

Labkotec Ice Warning Lights

Ice throw and ice fall pose a risk to people working or visiting wind farms. Labkotec Ice Warning Light System increases the safety of those people and meets the requirement for a real time ice warning equipment.

Labkotec Ice Warning Light System consists of base station, one or multiple substations and LabkoNet SaaS service. Base station is located close to the source of the ice alarm. Substations are installed by the incoming roads of the wind farm. The amount of substations is not limited. LabkoNet service takes care of the data transmission and system monitoring.

Labkotec Ice Warning Light System receives ice alarms from either Labkotec or third-party ice detectors. Additionally, the system can receive ice alarms from wind turbine automation system. When an alarm is triggered, the substations promptly alert individuals at risk by activating a flashing light.

The LabkoNet cloud service efficiently manages alarm transmission from the base station to substations via the cellular network. It actively monitors the system's operation, promptly alerting in case the ice alarm fails to activate the substation beacon or if the beacon remains illuminated after the icing event concludes. The LabkoNet user interface displays the ice warning light system's status on a map, while also enabling operators to gather comprehensive statistics on the frequency and duration of ice alarms.

The ice warning light system features weatherproof, heated cabinets designed to withstand diverse climates.



A flashing light warns of the risk of ice throw and ice fall.

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Labkotec Oy reserves the right to make changes without prior notice.

Technical specifications, base station and substation

Enclosure	Dimensions 380 x 380 x 210 mm (l x k x s) Wall- or pole mounting Ø 40...170 mm Equipped with lockable door Weight max 14 kg
IP classification	IP55 Condensate drainage
Material	Enclosure: powder-coated steel cabinet for outdoor use Saddle and pipemounting: stainless steel Warning light (beacon): polycarbonate
Operating environment	Operating temperature: -40 °C...+50 °C Relative humidity (RH) 0...100 % Suitable for outdoor use
Supply voltage	230 VAC +-10 % , 50/60 Hz, Circuit breaker 10...16 A Supplied with M25 sleeve gland, suitable for 8...17 mm thick input cable. Maximum conductor surface 6 mm ²
Power consumption	Normally 12 VA (230 VAC / 50 mA) Max. 69 VA (230 VAC / 300 mA) with enclosure heating and ice warning light on.
Relay outputs	1 pc, SPDT, 250V AC/5A/500VA The base station has an optional single potential-free relay output for external (forward) ice alarm.
Digital inputs	1 pc, 24 V DC, at the base station. The customer provides the ice alarm data, which controls the ice warning lights via system.
Data transfer	The base station and substation include a Labcom 200 data communication unit. The base station comes with the antennas required for the equipment. The substation has a fixed vandalism antenna attached to the side of the enclosure. Attention: If the substation is placed inside the building, GSM coverage must be ensured by a suitable positioning of the antenna, e.g. outside the building.
Measuring and data transmission interval	The ice warning lights will turn on and the system receives a start confirmation message within a few minutes.
Electric safety	EN 61010-1, Class II, CAT II/III
EMC	EN 61000-6-3, EN 61000-6-2
Warning light	Flashing LED light Red light (standard) and yellow light (option) Luminous intensity 10.5 cd LED light service time >50000 h
Backup battery	During a power cut, the ice warning light and the system will run on a full backup battery for about an hour.
System testing	System can be tested locally. There is a separate test switch at the base station. The test is typically activated within a few minutes.
Number of warning lights	The amount of substations is not limited and substations can be added afterwards.
Installation height for warning lights	Recommended at 2.5 m above the ground so that the light is visible to road and area users.
Maintenance	LabkoNet service will be informed of any broken warning light. Annual visual inspection of base and substations.

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