



## TECH BULLETIN

TECH BULLETIN NUMBER	0132
PCR	06192007-MS4024-SW 3-4.doc
SUBJECT	Various changes; MS series
MODELS AFFECTED	MS4024
REPAIR PROCEDURE	Change Control Board
WARRANTY	Standard warranty applies Call to get an RMA

WAS:	IS:
Ver 2.3	Ver 3.4
EQ for AGM1 30V	EQ for AGM1 31V
Customer found that the charger was inoperative when the remote wasn't connected. Found that the defaulted was set to 0% chg rate	Increase value to 100% charger rate as a default
Tested MS4024 and found that a dropout occurs in 7 sec at 57.0hz/120VAC.	Ran 10min at 50hz and 10min at 70hz at 120VAC while Bulk Charging at 90 amps, ran at 104VAC/39hz with VAC dropout set to 100vAC.
Microcontroller will reboot into Off mode for any reset reasons (i.e. Selco reset, ESD, software reset).	Reboot (not power up) for any reason, micro comes back in same mode (i.e. if in invert mode the inverter will restart in invert mode).
Stacker mode turned "On" for all models released (mod not released)	Defeat stacker mode for all except MS4024
Stacker mode easily faked out with RSA switch:	Added counter to input CLK to improve RSA/stacker detection.
Genset false tripping problem because of peak sensing problem at >80VAC:	Turned peak sensing on only for 105VAC and above for quick AC transfers. For settings below 105, the measurement is averaged before transferring.
CB1 protection runs immediately when in charger mode, so false trips under large inverter load transfer.	Wait for 10 sec charge mode timer to time out, no false trip upon charge mode entry.
No 0 amps charge rate	0 amp charge rate when remote set to 0 amps.
No CB1 protection, if CB1 opened during charging, relay contacts, ac board can burn up	Added CB1 protection, If chg rate >50% and shore amps < 10 amps, relay is opened.
No hysteresis for hi battery fault in inverter and search modes	0.3V hysteresis at 12V, 0.6V in 24V, etc. (so sinewave is 17V disconnect, 16.7 reconnect)
Stack mode problem, when only unit was rebooted, unit would not always resynchronize as a stacker.	If one unit of the stacked pair is rebooted, that unit will always reboot into a stack mode, with 9 LED blinks indicated.
When starting charging mode, charger always starts in Bulk mode unless Vbat > 12.9V, then charger starts in Float mode.	When starting charging mode, charger checks if AC has been disconnected within last two min. If so, then the charger starts in last charger mode. If no ac within last two min, charger starts in Bulk unless Vbat >12.9(25.8V for 24v), then the charger goes to float.