Cougar v1.10 firmware configurable parameters

Parameter	Abbreviation	Range	Default	Description
Kp	kp	0 - 500	2	Proportional gain for motor current controlling PI loop.
Ki	ki	0 - 500	160	Integral gain for motor current controlling PI loop.
throttle_min_raw_counts	t-min-rc	0 - 1023	413	Raw ADC counts for floored throttle.
throttle_max_raw_counts	t-max-rc	0 - 1023	683	Raw ADC counts for released throttle.
throttle_fault_raw_counts	t-fault-rc	0 - 1023	100	Raw ADC counts for throttle fault – if ADC counts for throttle is <= throttle_fault_raw_counts for 200mS throttle fault is latched.
throttle_pos_gain	t-pos-gain	0 - 128	8	CR (current reference) = TR (throttle) [0 to 511] * throttle_pos_gain / 8 - PWM [0 to 511] * throttle_pwm_gain / 8
throttle_pwm_gain	t-pwm-gain	0 - 128	0	If throttle_pwm_gain = 0 CR (current reference) is proportional to TR (throttle). If throttle_pwm_gain > 0 CR decreases as PWM (motor voltage) increases, approximating Curtis 1231C behavior.
current_ramp_rate	c-rr	0 - 100	6	Current ramp rate in amps per millisecond. Zero disables CR (current reference) change.
rtd_period	rtd-period	0 - 32000	0	Period for real time data updates (in milliseconds). Zero disables real time data updates.
pwm_filter	pwm-filter	0 - 3	0	Sets the speed of the low pass filter used for PWM used by throttle_pwm_gain. 0 is slowest and 3 is fastest.
motor_os_threshold	motor-os-th	0 - 9999	0	Threshold for motor overspeed detection. Larger number means higher speed.
motor_os_ftime	motor-os-ft	0 - 9999	1000	Motor overspeed fault is automatically cleared in the specified number of milliseconds.

motor_os_dtime	motor-os-dt	0 - 99	10	Motor overspeed detection time in milliseconds. Motor must be in overspeed state for specified time before motor overspeed fault is set.
pwm_deadzone	pwm-deadzone	0 - 99	5	Specifies at how many PWM counts the MOSFETs begin to conduct.
motor_speed_calc_amps	motor-sc-amps	0 - 511	0	Motor current (CF) must be > motor_speed_calc_amps to calculate motor speed. Helps eliminate false motor overspeed tripping when gas pedal is released.
battery_amps_limit	bat-amps-lim	0 - 511	0	Battery current limit in amps. Zero disables battery amps limiting.
precharge_time	pc-time	0 - 999	0	Capacitor bank precharge time in tenths of seconds. Zero disables precharg timer.

Cougar v1.10 firmware commands

config	Shows all configurable parameters.
save	Saves all configurable parameters from volatile memory to EE Prom.
idle	Shows micro-controller idle time percentage.
restart	Restarts (resets) the micro-controller.
reset-ah	Resets the calculated battery amp hours meter.