fairlight ENGINEERING CHANGE NOTE: mfx3

ECN #: 397

ASSEMBLY: BMW4021D BMW4021E **DESCRIPTION:** MW4-PS1 Power Supply PCB

New Assembly: **DATE:** 08/12/00

Current Assy Rev: H **Current Schematic Rev:**

New Assy Rev: J **New Schematic Rev:**

○ **CMS BOMs Updated** ◉ **Excel BOMs Updated** ◉ **Subcontractor Records Updated** **Compatibility Maintained:** Yes

IMPLEMENTATION INFORMATION:

○ **Safety Issue**	○ **UL Compliance Issue**	○ **New Feature**	○ **Cost Reduction**
◉ **Bug Fix**	○ **EMC Compliance Issue**	○ **Quality Issue**	
◉ **Reliability Reasons**	○ **Software Change**	○ **Cosmetic Change**	

REASON FOR CHANGE:

Q2 may fail when power is applied, resulting in the fuse opening. The cause is U4 pin 3 not driven when the supply has mains applied, and is not turned on.The fix is to add a 22k resistor across pins 3 and 4 of U4. Units in the field require this fix. See detail 1.

Voltage output levels on some units too low (see details 2-5). Changes to manufacturing include "select on test" for some resistors. Field units with out of spec voltages to be retuned as required.

Instability in 3.3V circuit causing ripple on 3.3V rail (see details 6-7).
New PCB revision 5 released to eliminate some modifications (see details 8-9).

Documentation of Mods which were done by CK Power on all Rev H PCBs (see details 11-18)

DETAILS OF CHANGE:

1. Add a 22k resistor between U4/3 and U4/4.

2. Remove the following components;
R76 (RMA9496 - Resistor 82k Metal Film, >= 0.25W, 1%, >= 100V)
R87 (RMA8698 - Resistor 240k Metal Film, >= 0.25W, 1%, >= 100V)
R139 (RMA0257 - Resistor 510k Metal Film, >= 0.25W, 1%, >= 100V)

3. Replace R76 with the following;
RMA8698 - Resistor 240k Metal Film, >= 0.25W, 1%, >= 100V
If the 3.3V rail is still out of spec. this value may need further adjustment.

4. Replace R87 with the following;
RMA0257 - Resistor 510k Metal Film, >= 0.25W, 1%, >= 100V
If the 12V rail is still out of spec. this value may need further adjustment.

5. Replace R139 with the following;
RMA9989 - Resistor 1M0 Metal Film, >= 0.25W, 1%, >= 100V
If the 5V rail is still out of spec. this value may need further adjustment.

6. Add a 4n7 cap (CRR2696) across pins 4 and 8 of U16.

7. Add a 1n5 cap (CRR1053) in parallel with R75.

8. A new PCB revision 5 has been introduced. The part number is BMW4021E. The PCB is marked PS1-5. It is also marked BMW4021D which is incorrect and should be remarked BMW4021E with a permanent marker pen (cross out the "D" then write in a "E" beside it).
The rev 5 PCB no longer requires the wire link detailed below at DETAIL 11. It also does not require milling to achieve safety clearances as was needed to be done to rev 4 PCBs.

9. If the PCB is Revision 5 then add a wire link from C8/2 (pin near board edge) to L3/2 (nearest pin of L3)

10. Place a assembly revision label on the card, marked "J", after the blank PCB P/N so it reads as follows: "BMW4021D-J"

for rev 4 PCBs or "BMW4021E-J" for rev 5 PCBs.

The following changes were done by CK Power on all Rev H PCB assemblies and also apply to revision J PCB asemblies. They are included here for documentation purposes.

11. Add a wire link from TP12 to the nearest end of R68. This is not required on Rev 5 PCBs. (Note: This link was placed in a different location on an earlier batch)

12. Change R98 from 75K to 120K.

14. Add an 18V 1.3W zener diode (SDZ1339) across Q2 - cathode to gate, anode to source.

15. Change R26 from 11k to 18k.

16. Change R30 from 1k to 1k6.

17. Add a 100pF cap (CCR1980) in parallel with C55.

18. U11 should be a TL7705A not TL7705B which does not work.

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HW or Project Engineer……

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R&D or Project Manager……