HAEHNE

STRANDER CONDITION MONITORING

Radio-controlled Condition Monitoring
for wire stranding machines

WIRE tension

BRAKE force

CRADLE lock

ROTATION speed

and more SIGNALS

With **Strander Condition Monitoring**, *HAEHNE* offers a comprehensive system for condition monitoring in wire stranding machines.

This system centrally collects all data relevant to machine monitoring from the rotating part and transmits it via radio. The transmitted data is consolidated by the Fusion Center outside the rotating zone, where it can be analyzed and monitored via the dashboard.

Made in Germany



DFT Transmitter Unit
(Digital Fusion Transmitter)
Mounted on the rotating part of the machine. Transmits tension, force, cradle lock, rotation speed, and more signals



DFC Receiver Unit
(Digital Fusion Center)
Mounted outside the rotating part of the machine. Receives all signals from the DFT.



DFM Digital Monitoring and Analysis Unit
(Digital Fusion Monitoring)
Graphical display of received measurement signals for the operator

DFT TRANSMITTER UNIT (DIGITAL FUSION TRANSMITTER)



Data is transmitted wirelessly via the DFT. The DFT is mounted on the rotating part of the machine and transmits signals for tension, force, cradle lock, rotation speed, and many more sginals.

Features:
- Connectivity for 4 x strain gauge full bridges (350–5000 Ω)
- IMU with acceleration in 3 spatial directions
- Temperature sensor (internal)
- Gyroscope

Data collection and transmission:
- Configuration and data transmission via Bluetooth Low Energy
- Sampling and transmission rates are configurable; for the Strander solution, we recommend 0.1–1 sps with prefiltering on DFT
- Range: approx. 20 m

Energy:
- Built-in battery with a 24 Ah capacity, depending on the configuration, providing up to 2 years of runtime in 24/7 operation
- Power supply for the force sensors

Connections:
- 4 x M12 connectors for strain gauge based sensors, pinout analogous to *HAEHNE* force sensors
- 1 x USB-C port for charging connection
- All ports are equipped with protective caps

Editing:
- Width 164 mm
- Height 186 mm
- Depth 64 mm
- Weight 800 g
- Mounted with screws
- Protection Class IP 67, with plugs inserted and protective caps in place, -20…60°C operating temperature

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DFC RECEIVER UNIT (DIGITAL FUSION CENTER)



Signals are received via the DFC. The DFC is mounted outside the rotating part of the machine, receives all signals from the DFT, and makes them available in MQQT format for further use.

Features:
- 4 to 64 channels that communicate directly with individual DFTs
- Centralized delivery of information via Ethernet TCP/IP
- Power supplies
- 1 LTE modem with LTE card (optional)

Data collection and provision:
- Connection with up to 16 DFTs, equivalent to 64 force sensors via Bluetooth, range approx. 20 m
- Data transmission via Ethernet (MQTT) for integration into a suitable customerside system, e.g., IBA. Transmission rate 0.1…100 sps or
- Data provision via Ethernet or LTE to the DFM digital monitoring and analysis unit. Transmission rate: 0.1…1 sps

Energy:
- Uninterrupted power supply

Editing:
- Width 220 mm
- Height 220 mm
- Depth 104 mm
- Mounting with screws to a wall or clamping to a post
- Protection Class IP 67, with plugs inserted and protective caps in place, -20…60°C operating temperature

DFM DIGITAL MONITORING AND ANALYSIS UNIT (DIGITAL FUSION MONITORING)



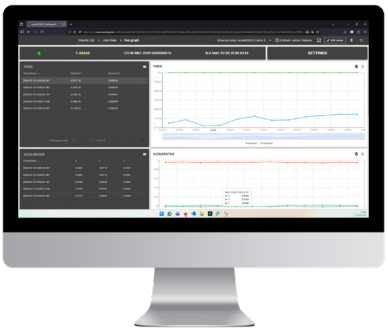
DFM processes the received data and makes it available in a cloud-based solution in a graphical format.

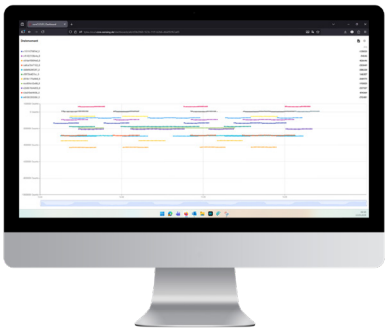
For each sensor channel, you can view live measurement data or the entire measurement history.

An intuitive measurement data view, complete with a zoom function and quick access to historical data, makes it easy to handle even large amounts of data. With a single click, you can export measurement series and download them as CSV or Excel files, as well as take screenshots.

Features:
- Live data and historical data visualization going back up to one year in appropriate dashboards
- Threshold, Event, and Notification Display
- Data export and User-Management

MQTT-Integration:
- Provision of the documented and annotated MQTT protocol, enabling customers to perform integration





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