SHOCK AND VIBRATION

CONDITION BASED MONITORING SYSTEM

imc CONTOR

Designed and manufactured in the UK, the IMC Group have revolutionised condition based monitoring with the new wireless Contor system.

For use as a predictive maintenance tool, the Contor system is capable of measuring and displaying shock impact and vibration data for critical equipment monitoring whilst in operation.

SHOCK IMPACT AND VIBRATION MEASUREMENT

WIRELESS REAL-TIME DATA COLLECTION AND ALERTS

INTUITIVE SOFTWARE WITH FAST AND ACCURATE ANALYSIS TOOLS

Key Features of Contor:

- Shock impact and vibration measurement
- Tri-axial Piezo accelerometer technology
- Real-time visual and emailed alarms to relevant parties
- Accurate and reliable measurements
- Comprehensive and user friendly software
- ZigBee radio communication from unit to local/remote server
- Data is available via MODBUS

Key Benefits of Contor:

- ✔ Accurately implement predictive maintenance regimes e.g. bearings by monitoring the RMS vibration
- ✔ Significantly reduce machine downtime and loss of production.
- ✔ Increase machine life.
- ✔ Provide accurate data for warranty claims.
- ✔ Significantly reduce maintenance costs by reducing the number of unnecessary scheduled preventive maintenance operations.
- ✔ Optimise machine performance e.g. milling machines
- ✔ Strengthen customer confidence

Low and high frequency monitoring capabilities

In its normal mode (mode A) of operation, the Contor unit detects low-frequency (sub 150Hz) accelerations. This mode could be used for example to validate the programmed operation of a CNC milling machine where the design sets limits on cutter acceleration, or to detect shocks in normal operation caused by operator errors.

Contor can also measure higher frequency vibration levels (mode B). Rotating parts will show a gradual increase in these values as they wear, enabling preventive maintenance to be carried out at the best time.

Contor Applications

- CNC milling machines
- Paper mills
- Wood mills
- Printing presses
- Reciprocating machinery
- Air handling plant

OVER 25 YEARS OF SHOCK & VIBRATION DATA ACQUISITION EXPERIENCE

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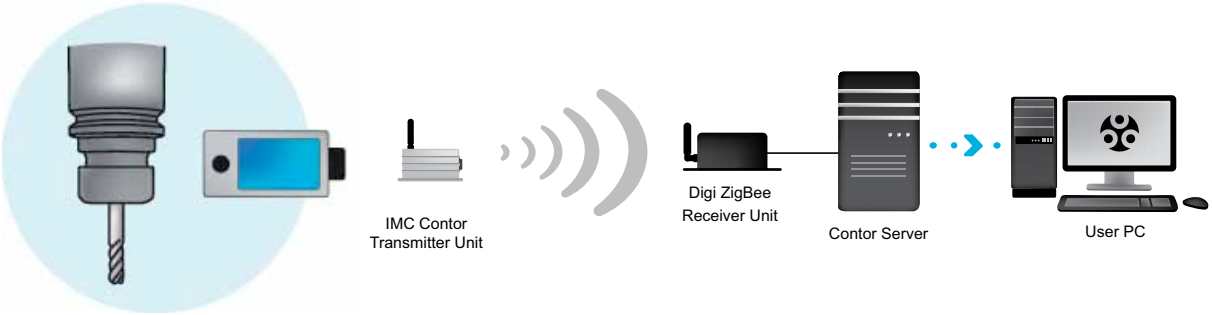
Schematic

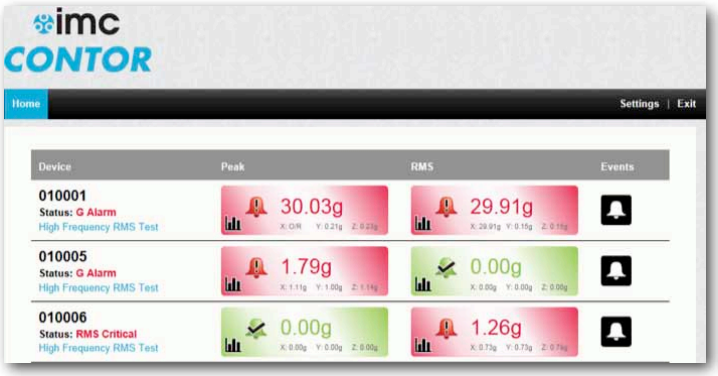
The below schematic shows a typical system construction.



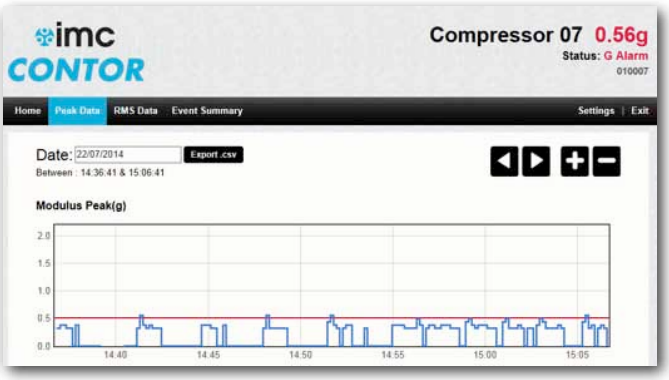
Software

The accompanying Contor software provides users with clear graphical interface that is available through all main web browsers. The software format enables users to access real-time data from multiple devices, such as PC, tablet or mobile phone and receive immediate indication of problems.

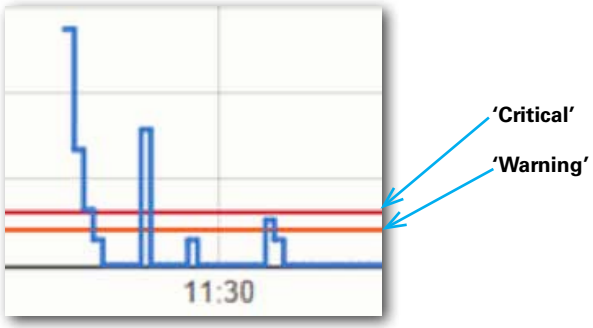
Below shows a typical home page display screenshot



Above: Alarms appear in red and further analysis is available through the graph icons.



Above: An example of peak data display detailing peak values exceeded



Above: Data display showing normal, warning and critical peak values

Version 1

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INSTRUMENTATION SPECIFICATIONS

Product Code:	**CTR-100**

Instrument:

Dimensions:	36W x 66L x 42H [mm] not including mounting feet
Total height with antenna:	155mm/78mm with folded antenna
Weight:	200g
Power supply:	10 ...30V DC, 1A

Sensors:

Piezo Electric Accelerometers	
Shock range:	+/- 0 – 30g
Frequency range:	0 – 150Hz for mode A (normal operational mode), 100-4000Hz for mode B (high frequency, manually activated mode)

Specification:

Temperature (operating):	-25°C to +60°C
Temperature (survivng):	-40°C to +70°C
Humidity:	0 - 100% (non-condensing)
Shock (survival):	1 Meter drop
Ingress protection:	IP66
Warning Threshold (%)	0.5g to 30g
Alarm Thresholds (%)	1g to 30g
Dynamic Range:	0.3g to 30g
Resolution:	0.1g
Accuracy:	+/- 0.2g, +/- 1% of reading
Frequency range Mode A:	0.5-150Hz
Frequency range Mode B:	100-4000Hz
Calculation Bandwidth Mode B:	20-3600Hz
Recording Methods:	Time Interval maxima for X, Y, Z and RMS
(Mode A):	ADS* of events (mode A) ADS* total in frequency band (mode B)
Event Sampling Rate Mode A:	1024samples/sec, 3-Axis
Event Sampling Rate Mode B:	1s
HF Sampling Rate Mode B:	10240samples/sec, X, Y or Z

*Acceleration density spectrum

Component Parts

CTR-RX	Ethernet Receiver unit
W510	Contor server software

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