INSTALLATION MANUAL PSU200 & PS200XP

Standalone & Integrated intelligent Power Supply Units

INS314-8

Texecom

15-06-2022	• Changes to battery ratings tables as per PCR01618

Texecom

Content

1.0 Introduction

The *Premier Elite PSU200* is a standalone intelligent 2.5 Amp power supply. The *Premier Elite PSU200XP* is a *PSU200* combined with a *Premier Elite 8XP* zone expander to create a fully monitored power supply unit via the control panel network. Both units are supplied in a metal housing which can accommodate either two 7Ah batteries or a single 17Ah battery.

The *PSU200XP* is designed for use with the following *Premier & Premier Elite* control panels:

- *Premier & Premier Elite 24/48/88/168 & 640*

PSU200 and PSU200XP Layout

1. *Texecom* Power Supply
2. Spare Fuse
3. *PSU200 & PSU200XP* PCB
4. *8XP* zone expander PCB (only fitted on *PSU200XP*).
5. Standby battery space; 2 x 7Ah or 1 x 17Ah.
6. Mains cable entry and anchor point
7. Fused terminal block connector for mains supply.
8. Keyhole mounting and back tamper fixing point.
9. Tamper switch assembly

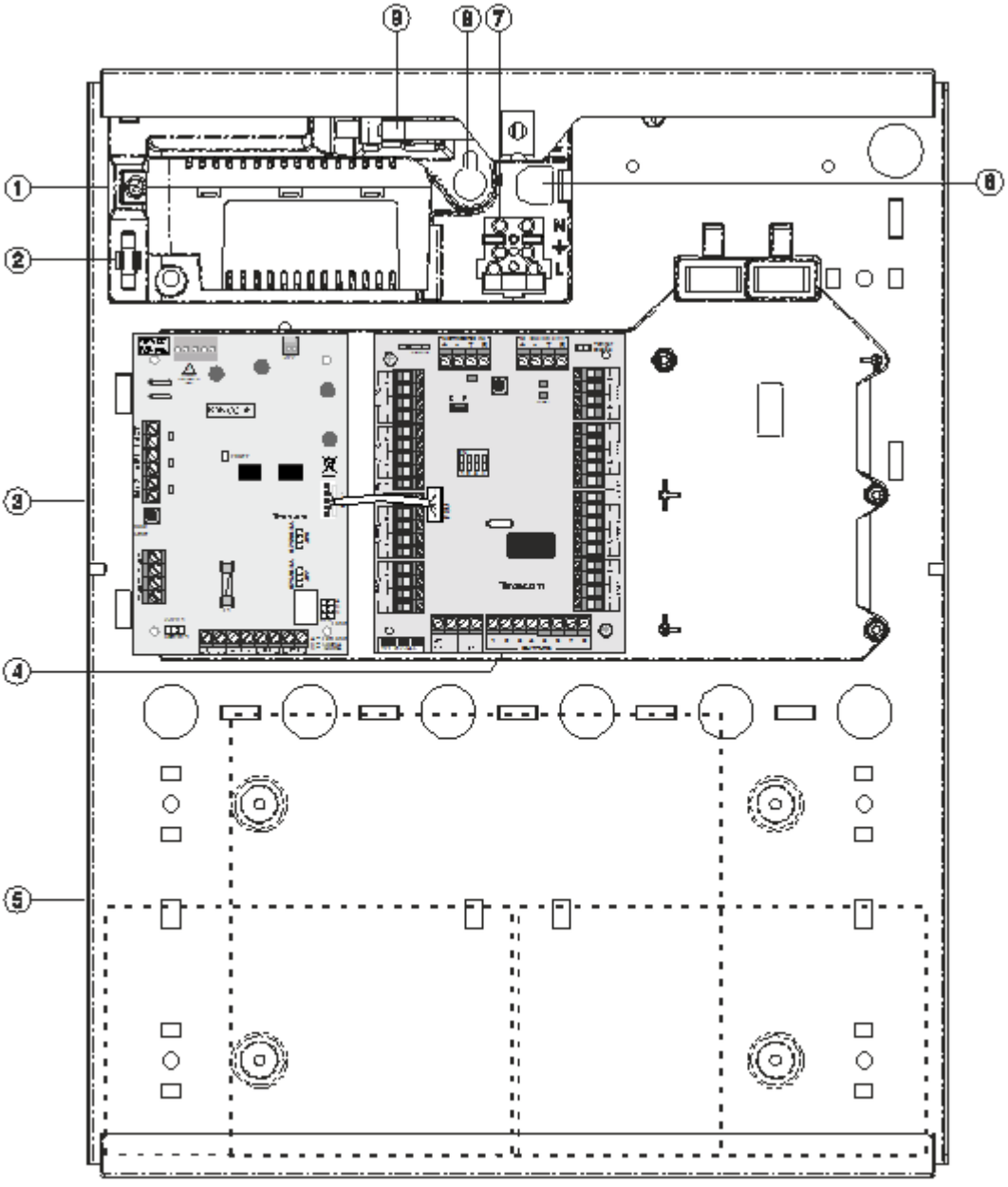


Figure 1. *PSU200 & PSU200XP* Layout

2.0 PCB Layout and Terminals

The figure below shows the PCB layout of the *PSU200* and *PSU200XP*:

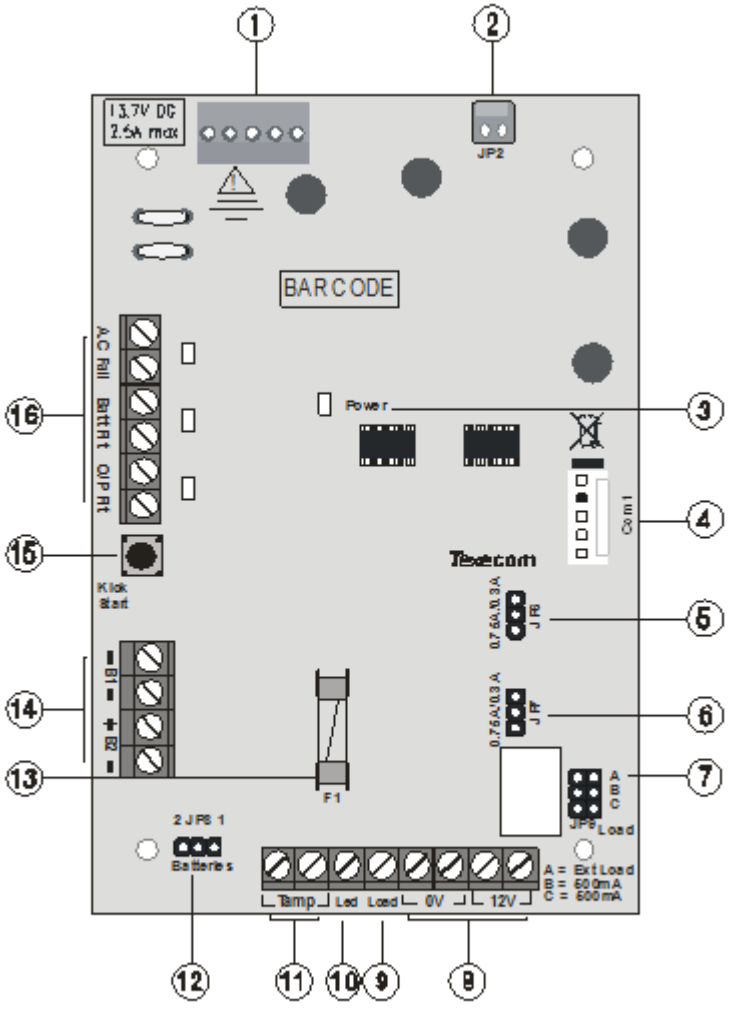


Figure 2. PCB Layout

1. *Texecom* Power Supply Connection.
2. Connector to case tamper switch.
3. Power LED
4. Communication port (for connection to *8XP* zone expander).
5. Battery 1 charge current selector (0.75A or 0.30A).

6. Battery 2 charge current selector (0.75A or 0.30A).
7. Battery load test options.
8. 12V supply output.
9. External load for battery load test.
10. Not Used
11. Normally closed tamper output.
12. Number of batteries connected.
13. 12V output protection fuse (1.6A).
14. Battery 1 and 2 connections.
15. Battery kick start switch.
16. Normally closed fault outputs and status led's.

Mains Supply Connection

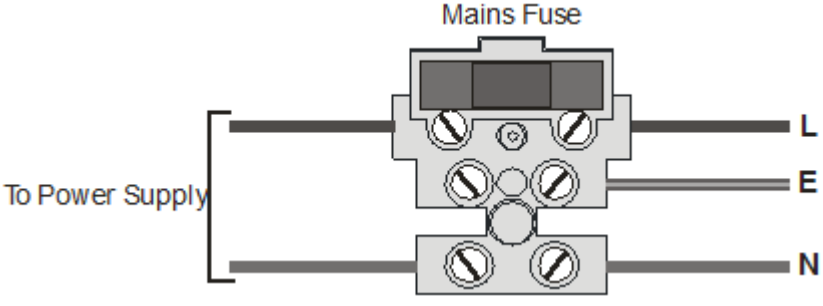
The mains supply is connected to a 3 way fused terminal block, which is fitted with a 3A - 3.15A slow/medium blow protection fuse. The supply cabling should also incorporate an accessible double pole disconnect device so that the supply can be isolated.

TO14 INCERT Mains Input Connections: Min/Max cable size 18/14AWG (0.82mm2/2.08mm2)

NOTE *All electrical connections should be carried out by a qualified electrician.*

After connecting the mains supply, fit the mains protection cover to the fused terminal block, this can be found in the spares bag.

Secure the mains cable to the anchor point using a cable tie.



Supply Output

Two sets of terminals are provided to allow connection to auxiliary 12V devices. The output is protected by a 1.6A fuse.

Tamper Protection

The power supply is both front and back tamper protected by the use of a tamper switch which is connected to the PCB via a jumper plug JP2. When installing a *PSU200* the two tamper connections terminals should be connected to the tamper or 24hour zone of the alarm control panel. The tamper connections are not required for the *PSU200XP* as the tamper status is detected through the communication port.

Fault Outputs and Indicators

Individual outputs and indicators are provided for the following faults:

A.C Fail: A normally closed set of contacts which open when the mains supply to the unit fails. The associated red status led also lights when this fault is present.

Battery Fault: A normally closed set of contacts which open when a battery fault is detected. The associated red status led also lights when this fault is present.

Output Fault: A normally closed set of contacts which open when the output fuse (F1) fails or output voltage falls below 11V. The associated red status led also lights when this fault is present.

When installing a *PSU200* the fault outputs terminals should be connected to individual zones or auxiliary inputs of the alarm control panel. The fault outputs are not required for the *PSU200XP* as the fault status is detected through the communication port.

3.0 Standby Battery

One or two 12V 7Ah batteries or one 12V 17Ah battery can be fitted inside the power supply case to provide continued operation in the event of a mains supply failure. The table below show various battery arrangements and recharge times

against rated output (maximum continuous current) for the required standby period:

PSU200					
Battery Arrangement	**Battery Charge**	**Rated Output (Amps)**			
		12h	24h	30h	60h
1 x 7Ah	0.3A	0.53A	0.24A	0.18A	0.071A
2 x 7Ah	0.3A	1.1A	0.53A	0.42A	0.18A
1 x 17Ah	0.3A	1.37A	0.66A	0.52A	0.23A
	0.75A	1.37A	0.66A	0.52A	0.23A
1 x 18h	0.75A	1.4A	0.7A	0.55A	0.25A
PSU200XP					
Battery Arrangement	**Battery Charge**	**Rated Output (Amps)**			
		12h	24h	30h	60h
1 x 7Ah	0.3A	0.46A	0.17A	0.11A	0.0A
2 x 7Ah	0.3A	1.0A	0.46A	0.35A	0.11A
1 x 17Ah	0.3A	1.3A	0.59A	0.45A	0.16A
	0.75A	1.3A	0.59A	0.45A	0.16A
1 x 18Ah	0.75A	1.3A	0.63A	0.48A	0.18A

The tables of Rated Output were calculated assuming the battery was charged to 100%

The table below shows the setting for the battery charge jumpers JP6 and JP7 for the various battery arrangements and recharge times:

Battery Charge Selector			
Battery Arrangement	**Recharge Time**	**Battery 1 (JP6)**	**Battery 2 (JP7)**
1 x 7Ah	< 24Hrs	0.3 A	-
2 x 7Ah	< 24Hrs	0.3 A	0.3 A
1 x 17Ah	< 24Hrs	0.75 A	-
	< 72Hrs	0.3 A	-

The table below shows the battery standby and recharge times for both EN50131-6, PD6662 and TO:31:

EN50131	**Grade 1**	**Grade 2**	**Grade 3**
Minimum Standby Period	12 hrs	12 hrs	30 hrs*
Maximum Recharge Time	72 hrs	72 hrs	24 hrs
PD6662	**Grade 1**	**Grade 2**	**Grade 3**
Minimum Standby Period	12 hrs	12 hrs	24 hrs**
Maximum Recharge Time	72 hrs	72 hrs	24 hrs
TO:31	**Grade 1**	**Grade 2**	**Grade 3**
Minimum Standby Period	12 hrs	24 hrs	24 hrs
Maximum Recharge Time	72 hrs	48 hrs	24 hrs

* *30h if MAINS FAIL is reported to ARC, otherwise 60h*

** *This time may be halved if mains failure is signalled to an ARC.*

Deep Discharge Protection

The power supply has a deep discharge protection circuit that prevents the standby battery from being fully discharged when the mains supply has failed. The standby batteries will be electronically disconnected when the terminal voltage reaches 9.0V. When powering up the power supply without a mains supply (battery only), the ‘Kick-Start’ switch must be pressed in order to bring the battery into circuit.

Battery Monitoring

Each battery is monitored independently, therefore, the number of batteries connected to the *PSU200/PSU200XP* must be set using JP8. If JP8 is set to “1 Battery” then battery 2 is not monitored. The following conditions are monitored:

Presence: Each battery is tested every 30 seconds when the case tamper is closed. If either battery is disconnected during this test a battery fault is generated.

Load: The *PSU200* tests the standby batteries every 24 hours by allowing the batteries to power the PSU and connected devices for a period of 10 seconds. During the load test the voltage and current drawn from each battery is measured and if either battery cannot supply the full load, a battery fault is generated (see Battery Load). The *PSU200XP* performs the same test, but the frequency and duration of the test is controlled by the control panel.

Low Voltage: When the mains supply fails and the unit is powered from the standby batteries, the voltage is continuously measured and if the battery voltage drops below 11V a battery fault is generated.

Battery Load

In order to ascertain the status of the battery during the load test the PSU must be put under a sufficient load. If the devices connected to the output of the PSU already draw 1A or more, then this is a sufficient load during the battery load test. If the devices connected to the output of the PSU draw less than 0.5A, then an additional load is required for the battery load test. This can be easily achieved using JP9:

JP9 Setting	Total Battery Load
A	External Load + PSU Load
B	500mA + PSU Load
A and B	External Load + 500mA + PSU Load
C	Do not use

If an external load is connected between EXT LOAD terminal and +12V then that load will always be used during battery test. You don’t need a jumper setting for this. If you don’t want an external load then don’t connect one.

JP9 – A = no extra load
JP9 – B = 500mA extra load
JP9 – C = 500mA extra load

A only = PSU Load + External Load (if any)

B only = PSU Load + External Load (if any) + 500mA
C only = PSU Load + External Load (if any) + 500mA
B + C = PSU Load + External Load (if any) + 1A

No jumpers fitted is the same as fitting jumper A, ie PSU Load + External Load (if any)

(see items - and 9 of Figure 2).

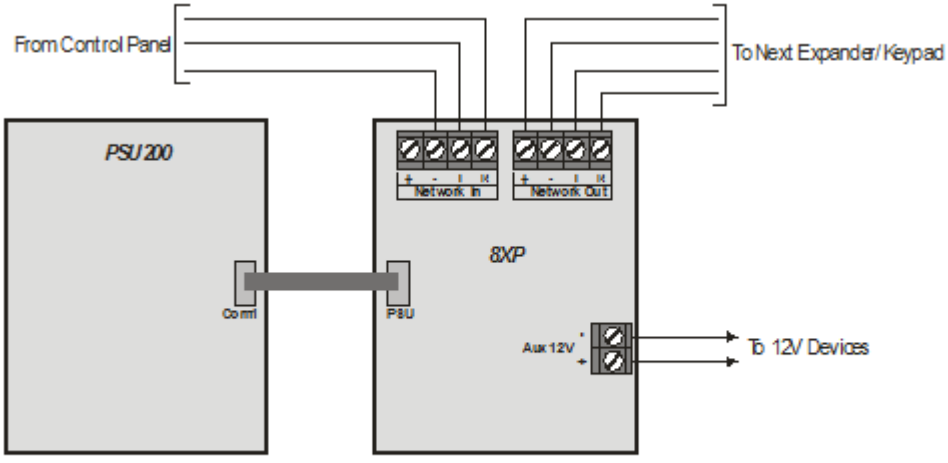
4.0 Installation

1. Remove the screw from the front cover and carefully slide it upwards to disengage the cover from the bottom clip.
2. Gently pull the cover towards you noting that earth is connected to a spade terminal on the front cover.
3. Unplug the earth lead from the spade connection on the inside of the front cover. The front cover can now be fully removed and placed to one side.
4. Position the base in the required location and mark at least four of the available mounting holes. If the back tamper is required the keyhole must also be marked.
5. Remove the base and drill and plug the holes.
6. Pass all necessary cables through the cable entries and fix the base to the wall using not less than 30mm x No 10 screws.
7. Connect the mains cable to the fused mains terminal block.
8. Connect the terminals on the PCB as required, see Wiring Diagrams.
9. Fit the appropriate standby battery or batteries and connect the battery leads to the battery terminals.
10. Apply mains power and check the operation of the power supply.
11. Refit the front cover, remembering to connect the earth lead to the front cover.
12. Replace the front cover screw.

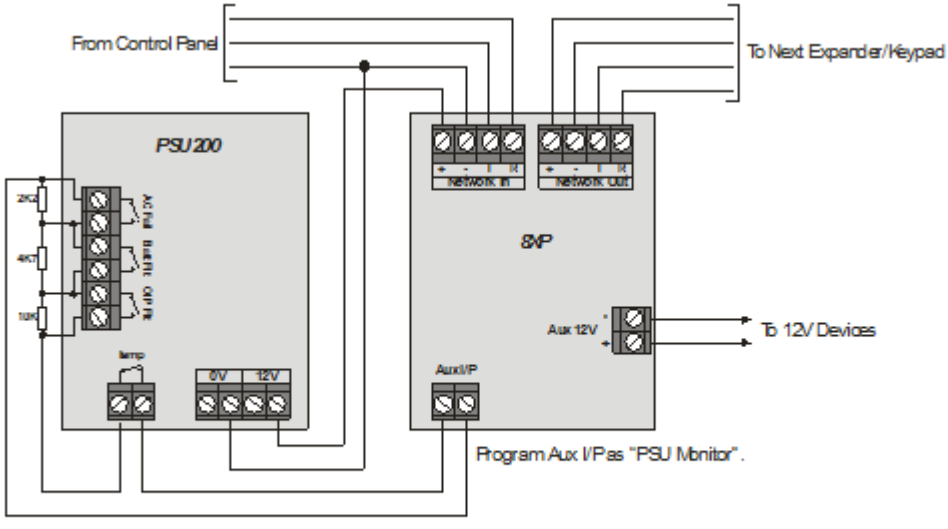
5.0 Wiring Diagrams

PSU200XP Connected to *Premier Elite* Control Panel

For a list of supported control panels, see Introduction.

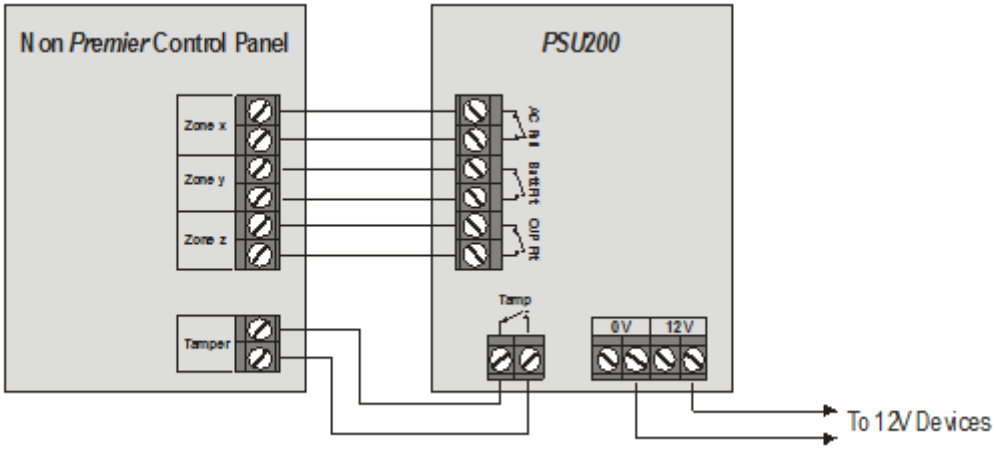


PSU200 Connected to an 8XP



PSU200 Connected to a non *Premier* Control Panel

The *PSU200* can be fully monitored by other makes of control panels, by using the fault and tamper terminals. The zones on the control panel will need to be programmed for PSU monitoring functionality. Please consult the manufacturer's instructions in order to ascertain whether the control panel supports these zone types.



6.0 Specifications

Power Supply Type	Type A
Mains supply	100V to 240V (+10%/-15%) @ 50Hz 1A max
Battery Voltage Charge	13.7Vdc +/- 2%
Output voltage Range	10.7V - 13.9V+/- 2%
TO14 INCERT Cable Spec	Min/Max cable size 18/14AWG (0.82mm2/2.08mm2
Maximum Ripple Voltage	0.5V pk-pk
Output Current Range	2.3A
Maximum available current	1.5A (0.75A charge rate) 1.6A (2 x 0.3A charge rate) 1.6A (1 x 0.3A charge rate)
Rated output	See page 4.
Current consumption	PSU200 50mA PSU200XP 115mA
Fuses	Mains = 3A (F3AL250V) or 3.15A (3.15AL250V) F1 = 1.6A (F1.6AL250V)
Battery Type	Sealed Lead Acid type 1 x 7Ah or 2 x 7Ah or 1 x 17Ah or 1 x 18Ah
Maximum Recharge Time	See table on page 4
Battery charge current	0.3A or 0.75A (selectable)
Battery Low Voltage Signal	11.0V (+/- 5%) at BATT terminal
Deep discharge cut-off	8.6V (+/- 5%) at BATT terminals
Output Fault Signal	10.7V (+/- 5%)
Over Voltage Protection	16V
Minimum energy level of the SD in its charged state	100% (to meet the backup periods specified in this manual)
Location	The PSU200 should be mounted within the supervised premises.
Operating temperature	-10°C to +50°C
Maximum humidity	95% non-condensing
Dimensions	310mm x 410mm x 100mm
Packed weight	PSU200 3.9Kg (approx) PSU200XP 4.1Kg (approx)

7.0 Standards

Texecom declares that this product complies with the requirements of the following directives:

- 2014/30/EU EMC Directive
- 2014/35/EU LVD Directive
- 2011/65/EU RoHS Directive

The product therefore meets all the requirements to enable it to be CE marked.

Weee Directive: 2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info

This product is a Type B Moveable device and is suitable for use in systems designed to comply with EN 50131-1, EN50131-3 and PD6662 at Grade 3 and Environmental Class II. The PSU200 and PSU200 XP are tested and approved to EN50131-1, EN50131-6 and INCERT (TO:31) by Kiwa Telefication B.V.

8.0 Warranty

All Texecom products are designed for reliable, trouble-free operation. Quality is carefully monitored by extensive computerised testing. As a result the *Premier Elite PSU200* and *PSU200XP* are covered by a two-year warranty against defects in material or workmanship. As the *Premier Elite PSU200* and *PSU200XP* are not a complete alarm system but only a part thereof, Texecom cannot accept responsibility or liability for any damages whatsoever based on a claim that the *Premier Elite PSU200* or *PSU200XP* failed to function correctly. Due to our policy of continuous improvement Texecom reserve the right to change specification

without prior notice.

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