

## Feonic F1PRO Audio Drive

Feonic F1PRO Audio Drives convert new and existing panels and structures of commonly used resonant building materials, glass, MDF, plywood, wooden floors, plasterboard and much more into high quality loudspeakers using non damaging micro-vibrations. When driven by a Feonic F1PRO the entire surface of the panel produces sound at an equal level.

The low profile F1PRO is unlike traditional speaker technology because it uses a very high powered smart material as a solid state exciter instead of a moving coil or such other high movement technologies. Typical amplitude at 200Hz is less than 30 microns of movement, compared with traditional moving coil technologies which generate 3000 microns of potentially damaging vibrations making Feonic audio solutions uniquely much less susceptible to feedback.

## Key benefits

Feonic F1PRO's provide a more even distribution of sound than directional traditional speakers - the whole panel becomes the speaker cone, creating an omni-directional, evenly distributed output. The frequency response of the output is not affected by the position of the listener relative to the sounder so all content is communicated all around the panel unlike directional solutions.

Traditional electromechanical exciters using moving coil mechanics which require massive movement to achieve the same results, often resulting in structural damage and cracking to surrounding structure. The versatility of the broad bandwidth F1PRO Audio Drive makes it the perfect choice for both audio and voice reproduction.

## Technical Specification

<b>Impedance:</b>	4 Ohms
<b>Integrated circuitry:</b>	Overload circuit protection
<b>Operating temperature range:</b>	-20°C to +80°C* (-68°F to 176°F)
<b>Storage temperature range:</b>	-20°C to +100°C* (-68°F to 212°F)
<b>Product weight:</b>	1580g
<b>Product weight boxed:</b>	1700g
<b>Product weight inc carton:</b>	1800g
<b>Dimensions:</b>	57mm (W) x 141mm (L) x 56mm (H)
<b>Mounting method:</b>	3M VHB adhesive tape or optional mounting plat
<b>Connection to amplifier:</b>	Binding posts / sockets
<b>Optimal amplifier power rating<sup>1</sup>:</b>	100Watt
<b>Power Consumption Pink Noise:</b>	≤60Watt (full bandwidth music)
<b>Sensitivity<sup>2</sup>:</b>	69dBA @ 1m
<b>Typical Bandwidth:</b>	60Hz-20,000Hz
<b>Sound Pressure Level 1kHz<sup>3</sup>:</b>	95dBA @ 1m
<b>Sound Pressure Level Pink Noise:</b>	90dBA @ 1m
<b>Amplitude:</b>	100µm (microns at <100Hz)
<b>Speech Transmission Index / Common Intelligibility Scale<sup>4</sup>:</b>	0.60 to 0.65 / 0.78 to 0.83
<b>Environmental protection:</b>	IP55 (Impervious to moisture damage**)

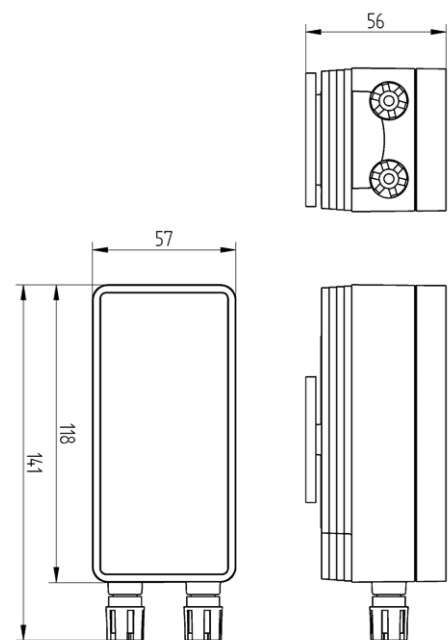
<sup>1</sup>Recommended amplifier power rating for optimum performance, <sup>2</sup>Sensitivity measured with 1kHz sine wave at 1Watt, <sup>3</sup>Max Sound Pressure Level (SPL) achieved with sounder mounted on same side as measurement with 1kHz sine signal, <sup>4</sup>STI/CIS values, measured to IEC Standard 60268-16, are typical values since it is dependent on acoustics of installation site. \*High temperature variants available on special order. \*\*Cannot be immersed



## Typical applications

The F1PRO is a powerful, broad bandwidth device delivering 60Hz – 20kHz and is the largest audio device in the range. They can be mounted on the rear of the panel so offer designers amazing freedom to use curvaceous and non linear forms without the need for unsightly speaker boxes. The technology can also be used in applications that include sonic transmission at up to 25kHz, and wide bandwidth bone conduction devices.

- Retail advertising and POS – [www.whisperingwindow.com](http://www.whisperingwindow.com)
- Information Points
- Outdoor – decking, walkways and nature trail audio signage
- Community projects, including high street regeneration and public audio artwork
- Communications via bone conduction



Product dimensions

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## Feonic F2PRO Audio Drive

Feonic F2PRO Audio Drives convert new and existing panels and structures of commonly used resonant building materials, glass, MDF, plywood, wooden floors, plasterboard and much more into high quality loudspeakers using non damaging micro-vibrations. When driven by a Feonic WW the entire surface of the panel produces sound at an equal level.

The low profile F2PRO is unlike traditional speaker technology because it uses a very high powered smart material as a solid state exciter instead of a moving coil or such other high movement technologies. Typical amplitude at 200Hz is less than 25 microns of movement, compared with traditional moving coil technologies which generate 3000 microns of potentially damaging vibrations making Feonic audio solutions uniquely much less susceptible to feedback.

## Key benefits

Feonic F2PRO's provide a more even distribution of sound than directional traditional speakers - the whole panel becomes the speaker cone, creating an omni-directional, evenly distributed output. The frequency response of the output is not affected by the position of the listener relative to the sounder so all content is communicated all around the panel unlike directional solutions.

Traditional electromechanical exciters using moving coil mechanics which require massive movement to achieve the same results, often resulting in structural damage and cracking to surrounding structure. The versatility of the broad bandwidth F2PRO Audio Drive makes it the perfect choice for both audio and voice reproduction.

## Technical Specification

<b>Impedance:</b>	4 Ohms
<b>Integrated circuitry:</b>	Overload circuit protection
<b>Operating temperature range:</b>	-20°C to +80°C* (-68°F to 176°F)
<b>Storage temperature range:</b>	-20°C to +100°C* (-68°F to 212°F)
<b>Product weight:</b>	1580g
<b>Product weight boxed:</b>	1700g
<b>Product weight inc carton:</b>	1800g
<b>Dimensions:</b>	57mm (W) x 141mm (L) x 56mm (H)
<b>Mounting method:</b>	3M VHB adhesive tape or optional mounting plat
<b>Connection to amplifier:</b>	Binding posts / sockets
<b>Optimal amplifier power rating<sup>1</sup>:</b>	100Watt
<b>Power Consumption Pink Noise:</b>	≤60Watt (full bandwidth music)
<b>Sensitivity<sup>2</sup>:</b>	69dBA @ 1m
<b>Typical Bandwidth:</b>	120Hz-20,000Hz
<b>Sound Pressure Level 1kHz<sup>3</sup>:</b>	95dBA @ 1m
<b>Sound Pressure Level Pink Noise:</b>	90dBA @ 1m
<b>Amplitude:</b>	100µm (microns at <100Hz)
<b>Speech Transmission Index / Common Intelligibility Scale<sup>4</sup>:</b>	0.60 to 0.65 / 0.78 to 0.83
<b>Environmental protection:</b>	IP55 (Impervious to moisture damage**)

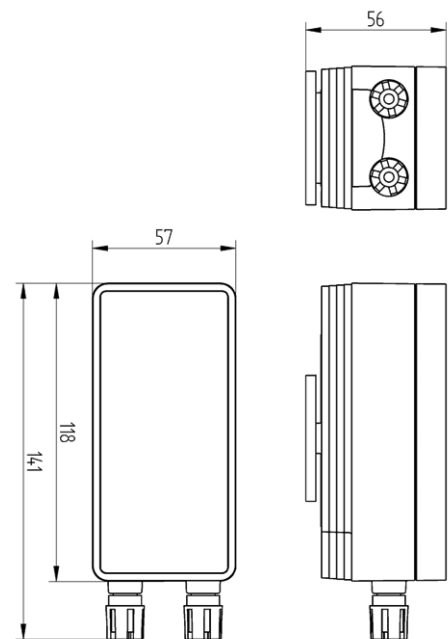
<sup>1</sup>Recommended amplifier power rating for optimum performance, <sup>2</sup>Sensitivity measured with 1kHz sine wave at 1Watt, <sup>3</sup>Max Sound Pressure Level (SPL) achieved with sounder mounted on same side as measurement with 1kHz sine signal, <sup>4</sup>STI/CIS values, measured to IEC Standard 60268-16, are typical values since it is dependent on acoustics of installation site. \*High temperature variants available on special order. \*\*Cannot be immersed



## Typical applications

The F2PRO is a powerful, broad bandwidth device delivering 120Hz – 20kHz and is the second most powerful in the range after F1PRO. They can be mounted on the rear of the panel so offer designers amazing freedom to use curvaceous and non linear forms without the need for unsightly speaker boxes. The technology can also be used in applications that include sonic transmission at up to 25kHz, and wide bandwidth bone conduction devices.

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- Communications via bone conduction



Product dimensions

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## Feonic F4PRO Audio Drive

Feonic F4PRO Audio Drives convert new and existing panels and structures of commonly used resonant building materials, glass, MDF, plywood, wooden floors, plasterboard and much more into high quality loudspeakers using non damaging micro-vibrations. When driven by a Feonic F4PRO the entire surface of the panel produces sound at an equal level.

The low profile F4PRO is unlike traditional speaker technology because it uses a very high powered smart material as a solid state exciter instead of a moving coil or such other high movement technologies. Typical amplitude at 200Hz is less than 15 microns of movement, compared with traditional moving coil technologies which generate 3000 microns of potential damaging vibrations making Feonic audio solutions uniquely much less susceptible to feedback.

## Key benefits

F4PRO's provide a more even distribution of sound than directional traditional speakers - the whole panel or structure being driven becomes the speaker cone, creating an omni-directional, evenly distributed output. The frequency response of the output is not affected by the position of the listener relative to the sounder so all content is communicated all around the panel or structure unlike directional solutions.

The versatility of the compact, broad bandwidth F4PRO audio drive makes it the perfect invisible speaker mounted safely inside the structure to be sounded. This is particularly useful when sound is required from kiosks, information points, ATM's etc that are prone to vandalism or water permeation as speaker grilles, slots or holes are not required as the sound transmits from the inner surface without quality loss.

## Technical Specification

<b>Impedance:</b>	4 Ohms
<b>Integrated Circuitry:</b>	2 way crossover & circuit protection
<b>Operating temperature range:</b>	-20°C to +80°C* (-68°F to 176°F)
<b>Storage temperature range:</b>	-20°C to +100°C* (-68°F to 212°F)
<b>Weight:</b>	c370g
<b>Dimensions:</b>	76.5mm(W)x46mm(L)x26mm(H)
<b>Mounting method:</b>	3M VHB adhesive or optional mounting plate
<b>Connection to amplifier:</b>	Phono with 1.8m cable
<b>Optimal amplifier power rating<sup>1</sup>:</b>	20Watt
<b>Amplitude:</b>	60µm (microns at <100Hz)
<b>Sensitivity<sup>2</sup>: (glass<sup>3</sup>)</b>	63dBA @ 1m
<b>Sensitivity<sup>2</sup>: (MDF<sup>4</sup>)</b>	67dBA @ 1m
<b>Typical Bandwidth:</b>	100Hz - 20,000Hz
<b>Sound Pressure Level Pink Noise<sup>5</sup>:</b>	82dBA @ 1m on (glass <sup>3</sup> )
<b>Sound Pressure Level Pink Noise<sup>5</sup>:</b>	80dBA @ 1m on (MDF <sup>4</sup> )
<b>Speech Transmission Index /</b>	0.60 to 0.65 /
<b>Common Intelligibility Scale<sup>6</sup>:</b>	0.78 to 0.83
<b>Environmental protection:</b>	IP55 (Impervious to moisture damage**)

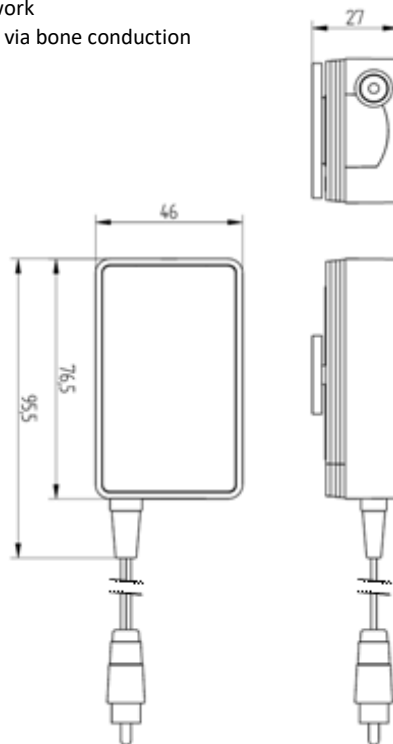
<sup>1</sup>Recommended amplifier power rating for optimum performance, <sup>2</sup>Sensitivity measured with 1kHz sine wave at 1Watt, <sup>3</sup>Max Sound Pressure Level (SPL) achieved with sounder mounted on same side as measurement with 1kHz sine signal just prior to input signal distorting, <sup>4</sup>STI/CIS values, measured to IEC Standard 60268-16, are typical values since it is dependent on acoustics of installation site. <sup>5</sup>High temperature variants available on special order. <sup>6</sup>Cannot be immersed – mount drive vertically in wet environments.



## Typical applications

The F4PRO is a powerful, broad bandwidth device delivering 100Hz to 20kHz and is our compact mid range device. F4PRO's can be mounted on the rear of the panel so offer designers amazing freedom to use curvaceous and non linear forms featuring integrated invisible audio. The drives can also be used in applications that include sonic transmission at up to 25KHz, and wide bandwidth bone conduction devices.

- Retail advertising and POS – [www.whisperingwindow.com](http://www.whisperingwindow.com)
- Information Points, ATM's and vending machines
- Outdoor – decking, walkways and nature trail audio signage
- Community projects, including high street regeneration and public audio artwork
- Communications via bone conduction



Product dimensions

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## Feonic F5PRO Audio Drive

Feonic F5PRO Audio Drives convert new and existing panels and structures of commonly used resonant building materials, glass, MDF, plywood, wooden floors, plasterboard and much more into high quality loudspeakers using non damaging micro-vibrations. When driven by a Feonic F5PRO the entire surface of the panel produces sound at an equal level.

The low profile F5PRO is unlike traditional speaker technology because it uses a very high powered smart material as a solid state exciter instead of a moving coil or such other high movement technologies. Typical amplitude at 200Hz is less than 15 microns of movement, compared with traditional moving coil technologies which generate 3000 microns of potential damaging vibrations making Feonic audio solutions uniquely much less susceptible to feedback.

## Key benefits

F5PRO's provide a more even distribution of sound than directional traditional speakers - the whole panel or structure being driven becomes the speaker cone, creating an omni-directional, evenly distributed output. The frequency response of the output is not affected by the position of the listener relative to the sounder so all content is communicated all around the panel or structure unlike directional solutions.

The versatility of the compact, broad bandwidth F5PRO audio drive makes it the perfect invisible speaker mounted safely inside the structure to be sounded. This is particularly useful when sound is required from kiosks, information points, ATM's etc that are prone to vandalism or water permeation as speaker grilles, slots or holes are not required as the sound transmits from the inner surface without quality loss.

## Technical Specification

<b>Impedance:</b>	4 Ohms
<b>Integrated Circuitry:</b>	2 way crossover & circuit protection
<b>Operating temperature range:</b>	-20°C to +80°C* (-68°F to 176°F)
<b>Storage temperature range:</b>	-20°C to +100°C* (-68°F to 212°F)
<b>Weight:</b>	c370g
<b>Dimensions:</b>	76.5mm(W)x46mm(L)x26mm(H)
<b>Mounting method:</b>	3M VHB adhesive or optional mounting plate
<b>Connection to amplifier:</b>	1.8m cable
<b>Optimal amplifier power rating<sup>1</sup>:</b>	15-20Watt
<b>Amplitude:</b>	60µm (microns at <100Hz)
<b>Sensitivity<sup>2</sup>: (glass<sup>3</sup>)</b>	62dBA @ 1m
<b>Sensitivity<sup>2</sup>: (MDF<sup>4</sup>)</b>	66dBA @ 1m
<b>Typical Bandwidth:</b>	120Hz-20,000Hz
<b>Sound Pressure Level Pink Noise<sup>5</sup>:</b>	82dBA @ 1m on (glass <sup>3</sup> )
<b>Sound Pressure Level Pink Noise<sup>5</sup>:</b>	80dBA @ 1m on (MDF <sup>4</sup> )
<b>Speech Transmission Index /</b>	0.60 to 0.65 /
<b>Common Intelligibility Scale<sup>6</sup>:</b>	0.78 to 0.83
<b>Environmental protection:</b>	IP55 (Impervious to moisture damage <sup>**</sup> )

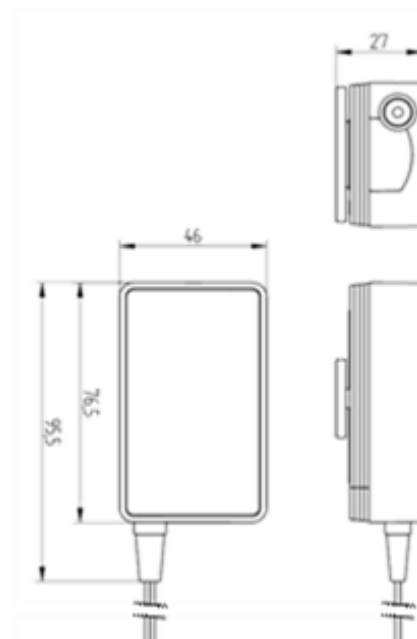
<sup>1</sup>Recommended amplifier power rating for optimum performance, <sup>2</sup>Sensitivity measured with 1kHz sine wave at 1Watt, <sup>3</sup>Max Sound Pressure Level (SPL) achieved with sounder mounted on same side as measurement with 1kHz sine signal just prior to input signal distorting, <sup>4</sup>STI/CIS values, measured to IEC Standard 60268-16, are typical values since it is dependent on acoustics of installation site. <sup>5</sup>High temperature variants available on special order. <sup>\*\*</sup>Cannot be immersed – mount drive vertically in wet environments.



## Typical applications

The F5PRO is a powerful, broad bandwidth device delivering 120Hz to 20kHz and is our compact mid range device. F5PRO's can be mounted on the rear of the panel so offer designers amazing freedom to use curvaceous and non linear forms featuring integrated invisible audio. The drives can also be used in applications that include sonic transmission at up to 25KHz, and wide bandwidth bone conduction devices.

- Retail advertising and POS – [www.whisperingwindow.com](http://www.whisperingwindow.com)
- Information Points, ATM's and vending machines
- Outdoor – decking, walkways and nature trail audio signage
- Community projects, including high street regeneration and public audio artwork
- Communications via bone conduction



Product dimensions

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## Feonic F5 Audio Drive

The F5 Audio Drive has been developed specifically for embedding into new and existing larger products made from glass, aluminium, steel, GRC, GRP, Corian, MDF, plywood, and more materials, where sound is required from the product without grilles or perforations. **When driven by a Feonic F5 the entire surface of the panel produces sound at an equal level all around the product.**

The low profile F5 is unlike traditional speaker technology because it uses a very high powered smart material as a solid state exciter (instead of a moving coil or such other high movement speaker technologies) to deliver miniscule non damaging micro-vibrations.

Typical amplitude at 200Hz is less than 4 microns of movement, (much less than a human hair) compared with traditional moving coil technologies which generate 3000 microns of potential damaging vibrations making Feonic audio solutions uniquely much less susceptible to feedback.

### Key benefits

F5's provide a more even distribution of sound than directional traditional speakers - the whole panel or structure being driven becomes a 3 dimensional speaker cone, creating an omni-directional, evenly distributed output. The frequency response of the output is not affected by the position of the listener relative to the sounder so all content is communicated all around the panel or structure unlike directional solutions.

The versatility of the compact, broad bandwidth F5 audio drive makes it the perfect invisible speaker mounted safely inside the structure to be sounded. This is particularly useful when sound is required from kiosks, information points, ATM's etc that are prone to vandalism or water permeation as speaker grilles, slots or holes are not required as the sound transmits from the inner surface without quality loss.

### Technical Specification

<b>Impedance:</b>	8 Ohms
<b>Integrated Circuitry:</b>	2 way crossover & circuit protection
<b>Operating temperature range:</b>	-20°C to +80°C* (-68°F to 176°F)
<b>Storage temperature range:</b>	-20°C to +100°C* (-68°F to 212°F)
<b>Weight:</b>	c340g
<b>Dimensions:</b>	76.5mm(W)x46mm(L)x26mm(H)
<b>Mounting method:</b>	3M VHB adhesive or optional mounting plate
<b>Connection to amplifier:</b>	1.8m cable
<b>Optimal amplifier power rating<sup>1</sup>:</b>	15Watt
<b>Amplitude:</b>	30µm (microns at <125Hz)
<b>Sensitivity<sup>2</sup>: (glass<sup>3</sup>)</b>	62dBA @ 1m
<b>Sensitivity<sup>2</sup>: (MDF<sup>4</sup>)</b>	66dBA @ 1m
<b>Typical Bandwidth:</b>	125Hz-20,000Hz
<b>Sound Pressure Level Pink Noise<sup>5</sup>:</b>	80dBA @ 1m on (glass <sup>3</sup> )
<b>Sound Pressure Level Pink Noise<sup>5</sup>:</b>	78dBA @ 1m on (MDF <sup>4</sup> )
<b>Speech Transmission Index /</b>	0.60 to 0.65 /
<b>Common Intelligibility Scale<sup>6</sup>:</b>	0.78 to 0.83
<b>Environmental protection:</b>	IP55 (Impervious to moisture damage <sup>**</sup> )

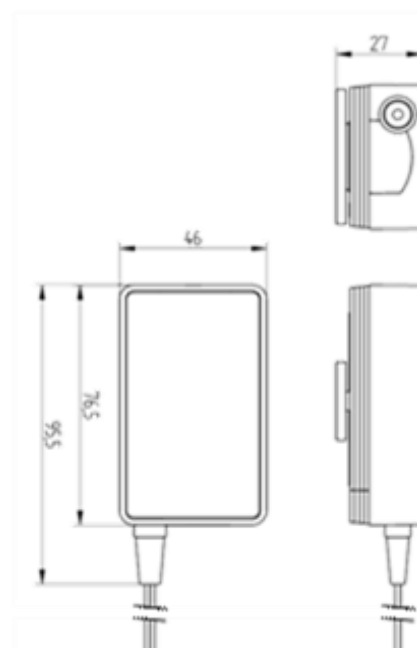
<sup>1</sup>Recommended amplifier power rating for optimum performance, <sup>2</sup>Sensitivity measured with 1kHz sine wave at 1Watt, <sup>3</sup>Max Sound Pressure Level (SPL) achieved with sounder mounted on same side as measurement with 1kHz sine signal just prior to input signal distorting, <sup>4</sup>STI/CIS values, measured to IEC Standard 60268-16, are typical values since it is dependent on acoustics of installation site. <sup>5</sup>High temperature variants available on special order. <sup>\*\*</sup>Cannot be immersed – mount drive vertically in wet environments.



### Typical applications

The F5 is a powerful, broad bandwidth device delivering 125Hz to 20kHz when mounted on the rear of a resonant the panel, offering designers amazing freedom to use curvaceous and non linear forms featuring integrated invisible audio without grilles or perforations. Designed to meet IP55 environmental standards, and impervious to a wide temperature range the F5 is suitable for outdoor use - all year round without requiring a protective casing.

- Digital Signage – embedded into advertising units
- Retail advertising and POS
- Information Points, ATM's, vending machines, petrol pumps
- Mirror TV and furniture
- Community projects, including high street regeneration and public audio artwork



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