

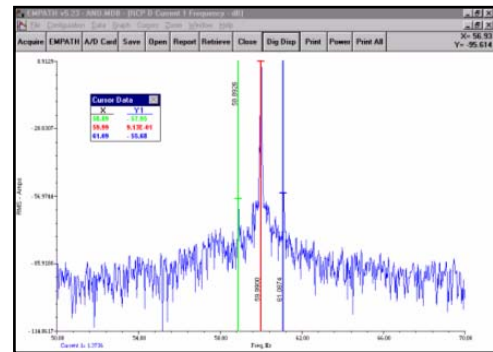
The Advanced Motor Diagnostics Option (AMD) combines the power analysis capabilities of the PS4500/PS4000 with EMPATH™, the proven on-line motor diagnostics software of Ariva NP ([http://www.empath.ws/\\_wsn/page3.html](http://www.empath.ws/_wsn/page3.html)).

### Compare these features with off-line motor analyzers:

- **Evaluate motors without taking them off line.** Avoid costly down time, loss of service, time-consuming maintenance activities.
- **Evaluate motors at the motor control center (MCC).** A centralized, safer, cleaner, quieter site allows for more efficient and safer evaluation in as little as 3 minutes per motor.

### Compare these features to other on-line motor analyzers:

- **Work with all types of motors.** Induction, synchronous, DC, wound rotor, and induction with VFD type motors can be evaluated
- **Diagnose wide range of motor problems.** Rotor/armature health, stator mechanical/electrical health, field coil faults, bearing health, eccentricity, loose connection problems, etc
- **Complete power analysis of motors.** Voltage and current levels, imbalances, phasor diagrams, power and power factor, harmonic distortion, complex impedance
- **Diagnose problems with the driven load.** Detects misalignment, unbalance, looseness, bearing damage, belt passing, gear meshing, gear and belt faults
- **Plain language reporting.** The reports are clear and organized, with checkmark summaries indicating what problems have been detected in each area.
- **Evaluate motors effectively.** Measure motor efficiency and torque on your induction motors. An extensive database of motor models listing rotor bars and stator slots allows checking of running speed, slip, pole passing frequency, de-rating factor, and slot counting.
- **Predictive maintenance assistance.** Maintaining a performance history for each motor allows spotting trends indicative of approaching failure.



This option provides the benefits of **Motor Current Signature Analysis (MCSA)** in order to evaluate motors and their driven loads while the motor is running. MCSA allows PowerSight, combined with EMPATH™ software, to do a complete frequency analysis of motor current from 0 to 5000 Hz and then analyze it using complex algorithms in order to detect the dynamic operating characteristics of the motor and its load. The benefit is fast evaluation of motors without powering them down. Once you use it, you will see that this is the best overall on-line motor diagnostic package available.

### Pricing and Availability

The AMD option is priced at \$9,250.00 (not including the PS4500/PS4000) and is available now (order part number AMD). PowerSight® products are manufactured in the USA.

For more information on our products contact:

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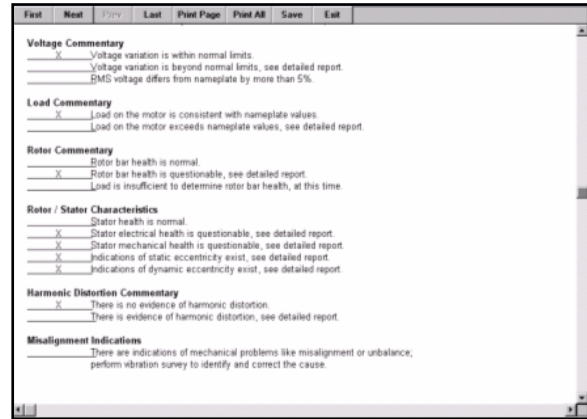
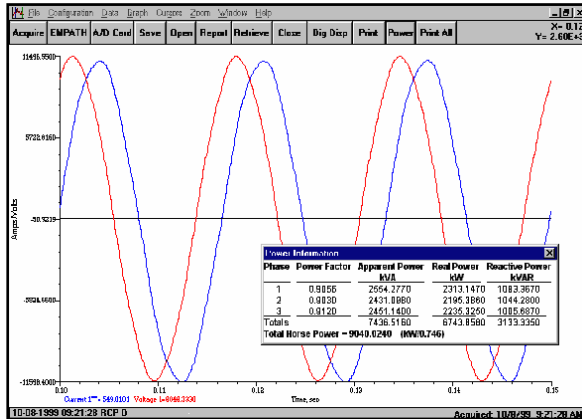
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# On-Line Motor Diagnostics Option

“Complete Capability, Smallest Size”

Order Number:  
[AMD]



Features - Motor Analysis	Motor types				
	Induction	Synchronous	DC	Wound Rotor	Induction with VFD
Rotor health	Yes	No	N/A	Yes	Yes
Armature health	N/A	N/A	Yes	N/A	N/A
Stator mechanical health	Yes	No	N/A	Yes	Yes
Stator electrical health	Yes	No	N/A	Yes	Yes
Turn-to-turn short	Yes	Yes	N/A	Yes	Yes
Static eccentricity	Yes	No	N/A	No	Yes
Dynamic eccentricity	Yes	No	N/A	No	Yes
Stator slot count	Yes	No	N/A	No	Yes
Rotor bar count	Yes	No	N/A	N/A	Yes
Field coil faults *1	N/A	Yes	Yes	N/A	N/A
Current rms value	Yes	Yes	Yes	Yes	Yes
Current unbalance	Yes	Yes	N/A	Yes	Yes
Inrush current	Yes	Yes	Yes	Yes	Yes
Complex impedance	Yes	Yes	N/A	Yes	Yes
Motor load	Yes	Yes	Yes	Yes	Yes
Derating factor based on current	Yes	Yes	N/A	Yes	Yes
Derating factor based on voltage	Yes	Yes	N/A	Yes	Yes
Motor efficiency in report	Yes	No	No	No	Yes
Bearing & motor database analysis	Yes	Yes	Yes	Yes	Yes
Running speed	Yes	Yes	Yes	Yes	Yes
Slip	Yes	N/A	N/A	Yes	Yes
Pole passing frequency	Yes	N/A	N/A	N/A	Yes
Brush passing *1	N/A	N/A	Yes	N/A	N/A
Loose connections	Yes	Yes	N/A	Yes	Yes
Hunting *1	N/A	Yes	N/A	N/A	N/A
DC drive faults (SCRs, controls...) *1	N/A	N/A	Yes	N/A	N/A
Volts/Hz ratio *1	N/A	N/A	N/A	N/A	Yes

\*1 - can be determined by operator by evaluating the graphs



# On-Line Motor Diagnostics Option

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Features - Driven Load Analysis	Motor types				
	Induction	Synchronous	DC	Wound Rotor	Induction with VFD
Looseness <sup>*1</sup>	Yes	Yes	Yes	Yes	Yes
Belt passing <sup>*1</sup>	Yes	Yes	Yes	Yes	Yes
Gear meshing <sup>*1</sup>	Yes	Yes	Yes	Yes	Yes
Gear box faults <sup>*1</sup>	Yes	Yes	Yes	Yes	Yes
Belt faults <sup>*1</sup>	Yes	Yes	Yes	Yes	Yes
Base looseness <sup>*1</sup>	Yes	Yes	Yes	Yes	Yes
Gear faults <sup>*1</sup>	Yes	Yes	Yes	Yes	Yes
Misalignment	Yes	Yes	Yes	Yes	Yes
Unbalance	Yes	Yes	Yes	Yes	Yes
Bearing damage	Yes	Yes	Yes	Yes	Yes
Soft foot <sup>*1</sup>	Yes	No	No	No	Yes

Features - Power Analysis	Motor types				
	Induction	Synchronous	DC	Wound Rotor	Induction with VFD
Voltage rms value	Yes	Yes	Yes	Yes	Yes
Voltage unbalance	Yes	Yes	Yes	Yes	Yes
Voltage swell capture	Yes	Yes	Yes	Yes	Yes
Voltage dip capture	Yes	Yes	Yes	Yes	Yes
Voltage high-speed transient capture	Yes	Yes	Yes	Yes	Yes
THD for voltage	Yes	Yes	N/A	Yes	Yes
Individual harmonics of voltage	Yes	Yes	N/A	Yes	Yes
Voltage crest factor	Yes	Yes	N/A	Yes	Yes
Current swell capture	Yes	Yes	Yes	Yes	Yes
Current dip capture	Yes	Yes	Yes	Yes	Yes
Current high-speed transient capture	Yes	Yes	Yes	Yes	Yes
Current crest and K factor	Yes	Yes	N/A	Yes	Yes
THD for current	Yes	Yes	N/A	Yes	Yes
Individual harmonics of current	Yes	Yes	N/A	Yes	Yes
True power	Yes	Yes	Yes	Yes	Yes
Apparent power	Yes	Yes	N/A	Yes	Yes
Reactive power	Yes	Yes	N/A	Yes	Yes
True power factor	Yes	Yes	N/A	Yes	Yes
Displacement power factor	Yes	Yes	N/A	Yes	Yes
Phasor diagrams	Yes	Yes	N/A	Yes	Yes
Trending/logging	Yes	Yes	Yes	Yes	Yes

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