

# D Series @Dante™ Networkable DSP MultiLoop™ Drivers

The D Series represents the global benchmark for digital audio hearing loop systems. The compact, elegant and sturdy units not only feature digital signal processing and networking functionality, but are also the most versatile and powerful solution available. @Dante™ Versions also feature a dedicated input for plug and play @Dante™ network audio.

The D Series @Dante™ range consists of 4 class 'D' drivers (3 dual loop output and 1 single output models); meaning a 60%+ increase in energy efficiency over existing solutions. Both drivers feature capacitive touch front panels with intuitive menus, built in test signals, and 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 D7 @Dante™ and D10 @Dante™ feature 7 and 10 Amps per loop output respectively plus ample voltage headroom, making it the most flexible solution on the market, suitable for a huge range of applications. The added power of the D14 @Dante™ provides a solution for installations in environments containing very high levels of metal, previously not possible without the use of combiners.

In another first for high-power Class D Induction Loop drivers, installation can be performed with total confidence, as unique multi-stage filtering ensures compatibility with both other system equipment and global EMC regulations. The D Series @Dante™ also boasts Dual slope Metal Loss Control that caters for a wide range of metal loss frequency characteristics.



## Features

- @Dante™ input for network audio
- AES67 compliant
- Single or dual output options. Dual outputs featuring accurate and stable 90° phase shift
- Networkable with remote browser interface
- Built-in test tones - controllable with LoopLink
- Digital display & intuitive 'touch' menu system - 3 modes; Main, Status & Quick
- Highly energy efficient Class-D amplifier with low heat dissipation
- Up to 2 x 1,300m<sup>2</sup> Perimeter Loops area coverage
- Up to 3,300m<sup>2</sup> MultiLoop™ Low Loss area coverage
- Compact 1U rack mount unit with internal transformer for simple rack installation
- Optimised for speech frequencies with unmatched intelligibility & capable of high quality musical reproduction
- AGC & Dual Slope MLC
- Active status monitoring & remote fault reporting via email
- Data compliant with: IEC 62489-1 Standard

## Applications include

- Lecture Theatres & transport concourse
- Stadia, Sports Halls, Cinemas & Theatres

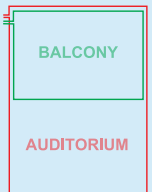
## MultiLoop™ System Design Configurations

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.

### Perimeter MultiLoops

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

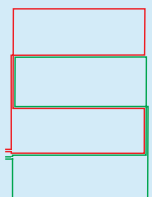
Suitable for applications where there is no metal in the buildings construction, or in areas of moderate metal up to a maximum loop width of 5 meters.



### Simple MultiLoops

Parallel loop segments with adjacent cables for ease of installation. Does not give the even coverage of loss control or low spill loops, with dips in level between loops.

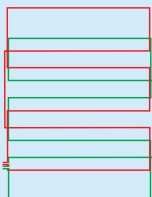
Suitable for fixed seating areas, or where dips in field strength are acceptable.



### Loss Control MultiLoops

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

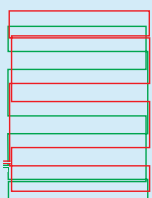
Best for optimum even area coverage across any area. Suitable for large areas and buildings with metal construction.




### Low Spill MultiLoops

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

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



# D Series Product Information & Specifications

INPUTS	
<b>Power</b>	50/80/160W 230V AC nominal, 45-65Hz [120V option available] Power switch on front panel
<b>Input 1 &amp; 2 Programmable Microphone / Line</b>	XLR balanced input with programmable switchable between microphone and line via panel menu Microphone specification; 200 - 600Ω, sensitivity -64dBu. Selectable 12V phantom power on microphone only Line sensitivity; -39dBu Input 2 can also be used for AES3 Digital Audio Signals. <small>Note: D10-2 drivers manufactured from 2022 do not have AES3 capability.</small>
<b>Slave In</b>	6.35mm jack socket for linking more than one amplifier. Inserting plug disables other inputs
	RJ45 Ethernet input (100MB/s), AES67 compliant.

OUTPUTS	
<b>Drive Voltage</b>	33.9Vrms (48Vpk) at maximum output current per channel
<b>Loop Output Drive Current</b>	<b>D7-X</b> <ul style="list-style-type: none"> <li>7A<sub>rms</sub> (10A<sub>pk</sub>) up to 60 seconds continuous 1kHz sine wave, peak &gt;10A per channel</li> <li>Cont. pink noise 3.3A<sub>rms</sub> short term peaks &gt;10A per ch.</li> </ul> <b>D10-x</b> <ul style="list-style-type: none"> <li>10A<sub>rms</sub> (14.1A<sub>pk</sub>) up to 60 seconds continuous 1kHz sine wave, peak &gt;14.1A per channel</li> <li>Cont. pink noise 4.7A<sub>rms</sub> short term peaks &gt;14.1A per ch.</li> </ul> <b>D14-x</b> <ul style="list-style-type: none"> <li>14A<sub>rms</sub> (19.8A<sub>pk</sub>) up to 60 seconds continuous 1kHz sine wave, peak &gt;19.8A per channel</li> <li>Cont. pink noise 6.6A<sub>rms</sub> short term peaks &gt;20A per ch.</li> <li>Level controlled via front panel menu or network</li> <li>Drive current indicated on two 4-LED displays in 6dB increments</li> </ul>
<b>Slave Out</b>	6.35mm jack socket to connect to other slave amplifiers
<b>Loop Connectors</b>	Neutrik NL2 Speakons (supplied) for each output
<b>Loop Monitor</b>	Provides access to monitor actual loop current via a 3.5mm stereo headphone connector on front panel Channel A on left, channel B on right
<b>DC Output</b>	Resettable, fuse protected 12V 0.1A. Operation can be configured via menu.

AUDIO SYSTEM	
<b>Frequency Response</b>	80Hz to 6.5kHz
<b>Distortion</b>	THD+N <0.2% 1kHz sine at full current
<b>Automatic Gain Control</b>	The AGC is optimised for speech. Dynamic range >36dB
<b>Metal Loss Correction</b>	Corrects system frequency response 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. This does not compensate for signal loss from metal structures which can be significant.
<b>Phase Shift</b>	User selectable at 0° or 90° between outputs

ADDITIONAL FUNCTIONS	
<b>Fault Monitoring</b>	Indicators on the front panel; <ul style="list-style-type: none"> <li>Clipping – delivering over the rated voltage (per channel)</li> <li>Error - Check status in menu</li> </ul> Temperature and loop errors reported via the status menu
<b>Cooling</b>	Variable speed fan cooled. Front inlet, rear exhaust.

PHYSICAL	
<b>Size</b>	Full width 1U 19" rack mount. Width 430mm Depth 290mm Height 44mm
<b>Mounting Options</b>	<ul style="list-style-type: none"> <li>Freestanding</li> <li>1U 19" rack mount (brackets included)</li> </ul>
<b>Weight</b>	<b>D7-2:</b> 4.62kg <b>D10-1:</b> 4.37kg <b>D10-2:</b> 5.5kg <b>D14-2:</b> 6.9kg
<b>Environment</b>	IP20 rated; 20 to 90% relative humidity; 0 to 35°C

## Standards compliance

This product is 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 BS7594. 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 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 NRTL (ETL) approved for sale in North America.



## Indicative D-Series Max Area Coverage Scenarios

Perimeter Loop Systems m <sup>2</sup>				MultiLoop Array Systems m <sup>2</sup>			
Driver	Metal Loss	1:1 Perimeter Loop	3:1 Perimeter Loop	Metal Loss	Non Overlap Multiloop	Loss Control Multiloop	Low Spill Multiloop
D7-2	0dB	2 x ≤400	2 x ≤650	0dB	D7-2 ≤1,765	D7-2 ≤3,300	D7-2 ≤1,600
	-5dB	Max 5m width	Max 5m width		D7-2 ≤576	D7-2 ≤961	D7-2 ≤841
D10-1	0dB	≤1,000	≤1,450	-5dB	D10-2 ≤625	D10-2 ≤1156	D10-2 ≤441
	-10dB	Max 5m width	Max 5m width		D14-2 ≤361	D10-2 ≤625	D10-2 ≤441
D10-2	0dB	2 x ≤1,000	2 x ≤1,450	-10dB	-	D14-2 ≤289	D14-2 ≤196
	-10dB	Max 5m width	Max 5m width		-	-	-
D14-2	0dB	2 x ≤1,300	2 x ≤1,450	-15dB	-	-	-
	-10dB	Max 5m width	Max 5m width		-	-	-

Indicative metal loss scenarios are based on: 0db = a building with no structural metal, -5dB = a building with reinforced concrete (re-bar) construction, and -10dB = a room with steel raised access floor tiles, -15dB = a room with steel decking or reinforced concrete and raised access floor tiles.  
 Multiloop area coverage calculations are based on the following assumptions: 1:1 room aspect ratio, 3mm<sup>2</sup> copper tape laid at floor level, base current varies depending on solution employed.



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