

Restricted
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General Specification

Aviation obstruction light - Tower KIT SET AL TOW 1-4-L92-AVV-ES 1x4x10



V90-1.8/2.0 MW Mk 8–9
V90-3.0 MW Mk 1–9
V100-1.8/2.0/2.2 MW Mk 10
V105-3.3/3.45 MW Mk 2–3
V110-1.8/2.0/2.2 MW Mk 10
V112-3.3/3.45 MW Mk 2–3
V116-2.0 MW Mk 11B
V117-3.3/3.45 MW Mk 2–3
V117-4.0/4.2 MW Mk 3E
V120-2.0/2.2 MW Mk 11C
V126-3.3/3.45 MW Mk 2–3
V136-3.45 MW Mk 3
V136-4.0/4.2 MW Mk 3E
V150-4.0/4.2 MW Mk 3E
V150 5.6MW EnVentus
V162 5.6MW EnVentus

Version no.	Date	Description of changes
00	2019-01-23	New document release.
01	2019-10-21	Updated applicable platforms and Table 4-1 Technical data

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2 Abbreviations and technical terms

Abbreviation	Explanation
EMC	Electromagnetic compatibility
GPS	Global positioning system
OVP	Overvoltage protection
SCADA	Supervisory Control And Data Acquisition

Table 2-1: Abbreviations

Terms	Explanation
None	

Table 2-2: Terms

3 Introduction

This document specifies the tower aviation obstruction light options for Vestas wind turbines. The Vestas supplied aviation obstruction lights are mechanical installation options that are fully integrated with the electrical system and SCADA surveillance system.

4 General description

The tower aviation obstruction light system has components that follow:

- Control unit (MLC400)
- Junction box OVP-LI-TOW (Overvoltage protection unit)
- Tower light (L92-xxx)
- Cables for connection of all elements
- Mounting brackets attached with magnets

The tower light (L92) is an aviation obstruction light with low intensity and steady burning. The tower lights (L92) are installed around the tower on brackets that are attached with magnets.

The control unit (MLC400) gets 230 VAC power supply from the CIP400 unit. The control unit (MLC400) have an integrated transformer. The integrated transformer has a primary on 230 VAC and secondary on 24 VDC. The tower light (L92) gets the 24 VDC supply.

4.1 Component overview



Figure 4-1
 Control unit (MLC400)
 for marker lights, up to 8 pieces

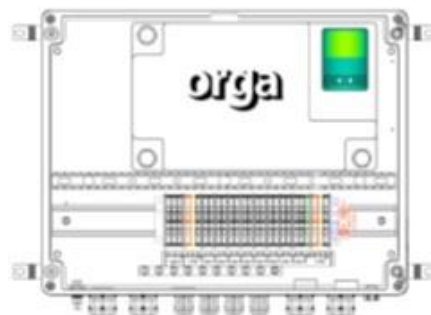


Figure 4-2
 Internal view of the control unit
 (MLC400)



Figure 4-3:
 Junction box OVP-LI-TOW (with overvoltage protection)
 for tower lights (L92)

It is necessary to have 1 junction box OVP-LI-TOW for each level.

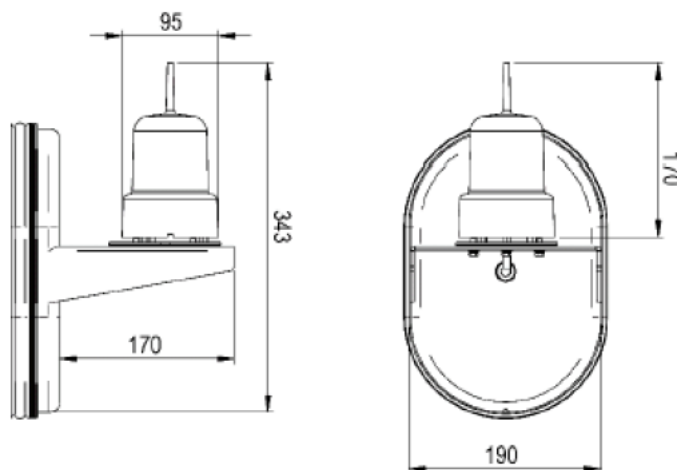


Figure 4-4:
 Tower light (L92)

4.2 Cables

- Power cables from CIP to MLC are 3 x 2.5 mm.
- Profibus data cable from CIP to MLC is 2 x 0.25 mm.
- Power cable from MLC to junction box OVP-LI-TOW is 4 x 2 x 0.5 mm.
- Power cable from junction box OVP-LI-TOW to tower light (L92) is 2 x 2 x 0.5 mm.

4.3 Aviation obstruction light data

Parameters	Value for single lamp
Vestas item number	29127389
Type	KIT SET AL TOW 1-4-L92-AVV-ES
Standard	ICAO, AVV
Operating voltage	24Vdc
Power consumption visible light	3W each light
Power consumption MLC400	3W
Intensity red light	10cd
Horizontal beam pattern	>180°
Overvoltage protection class	IEC 61643-1
Operating temperature range (°C)	-40° to +55° C
Environmental protection rating	IP66
Flash per minute	Steady burning
Colour	Red
Weight L92-AVV-ES	< 1 kg
Weight MLC400	8.5 kg

Table 4-1: Technical data

4.4 Mounting brackets

The tower aviation obstruction lights are installed around the tower on brackets attached with magnets.

4.5 Alarm

The tower aviation obstruction light gets an alarm signal, through a profibus connection which can be detected and used in the CIP400.

4.6 Key features

- One level of the tower aviation obstruction light has 4 tower lights (L92) of low intensity and brackets in each level.
- Power and alarm-shielded cables.
- Tower light-controlled integration with the CIP400 unit.
- OVP built-in control panel.

5 Lightning protection

The aviation obstruction light system meets or exceeds normal industry EMC and lightning standards. In addition to high test standards the unit has a built-in OVP.

6 Dimension

L92 dimensions:

- The length (L) of the aviation obstruction light is 92 mm.
- The width (W) of the aviation obstruction light is 95 mm.
- The height (H) of the aviation obstruction light is 170 mm.

For MLC400 dimensions see the figure 6-1, p 7

6.1 Scale drawing

See Figure 4-4, p. 5 for the scale image of the tower lights (L92)

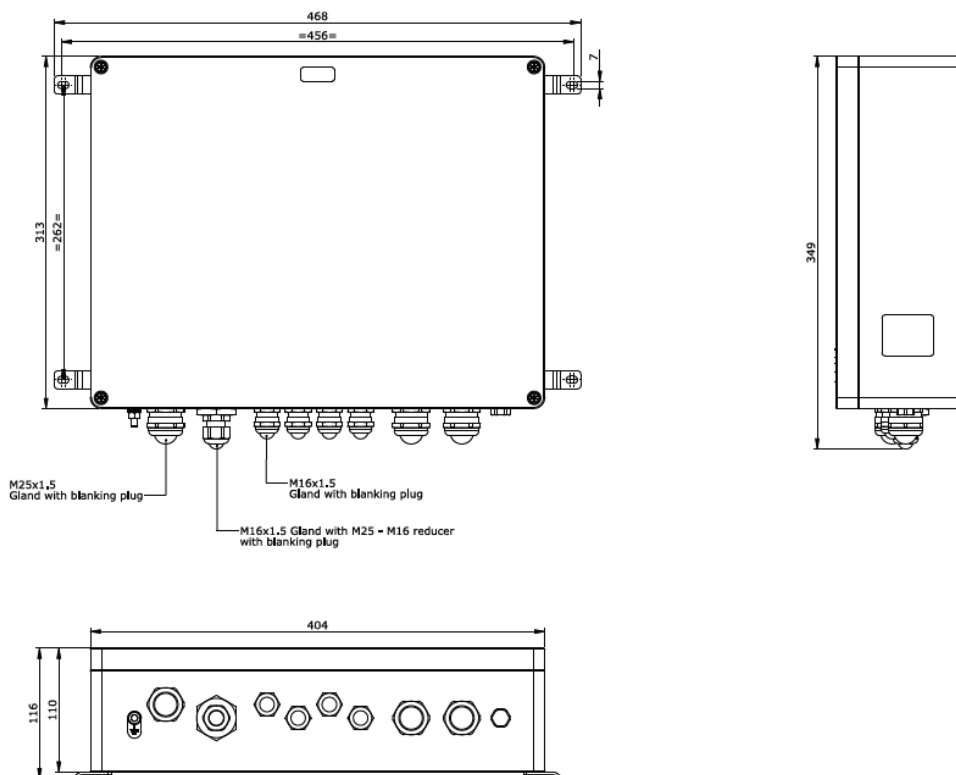


Figure 6-1

Control unit (MLC400)
 for marker lights, up to 8 pieces

6.2 System overview

See Figure 6-1, p. 8 and Figure 6-3, p. 9 for system overview.

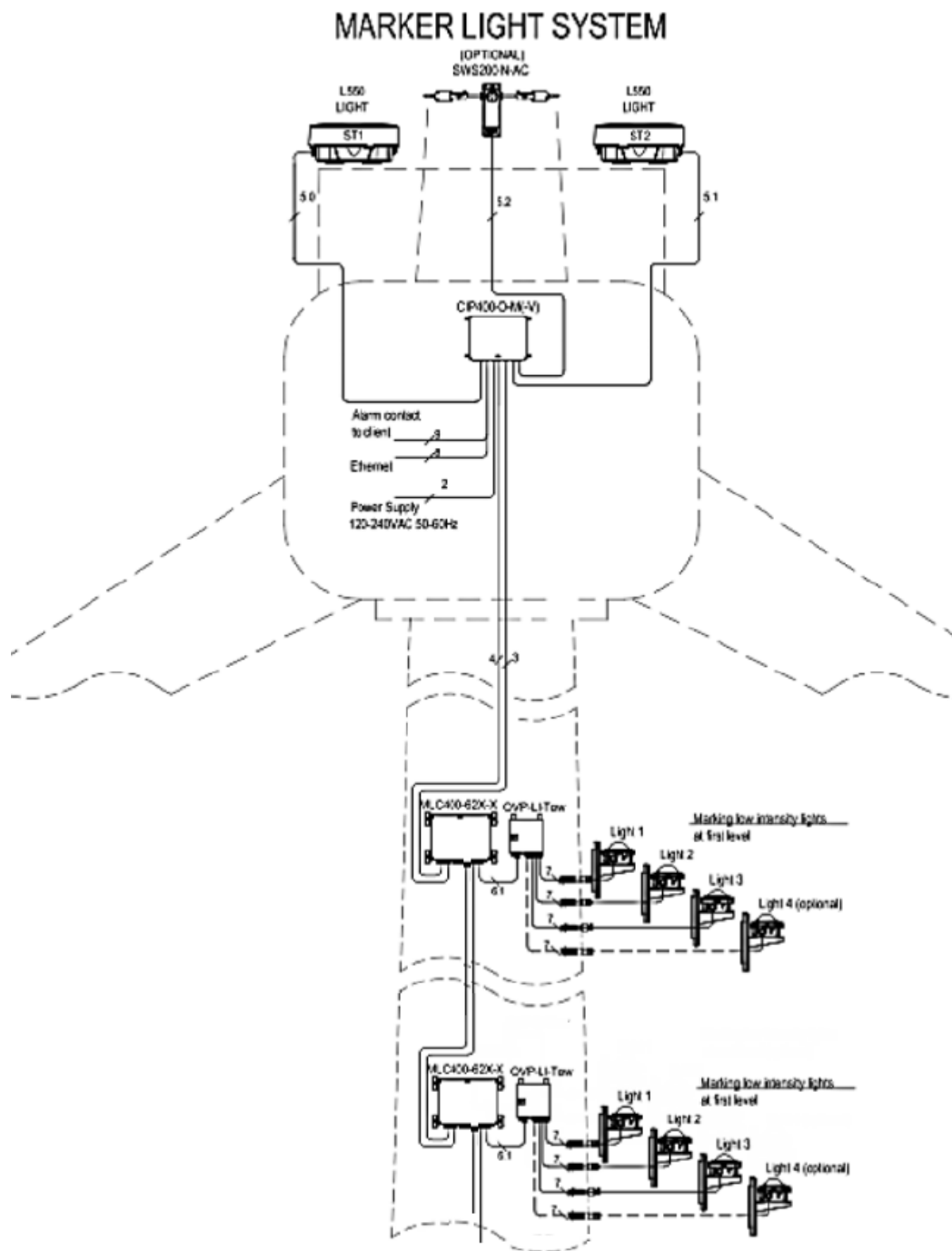


Figure 6-1:
Marker light system, one-line diagram

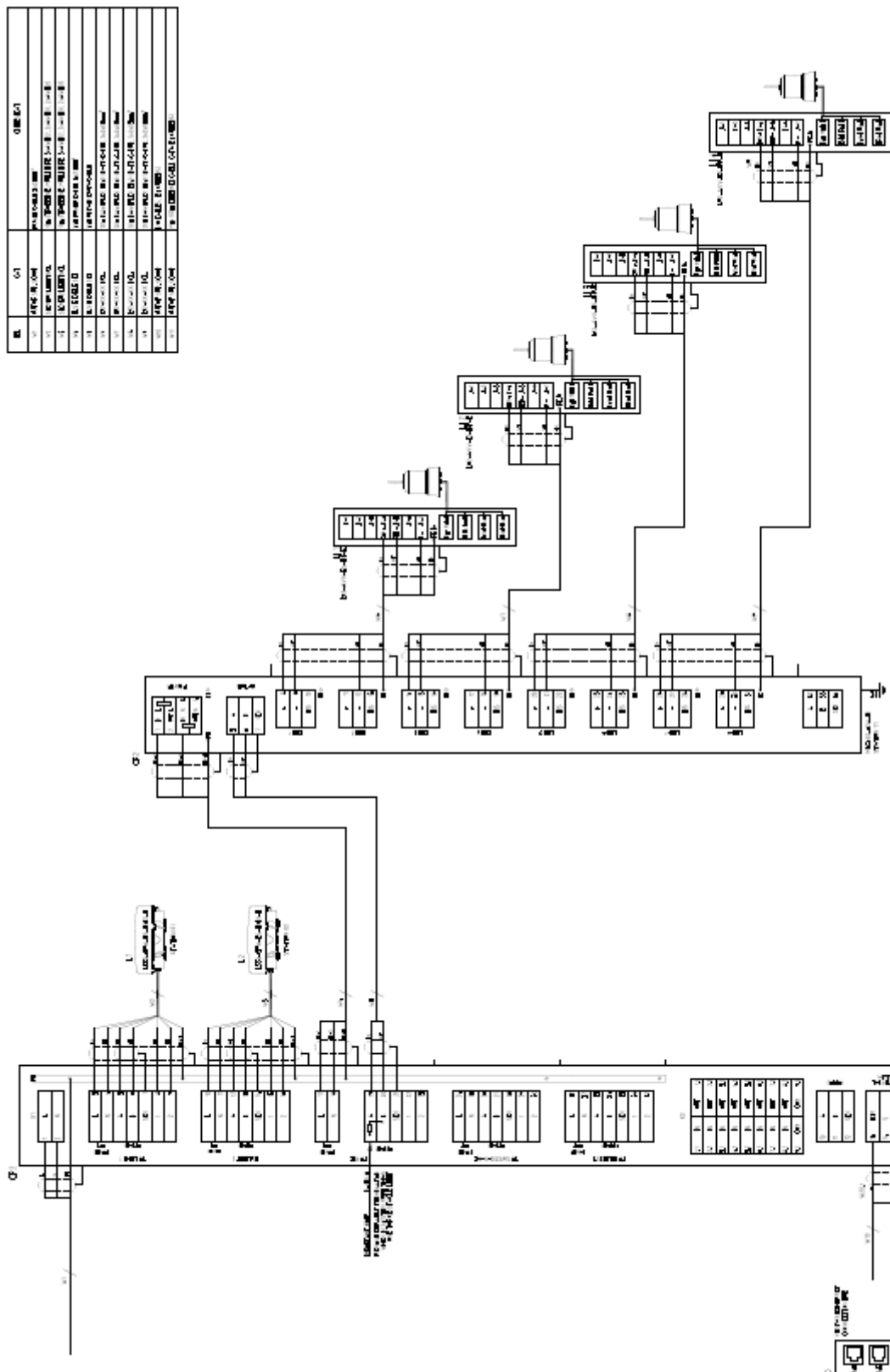


Figure 6-2:
 Marker light system, cable and terminal connection diagram

7 Certificates and test reports

This document is made in accordance with the ICAO standard.