



9X50 Motion Control FRA

The **Venable 9X50 Series of Motion Control Frequency Response Analyzers** extends the leading-edge analog and digital technology, with advanced DSP, found in Venables' FRAs. This single, comprehensive hardware and software system adds carrier modulation and demodulation capability, enhanced oscillator output with no discontinuities when changing frequency or amplitude, and programmable single pulse oscillator output to support Motion Control applications (electro-mechanical servo loops).

All 9X50 models feature 10uHz to 500kHz gain phase measurement bandwidth and **up to 4 input channels protected to 600 Vpk**.

Venable, a pioneer in stability analysis for over 45 years, continues to support test and measurement customers with cutting edge instruments and analysis software.

Venable Performance Advantage

- High Common Mode Rejection Ratio >120dB
- Channels feature auto ranging for high dynamic range (+/- 120dB)
- Superior noise rejection—narrow bandwidth DFT
- Automatic DC offset for very low frequency measurements
- High voltage channel inputs and oscillator that float to 600V
- Line frequency optimization for analysis on AC based systems
- Life-time Tech and Application support from Austin, Texas USA
- Software with unlimited seats, no subscriptions needed
- Cumulative 80+ years of experience in power supply design & testing

Generator	
Frequency Range	10μHz to 500kHz (sine wave) 10μHz to 500kHz (square wave) Generator Output without discontinuities: 10mHz to 4kHz
AC Amplitude	1mV to 10V
DC Bias	0 to ± -10VDC, 10mv step
Single Pulse Output	Pulse Amplitude: -10V to +10V; in 10mV steps Pulse Duration: 0.001 s to 3,600s; accuracy: approx. +/- 10%
Sweep Type	Single Frequency, Linear Sweep, and
Log Sweep	0.1 - 2000 Steps per decade (Log Step) Linear Sweep 10μHz - 500kHz step (frequency or Hz Step)
Output Amplitude Compression	Dynamically adjust output to maintain a constant input level through Venable
Output Impedance	Switchable 50ohms/2ohms
Output Configuration	Single-ended floating
Isolation from Chassis Ground	600V
Gain/Phase Measurement Channels	
Measurement Frequency Range	10μHz to 500kHz
Input Configuration	Single-ended floating (600V)
Input Impedance Selectable	50ohms or 1 Meg ohm (default)
Measurement Accuracy	±0.03dB + .1dB/MHz ± 0.4deg + 1deg/MHz
Measurement Technique	Narrowband DFT Delay Time 0-100 sec Integration Time 20msec to 100ksec Integration Cycles 1-9999 cycles
Input Coupling	DC, automatic DC offset cancellation
Input Range	10mV to 500Vpk Full Scale in 11 ranges, Auto-ranging
Dynamic Range	120dB
CMRR/IMRR	120dB
Max Input	±500Vpk (differential)
Max Input Withstand Voltage	±600Vpk (common mode)
Over-range Alarms	LED indicator
Carrier Modulation/Demodulation	
Carrier Frequency Range	20Hz to 6kHz
Sweep Frequency Range	1mHz to 3kHz
Carrier Rejection	-greater than 48dB (at 1/12 carrier frequency or lower) -greater than 25dB (at 1/10 carrier frequency)
Carrier Input	± 5V peak, non-isolated



Front 9450



Back 9X50



Rack Mount (Example 6340)