

CONTROL & MONITORING

Navigator™

Airport Lighting Control System



Compliance with Standards

- FAA:** L-821 AC 150/5345-3 (Current Edition). ETL Certified.
- ICAO:** Annex 14, Vol. 1, para. 5.3 and 8.3 and Aerodrome Design Manual part 5, para. 3.4 and 3.7.
- Military:** UFC 3-535-01 par. 15-3.

System Overview

The ADB SAFEGATE Navigator Airport Lighting System represents the next generation of lighting control systems specifically designed for airports that seek a cost-effective control and monitoring solution, such as general aviation airports or military bases. Typically, this system can be used to replace hard-wired control desks and mimic panels (L-821/L-841 type) providing basic control and monitoring of airfield ground lighting functions.

The standard ADB SAFEGATE Navigator system consists of one Touchscreen/ Panel PC and one PLC cabinet. It controls up to 18 airfield devices, such as CCRs, beacons, REILs, PAPIs, and floodlights. In addition, the Navigator has dedicated contact points to monitor if utility and/or generator is available or on-line. If the airfield device is a CCR, there can be up to six 5-step and twelve 3-step CCRs.

Standard System Features

- Commissioning can be performed by the airport's technical staff ("out-of-the-box"), simplifying system delivery and setup on site. ADB SAFEGATE support available if needed.
- The lighting control system is built around an integrated Touchscreen/Panel PC, requiring only minimal installation space in the ATC tower. It incorporates a Human Machine Interface (HMI) with control functionalities for approach, runway, taxiway and apron visual aids.
- High-contrast, anti-glare resistive 12-inch LCD Touchscreen. Standard Touchscreen can be either pedestal or flush mount.
- Intuitive user interface provides buttons that lead air traffic controllers through lighting control tasks
- The ADB SAFEGATE Navigator can be remotely controlled using an L-854 Radio Control, photocell or phone dial-in device
- A static airfield touchscreen graphic (.png file) can be added
- Provides visual alarm indications for all monitored points
- Soft-start CCR control provides programmable delays between intensity step switching
- Based on Windows™ Embedded Standard 2009
- Entire system uses only off-the-shelf components

- Highly reliable and effective PLC-based control and monitoring of CCRs and auxiliary circuits
- If the controllable item is a CCR, each CCR can have up to 3 dedicated feedback contact points (Primary Power; Remote/ Local status; CCR Output Current Sensing) or may have a single General Fault feedback point. A General Fault feedback point is used, for example, to tie an FAA L-827/L-829 Fault indication into the system.
- Panel touchscreen has embedded PC with flash memory – no hard drive, fans or moving parts – limiting the need for maintenance and providing a highly reliable control system
- PLC enclosure can be installed in either the tower (if space is available) or an electrical vault (standard 9 feet/3 m, or optionally, up to 4,000 feet/1,219 m away) using EIA-485 communication
- Fail-safe – Fail-safe provides preset relays to meet airport operational requirements. Fail-safe is manually wired to select a dedicated CCR step. Fail-safe can be manually overridden for maintenance troubleshooting purposes.

Hardware Options

- Second Touchscreen for tower or vault
- 15-inch Touchscreen display
- Audible alarm speakers
- Communication methods: Fiber optic or wireless radio communication link
- CCR Monitoring Kit: Primary Power; Remote/Local and CCR ON Current Sensor
- UPS with UL1449 surge protection
- Remote dial-in capability (modem and software) for remote service and maintenance. A dedicated telephone line (customer supplied) is connected to a modem that is added to the panel PC.
- L-854 radio remote control (see ADB data sheet 3002)
- Phone dial-in device for password-protected lighting control
- Photocell (day vs. night input)

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Operating Conditions

Operating Temperature: 0 °C (+32 °F) to +45 °C (+113 °F)
 Extended Operating Temperature¹: -18 °C (0 °F) to +45 °C (+113 °F)
 Relative Humidity: 10-95% at 40 °C (non-condensing)

Notes

¹ Extended Operating Temperature available with the purchase of the Extreme Temperature Kit

Environmental Protection

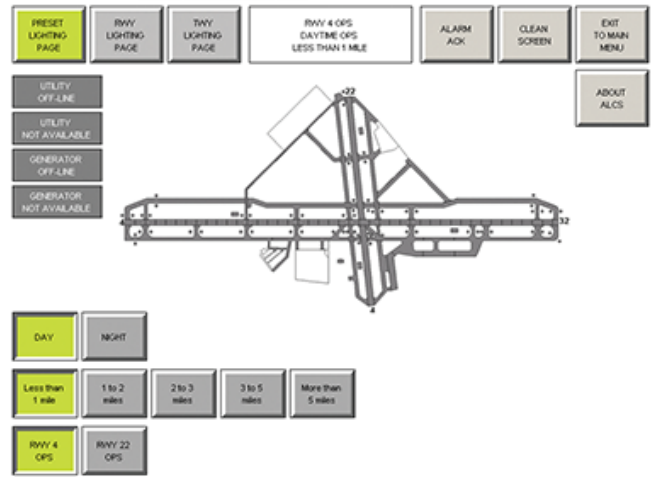
Touchscreen Front Panel: NEMA 4 (IP 65)
 PLC Cabinet: NEMA 4 (IP 65)

Electrical Supply

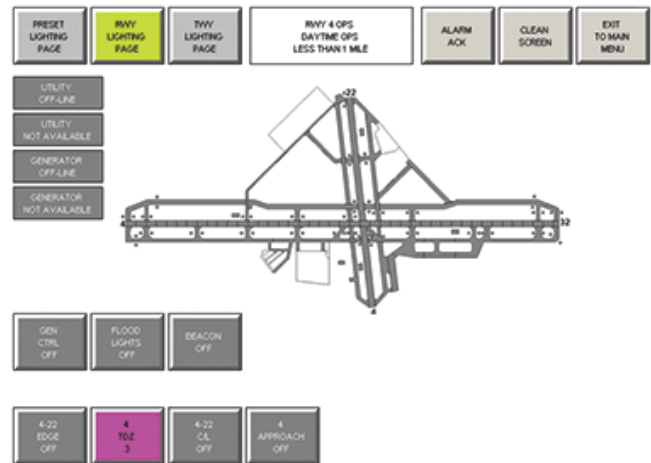
Touchscreen/Panel PC	
Input power:	Single phase, 100-240 VAC, 50/60 Hz
PLC Cabinet	
Input power:	Single phase, 100-264 VAC, 50/60 Hz

Dimensions

12" Touchscreen/Panel PC with Stand (H x W x D)	
10.6 x 13.41 x 2.78 – in	(26.9 x 34.06 x 7.06 – cm)
15" Touchscreen/Panel PC with Stand (H x W x D)	
12.5 x 15.6 x 2.78 - in	(31.76 x 39.65 x 7.06 - cm)
Stainless Steel Enclosure (H x W x D)	
41.75 x 35.75 x 10.75 – in	(106.0 x 90.8 x 27.3 – cm)



Typical Preset Lighting Page (Shown with optional static graphic)



Typical Runway Lighting Page (Shown with "pop up" button configuration option)

Ordering Code 44A7675 - X X 1 1 X X - X X 0

Touchscreen

- 1 = One 12-inch PC (in tower only)
- 2 = One 15-inch PC (in tower only)
- 3 = Two 12-inch PC (in tower and vault)
- 4 = Two 15-inch PC (in tower and vault)

Communications Package

- 1 = No communication extension¹
- 2 = Multi-mode fiber optic communication extension²
- 3 = Single-mode fiber optic communication extension²
- 4 = 2.4 GHz radio communication extension

UPS

- 1 = External UPS with 15-minute backup³

Alarm Package

- 1 = External speakers at touchscreen station

CCR Control

- 1 = No B1 or B10 control provided⁴
- 2 = Separate B1 or B10 control provided⁵

Remote Dial-In

- 1 = No dial-in
- 2 = Remote dial-in diagnostic included

Extreme Temperature Kit

- 1 = No electric heater
- 2 = Electric heater mounted in PLC Cabinet⁶

Second PC Mounting Option

- 0 = External mounting of second PC⁷
- 1 = Internal mounting of second PC⁸

Notes

- All fiber optic cables should be terminated with ST style connectors. Fiber optic cable and connectors not provided by ADB SAFEGATE.
- ¹ PLC cabinet must be within 9ft of Touchscreen/PC.
- ² Fiber optic cable supplied by others, multi-mode wavelength 1300 nanometers, single-mode 1310 nanometers.
- ³ For use with 120 VAC 60 Hz operation only.
- ⁴ Use this option if all CCRs present do not require B1 (5-Step) or B10 (3-Step) to activate the low-intensity step.
- ⁵ Use this option if any CCRs present require both B1 (5-Step) or B10 (3-Step) and CC to activate the low-intensity step.
- ⁶ Extreme Temperature Kit includes 200 W heater that allows a decrease in minimum operating temperature to -18 °C (0 °F).
- ⁷ Use this option if it is desired to mount the vault touchscreen outside of the PLC cabinet (i.e. on a desk).
- ⁸ Use this option if it is desired to mount the vault touchscreen inside the PLC cabinet.