

M8203

8200 SERIES DISTRIBUTION SYSTEM OSCILLATOR MODULE - ANALOG TEST TONE GENERATOR



by Ward-Beck Systems

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M8203 400/1000HZ OSCILLATOR MODULE - ANALOG TEST TONE GENERATOR

GENERAL

The M8203 Oscillator module is used to provide a reference source of either 1000 Hz or 400 Hz for alignment and test purposes within an audio system. The module has its reference levels calibrated at the factory. The frequency and amplitude outputs are programmable via Berg style connectors. Three line level outputs are available; 0, +4, and +8 dBu, along with a -60 dBm, 150 Ohm output for microphone input calibration.

The M8203 module is packaged in a module size the same as the M8205 series of distribution amplifiers. The M8203 mounts in Ward-Becks' 8200 Series frames, and connections are made via the TB8205P pluggable screw termination.

CIRCUIT DESCRIPTION

The M8203 is a two frequency oscillator designed to be used as a reference source for alignment and test purposes within an audio system.

Oscillator

The oscillator is of the Wein bridge type. U1 provides the necessary gain to sustain oscillation. The series and shunt capacitors of the bridge are made up of C1&C2 and C3&C4 respectively. Berg connector LK1 and LK2 allow selection of either 400 Hz when in the B&C shorted position, and 1000 Hz when connected between A&B. Both connectors should have the same connections shorted for proper oscillator operation.

Automatic Gain Control

The output amplitude of U1 would quickly build until a square wave is produced without the action of JFET Q1; which acts as a voltage variable resistance element to control the gain of U1. Q1 is controlled by the DC voltage generated by the amplitude detection circuit consisting of U2, CR1, CR2, C9, R15, and R16. The input signal driving the amplitude detector is taken from the output of U1.

Output Amplifier

The oscillator output signal is buffered by U3 and fed to two independent output stages. The output stage consisting of calibration control R41 and U5, along with R51 through R58, provides a -60 dBm output into a 150 Ohm load impedance.

Integrated Circuit U4 and associated circuitry provides a programmable line level output. The Berg connectors allow selection of 3 separate line level outputs, +8, +4, and 0 dBu. The splitter network consisting of R34 to R40 allows up to 4 bridging loads to be connected to the M8203 oscillator, providing better than 40 dB of isolation between adjacent outputs. All trim potentiometers are factory calibrated, and there should be little need for further adjustment.

Power Supply Decoupling

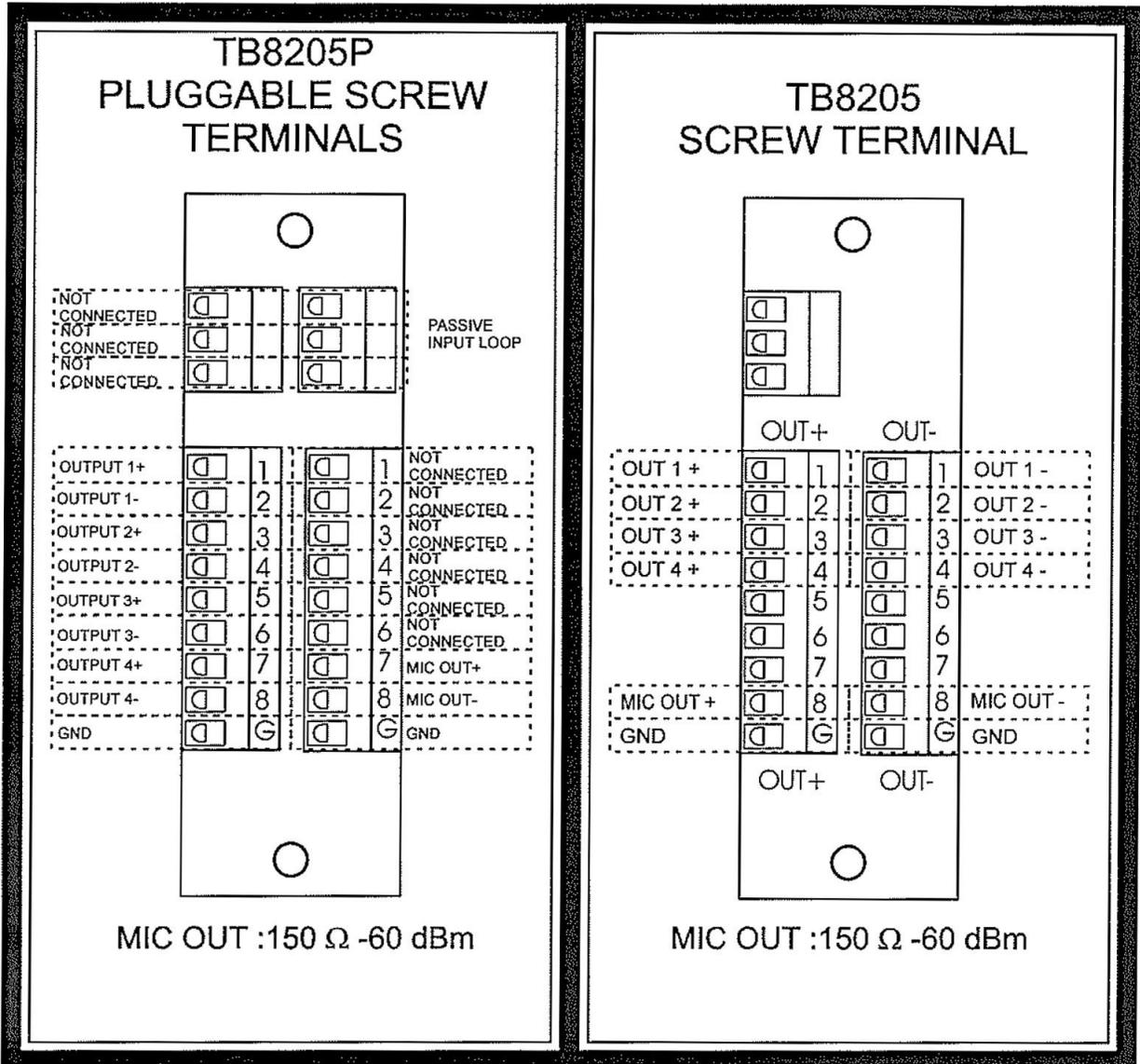
The ± 20 volt DC supply bus voltages appearing at the amplifier connector pins 15&S and 13&P are isolated from the amplifier circuitry via fusing resistors R59 and R60. The incoming ± 20 volt supply is filtered by C29 through C32. Transistor Q2 and Q3 form an active positive and negative power supply decoupler for the oscillator. These decoupling circuits filter and drop the ± 20 volt supply voltage down to ± 18 volts.

SPECIFICATIONS

Oscillator frequencies	400 Hz, 1000 Hz
Frequency tolerance	$\pm 5\%$
Amplitude stability	After 30 minutes warmup: constant within ± 0.25 dB at both frequencies and all nominal levels.
Waveform	Sine wave, less than 0.2% THD at both frequencies, measured over a 30 kHz bandwidth.
Output Impedance	
Line:	60 Ohm, balanced
Mic:	150 Ohm, balanced
Output Levels	
Line:	Programmable to 0, +4, +8 dBu
Mic:	-60 dBm nominal
	(Note: Output levels are calibrated within 0.3 dB)
Load Impedances	
Line:	5000 Ohms or greater, balanced
Mic:	150 Ohm, balanced
Power Requirements	± 20 volts, 30 mA
Ambient Temperature	0 to 50 degrees Celsius
Dimensions	1.00" wide x 2.75" high x 10.60" deep (25.4 mm x 70.0 mm x 270 mm)
Weight	6 oz. (165 g)

Ward-Beck Systems Inc. reserves the right to change performance specifications without prior notice.

M8203 TERMINAL OPTIONS



DISCONTINUED MODEL
FOR REFERENCE ONLY

WARRANTY

All Ward-Beck Systems Inc. products are warranted against defective materials and workmanship for a period of one year from the date of shipment.

Ward-Beck Systems Inc. will repair or replace, at its option and without charge, all said products or parts thereof which upon factory inspection prove to be defective during the warranty period, provided that:

1. The original serial numbers are intact and have not been tampered with.
2. The purchaser shall return any equipment or parts thereof to Ward-Beck Systems Inc. only after obtaining prior authorization and shipping instructions from the factory. (Ward-Beck Systems Inc. reserves the right to inspect or repair equipment on the purchaser's premises).
3. The purchaser assumes the obligation for all expenses in connection with the shipping and return of such goods, once authorization has been obtained.

This warranty does not cover items normally considered expendable, such as fuses and lamps.

This warranty does not cover damages caused by misuse, accident, neglect, unauthorized alteration, repair by unauthorized personnel, or damage caused by an act of God, war, or civil insurrection.

In no event shall Ward-Beck Systems Inc. be liable for consequential damages. Ward-Beck Systems Inc. shall have the rights to final determination as to the application of this warranty.

Ward-Beck Systems Inc. reserves the right, at any time and without notice, to make changes in its equipment, components, specifications or designs, as may be warranted by progress in state-of-the-art technology.

Ward-Beck Systems Inc. reserves the right to make design changes, additions to, and improvements in its products, without obligation to install such revisions in products previously manufactured.

The warranty set forth herein is in lieu of all other warranties expressed or implied, including the warranties of merchantability and fitness.

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