

Topbox Wireless®

Wireless online condition monitoring system

Data Acquisition Unit

The Topbox is the smart data acquisition module developed by DMT. The signals from the structure-borne noise sensors and operating data channels are collected in Topbox and processed in the internal data acquisition unit. In addition, a multitude of operating data channels can be recorded via digital industry protocols such as OPC DA/UA or Modbus TCP.

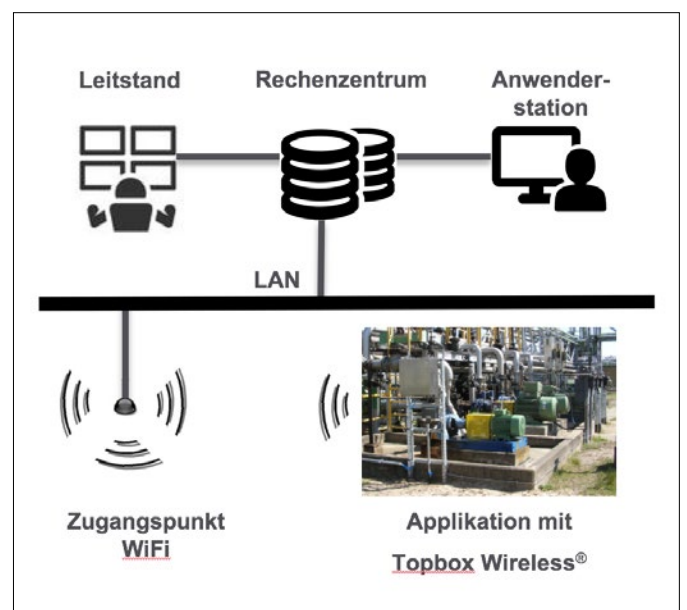
Wireless communication

The Topbox buffers and transmits the data via WLAN or mobile web connection to a central database server or cloud system.

This saves high cabling costs and enables fast commissioning. The autonomous operation of the unit ensures that no data is lost in case of network failures.



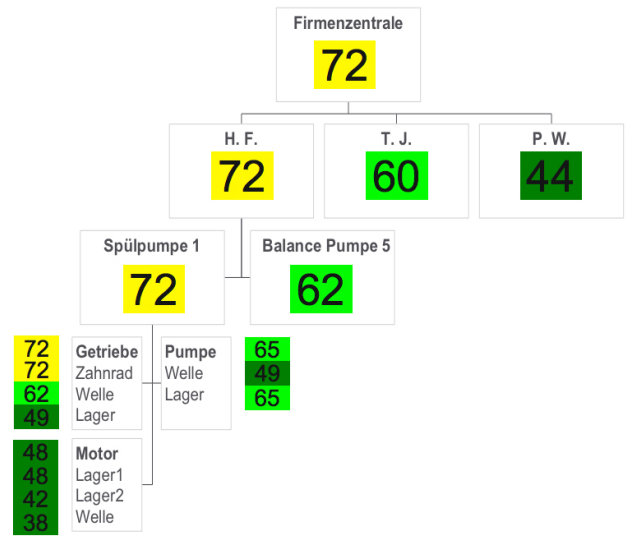
Wireless monitoring concept



Monitoring strategy

Characteristic changes in the condition of the monitored machines and plants are recorded by the online condition monitoring system. Wear and critical loads are reliably detected. Trend analyses and forecasts can be derived from this.

Relevant statuses are visualized for the user in form of an intuitive traffic light logic and the normalized CMI (Condition Monitoring Index) with a scale value between 10 and 100.



Aggregated Condition Monitoring index example:
Deep drilling technology

Technical Data		
Inputs	Structure-borne noise Operating data	8 channels 8 channels
Sampling rate	Structure-borne noise Operating data	25,6 kHz per channel (5,12 kHz simultaneous) 1,28 kHz per channel (simultaneous)
Frequency resolution (2048 points)	im 20 Hz Bereich im 200 Hz Bereich im 2 kHz Bereich im 10 kHz Bereich	0,0125 Hz 0,125 Hz 1,25 Hz 12,5 Hz
Dynamics	138 dB (24 Bit)	
Signal-to-noise ratio	90 dB	
Analytic process	FFT, Envelope FFT, RMS, Order analysis via postprocessing, DMT CMI	
Connectivity	Ethernet, WLAN, LWL, Mobile web connections (LTE, UMTS, Edge)	
Protection class	IP 65	
Operating temperature	-20 ... 60°C	
Supply voltage	100 ... 240 VAC, 50 ... 60 Hz	
Power input	50 W	

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