Map Light with Backup Battery Functionality

The Map Light is designed to provide white and blackout light at a medium flood beam angle. It uses multiple LED technology.
The control of the light is enabled by a momentary push button switch located on the product.
The product is designed to provide illumination for a specific cabin or workstation areas.
The design utilizes solid state technology and a constant current drive circuit to achieve a consistent and power economical light output at an input voltage range of 16-33VDC.
The product is designed to meet the rigorous requirements of military ground vehicle environments.
The product comprises backup battery functionality, active while mains are disconnected or during vehicle power supply failure event.

Features:

- ✓ Spectral Colour – white and blue
- ✓ Simple mounting – mounted by 4 screw holes located in the base box
- ✓ Receptacle type – the unit utilizes a VG95234A-10SL-3PN
- ✓ Dimming control – light intensity is controllable through a potentiometer
- ✓ Low Voltage Alert – low voltage visual alert of the vehicle's battery
- ✓ Backup battery – active during vehicle power supply failure event

Technical data:

Input Voltage	16-33VDC
Input current at 24V	180mA ±10%
Power consumption at 24V	4,3Watts
Input Over Voltage Protection	Included
Input Reverse Voltage Protection	Included
Light source	LEDs
White Light center Luminance at 1m	300 Lux
Blue Light center Luminance at 1m	120 Lux
Light Beam Angle (FWHM)	30°
Operating Temperature Range	-40°C to +71°C
Dimensions (LxWxH) mm	Acc. Drawing
Weight	0,93kg
Water sealing	MIL-STD-810E
Transient Voltage Characteristics	MIL-STD-1275A
Electromagnetic interference characteristics	MIL-STD-461E
Built-In EMI RFI Filter, Low Noise	MIL-STD-461E
Mechanical Shock Test	MIL-STD-810E
Random Vibration	MIL-STD-810E
Colour of external housing	Black

Receptacle pin-out

Type – VG95234A-10SL-3PN

PIN	Functional description
A	(+) Active Hatches 1
B	(-) Return
C	(+) Active Hatches 2

Functionality:

Functionality while Energizing both pins, Pin A and Pin C

Enables blackout and white light.
Upon energizing both Pin A and Pin C, the indicator LED on the pushbutton starts flickering, indicating that the system is active and backup battery is being charged.
Blackout light is enabled upon short depression of the pushbutton.
A consecutive short depression turns OFF the light.

Transition from Blackout light to White

Transition from Blackout light to White is enabled only while blackout light is on.
A 3 seconds continuous depression of the pushbutton enables transition to white light.

A consecutive brief push turns OFF the light.

Hatches mode functionality.
Pin A represents active hatches 1 (vehicle's door).
Pin B represents active hatches 2 (vehicle's window).

During white light mode (both pins, Pin A and Pin C, are energized).
Upon door opening (Pin A is disconnected), light will switch immediately to blackout mode.
Upon door closing, light will turn back to white mode.
The same procedure will occur if a window was opened (Pin C is disconnected).

Blackout light mode forced by the commander
Blackout light mode can be forced by a command box located within the vehicle.
The command box may disconnect Pin A or Pin C in order to disable White light.

Light intensity control
Light intensity is controllable by a Potentiometer.
Light intensity is controllable between 1-100% during normal operation.
Light intensity is controllable between 1-100% during Emergency mode operation.

Backup Battery Charging
Upon connecting the Light to mains, the indicator LED on the pushbutton starts flickering at 1 Hz, indicating that the Backup Battery is charging.
When the battery is fully charged, the indicator LED stops flickering and remains lit indicating that the system is active and charged.
When backup battery is defective, the LED flickers rapidly.
During Emergency operation mode the indicator LED on the pushbutton remains unlit.

Backup Battery Functionality (Emergency Mode):
Backup battery is active while mains is disconnected or during vehicle power supply failure event.

OFF to ON:
A short depression of the pushbutton will turn on the lamp in Blackout mode for 5 minutes.

Blackout to OFF:
Once Blackout light is on, a short depression of the pushbutton turns the light OFF.

Blackout to White:
Toggling from Blackout light to White light requires a 3 seconds continuous depression of the pushbutton while blackout light is on.

White to OFF:

Once White light is on, a short push on the pushbutton turns the light OFF.

Potentiometer:
Light intensity is controllable from 1% to 100% by a Potentiometer.

Light intensity under Backup Battery Functionality:
White and blackout light intensity is reduced to enable a long use of the internal Backup Battery.

LVD – Low Voltage Detection:
Vehicles's battery low voltage monitoring:

When the vehicle's battery voltage falls below a predetermined value (21,5V) the system automatically shifts to low voltage visual alert as follows:
- White light and blackout light flickers alternately if the white light was lit.
- Blackout light flickers if the blackout light was lit.
- A brief press of the push button suspends the alert for 2 minutes.