



# PDA PRO-RANGE

## PDA200/2 • PDA500/2 • PDA1000/2 PROFESSIONAL INDUCTION LOOP AMPLIFIERS

C-TEC's new range of professional audio-frequency induction loop amplifiers offer outstanding sound quality at a competitive price.

Each amplifier features one balanced microphone input and one switchable balanced mic. or line level input, both of which will accept standard 3 pin XLR connectors. A four-way 'Outreach' input is also included offering full compatibility with C-TEC's unique 'Outreach plate' audio input extension system.

The pre-amplification stage of each amplifier utilises an advanced signal processing system that allows tight control over the audio signal without any degradation of output quality. A metal compensation control is also provided to help offset the frequency response problems associated with the excessive metal content of some rooms.

Other features include three level controls (one for each input), a loop drive control, an output current meter and a 'compression' activity display giving visible indication of the amplifier's compressor.



- Ideal for theatres, cinemas, churches, conference halls and other applications where top quality sound is a must
- Attractive free-standing design (optional wall and 19" rack-mounting kits available)
- Improved drive current capability provides up to 50% extra coverage over previous PDA Pro-Range models

Model No.	Max. square room coverage	Max. rectangular room (2:1 aspect ratio) coverage
PDA200/2	200m <sup>2</sup>	240m <sup>2</sup>
PDA500/2	500m <sup>2</sup>	600m <sup>2</sup>
PDA1000/2	900m <sup>2</sup>	1100m <sup>2</sup>

- Two XLR 3 pin input sockets - one balanced mic. and one switchable balanced mic./line
- Optional 11V phantom power available for electret or condenser microphones
- 'Outreach' input allows the connection of up to 10 additional mic. or line level inputs via a series of separately available single gang connector plates
- Adjustable level controls provided for all inputs - can be used individually or together as a three-input mixer
- Adjustable drive control allows the loop current to be adjusted to suit a room's individual characteristics
- Metal compensation control helps offset the frequency response problems associated with excessive metal in a building
- True output current meter
- Visible indication of the amplifier's compressor action via two LEDs
- 3.5mm headphone socket allows true monitoring of the output signal
- Advanced audio signal processing with automatic gain control
- On-board cooling fan on PDA500/2 and PDA1000/2 promotes stable operating temperature and increased reliability
- All models designed to meet or exceed the requirements of BS7594 and EN60118-4 when correctly installed

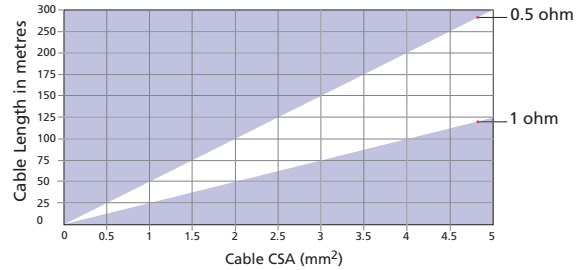
**Audio-frequency induction loop systems work by transmitting amplified sound to hearing aids. Most hearing aids have a 'T' or 'MT' switch which allows them to pick up the electromagnetic field generated by an induction loop system. The hearing aid converts this signal to a sound suited to its user's specific hearing requirements, allowing them to participate more fully in general conversation, ordering goods or services, etc.**



PDA Pro-Range amplifiers are fully compatible with C-TEC's unique 'Outreach Plate' audio input extension system. This system allows the connection of multiple microphone or line level inputs via a range of specially designed single gang connector plates covering the most common variants of audio connector including XLR line, XLR mic., 3.5mm jack, dual phono and 1/4" jack. A maximum of 10 plates (any mix) can be daisy-chained to the amplifier's Outreach socket using standard two pair audio cable such as Belden 8723. Contact our sales desk for further information.

**Loop cable selection graph**

Almost any single core tri-rated cable can be used for the induction loop provided it is of the appropriate DC resistance (ideally 0.5 to 1 Ohm). The graph below shows the recommended CSA for different lengths of loop cable. Simply work out the length of the loop required and choose a cable size that falls into the non-shaded area of the graph. For example, to cover a room 30m x 20m (600m<sup>2</sup>) the loop cable would need to be 100m long (2 sides @ 30m and 2 sides @ 20m). The recommended cable CSA for a loop this length is between 2mm<sup>2</sup> and 4mm<sup>2</sup>. Therefore, a PDA1000/2 (which can cover areas up to 900m<sup>2</sup>) using 2.5mm<sup>2</sup> cable would be sufficient.



**PDA PRO RANGE SPECIFICATIONS**

Power	230-240 V a.c. mains (PDA200/2 <150 VA; PDA500/2 <225 VA; PDA1000/2 <300 VA). IEC 320 fused mains lead supplied)
Inputs	Line (3 pin XLR) - impedance: 6k8 + or - input to ground; Sensitivity: 200mV - 2.5V RMS balanced or unbalanced. Microphones (3 pin XLR) - impedance: 6k8 + or - input to ground; Sensitivity: 1 - 8 mV balanced Phantom power: 12V switchable (on/off) Outreach (Four-way Weidmuller connector BL5. 08/4) - impedance: >10k; Sensitivity: 500mV - 6V RMS balanced Outreach Power: 16 - 21 V d.c. is available via the amplifier's Outreach Socket.
Output type	Current mode
Loop connector	Four way binding posts
Recommended loop impedance:	0.5 - 1 Ohm @ 1KHz. Will drive higher impedance loops with reduced area of coverage.
Loop drive current @ 1 Ohm:	PDA200/2 - 6A; PDA500/2 - 9A; PDA1000/2 - 12A.
Peak loop drive current (Measured over 5mS integration time)	PDA200/2 - 8 Amps @ 1 Ohm, 13Amps @ 0.5 Ohm; PDA500/2 - 12 Amps @ 1 Ohm, 19 Amps @ 0.5 Ohm; PDA1000/2 - 14 Amps @ 1 Ohm, 24 Amps @ 0.5 Ohm
Recommended cable gauge:	See Loop Cable Selection Graph at bottom of page.
Headphones:	3.5mm jack socket allows monitoring of the loop signal via >32 Ohm headphones.
Maximum area coverage:	For a 400mA/M field strength +/- 1dB. PDA200/2 @ 6A max short term current: Square room = 200m <sup>2</sup> ; Rectangular room (2:1 aspect ratio) = 240m <sup>2</sup> PDA500/2 @ 9A max short term current: Square room = 500m <sup>2</sup> ; Rectangular room (2:1 aspect ratio) = 600m <sup>2</sup> PDA1000/2 @ 12A max short term current: Square room = 900m <sup>2</sup> ; Rectangular room (2:1 aspect ratio) = 1100m <sup>2</sup>
Performance	Frequency response: 20Hz - 14 KHz + - 3dB; Distortion: Less than 0.5 %; S to N ratio: Better than -65dB any input
Compressor:	Gives dynamically variable compression ratio from 1:1 (no compression) to 17:1 Attack time: Approx. 10mS. Release time: Approx. 2.25
Metal Compensation:	True 3dB /octave design counteracts frequency dependent absorption by metal in the proximity of the installation over a bandwidth of approximately 100Hz - 10KHz.
Indicators	Power on LED: Red  Loop current: A five LED bar graph type meter is provided to allow monitoring of loop current output and assist in setting up the amplifier. This is provided by monitoring true output current rather than from a line level derived signal. This meter has PPM type characteristics i.e. fast attack and slow release. This allows easy reading of fast peaks. Accuracy - +/-10%  Compression: A two LED display is provided for indication of signal compression. The first LED shows the beginning of compression whilst the second indicates very high compression levels have been reached.
Controls	On/Off switch incorporated into IEC mains inlet. Four way piano key style DIP switch selects Phantom power for mic 1 & 2 XLR inputs and switches XLR input 1 between Line and Microphone settings. The fourth of the 4-in-line switch is not connected. Level controls for XLR 1 (Line/Mic switchable), XLR 2 (Mic) and Outreach. These can be used individually or any of them together, in which case they act as a three input mixer. Drive control: Sets the level of amplifier output current supplied by the amplifier. Metal compensation control. When fully anti-clockwise has no effect on the signal. When turned clockwise imparts a rising 3dB/octave characteristic to the frequency response of the amp to counteract the effect of metal in proximity to the loop.
Cooling Requirements	The PDA1000/2 and PDA500/2 have thermostatically controlled cooling fans, which are activated when the amplifier's internal heatsink temperature reaches approx. 56°C. The PDA200/2 model does not require a cooling fan, as it does not generate as much heat as the larger models.
Dimensions	All models: Length - 380mm; Depth - 220mm; Height - 80mm
Weight	PDA200/2 - 3.74Kg, PDA500/2 - 3.46Kg; PDA1000/2 - 4.54Kg