

Motor Drive Analyzer - New Class of Instrument

350 MHz – 1 GHz



Key Specifications

Bandwidth	350 MHz, 500 MHz, 1 GHz
Resolution	12-bit ADC resolution
Channels	8
Memory	50 Mpts - 250 Mpts
Sample Rate	Up to 2.5 GS/s
Digital Channels	16 (optional)
Digital Sample Rate	1.25 GS/s (optional)
Display	12.1" WXGA (1024x800) with external monitor support to UHD (3840x2160)
Power Analysis	AC: 1-phase or 3-phase; 2, 3, or 4-wire. DC. Mechanical. Real, Apparent, Reactive Power. Power Factor, Phase Angle, Efficiency.
Motor Integration	Torque, Speed, Rotor/Electrical Position using Tachometers, Hall sensors, Quadrature Encoder Interface (QEI), or Resolvers.
Capability	Static and Dynamic Power Analysis. Embedded control loop debug. Complete system testing.

Complete Drive System Analysis

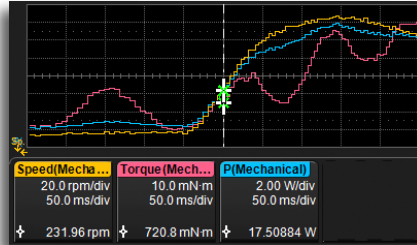
- **Static and Dynamic Power Analysis** – Supports both steady-state and transient power analysis
- **Complete System Analysis** – Correlate analog, digital, and serial data control system behaviors to power system behaviors.
- **Numerics Table** – User-definable, like what a power analyzer provides. Summarizes average voltage, current, power, speed, torque and other values.
- **Per-Cycle "Synthesized" Waveforms** – Enhances and speeds understanding of complex behaviors, especially during dynamic operating conditions.
- **Complete Motor Integration** – Most complete on the market, including support for BLDC Hall sensors, Quadrature Encoder Interface (QEI), and Resolvers. Speed, direction, and rotor/electrical position.
- **Zoom+Gate Mode** – Capture a long acquisition, then Zoom to gate the Numerics table data and per-cycle Waveforms - updates instantly!
- **Full HDO8000 Oscilloscope Capability** – The Motor Drive Analyzer is also a fully functional, high bandwidth oscilloscope with all of the capability of the HDO8000.

For more information, please contact:

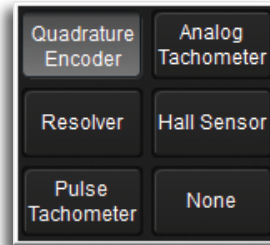
MDA800 Motor Drive Analyzers Fact Sheet



Static steady-state power analysis with Numeric tables to display results for average voltage, current, power, power factor, phase angle, torque, speed, efficiency, etc.



Dynamic transient power analysis that power analyzer instruments cannot perform. Each cyclic value can be plotted over time as a Waveform.



Complete speed and position integration, including support for Quadrature Encoders, Resolvers, and BLDC Hall sensors. Use digital inputs for pulse tachometer, Hall and QEI sensors.



Excellent Performance

- 8 analog channels
- 350 MHz, 500 MHz, 1 GHz
- 12-bit ADC resolution, 15-bit with ERES
- 2.5 GS/s maximum sample rate
- Up to 250 Mpts / Ch
- 16 channel mixed signal option

Setup Capability

- Intuitive, graphical UI
- AC Input, DC Bus, Drive Output, Motor
- 1-phase to 3-phase, 2 wire to 4-wire
- Line-Line to Line-Neutral conversion

Measurements

- Comprehensive voltage & current
- Real, reactive, apparent power, λ , Φ
- Efficiencies
- Torque, speed, rotor/electrical angle
- Slip

Ordering Information

Model	Bandwidth	Channel	Standard Memory / Optional (per Ch)	Sample Rate
MDA803	350 MHz	8	50 Mpts / 250 Mpts	2.5 GS/s
MDA805	500 MHz	8	50 Mpts / 250 Mpts	2.5 GS/s
MDA810	1 GHz	8	50 Mpts / 250 Mpts	2.5 GS/s

Available Probes	
Single-Ended	
ZS1500	1.5 GHz, 0.9 pF, 1 M Ω High Impedance Active Probe
ZS1000	1 GHz, 0.9 pF, 1 M Ω High Impedance Active Probe
Differential	
HVD3106	1,500 V, 120 MHz High-Voltage Differential Probe
HVD3106-6M	1,500 V, 80 MHz High-Voltage Differential Probe with 6m cable
HVD3102	1,500 V, 25 MHz High-Voltage Differential Probe
ZD200	200 MHz Active Differential Probe
ZD500	500 MHz Active Differential Probe
ZD1000	1 GHz Active Differential Probe
ZD1500	1.5 GHz Active Differential Probe
Differential Amplifiers	
DA1855A	1 Ch, 100 MHz Differential Amplifier
DXC100A	100:1 or 10:1 Selectable, 250 MHz Passive Differential Probe Pair
High-Voltage	
HVP120	400 MHz, 1kV V _{rms} High-Voltage Passive Probe
PPE1.2KV	10:1/100:1 200/300 MHz 50 M Ω High-Voltage Probe 600V/1.2kV Max. Volt. DC
PPE2KV	100:1 400 MHz 50 M Ω 2 kV High-Voltage Probe
PPE4KV	100:1 400 MHz 50 M Ω 4kV High-Voltage Probe
PPE5KV	1000:1 400 MHz 50 M Ω 5 kV High-Voltage Probe
PPE6KV	1000:1 400 MHz 50 M Ω 6 kV High-Voltage Probe
Current	
CP030	30 A; 50 MHz Current Probe – AC/DC; 30 A _{rms} ; 50 A _{peak} Pulse
CP030A	30A, 50 MHz High Sensitivity Current Probe – AC/DC; 30 Arms; 50 Apeak Pulse
CP031	30 A; 100 MHz Current Probe – AC/DC; 30 A _{rms} ; 50 A _{peak} Pulse
CP031A	30 A; 100 MHz High Sensitivity Current Probe – AC/DC; 30 Arms; 50 Apeak Pulse
CP150	150 A; 10 MHz Current Probe – AC/DC; 150 A _{rms} ; 50 A _{peak} Pulse
CP500	500 A; 2 MHz Current Probe – AC/DC; 500 A _{rms} ; 700 A _{peak} Pulse