

Vibration monitoring

HUB-VM102

APPLICATIONS

- Industrial sector: long-term monitoring of conditions, generators, motors, gearboxes, turbines, pumps, fans, compressors, machines, bearings
- Science: vibration and impact testing, quality assurance and product testing

The compact HUB-VM102 is specially designed for vibration monitoring of machines and machine parts such as bearings, shafts, springs, and dampers to detect both spontaneous failures and long-term wear. With the help of the module, the vibration analysis of a system can be integrated into a predictive digital maintenance and service plan. In addition to the continuously recorded RMS and peak values, the user also has access to the sample values stored in the internal RAM. The latter enable, among other things, vibration analysis by means of FFT. All measured values can be retrieved from a controller via bus interface or can be further processed and displayed live, e.g., via the HUB-GM200 gateway.



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Specifications

Supply voltage	24 V
Power consumption	approx. 150 mA
Digital input	2 x input up to 30 V and 10 kHz (e.g. trigger, rotation speed)
Analog input	2 x IEPE sensors (vibration and acoustic sensors)
Supply for ICP/ IEPE sensors	approx. 4 mA
Max. AC input level	6 V _{eff}
Frequency range	0,5 ... 10 kHz
Sampling frequency	48 kHz
Resolution ADC	24 Bit
Microcontroller	216 MHz, 32 Bit, ARM Cortex M7

HARDWARE FUNCTIONS

- Continuous measurement of effective value (RMS) and peak value
- Instantaneous value storage and processing
- Configurable filters (low pass, band pass, high pass)
- Monitoring functions in conjunction with one of our IoT gateways: Data logger, alarm messages when threshold value is exceeded
- Event-controlled measured value recording for data processing in the gateway
 - Threshold value monitoring (RMS or peak value)
 - External digital pulse
- Sensor monitoring (cable break and short circuit)

SOFTWARE FUNCTIONS

The HUB-VM102 can be connected to one of our IoT gateways (from model HUB-GM150 upwards compatible) via a Modbus interface. This is necessary to be able to use all software functions by means of an integrated dashboard.

- Configuration (measured value filter, trigger functions)
- Digital inputs
- Graphical signal display in time and frequency domain
frequency domain (FFT)
- Measured value curve of RMS and peak value



Specifications

Flash	1 MByte
Internal RAM	358 kB + 128 MB
External RAM	16 Mbyte
Interfaces	Ethernet
LEDs	3 LEDs on the front panel (status of the sensor status of the device custom)
Environmental conditions	EN61010-1
Backplane bus	Modbus RTU for gateway connectivity
Special features	Synchronous data acquisition of both measuring channels



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