

arco - User Guide



1. General Description

ARCO is an Indoor Emergency Lighting device with innovative design that can operate in two different modes:

- As Emergency Lighting, where it is activated on mains power loss (when voltage drops below acceptable limits).
- In Continuous Operation Lighting with two separate levels of brightness, one while Mains power is present and one while mains is lost.

ARCO also provides:

- A **TEST** button, for testing and programming
- Three (3) LED indications: **FLT**=Fault (yellow), **PWR**=Power (green) and **BAT**=Battery Fault (red)
- Up to 3 hours of emergency lighting duration (at maximum brightness)

2. PRG/TEST button operation

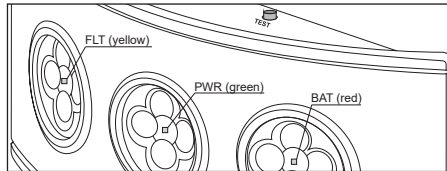


Figure 1. ARCO LED indications

If the **PRG/TEST** button is pressed for an interval:

- Less than 3 seconds, the system's diagnostic test starts.
- Between 3 and 30 seconds, the system's programming operation starts.
- More than 30 seconds, the system restores the default settings.

2.1 Test Procedure

1) Battery Internal Resistance Test

- The battery presence is checked.
- The battery internal resistance is checked.

2) LED Lights Test

- A cycle through all 5 light intensities is done
- If there is an open-circuit or a short-circuit fault with the LED operation, an error is indicated.

2.1 System Programming

To enter the system programming the user presses the **PRG/TEST** button for more than 3 seconds and until the **PWR** LED starts blinking. The **PWR** LED will remain in the blinking state until the programming ends.

The system will automatically exit the programming mode if no user interaction takes place for more than 60 seconds.

The programming procedure consists of two (2) steps. The user advances to the next step by pressing the **TEST** button for more than 3 seconds. The steps are described below:

STEP 1: Adjusts the intended brightness level while mains power is present. Green LED (middle) and Red LED (right) LEDs are flashing.

In this step the user sets the brightness level produced by ARCO while the mains supply power is present. By instantaneously pressing the **PRG/TEST** button the brightness cycles through the six (6) available levels (including the off state). When the desired brightness is active, the user presses the **PRG/TEST** button for more than three (3) seconds; the brightness level is saved and the programming continuous to STEP 2.

 **If EMERGENCY ONLY operation is required the user must select Zero Brightness (Lighting element OFF).**

STEP 2: Adjusts the intended brightness level while mains power is below acceptable limits (lost). Green LED (middle) and Yellow LED (left) LEDs are flashing.

In this step the user sets the brightness level produced by ARCO while the mains supply power is lost. By instantaneously pressing the **PRG/TEST** button the brightness cycles through the five (5) available levels (minimum to maximum brightness). When the desired brightness is active, the user presses the **PRG/TEST** button for more than three (3) seconds; the brightness level is saved and the programming is completed.

After the completion of the programming steps ARCO returns to normal operation.

 **During the programming operation, ARCO does not check the mains power or execute any diagnostic tests.**

3. Indications Functionality

PWR Indication (green LED)

- **OFF:** Mains voltage is low or lost.
- **ON:** Mains voltage is present.

FLT Indication (yellow LED)

- **OFF:** Light Elements in normal mode.
- **Blinking:** Light Elements Fault.

BAT Indication (red LED)

- **OFF:** Battery is working properly.
- **ON:** Battery Fault.
- **Blinking:** Battery has lost capacity and will need to be replaced soon.


SYSTEM IN NORMAL OPERATION MODE		
LED INDICATOR	STATE	Description
PWR (green)	ON	Mains power present
	OFF	Mains power is lost
FLT (yellow)	BLINK	Light element Fault
BAT (red)	ON	Battery Fault
	BLINK	Battery reduced capacity, needs to be replaced soon

SYSTEM IN PROGRAMMING MODE		
LED INDICATOR	STATE	Description
PWR	BLINK	System enters programming mode
FLT	BLINK	System is in STEP 1
BAT	BLINK	System is in STEP 2

4. Technical Characteristics

Power Supply	230VAC / 50Hz
Max. Power Consumption	Less than 5VA
Light Source	12 LED
Battery	3.6V 1.0Ah NiCd
Emergency Operation Time	From 180min to 240min depending on luminance setting
Luminance setting	5 steps (20, 40, 60, 80 & 100%)
Light source intensity (230V)	100lm
Switch over Voltage	Between 150 ~ 190V
IP rating	IP20
Isolation Category	Mains connection Doubly isolated
Environmental	Temperature: 5 to 45 °C Humidity: 5 to 95% RH, condensating
Dimensions [WxHxD]	225x100x47 mm
Guarantee	3 years (1 year for the battery)

5. Installation instructions

 **ATTENTION! The installation and maintenance of this unit must be performed by qualified personnel only. Mains voltages are lethal. Electrical wiring must be compliant to all safety and electrical regulations that apply.**

Wall mounting installation:

The unit should be surface mounted. To wall mount the cabinet:

1. Remove the two screws from the top side of the device to be installed.
2. Open the case by pushing down on the two plastic tabs and pulling the face of the device forward.
3. Use the back cover to mark the required drill points on the mounting surface (wall). Drill the required holes.
4. Remove one of the three available knock outs, pass the mains cable through.
5. Place the back cover on the wall and fix it in place with screws.
6. Connect the mains cable on the terminal block.
7. Connect the battery (see battery replacement)
8. Place the front cover by hooking the two hinges at the bottom of the unit and gently pushing upward. Push on the top side until the plastic tabs lock in place.
9. Place the screws in place paying attention to not overtight them.



Figure 2. ARCO wall mounting base

Connecting the battery:

The ARCO does not contain a user replaceable battery. However new units must have the battery connected to the PCB by the installer with the following procedure:

1. Make sure ARCO is not connected and powered from the mains (AC) power supply.
2. Connect the new battery observing the correct polarity.
3. Connect/power up the unit from the mains (AC) power line.

 **ATTENTION: After installation, proper operation is established after the batteries have been charged for 24 hours.**

The battery connectors employ plastic guides ensuring the correct connection of a new battery. Do not use excessive force to connect the battery as this is an indication of improper alignment. Reverse connection of the battery will cause permanent damage to the Luminary.

The unit contains electronics required for the verification of the battery's good health. When the indication

BAT blinks the unit must either be replaced or serviced by a qualified technician.

Mains connection:

Use the terminal block to connect the AC power cable to the panel. Ensure that the power cable is safe to handle (has no power). See figure below.

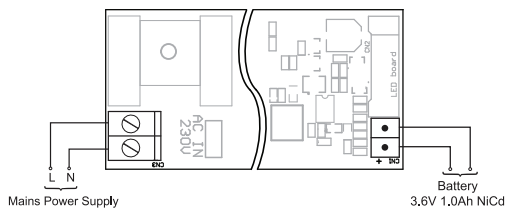




Figure 3. ARCO mains & battery connection

The diameter of the wires must be between 0.8 and 3.3 mm² (12-18 AWG).

 **If multi stranded wire is used for the mains connection, the ends of the wire should never be tinned. If desired, wire ferrules may be fitted. Controlgear is suitable only for ARCO LDM.**

Lighting Element Failure

The lighting elements of the ARCO unit are NOT user replaceable. In case of failure the unit must be either replaced or serviced by qualified personnel. This failure is indicated by the RED blinking fault light.

 **This device contains no user replaceable parts inside.**
*** Persisting Faults require the replacement of the unit.**

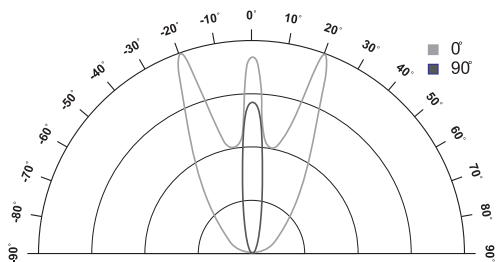


Figure 4. ARCO angular light distribution

EMERGENCY LIGHTING LABELING EXPLANATION:

X: Self contained

1: Maintained

A: Including test device

180: 3 hour duration

CE Certified by:



00122/101/1/2017



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EN60598 | EN62031 |

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