

EOLOGIX-PING

eologix sensor technology flexco, Waagner-Biro-Strasse 124, 8020 Graz, Austria

User Manual

Product: eologix-ping – Wireless On-Blade Sensor

FCC ID: 2APYI-WBSU26

Manufacturer: eologix sensor technology flexco

1 Product Overview

The eologix-ping on-blade sensor is part of the eologix wireless blade monitoring system for wind turbines. The system consists of several wireless sensors installed on the rotor blades and a WBSLink receiver unit installed inside the turbine nacelle.

The sensor measures parameters such as:

- ice formation on rotor blades
- surface temperature
- optional other physical quantities such as inertial measurements.

The measured data is transmitted wirelessly from the sensor to the WBSLink receiver and then forwarded to a host system for processing and visualization.

The system allows wind turbine operators to detect e.g. icing conditions and automatically trigger protective actions such as turbine shutdown or restart when the blades are ice-free.

2 Intended Use

The device is intended to be used as part of the eologix wireless on-blade sensor system for wind turbines.

The system detects icing on rotor blades and supports turbine control functions such as:

- ice detection (turbine stop)
- automatic restart after ice melting
- optional monitoring of ice load, pitch-related and other physical quantities [TBD]

The product must only be used under the conditions described in this manual and in accordance with applicable safety regulations.

3 System Components

The complete system typically consists of:

- Wireless on-blade sensors installed on rotor blades
- Wireless receiver (WBSLink) installed inside the turbine
- Host system or industrial PC for data processing and monitoring

The sensors transmit measurement data wirelessly to the receiver. The receiver processes the incoming data packets and forwards them to the monitoring system via wired communication interfaces.

EOLOGIX-PING

4 Installation and Setup

Installation of the sensors must be performed by trained and authorized personnel.

General installation procedure:

1. Prepare the rotor-blade surface at the designated mounting position according to the sensor installation instructions.
2. Mount the on-blade sensor at the specified position on the rotor blade.
3. Ensure the sensor is securely fixed and that the integrated antenna area is not covered by conductive material.
4. Activate the sensor and verify wireless communication with the WBSLink receiver.
5. Repeat for all sensors and confirm system-level operation.

Commissioning of the system may only be performed by qualified personnel trained by the manufacturer.

5 Operation

During operation, the sensor periodically acquires measurement data and transmits it wirelessly to the receiver.

The sensor performs the following functions:

- acquires blade-condition measurements (ice, surface temperature, ...)
- assembles and transmits wireless data packets to the receiver
- receives synchronization and configuration commands from the receiver
- supports synchronized measurements across multiple sensors

Device status and communication activity are monitored via the WBSLink receiver and the host system.

6 Maintenance

The device requires minimal maintenance.

Recommended measures include:

- periodic inspection of the sensor mounting and physical condition
- verification of communication status via the host system
- ensuring the sensor is within its expected service/ life

Maintenance and repair work may only be carried out by qualified personnel.

7 Safety Information

The product must only be installed by trained personnel.

Improper installation or modification of the device may lead to equipment damage or unsafe operating conditions.

Do not modify the device hardware or the integrated antenna. Only manufacturer-approved components and configurations may be used.

EOLOGIX-PING

8 FCC Compliance Statement

This device complies with **Part 15 of the FCC Rules**. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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9 ISED Canada Compliance Statement

This device complies with **Innovation, Science and Economic Development Canada license-exempt RSS standards**. Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

1. *L'appareil ne doit pas produire de brouillage;*
2. *L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.*

10 Antenna Information

This device uses a single, permanently integrated PCB trace antenna. It is not removable and cannot be replaced or modified by the user.

Antenna type: integrated PCB trace antenna. Use of any modified or additional antenna is not permitted and may violate regulatory requirements.