

NBC 24V 1BLCN0 / 1BLCWMN

1 Introduction

NBC 24V 1B LCx is a complete solution to use only one product to control and charge one 24V 7.2 Ah acid lead battery or two 12V batteries connected in series.

The NBC 24V 1B LCx device is to be used by skilled and qualified personnel and in compliance with current standards to avoid damages or safety hazards.

IMPORTANT

- For use in protected ambient only.
- Do not use the battery charger in proximity of explosive gases and/or other inflammable material.
- Disconnect the power supply before any connection or disconnection is done through the charger terminal block.
- Arrange for adequate air flow during recharging.
- Should the battery charger be disconnected from the power supply for a long period of time, we recommend that you disconnect the batteries from the battery charger. Connection for long periods of inactivity may discharge the batteries.
- The device cannot be used by children under the age of 8 or by persons with reduced physical capacity

2 Functionality

NBC 24V 1B LCx is the ideal solution to recharge and analyze 24V batteries, remaining always connected to the battery without any risk and without need to disconnect the battery from the equipment. This allows to maintain the battery always charged also through long (up to months) idle period. This battery charger provides a maximum current up to 0.4A. This product is suitable for standard batteries (acid lead) which normal charge could be evaluated at 0.057A per each Ah of capacity.

The microprocessor inside allows an automatic analysis:

Battery status monitoring during normal function (in presence of main voltage):

- Battery disconnected or short circuit (Battery LED lit with RED COLOR, alarm output ACTIVATED)
- Battery connected and charged, voltage higher than 26.5V (Battery LED lit with GREEN COLOR, alarm output NOT ACTIVATED)
- Battery connected and in charging, voltage in the range 23V - 26V and recharging current greater than 50mA (Battery LED blinking RED and GREEN, alarm output NOT ACTIVATED).
- Battery connected with voltage lower than 22.5V. The battery is considered not compliant (battery damaged) with the required specifications (Battery LED lit with RED COLOR, alarm output ACTIVATED).

Emergency battery analysis (mains voltage not present) :

- The NBC24V1BLCN0 model in emergency, when the battery powers the load, monitors the battery charge. and if its voltage drops below 19V it signals the condition through the battery led (RED LED ON) and the alarm output (ACTIVATED).
- The NBC24V1BLCWMN model does not have the functionality of battery analysis in emergency, to preserve the charge of the same in the absence of mains power, this allows the storage of the system with batteries connected

3 General Technical Data

GENERAL TECHNICAL DATA	
Input Voltage	110÷230Vac, 50÷60 Hz
Battery charger voltage (no load)	27V
Max Current (for battery stage)	0.400 A max
Battery type	24V - 7.2Ah acid lead
Connection cables sections	Battery cables: min 0.75 mm ² /Alarm cables: min 0,35 mm ²
Protections	Short circuit, over current, over temperature. Automatic restart after fault removal.
Housing	Box IP 20, Thickness 26mm, Height 100 for 1BLC and 120mm for 1BLCRxx0; Width 79mm
Battery Full Charging Time	24 h
Working Temperature	0°÷50°C
Storage Temperature	-5°÷70°C
Efficiency	>75%

4 Battery status

The control unit is able to detect certain conditions that allow an analysis of the status of the battery:

Battery status during normal function (in presence of main voltage)				
Battery status	(Led Power)	(Led Batt.)	Output Alarm	Description
Battery disconnected, short circuit or discharge	On Green	On Red	Allarm On (Closed)	Voltage lower than 23V
Battery connected and charged	On Green	On Green	Allarm Off (Open)	Voltage higher than 26V
Battery connected in charge	On Green	Blink Red / Green	Allarm Off (Open)	Voltage in the range 23V-26V
Battery status during emergency condition (lack of main voltage) only NBC24V1BLCN0				
Battery status	(Led Power)	(Led Batt.)	Output Alarm	Description
Battery worn out	Off	On Red	Allarm On (Closed)	Voltage lower than 19V
Battery connected and charged	Off	On Green	Allarm Off (Open)	Voltage higher than 19V

5 Connector

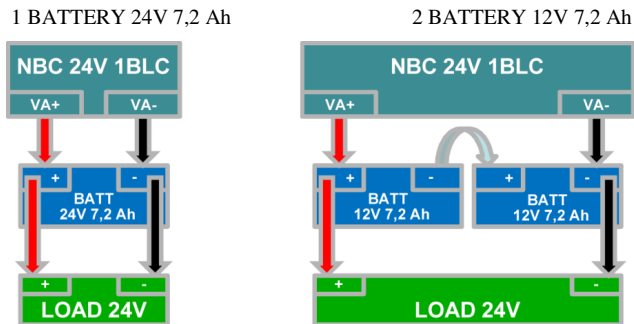
Inputs:

Name	Description	Range V	Max I
N	Neutral	110-230Vac	250mA
F	Phase	110-230Vac	250mA

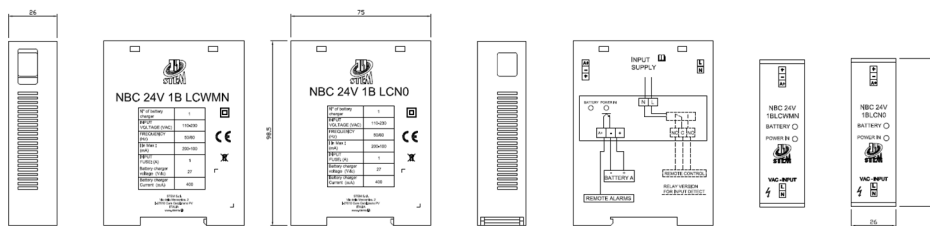
Outputs:

Name	Description	Range V	Max I
+	Battery voltage + (A channel)	5-28Vdc	0.400A
-	Battery voltage - (A channel)	5-28Vdc	0.400A
A+	(O.C. NPN type) Alarm for "A battery damaged"	0-30Vdc	0.05A

6 Connection diagram



7 MECHANICS



Dimensions and Markings

8 Order code

Code	Description
NBC 24V 1B LCN0	standard version with complete allarms
NBC 24V 1B LCWMN	Version without allarms in emergency mode

ASSEMBLY

These battery chargers can only be used if they are mounted in a closed electrical panel with cover or door.

To promote heat dissipation, make sure that at the 4 sides of the battery charger there is at least 2cm of space for free air flow. A network disconnection device with contact opening with at least III overvoltage category must be connected upstream of the battery charger. Disconnect the mains before any connection or disconnection on the battery charger terminal board. The unit is installed by fixing it to a standard 35 mm DIN rail in compliance with EN 50022.

All outputs must be isolated from the main power supply. It is recommended to insert a ferrite (FERRITE STEWARD LAIRD TECHNOLOGIES: 28B0735-000 or equivalent, 3 windings of the power cable on the ferrite).

MAINTENANCE AND CONTROLS

The correct operation of the control unit NBC24V 1B LCN0 must be controlled by the operator periodically checking the follows:

- Simulate the battery is faulty, disconnected and short-circuited
- correct closing of the connections

In the event of damage or wear and tear, the damaged component must be replaced.

Liability coverage is void under the following circumstances:

- If instructions are not followed
- Non-compliance with safety regulations
- Installation and electrical connection not performed by authorized personnel
- Non-implementation of functional checks

Setup:

If the control unit does not appear to function when operating voltage is applied (Green power in LED does not light up), the unit must be returned unopened to the manufacturer.