

INGESYS

CMS

Condition Monitoring System



INGESYS® CMS determines the machine condition, anticipating the appearance of functional anomalies by the analysis of vibrations, temperature, oil condition, etc.

Online condition monitoring system for rotary machines

Main Features:

Modular design (up to 8 modules) to support application customization

Wide range of input modules for data collection (IEPE accelerometers, Velocity and position probes, 0-10V, 4-20mA signals, Temperature sensors)

Data collection through communication interfaces (MODBUS TCP, CAN, RS232, RS485)

Parameter triggered data collection on user defined machine operation states

Advanced diagnosis and analysis utilities

Central monitoring of plant machines

Automatic or manual customizable report generation

Embedded Server for web visualization

Email or text message alerts for plant personnel

INGESYS® CMS Tool Suite, powerful diagnosis & analysis software utilities, for an easy and accurate detection of upcoming failures

Benefits:

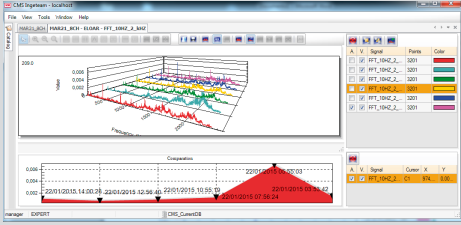
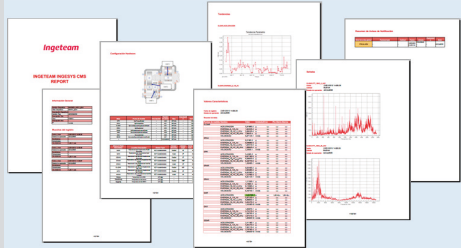
- Early detection of upcoming damages
- Maintenance program optimization
- Downtimes reduction
- Spare parts saving
- Plant lifetime extension

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Main Characteristics

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| <p>Characteristic values</p> <p>Signal selection</p> <p>Quantities</p> <p>Units</p> <hr/> <p>FFT max. freq.</p> <p>High pass filter freq.</p> <p>Number of spectral lines</p> <p>Time waveform samples</p> <p>Window types</p> <p>Characteristic val. averaging</p> <p>Signal averaging</p> <p>Overlap</p> <p>Envelope carrier frequency</p> <p>Envelope bandwidths</p> <p>Order analysis</p> | <p>Signal processing</p> <p>RMS, Vpp, Vp, Minimum, Mean, Crest Factor, Kurtosis, Angle Delta</p> <p>Time Waveform, FFT, Envelope, Envelope FFT, Order analysis</p> <p>Accelleration, Velocity, Displacement</p> <p>g, m/s², mm/s², m/s, mm/s, mm, um V, mA, kNm, u</p> <p>375Hz to 48kHz [7 steps]</p> <p>125Hz to 20kHz [7 steps]</p> <p>0.1 - 2000Hz [7 options]</p> <p>100, 200, 400, 800, 1600, 3200</p> <p>128, 256, 512, 1024, 2048, 4096, 8192, 16384</p> <p>Hamming, Hanning, Rectangular</p> <p>Maximum Value, Middle Value, No Avg.</p> <p>Linear, Exponential, No Avg. [Signal number:1 to 64]</p> <p>0, 25, 50, 67, 75 %</p> <p>From 750Hz to 11,000Hz [7 options]</p> <p>From 375Hz to 12,000Hz [6 options]</p> <p>Order-based signal [Rotational speed value required]</p> |
| <p>Machine operation state</p> <p>Register triggering</p> | <p>Diagnosis</p> <p>Defined using data sources [Analysis in similar operation conditions]</p> <p>User defined</p> |
| <p>Definition</p> <p>Levels</p> <p>Threshold value configuration</p> <p>Actions</p> | <p>Notification levels</p> <p>Per parameter and state [Watching within a value range and state]</p> <p>Error, Prealarm, Alarm</p> <p>Absolute, Relative, Statistic Value [Threshold value definition wizard]</p> <p>User configurable per notification level [Create register file, log generation, activate DO]</p> |
| <p>Storage capacity & duration</p> <p>Recording retrieval to DB</p> | <p>Data storage</p> <p>External Compact Flash (64MB to 2GB) [At least up to 3 months (1 record/day with 40 signals, 40 characteristic values)]</p> <p>Automatic [Upon link reestablishment]</p> |
| <p>Accelerometer channels</p> <p>Synchronous recordings</p> <p>Sensor drive current</p> <p>A to D conversion</p> <p>Self-diagnosis</p> <p>Configurable gain</p> <p>Sensitivity</p> <p>Dynamic range</p> <p>Usefull band</p> <p>General analog inputs channel</p> <p>Resolution</p> <p>Value refreshing period</p> <p>Connection type</p> <p>Temperature channels</p> | <p>Analog inputs</p> <p>Up to 64 [IEPE/ICP sensors (8 sensors per module)]</p> <p>In groups of 8 sensors</p> <p>4mA @ 24V</p> <p>24 bit</p> <p>sensor signal level diagnosis</p> <p>0, 3, 6, 9, 12, 20, 23, 26, 29, 32 dB</p> <p>10Vpp</p> <p>106.5dB</p> <p>0.5Hz a 21Khz</p> <p>Up to 128 [Voltage (0-10V, +-10V, etc.), Current (4-20mA)]</p> <p>16 bits</p> <p>< 1ms</p> <p>Differential</p> <p>Up to 128 [Different options (PT100, NTC, etc.)]</p> |



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| <p>Serial data input Protocols Network communication Ethernet adapter Protocol</p> | <p style="text-align: center;">Communication</p> <p>RS232, RS485 MODBUS RTU Ethernet v2.0, TCP/IP, 10/100BaseT RJ45 MODBUS TCP</p> | |
| <p>Number of channels Resolution Input signal type</p> | <p style="text-align: center;">Counter inputs</p> <p>Up to 8 32 bits High side drive to 24V or HTL</p> | |
| <p>Number of channels Signal type Output maximum current</p> | <p style="text-align: center;">Digital input/outputs</p> <p>Up to 64 [Configurable as input or output] High side drive to 24V or HTL 250mA</p> | |
| <p>System status I/O status</p> | <p style="text-align: center;">Status indications</p> <p>3 x LED [Status: PWR, ON, OK] 2 x LED [ON: Module status. OK: Signal status]</p> | |
| <p>Voltage</p> | <p style="text-align: center;">Power supply</p> <p>24Vdc, 88-300Vdc / 85-250Vac</p> | |
| <p>Mounting Size Operating temperature range Storage temperature range Operating & storage humidity EMC</p> | <p style="text-align: center;">Mechanical & Environmental</p> <p>Panel Mount Min. 156x176.7x150.5 / Max. 391.75x176.7x150.5 [Configuration dependent (W mm x H mm x D mm)] 0°C to +60°C/ -40°C to +70°C [Standard range/ Extended range] -40°C to +85°C 5% - 95% CE marking [Electromagnetic Compatibility]</p> | |
| <p>Name Configuration Tool Data Synchronization Visualization & Analysis Reports Slim Data Manager</p> | <p style="text-align: center;">Analysis and Diagnosis Software</p> <p>INGESYS® CMS Tool Suite Object Oriented Hierarchical structure Automatic data synchronization Standard file transfer protocol Fleet status information screens Postprocessing functions Specific cursors Dfferent view modes Web visualization Automatic report generator Backup Restore Compression</p> <div style="display: flex; justify-content: space-around;">   </div> | |

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