



Power Station

Class A amplifiers are often huge and heavy but sound superb. Musical Fidelity take this formula to the limit with the massive AMS50 power amplifier, finds Noel Keywood...

Here's a power amplifier that will bewilder many but delight some. I was one of the 'some' delighted by it. But then, I enjoyed its charms whilst avoiding one of its drawbacks – an £8,900 price tag! If you have the money and are prepared to spend it on good sound quality, as many still are I'm constantly assured, then Musical Fidelity's new AMS50 Class A power amplifier is required listening. I've been using it now for many months across a wide range of loudspeakers and it has become my tool of choice for driving loudspeakers with a quality and equanimity I have been unable to find elsewhere in solid-state amplifiers.

Bewildering? Yes, I haven't

mentioned yet that this monster power amplifier weighs a truly massive 60kgs, or 132lbs, and is a two or three person lift. But it produces just 40 Watts!

Adding bewilderment is the fact that although its power output is limited, it actually sounds very powerful. I'll attempt to explain this, insofar as any definitive explanation exists. On offer here is a pure Class A amplifier. Class A consumes maximum power all the time and both sides of the push-pull pair swing the full voltage cycle. There can be crossover discontinuity in Class A but it is usually benign, producing low order distortion harmonics only. I say 'can' however, because this depends on the circuit used. Single-ended working is Class A, but there is no

crossover region.

The beauty of Class A is good sound quality, especially at low levels, where good designs have an easy lucidity and unstrained clarity that makes for relaxed listening. The big drawback of Class A is heat production, especially when the circuits are what is known as full Class A, as used in the AMS50, where each output pair shares the entire duty cycle. The output devices then stream heat and to keep them cool a lot of heatsinking is needed – and that's one reason the AMS50 is so heavy, Anthony Michaelson of Musical Fidelity told me. But it does run fairly cool.

The other reason is that it uses a massive mains transformer. However, knowing that Musical

Fidelity understand the need for quiet power lines and have in the past used chokes to achieve this – valve amplifier practice – I couldn't help but ask whether the AMS50 had chokes onboard, but was told it hasn't. Whilst a choke version may well be produced, it's best to understand that chokes compromise regulation, often seen as all important in solid-state amplifiers. The big AMS50 has superb regulation, as you'd hope, and that allows it to double its power output into a 4 Ohm load, from 40 Watts into 8 Ohms to 76 Watts into a 4 Ohms. Since most loudspeakers nowadays use 4 Ohm bass units this is what the AMS50 will actually be delivering in use, rather than 40 Watts, one reason it seemingly goes louder than its spec. suggests. Chokes will alter all this, as well as make the amplifier even heavier, so heavy lifting equipment would probably be needed, but then Musical Fidelity have made such things in the past! I'm thinking of an A-470 I once used and its bigger brother that even I had to keep away from, an A-570.

Another reason it goes loud is that modern loudspeakers need very little power; a 4 Ohm floorstander needs just 1 Watt for a loud 90dB one metre away. This falls to 80dB or so at a normal listening distance of 4 metres. The AMS50 would produce 98dB, 4 metres away from 76 Watts – and that is very loud. I listen at 90dB maximum at home and rarely use more than 10 Watts (I monitor electrical power with a 'scope and loudness with a Bruel & Kjaer SPL meter, to ensure I am not overly stressing either loudspeakers or amplifiers when reviewing them, and to inform myself of course).

For those of you wondering, we never supported Musical Fidelity's recent campaign to persuade people a lot of power is needed in the home. True, powerful amplifiers often sound that way, even though in most circumstances only a fraction of their output is being used, but the big AMS50 also sounds powerful. It might not deliver voltage swing but it can deliver plenty of current.

Not only do its fully complementary push-pull output triple bi-polars (they are not MOSFETs I was told) share the load fully, they work in bridged pairs. Bridge amplifiers often sound quite chunky yet smooth in what they do and the AMS50 has this quality about it, plus some. With bridge amplifiers both positive and negative loudspeaker terminals are 'live'; negative is only a convention. On most conventional amps the loudspeaker negative

terminal goes to ground; on a bridge amplifier it does not. If the negative is grounded accidentally then the channel goes silent; if the positive is grounded sparks fly I found! Protection circuits exist to avoid damage.

There are two pairs of output terminals per channel, provided to make biwiring easier. They are chunky, gold plated affairs that cater for 4mm banana plugs, spade terminals favoured in the U.S., and bare wire.

In line with today's preferences the AMS50 has balanced XLR inputs in addition to unbalanced phono inputs. The amplifier is unbalanced internally, so the balanced input runs through a balanced-to-unbalanced receiver chip, as most do. What's the benefit? It is to be able to use balanced cabling. Sceptics – usually electrical engineers! – need to listen first before jumping to conclusions. Just the fact that the signal line is symmetric and earth currents passed through an independent ground helps. Then there's cancellation of common mode interference, a subject that's off the radar of high fidelity engineering

balanced signal cabling is a sensible one. For this review however I used both a Creek OBH-22 passive preamplifier and Icon Audio LA7 valve preamplifier, connected through short, phono terminated unbalanced cabling.

My initial interest and final appreciation of this power amplifier revolved around its ability to match and drive a wide variety of loudspeakers. Loudspeaker reviewing demands use of a decent power amplifier sufficiently neutral in itself, yet of deep ability, to act as a blameless drive amplifier. The AMS50 turned out to be near perfect for this purpose, suggesting it will give consistently fine sound with whatever loudspeaker it is partnered with. It didn't quite score 100%; some loudspeakers, like the Usher V-640s in this issue, didn't suit it I felt. But it got a lot closer than most solid-state amplifiers at being able to get the best from most loudspeakers and regular readers will know I've used the AMS50 for some months now as a solid-state benchmark, a reliable, top quality workhorse for

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and talk, even though increasing amounts of radio frequency hash surrounds us.

Musical Fidelity would like owners to use their Primo valve preamplifier of course, which has balanced outputs. Bearing in mind the AMS50 is so heavy it will normally sit on a floor, the signal cable to it will likely be a long one and therefore best as a well screened, balanced type, I believe. Just how important this is may well be down to location. For example, radio breakthrough into hi-fi amplifiers used to be common in the Crystal Palace area of South London, due to the presence of the powerful Crystal Palace transmitter. Both loudspeaker leads and phono stage cabling acted as an aerial, rectification occurring across the base-emitter junction of the first preamplifier transistor. That both low level input and high level output cables were culprits in this demonstrated that radio frequency pickup can occur anywhere. With Wi-Fi transmitters all around us nowadays there is a need to pay attention to connection methods and cables in top quality set ups and for this reason the move to

loudspeaker reviews, alongside our Icon Audio MB845 valve amplifiers.

No they are not alike! They are not even similar in sound quality. But the big AMS50 has an array of qualities that mark it out as an utterly superb amplifier no matter what loudspeaker it is paired with.

SOUND QUALITY

In broadest outline, the AMS50 has a taut, clean cut delivery with monumental grip. Reviewing loudspeakers with it, it consistently drove them lower than other amplifiers, without bloom or warmth. This isn't a full bodied sort of bass, and certainly not a bloated one, but a sense of total control in keeping the strong bass line of Santana's 'Love of my Life' perfectly timed, as if in a rhythmic vice, placed clearly apart from all else so it took up position as a backing line, rather than a deep sound of indeterminate origin, and finally a very obvious extra depth that sent low notes downward with pile driving determinism; I almost wanted to grab the arms of the settee. As Santana picked off the simple motifs, leading edges from the his guitar were sudden and strong, the follow



A large rear panel carries paralleled loudspeaker outlets for biwiring, a master power switch and both balanced (XLR) and unbalanced (phono socket) inputs.

through densely detailed and richly textured. The AMS50 paints a richer and more intricate canvas than any other solid-state amplifier I have ever heard and, as a valve head, I admit to sitting there thinking it is probably the best amplifier I have ever heard, not just as defined by reductionist analysis but also by sheer enjoyable musicality too. Of the two I live by the former but listen by the latter (!), which is why I spend so much time measuring 'perfect' solid-state amplifiers then walk away and listen to my valve amplifier. But the AMS50 does make a case that solid-state can be made to work in a solid-state way that is also pleasurable to hear and very, very impressive in itself.

Similarly, the deep walking bass lines used behind Angélique Kidjo, which I use to test loudspeaker bass quality because they reach right down to a low 30Hz, came across as rippingly powerful yet perfectly taut. Drums were kept well apart in a soundscape that, temporally, had a hard-chiselled time domain outline. This is the main reason the AMS50 sounds so powerful. It has both mighty power and visceral control, which together make for a sound that in many respects is more impressive than anything I've heard before.

Bass quality alone does not make a good amplifier though. Another important feature on the sonic landscape of this amplifier is its tonal neutrality, a strong feature of many Musical Fidelity amplifiers. Where, say, our 'budget' Leema Pulse integrated amplifier has accentuated treble (albeit of good quality) that with some loudspeakers is a deal breaker, the AMS50 always struck me as natural in balance, completely without accentuation and almost dryly stark. Again, as rhythmic strands were kept apart so adeptly, so the amplifier seemed able to separate

finest instrument details, and to present a swathe of orchestral violins as separate instruments, each with its own clearly outlined and convincingly delineated presence.

Whilst the AMS50 is nothing other than intensely detailed, it is also without colour and comes across as very neutral. It was this neutrality that helped smooth the path to broad loudspeaker compatibility. Only when I needed to take the accent off treble with a loudspeaker like Usher's V-604, did I feel the less forceful and hard chiselled sound of our Icon Audio MB845s preferable.

Where the AMS50 always had the upper hand to the many amplifiers I compared it to, including our MB845s at high volume, was its complete absence of muddle. This was largely responsible for its sense of deep analysis, maintained no matter how soft or loud I chose to run any accompanying loudspeaker. No valve amplifier and few transistor amplifiers get close.

Being solid-state the AMS50 lacked the easygoing midband dynamics of the MB845s, their deep sound staging and dark treble. Yet it was more grippy, revealing, forensic in its detailing and complete in its ability to separate instruments and musical strands. Objectively it cannot be compared to any valve amplifier. The two are chalk and cheese, which is why I now use both in loudspeaker reviews. Perhaps surprisingly, although one uses little feedback and the other a lot, both seem able to drive almost any

loudspeaker. So much for engineering theory!

With all its grip and analysis, its rich ability to reveal a wealth of fine detailing, the AMS50 is also crucially free from the glassiness or sterility that characterises so many high end solid-state amplifiers. It conveys the tonal pallor of instruments rather than smothering them with its own, and here again it breaks free from the worldly constraints of most rivals. I think this is why I found I could use it; too many solid-state amplifiers for me are just too coloured. That isn't a term commonly used to describe the sound of solid-state but I hear a pervasive 'colour' and always have. It's that hard sterility, sometimes accompanied by a grittiness that together conspire to smother the timbral colour of musical instruments. The big AMS50 is cool and clear, starkly dry and controlled, but it allows an orchestra to sound like an assemblage of different instruments, conveying the woodiness of woodwinds, the rasp of the brass, the vigour of the higher strings in a busy violin section, and the rich tones of the cellos. Through the AMS50 you get them all in full measure, lustrous in body and tone.

CONCLUSION

The purity and natural ease of Class A is fully revealed in this amplifier. With its powerful grip both upon the music flowing through it and the loudspeaker on the end of it, Musical Fidelity's AMS50 offers a spectacularly refined sound that's absent from solid-state amplifiers. If you want the best and can afford it this is an amplifier you must hear. It's probably the best solid-state amplifier I have ever heard.

VERDICT 
 Monstrously grippy with pile-driving deep bass and swathes of detail, this superlative solid-state power amplifier demands commendation.

MUSICAL FIDELITY
AMS50 £8,900
 ☎ +44(0)208900 2866
 www.musicalfidelity.co.uk

FOR
 - superb bass quality
 - neutral tone
 - intense detailing

AGAINST
 - price
 - size
 - weight

MEASURED PERFORMANCE

Surprisingly, this vastly heavy solid-state amplifier produces just 40 Watts into 8 Ohms. Regulation is as good as one might expect from a vast power supply and so power into 4 Ohms was almost double at 76 Watts. Since most loudspeakers now use 4 Ohm bass units this is what will be usefully delivered in practice.

As with most Musical Fidelity amplifiers distortion was minimal, even at high frequencies. There was absolutely no sign of crossover components on the high frequency distortion residual, so the sound will be free from their harshness.

Damping factor was high at 75, so control over loudspeaker bass units will be good, suggesting tight bass. Frequency response was wide, stretching from 3Hz up to 53kHz.

Although not powerful for its size, the AMS50 measures well all round. NK

Power	40 Watts
Frequency response	3Hz-53kHz
Separation	74dB
Noise	-101dB
Distortion	0.001%
Sensitivity	600mV
Damping factor	75

DISTORTION

