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The Evolution of Measuring
Implement Monitoring Solutions efficiently



Our system solution for

Condition & Structural Health Monitoring

MZ84 – Smart Measurement and Monitoring System

Our system solution MZ84 has emerged based on the motivation to simplify the entry into measurement applications and at the same time to enable new use cases in the context of Industrie 4.0, i.e. continuous and permanent applications.

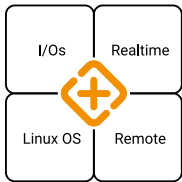
The focus is on vibration analysis, which - in conjunction with methods of system identification and statistics - forms the basis of condition monitoring or structural health monitoring of machinery, plants and buildings.



- ✓ embedded Linux PC
- ✓ up to 12 analog inputs (24 bit)
- ✓ up to 100 kHz sampling frequency
- ✓ signal conditioning (e.g. IEPE)
- ✓ web-based user interface
- ✓ threshold monitoring
- ✓ automatic messaging
- ✓ data management
- ✓ cellular connectivity
- ✓ extendable memory (microSD)
- ✓ extended temperature range

Technical Specifications

Dimension 160 x 120 x 80 mm (aluminium housing, passive cooling)	Analog Inputs 8 x low-speed with variable sampling frequency up to 10 kHz 4 x high-speed with variable sampling frequency up to 100 kHz All channels with anti-aliasing filter.
Mounting Type screwing (4 x M6), DIN rail (TS 35)	Other Configurations on request. Info: The system is cascable.
Operating Temperature standard: -25..+60 °C, extended*: -40..+85 °C	Resolution 24 Bit
Supply Voltage 24 V DC, max. power consumption 10 W	Analog Outputs 1 x 0..10 V
Connectivity LAN, WiFi*, USB*, microSD, Cellular* (UMTS/LTE) fieldbus on request (e.g. CANopen, Modbus, EtherCAT, etc.)	



All-in-One

Our all-in-one solution for vibration measurement handles all measuring tasks autonomously and automatically. The integration of all functions in one robust and compact housing eliminates your effort for system setup and external wiring.



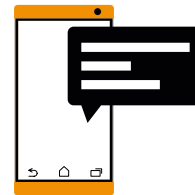
Integrated Data Management

The integrated data management handles all measurement and processing data automatically and ensures a trouble-free continuous operation – even if the memory card is full. For external backups, you have several options for automatic pushing.



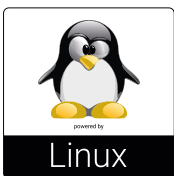
Web-based User Interface

The application software is embedded in the system and is exposed in the web browser. You can use the system immediately and don't need to install additional software. With the web-based interface you are independent of the device and the platform.



Automatic Messaging

Get notified automatically on all important system information and result values. The messaging can be done time-controlled for logging, as well as event driven for alerting, e.g. on threshold crossing.



Wholesome PC Operating System

Our system solution includes a Linux PC with ARM architecture, which provides high processing power in relation to its power consumption. The wholesome PC operating system offers maximum features and comfort for the application development.



Remote Access

You can readily access the system from remote using the web-based user interface. For the extended remote access, a web API is available, which you can use for M2M communication as well as for developing your own web interfaces.

Sensor Interfaces

standard: 0..20 mA, -10..+10 V, IEPE, MEMS
extended*: thermocouple, resistance temperature detector, resistance bridge

Function Libraries

statistics:
mean, median, quantile, rms, kurtosis, crest, etc.
signal analysis:
fft, psd, cepstrum, envelope, coherence, etc.

Info: The number of functions is too big for a complete listing. Only a selection is listed exemplary.

Digital Interfaces

4 x 24 V DC output, 4 x 24 V DC input
Other configurations on request.

Others

time synchronization: NTP, PTP, GPS*
data transfer: SFTP, SCP, RSYNC, HTTP
databases: SQL and NoSQL
remote access: SSH, HTTPS
data format: export in standard formats (ASCII and binary)

* optional or in development

Custom Soft- & Hardware Development

We know from our own experience the advantages, but also the limitations of standard solutions in the field of vibration measurement. Before you are forced to adopt your problem to a restricted solution, get in touch with us.

We are happy to support you on the best possible implementation by responding to your custom requirements and adopting the solution to your problem.

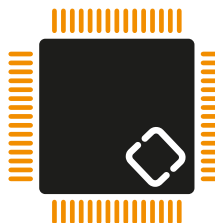
Software Development

- ✓ Vibration Analysis
- ✓ Condition and Structural Health Monitoring
- ✓ Data Management
- ✓ Web Visualization
- ✓ Web APIs
- ✓ Web Services (e.g. Monitoring Servers)
- ✓ ...



Hardware Development

- ✓ Analog Filters (e.g. for Anti-Aliasing)
- ✓ Signal Conditioning (e.g. IEPE)
- ✓ Analog Sensors (MEMS)
- ✓ Smart Sensors
- ✓ Data Loggers
- ✓ Real-Time Data Acquisition
- ✓ Measurement and Monitoring Systems
- ✓ ...



Vibration Measurement & Vibration Analysis

Based on our professional expertise and years of experience in the field of vibration measurement and vibration analysis, we are happy to take over the complete project management and processing and provide our know-how to you. Describe your task, so that we can submit a project specific proposal.