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MULTI-ACCESS-UL-PSU6
(UL294 Access Control V Enclosure with UL294-12V 8A Module & FOM8)
UL294-V Enclosure: P/N: CAS961002-1
12V 8A UL294 MODULE: P/N: MOD130104
UL294-FOM8: P/N: PCA122102

FEATURES

High efficiency cost effective UL294-listed power supply/charger designed for use in Access Control systems enclosed in spacious cabinet fitted with two locks and a tamper switch. Regulated 13.8V dc output with battery stand-by supplying rated current to 8 independently PTC fused outputs (resettable fuses), individually configured for continuous or switched output current via a fire relay switch with flexible trigger options, capable of operating with any external control signal. Class 2 or 8Amax Non-Power-Limited outputs available. Additional 0.5A for charging a 12V stand-by battery. PSU Universal mains input offers geographical flexibility. A dry (volt free) contact is provided for a loss of mains signalling.

- AC-DC High power module
- Continuous full rated current to load at 12V 8A
- Universal mains input voltage 100-240Vac
- Full electronic short circuit and overload protection
- Individual battery and output fuse protection
- High efficiency electronics for reduced running costs and operating temperatures
- Installer safe design with all high voltage electronics fully shrouded
- Mains transient protection circuit
- Dry contact indicating loss of AC mains (MAINS FAIL). Required to be monitored by UL listed control unit in UL294 application.
- Green Mains present LED
- Yellow Fault LED
- Non-Power-Limited output available
- Versatile fire relay functionality
- 8-way Class 2 fused outputs with health LED's
- Independent ancillary relay (12Vdc or 24Vdc controlled)
- Enclosure fitted with a tamper switch and locks
- UL294 Listed for Access Control Systems Destructive Attack – I; Endurance – IV; Line Security – I; Stand-by Power-II

SPECIFICATION

Input Specification

Rated Voltage	110-240Vac
Frequency	50-60Hz
Max Current	< 2.0A @ Full load
Mains Input Fuse	T3.15A (20mm IEC 250Vac HBC)

Output Specification

Voltage	12.8 – 14.0V dc (13.8V dc nominal) on mains power 10.5 – 12.40V dc on battery standby
Total load current	8A maximum
Ripple	< 150 mV pk-pk max
Power Module Output Fuses	F2 PSU Protection: F4.0A (20mm IEC Glass) F3: Output Fuse: F8.0A (20mm IEC Glass)
FOM Fuse	8 off 1.1A PTC Fused Outputs *Class 2* (resettable)
Overload	(AC mains powered only)

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Standby Battery

Battery Type	12V Valve Regulated Lead Acid
Battery Capacity	Designed for up to 17Ah or 18Ah VRLA
Battery Charging Fuse protection	F4.0A (20mm IEC Glass)

Product Reference	**External Dimensions** h x w x d (mm)	**Battery Capacity**	**Weight (kg) Battery Excluded**
MULTI-ACCESS-UL-PSU6	478 x 515 x 146	1 x NP18 (18Ah)	10.5

Environmental

Temperature	-10 to +49°C (operating) 75% RH non-condensing -20 to +80°C (storage)

SIGNALLING OUTPUT

Rating:	0.50A @ 30Vdc, NO or NC, volt free.
MAINS Fail:	COM / N/O = OPEN in the event of loss of AC mains COM / N/C = CLOSED in the event of loss of AC mains

LOCAL INDICATORS

12V 8A UL294 MODULE (Non-Power-Limited)

MAINS LED (Green)	Mains present
FAULT LED (Yellow)	Fault present: Output fuse fail or Protection fuse fail (requires load and battery to be connected); battery shorted, reversed voltage.

UL294-FOM8 (With Class 2 8-Way Fire Relay)

INPUT LED (Red)	Indicates input power applied to FOM8 Board when ON
OUTPUT LEDS - 8off (Red)	Indicates output voltages (1 to 8) present when ON
RELAY LED (Orange)	Indicates Fire Relay energised when ON

CONNECTIONS

12V 8A UL294 MODULE (Non-Power-Limited)

MAINS INPUT	LIVE and NEUTRAL	"L N"
MAINS FAIL	Relay output	"COM, N/O, N/C" (Form "C" contacts) Normal = AC Failed
UNCOMMITTED RELAY	COIL Connects CONTACTS	"0V 12V 24V" "COM, N/O, N/C" (Form "C" contacts)
G1208N 12Vdc OUTPUT	O/P	"+ + O/P - -" Note: Observe Polarity Non-Power-Limited: Rated 8Amax
BATTERY CONNECTION	BATT	"+ BATT -" Note: Observe Polarity

UL294-FOM8 (With Class 2 8-Way Fire Relay)

INPUT (PRE-WIRED)	INPUT	"+ -"
RELAY TRIGGER	TRIG	"+ -" Trigger Configured by Jumpers as +VE, NC or NO
OUTPUTS (8off)	+O/P-	" + 1 -, + 2 -, + 3-, + 4-, + 5 -, + 6 -, + 7 -, + 8 - " (All Class 2) O/P action configured by Jumpers ON, OFF or RELAY Controlled

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. Use a minimum spacing of 0.25" between power limited and non-power limited wiring. This unit is only suitable for installation as permanently connected equipment. This PSU is *NOT SUITABLE* for external installation. This unit must be fed from a mains power source having a separate (approved) disconnect device and fitted with a fuse or other over-current protection device rated at 15A maximum.
Ensure that the disconnect device used has appropriate earth fault protection to the applicable standard.
EQUIPMENT MUST BE EARTHED. Before installation, ensure that external disconnect device is *OFF*.

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Mounting

1) Mount enclosure securely in the correct orientation allowing minimum clearance – see *Fig. 1*
2) Route mains and low voltage output cables via different knockouts and/or cable entry holes.
3) Use bushes and cable glands rated to UL94 HB minimum.

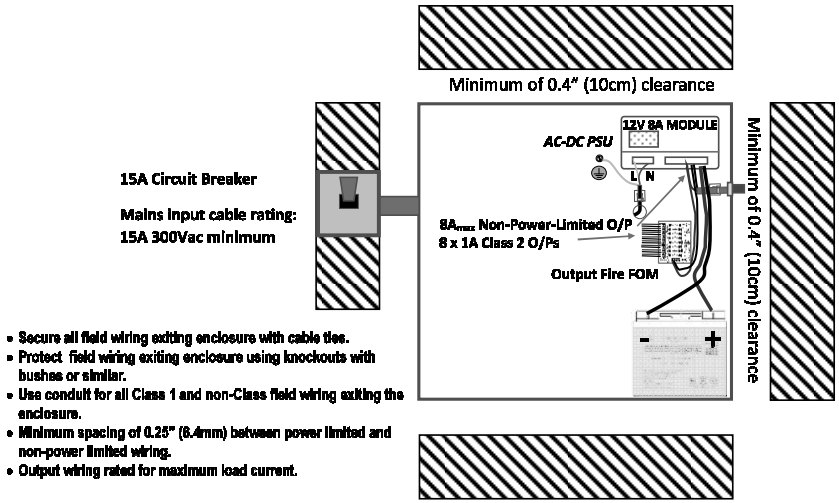


Fig. 1 Mounting of Power Supply

Mains Power Up

4) Attach correctly rated mains cable (minimum 2.5mm^2 [15A], 300/500Vac). Fasten with cable ties.
5) Apply mains power. Check for 13.8Vdc on load outputs and Green Mains LED is ON.
6) Disconnect mains power.

Load Output

7) Attach correctly rated load cables and fasten using cable ties. Note polarity.
8) Apply mains power. Check Green Mains LED is ON. Verify load is operating correctly.
9) Disconnect mains power.

Signalling

10) Connect MAINS Fail output to appropriate input of Access Control or Indicating Equipment.
    Note: COM / N/O = Open in the event of loss of AC mains, COM / N/C = CLOSED in the event of loss of AC mains

Standby Battery

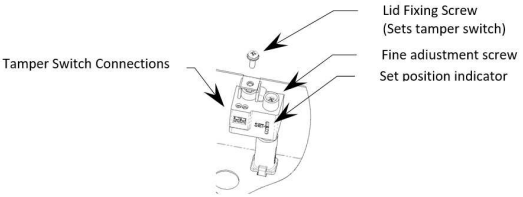
11) Attach supplied battery cables to terminal block and attach battery using supplied adapters if required.
    Note: Ensure correct polarity of battery connections: +ve use Red lead, -ve use Black lead.

Fire Relay Configuration

12) See "OUTPUT FIRE RELAY OPERATION" - Typical Application below.

Tamper

13) Connect tamper switch to appropriate inputs of control and indicating equipment.



14) Close the lid and fasten with screw supplied.
15) With the unit mounted on the wall check that the rear tamper is not in a position that will affect its operation, for example over a mortar course, recess or raised area on the wall.

Check that the tamper switch is:

- CLOSED when the lid/cover is closed, and the retaining screws are fitted.
- OPEN when the retaining screws are removed, and the lid/cover is open.

Use the fine adjustment screw if necessary, to align indicator with set point.

16) Close the lid/cover and fasten. Re-check tamper circuit is closed at the control panel.

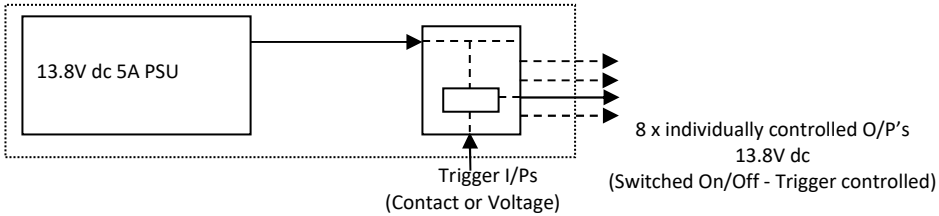
OPERATING INSTRUCTIONS

In the event of loss of AC mains, the MAINS Fail relay shall indicate by: opening or closing according to set-up.

If the output of the PSU fails, the cause of the failure should be investigated e.g. short circuit load, connection of a deeply discharged battery. The fault should be rectified before restoring power to the PSU. If any of the fuses require replacing, ensure the correct fuse rating and type is used.

OUTPUT FIRE RELAY OPERATION

The power module Fire Relay functionality gives the installer the choice of continuous or switched external control of the PTC fused Class 2 outputs, by the means of either a Volt Free contact (Normal Open or Normal Closed) or a low voltage signal (12V dc/24V dc), as shown in the block diagram below:



Typical Application:

If power is required to be removed from certain parts of the system in the event of a Fire Alarm activation, i.e. door lock power removed whilst ACU remains powered.

FIRE RELAY JUMPERS CONFIGURATIONS

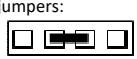
TRIG:	+	Trigger I/P from control device (+VE or Contact)
	-	Trigger I/P from control device (0V or Contact)
		Note: Wiring to "TRIG" should be less than 98.5ft (30m) in length from controller

Note: Fail safe mode shall be employed in UL294 applications.

In case of fail secure configuration, panic hardware should be employed to allow exit from secured location.

Contact local authorities having jurisdiction.

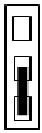
The device has 3 modes of trigger (TRIG) operation set by the on-board jumpers:

Contact Mode (NO) - Jumper across: 2 & 3		**FAIL SAFE**
Contact Mode (NC) - Jumpers across: 1 & 2 and 3 & 4		**FAIL SECURE**
Voltage Mode - Jumper across 3 & 4		**FAIL SAVE**

Each channel can then be set using the jumpers next to the relevant fuse:

Channel Always ON (+V)

Channel Isolated on TRIGGER (Relay)



Note: Removing the jumper completely, will disable the channel (no output).
Table 1 below defines the output state for the Normal Closed and "Normal Open Contact Modes with Trigger (TRIG) selection

Table 1	Trigger Select	Jumper(s)	Trigger + & -	Output	Orange LED
Contact Mode Normal Closed	**NO**	2 & 3	Open	No output	OFF
			Closed	12V dc	ON
Contact Mode Normal Open	**NC**	1 & 2 3 & 4	Open	12V dc	ON
			Closed	No output	OFF
Voltage Mode	**+VE***	3 & 4	+V Applied**	12V dc	ON
			Removed	No output	OFF

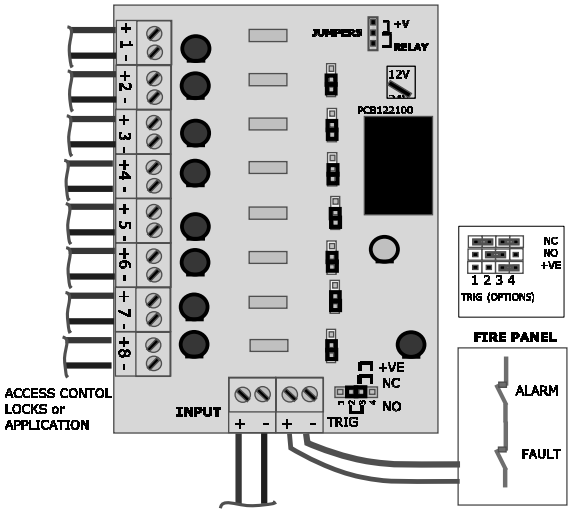
*Note: Trigger Input terminals (TRIG) + and - are polarity conscious when used in Voltage Mode only.
** In Voltage Mode the "+V Applied" can be used with voltages between 10.0V to 28.4V

Typical Fire Relay Fail-Safe Setup for a Fire Panel Alarm:

In this example the power to the access control lock is FAIL-SAFE when the Fire Panel alarms or O/P power is removed.

- O/P configured to be "Relay(switched O/P)".
- Normal Closed Contact Mode - "Trigger Select" TRIG : configured as N0 2 &3 Linked

Output Select Jumpers:



Note: Listed panic hardware may be required for fail secure configuration. Consult local authority having jurisdiction.

MAINTENANCE

This unit is intended for use by Service Personnel only. There are NO USER SERVICEABLE parts inside.
There is no regular maintenance required of the PSU other than periodic testing, and replacement of the standby battery. Reference should be made to the battery manufacturer's documentation to determine typical/expected battery life with a view to periodic replacement of the battery.

COMPLIANCE

This power supply unit meets the essential requirements of the following European Directives:

CPR:	305/2011/EU
Low Voltage	2014/35/EU
EMC	2014/30/EU
WEEE	2012/19/EU
RoHs2	2011/65/EU

CE

DISPOSAL OF PRODUCT AT END OF LIFE

This product falls within the scope of EU Directives 2012/19/EU Waste Electrical and Electronic Equipment (WEEE) and 2013/56/EU (Battery). At the end of life, the product must be separated from the domestic waste stream and disposed via an appropriate approved WEEE disposal route in accordance with all national and local regulations.
Before disposal of the product, any batteries must be removed, and disposed separately via an appropriate approved battery disposal route in accordance with all national and local regulations. Package used batteries safely for onward transport to your supplier, collection point or disposal facility.

Caution: Risk of fire or explosion
if bare battery wires are allowed to touch.

See Specification for battery type information. The battery is marked with the crossed out wheelie bin symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg).

For more information see: www.recyclethis.info

Explanation of symbols: *(Not all may apply)*


Fault Indication


Mains Present


Shock Risk - isolate before attempting access


Protective Earth

CE
Certification Level


Do not dispose of in unsorted waste

Specifications subject to change without notice

The packaging supplied with this product may be recycled. Please dispose of packaging accordingly.

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