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# 5950

## *Power Supply / Charger*

### Description

The 5950 series of power supply/charger supplies a total of 6 amp nominal continuous supply current @ 12/24VDC outputs. It is installed in a large sheet steel enclosure capable of accommodating one or two 12AH lead acid rechargeable batteries. The above Power supplies are not intended to power Fire Notification Appliances(Horns,Strobes & Bells). The power supply model: 5950 is evaluated for: UL294,CAN/ULC-60839-11-1,CAN/ULC-S533.

### General Specifications:

1. Input = 120-240VAC 50-60Hz, 2.5 Amp maximum, fuse at 6 Amp
2. Output 6 Amps continuous supply current PF 0.6 at nominal 12/24 VDC.
3. Built-in dedicated charger for sealed lead acid or gel cell type batteries.
4. Maximum battery charging current 1.5Amps (not part of the max output current rating).
5. Automatic switch over to stand-by battery upon AC failure or below 72.5VAC.
6. Battery presence detection within 10 seconds.
7. Temperature Compensated Battery Charger.(EN54-4 only,not UL evaluated)
8. Battery Charger Monitor.
9. Battery load test every 48hr.
10. Battery test result indication.
11. Battery Reversal protection.
12. Low Battery indication at 11.40/22.80 Volts.
13. Low Battery disconnect at 10/20.2 Volts.
14. Low Battery, Battery disconnect, No Battery presence, battery charger trouble reporting. (See FAULT TABLE)
15. AC input indication by Green LED. (LED on when AC is present).
16. AC Fault CMOS Relay contact for AC failure
17. LEDs display on enclosure door (Green, Yellow, Blue).
18. DC output indication by Blue LED, on board and enclosure.
19. Overload and short circuit protection on DC output.
20. Battery charging leads included.
21 Board Dimension: 195mm x 110mm
22. Enclosure Dimension: 338 x 448 x 110mm

## ***Technical Specification:***

| | |
|---|---|
| Output Voltage<br>Output Amperage<br>Ripple | 12/24 Vdc Regulated. Class E, unsupervised<br>6 Amp<br>50 mVp-p max |
| Charging Current<br><br>Battery Charging Voltage | 1.5A Max, and not part of<br>max output rating<br>13.8V/27.6V Nominal |
| Operating Temperature | 0deg.C to 49deg.C |

## ***Performance Ratings***

UL 294 Performance Levels:

| Model | Product Type | Line Security | Destructive Attack | Endurance | Standby Power |
|---|---|---|---|---|---|
| 5950 | Power Supply | I | I | IV | III (when used with 12Ah battery "output is limited to maximum 4 Amps" |

CAN/ULC-60839-11-1 Performance Grades:

| Model | Product Type | Grade | Grade Achievement |
|---|---|---|---|
| 5950 | Power Supply | 3 (when used with 12Ah battery) "output is limited to maximum 4 Amps" | Connect AC & Battery Trouble Outputs to a Grade 3 Control Unit, to achieve Grade 3. |

## ***LED Indications***

1. **Green LED - AC indicator**
    a. On when AC present.
    b. The AC fail Relay activates (opens) within 60 seconds after AC failure.
2. **Blue LED – DC Power indicator**
    a. Powered directly from the power supply DC output and indicates output is present.
3. **Yellow LED – Battery Charging and Fault indicator**
    a. The Yellow LED flashing indicates the battery is charging and is also used to indicate various Fault conditions. See the Fault Condition and Indication Table for details.
4. **Red LED –Battery/Charger test Indicator for Pass or Failure.**
    a. The Red LED indicates a Battery test Failure or a Battery charger failure in conjunction with the Yellow LED to indicate other Fault Conditions. See the Fault Conditions and Indication Table for details.

## ***Relay Outputs:***

| Output | Output Type | Description |
|---|---|---|
| AC FAIL | NORMALLY CLOSED<br>OPEN = FAULT | TRIPS WITHIN 60 SEC. AFTER AC FAILS<br>CMOS RELAY RATING: 30VDC 60mA 16 OHMS |
| BATTERY FAIL | NORMALLY CLOSED<br>OPEN = FAULT | BATTERY PROBLEM<br>CMOS RELAY RATING: 30VDC 60mA 16 OHMS |

## ***Fault Condition & Indications:***

| FAULT | LED-G | LED-Y | LED-R | BATT RELAY | AC RELAY | LED-B |
|---|---|---|---|---|---|---|
| BATTERY REVERSED OR NOT CONNECTED | | ON | | OPEN | | |
| BATTERY LOW | | ON | | OPEN | | |
| BATTERY DISCONNECTED | | ON | | OPEN | | |
| BATTERY TEST FAIL | | ON | 5 RAPID FLASHES<br>STOP 1 SECOND<br>REPEAT UNTIL<br>BATTERY IS<br>REPLACED | OPEN | | |
| BATTERY TEST OK | | OFF | 3 FLASHES<br>1 SEC ON/OFF | | | |
| CHARGER FAIL | | | 10 RAPID FLASHES<br>2 SECONDS STOP<br>AND REPEAT UNTIL OK | OPEN | | |
| AC FAIL | OFF | | | | OPEN<br>WITHIN<br>60 SEC | |
| DC FAIL/OVERLOAD | | | | | | OFF |

## *Battery Operating Values*

| Parameter | Output | Description |
|---|---|---|
| Battery Disconnect voltage | 10/20.2V | When AC is off, the battery is disconnected when the battery voltage drops below this value.<br><br>The battery is only reconnected when the AC is restored. |
| Minimum battery voltage to pass battery test | 11.50V<br>23.0V | Red Led Flash 1 sec ON/OFF during 2 minutes testing. Battery Fail 5 rapid flashes and 1 sec pause. Replace Battery |
| Low Battery Voltage Warning | 11.40V<br>22.80V | If the output voltage drops below this value a voltage low warning is generated. See Fault Conditions and Indication table. |

# Installation Instructions

***This power supply should be installed in compliance with National Electrical Code, NFPA70 as well NFPA72 National Fire Alarm Code, CSA C22.1, Safety Standard for Electrical Installations, Canadian Electrical Code, Part I, CAN/ULC-S524, and all applicable Local Codes. Installation to be performed by suitably qualified personnel. The power supply shall not be installed in the fail secure mode unless permitted by the local authority having jurisdiction, and shall not interfere with the operation of Listed panic hardware.***

1 Mount the power supply in the desired location using the 4 mounting holes.
**NOTE: For use in Indoor Protected Area with Controlled Environment only.**
***Do not Install Power Supply on Exterior Doors.***

2 With the Mains power disconnected, connect the leads to the AC Input Terminal Block, respecting the wiring phase and polarity :
**Ground/Earth**=Green/Yellow, **Neutral** = Blue (White), **Live** =Black (Brown). This equipment must be connected to the 120-240 Volt Mains via a readily dedicated accessible external disconnect device with maximum 15 Amp branch protection. Select the operating output DC voltage 12/24 with the jumper SW1. SW1 ON=12VDC, SW1 OFF=24VDC.

3 ***Do not connect the battery at this time.***

4 Switch ON the AC. Green LED will come ON indicating AC is present and the AC Fault Relay will be energized “ON” (closed). When the AC is off the AC Fault Relay will drop open within 60 seconds (Factory set) activating the CMOS output contact “AC Fail”. Connect this output to relevant monitoring devices.

5 Verify the DC output voltage is correct = 13.20VDC or 26.40VDC max. Blue DC LED will be ON to indicate DC output is OK.

6 Yellow LED will be on and the BAT FAULT CMOS relay open indicating the Battery is not present or connected with reversed polarity.

7 Connect the Battery or Batteries respecting the polarity. Battery shall not be connected if AC is not present first.

8 If the battery is connected with the correct polarities the Yellow LED will turn OFF (See Fault Conditions and Indications Table). Within one minute the Battery Fault Relay will restore and the Yellow LED will flash once every 2 seconds.

9 If the battery is connected reverse polarity, the Yellow LED will be ON. (See the Table Fault). The CMOS relay will open indicating Battery Fault. Connect this output to relevant monitoring devices.

10 Connect the devices to be powered to the output terminals marked “Vo- Vo+”.

11 If Tamper Switch is required use part # TS1 or TS2, see Fig 3.

12 Use 2K2 EOLR (end of line resistor) Part #500347

13 Connect the fault relays to FACP or ACP for trouble indication.

14 Secure the enclosure with the Key Lock if provided.

# DC8

## *DESCRIPTION:*

The DC8 is a distribution controller to be used with card Access Control, Egress Doors.
It provides 12/24Vdc through 8 outputs rated 2.0A(max. 6A total) each with electronic over-current protection set at 2.5A. The 8 outputs will switch ON or OFF security devices such as Magnetic Locks, Door Strikes, etc. It is connected to FACP or ACP via a NO or NC configurable contact input using 2K2 EOLR(Part #500347). Also it has input for Reversed Polarity triggering.
The DC8 has 2 relay outputs, one Dry Contact “Form C” to indicate output status, and one Dry Contact “Form C” to indicate DC failure on any of the 8 outputs, due to overcurrent or short.

## *Installation:*

1. **Output Connections**

   There are 8 selectable outputs suitable for FAIL Safe config and Fail Secure config.

   a) For Fail Safe Operation connect the positive (+) lead of the device to normally Closed (NC) and the negative lead to COM ”Neg”, connector CN1 to CN8. DC power is present in normal condition and will switch OFF when FACP/ACP or Reverse Reverse Polarity input is triggered. Fail Safe operation devices such as, Magnetic Lock should be connected to this output as show on Fig. 2.

   b) For Fail Secure operation connect device positive(+) lead to Normally Open (NO) DC power is not present in normal condition and will switch ON when the FACP or ACP or Reverse Polarity input is triggered. Fail Secure operation devices such as Door Strikes should be connected to this output.

2. **Fire Alarm and Access Control Interface**

   Normally Open (NO), Normally Closed (NC) input or Polarity Reverse (Rev. Volt.) input are available to trigger the DC8 operation. Connect the positive(+) and Negative(-) from the FACP or ACP to the REV. VOLT terminals observing the polarity, (polarity is referenced in alarm condition) or connect the NO or NC from the FACP or ACP output to the “Fire Trigger “terminals. Install #500347 2k2 (EOLR) resistor at the FACP or ACP as show in Fig. 1. Note: No ELOR on Rev. Pol.

3. **Engineering RESET/REX Input**

   This option is avaliable when the Jumper ***JL*** is removed(JL OFF). This will cause the DC8 to latch opon receiving Input from the FACP or ACP with this option in place and when the FIRE/ACP TRIGGER resets, DC8 will only reset by activating the RESET/REX input.

   ***JL ON*** will cause the unit to follow the FIRE/ACP TIGGER. Install #500347 2.2K (EOLR) resistor at the Key Switch or Push Button to perform this operation.

**4. Relay Output**

a) DC Fail: When one or more of the 8 outputs fail due to over current or short circuit condition, the DC fail Relay will open. Connect this output to monitoring device. (28Vdc, 300mA)

b) Status Output: When the **FACP or ACP** input activates this will cause the dry contact Relay Form "C" to change state (de-energize). Connect this output to monitoring device. (28Vdc, 300mA)

**5. Cascade Connection**

Two(2) or more DC8 units can be connected together as follow: Connect the Status Output relay **C** and **NC** terminals from the 1st unit to the **REMOTE RESET/REX INPUT** of the 2nd unit(not polarity sensitive) and remove the **JR** of the 1st unit. Install EOLR(2K2) on 2nd unit Fire Trigger terminal. If 3rd unit is connected, the JR of the 2nd unit must be removed, and so on for any additional unit. Ref to Fig.1.

**NOTE:** *If Latch Mode is used, only **JL** jumper on the first unit must be removed. Engineering Reset will be performed from the 1st unit.*

**6. DC8 LED INDICATION**

L1 to L8 are the Output RED Led, when **ON** indicates DC is present (enable), and the Output relays are energized.
When **OFF**, Relay is de-energized and the output is **OFF**, NO DC present (disable).
LD1 to LD4 Yellow LED indication denotes overload or short on the output. The outputs are **Current limited set @ 2.5Amp, rated at max 2.0Amp.**
L9 Green Led is normally OFF. It will switch on upon receiving an alarm from the FACP/ACP. This LED will stay ON following the status of the FACP/ACP input. If JL was removed this LED will stay ON until the manual RESET circuit resets.

**7. Access Control Panel (ACP)Trigger input.**

There are 8 inputs, **CN10** through **CN13** each with four terminals, two **IN** and two **GND**. Activation of the inputs is achieved by shorting **IN** and **GND** terminals of the respective inputs

**8. FACP/ACP Input Programming**

*Selectable Output to be Irrelevant on Fire Activation*
To have the output relay activation follow the FACP or ACP input place the DIP switch corresponding to desired relay to the "OFF" position. In the "ON position, the correspondent output relay will not be effected by the FACP, ACP or Rev. Pol input.

**9. Isolated Output Configuration**

If any of the outputs requires to be Isolated DRY CONTACT, remove the respective Jumper J1 through J8 to achieve this configuration, Form "C",(C NO NC) available to connectors CN1 through CN4. This connection is now isolated from the internal power source.
Relay Rating: 28Vdc, 2A. PF 0.6

# 5950

REGULATED POWER SUPPLY CHARGER
UL/ULC LISTED AS FOLLOWS: UL294 ,CAN/ULC-60839-11-1,CAN/ULC-S533 FOR ACCESS CONTROL SYSTEM
UL603, ULC-S318 FOR BURGLARY ALARM SYSTEM
NOTE: PLEASE REFER TO 5950 INSTALLATION MANUAL,

DynaLock™ For Life™

Date of MFG

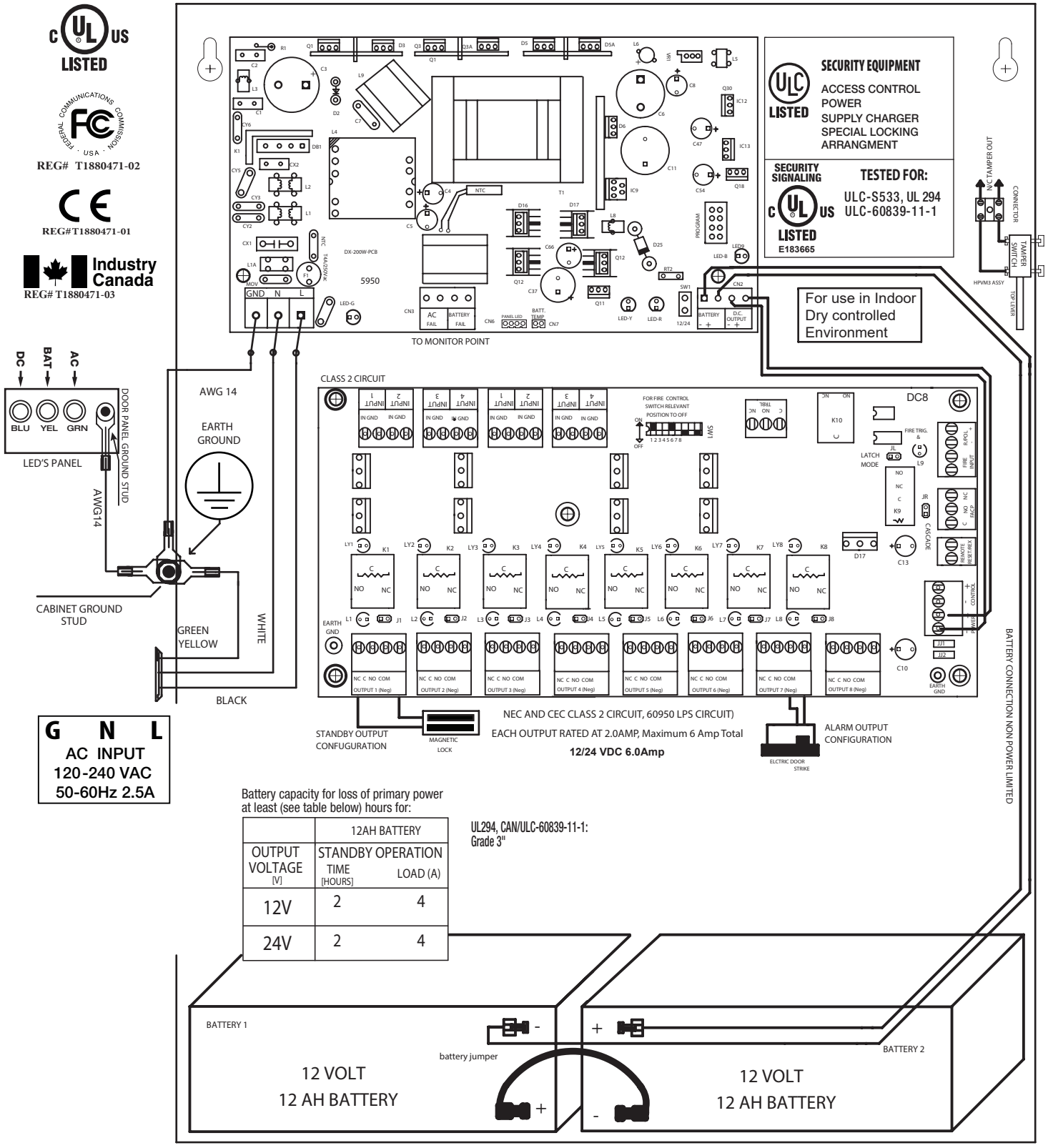
PART NO:M5950 VER:01

c UL us LISTED

REG# T1880471-02

REG#T1880471-01

Industry Canada
REG# T1880471-03




Battery capacity for loss of primary power at least (see table below) hours for:

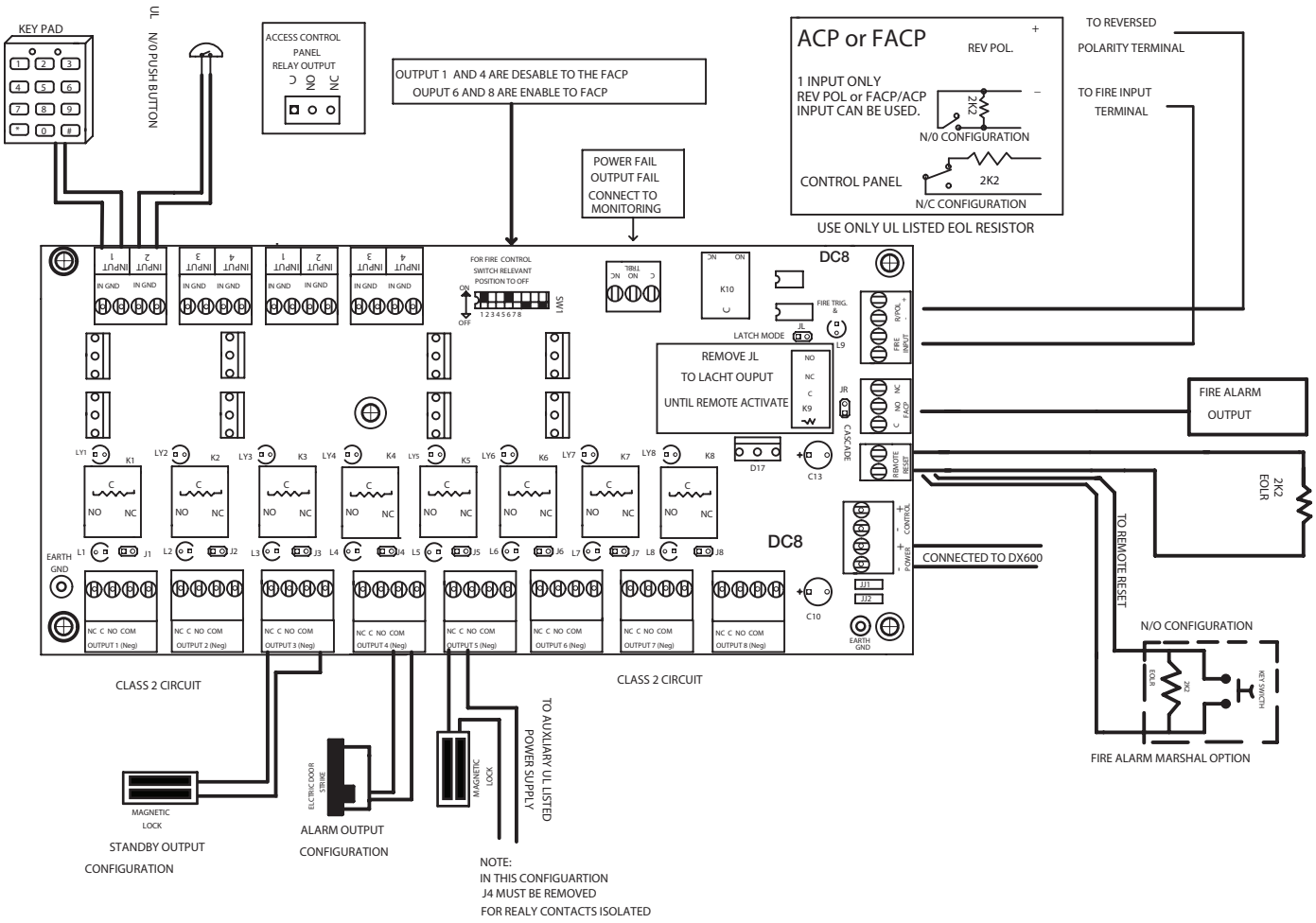
| | 12AH BATTERY | |
|---|---|---|
| OUTPUT VOLTAGE [V] | STANDBY OPERATION TIME [HOURS] | LOAD (A) |
| 12V | 2 | 4 |
| 24V | 2 | 4 |

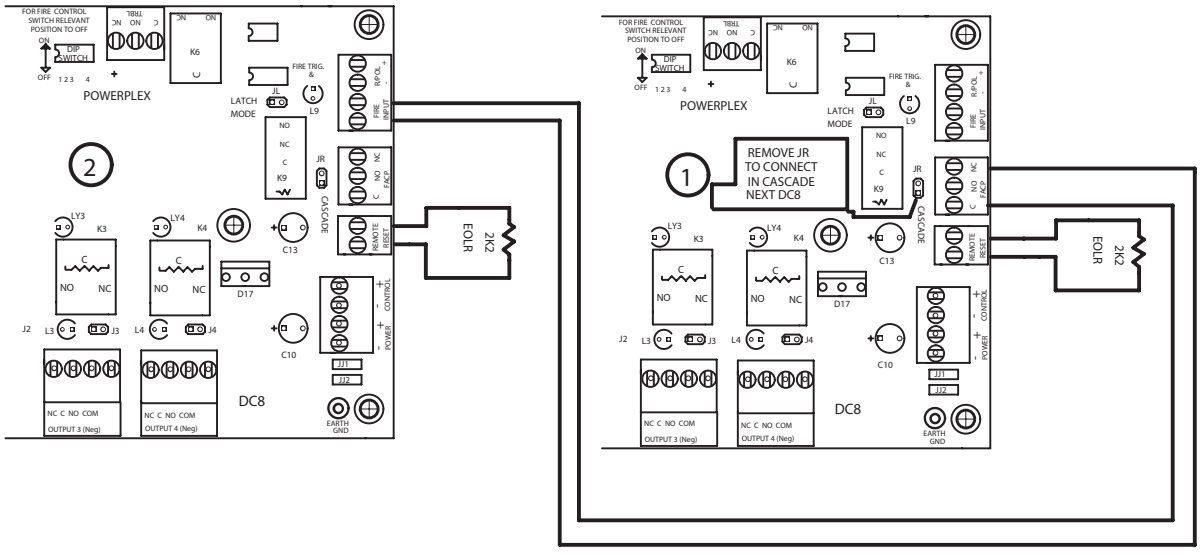
UL294, CAN/ULC-60839-11-1:
Grade 3"

KEEP POWER LIMITED WIRING FROM NON POWER LIMITED WIRING AT LEAST 0.25" INCH APART

# TYPICAL SUGGESTED APPLICATION WIRING DIAGRAM

2 OR MORE DC8 CONNECTED IN CASCADE

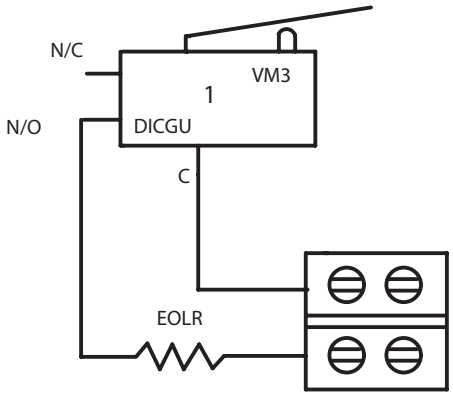



KEEP POWER LIMITED WIRING AT .25" MINIMUM SPACING

FIG 2

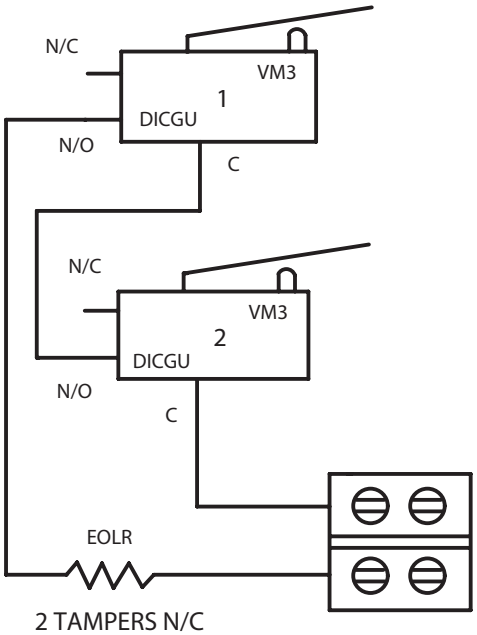
# Optional Tamper Switch Connection




1 TAMPER N/C

**( TS1 )**

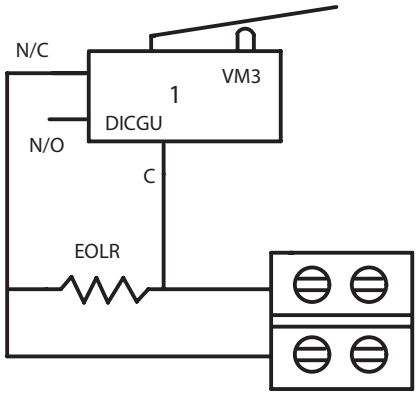
CONNECT TO MONITORING POINT




2 TAMPERS N/C

**( TS2 )**

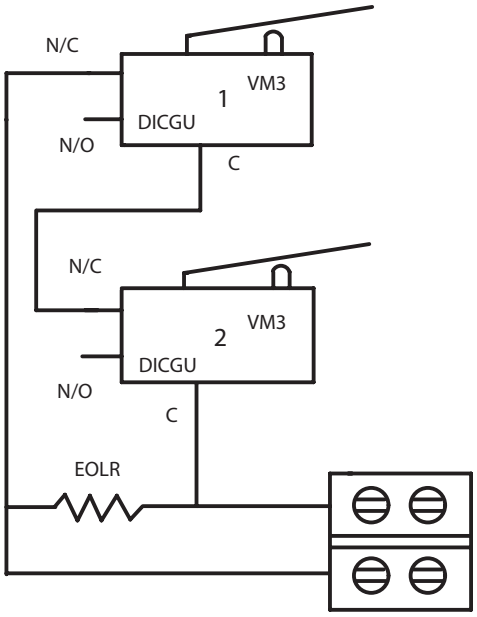
CONNECT TO MONITORING POINT




1 TAMPER N/O

**( TS1 )**

CONNECT TO MONITORING POINT




2 TAMPERS N/O

**( TS2 )**

CONNECT TO MONITORING POINT

Fig. 3