TPS12

FEATURES:

- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage
- Battery low protection / Battery reverse polarity protection by fuse
- Alarm signal for AC OK and Battery low
- Cooling by free air convection
- 100% full load burn-in test

APPLICATIONS:

- Security system
- Emergency lighting system
- Alarm system
- UPS system
- Central monitoring system
- Access systems

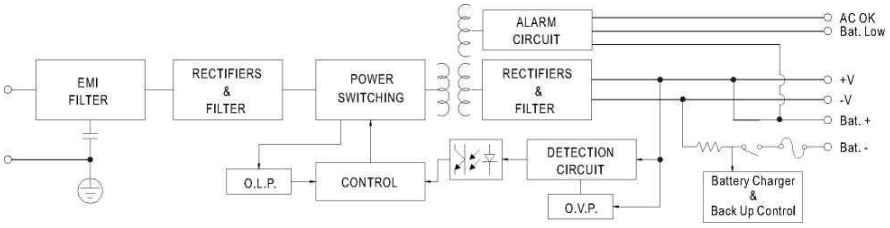
DESCRIPTION:

TPS12 series is a 36W AC/DC security power supply, allowing the universal input range between 90VAC and 264VAC and incorporating the built-in PFC function. In addition to the primary output, there is a charger output, with a smaller rated current, providing the backup application the security access systems normally need.
TPS12 delivers an efficiency up to 86%; it can operate with air convection under -30°C through 70°C. This series is designed with thorough alarm features, including AC OK and battery low signaling; moreover, the relay contact is provided to facilitate use system designs.

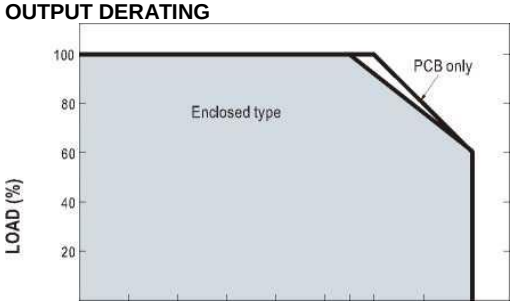
SPECIFICATIONS:

OUTPUT	OUTPUT NUMBER	**Main power**	**Battery charge**
	DC VOLTAGE	13.7V	13.7V
	RATED CURRENT	1.8A	0.9A
	CURRENT RANGE	0 ~ 2.6A	-
	RATED POWER	36W	
	RIPPLE & NOISE (max.) Note.2	120mVp-p	-
	VOLTAGE ADJ. RANGE	CH1: 12 ~ 15V	
	VOLTAGE TOLERANCE Note.3	±1.0%	-
	LINE REGULATION	± 0.5%	-
	LOAD REGULATION	± 0.5%	-
	SETUP, RISE TIME Note.4	800ms, 50ms/230VAC 1600ms, 50ms/115VAC at full load	
	HOLD UP TIME (Typ.)	50ms/230VAC 10ms/115VAC at full load	
INPUT	**VOLTAGE RANGE**	90 ~ 264VAC 127 ~ 370VDC	
	FREQUENCY RANGE	47 ~63Hz	
	EFFICIENCY (Typ.)	84%	86%
	AC CURRENT (Typ.)	0.75A/115VAC 0.5A/230VAC	
	INRUSH CURRENT (Typ.)	COLD START 20A/115VAC	40A/230VAC
	LEAKAGE CURRENT	<1mA / 240VAC	
PROTECTION	**OVERLOAD**	105 ~ 150% rated output power	
		Protection type : Hiccup mode, recovers automatically after fault condition is removed	
	OVER VOLTAGE	CH1:14.49 ~ 19.5V	
		Protection type : Shut down O/P Voltage, repower on to recover	
	BATTERY CUT OFF	10±0.5V	
FUNCTION	**AC OK**	TTL open collector output, ON : AC OK ; OFF : AC Fail ; Ice : max. 30mA@ 50VDC	
	BATTERY LOW	TTL open collector output, ON : Battery Low ; OFF : Battery OK ; Ice : max. 30mA@ 50VDC	
		Battery low voltage : < 11V	
ENVIRONMENT	**WORKING TEMP.**	-30 ~ +70°C (Refer to "Derating Curve")	
	WORKING HUMIDITY	20 ~ 90% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-20 ~ +85C, 10 ~ 95% RH	
	TEMP. COEFFICIENT	±0.03%/C (0~50°C) on CH1 output	
	VIBRATION	10 ~ 500Hz, 2G 10mln./1 cycle, 60min. each along X, Y, Z axes	
SAFETY &EMC (Note 4)	**SAFETY STANDARDS**	UL60950-1, TUV EN60950-1 approved	
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC	
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25C/ 70% RH	
	EMC EMISSION	Compliance to EN55022 (CISPR22) Class B, EN61000-3-2,-3	
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, light industry level, criteria A	
OTHERS	**MTBF**	658.4 K hrs min. MIL-HDBK-217F (25C)	
	DIMENSION	Enclosed type:86.4*59.6*30mm (L*W*H)	
	PACKING	Enclosed type: 0.145Kg;100pcs/15.5Kg/1.03CUFT	
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC Input, rated load and 25°C of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time. 5. Heat sink HS1 ,HS2 can not be shorted. 6. Heat sink HS1 must have safety isolation distance with system case. 7. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.)		

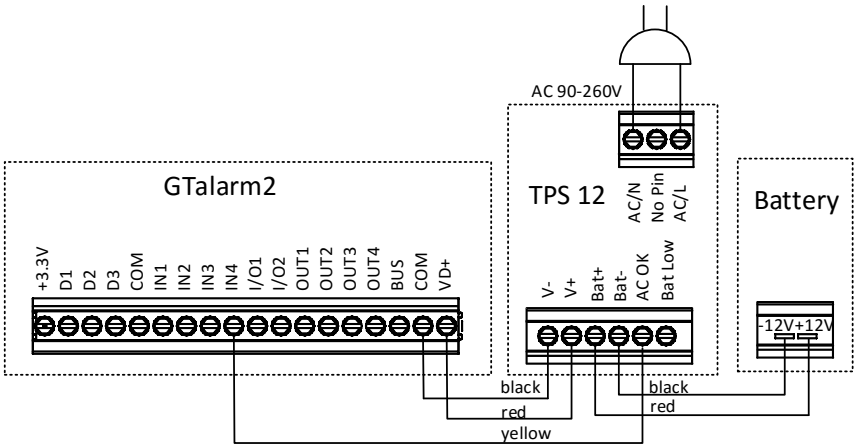
BLOCK DIAGRAM



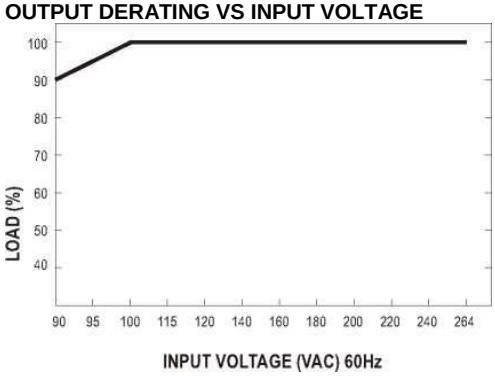
OUTPUT DERATING



SUGGESTED APPLICATION WITH GTALARM2 MODULE



OUTPUT DERATING VS INPUT VOLTAGE



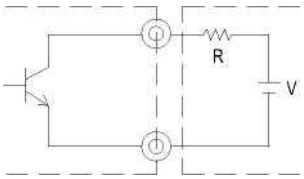
1. Backup connection for AC interruption

It is possible to supply the security system from stabilized power supply source 10-15 V and not less than 1,5A. It is necessary to calculate max current of power supply. The current of the alarm system is the current used by sensors, relays, siren and other devices. It is most convenient to use power supply source applied for power supply of security systems with the option to connect backup lead battery.
The power supply charges the battery and provides energy to the load at the same time when the AC main is OK. The battery starts to supply power to the load when the AC mains fails. Please refer to the connection diagram for suggested connection.

2. Alarm Signal for AC OK and Battery Low

(1) Alarm Signal is sent out through "AC OK "&" Battery Low " pins.
(2) An external voltage source is required for this function. The maximum applied voltage is 50V and the maximum sink current is 30mA.
(3) Table2.1 explains the alarm function built in the power supply

Function	Description	Output of alarm
AC OK	The signal is "Low" when the power supply turns on	Low (0.3V max. at 30mA)
	The signal turns to be "High" when the power supply turns OFF	High or open(External applied voltage 50V max.)
Battery Low	The signal is "Low" when the voltage of battery is under A:11V, B:22V	Low (0.3V max. at 30mA)
	The signal is "High" when the voltage of battery is above A:11V, B:22V	High or open (External applied voltage 50V max.)

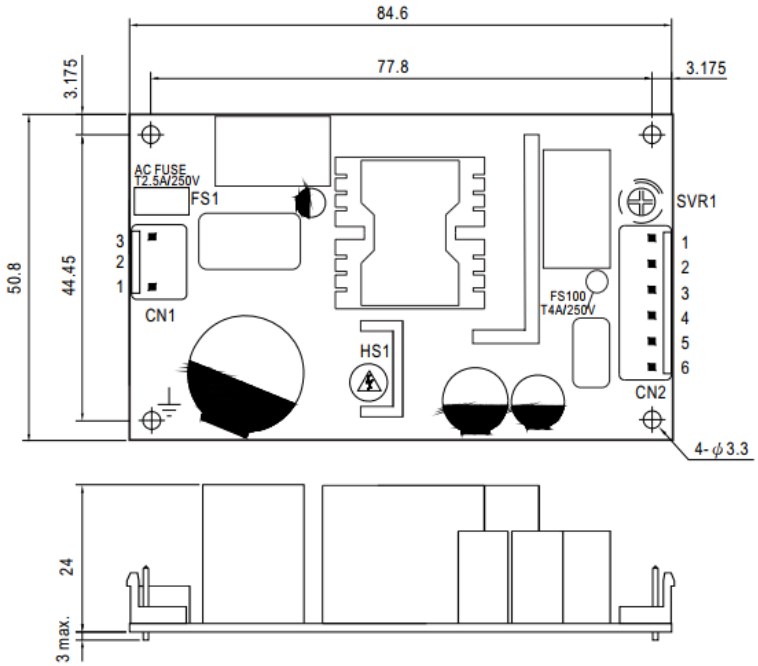


AC OK (Battery low)

Pin6 DC output com External voltage and R

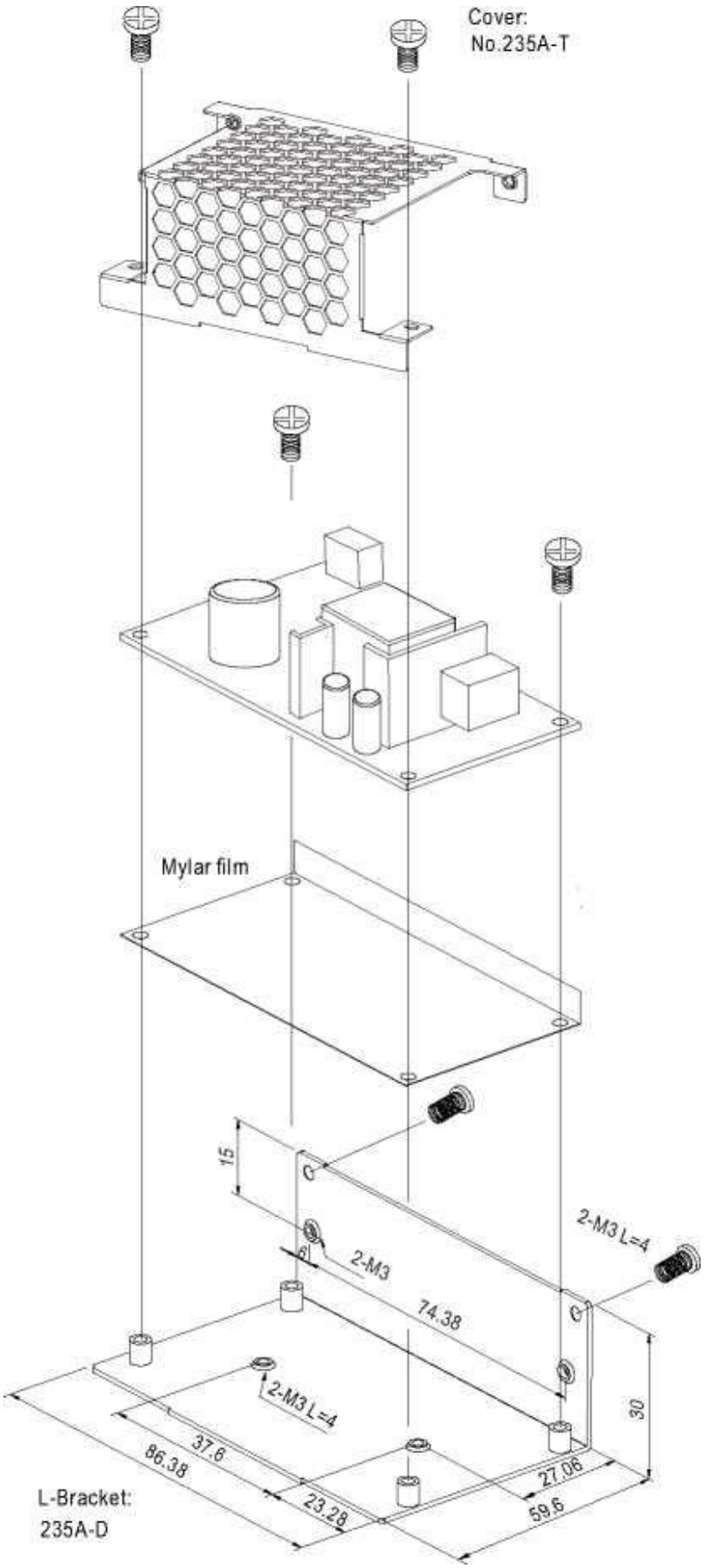
(The max. Sink is 30mA and 50V)

MECHANICAL SPECIFICATION



DC Output Connector	
1	Bat Low
2	AC OK
3	Battery -
4	Battery +
5	+V
6	-V

AC Input Connector	
1	AC/N
2	No Pin
3	AC/L


Cover:
No.235A-T
Mylar film
15
2-M3 L=4
2-M3
74.38
2-M3 L=4
37.6
86.38
23.28
27.06
59.6
30
L-Bracket:
235A-D