LID-warning light systems

Warning lights

Warning lights

Wind turbine

Warning lights

Ice alarm

Warning of icy conditions

Substation of the warning light system

Measure your success

Labkotec
INDUTRADE GROUP

SATEL case story | Environmental Monitoring | Labkotec Oy

Ahead of icy conditions

Finnish Labkotec is a leading measurement equipment manufacturer and services provider for many industrial applications. One of their solutions is an ice detection system for wind turbines. Ice reduces the productive capacity of wind turbines and burdens their construction. Falling ice can also cause damage to people and buildings nearby. Labkotec's ice detection system uses SATEL-LP radio modems and I/O units to transfer data.

Detecting ice, reducing risks

Ice detection systems are used in wind farms, airports, weather stations and marine applications. Labkotec's solution, LID-3300IP Ice Detection System, detects all icing types from freezing rain to in-cloud icing.

Icy weather conditions impede wind turbine service reliability, because even a thin layer of ice on turbine blades will increase the risk of accidents, decrease productivity and wear out turbine structures. This is especially important to consider in northern coastal regions with weather conditions including icy winds, heavy frost and rapid temperature changes.

In addition to ice detection systems, Labkotec's product range includes alarm devices for oil and grease separators, leakage detectors, level measurement equipment for petrol storage and distribution and level measurement and detection instruments. They also provide a cloud-based measurement data monitoring system, LabkoNet® for remote monitoring.

Transmitting data wirelessly

LID-3300IP Ice Detector is developed especially for wind turbines in icy conditions. It improves the reliability of the wind turbine and reduces risks related to ice formation.

The system warns about icing conditions already at an early stage. When LID-3300IP detects the icing condition, it changes the state of the ice alarm relay and gives an alarm. The base station transmits the relay status wirelessly with SATEL radio modems to substations, which control the LED strobe light.

Both the base station and the substations use SATEL-LP8 radio modems and I/O units with licence-free frequency band 869 MHz. The radio modems enable both point to point and point to multipoint connections and mesh networks of up to 99 devices. The data transfer is secured with 128-bit AES encryption and authentication.

The warning light cabinets include a heating element and a thermostat that maintain the system operational even in cold conditions. Each enclosure has a padlock option and each of the warning posts also has a warning sign.

Substation

Base station
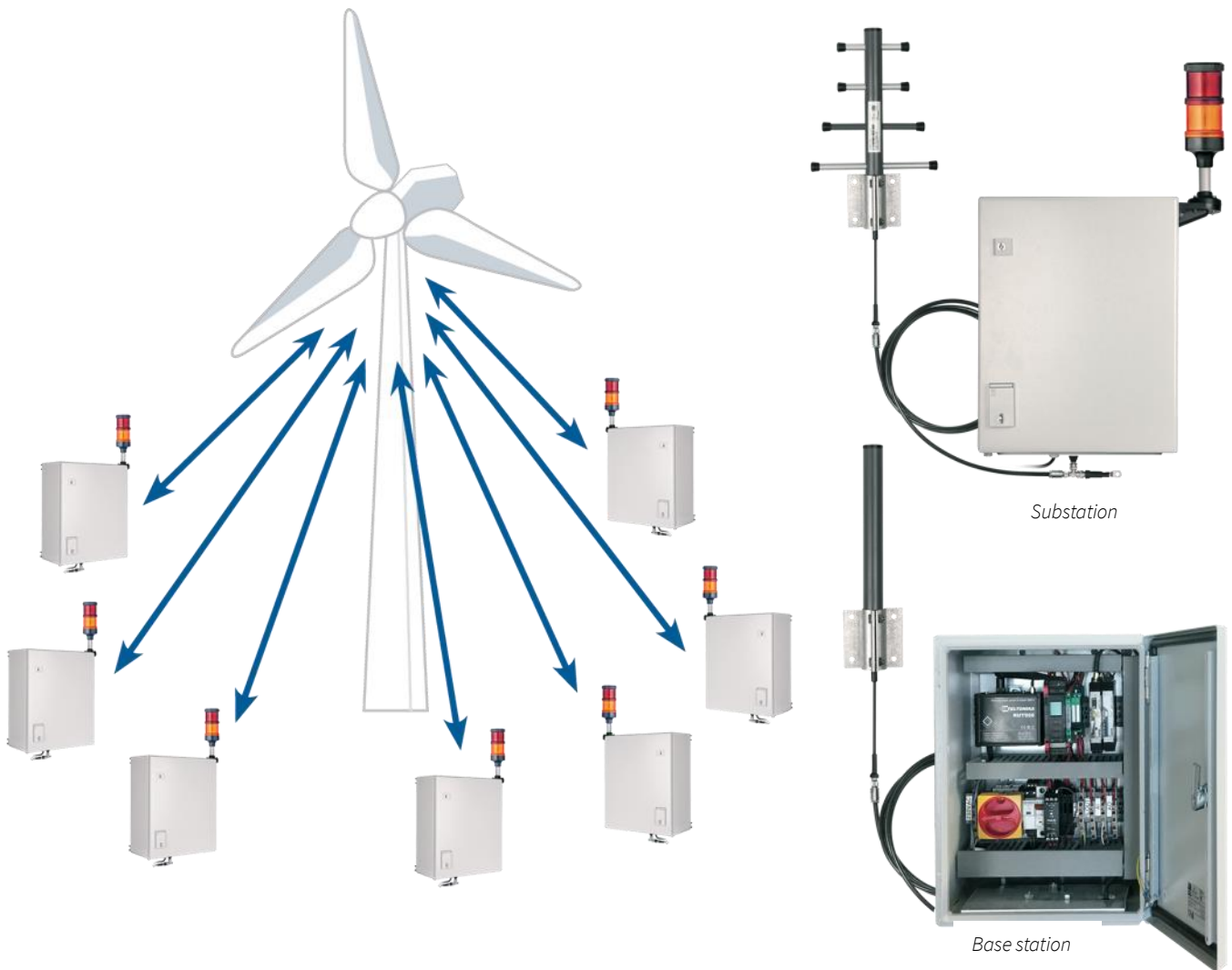
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