



239 Firmware Revision History

FIRMWARE REVISION	BOOT CODE REVISION	BRIEF DESCRIPTION OF CHANGES	RELEASE DATE
2.60 CURRENTLY IN PRODUCTION	3.00	<ol style="list-style-type: none">'Overload Pickup Display Enable' setpoint addedCorrected intermittent alarm pickup status flag read from address 0207H being set when there was no true internal fault	September 16, 2002
2.51	3.00	<ol style="list-style-type: none">Corrected the firmware so the serial number would never become corrupted after a firmware upgrade.Corrected Mod 517 'ground trip delay' serial setpoint storage.Updated default programmable message.	July 23, 2001
2.50	2.00	<ol style="list-style-type: none">Firmware changed to use LCD.Motor running hours added.Removed Mod 510 from firmware.Motor Starting currents added.Mod 517 implemented.	March 8, 2001
2.40	2.00	<ol style="list-style-type: none">Enhanced Mod 505 to minimize the reset time for overload trip. When the start inhibit feature is active, thermal capacity must only drop enough to allow another successful start, ex 100% - learned start capacity.Corrected the firmware so the 'Manufacture Date' no longer is overwritten by the 'Calibration Date' upon a setpoint dump.Mod 509 Corrected. No previous versions of firmware should be used for Mod 509 units.Mod 509 can now accommodate 5A and 2000:1 ground connections. Not just 2000:1 connectionsPrevious versions considered voltage in phase with current (rather than leading by 90° as indicated in the example in the manual) directional features would pick up and drop up 90° early.Undercurrent was set to Trip & Aux, the Aux relay would activate and the clear again when the Trip relay picked up. They now work together.Enhanced the 239 so that when the CT primary setting is changed and crosses the 50A setting the FLC is reset to 0A and forces the operator to restore the correct value. This enhancement accounts for all settings groups 1-4 independently.Previously when Mechanical Jam was set to TRIP & AUX, the reset key would need to be pressed twice to clear a fault, once for the trip relay and again for the Aux relay. Trip & Aux now clear together.Enhanced the power down sequence to account for a loss of power during uploadAll setpoints and messages that previously stated Multilin and GE Multilin have been revised to state GE POWER MANAGEMENT.	January 4, 2000



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2.32	2.00	<ol style="list-style-type: none">1. Added a lower cutoff to Ground input to eliminate low level displayed noise, equivalent to 0.04A on the 2000:1 connection. This cutoff is below the advertised 2000:1 0.05A cutoff and well below the X:5 / Residual advertised cutoff.	May 21, 1999
2.31	2.00	<ol style="list-style-type: none">1. Ground Alarm would occur at lower values than the specified trip level when set to residual ground sensing with a CT primary > 1000 and a alarm trip pickup level of > 60% CT. This was corrected.2. When a Ground Fault occurs the Last Trip Data goes blank except for the most recent trip. Corrected.3. A Ground Trip would occur when the 239 was set to any ground sensing option. This was only observed when an undervoltage condition was experienced by the 239 followed by immediately with full supply voltage being reapplied. This too was corrected.4. Disable starts would work as indicated in the manual. When both Disable Starts were enabled the condition of the switch input programmed for disable starts was ignored. This was corrected in 2.31.5. When Mod 510 was installed on units with 2.30 firmware during each power down sequence the unit would reload factory setpoints. This was corrected as well.	May 26, 1998
2.30	2.00	<ol style="list-style-type: none">1. Options and available firmware Mods can now be updated in the field. This has been accomplished by incorporating a passcode system into the 239.2. Mod 515 "Enhanced Breaker Failure" has been incorporated into this version of software, effectively making this Mod obsolete.3. Updates included on 239PC Version 2.30.	January 9, 1998
2.21	2.00	<ol style="list-style-type: none">1. Ground Primary Alarm Pick up level setpoint was V2.20 was treating this setpoint as a current value rather than the expected percentage of the ground CT.2. Version 2.20 when using Core Bal. 50:0.025 would actually trip at a lower value than that of the Ground Fault Trip Pickup level.	October 30, 1997



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2.20	2.00	<ol style="list-style-type: none">1. Setpoint ranges increased on Immediate O/L, Phase S/C, Ground Trip, Mechanical Jam and Unbalance2. Mechanical Jam can now be assigned to various combinations of output relays.3. Inhibit On Start Delay feature has been added to block or delay the Mechanical Jam and Immediate O/L functions during start condition.4. A message has been added to display the amount of time remaining before Overload Lockout reset is allowed.5. The ability to disable starts via a setpoint and/or switch input closure has been added.6. The Overload Pickup Inhibit can now be applied during start, run or start and run.7. Breaker Failure feature has been added to enable the assigned output relay if the phase current continues to flow after the 239 has issued a trip.8. All the 239 firmware updates included in 239PC Version 2.20.9. 239 Hardware revision is now displayed on the 239.10. Motor Status can now be viewed on the 239.11. The ability to record the setpoints group in use at the time of the last trip has been added.	July 8, 1997
2.12	1.00	<ol style="list-style-type: none">1. When the output relays were exercised, the assumption was made that they were always set to non-failsafe. The functionality has been changed so during testing of the output relays the normal state (un-energized) state of the relay will match the setpoint (failsafe, or non-failsafe).2. Short circuit and ground trips did not work correctly when using simulation currents. This problem has been resolved	April 25, 1997
2.11	1.00	<ol style="list-style-type: none">1. If the Analog Output is assigned to AVERAGE PHASE AMPS and PHASE CT PRIMARY is set to a value less than or equal to 50A, the output was scaled incorrectly. The problem has been fixed.2. The 50:025 ground trip did not function correctly using simulation currents. This has been fixed.3. On various Occasions the serial number was not written to the 239. This problem has been resolved.4. If a relay was set to failsafe, it was turned off when the "OPERATION TEST: NORMAL MODE" setpoint was displayed. This problem has been resolved.	October 25, 1996



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2.10	1.00	<ol style="list-style-type: none">1. SHORT CIRCUIT TRIP PICKUP range increased from 3-11xCT to 1-11xCT.2. SAFE STALL TIME range increased from 1-30 s to 1-600 s.3. SERVICE FACTOR setpoint renamed to OVERLOAD PICKUP INHIBIT and the range from 1-1.50 x FLC to 1-5.00 x FLC.4. 50:0.025 ground input readings and trip levels are now to two decimal places and go as low 50 mA.5. GROUND ALARM and TRIP PICKUP range increased from 10-100% to 3-100%.6. Two separate delays for RUNNING and STARTING mode for GROUND TRIP and ALARM.7. THERMISTOR FUNCTION can now be assigned to AUXILIARY relay.8. 20 character names can be assigned to Option Switch 1 and 2 inputs.9. ALTERNATE SETPOINTS function has been added to both option switches to allow three alternate selections of PHASE CT PRIMARY, FULL LOAD CURRENT, OVERLOAD CURVE, PHASE S/C PICKUP, PHASE S/C RELAY, and PHASE S/C DELAY setpoints.10. Setpoint has been added to clear the pre-trip data.11. SIMULATION ENABLED FOR setpoints added to allow the simulation for 5-300 minute or UNLIMITED amount of time.12. DATE OF MANUFACTURE message has been added to indicate when the relay was manufactured.13. ORDER CODE message has been added to show the installed options in each relay.14. The auxiliary relay can now be assigned to more than one function at a time.	March 1, 1996
2.01	1.00	<ol style="list-style-type: none">1. The problem of TRIP light not working when GROUND TRIP was assigned to TRIP relay has been corrected.2. Starts Per Hour Timers not manipulated properly on power-up for Mod# 505 causing them to be loaded with incorrect times on power-up.3. Small change implemented to allow the AUX relay to be assigned to S/C TRIP and GROUND TRIP at the same time.4. The pre-trip data was not initialized properly on power-up causing the values to read zero on some occasions. This problem has been fixed.5. Ground and RTD Pre-trip data values were not being stored when simulating the respective trips. This problem has been fixed.	September 7, 1995



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2.00	1.00	<ol style="list-style-type: none">1. Ability to disable default message display added.2. Addition of capability to adjust the brightness of the display when the default messages are being displayed.3. Wider range (1-5000 min) for OVERLOAD LOCKOUT TIME setpoint.4. Wider range (3.0-11.0 x CT) for SHORT CIRCUIT TRIP PICKUP setpoint.5. Wider range (0-20000 ms) for GROUND TRIP PICKUP setpoint.6. Wider range (0-60 s) for GROUND ALARM PICKUP setpoint.7. Setpoint added to block trip reset attempts using the keypad RESET key.8. Setpoint added to automatically reset OVERLOAD trips once the thermal capacity decreases to 15%.9. Assign GROUND FAULT trips to trip, auxiliary or trip & auxiliary output relays.10. Built-in calculator to calculate the overload trip times at a given trip level.11. Setpoints added to allow simulation of switches, RTDs and thermistor input.12. Setpoint added to disable start protection in order to test overload curves.13. A TIME TO TRIP count-down timer added to indicate the trip name and amount of time remaining before it occurs.	June 16, 1995
1.12	1.00	<ol style="list-style-type: none">1. Occasionally (approx. 1 out of 100) trip status and pre-trip data not stored to the EEPROM on power down. This has been corrected.	March 17, 1995



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1.11	1.00	<ol style="list-style-type: none">1. In cases of short control power dips (i.e. control power is restored before the 239 resets) with phase current within 10% of the Short Circuit Trip Level and the Short Circuit Trip Delay set to INST or 10 ms, false Short Circuit Trips could occur. The same was also true with Ground Trips. This problem has been corrected by clearing the fast current sample buffers and sums.2. If the Pre Trip values are read as 0xFFFF on power up they are cleared to zero. Pre Trip values of 0xFFFF indicate that the EEPROM write cycle on power down did not complete. Clearing the Pre Trip values to zero prevents the display of invalid values. The power down flags are also cleared if they are read as invalid (i.e. more than one trip present).3. Digital filtering added to the ground current and RTD inputs sample buffer to prevent spurious trips during Oscillatory and Fast Transient testing.4. The hottest stator and bearing RTD temperatures now displayed correctly when the actual RTD temperature drops below the Stator or Bearing RTD Alarm level and the Alarm Relay is configured as latched. Previously the RTD temperature value in the alarm message read zero whenever all RTDs were below the alarm level.	February 28, 1995
1.10	1.00	<ol style="list-style-type: none">1. User Definable Memory Map area added.2. Support for hardware Revision C added.3. Improved Analog Output linearity at the high end.4. The logic for External Reset of Parameters Not Set Trips at power up corrected.5. The COMMUNICATE LED now goes off after 10 seconds of no serial communication activity. The activity timer is also now triggered by framing and parity errors.6. A decimal point added to the Analog Output Force Setpoint to increase the resolution available to the user. The range of the Setpoint in the Modbus memory map changed accordingly.7. The Phase Short Circuit Trip function changed from a multiple of FLC to a multiple of CT. The Phase Short Circuit Trip Time Delay Setpoint changed from 40-500 ms to 0-2000 ms; this Setpoint now represents the intentional delay added to the detection time of the function. "0" is displayed as "INST".	February 6, 1995
1.00	1.00	<ol style="list-style-type: none">1. First 239 release to production.	December 22, 1994