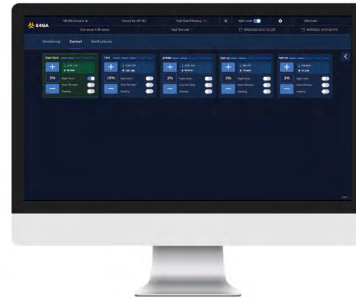


ALCMS BASIC

AIRFIELD LIGHTING CONTROL & MONITORING SYSTEM



+ HARDWARE

SYSTEM OVERVIEW

S4GA ALCMS is an Airfield Lighting Control and Monitoring System designed to provide full remote control and monitoring of solar LED runway lighting from the TWR or maintenance center. S4GA ALCMS consists of Computer Interface integrated with UR-201 Control and Monitoring Unit. It features open interface for integrating with existing conventional AGL control system.

FEATURES

- Individual Light Status Display
- 1-6 Groups/Circuits Control (optionally up to 12)
- Up to 5-step Light Intensity Setup (optionally 6-steps)
- Operating Mode Setup (Visible/NVG/Remote/Autonomus)

CONTROL

- Grouping of entire airfield lighting in 3 major groups
- Control of entire lighting system and groups of lights
- 5-step intensity level setup for a particular group of runway lights and PAPI
- Operating modes setup: Visible, NVG, Remote, Autonomus)
- Timer setup (for VHF-activated and GSM-activated modes)

ALCMS Basic is designed for airports with simple runway lighting system configuration. ALCMS Basic allows to control entire system and groups of lights separately (e.g. runway, threshold and taxiway lights) as well as report about individual light statuses.

• Real-time monitoring	YES
• Automatic failure alarm	YES
• Operating mode setup	YES
• Individual light status indication	YES
• Grouping of airfield lights	up to 12
• Light intensity, steps	up to 6
• Separate taxiways control	YES
• Airfield layout	N/A

For airports with more advanced AGL system (including few taxiways, approach lighting, temporarily closed areas), S4GA offers **ALCMS Advanced**.



MONITORING

Monitoring Tab makes it possible to monitor all airfield lighting devices. The information provided allows to obtain data not only about the current condition of devices, but also about maintenance requirements. This way end user can pro-actively supervise entire system and its components. Key features of the monitoring system:

- Individual light Status Monitoring - includes such parameters of light as: battery level, charging speed, temperature, operating status, etc.
- Monitoring of UR-201 Control unit status
- Preventive Maintenance function allows for planning maintenance works for individual equipment items (ie. battery replacement, solar panel cleaning etc.)

The screenshot displays the S4GA Monitoring Dashboard for 'Military Airbase'. Key features include:

- System Overview:** UR-201 Connect status, Control by ALCMS, Total Solar Efficiency (0%), Night mode, and Co2 saved (0.00 tonnes).
- System Status Indicators:** A grid showing the status of various components: CMS Data Drive (OK), CMS Unit Back-Up Battery (OK), CMS Mains Power Supply (OK), CMS Radio Transmit Unit (OK), VHF Remote Activation (Not Activated), and CMS System Devices (100%).
- Equipment List:** A table listing equipment with columns for Name/ID, Solar Generated Wh, Batt. Cycles, Start Date, Total Days in Operation, and More Details.
- GROUP OF LIGHTS:** A section showing a list of lamps (Lamp 1 to Lamp 7) with their respective IDs and details.
- INDIVIDUAL LIGHT STATUS:** A detailed view for 'Lamp 1' showing parameters such as Status (Online), Battery Level (96%), Charging Source, Mode (Off), Solar Efficiency, Ops. Time Left, Max. Cycle Limit, Last Update, Charge Time Left (Cable), Device Temp, Emergency Button, Charge Time Left (Solar), Days to Replace Battery, Bat. Cycles Left, Total Up-Time, Solar Generated Wh, Bat. Cycles Used, Last Illumination time, and Total Illumination Time.

NOTIFICATIONS

Notification Tab provides user with quick overview of all critical issues. Whether light is not working or it has low battery - user will have immediate feedback stored in Notification Tab. Moreover user can customize level of threshold that triggers particular notification (e.g. battery level is lower than x%). Key features of the notification system:

- Automatic Failure reporting via email
- Customization of reporting thresholds

The screenshot displays the S4GA Notifications Dashboard for 'Elliot Lake'. Key features include:

- Monitoring Tab:** Shows 'Notifications' as the active view.
- CRITICAL NOTIFICATIONS:** A list of alerts such as 'Lamp(s) with high temperature more than 13 celsius : WDI' and 'Lamp(s) with low battery level less than 30%'. Each notification includes a timestamp and a list of affected lamps.
- Notification Settings:** A configuration panel with various thresholds and states:
 - Online Devices less than [%]: 30
 - Battery cycles used more than [cycles qty]: 1
 - Temperature higher than [°C]: 13
 - Days to replace battery less than [days qty]: 700
 - Group Battery Level less than [%]: 80
 - Solar charging efficiency less than [%]: 3
 - Last update more than [min]: 7
 - Operation time left less than [h]: 150
 - Battery level less than [%]: 30
 - Emergency mode activation [ON/OFF]
 - Notification on System Check [ON/OFF]
 - UR-201 Connect [ON/OFF]
 - No internet connection [ON/OFF]
 - VHF Failure [ON/OFF]
 - Individual Device Offline [ON/OFF]
 - CMS Unit Back-up Battery State [ON/OFF]
 - CMS Main Power Supply State [ON/OFF]
- CUSTOMIZATION OF AUTOMATIC REPORTING BY USER:** A label indicating the user's ability to customize these settings.

KEY ELEMENTS OF ALCMS

Compliance of ALCMS Computer Interface

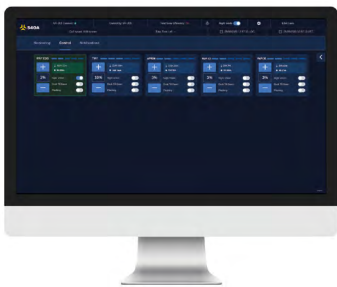


Compliance	
ICAO AerodromeDesign Manual	Part 5 Electrical Systems / Chapter 10, clauses 10.1 - 10.12 & clause 10.14
ICAO Annex 14, Volume I	Electrical Systems Chapter 8, clauses 8.3.1 - 8.3.5
EASA CS ADR-DSN.S.890	CS ADR-DSN.S.890 Monitoring, clauses (a), (b) & (d)
FAA AC 150/5345-56B	Specification for L-890 Airport Lighting Control and Monitoring System (ALCMS), clauses 3-7 & 9


Compliance of ALCMS Hardware - UR-201 Control & Monitoring Unit



Compliance	
RED Directive	RED DIRECTIVE 2014/53/EU on the harmonization of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC, clauses 3.1a, 3.1b & 3.2
RoHS Directive	ROHS DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment, clause 4.1
FAA AC 150/5345-56B	Par. 4.3 Hardware Requirements, clauses 4.3.1 & 4.3.2



**ALCMS ADVANCED OBLIGATORY
REQUIRES UR-201 TO BE SUPPLIED
AND HMI COMPUTER**


+ HARDWARE

ACCESSORIES INCLUDED



24" TV Monitor for TWR



Wireless set: keyboard + mouse



Power cable
LAN cables



HMI Computer



LAN Router



Tablet PC (optional)

SHIPPING DATA

Item	Dimensions of Package (LxWxH)	Gross Weight
ALCMS Set (24" screen, cables, keyboard, mouse)	600 mm x 400 mm x 360 mm	10 kg