

*Roger Access Control System*

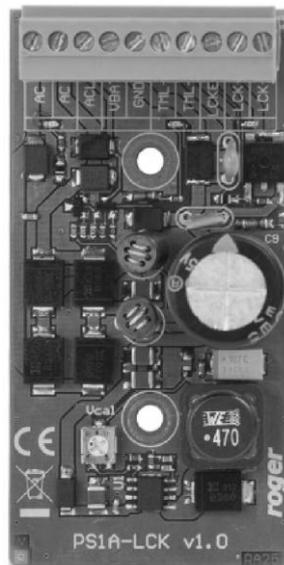
## PS1A-LCK power supply module

### Operating Manual

*Product version: 1.0*

*Firmware version: n/a*

*Document version: Rev. A*



rcdr276

## Design and application

PS1A-LCK module is dedicated to provide power supply for the second door if built-in power supply unit of the MC16 controller or MCX402DR expander is sufficient for only single door. The module is supplied with 18VAC and it offers 13.8VDC at LCK and TML outputs. The LCK (1.0A) output is dedicated to supply door lock and it can be triggered with LCKEN input. Optionally it can be triggered all the time and used to supply door related devices e.g. alarm signalling, door bell. The TML (0.2A) output is dedicated to supply readers and is triggered all the time. PS1A-LCK can be connected to backup battery in order to offer emergency supply for door. The shortage of 18VAC power supply is signalled with ACL transistor (open collector) output. All PS1A-LCK outputs are protected against overload. PS1A-LCK is offered individually as electronic module or as a component of MCX402-2-KIT.

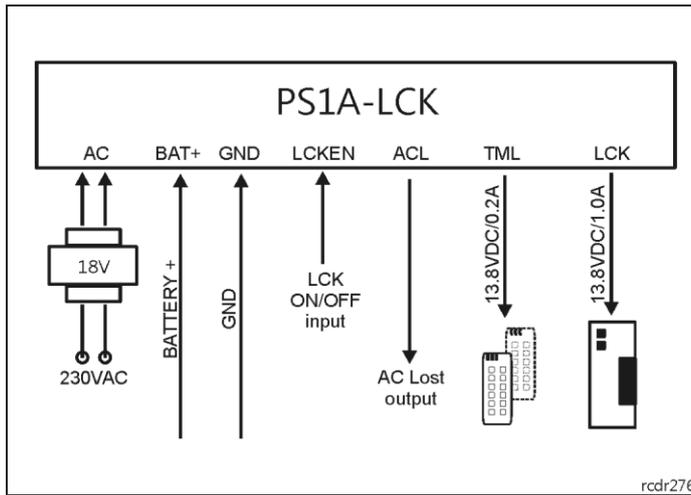


Fig. 1 Functional diagram of PS1A-LCK module

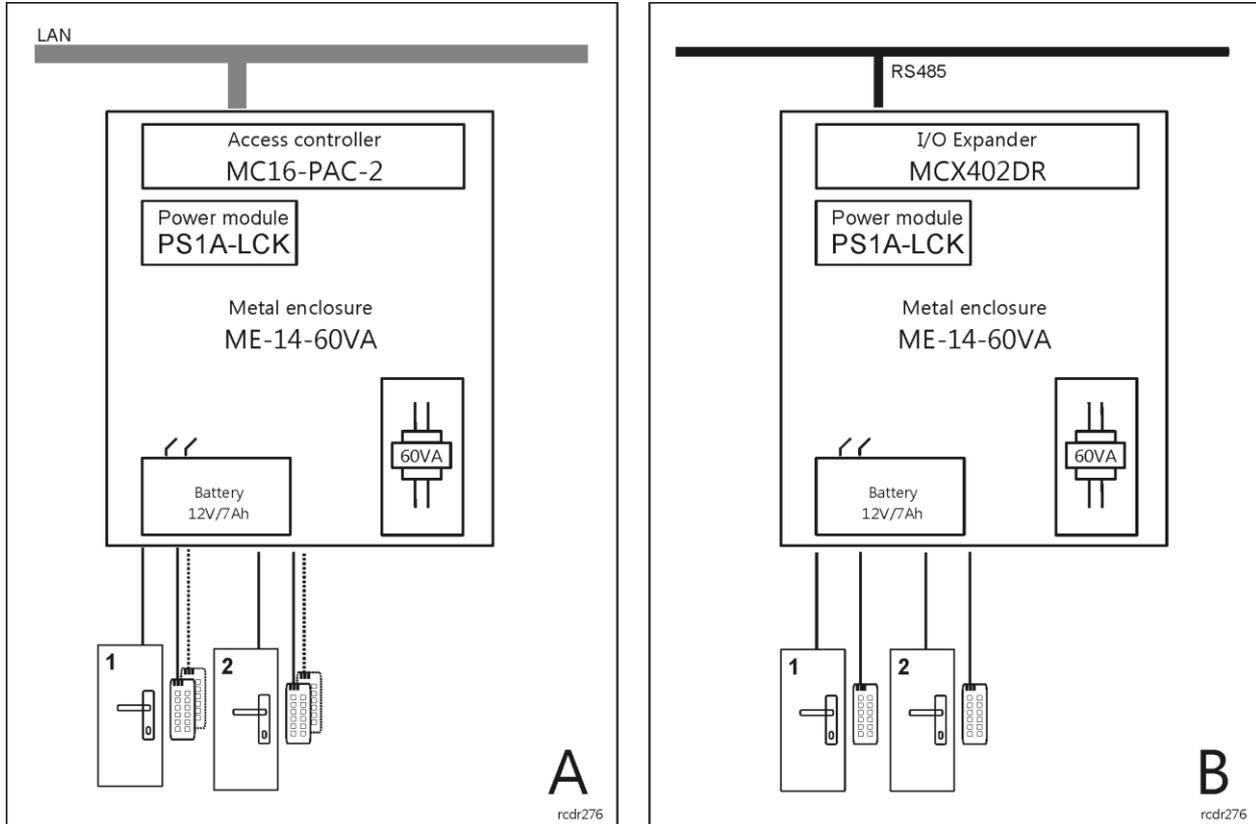


Fig. 2 PS1A-LCK installation with MC16 access controller (A) and MCX402DR expander (B)

## Characteristics

- Power supplied from 18VAC transformer
- Power output 13.8VDC/1.0A
- Power output 13.8VDC/0.2A
- LCK output control with LCKEN input
- 18VAC power supply shortage signalling output

## Power supply and backup battery

PS1A-LCK module is supplied through AC terminals and red LED indicator is located at the AC+ terminal to signal the voltage at the input. The module can be supplied from own 18VAC/20VA transformer or the same transformer which supplies MC16 controller or MCX402DR expander. In such case the power of transformer must be sufficient to ensure supply to all devices. Positive pole of the battery connected to the controller/expander must be also connected to module BAT+ terminal. Do not connect battery negative pole to the module. PS1A-LCK ground must be connected with controller/expander ground.

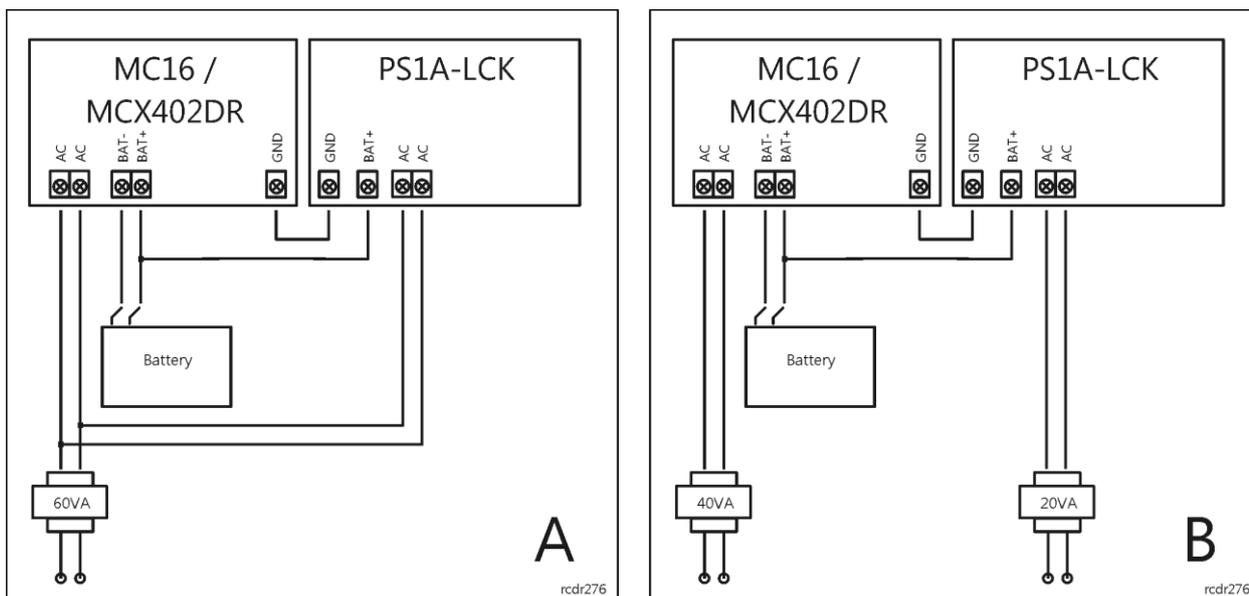


Fig 3. PS1A-LCK power supply from single transformer (A) or two transformers (B)

## LCK output and LCKEN input

LCK output is dedicated to supply door lock. The output can be triggered with LCKEN input which on the other hand can be triggered by transistor or relay output with minimal rating 15V/5mA at the controller/expander. When LCKEN is shorted to ground then LCK is triggered. If the input is shorted to ground constantly then LCK output could be used to supply door related devices such as alarm signalling, door bell, etc. The terminal LCK+ is protected with 1.0A electronic fuse. The terminal LCK- is internally shorted to ground. Green LED indicator is located at the LCK+ terminal to signal voltage at the output.

## TML power output

TML power supply output is dedicated to supply readers at doors. The terminal TML+ is protected with 0.2A electronic fuse. The terminal TML- is internally shorted to ground. Green LED indicator is located at the TML+ terminal to signal voltage at the output.

## ACL signalling output

ACL output is triggered in case of 18VAC power supply shortage and it can switch up to 40mA current at 15V. MC16 controller and MCX402DR expander monitor their power supply thus ACL output is used only if PS1A-CLK is supplied from its own transformer.

### Door control and connection to controller/expander

The module offers 13.8VDC power supply to readers and door lock when supplied from 18VAC transformer. LCK output can be controlled in two alternative ways according to fig. 4. Transistor output or relay can be used to control the lock.

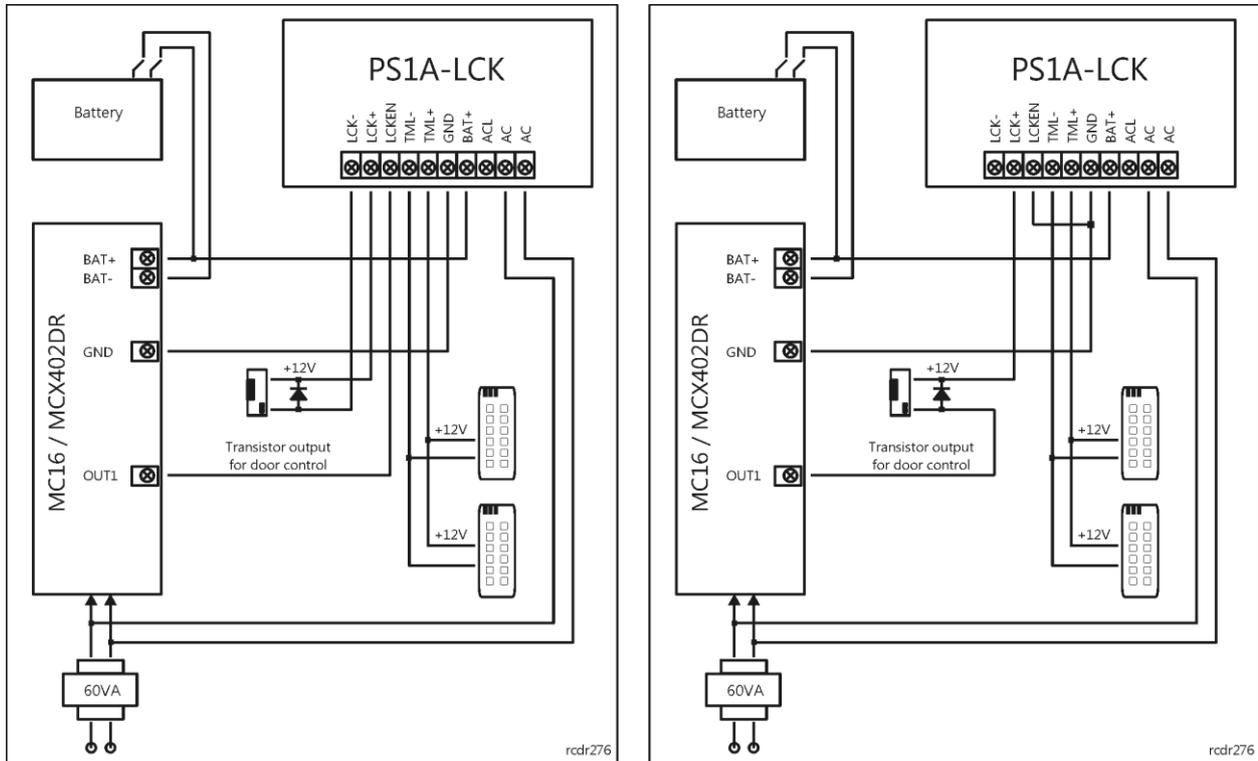


Fig. 4 Typical scenarios of door lock control with PS1A-LCK

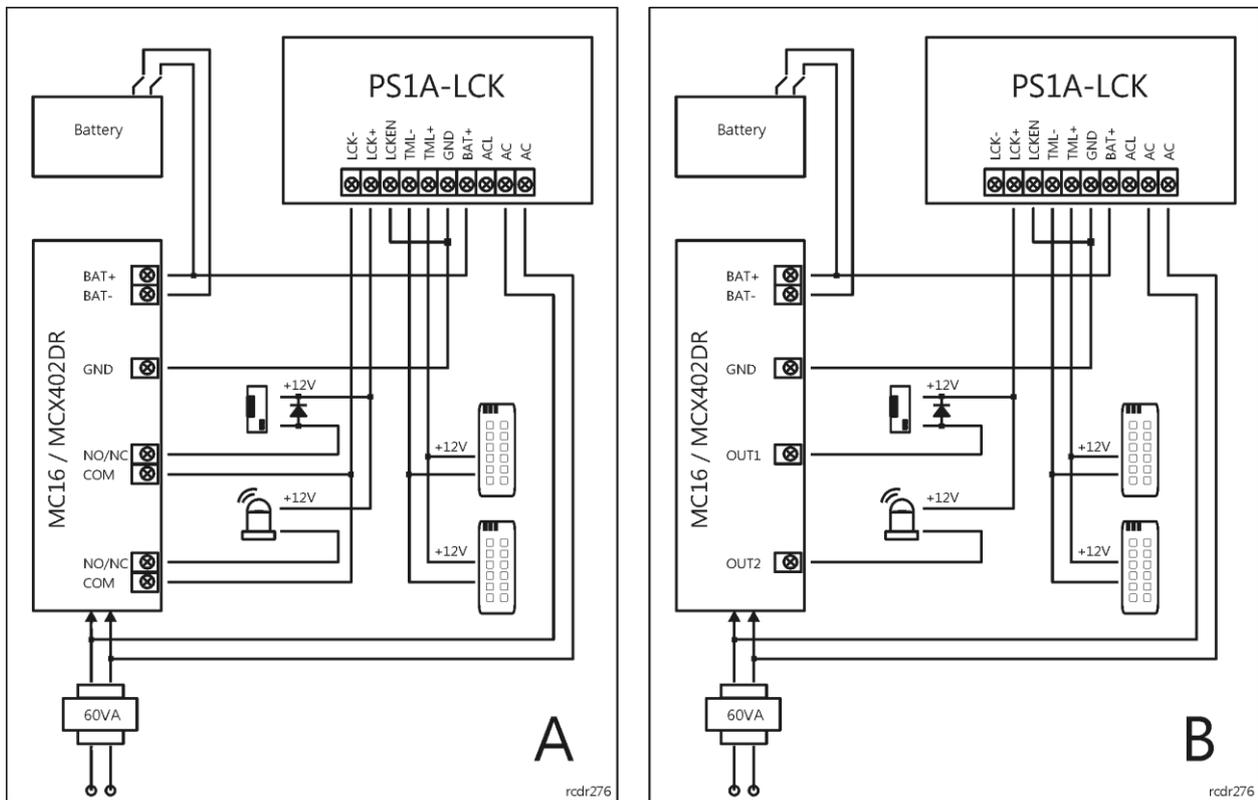


Fig. 5 Door lock and alarm signalling device (siren) control with relays (A) or transistor outputs (B)

## Installation

Enclosure with DIN rail is recommended for installation of PS1A-LCK power module. All electric connections must be done without voltage on wires/terminals and with power supply disconnected. Optionally, DIN rail mounting clips can be removed and the module can be installed on flat surface. It is recommended to install the module in the same enclosure as controller/expander.

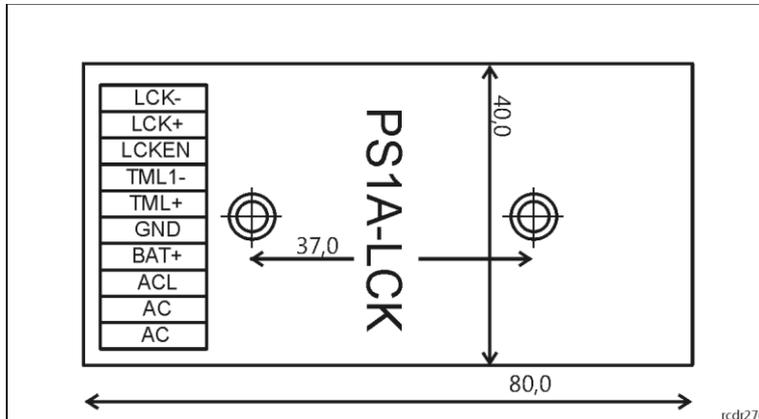


Fig. 6 PS1A-LCK board

| PS1A-LCK terminals |   |
|--------------------|---|
| Terminal           | Function  |
| LCK+               | 13.8VDC/1.0A output power positive pole                         |
| LCK-               | 13.8VDC/1.0A output power negative pole                         |
| LCKEN              | LCK output control input  |
| TML+               | 13.8VDC/0.2A output power positive pole                         |
| TML-               | 13.8VDC/0.2A output power negative pole                         |
| GND                | PS1A-LCK ground internally shorted with LCK- and TML- terminals |
| BAT+               | Battery positive pole   |
| ACL                | 18VAC power failure signalling output                           |
| AC                 | 18VAC power input   |
| AC                 | 18VAC power input   |

## Specification

| Parameter                                | Value  |
|--|--|
| Power supply voltage                     | 18VAC min. 20VA  |
| LCK power output for door lock           | 13.8VDC/1.0A; overload protection  |
| TML power output for readers             | 13.8VDC/0.2; overload protection   |
| ACL output for power shortage signalling | 15VDC/40mA; overload protection  |
| LCKEN input                              | Triggering <1V   |
| Environmental class                      | Class I, indoor general conditions, temperature: +5°C to +40°C, relative humidity: 10 to 95% (no condensation) |
| Dimensions                               | 40 x 80 mm   |
| Weight                                   | 45 g   |

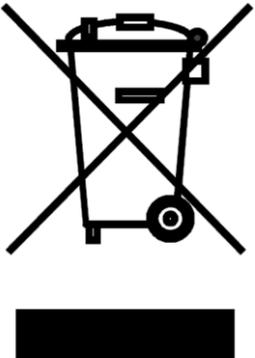
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| Certificates | CE |
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## Ordering information

| Product  | Description                   |
|----------|-------------------------------|
| PS1A-LCK | Door lock power supply module |

## Product history

| Version       | Date    | Description                                 |
|---------------|---------|---|
| PS1A-LCK v1.0 | 10/2017 | The first commercial version of the product |

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|---|--|
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