Hi Performance Electric Vehicle Systems

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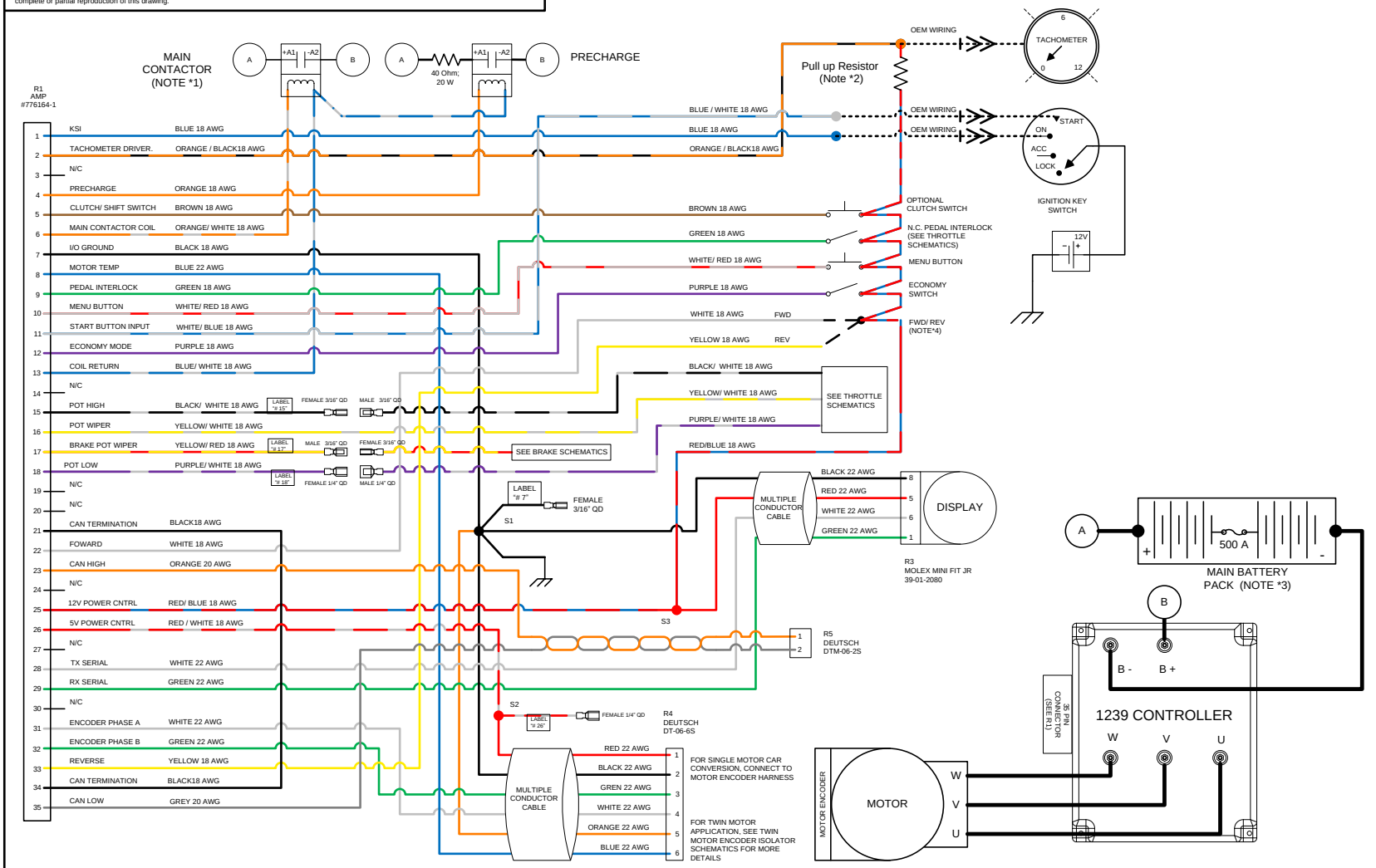
# WIRING SCHEMATICS

## FOR SOFTWARE VERSIONS 5.00 AND HIGHER

## FOR CURTIS 1239 CONTROLLER
## ON-ROAD VEHICLE CONVERSION

**REVISION: A**
**Date 4/26/2013**




**NOTES:**

(*1) USE SUPPLIED CONTACTOR

(*2) TACHOMETER THAT IS DESIGNED TO WORK OFF OF AN IGNITION COIL WILL NOT WORK. SOME TACHOMETER MAY NEED A PULL UP RESISTOR FROM 470 TO 10K Ω

(*3) A BATTERY MANAGEMENT SYSTEM (BMS) IS STRONGLY RECOMMENDED IF LITHIUM ION BATTERIES ARE USED. POSSIBLE SOURCE OF BMS IS EWERT ENERGY SYSTEM'S ORION BMS (www.orionbms.com)

(*4) FORWARD IS CLOCKWISE MOTOR ROTATION FROM ENCODER SIDE VIEW. DEPENDING ON TRANSMISSION CONFIGURATION, USE EITHER WIRE TO OBTAIN DESIRED ROTATION. USE FWD & REV SWITCH IN DIRECT DRIVE APPLICATIONS

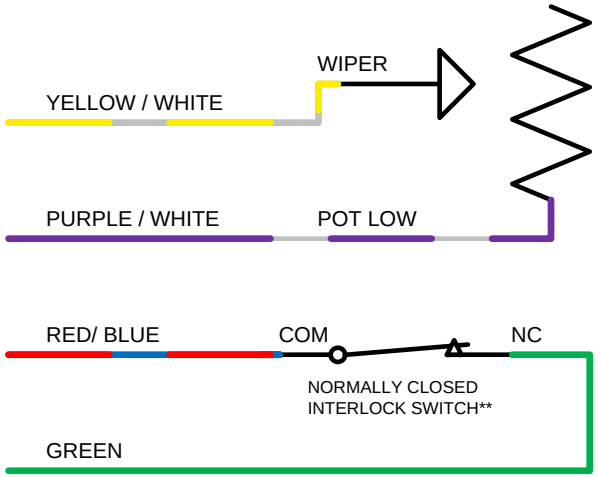
| | | | |
|---|---|---|---|
| CAD TYPE VISIO | APPLICABLE SOFTWARE | | |
| UNIT NONE | DRAWING 1010-AUTO-CONVERSION-1239 | | |
| DRW SIZE A | TITTLE 1239 CONTROLLER ON-ROAD VEHICLE CONVERSION / PRIMARY DUAL MOTOR SCHEMATICS | | |
| DATE 4/12/13 | | | |
| SCALE 1:1 | SHEET 1 OF 1 | REVISION A | **HPEVS** |

## THROTTLE CONFIGURATION

Depending of the type of throttle used for the application, see below table to determine the appropriate connection. Electrical schematics are also included in page 4 through 6.

| **THROTTLE CONFIGURATION** | **TYPE** | **ELECTRICAL CONNECTIONS** |
|---|---|---|
| 2 WIRE with SWITCH 0-5k Ω | TYPE 2 | Connect PURPLE / WHITE wire labeled #18 with PURPLE / WHITE wire. Ending connection at throttle pot low.<br><br>YELLOW / WHITE wire connected to throttle wiper |
| 3 WIRE with SWITCH 0-5k Ω | TYPE 3 | Connect BLACK / WHITE wire labeled #15 with BLACK/ WHITE wire. Ending connection at throttle pot high.<br><br>Connect PURPLE / WHITE wire labeled #18 WITH PURPLE / WHITE wire. Ending connection at throttle pot low.<br><br>Connect YELLOW / WHITE wire connected to throttle wiper. |
| ELECTRONIC without SWITCH | TYPE 1 | Disconnect any wire connected to BLACK/WHITE wire labeled #15.<br><br>Disconnect any wire from PURPLE/ WHITE wire labeled #18.<br><br>Connect BLACK WIRE LABELED #7 with BLACK wire. Ending connection at electronic throttle ground.<br><br>Connect RED/ WHITE wire labeled #26 with PURPLE / WHITE wire. Ending connection at throttle +5V input.<br><br>Connect YELLOW / WHITE wire to electronic throttle signal. |

| REVISIONS | | |
|---|---|---|
| REV | DESCRIPTION | APPROVED |
| A | INITIAL RELEASE | 1/22/2013 |

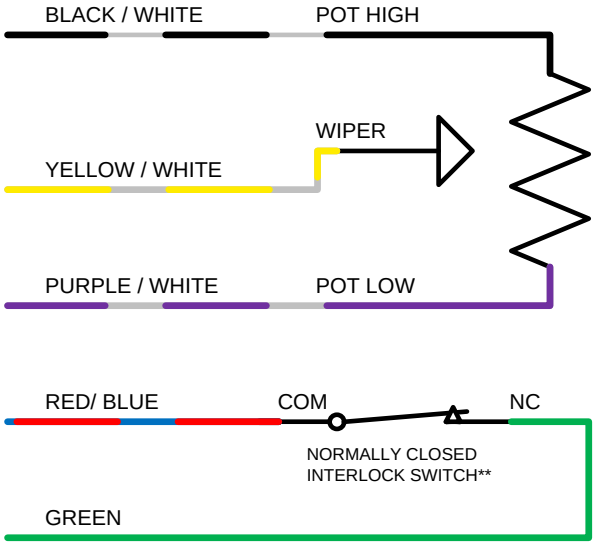



# 2 WIRE TYPE 2 THROTTLE

** When accelerator pedal IS PRESSED the interlock switch is released to its NORMAL position (switch not activated) thus completing the circuit since its green wire is connected to the normally closed (NC) connection.

| | | | |
|---|---|---|---|
| CAD TYPE VISIO | CAD LOC. | CAD FILE | DRW SIZE A |
| OPER. NO. | UNIT | DRAWING 1010-THROTTLE-001 | |
| DESIGN | DETAIL | TITTLE 2 WIRE TYPE 2 THROTTLE | |
| CHECKED | SAFETY | | |
| SCALE NONE | DATE 1/22/13 | REVISION A<br>SHEET 1 OF 3 | HPEVS |

| REVISIONS | | |
|---|---|---|
| REV | DESCRIPTION | APPROVED |
| A | INITIAL RELEASE | 1/22/2013 |



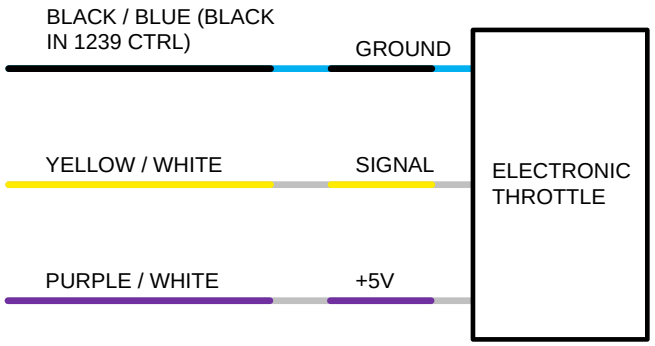

# 3 WIRE TYPE 3 THROTTLE

** When accelerator pedal IS PRESSED the interlock switch is released to its NORMAL position (switch not activated) thus completing the circuit since its green wire is connected to the normally closed (NC) connection.

| | | | |
|---|---|---|---|
| CAD TYPE VISIO | CAD LOC. | CAD FILE | DRW SIZE A |
| OPER. NO. | UNIT | DRAWING 1010-THROTTLE-001 | |
| DESIGN | DETAIL | TITTLE 3 WIRE TYPE 3 THROTTLE | |
| CHECKED | SAFETY | | |
| SCALE NONE | DATE 1/22/13 | REVISION A<br>SHEET 2 OF 3 | HPEVS |

| REVISIONS | | |
|---|---|---|
| REV | DESCRIPTION | APPROVED |
| A | INITIAL RELEASE | 1/22/2013 |

# ELECTRONIC THROTTLE**




** When Electronic pedal is used, the GREEN wire from pedal interlock does not need to be connected

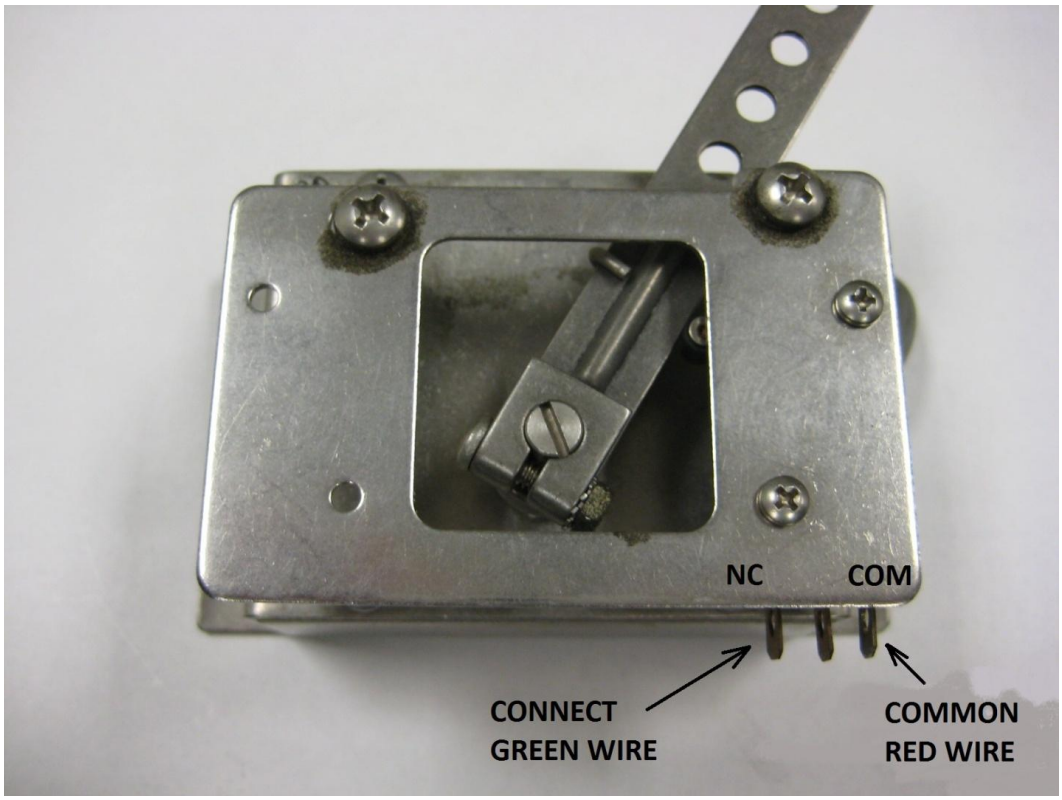
| | | | |
|---|---|---|---|
| CAD TYPE VISIO | CAD LOC. | CAD FILE | DRW SIZE A |
| OPER. NO. | UNIT | DRAWING 1010-THROTTLE-001 | |
| DESIGN | DETAIL | TITTLE ELECTRONIC THROTTLE | |
| CHECKED | SAFETY | | |
| SCALE NONE | DATE 1/22/13 | REVISION A<br>SHEET 3 OF 3 | HPEVS |

## PEDAL INTERLOCK CONNECTION

The pedal interlock connection is required for both 2 and 3 wire throttle pot assemblies. The Green wire is connected at Normally Closed tab. Red wire is connected at common tab. See below picture.

NOTE, when accelerator pedal IS PRESSED the interlock switch is released to its NORMAL position (switch not activated) thus completing the circuit since its green wire is connected to the normally closed (NC) connection.

Electronic throttles usually do not have an interlock switches. In this application, the Green and Red wires are connected together.

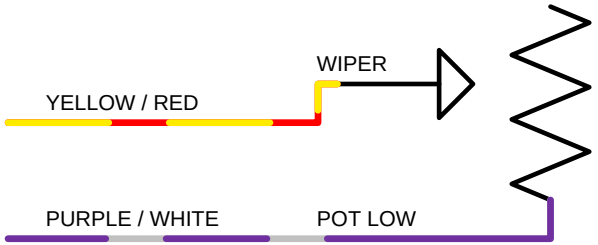


## BRAKE POT CONFIGURATION

Depending of the type of brake pot used for the application, see below table to determine the appropriate connection. Electrical schematics are also included in page 9 & 10.

| **BRAKE POT CONFIGURATION** | **TYPE** | **ELECTRICAL CONNECTIONS** |
|---|---|---|
| 2 WIRE 0-5k Ω | TYPE 2 | Connect PURPLE / WHITE wire labeled #18 with PURPLE / WHITE wire. Ending connection at brake pot low.<br><br>Connect YELLOW / RED wire labeled #17 with wire YELLOW/ RED wire. Ending connection at brake wiper. |
| BRAKE TRANSDUCER | TYPE 1 | Connect RED/ BLUE wire to brake transducer +12V input.<br><br>Connect BLACK wire labeled #7 with Black wire. Ending connection at brake transducer ground.<br><br>Connect YELLOW / RED wire labeled #17 with wire YELLOW/ RED wire. Ending connection at brake transducer output signal. |

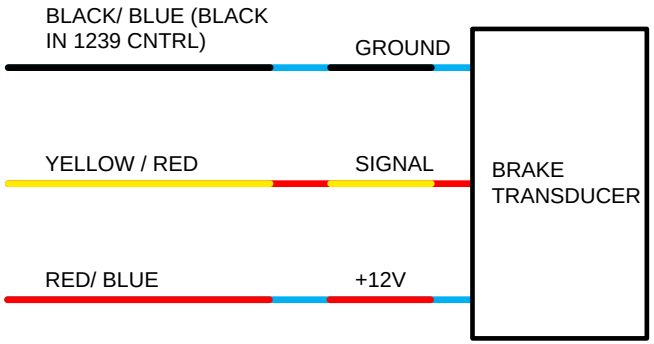
| REVISIONS | | |
|---|---|---|
| REV | DESCRIPTION | APPROVED |
| A | INITIAL RELEASE | 2/19/2013 |




# 2 WIRE BRAKE POT

| | | | |
|---|---|---|---|
| CAD TYPE VISIO | CAD LOC. | CAD FILE | DRW SIZE A |
| OPER. NO. | UNIT | DRAWING 1010-BRAKE-001 | |
| DESIGN | DETAIL | TITTLE 2 WIRE BRAKE | |
| CHECKED | SAFETY | | |
| SCALE NONE | DATE 2/19/13 | REVISION A<br>SHEET 1 OF 2 | **HPEVS** |

| REVISIONS | | |
|---|---|---|
| REV | DESCRIPTION | APPROVED |
| A | INITIAL RELEASE | 2/19/2013 |




# BRAKE TRANSDUCER

| | | | |
|---|---|---|---|
| CAD TYPE VISIO | CAD LOC. | CAD FILE | DRW SIZE A |
| OPER. NO. | UNIT | DRAWING 1010-BRAKE-001 | |
| DESIGN | DETAIL | TITTLE BRAKE TRANSDUCER | |
| CHECKED | SAFETY | | |
| SCALE NONE | DATE 2/19/13 | REVISION A<br>SHEET 2 OF 2 | HPEVS |