

**Here are the recommendations for installing the EMRI-3 board:**

- 1. Use a separate power supply for locks and sirens (i.e. one power supply for the EMRI-3 board and a different supply for the peripheral devices).**
- 2. DC inductive loads (magnetic locks, lock strikes, relays, etc.) need to have a reversed-biased diode (1N4001 recommended) installed as close as possible to the lock or relay coil.**
- 3. Use a 24VAC 40VA transformer to power a single EMRI-3 board. 40VA per board is recommended (i.e. a 24VAC 175VA open frame transformer can power up to 4 EMRI-3 boards at full power.)**
- 4. If an EMRI-3 board is not powered through a UPS, a battery backup is recommended.**
- 5. Wiring from the readers to the EMRI-3 board should be done with shielded cable with the drain connected to the ground on the reader side of the cable and not connected on the EMRI-3 board side of the cable.**
- 6. Use recommended wiring diagram(s) as appropriate.**
- 7. The EMRI-3 board should be well grounded. At least one of the leads marked 'GND' on the board (NOT on the incoming power!) should be connected to an earth ground.**
- 8. Batteries used for battery backup must be 12V gel-cell lead-acid types. Any battery from 1.3AH to 7AH is acceptable (7AH capacity is recommended for maximum up-time in a power outage). If the board is powered by DC and you wish to use battery backup, the DC input voltage must be at least 14V. If the board is powered by 12-28V AC, it will trickle charge the battery.**
- 9. The transistor outputs can be used for controlling DC locks directly if the activation current is less than 1A. Transistor outputs can be used to power a relay to control AC or high power locks, sirens, etc.**
- 10. The internally generated power must be used to power the locks if the board is to operate locks in battery backup mode, unless the lock power supply has its own battery backup.**
- 11. All pins labeled GND or G are connected together. This is important to know to avoid possible damage to the EMRI-3 board.**
- 12. Up to 1500ma of 12VDC current is available from the V+ pins of the transistor outputs.**