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WIRING SCHEMATICS

ON-ROAD VEHICLE CONVERSION WITH A SINGLE OR DUAL MOTOR CONFIGURATION

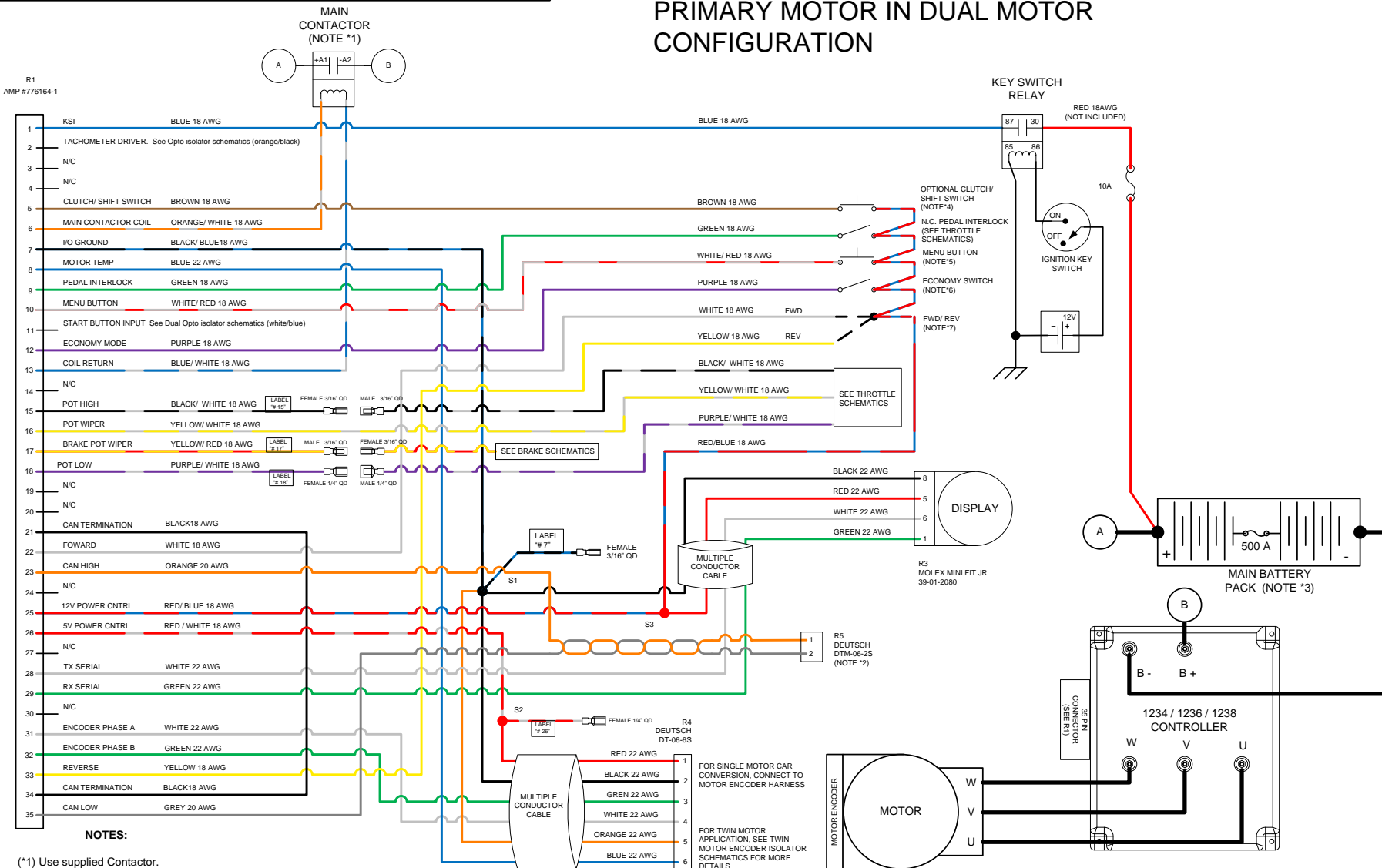
FOR SOFTWARE VERSIONS 5.00 AND HIGHER

FOR CURTIS CONTROLLERS 1234/1236/1238

REVISION: A
Date: 11/01/2013

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SCHEMATIC FOR SINGLE MOTOR OR PRIMARY MOTOR IN DUAL MOTOR CONFIGURATION



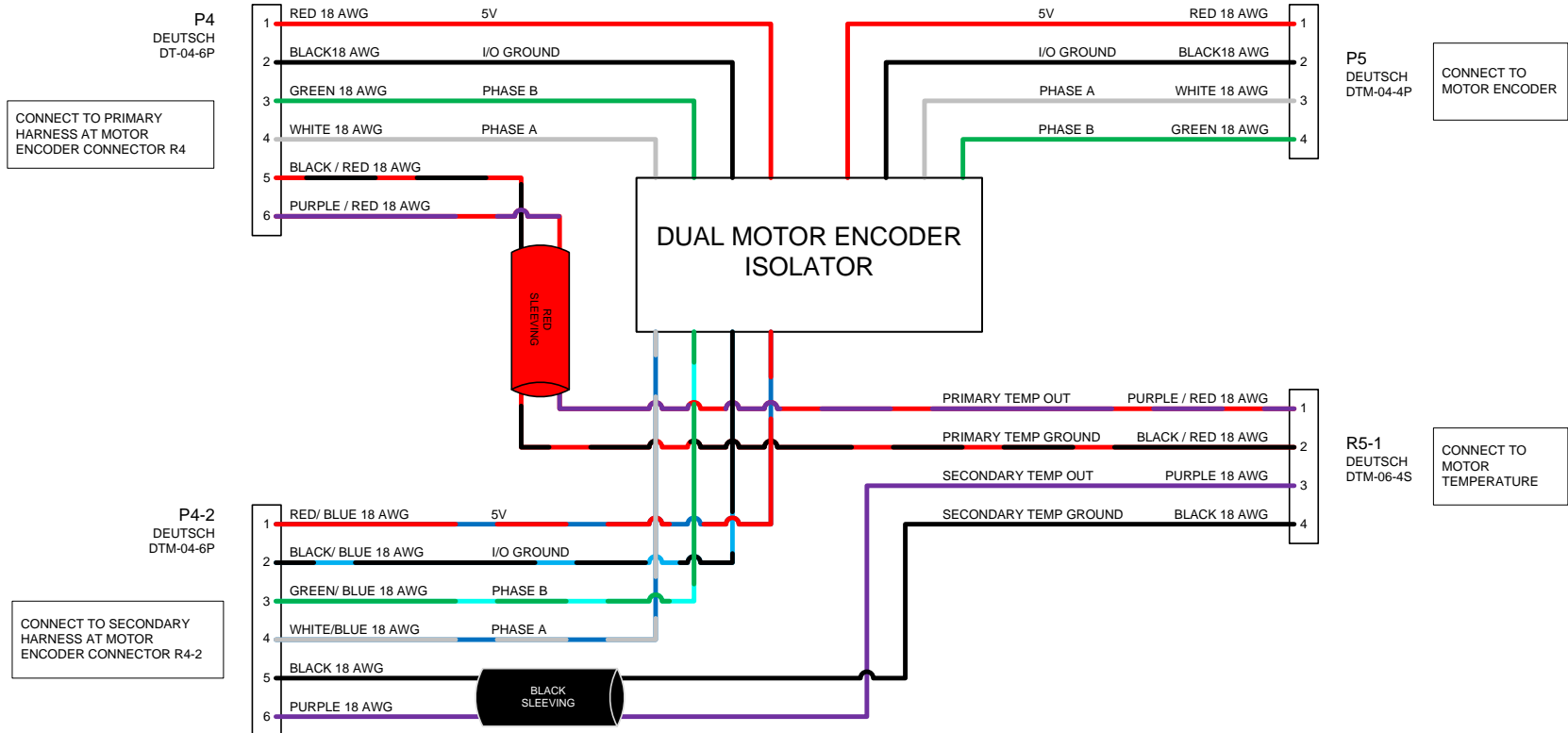
CAD TYPE	APPLICABLE SOFTWARE			
VISIO				
UNIT	DRAWING 1010-AUTO-CONVERSION			
NONE				
DRW SIZE	TITLE			
A	ON-ROAD VEHICLE CONVERSION /			
DATE	PRIMARY DUAL MOTOR SCHEMATICS			
2/12/13				
SCALE	SHEET 1 OF 1	REVISION	C	HPEVS
1:1				

DUAL MOTOR – SECONDARY MOTOR SCHEMATICS



CAD TYPE VISIO	APPLICABLE SOFTWARE		
UNIT NONE	DRAWING 1010-AUTO-CONVERSION-TWIN MOTOR		
DRW SIZE A	TITLE SECONDARY DUAL MOTOR SCHEMATICS		
DATE 4/2/13			
SCALE 1:1	SHEET 1 OF 1	REVISION A	HPEVS

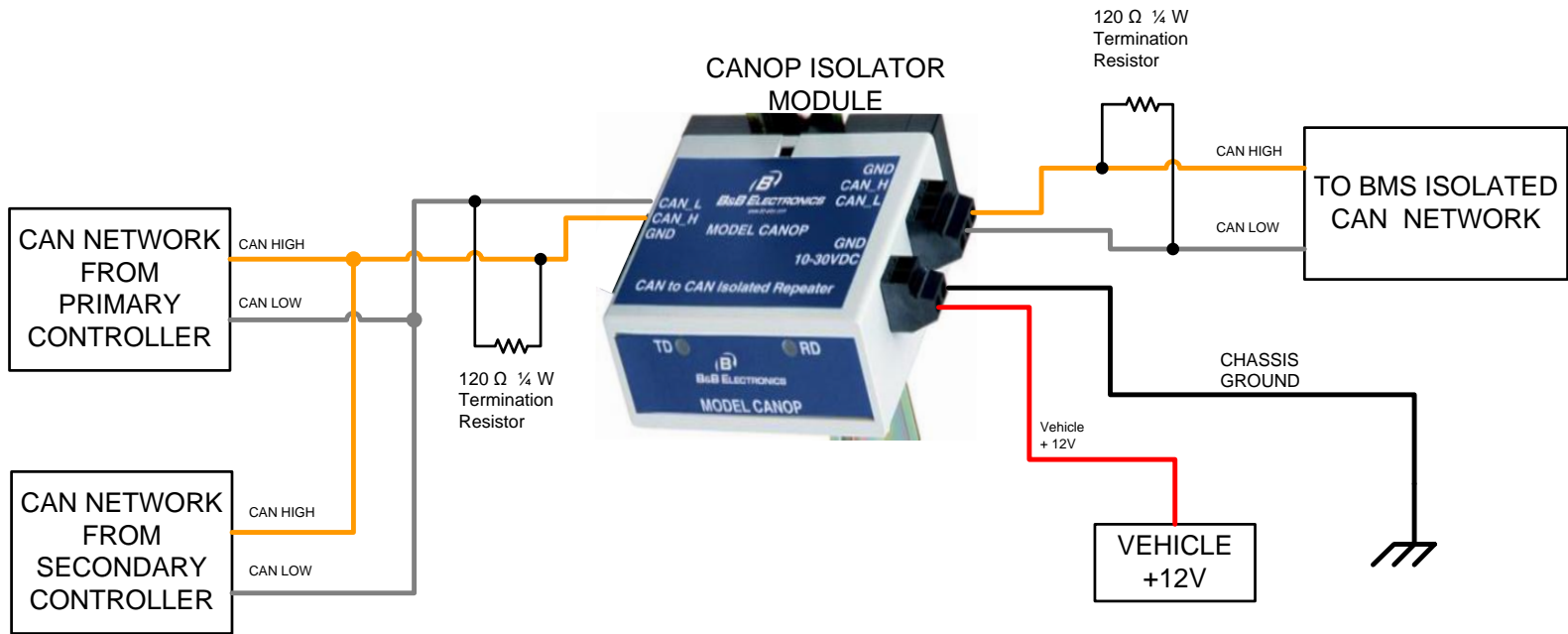
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CAD TYPE VISIO	CAD LOC.	APPLICABLE SOFTWARE	DRW SIZE B
OPER. NO.	UNIT	DRAWING 1010-TWIN-ENCODER-ISOLATOR	
DESIGN	DETAIL	TITLE DUAL MOTOR ENCODER ISOLATOR SCHEMATICS	
CHECKED	SAFETY		
SCALE NONE	DATE 4/2/2013	REVISION A SHEET 1 OF 1	HPEVS

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



CAD TYPE VISO	CAD LOC.	CAD FILE	DRW SIZE A
OPER. NO.	UNIT	DRAWING 1010-CAN-OP-ISOLATOR	
DESIGN	DETAIL	TITTLE	
CHECKED	SAFETY	CAN ISOLATOR DUAL 1238 CONTROLLER	
SCALE NONE	DATE 4/17/13	REVISION B SHEET 1 OF 1	HPEVS

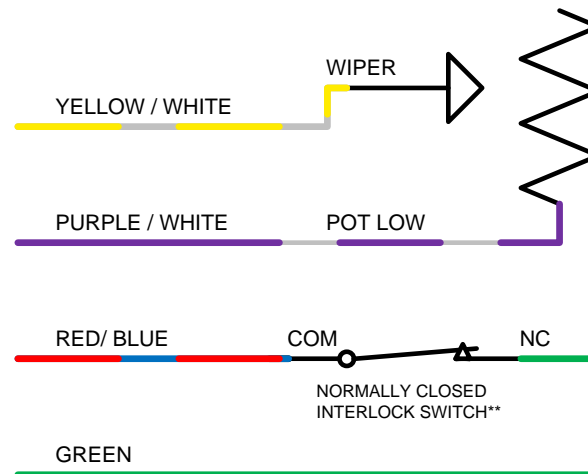
THROTTLE CONFIGURATION

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 7 through 9.

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

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REV	DESCRIPTION	APPROVED
A	INITIAL RELEASE	1/22/2013



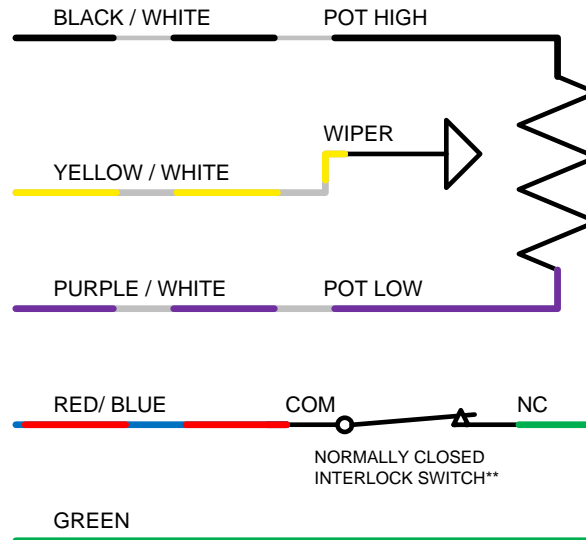
2 WIRE TYPE 2
THROTTLE

** 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 VISO	CAD LOC.	CAD FILE	DRW SIZE A
OPER. NO.	UNIT	DRAWING 1010-THROTTLE-001	
DESIGN	DETAIL	TITLE	
CHECKED	SAFETY	2 WIRE TYPE 2 THROTTLE	
SCALE NONE	DATE 1/22/13	REVISION A SHEET 1 OF 3	HPEVS

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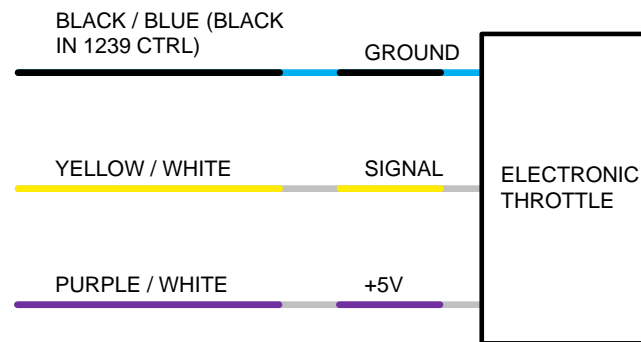
3 WIRE TYPE 3
THROTTLE

** 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 VISO	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 SHEET 2 OF 3	HPEVS

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ELECTRONIC THROTTLE**

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

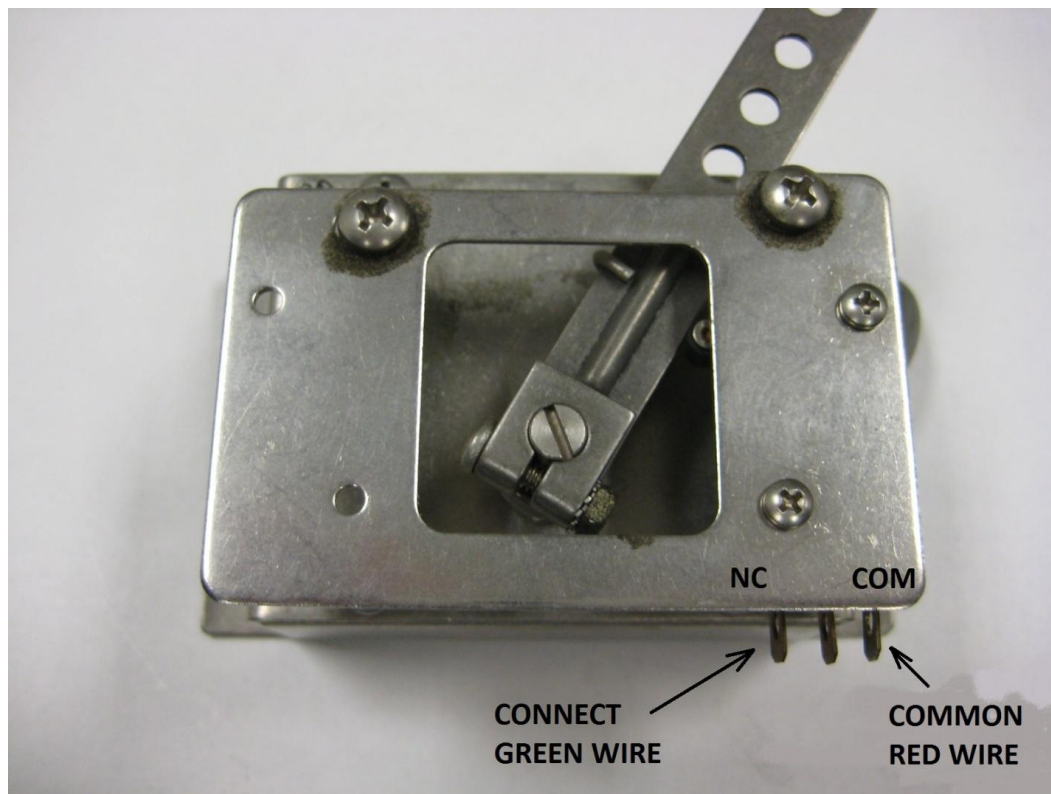
CAD TYPE VISO	CAD LOC.	CAD FILE	DRW SIZE A
OPER. NO.	UNIT	DRAWING 1010-THROTTLE-001	
DESIGN	DETAIL	ELECTRONIC THROTTLE	
CHECKED	SAFETY		
SCALE NONE	DATE 1/22/13	REVISION A SHEET 3 OF 3	HPEVS

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.



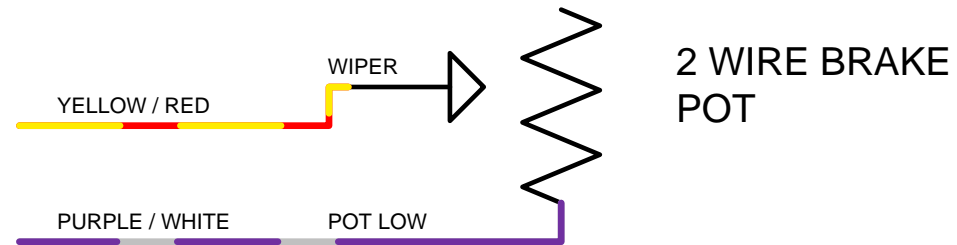
BRAKE POT CONFIGURATION

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 12 & 13.

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

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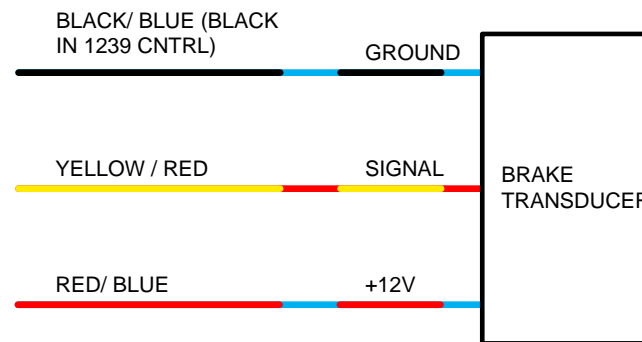
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REV	DESCRIPTION	APPROVED
A	INITIAL RELEASE	2/19/2013



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

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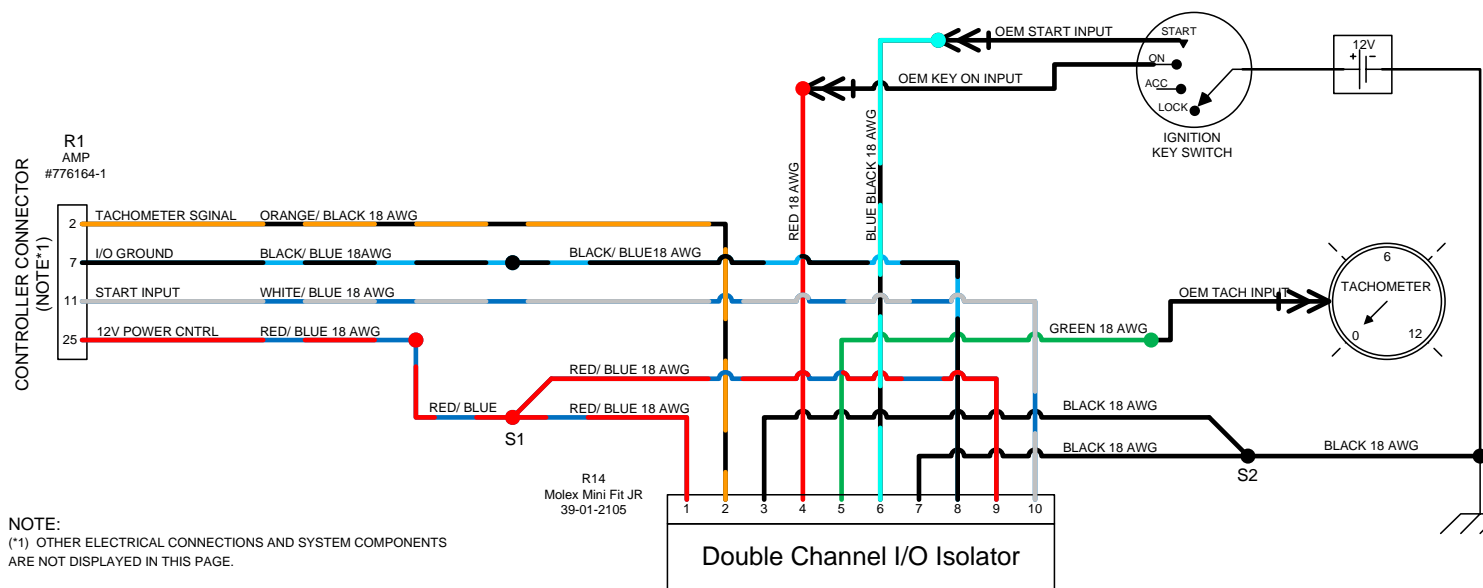
REVISIONS		
REV	DESCRIPTION	APPROVED
A	INITIAL RELEASE	2/19/2013



**BRAKE
TRANSDUCER**

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

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NOTE:
(*1) OTHER ELECTRICAL CONNECTIONS AND SYSTEM COMPONENTS ARE NOT DISPLAYED IN 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

CAD TYPE VISIO	CAD LOC.	CAD FILE	DRW SIZE B
OPER. NO.	UNIT	DRAWING 1010-2CH-ISOLATOR-001	
DESIGN	DETAIL	TITLE	
CHECKED	SAFETY	DUAL CHANNEL OPTO-ISOLATOR SYSTEM SCHEMATICS	
SCALE NONE	DATE 4/19/12	REVISION B SHEET 1 OF 1	HPEVS