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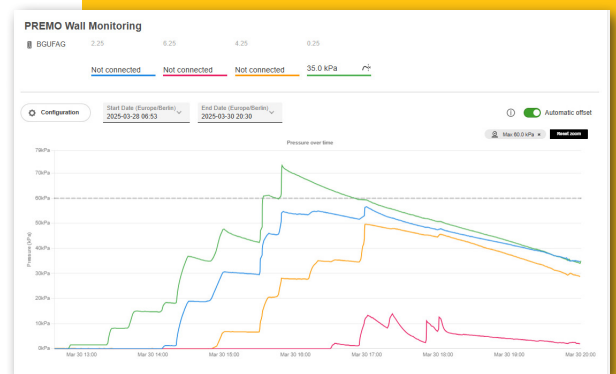
ISC Hub & Node

Concrete Performance Monitoring System: 1 Setup for 5 Applications

The Vemaventuri Hub and Node system is a modular monitoring platform that combines concrete temperature monitoring, maturity monitoring, pressure monitoring, concrete detection, and compaction monitoring in one integrated solution.

By connecting different sensor types to a shared hub-and-node infrastructure, it provides continuous, real-time insight into the concrete pouring and curing process directly on site. This enables safer formwork operations, earlier and data-driven decisions, improved concrete quality, and greater transparency across all construction phases — from fresh concrete placement to compaction verification and strength development.

The system is designed to minimize cost per sensor point and reduce losses from missing components.



ENSURE
CONCRETE QUALITY
**Temperature
Monitoring** **1**

REMOVE
FORMWORK EARLIER
**Maturity
Monitoring** **2**

OPTIMIZE
CONCRETING SPEED
**Pressure
Monitoring** **3**

MINIMIZE THE RISK OF
HIDDEN DEFECTS
**Compaction
Monitoring** **4**

REDUCE THE RISK OF
VOIDS
**Concrete
Detection** **5**



PHONO
Vibration
Sensor

From guesswork to certainty in every concrete pour

Temperature Monitoring (TEMO)

- Continuous measurement of concrete temperature from the first second of concreting
- Early detection of critical temperature gradients between core and surface
- Reliable control of curing conditions in hot, cold, or changing weather

Maturity Monitoring (TEMO)

- Real-time assessment of concrete strength development based on temperature history
- Data-driven decisions for safe and earlier formwork striking
- Eliminates delays caused by waiting for cube or cylinder test results

Pressure Monitoring (PREMO)

- Direct measurement of fresh concrete pressure on the formwork
- Improved safety through early detection of critical load conditions
- Optimized formwork utilization and concrete placement strategies

Concrete Detection (PHONO)

- Verification that concrete has reached critical areas inside the formwork
- Increased placement reliability in complex geometries and dense reinforcement
- Reduced risk of voids

Concrete Compaction Monitoring (PHONO)

- Monitoring of compaction quality directly inside the concrete
- Immediate feedback during placement to avoid under- or over-compaction
- Improved concrete homogeneity, durability, and surface quality

How Hub and Node works

1. The Node is connected to pressure, temperature or vibration sensors, depending on the application
2. Data is recorded automatically and transmitted to the Hub for immediate on site analysis
3. Data is also transmitted from the Hub via mobile network to the cloud
4. Measurements are available in real time through the web-based platform



TEMO Temperature Sensor



PREMO Pressure Sensor

Want to use Hub and Node on your project?

Contact us to discuss how real-time concrete performance monitoring can support your work.



Vemaventuri GmbH

Rudolf-Diesel-Straße 19
89264 Weißenhorn
Germany

+49 7309 950 2244
www.vemaventuri.io
info@vemaventuri.io