



Prototype declaration

Prototype declaration MOE 18-EZE-0042-06

Version: 3.0
 PGU manufacturer: Vestas Wind Systems A/S
 Hedeager 42
 8200 Aarhus N.
 Denmark

Scope

Type of product: PGU, wind turbine
 PGU types: V150-5.0 MW 50 Hz
 V150-5.4 MW 50 Hz
 V162-5.4 MW 50 Hz
 V150-5.6 MW 50 Hz
 V162-5.6 MW 50 Hz
 V150-6.0 MW 50 Hz
 V162-6.0 MW 50 Hz
 V162-6.2 MW 50 Hz
 V162-6.8 MW 50 Hz
 V162-7.2 MW 50 Hz

Standards and guidelines: VDE AR-N 4110:2018
 VDE AR-N 4120:2018
 VDE AR-N 4130:2018
 FGW TG8 Rev.09
 NELEV


Commissioning date of the first prototype: 2021-02-19

Applicable documents: Evaluation report MOE 18-EZE-0042-05 Ver. 3.0
 Annex 1 – 3

Itzehoe, 2022-03-09


 10.03.2022




 09.03.2022

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 Head of unit certification body

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 Senior Expert of the certification body



Prototype declaration 18-EZE-0042-06 Ver. 3.0
 Vestas V150-5.0 MW / 5.4 MW / 5.6 MW / 6.0 MW and
 Vestas V162-5.4 MW / 5.6 MW / 6.0 MW / 6.2 MW / 6.8 MW / 7.2 MW
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Version history

Table 1: Version history

Report number	Date	Change	Prepared	Approved
18-EZE-0042-02	2018-08-30	Original document	MM	TB
18-EZE-0042-04	2019-06-20	The changes are described in the assessment report MOE 18-EZE-0042-03.	MM	JaM
18-EZE-0042-06 Ver. 1.0	2021-01-15	<ul style="list-style-type: none"> • Implemented commissioning date of the first prototype (see Annex 2) • Prototype declaration extension by the following types: <ul style="list-style-type: none"> ○ V150-6.0 MW 50 Hz ○ V162-6.0 MW 50 Hz • Consider VDE-AR-N 4130 guideline • The changes are described in the evaluation report MOE 18-EZE-0042-05 Ver. 1.0. 	DL	TB
18-EZE-0042-06 Ver. 2.0	2021-10-26	<ul style="list-style-type: none"> • Implemented commissioning date of the first prototype in Germany (see Annex 2) • Prototype declaration extension by the following type: <ul style="list-style-type: none"> ○ V162-6.2 MW 50 Hz 	DL	TB
18-EZE-0042-05 Ver. 3.0	2022-03-09	<ul style="list-style-type: none"> • Prototype declaration extension by the following types: <ul style="list-style-type: none"> • V162-6.8 MW 50 Hz • V162-7.2 MW 50 Hz 	DL	TB

The preliminary prototype declaration MOE 18-EZE-0042-06 Ver 2.0 is hereby withdrawn and replaced by the prototype declaration MOE 18-EZE-0042-06 Ver. 3.0.



Prototype declaration 18-EZE-0042-06 Ver. 3.0
 Vestas V150-5.0 MW / 5.4 MW / 5.6 MW / 6.0 MW and
 Vestas V162-5.4 MW / 5.6 MW / 6.0 MW / 6.2 MW / 6.8 MW / 7.2 MW
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Annex 1: Specifications of main components

Type of product: PGU / wind turbine
 PGU type: V150-5.0 MW 50 Hz
 V150-5.4 MW 50 Hz
 V162-5.4 MW 50 Hz
 V150-5.6 MW 50 Hz
 V162-5.6 MW 50 Hz
 V150-6.0 MW 50 Hz
 V162-6.0 MW 50 Hz
 V162-6.2 MW 50 Hz
 V162-6.8 MW 50 Hz
 V162-7.2 MW 50 Hz

The type designations correspond to the following operating modes:

Table 2: Operating modes

Type designation	Operating mode
V150-5.0 MW 50 Hz	Mode PO5000
V150-5.4 MW 50 Hz	Mode PO5400
V162-5.4 MW 50 Hz	Mode PO5400
V150-5.6 MW 50 Hz	Mode PO5600
V162-5.6 MW 50 Hz	Mode PO5600
V150-6.0 MW 50 Hz	Mode PO6000
V162-6.0 MW 50 Hz	Mode PO6000
V162-6.2 MW 50 Hz	Mode PO6200
V162-6.8 MW 50 Hz	Mode PO6800
V162-7.2 MW 50 Hz	Mode PO7200

Nominal power: 5.0 MW / 5.4 MW / 5.6 MW / 6.0 MW / 6.2 MW / 6.8 MW / 7.2 MW
 Electrical principle: Permanent magnet synchronous generator, full-scale converter
 Rotor diameter: 150 m (V150) / 162 m (V162)
 Number of blades: 3
 Power control: pitch
 Orientation: upwind

Refer to the evaluation report MOE 18 EZE 0042 05 Ver. 3.0 chapter 3 for further and detailed main component specifications.

Annex 2: Identity of first prototype in Germany

Wind turbine type: V150-5.6 MW
 Commissioning date: 2021-02-19



Prototype declaration 18-EZE-0042-06 Ver. 3.0
Vestas V150-5.0 MW / 5.4 MW / 5.6 MW / 6.0 MW and
Vestas V162-5.4 MW / 5.6 MW / 6.0 MW / 6.2 MW / 6.8 MW / 7.2 MW
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Annex 3: Declaration and further remarks

The wind turbine product family consisting of V150-5.0 MW / 5.4 MW / 5.6 MW / 6.0 MW and V162-5.4 MW / 5.6 MW / 6.0 MW / 6.2 MW / 6.8 MW / 7.2 MW is a new product family based upon 4 MW MK3E, which again is based on 3 MW MK3A. The main changes to the product with respect to grid compliance are:

- permanent magnet synchronous generator instead of induction generator
- one additionally converter module (4 converter modules instead of 3)
- The software will be adapted in accordance with the new requirements of the VDE-AR-N 4110, VDE-AR-N 4120 and VDE-AR-N 4130.

The difference between the 5.0 MW, 5.4 MW, 5.6 MW, 6.0 MW, 6.2 MW, 6.8 MW and 7.2 MW variants is only the power mode (same hardware).

The difference between the V150 and V162 is only the rotor diameter.

It is hereby confirmed that the members of the Vestas V150-5.0 MW / 5.4 MW / 5.6 MW / 6.0 MW and V162-5.4 MW / 5.6 MW / 6.0 MW / 6.2 MW / 6.8 MW / 7.2 MW product family are prototypes as defined by VDE AR-N 4110:2018 / VDE AR-N 4120:2018 / VDE AR-N 4130:2018, chapter 12, for the duration of validity of this declaration.

It is also confirmed that the Vestas V150-5.0 MW / 5.4 MW / 5.6 MW / 6.0 MW and V162-5.4 MW / 5.6 MW / 6.0 MW / 6.2 MW / 6.8 MW / 7.2 MW turbines meet the requirements of VDE AR-N 4110:2018 / VDE AR-N 4120:2018 / VDE AR-N 4130:2018 based on detailed manufacturer declarations presented to M.O.E. by Vestas (see evaluation report MOE 18-EZE-0042-05 Ver 3.0).

References to source documents and further details (e.g. restrictions and conditions of validity) can be found in the evaluation report MOE 18-EZE-0042-05 Ver. 3.0.

This document may be submitted to fulfil the requirement of the NELEV (Elektrotechnische-Eigenschaften-Nachweis-Verordnung) to provide a verification of the electrical properties according to the application guidelines.