

RCM Audio Sensor 2

RCM's new Sensor 2 phono preamplifier replaces the Sensor Prelude with the promise of great sound and truly excellent flexibility. Does it deliver?

Review: **Adam Smith** Lab: **Paul Miller**



If you are in the market for a high quality phono stage with plenty of flexibility, the Polish brand RCM could well tempt you. The £1990 Sensor 2 supersedes the Sensor Prelude which was very favourably reviewed some years ago [*HFN* Nov '09] and yet this price tag puts the RCM up against some strong contemporary competition, including the Naim Superline, Whest PS.30R and Icon Audio PS3 MkII.

The Sensor 2 is a two-box solution, the outboard PSU and MM/MC phono preamp linked by an umbilical cable terminated in a locking 5-pin socket. The power switch is located on the rear of the PSU, but a green LED illuminates on the front of the main unit when power is on. Front panel colour options for the preamplifier are black or natural anodised aluminium.

DIP SWITCHES GALORE

The preamp's design is fully balanced, and both balanced XLR and unbalanced phono socket output options are offered. Input to the Sensor 2 is only via phono sockets, but these can be switched to configure the unit for a balanced or unbalanced input. The rear panel is completed by a grounding post and an array of slightly fiddly DIP switches that set the various gain and input loading options. Some nice front panel-mounted controls would, frankly, make life much easier. That said, the range of available options is more comprehensive than offered by the old Sensor Prelude.



Input loading comprises 20, 30, 50, 100, 200, 400 and 1000ohm for MC cartridges and 47kohm for MMs with input capacitance fixed at 150pF. A second bank of switches select the unit's gain and it's here that things get more interesting. I like the way in which the settings are labelled in mV rather than dB gain but, as can be seen from PM's Lab Report, you shouldn't correlate them directly to the rated output of your cartridge, especially if the Sensor 2's balanced outs are employed. Not only are the gains for each setting very high but overload margins are correspondingly limited, so you should match the output of your pick-up to a higher (numerical) sensitivity figure than indicated.

As mentioned, the standard price of the Sensor 2 is £1990, but UK importer Fi Audio is also offering a couple of upgrade packages. The first is a Furutech Gold version, complete with gold-plated RCA, XLR and mains sockets, plus a Furutech fuse for £260. The Furutech Rhodium option

ABOVE: Built into compact and purely functional cases, the Sensor 2 and outboard PSU can be tucked away in any equipment rack

swaps these items for rhodium plated versions and commands a £310 price premium over the standard unit.

HIDDEN TREASURES

I used the 2.5mV gain setting to best accommodate my Charisma Audio MC-2 cartridge, despite its 0.6mV output [*HFN* Feb '15]. Set like this, the RCM proved itself to be a very capable performer indeed, with a clear sense of purpose and enthusiasm about its music making. The Sensor 2 gives the impression that it's actually enjoying playing music!

Most striking is the way the Sensor 2 deals with poorer recordings. I span up some recent car boot sale LP acquisitions, well aware that I would not be hearing the unit at its best. But the joke was on me as the RCM did an absolutely stunning job of revealing the hidden treasures within these budget 1980s pressings.

First up was 'Under The Milky Way', from the 1988 album *Starfish*, by The Church [Arista 208 895]. As mentioned, this is a typical late '80s LP on thin vinyl and with an equally thin sound. Through the RCM, however, it gained depth and even a hint of warmth across the midband. As a result, the instruments were clearly delineated and even Steve Kilbey's bass line appeared from the depths. The Sensor 2 never attempted to disguise the limitations of the recording or LP but took what was available and made the very best of it.

POLISH PASSION

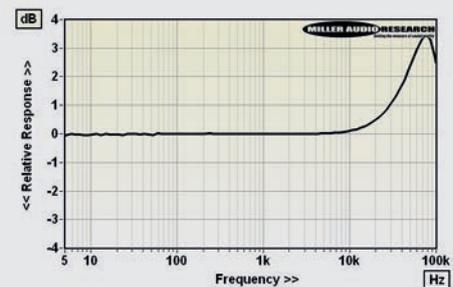
RCM Audio has been a high-end distributor for around 25 years, and is based in Katowice in Poland. However, ten years ago the company decided to concentrate its efforts on introducing new products under its own name. The first of these was an integrated valve amplifier, the Bonasus, which received high praise for both its sound and exceptional build quality. Interestingly, all the models that have followed since, namely the Sensor Prelude, the range-topping Theriaa and the new Sensor 2, are solid-state phono stages. Perhaps this is not so surprising when one considers that, as an importer, a good deal of the company's products are vinyl-based, including SME, Dynavector, Dr Feickert Analogue and TechDAS. The name RCM originally came from the initials of the company's three founders, but today the organisation is run purely by owner Roger Adamek.

RCM AUDIO SENSOR 2

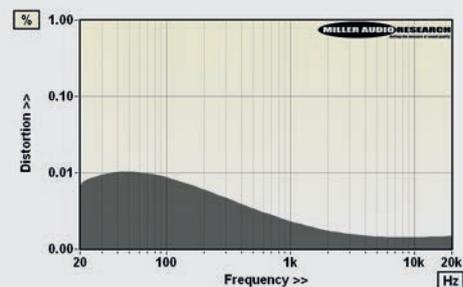
Comprehensive though they are in scope, I'm not entirely sure that the 'sensitivity' settings on the Sensor 2 are especially helpful. They range from 5mV in seven steps down to a notional 0.3mV, the former ostensibly for high output MM pick-ups, the latter for low output MCs. In practice, the '5mV' setting offers a substantial +55dB gain via the RCA outs and +61.4dB via the balanced XLRs which is a full 20dB (10x) more than strictly necessary for the average MM. The flipside of this extra gain is compromised input overload margins – arguably less of an issue with low/medium output MCs but of real concern for MM users.

For example, the '5mV' setting overloads with inputs beyond 17mV (1% THD) when a figure of 50-100mV would probably have been more appropriate. (So the likes of an Ortofon 2M series pick-up tracking a hot LP will inevitably push the Sensor 2 into clipping.) The full breakdown of Sensor's 'sensitivity rating'/actual gain/input overload is as follows: 5mV/+61.4dB/17mV; 2.5mV/+67.3dB/8.6mV; 1.4mV/+73.6dB/4.1mV; 0.9mV/+76.8dB/2.6mV; 0.6mV/+79.6dB/2.1mV; 0.4mV/+83.1dB/1.3mV and 0.3mV/+85.4dB/1.1mV. So, as a rule, opt for a 'sensitivity' setting 2-4x higher than the rated 1kHz/5cm/sec output rating for your MC pick-up.

Performance is otherwise excellent – the RIAA-corrected response is flat to within ±0.4dB from 1Hz-20kHz (beware ported loudspeakers), rising to +3.7dB/70kHz [see Graph 1], while distortion ranges from 0.01-0.001% between 20Hz-20kHz [see Graph 2]. Noise is low too – 88dB A-wtd S/N (5mV input treated as MM) and 72dB (2.5mV input treated as MC). Readers may view a full QC Suite test report for the RCM Audio Sensor 2 phono preamp by navigating to www.hifinews.co.uk and clicking on the red 'Download' button. PM



ABOVE: RIAA-corrected frequency response via '5mV' sensitivity input option from 5Hz-100kHz



ABOVE: Distortion versus frequency from 20Hz-20kHz at 1V output. THD decreases gently with frequency

HI-FI NEWS SPECIFICATIONS

Input loading	20ohm-1kohm, 47kohm
Input sensitivity (re. 0dBV)	0.85mV-53.7µV
Input overload (re. 1% THD)	17mV-1.1mV
Max. output (re. 1% THD) / Impedance	19.0V / 25ohm (balanced)
A-wtd S/N ratio (re. 0dBV, MM/MC)	87.6dB (5mV) / 77.9dB (0.3mV)
Frequency response (20Hz-20kHz)	+0.05dB to +0.45dB
Distortion (20Hz-20kHz, re. 0dBV)	0.0014-0.010%
Power consumption	6W
Dimensions (WHD, preamp/PSU)	245x110x227/122x70x230mm



LEFT: RCA input may be rigged for balanced input alongside eight loading options and seven gain settings

With better quality material passing under the stylus, the RCM impressed greatly. It has a very real sense of vitality about it that transfuses the listener, drawing you into the music, while ensuring it's also easy to concentrate on individual aspects of a performance. The Sensor 2 is a thoroughly enjoyable listen as a result.

MASTERFUL PERFORMANCE

In terms of space and soundstaging, the RCM is something of a master. It lays out instruments and performers with both conviction and an underlying sense of ease. Main vocal performances were set solidly centre stage, the Sensor 2 revealing the hidden depths of familiar LPs.

Across the midband and top end, the RCM exhibited a purity and clarity that made it a joy to listen through. Austere recordings such as Donald Fagen's *Sunken Condos* [Reprise 9362-49478-4] had a pleasing sense of starkness and openness. On the other hand, rather better balanced options such as The Eagles' *Long Road Out Of Eden* [Universal 06025 17546950] were much more fulsome and expansive.

'The Eagles sounded much more fulsome and expansive'

The title track from this album proved an utterly captivating listen through the RCM.

So, were there any chinks in the sonic armour of this fine design? Being ultra-critical for a moment, I would have liked a fraction more weight at the low end, as tracks with enthusiastic synthesiser bass lines could occasionally sound a little reticent. Grimes' 'Genesis' from her *Visions* album [4AD CAD3208] proved to be a case in point here.

Through my usual phono stage this LP has a touch more 'pin you in your seat' grunt behind it so, for all the generosity of the RCM's 'bottom end', a little more drive and gravitas would have helped flesh out the musical picture.

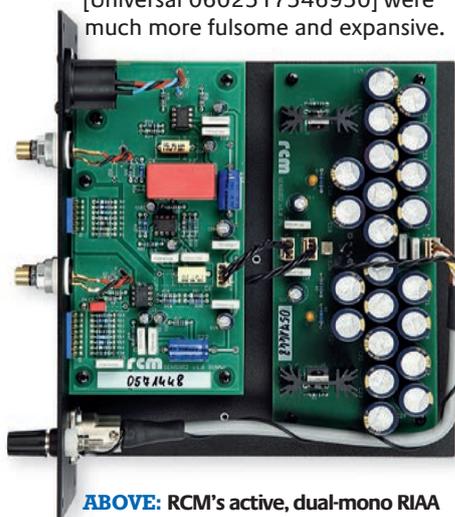
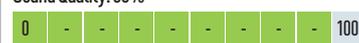
MIX 'N MATCH

Finally, I swapped a higher output Ortofon 2M Black into my SME arm and the results were just as superb, albeit with one small caveat. Spinning a few 12in singles with high groove modulations did elicit a sense of compression that I put down to the Sensor 2's limited headroom. In practice, this was the only real blot in an otherwise superb audiophile copybook. ☺

HI-FI NEWS VERDICT

There's little doubt that the RCM Sensor 2 is very nearly an exceptional phono stage. It has a superbly balanced and effortlessly captivating sound and offers a wide range of gain and loading options that should allow a broad swathe of cartridges to be matched optimally. Although the input headroom issues cannot be ignored, choose a partnering cartridge wisely and the Sensor 2 rewards handsomely.

Sound Quality: 83%



ABOVE: RCM's active, dual-mono RIAA eq section uses an instrument-grade Burr-Brown INA217 op-amp with a Burr-Brown OPA2134 driving the output