TECH BULLETIN

TECH BULLETIN NUMBER	0158
PCR	04222009
DATE	04/30/09
SUBJECT	ME20XX Update to v4.2
MODELS AFFECTED	ME2000 and ME2012
REPAIR PROCEDURE	N/A
WARRANTY	Non-warranty item

Software and hardware update v4.2 which includes some bug fixes but mostly product improvements to bring the ME 2000 and ME2012 up to date with the MS v3.7

Was:	Is:	Implication:
V3.6	V4.2	
1. Charger regulation issues		
Charger overshoots	Improves charging regulation	Charger voltage and amperage are more accurate
2. Search watts sensitivity issues		
Take up to .5 sec to come out of search mode if set at 50 W	Pick up loads much faster ~150 ms at 50 W	Recalibrated search watt settings for better response and accuracy
5 W Search mode different with remote	5 W search mode same with or without remote	

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3. Battery Size		
Absorb time Limited to 1600 AHrs	Absorb time are defined up to 5000 AHrs	Will allow charging of larger battery banks. 200 AHrs = 60 min. and 30 Mins. of absorb charge time for every additional 200 AHrs.
4. Internal Fault 1 bug		
Error hit counter accumulates error counting up to 50, eventually requiring manual reset due to Internal Fault 1	Error hit counter accumulates fault counts, but will decrement down to 0 when there are no errors. So error counter will reset with time	Internal Fault 1 fault code requiring a manual reset will be less frequent
5. Charger response to ambient temperature		
Charger dials back to 50% if ambient temperature is above 45C	Charger dials back to 50% when ambient temp. is above 45C and FET's are warmer than 75C	Charger will not begin to dial back just due to ambient temperature the FET's temp must get hot also
6. Shore Max setting		
	Recalibrated shore amps settings for better accuracy	
7. Random Inverter shutdowns in the field		
Communication bytes from remote not validated before use	Inverter validates by confirming correct packet length before information is executed.	Inverter will confirm data stream before using it, fixing shutdowns in situations with electrical noise might be interrupting communications

8. Inverter voltage & current readings		
	Recalibrated inverter current meter and charger current meter	Improved accuracy for inverter current and charger current meters
9. Inverter fault recording		
Records data at the time of a fault	Disabled fault recording	This data could not be accessed and was not in a format that was usable
10. Backfeed fault		
Backfeed fault allowed	Removed backfeed fault	Eliminates erroneous backfeed faults
11. Other new features		
No 0% charge rate	Adds 0% charge rate	Can set a 0% charge rate which will limit the charger to 0 amps
No high battery fault hysteresis	0.3v Hysteresis for high battery cut out before high battery cut in is activated	After high battery cutout the voltage must drop 0.3v before fault will clear and begin inverting
Each time the inverter detects AC input the charger looks at battery voltage to determine the starting charge mode.	If the charger was operating within 2 minutes of reapplying AC the charger will restart in the same mode it stopped in ignoring the current battery voltage check.	Allows charger to stay in bulk or absorb mode even if battery voltage has risen above 12.9VDC, as long as ac is reapplied within 2 minutes
No custom battery voltage	Custom battery setting for bulk, absorb, float, and EQ settings	Added custom battery setting abilities available in new remotes
EQ for AGM1= 15v	EQ for AGM1= 15.5	Matches battery manufactures charging profile

If the inverter is in search or off mode when ac is applied it stays in that mode while going in and out of charge mode	If the inverter is in search or off mode when AC is applied invert mode is turned on before relays are closed then after charge mode unit is allowed to go back previous mode.	Allows for a much smoother transfer in and out of charger mode.
Charge rate is reduced if AC drops below 90VAC	Charge rate is reduced if AC Drops below 90VAC unless the VAC dropout is set below 90VAC the charge rate is reduce when VAC is equal to VAC Dropout + 5VAC	Allows full charge rate at lower AC voltages if you have lower VAC dropout set on the remote
High battery cutout is 15.5VDC	High battery cutout is 16VDC	Inverter now capable of inverting at higher voltage and makes room for the .3VDC hysteresis for high battery cut in
High VAC dropout @ 165VAC	High VAC dropout @ 140 – 150VAC	
If input breaker CB1 is open, pass through still allowed through leg 2	If input breaker CB1 is open a fault occurs and the relays are opened	Will no longer allow high current to flow through single leg 2 if inverter is wired in single in single out 60 amp configuration
If inverter shuts down for AC/DC Overload the remote sometime says off	Remote will display AC or DC Overload if shutdown fault occurs	Better diagnostic terminology displayed on remote
If FETs get to 80C charge rate is reduced to @ 50% when FETs cool to 75C charge rate return to normal	When FETS get to 80C the charger gently reduces charge rate (12.5% steps) to maintain FETs between 80-84C	Stops dramatic load changes on AC source

Low/High battery fault is only detected in search and inverter modes	Low/High battery fault is detected in search, invert, and off modes	
Fans strobe during dead battery boot	Fans are off during dead battery boot	Less current draw while booting up with dead or no batteries
Charger LED blinks the same for all charger faults	Different blink rate on charger LED for charger faults High Temp= faster than once per second Low VAC= every other second Overcurrent= every fourth second	Better visual for diagnostic purposes
No UPS mode	Peak sensing mode at 105VAC	Used for quick AC transfers
If Battery Temp Sensor is shorted the remote displays 0C	If Battery Temp Sensor is shorter Charger returns to default 25C and remote displays 151C	Senses a shorted BTS so charger doesn't regulate voltage for 0C conditions