

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the RADAR**

with type designation(s)  
**MAX Bird Detection Radar**

Issued to

**Robin Radar Systems B.V.**  
**'s-Gravenhage, Zuid-Holland, Netherlands**

is found to comply with

**IEC 60945 Ed. 4 (2002-08) Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required test results**

**Application :**

**See page 2**

Issued at **Høvik** on **2020-07-01**

This Certificate is valid until **2025-06-30** .

DNV GL local unit: **Netherlands CMC**

for **DNV GL**

Approval Engineer: **Steinar Kristensen**

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**Marta Alonso Pontes**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Job Id: **262.1-030125-2**  
Certificate No: **TAA00002TX**

## Product description

MAX Bird Detection Radar consists of the following components:

### Hardware modules:

| Unit               | Description                                                 | Details                                                                    | Env. *)   |
|--------------------|-------------------------------------------------------------|----------------------------------------------------------------------------|-----------|
| Processing station | Cabinet with server, switches, router, UPS and breakout box | Power rating: 220-240VAC/50Hz, 700W nominal/ 2750W Peak Ethernet interface | Protected |
| Radar Transceiver  | Transmitter and receiver of radar signals                   | Frequency range: 9550-9750 MHz<br>EIRP: 79,5 dBm<br>Scan rate: 60RPM       | Exposed   |

\*) Environment according to IEC 60945.

Protected corresponds to an indoor environment, exposed corresponds to outdoor.

## Application/Limitation

- System is to be installed and operated according to manufacturer's documentation.
- The radar is stated by the manufacturer to be operating at with a tuneable frequency range 9550-9750 MHz, EIRP 79,5 dBm and scan rate of 60RPM.  
See equipment manual for further details.
- The performance of the radar with regards to ability to avian detection has not been assessed as a part of this approval. The scope of the approval is limited to compliance to EMC and environmental requirements specified in IEC 60945.  
The Avian radar Robin MAX is to be installed on stationary offshore wind farms and not on-board vessels. The Compass Safe Distance test Ch. 11.2 of IEC 60945 has therefore been excluded from the scope of the approval.
- Compliance to any regulatory requirements for transmission of radar signals is not part of the scope of this approval.

## Type Approval documentation

| DNV GL No | Document ID                    | Rev.       | Description                                                                  |
|-----------|--------------------------------|------------|------------------------------------------------------------------------------|
| 26        | 19C01036RPT02<br>20190087RPT02 | 2020-01-15 | Report: DARE, EMC test report for Avian radar Robin MAX, model ROBIN_3GPA_A1 |
| 25        | 2242359.01-INC                 | 2020-04-08 | Report: Dekra, Test report for IPX6 and Salt Mist                            |
| 15        | 910.071.010                    | R01        | Manual: ROBIN Radar, MAX- Manual- Advanced Bird Detection System             |
| 13        | 2236760.01-INC                 | 2019-04-12 | Report: Dekra, IP Test Report IPX6 and Resistance to corrosion               |
| 12        | M19.001-P19.001                | 2019-03-19 | Report: Sebert, Vibration test report for RRS-MAX/A1 radar system            |
| 10        | M19.002-P19.002                | 2019-03-19 | Report: Sebert, Climate tests on Radar System                                |

## Tests carried out

- Environmental testing: IEC 60945 (2002) incl. Corrigendum 1 (2008)

## Marking of product

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location. In addition the equipment shall be marked with serial number, power consumption and/or supply voltage.

## Periodical assessment

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.



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The scope of the periodical/renewal assessment is to verify that the production quality conditions stipulated for the type approval are complied with and that no alterations are made to the product design or its components and/or materials without appraisal by the Society.

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnvgl.com>