FN-400X-220 - Power Supply/Charger

Rev. 030807

Overview:

The FN-400X-220 power supply converts a 220VAC/50/60Hz input to a 12VDC or 24VDC output (see specifications).

Specifications:

Input:

- Input 220VAC 50/60Hz, 0.8 amp.
- AC input and DC output LED indicators.

Output:

- 12VDC or 24VDC selectable output.
- 4 amp total supply current at 12VDC or 3 amp total supply current at 24VDC.
- Filtered and electronically regulated outputs.
- Short circuit and thermal overload protection.
- Output fuse rated at 15A/32V.

Battery Backup:

- Built-in charger for sealed lead acid or gel type batteries.
- Automatic switch over to stand-by battery when AC fails.
- Maximum charge current 0.7 amp.

Battery Backup *(cont'd)*:

- Zero voltage drop when switched over to battery backup.

Supervision:

- AC fail supervision (form "C" contacts).
- Low battery and battery presence supervision (form "C" contacts).

Additional Features:

- Power supply, enclosure, cam lock and battery leads.

Enclosures:

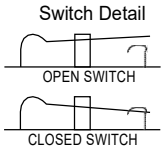
FN-400X-R-220 (Red Enclosure)
FN-400X-C-220 (Charcoal Grey Enclosure)

Enclosure Dimensions *(H x W x D)*:

13.5" x 13" x 3.25" (342.99mm x 330.2mm x 82.55mm)

Power Supply Voltage Output Selections:

Output	Switch Position
12VDC **(Factory Set)**	SW1 - CLOSED *(Fig. 1c)*
24VDC	SW1 - OPEN *(Fig. 1c)*



Stand-by Specifications:

Output	4 hr. of Stand-by & 5 Minutes of Alarm	24 hr. of Stand-by & 5 Minutes of Alarm	60 hr. of Stand-by & 5 Minutes of Alarm
12VDC / 40AH Battery	Stand-by = 4.0 amp Alarm = 4.0 amp	Stand-by = 1.0 amp Alarm = 4.0 amp	Stand-by = 300mA Alarm = 4.0 amp
24VDC / 12AH Battery	--------	Stand-by = 200mA Alarm = 3.0 amp	--------
24VDC / 40AH Battery	Stand-by = 3.0 amp Alarm = 3.0 amp	Stand-by = 1.0 amp Alarm = 3.0 amp	Stand-by = 300mA Alarm = 3.0 amp

Installation Instructions:

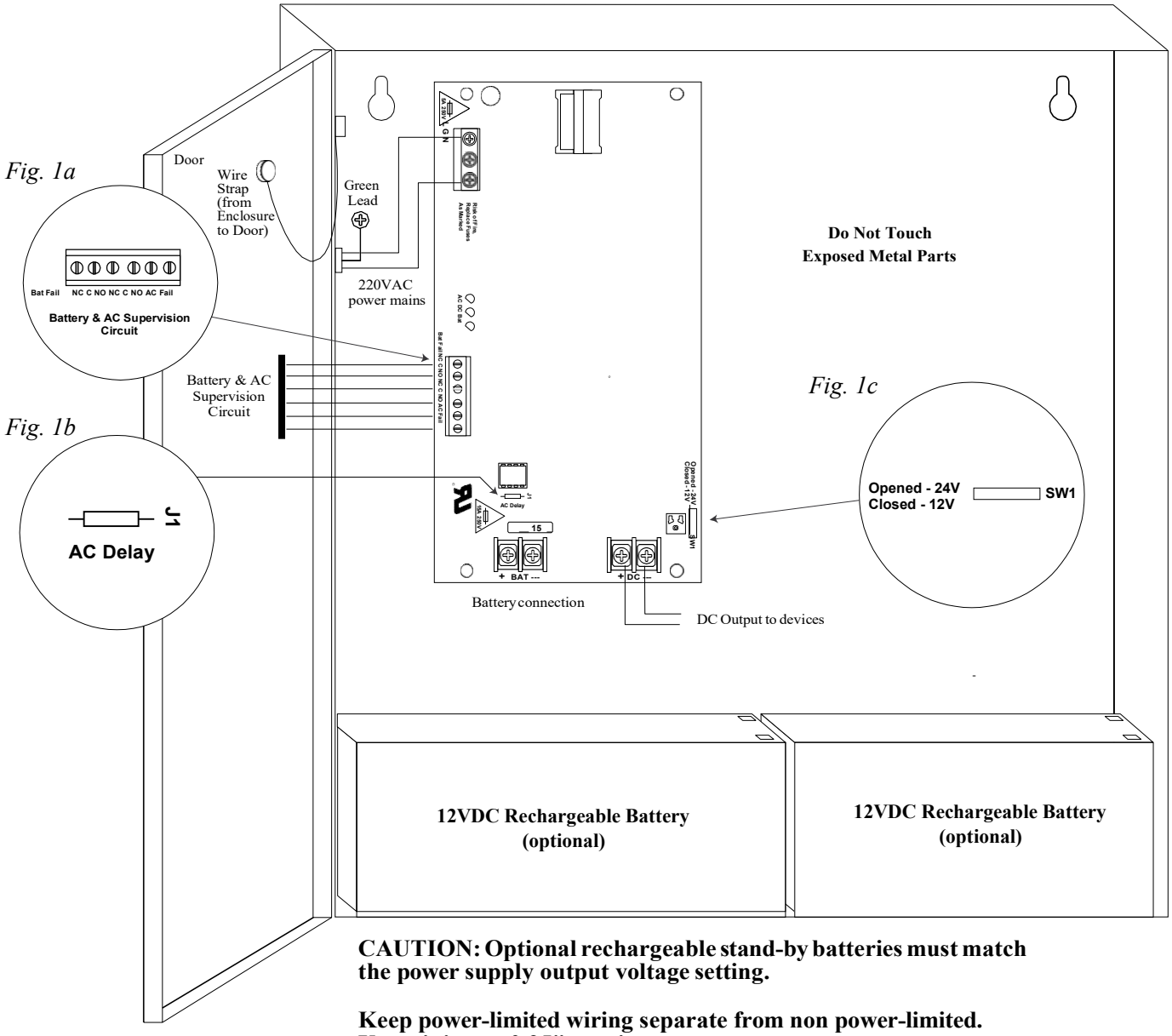
Wiring methods shall be in accordance with the National Electrical Code/NFPA 70/NFPA 72/ANSI, and with all local codes and authorities having jurisdiction. Product is intended for indoor use only.

1. Mount unit in desired location. Mark and predrill holes in the wall to line up with the top two keyholes in the enclosure. Install two upper fasteners and screws in the wall with the screw heads protruding. Place the enclosure's upper keyholes over the two upper screws; level and secure. Mark the position of the lower two holes. Remove the enclosure. Drill the lower holes and install the three fasteners. Place the enclosure's upper keyholes over the two upper screws. Install the two lower screws and make sure to tighten all screws *(Enclosure Dimensions, pg. 4)*. Secure enclosure to earth ground.
2. Set the unit to the desired DC output voltage by setting SW1 *(Fig. 1c, pg. 2)* to the appropriate position *(Power Supply Voltage Output Selections Chart, above)*.
3. Secure enclosure to earth ground. Connect AC power (220VAC 50/60 Hz) to the terminals marked [L, N] *(Fig. 1, pg. 2)*. Use 14 AWG or larger for all power connections (Battery, DC output, AC input). Use 22 AWG to 18 AWG for power-limited circuits (AC Fail/Low Battery reporting).
   Keep power-limited wiring separate from non power-limited wiring (220VAC / 50/60Hz Input, Battery Wires). Minimum 0.25" spacing must be provided.
   CAUTION: Do not touch exposed metal parts. Shut branch circuit power before installing or servicing equipment. There are no user serviceable parts inside. Refer installation and servicing to qualified service personnel.
4. Measure output voltage before connecting devices. This helps avoiding potential damage.
5. Connect devices to output terminals marked [+ DC -] *(Fig. 1)*.

6. For Access Control applications, batteries are optional. When batteries are not used a loss of AC will result in the loss of output voltage. When the use of stand-by batteries is desired, they must be lead acid or gel type. Connect battery to terminals marked [+ BAT –] *(Fig. 1, pg. 2)*. Use two (2) 12VDC batteries connected in series for 24VDC operation (battery leads included).
7. Connect trouble reporting devices to AC Fail & Low battery *(Fig. 1a)* supervisory relay outputs marked [NC, C, NO]. Use 22 AWG to 18 AWG for power-limited circuits (AC Fail / Low Battery reporting).
   Note: When used in fire alarm, burglar alarm or access control applications, "AC Fail" relay should be utilized to visually indicate that AC power is on. To delay report for 6 hours cut "AC Delay" jumper *(Fig. 1b, pg. 2)*.
8. Connect appropriate signaling notification devices to terminals marked [AC FAIL & BAT FAIL] *(Fig. 1a, pg. 2)* supervisory relay outputs.

Fig. 1

CAUTION: De-energize unit prior to servicing. For continued protection against risk of electric shock and fire hazard replace fuse with the same type and rating.
Do not expose to rain or moisture.



CAUTION: Optional rechargeable stand-by batteries must match the power supply output voltage setting.

Keep power-limited wiring separate from non power-limited. Use minimum 0.25" spacing.

Maintenance:

Unit should be tested at least once a year for the proper operation as follows:
Output Voltage Test: Under normal load conditions, the DC output voltage should be checked for proper voltage level *(Power Supply Voltage Output Selection Chart).*
Battery Test: Under normal load conditions check that the battery is fully charged, check specified voltage both at battery terminal and at the board terminals marked [- BAT +] to ensure there is no break in the battery connection wires.
Note: Maximum charging current under discharges is 0.7 amp.
Note: Expected battery life is 5 years; however, it is recommended changing batteries in 4 years or less if needed.

LED Diagnostics:

Red (DC)	Green (AC)	Red (BAT)	Status
ON	ON	ON	Normal operating condition.
ON	OFF	ON	Loss of AC. Stand-by battery supplying power.
OFF	ON	OFF	No DC output. Battery Trouble
OFF	OFF	OFF	Loss of AC. Discharged or no stand-by battery. No DC output.
ON	ON	OFF	Battery missing / Low battery.

Terminal Identification:

Terminal Legend	Function/Description
L, G, N	Connect 220VAC 50/60 Hz to these terminals: L to hot, N to Neutral. Do not use the [G] terminal.
+ DC –	12VDC @ 4 amp or 24VDC @ 3 amp continuous power-limited output.
AC Fail NC, C, NO	Indicates loss of AC power, e.g. connect to audible device or alarm panel. Relay normally energized when AC power is present. Contact rating 1 amp @ 28VDC. AC or brownout fail is reported within 1 minute of event. To delay reporting of up to 6 hrs., cut “AC delay” jumper and reset power to the unit.
Bat Fail NC, C, NO	Indicates low battery condition, e.g. connect to alarm panel. Relay normally energized when DC power is present. Contact rating 1 amp @ 28VDC.
+ BAT –	Stand-by battery connections. Maximum charge current 0.7 amp.

Enclosure Dimensions *(H x W x D):*

13.5” x 13” x 3.25” (342.99mm x 330.2mm x 82.55mm) * The door is included