



LC225 / LC270AC

## Features

- 2-Channel
- 200 Watts Per Channel
- LC225AC for 25V Line
- LC270AC for 70.7V Line
- Power and Signal / Clipping LEDs
- Modular Design
- High Efficiency

## Description

Models LC225AC and LC270AC are Class D (switching mode) dual channel 200W amplifier cards. The amplifiers may be used in the IED LANcom LC200AF analog Power Amplifier Mainframe. Any card may be placed in any slot in the mainframe without any configuration settings needing to be made on the amplifier cards. LC225AC is for use in 25V systems while the LC270AC is for use in 70.7V systems.

Class D operation combined with an integral switching mode power supply offers many advantages, and the unique IED design makes full use of these benefits. They include higher efficiency, increased reliability, improved performance, and lower cost. Switching mode operation combined with high voltage power MOSFET devices make it possible to eliminate the need for heavy, costly transformers. IED's design is stable under all load conditions (phase angles of 0° to 360°). The amplifier cards have 34dB of input gain and no attenuation controls onboard. Attenuation is handled ahead of the power amplifier by electronics or controls on the amplifier mainframes.

The power amplifier has built-in voltage limiting to protect the loudspeakers being driven. In addition, a temperature sensor on the heatsink will automatically shutdown an amplifier that becomes too hot, such as due to cooling fan blockage or failure, so as to protect the electronics. In the IED LANcom LC200AF mainframe application, the temperature and other status conditions of the power amplifier are reported back to the digital controller in the IED mainframe for reporting to a user, generation of alarm conditions or for automatic throttling of input signals to try to keep the amplifier operating within safe limits. In the IED LANcom LC200AF application, these status signals are presented at the back of the

mainframe for monitoring by another system or controller.

The amplifier cards have 3 LEDs located on its front edge. There is one green LED for the card plus one multi-color LED per channel. The green LED when lit steadily, represents that the amplifier is powered up. The channel LED is yellow to represent output signal presence of the amplifiers. The signal presence indicator turns on when 1 Watt is detected on the amplifier output. This same LED changes to red to indicate when the voltage limit has been reached on that channel.

There is a switch on the front of the power amplifier to turn it off without taking the whole frame down. This may be used, for example, to remove/replace an amplifier without affecting any other channels in the frame. The IED LANcom LC200AF provides +24V through current limiting resistors for operation of the fans in the rear of the mainframe.

## Related Models

|         |                                  |
|---------|----------------------------------|
| LC200AF | Analog Power Amplifier Mainframe |
|---------|----------------------------------|

## Specifications

### Electrical

*All Measurements at 120VAC Unless Noted Otherwise*

|  |  |
|--|--|
| Power Output (Per Channel).....                | 200 Watts  |
| <i>(25V for LC225AC and 70.7V for LC270AC)</i> |  |
| Efficiency.....                                | 78%  |
| <i>(P = 200 Watts)</i>                         |  |
| Efficiency.....                                | 72%  |
| <i>(P = 100 Watts)</i>                         |  |
| Power Input, Quiescent .....                   | 21 Watts Per Channel, 42 Watts for Card                |
| Clipping Level .....                           | 100V Peak  |
| Frequency Response.....                        | 20Hz – 20kHz ( $\pm 1$ dB)                             |
| <i>(P<sub>o</sub> = 50 Watts)</i>              |  |
| Power Bandwidth .....                          | 20Hz – 20kHz (-3dB)                                    |
| Signal to Noise Ratio .....                    | >85dB  |
| <i>Unweighted, 20Hz – 20kHz</i>                |  |
| Total Harmonic Distortion, THD .....           | <0.2% @ 2kHz   |
| <i>(P<sub>o</sub> = 200 Watts)</i>             |  |
| Input Sensitivity.....                         | +5dBu  |
| <i>(P<sub>o</sub> = 200 Watts)</i>             |  |
| Input Common Mode Rejection Ratio, CMRR.....   | >70dB, 20Hz – 20kHz                                    |
| Output Impedance.....                          | 0.67 $\Omega$  |
| Output Loading ....                            | Stable for Any Load: 0 Watts to Infinity, 20Hz – 20kHz |
| Overcurrent Protection.....                    | 5A, 2AG Fuse   |

### Controls

|                    |                           |
|--------------------|---------------------------|
| Power Switch ..... | Two Position Slide Switch |
|--------------------|---------------------------|

### Indicators

|                                 |                                      |
|---------------------------------|--------------------------------------|
| Signal Present / Clipping ..... | Two Yellow/Red LEDs, One Per Channel |
| Power .....                     | Green LED                            |

### Connectors

|                             |                     |
|-----------------------------|---------------------|
| 32-Pin Euro Connector ..... | Panduit 100-032-033 |
|-----------------------------|---------------------|

### Mechanical

|                                       |                           |
|---------------------------------------|---------------------------|
| Dimensions .....                      | 1.8" W x 6.8" H x 12.5" D |
| <i>(46mm W x 173mm H x 317.5mm D)</i> |                           |
| Weight .....                          | 4lbs (1.8kg)              |

### Environmental Specifications

|                                   |                              |
|-----------------------------------|------------------------------|
| Operating Temperature Range ..... | 32°F – 122°F (0°C – 50°C)    |
| Storage Temperature Range .....   | -40°F – 158°F (-40°C – 70°C) |

## Architect & Engineering Specifications

IED LANcom SCS amplifier cards shall be model LC225AC, LC270AC, or approved equal for use with the LC200AF amplifier mainframe. Each 2-channel amplifier card shall provide 200W per channel into either a 25V (LC225AC) or 70.7V (LC270AC) speaker line. The amplifier cards shall have status LEDs for power and signal/clipping per channel. Dimensions shall be 6.8" (173mm) H x 1.8" (46mm) W x 12.5" (317.5mm) and shall weigh 4.0lbs (1.8kg) each.