWN WARRANTY

This Crown Warranty is in effect only for failure of a new Crown product which occurred within the Warranty Period. It does not cover any product which has been damaged because of any intentional misuse, accident, negligence, or loss which is covered under any of your insurance contracts. This Crown Warranty also does not extend to the new Crown product if the serial number has been defaced, altered, or removed.

#### WHAT THE WARRANTOR WILL DO

We will remedy any defect, regardless of the reason for failure (except as excluded), by repair, replacement, or refund. We may not elect refund unless you agree, or unless we are unable to provide replacement, and repair is not practical or cannot be timely made. If a refund is elected, then you must make the defective or malfunctioning product available to us free and clear of all liens or other encumbrances. The refunds will be equal to the actual

purchase price, not including interest, insurance, closing costs, and other finance charges less a reasonable depreciation on the product from the date of original purchase. Warranty work can only be performed at our authorized service centers or at the factory. Warranty work for some products can only be performed at our factory. We will remedy the defect and ship the product from the service center or our factory within a reasonable time after receipt of the defective product at our authorized service center or our factory. All expenses in remedying the defect, including surface shipping costs in the United States, will be borne by us. (You must bear the expense of shipping the product between any foreign country and the port of entry in the United States including the return shipment, and all taxes, duties, and other customs fees for such foreign shipments.)

#### HOW TO OBTAIN WARRANTY SERVICE

You must notify us of your need for warranty service within the warranty period. All components must be shipped in a factory pack, which, if needed, may be obtained from us free of charge. Corrective action will be taken within a reasonable time of the date of receipt of the defective product by us or our authorized service center. If the repairs made by us or our authorized service center are not satisfactory, notify us or our authorized service center immediately.

#### DISCLAIMER OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

YOU ARE NOT ENTITLED TO RECOVER FROM US ANY INCIDENTAL DAMAGES RESULTING

FROM ANY DEFECT IN THE NEW CROWN PRODUCT. THIS INCLUDES ANY DAMAGE TO ANOTHER PRODUCT OR PRODUCTS RESULTING FROM SUCH A DEFECT. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

#### WARRANTY ALTERATIONS

No person has the authority to enlarge, amend, or modify this Crown Warranty. This Crown Warranty is not extended by the length of time which you are deprived of the use of the new Crown product. Repairs and replacement parts provided under the terms of this Crown Warranty shall carry only the unexpired portion of this Crown Warranty.

#### DESIGN CHANGES

We reserve the right to change the design of any product from time to time without notice and with no obligation to make corresponding changes in products previously manufactured.

#### LEGAL REMEDIES OF PURCHASER

THIS CROWN WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE. No action to enforce this Crown Warranty shall be commenced after expiration of the warranty period.

THIS STATEMENT OF WARRANTY SUPERSEDES ANY OTHERS CONTAINED IN THIS MANUAL FOR CROWN PRODUCTS.



## 9 Warranty



### SUMMARY OF WARRANTY

Crown International, 1718 West Mishawaka Road, Elkhart, Indiana 46517-4095 U.S.A. warrants to you, the ORIGINAL PURCHASER and ANY SUBSEQUENT OWNER of each NEW Crown<sup>1</sup> product, for a period of three (3) years from the date of purchase by the original purchaser (the "warranty period") that the new Crown product is free of defects in materials and workmanship, and we further warrant the new Crown product regardless of the reason for failure, except as excluded in this Warranty.

<sup>1</sup> Note: If your unit bears the name "Amcron," please substitute it for the name "Crown" in this warranty.

### ITEMS EXCLUDED FROM THIS CROWN WARRANTY

This Crown Warranty is in effect only for failure of a new Crown product which occurred within the Warranty Period. It does not cover any product which has been damaged because of any intentional misuse, accident, negligence, or loss which is covered under any of your insurance contracts. This Crown Warranty also does not extend to the new Crown product if the serial number has been defaced, altered, or removed.

### WHAT THE WARRANTOR WILL DO

We will remedy any defect, regardless of the reason for failure (except as excluded),

### WORLDWIDE EXCEPT USA & CANADA

by repair, replacement, or refund. We may not elect refund unless you agree, or unless we are unable to provide replacement, and repair is not practical or cannot be timely made. If a refund is elected, then you must make the defective or malfunctioning product available to us free and clear of all liens or other encumbrances. The refund will be equal to the actual purchase price, not including interest, insurance, closing costs, and other finance charges less a reasonable depreciation on the product from the date of original purchase. Warranty work can only be performed at our authorized service centers. We will remedy the defect and ship the product from the service center within a reasonable time after receipt of the defective product at our authorized service center.

### HOW TO OBTAIN WARRANTY SERVICE

You must notify your local Crown importer of your need for warranty service within the warranty period. All components must be shipped in the original box. Corrective action will be taken within a reasonable time of the date of receipt of the defective product by our authorized service center. If the repairs made by our authorized service center are not satisfactory, notify our authorized service center immediately.

### DISCLAIMER OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

YOU ARE NOT ENTITLED TO RECOVER FROM US ANY INCIDENTAL DAMAGES RESULTING FROM ANY DEFECT IN THE NEW CROWN PRODUCT. THIS INCLUDES ANY DAMAGE TO ANOTHER PRODUCT OR PRODUCTS RESULTING FROM SUCH A DEFECT.

### WARRANTY ALTERATIONS

No person has the authority to enlarge, amend, or modify this Crown Warranty. This Crown Warranty is not extended by the length of time which you are deprived of the use of the new Crown product. Repairs and replacement parts provided under the terms of this Crown Warranty shall carry only the unexpired portion of this Crown Warranty.

### DESIGN CHANGES

We reserve the right to change the design of any product from time to time without notice and with no obligation to make corresponding changes in products previously manufactured.

### LEGAL REMEDIES OF PURCHASER

No action to enforce this Crown Warranty shall be commenced after expiration of the warranty period.

THIS STATEMENT OF WARRANTY SUPERSEDES ANY OTHERS CONTAINED IN THIS MANUAL FOR CROWN PRODUCTS.

**Notes**



### Crown Factory Service Information

Shipping Address: Crown International, Factory Service, Plant 2 SW, 1718 W. Mishawaka Rd., Elkhart, IN 46517  
Phone: 1-800-342-6939 or 1-574-294-8200 Fax: 1-574-294-8124

Owner's Name : \_\_\_\_\_  
 Shipping Address : \_\_\_\_\_  
 Phone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_  
 Model: \_\_\_\_\_ Serial Number: \_\_\_\_\_  
 Purchase Date : \_\_\_\_\_

**NATURE OF PROBLEM**

*(Be sure to describe the conditions that existed when the problem occurred and what attempts were made to correct it.)*

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Other equipment in system: \_\_\_\_\_  
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If warranty has expired, payment will be:  Cash/Check  VISA  MasterCard  C.O.D.  
 Card Number: \_\_\_\_\_ Exp. Date: \_\_\_\_\_  
 Signature: \_\_\_\_\_

ENCLOSE THIS PORTION WITH THE UNIT. DO NOT MAIL SEPARATELY.



**H** A Harman International Company