control solutions
TERACOM



125 kHz Compact RFID Reader
Locky-BP-v2

USER MANUAL

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1. Introduction

Locky-BP-v2 is a 125kHz Compact RFID Reader for access control applications. Designed for panel-mount installation, the device combines an RFID reader, controller and relay output in a compact enclosure for indoor use.

The device supports EM4102-compatible RFID tags and stores up to 1000 authorized RFID identifiers in nonvolatile memory. Access credentials are managed using a dedicated service tag, allowing new identifiers to be added or removed without a computer.

An integrated relay output enables direct control of electronic locks, elevator access systems, gates, barriers and other access-controlled equipment. The LEDs and an acoustic buzzer provide clear feedback during operation and configuration.

2. Features

- 125 kHz RFID reader compatible with EM4102 RFID tags
- Compact panel-mount design with integrated RFID antenna
- Stores up to 1000 authorized RFID identifiers in nonvolatile memory
- Relay output with NO, COM, and NC contacts for access control and equipment switching
- Configurable relay activation time from 1 to 240 seconds
- Service tag for adding and deleting authorized RFID identifiers
- LED status indication and acoustic buzzer for user feedback
- RS-232 interface for configuration using LockyMonitor-3 software

3. Specifications

- Physical characteristics
  Dimensions: Ø38 × 27 mm
  Mounting hole diameter: Ø35 mm
  Connector: Screw terminals
- Environmental limits
  Operating temperature range: -10 to +40 °C (-14 to +104 °F)
  Operating relative humidity range: 10 to 90 %RH (non-condensing)
- Power supply
  Operating voltage range (including -15/+20 % according to IEC 62368-1): 10 to 24 VDC
  Current consumption (relay ON): 56 mA @ 12 VDC
  Maximum current from +5 V auxiliary output: 100 mA
- RFID characteristics
  Operating frequency: 125 kHz
  Supported RFID tags: EM4102 compatible
  Typical reading range: Up to 3 cm*
  * The actual reading distance depends on the RFID tag type, installation conditions and surrounding environment.
- Serial interface
  Type: TTL-level RS-232 (0/5 V)
  Communication settings: 19200bps, 8 bits, 1 stop bit, No parity
- Memory
  Maximum number of stored RFID identifiers: 1000
- Relay output
  Contacts: NO, COM, NC
  Maximum switching voltage: 24 VDC /30 VAC

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Maximum switching current: 1 A

Relay activation time: 1 to 240 s

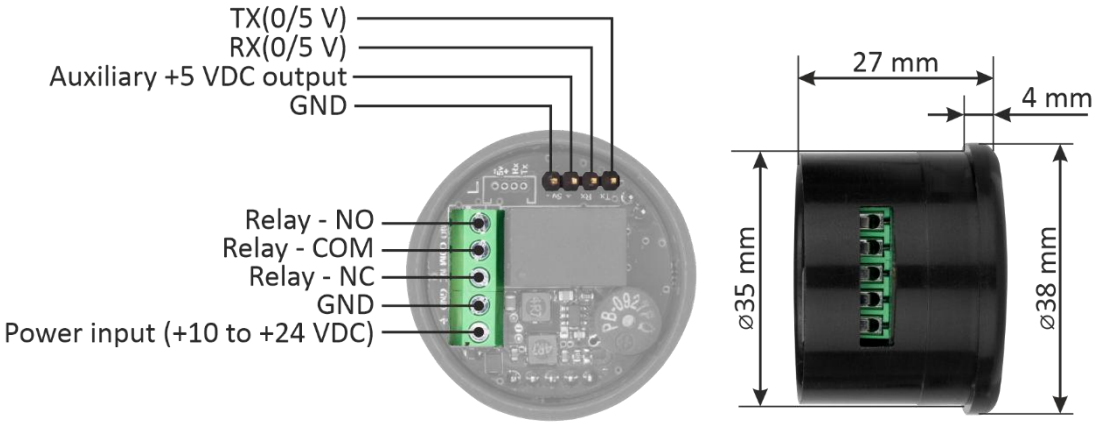
Caution! The device does not contain any internal overcurrent protection facilities on the relays' contact lines. External fuses or short circuit current limiting circuit breakers, rated to 1 A, are to be used for overcurrent protection of the connecting lines.

Caution! In case of switching an inductive load, an RC or diode snubber are to be used for relay contact protection (arc suppression).

- Warranty

  Warranty period: 3 years

4. Dimensions and Pinout



5. Device operation

In normal operation, the device monitors for RFID tags within the reading range. The red LED blinks once per second to indicate that the reader is ready.

When a valid RFID tag is presented briefly within the reading range, the relay is activated and the NO and COM contacts are connected. The relay remains active for the configured activation time.

If the RFID tag remains within the reading range, the relay stays activated for as long as the tag is present. After the RFID tag is removed, the relay remains activated for the configured activation time before switching off. This behavior allows the relay to remain energized while an authorized RFID tag is present within the reading range, eliminating the need to repeatedly present the tag.

When an unauthorized RFID tag is presented, the relay is not activated and the red LED flashes six times.

6. Configuration

6.1. Configuration via RS-232

The device provides an RS-232 interface that can be used with the LockyMonitor-3 software to manage authorized RFID identifiers and configure the relay activation time.

The interface uses TTL signal levels and cannot be connected directly to a standard PC RS-232 port. A compatible TTL-to-RS-232 level converter must be used when connecting the device to a computer.

The +5 V pin provides an auxiliary 5 VDC output for powering external interface converters or low-power peripheral devices. The maximum available output current is 100 mA.

Using LockyMonitor-3, authorized RFID identifiers can be added, deleted, imported from files, and exported to files. This simplifies the management of multiple devices and enables convenient backup and restoration of RFID identifier lists.

LockyMonitor-3 is available free of charge and can be downloaded from the Locky-BP-v2 product page on the Teracom website.

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6.2. Configuration using the service tag

Adding RFID identifiers

To enter enrollment mode, present the service tag to the reader for less than 5 seconds. The yellow LED turns on and the device emits a single beep.

While in this mode, each new RFID tag presented to the reader is stored as an authorized identifier. The device confirms successful enrollment with two beeps and one LED flash.

If the RFID tag is already stored, the red LED flashes three times and the tag is not added.

When the last available memory location is occupied, the device automatically exits enrollment mode and returns to normal operation.

To exit enrollment mode manually, present the service tag again for less than 5 seconds. The device also returns automatically to normal operation after 60 seconds of inactivity.

Deleting RFID identifiers

To erase all stored RFID identifiers, present and hold the service tag for more than 10 seconds. The yellow LED flashes rapidly while the memory is being erased.

When the operation is complete, the device returns to normal operation. The service tag remains stored in memory and is not deleted.

7. LED and buzzer indications

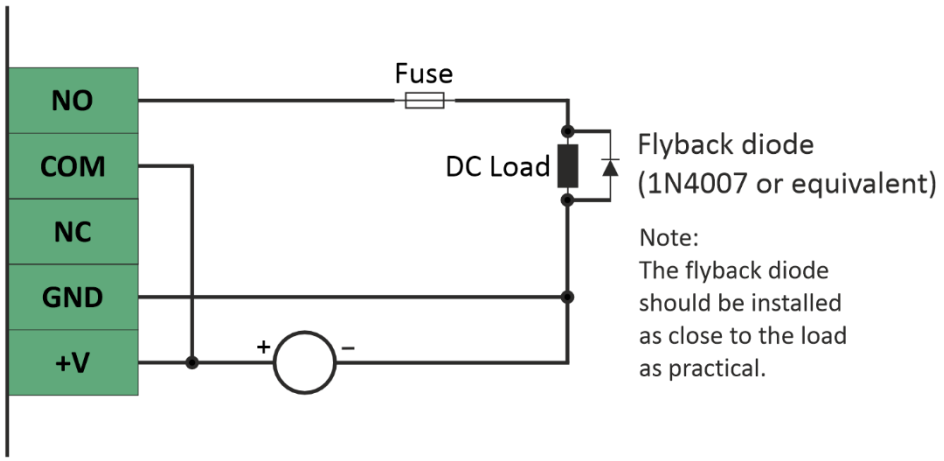
The table below summarizes the LED and buzzer indications during device operation.

Condition	LED	Buzzer
Normal operation	Red LED blinks once per second	—
Valid tag	Green LED ON	—
Invalid tag	Red LED flashes 6 times	6 beeps
Enter enrollment mode	Yellow LED ON	1 beep
Tag enrolled	Yellow LED flashes once	2 beeps
Duplicate tag	Red LED flashes 3 times	3 beeps
Erasing memory	Yellow LED flashes rapidly	—

8. Typical output connection

The relay output can be used to switch DC and AC loads within the electrical ratings specified in this manual. Typical connection examples are shown below.

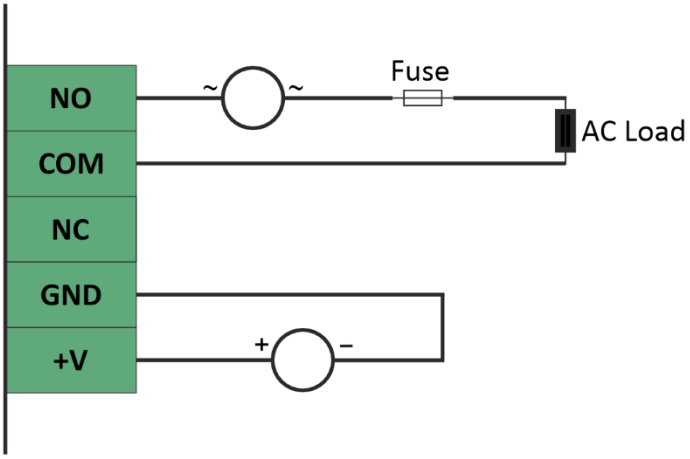
When switching an inductive DC load, install a flyback diode (for example, 1N4007 or equivalent) across the load. To provide effective protection, the diode should be installed as close to the load as practical.



Typical DC load connection

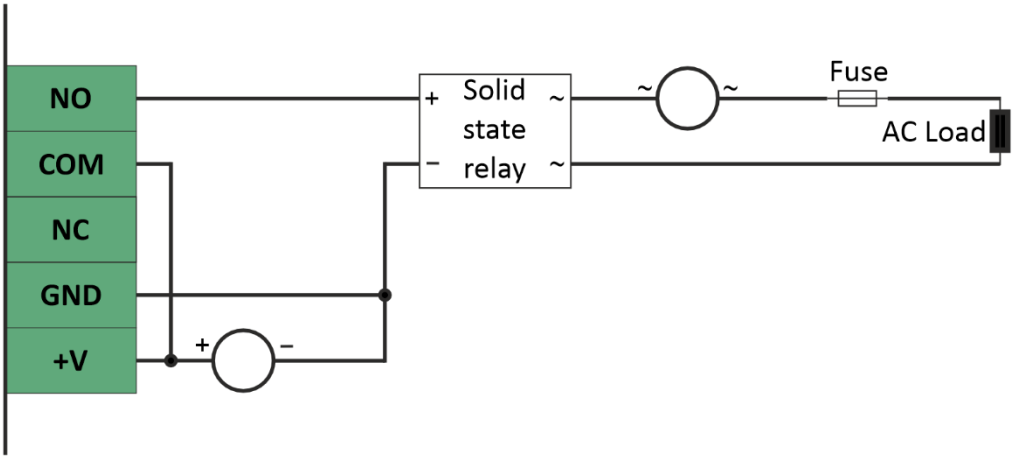
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When switching AC loads, protect the output circuit with an appropriately rated fuse. For inductive AC loads, additional suppression components may be required depending on the application.



Typical AC load connection

For applications requiring frequent switching, higher load currents, or extended relay service life, the relay output may be used to drive a solid-state relay (SSR) instead of switching the load directly.



Typical AC load connection using a solid-state relay

9. Factory default settings

- Relay activation time: 3 s
- Authorized RFID identifiers: None
- Service tag: Pre-programmed

10. Operating environment

The device is intended for operation in a Pollution Degree 2 environment, at altitudes up to 2000 meters above sea level.

When the device is integrated into a larger system, all other system components must comply with applicable EMC (Electromagnetic Compatibility) requirements and be suitable for operation under the same environmental conditions.

11. Safety precautions

The device must not be used for medical, life-support, or life-saving applications, or in any system where a failure of the device could result in serious injury or loss of life.

To reduce the risk of fire, only flexible stranded conductors with a minimum cross-sectional area of 0.5 mm² must be used for wiring.

To prevent electric shock and fire hazards, the device must not be exposed to liquids, rain, or excessive moisture. Objects containing liquids must not be placed on or near the device.

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Ensure adequate ventilation around the device. Failure to maintain the recommended free space around the device may result in overheating and potential damage. Sufficient space must also be provided to allow safe connection and disconnection of cables.

The device must be operated strictly within the limits specified in this documentation. Operation outside the specified conditions may impair the protection provided by the device and lead to unreliable operation.

Teracom OOD does not guarantee correct operation of the product if it is used under conditions that differ from those specified by the manufacturer. In no event shall Teracom OOD be held responsible or liable for indirect or consequential damages resulting from the use or application of this product.

12. Maintenance

The device does not require routine maintenance during normal operation.

Periodically inspect the device to ensure that it is in good operating condition, that all electrical connections are secure, and that there are no signs of mechanical damage.

Clean the device using a dry cloth only. Do not use liquid or aerosol cleaners. Magnetic or electrostatic cleaning devices, as well as abrasive materials, must not be used.

Following these maintenance guidelines helps ensure reliable operation and extends the service life of the device.

13. Disposal and recycling

Please recycle all applicable materials in accordance with local regulations.



Do not dispose of the device as regular household waste.

Electronic components should be properly recycled to minimize environmental impact.

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