WIRING SCHEMATICs

ON-ROAD VEHICLE CONVERSION
SINGLE AND DUAL MOTOR
APPLICATION

FOR SOFTWARE VERSIONS 5.13 AND HIGHER

FOR CURTIS CONTROLLERS 1234/1236/1238

REVISION: B
Date: 12/09/2013
NOTES: (*1) USE SUPPLIED CONTACOR

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DUAL MOTOR ENCODER ISOLATOR

- P4: DEUTSCH DTM-04-6P
  - Connect to Primary Harness at Motor Encoder Connector R4
- P4-2: DEUTSCH DTM-04-6P
  - Connect to Secondary Harness at Motor Encoder Connector R4-2
- P5: DEUTSCH DTM-04-4P
  - Connect to Motor Encoder

Connect to Primary Harness at Motor Encoder Connector R4:
- RED 18 AWG: 5V
- BLACK 18 AWG: I/O Ground
- GREEN 18 AWG: Phase B
- WHITE 18 AWG: Phase A
- BLACK / RED 18 AWG
- PURPLE / RED 18 AWG

Connect to Secondary Harness at Motor Encoder Connector R4-2:
- RED: BLUE 18 AWG: 5V
- BLACK: BLUE 18 AWG: I/O Ground
- GREEN: BLUE 18 AWG: Phase B
- WHITE: BLUE 18 AWG: Phase A
- BLACK 18 AWG
- PURPLE 18 AWG

- R5-1: DEUTSCH DTM-06-4S
  - Connect to Motor Temperature

Primary Temp Out: Purple / Red 18 AWG
Primary Temp Ground: Black / Red 18 AWG
Secondary Temp Out: Purple 18 AWG
Secondary Temp Ground: Black 18 AWG

Schematics: Twin Encoder Isolator

HPEVS

Sheet 1 of 1
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CAN NETWORK FROM PRIMARY CONTROLLER

CAN NETWORK FROM SECONDARY CONTROLLER

CANOP ISOLATOR MODULE

120 Ω ¼ W Termination Resistor

TO BMS ISOLATED CAN NETWORK

CHASSIS GROUND

VEHICLE +12V

120 Ω ¼ W Termination Resistor

REV. DESCRIPTION APPROVED
A INITIAL RELEASE 3/11/2013
B Revision for clarification 10/30/2013

REVISIONS

CAD TYPE VISIO
OPER. NO. DRW SIZE A

CAD LOC. CAD FILE
UNIT DRAWING

DESIGN DETAIL TITTLE
CHECKED SAFETY CAN ISOLATOR DUAL

SCALE NONE 1238 CONTROLLER
DATE 4/17/13
REVISION B SHEET 1 OF 1

HPEVS
THROTTLE CONFIGURATION

Depending on the type of throttle used for the application, the different types of throttle configurations are listed within the table below. Electrical schematics are also included within the following pages.

<table>
<thead>
<tr>
<th>THROTTLE CONFIGURATION</th>
<th>TYPE</th>
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<tbody>
<tr>
<td>ELECTRONIC without SWITCH</td>
<td>TYPE 1</td>
</tr>
<tr>
<td>2 WIRE with SWITCH 0-5k Ω</td>
<td>TYPE 2</td>
</tr>
<tr>
<td>3 WIRE with SWITCH 0-5k Ω</td>
<td>TYPE 3</td>
</tr>
<tr>
<td>CURTIS PB8 THROTTLE ASSEMBLY</td>
<td>TYPE 3</td>
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</table>
** When an electronic pedal is used, the GREEN wire from pedal interlock does not need to be connected.
** When the 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.
** When the 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.
** When the 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.
PEDAL INTERLOCK CONNECTION

The pedal interlock connection is required for both 2 and 3 wire throttle pot assemblies. The Green wire is connected to the Normally Closed tab. The red/blue wire is connected to the common tab. See picture below.

NOTE: when the 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.
BRAKE INPUT CONFIGURATION

Depending on the type of brake input used for the application, the different types of brake input configurations are listed within the table below. Electrical schematics are also included in the following pages.

<table>
<thead>
<tr>
<th>BRAKE INPUT CONFIGURATION</th>
<th>TYPE</th>
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<tbody>
<tr>
<td>NO BRAKE POT INSTALLED</td>
<td>TYPE 0</td>
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<tr>
<td>PRESSURE TRANSDUCER/ELECTRONIC 0-5V INPUT</td>
<td>TYPE 1</td>
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<tr>
<td>2 WIRE 0-5k Ω POT</td>
<td>TYPE 2</td>
</tr>
<tr>
<td>SWITCH</td>
<td>TYPE 3</td>
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** Typical Pressure Transducer Ratings
8-30 Volt Input
1-5 Volt Output
2500 PSI

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**Diagram:**

- **Type 2 2 Wire Brake Pot**
- **Color Codes:**
  - Yellow/Red: Wiper
  - Purple/White: Pot Low

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**Table:**

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**HPEVS**
OPTIONAL ACTIVE BRAKE LIGHT CONFIGURATIONS

These optional active brake light configurations are used to activate the brake lights during regenerative braking or when the vehicle brakes are being applied. Based on the brake type configuration that is being used in the application use one of the following wiring configurations.
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ACTIVE BRAKE LIGHT CONFIGURATION
OPTION 1
FOR BRAKE TYPE 0, 1 OR 2 CONFIGURATIONS

** This option turns the brake lights ON during REGEN. Brake TYPE 0 does not allow for BOOSTED BRAKE while pressing the brake pedal. Brake TYPE 1 & 2 uses a variable input for BOOSTED REGEN.

**
ACTIVE BRAKE LIGHT CONFIGURATION
OPTION 2
FOR BRAKE TYPE 3
1234, 1236, & 1238 CONTROLLER

** This option will turn ON the brake lights when either of two conditions are satisfied:
1. The user's foot is OFF of the accelerator pedal and REGEN is active.
2. Brake pressure is applied and the OEM brake switch is active.
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NOTE: Other electrical connections and system components are not displayed on this page.

I/O ISOLATOR PIN FUNCTION
1 – CHANNEL 1 CONTROLLER 12V
2 – CHANNEL 1 TACHOMETER SIGNAL
3 – CHANNEL 1 GROUND
4 – CHANNEL 1 VEHICLE 12V
5 – CHANNEL 1 OUTPUT TO TACHOMETER
6 – CHANNEL 2 IGNITION KEY INPUT
7 – CHANNEL 2 GROUND
8 – CHANNEL 2 CONTROLLER I/O GROUND
9 – CHANNEL 2 CONTROLLER 12V
10 – CHANNEL 2 CONTROLLER START INPUT

DOUBLE CHANNEL I/O ISOLATOR

R14 Molex Mini Fit Jr 39-01-2105