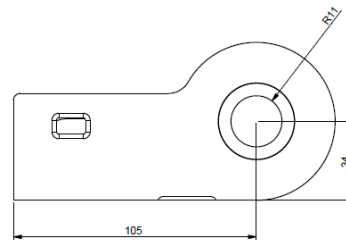
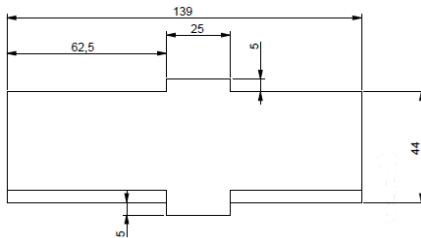




▶▶ DL EOLOS K15FO

High bandwidth lightning strike counter with optical fibre output for wind turbines.



Ref.430022
Dimensions in mm

▶ applications

DL EOLOS K15FO lightning strike counters register and account local strikes impacting on wind turbine blades. The compact design and robust construction, combined with a high current impulse bandwidth, makes this product a perfect fit for monitoring the most common types of lightning strike impacts registered in wind turbine blades and elevated structures.

DL EOLOS K15FO lightning strike counters also provide an optical fibre output for remote event notifications to SCADA, PLC and other modules inside the wind turbine. The output optical fibre event notification signals generated by the **DL EOLOS K15FO** counter can be received and decoded by the **DL EOLOS FO-RCVR-3CH** three channels optical fibre receiver.

▶ operation

The **DL EOLOS K15FO** detects the current impulse produced by the lightning strike in the lightning protection system down conductor. Registered lightning strikes are reported as events in the optical fibre output and, at the same time, accounted in one mechanical counter.

The high bandwidth magnetic sensor used in the **DL EOLOS K15FO** counter ensures a contact-free installation and a maintenance free operation.

These counters harvest all necessary energy from the lightning strike current impulse without any need for batteries, external power sources or moving parts.

▶ standards and tests

IEC 62.305, UNE 21.186 and NFC 17-102 standards indicate the need to install lightning strike counters as part of lightning protection systems. Lightning protection systems must be inspected and checked after the occurrence of any impact on the structure. **DL EOLOS K15FO** counters assist the maintenance planning staff in reducing the wind turbine down time as they allow accurate knowledge of impacted blades.

DL EOLOS K15FO counters have been designed to comply with IEC 62.561-6 standard requirements, with the exception of the minimum current threshold. The counter's current threshold has been optimized for detecting lightning impacts as described by IEC 61.400-24 standard.

DL EOLOS K15FO counters have been tested in combination with the **DL EOLOS FO-RCVR-3CH** receiver for current impulse immunity at LABELEC, Laboratorio de Ensayos Electrotécnicos (ENAC accreditation number 307/LE681).

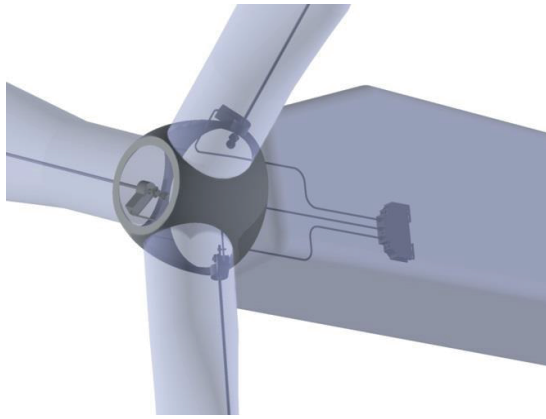


Fig. 1 DL EOLOS K15FO installation inside the blades.



DL EOLOS FO-RCVR-3CH
Ref.430023

10m optical fibre cable
DL EOLOS FO-650N-1H(06mm)
Ref.432031

DL EOLOS K15FO
Ref.430022

► technical specifications

Current wave front	from 8 μ s to 2000 μ s
Current range	\pm 180A to \pm 200kA
Current impulse immunity (10/350 μ s)	\pm 200kA
Counting range	Up to 999 events (rolls down to 000)
Temperature range	-20°C to 60°C
Protection grade	IP 65
Dimensions	139x44x68 mm
Weight	770g
Downconductor diameter	22 mm
Output connector	SMA for 1mm POF optical fibre
Output data format	Proprietary
Event notification delay	680 μ s (typical)

► main characteristics

- Accounting of up to 999 events.
- Permanent visibility of accounted events count.
- High detection sensitivity for a wide impulse current bandwidth, including typical wind turbine impacts as described by standard IEC 61.400-24.
- Direct attachment to wind turbine blades with adhesive.
- No need for external power or batteries.
- Contactless current impulse measurement sensor without ohmic contact with the down conductor.

► guaranties and benefits

- Meets UNE 21.186, NFC 17.102 and IEC 62.305 standard requirements
- Indoor/outdoor installation
- Great durability
- Maintenance-free operation

Recommendations

It is recommended to install one DL EOLOS K15FO counter per wind turbine blade in conjunction with one DL EOLOS FO-RCVR-3CH optical fibre receiver.



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**LIGHTNING STRIKES
COUNTER INGESCO®
DL EOLOS K15FO**