

# SONIFEX

Reference Monitor Meters

# Catalogue





## Reference Monitor Meters

The Reference Monitor Meters are a range of freestanding and 1U rack-mount precision meters offering accurate, high resolution metering of between 1 and 4 stereo audio sources.

Each stereo source is auto-switching between either analogue or digital AES/EBU format with sample rates up to 192kHz accepted.

The level of each stereo source is displayed on a pair of bright, multi-coloured bargraph meters, with a large choice of accurately modelled scales/responses to suit different applications and local preferences. Separate 5 LED phase meters indicate channel correlation or phase error conditions, and additional LEDs show digital input lock and audio level alarm status.

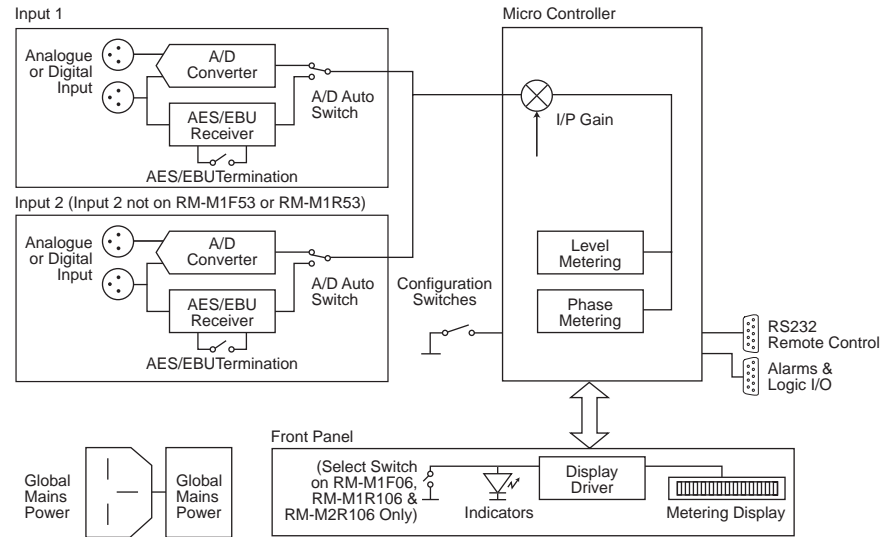
On the rear panel, open-collector alarm outputs provide hardware indication of audio under-level or silence, audio over-level, sustained phase errors above 90 degrees and digital source lock.

Status monitoring and unit ID functions, plus firmware updates to add extra functionality, are all accessible remotely via a RS232 connection in conjunction with Sonifex SCi software.

All Reference Monitor Meters operate from global mains voltages (85-264V AC, 47-63Hz) without adjustment.

There are eight Reference Monitor Meters:

- RM-M1F53 1 Stereo 53-Segment Meter, Free-Standing
- RM-M1R53 1 Stereo 53-Segment Meter, Rack-Mount
- RM-M2F53 2 Stereo 53-Segment Meters, Free-Standing
- RM-M2R53 2 Stereo 53-Segment Meters, Rack-Mount
- RM-M4R53 4 Stereo 53-Segment Meters, Rack-Mount
- RM-M1F106 1 Stereo 106-Segment Meter, Free-Standing
- RM-M1R106 1 Stereo 106-Segment Meter, Rack-Mount
- RM-M2R106 2 Stereo 106-Segment Meters, Rack-Mount



Reference Monitor Meters Block Diagram.



## RM-M1F53 1 Stereo 53-Segment Meter, Free-Standing



**Category:** Reference Monitor Meters.

**Product Function:** Visual monitoring of analogue and digital audio inputs.

**Typical Applications:** Radio station engineering racks-room for monitoring news feeds and audio sources.

**Features:**

- Bright, accurate precision LED meters.
- Auto-switching analogue or digital audio inputs.
- 9 meter scales and ballistics types
- Phase meter.
- Alarm GPOs for under/over level.
- RS232 connection for PC updates and control.
- Desktop or rack-mount formats.

The RM-M1F53 is a free-standing, single stereo channel meter with bright, multi-coloured 53-segment bargraph meters and all the features listed in the summary.



## RM-M1R53 1 Stereo 53-Segment Meter, Rack-Mount

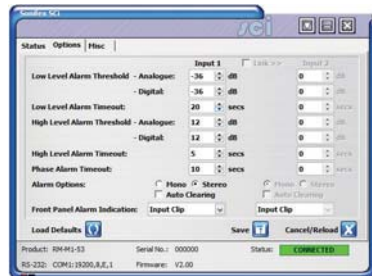


The RM-M1R53 is a 1U rack-mount version of the RM-M1F53.

### Available Scales/Ballistics For All Meters

There are nine scales available with accurately modelled ballistics. Each stereo meter pair can have a different scale, set via a DIPswitch on the rear panel. A complete set of overlays are provided per stereo meter so that you can define the scale(s) that you need:

1. Dual BBC PPM + standard VU
2. BBC PPM IEC60268-10 11a
3. EBU PPM IEC60268-10 11b
4. Nordic PPM IEC60268-10 1
5. AES/EBU IEC60268-18 digital PPM
6. DIN PPM DIN45406
7. Standard VU IEC60268-17
8. Extended VU IEC60268-17
9. German PPM



SCI Software Screen for RM-M1F53 .



## RM-M2F53 2 Stereo 53-Segment Meters, Free-Standing

The RM-M2F53 is a free-standing, twin stereo channel meter with bright, multi-coloured 53-segment bargraph meters and all the features listed in the summary.



## RM-M2R53 2 Stereo 53-Segment Meters, Rack-Mount

The RM-M2R53 is a 1U rack-mount version of the RM-M2F53.



## RM-M4R53 4 Stereo 53-Segment Meters, Rack-Mount

The RM-M4R53 is a 1U rack-mount which combines 2 x RM-M2R53 units, providing 4 stereo channel monitoring.





## RM-M1F106 1 Stereo 106-Segment Meter, Free-Standing



**Category:** Reference Monitor Meters.  
**Product Function:** Visual monitoring of analogue and digital audio inputs.  
**Typical Applications:** Radio station engineering racks-room for monitoring news feeds and audio sources.  
**Features:** As per 53 segment meters with the addition of a stereo source select button.



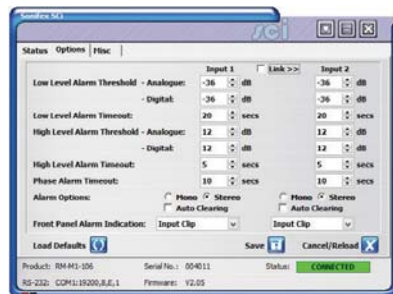
The RM-M1F106 is a single stereo channel free-standing meter but with 2 stereo inputs and a front panel source selector.

This unit has a pair of multi-coloured 106-segment bargraph meters for greater display accuracy. A front panel mounted push-button selects the input source to be monitored, from either of the 2 auto-switching analogue or digital AES/EBU stereo inputs, or from a mono mix of each channel, with channel 1 shown on the left meter and channel 2 shown on the right meter. All other functionality is listed in the summary.

## RM-M1R106 1 Stereo 106-Segment Meter, Rack-Mount



The RM-M1R106 is a 1U rack-mount version of the RM-M1F106.



Sci Software Screen for RM-M1F106.





## RM-M2R106 2 Stereo 106-Segment Meters, Rack-Mount

A dual rack mount version, the RM-M2R106, combines 2 x RM-M1R106 units, giving 4 stereo channel monitoring.



### Technical Specification For Reference Monitor Meters

Audio Specification	Level Metering
<b>Inputs</b>	Number:
Audio Inputs: 1 x stereo analogue or AES/EBU digital (auto-selecting) (RM-M1F53 & RM-M1R53) 2 x stereo analogue or AES/EBU digital (auto-selecting) (RM-M2F53, RM-M2R53, RM-M1F106 & RM-M1R106) 4 x stereo analogue or AES/EBU digital (auto-selecting) (RM-M4R53 & RM-M2R106)	1 x 53-segment tri-colour LED bargraphs (RM-M1F53 & RM-M1R53) 2 x 53-segment tri-colour LED bargraphs (RM-M2F53, RM-M2R53) 4 x 53-segment tri-colour LED bargraphs (RM-M4R53) 1 x 106-segment tri-colour LED bargraphs (RM-M1F106, RM-M1R106) 2 x 106-segment tri-colour LED bargraphs (RM-M2R106)
Max Level (0dB Input Gain): +18dBu (analogue)/0dBFS digital	Characteristics:
CMRR: >60dB typical	1. Selectable by DIPswitch from: Dual BBC PPM + standard VU
Input Impedance: 20kΩ (analogue) 110Ω (digital with termination switchable via DIPswitch)	2. BBC PPM IEC60268-10 11a
AES/EBU Sample Rate: 32 to 192kHz, converted internally to 48kHz	3. EBU PPM IEC60268-10 11b
Input Gain: 0, +6, +12 or +18dB digital gain (switchable via DIPswitch)	4. Nordic PPM IEC60268-10 1
Selection: Front panel illuminated push switch button (RM-M1F106, RM-M1R106 & RM-M2R106)	5. AES/EBU digital PPM IEC60268-18
	6. DIN PPM DIN45406
	7. Standard VU IEC60268-17
	8. Extended VU IEC60268-17
	9. German
	Ballistics: According to selected characteristic
	Line-Up Level: According to selected characteristic
	<b>Phase Metering</b>
	Type: 5-segment, indication at 0, 45, 90, 135 and 180 degrees, 1 per stereo meter

Remote Control
Serial: RS232, 19200 baud, 3-wire connection
Alarm Outputs: (1-4 single input units, 1-8 twin units)
1. Audio input 1 under-level/fail (latching)
2. Audio input 1 over-level (latching)
3. Audio input 1 sustained phase error above 90 degrees (latching)
4. AES/EBU input 1 unlock (non-latching)
5. Audio input 2 under-level/fail (latching)
6. Audio input 2 over-level (latching)
7. Audio input 2 sustained phase error above 90 degrees (latching)
8. AES/EBU input 2 unlock (non-latching)
Open-collector outputs rated at 30V, 50mA maximum Output low/conducting in normal condition (no alarm)
Control Inputs: (1 single input units, 2 twin units)
1. Input 1 Alarm reset
2. Input 2 Alarm reset
Pull-to-ground to activate inputs
<b>Status Indicators</b>
AES Lock: Indicates lock achieved on digital input
Level Alarm: Indicates audio over-level

Connectors
Audio Inputs: (All balanced, but may be wired unbal)
2 x XLR 3-pin female (RM-M1F53 & RM-M1R53)
4 x XLR 3-pin female (RM-M2F53, RM-M2R53, RM-M1F106 & RM-M1R106)
8 x XLR 3-pin female (RM-M4R53 & RM-M2R106)
Serial: D-sub 9-pin female
Remote I/O: D-sub 15-pin female
Mains Input: Filtered 3-pin IEC male, continuously rated 85 – 264VAC, 47 – 63Hz, fused 1A, 30W peak, 15W average
<b>Equipment Type</b>
RM-M1F53 1 stereo 53-segment meter, free-standing
RM-M1R53 1 stereo 53-segment meter, rack-mount
RM-M2F53 2 stereo 53-segment meters, free-standing
RM-M2R53 2 stereo 53-segment meters, rack-mount
RM-M4R53 4 stereo 53-segment meters, rack-mount
RM-M1F106 1 stereo 106-segment meter, free-standing
RM-M1R106 1 stereo 106-segment meter, rack-mount
RM-M2R106 2 stereo 106-segment meters, rack-mount
<b>Physical Specification</b>
Dimensions (Raw): RM-M1F53, RM-M2F53 & RM-M1F106 21.8cm (W) x 14.8cm (D) x 4.4cm (H) 8.6" (W) x 5.8" (D) x 1.73" (H)
Dimensions (Boxed): 34.5cm (W) x 27cm (D) x 7cm (H) 13.6" (W) x 10.6" (D) x 2.75" (H)
Dimensions (Raw): RM-M1R53, RM-M2R53, RM-M4R53 & RM-M1R106 & RM-M2R106 48cm (W) x 14.8cm (D) x 4.4cm (H) 19" (W) x 5.8" (D) x 1.73" (H)
Dimensions (Boxed): 59cm (W) x 27cm (D) x 7cm (H) 21" (W) x 10.6" (D) x 2.75" (H)
Weight: RM-M1F53 & RM-M1R53 Nett: 1.3kg Gross: 2.0kg Nett: 2.9lb Gross: 4.4lb
Weight: RM-M2F53 & RM-M1F106 Nett: 1.4kg Gross: 2.1kg Nett: 3.1lb Gross: 4.6lb
Weight: RM-M2R53 & RM-M1R106 Nett: 1.45kg Gross: 2.15kg Nett: 3.2lb Gross: 4.7lb
Weight: RM-M4R53 & RM-M2R106 Nett: 2.8kg Gross: 3.5kg Nett: 6.2lb Gross: 7.7lb

# **SONIFEX**

[www.sonifex.co.uk](http://www.sonifex.co.uk)

---

## **UK Office:**

### **Sonifex Ltd**

61 Station Road, Irthlingborough,

Northants, NN9 5QE, UK

Tel: +44 (0) 1933 650700

Fax: +44 (0) 1933 650726

Email: [sales@sonifex.co.uk](mailto:sales@sonifex.co.uk)

## **Australian Office:**

### **Sonifex Pty Ltd**

12/6 Leighton Place,

Hornsby NSW 2077, Australia

Tel: +61 (2) 9987 0499

Fax: +61 (2) 9476 4950

Email: [sales@sonifex.com.au](mailto:sales@sonifex.com.au)