

# Labkotec ICE

Increase area safety and productivity of the wind farm with ice detection and ice warning lights



Enhance wind farm efficiency

Ensure safety

Fulfil the requirements

Easy and quick installation

Suitable for old and new wind turbines

Suitable for all manufacturer's wind turbines



LabkoNet<sup>®</sup>  
COMPATIBLE



Measures for a better tomorrow

 **Labkotec**  
INDUTRADE GROUP

# Safety and durability for wind turbines



## Ice Detection

- Ensure safety
- Enhance the productivity of wind turbines

### Ensure safety

Ice accumulating on the blades of a wind turbine poses a significant safety risk to people and buildings in the vicinity of the wind park. The Labkotec ice detection system detects icing conditions and sends you an alert so you can initiate the necessary actions accurately when needed.

### Meet the requirements

Designed to enhance the safety and efficiency of wind turbines and other critical infrastructure in cold climates, Labkotec's ice detection system is the only ice detection solution in the market that meets the strict functional safety requirements and can be used as part of wind turbine operations that require PLd safety level according to ISO 13849-1.

### Applications

- Wind turbines
- Weather stations
- Airports
- Communication masts

### Reduce production losses

Ice accumulation on the blades strains the mechanics of the wind turbine and thus shortens its lifetime. With the help of ice detection, you can start blade heating at a right time and thus reduce downtime and annual energy production (AEP) losses.

### Ready to use with easy installation

Labkotec ice detection system is easy and quick to install on any manufacturer's wind turbine, including wind turbines that are already in use. Installation does not require separate lifting equipment or separate calibration.

The Labkotec ice detector can easily be connected to the wind farm's SCADA system. Remote connection allows easy monitoring and parametering of the ice detector. In addition, the software updates of the ice detector can be done remotely. The ice detector is fully compatible with LabkoNet® cloud service – a flexible and easy to use remote monitoring system, to transfer and control alarm data.

### The market leader

We have manufactured over 10,000 ice detection systems since the 1990s, and today Labkotec is the world's most widely used ice detection system. We cooperate with all major wind power companies.





## NEW FEATURE

### Icing Intensity Estimate

#### Meet the requirements for real-time monitoring

Icing intensity estimate is a new feature for Labkotec ice detector that improves the safety of the wind farm and meets the requirements for real-time ice warning equipment.

Icing intensity algorithm gives an ice growth rate estimate in four different grades of icing intensity to help increase performance, safety, and profitability of your wind park.



### Ice Warning Lights

#### Ensure area safety

##### Prevent accidents caused by ice throw

Increase safety of the wind farm area by warning of the ice throw danger with a flashing light.

##### Meet the regulations

Ensure compliance and safety of the wind farm area by warning of ice throw dangers using Labkotec ice warning lights.

The weather-proof system operates in mobile network coverage areas. Ice information is brought to the base station and the LabkoNet cloud service ensures that the information is transferred to one or more sub stations including warning lights.

##### Monitor remotely

LabkoNet shows the status of the warning lights on the map and provides statistics on the number and duration of alarms.





## Measures for a better tomorrow

Labkotec is a market-leading measurement equipment manufacturer, and related services provider. Our mission is to provide sustainable measurement solutions which help our customers to enhance their business, reduce risks and protect the environment and people.

Labkotec's comprehensive export product range comprises ice detection systems, alarm devices for oil and grease separators, a wide range of level switches and measurements as well as LabkoNet cloud service for remote on-site monitoring of measurement data and alarm information.

### Sustainable competence

We are committed to sustainable business, and in our own operations, sustainability is built around three key elements: people, environment and sustainable growth.

We provide sustainable measurement solutions which help our customers not only to protect the environment and people, but also to save energy, water and materials and reduce CO<sub>2</sub> emissions. We work systematically through continuous improvements and the efficient use of materials and resources to minimize the emissions and waste.



Measures for a better tomorrow



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