

C Series DSP Perimeter and MultiLoop™ Drivers

The C Series hearing loop drivers from Ampetronic mark a substantial development in hearing loop technology for assistive listening. Compact, elegant, and sturdy, C Series units, the most versatile and powerful solutions available in their class, feature digital signal processing and networking functionality.

Four class 'D' drivers (two dual output and two single output models) make up the C Series; offering a significant increase in energy efficiency over existing solutions in a similar price range.

The drivers feature a simple digital user interface, enabling accurate adjustment and providing clear indicators, system diagnostics and built-in test tones. C Series drivers are fully networkable with a Wi-Fi accessible standard browser based control panel, for remote set-up, monitoring and email alerts, and with Loopworks Measure LoopLink for easy test and commissioning.

The C5 and C7 feature 5 and 7 Amps RMS current per loop output, respectively, plus ample voltage headroom, making them suitable for a wide range of applications. Installation can be performed with total confidence; unique, multi-stage filtering ensures compatibility with other systems and global EMC regulations. The C Series also boasts dual slope Metal Loss Control that caters for a wide range of metal loss frequency characteristics (network versions only).



Features

- **Simple digital interface enabling accurate adjustment**
- **Single or dual output options. Dual outputs featuring accurate and stable 90° phase shift**
- **Highly energy efficient Class-D amplifiers with low heat dissipation providing low running and maintenance costs**
- **Networking with browser interface for remote reporting, adjustment, active status monitoring and remote fault reporting via email, SNMP or Telnet**
- **Built-in test tones**
- **Compatible with Loopworks Measure LoopLink for direct and automated driver control**
- **AGC and dual slope configurable MLC (including HF boost option for un-even loss scenarios)**
- **Up to 2 x 675m² Perimeter Loops area coverage**
- **Up to 1100m² MultiLoop™ area coverage**
- **Compact 1U rack mount unit with internal transformer for simple rack installation**
- **Optimised for speech frequencies with unmatched intelligibility and capable of high quality musical reproduction**
- **Industry standard Phoenix connectors**
- **Data compliant with IEC 62489-1 Standard**
- **100V line input**

Applications include

- **Lecture Theatres and Conference facilities**
- **Stadia, Sports Halls, Cinemas and Theatres**
- **Courtrooms, Airports and Railway Stations**

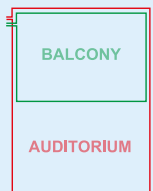
MultiLoop™ System Design Configurations

MultiLoop Drivers can be used for different types of loop layout. You will need a MultiLoop system design for the loop layout which you can obtain from Ampetronic, or have your own design approved by Ampetronic free of charge through Loopworks™ Design.

Perimeter MultiLoops

Two channels drive single area loops either side by side or overlaid.

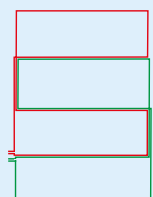
Suitable for applications where there is no metal in the buildings construction, or in areas of moderate metal up to a maximum loop width of 5 meters.



Simple (non-overlap) MultiLoops™

A simplified layout which uses less cable than a Loss Control or Low Spill MultiLoop™, however, this is at the expense of evenness of coverage.

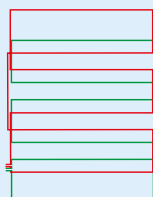
Particularly useful where a concrete floor is being slotted for the loop cable.



Loss Control MultiLoops™

Multiple loop segments in two patterns each driven by one output channel.

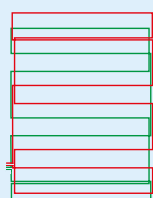
Best for optimal evenness of coverage across any area. Suitable for large areas and buildings with metal construction.



Low Spill MultiLoops™

Suitable for applications where loops are close together or where confidentiality is an issue. Low Spill MultiLoops™ require careful and precise design.

Similar in design to a Loss Control MultiLoop™ but with a more complex pattern that requires more cable.



C Series Product Information and Specifications

| INPUTS | |
|---------------------------------|---|
| Power: | 35/55/95W 230V AC nominal, 45-65Hz [120V option available] |
| Input 1 and 2 | 3 way 3.5mm euroblock screw terminal input (supplied) with a balanced microphone and line level operation, selectable via rear panel switch. Switchable 250Hz low cut filter and priority input option. |
| Microphone / Line | Microphone specification; 200 - 600Ω, sensitivity -67dBu. Selectable 24V phantom power on microphone only Line sensitivity -42dBu |
| 100V Line (Input 2 only) | 2 way 5mm euroblock screw terminal (supplied) sensitivity +7dBu |

| OUTPUTS | |
|----------------------------------|---|
| Loop Output Drive Voltage | 20V _{RMS} (28Vpk) at maximum output current per channel |
| Loop Output Drive Current | C5-X 5A _{RMS} (7Apk) up to 60 seconds continuous 1kHz sine wave, peak >7A per channel Cont. pink noise 2.3A _{RMS} short term peaks >7A per ch. C7-X 7A _{RMS} (10Apk) up to 60 seconds continuous 1kHz sine wave, peak >10A per channel Cont. pink noise 3.3A _{RMS} short term peaks >10A per ch. |
| Loop Connectors | 4 way 5mm euroblock screw terminal (supplied) for each output, for twisted pair or star-quad configured feed cables |
| DC Output | 2 way 3.5mm euroblock screw terminal Re-settable, fuse protected 12V 0.1A. Controllable to reflect amplifier status (network models only) note powering an external device via DC out or USB may reduce power headroom available for the loop. |
| Line Output | 3 way 3.5mm euroblock screw terminal (supplied) post AGC balanced output |

| AUDIO SYSTEM | |
|-------------------------------|--|
| Frequency Response | 80Hz to 6.5kHz |
| Distortion | THD+N <0.3% 1kHz sine at full current |
| Automatic Gain Control | The AGC is optimised for speech. Dynamic range >36dB |
| Metal Loss Correction | Corrects system frequency response issues due to metal structures in a building. Gain constant at 1kHz, adjustable gain slope from 0 to 4dB per octave in 0.25dB increments. Custom 2 slope MLC allows different slopes and transition frequency to be set via the menu (network models only). This does not compensate for signal loss from metal structures which can be significant. |
| Phase Shift | User selectable (network models only) at 0° or 90° between outputs |

| ADDITIONAL FUNCTIONS | |
|----------------------|---|
| STATUS | Tri-colour LED: Solid GREEN = normal operation Flashing GREEN = sleep or standby mode Flashing RED = error Flashing AMBER = firmware updating |

| PHYSICAL | |
|-------------------------|--|
| Size | Full width 1U 19" rack mount. Width 430mm Depth 190mm Height 44mm |
| Mounting Options | Freestanding 1U 19" rack mount (brackets fitted as standard) |
| Weight | C5-1: 2.5 kg C5-2: 2.8 kg C7-1: 2.8 kg C7-2: 3.1 kg |
| Environment | IP20 rated; 20 to 90% relative humidity; 0 to 35°C |
| Cooling | Passive |

Standards compliance

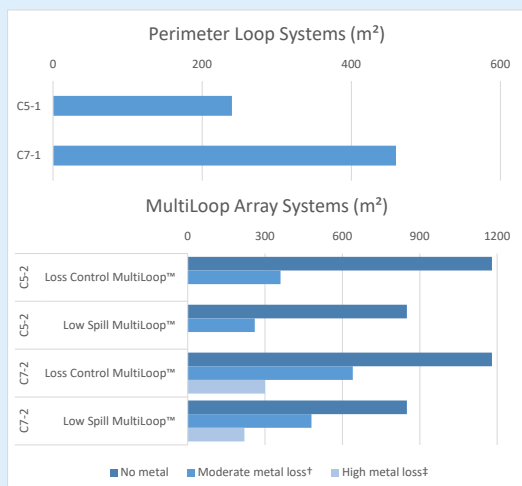
These products are designed to form part of a system that can meet all of the requirements of the international loop performance standard IEC60118-4, and the relevant parts of IEC TR 63079. To fully meet requirements of these standards, correct design, installation, commissioning and maintenance are required.

All specification data has been compiled in accordance with IEC62489-1, the international performance reporting standard for audio frequency induction loop equipment. Specification data should only be compared with data compliant to this standard.

This product is CE and RCM marked to all relevant safety and EMC standards, and is MET Labs approved for sale in North America.



Indicative C Series Max Area Coverage Scenarios



Note: dual channel drivers can be used to power two perimeter loops each up to this size, with the same input audio signal provided to both.

Perimeter loops can be used in small rooms with moderate metal loss, but if possible should be tested on site to confirm performance.

The Perimeter loop systems shown here are modelled as single-turn loops using 2.5mm² single wire and installed at height where required (essential in larger rooms)

The MultiLoop loss figures shown are based on maximum 2m wide loop segments installed at floor-level using 3.0mm² Flat Copper Tape with a suitable gap to wall. Larger sizes will result in higher loss which may significantly impact coverage area.

Moderate metal loss[†] example used:
Concrete with moderate reinforcement (-5dB)

High metal loss[‡] example used:
Profiled Steel Deck and Metal System Floor (-9dB)

All calculations are based on square rooms. Please note coverage will be greater in long, narrow areas.

These figures are a guideline only and shouldn't be used to specify a system. For an accurate simulation of your system requirements register for **Loopworks Design** or contact Ampetronic or your local distributor for advice.