



1551 S. Vineyard Avenue
Ontario, CA 91761
(909) 923-1973

WIRING SCHEMATICS

ON-ROAD VEHICLE CONVERSION SINGLE AND DUAL MOTOR APPLICATION

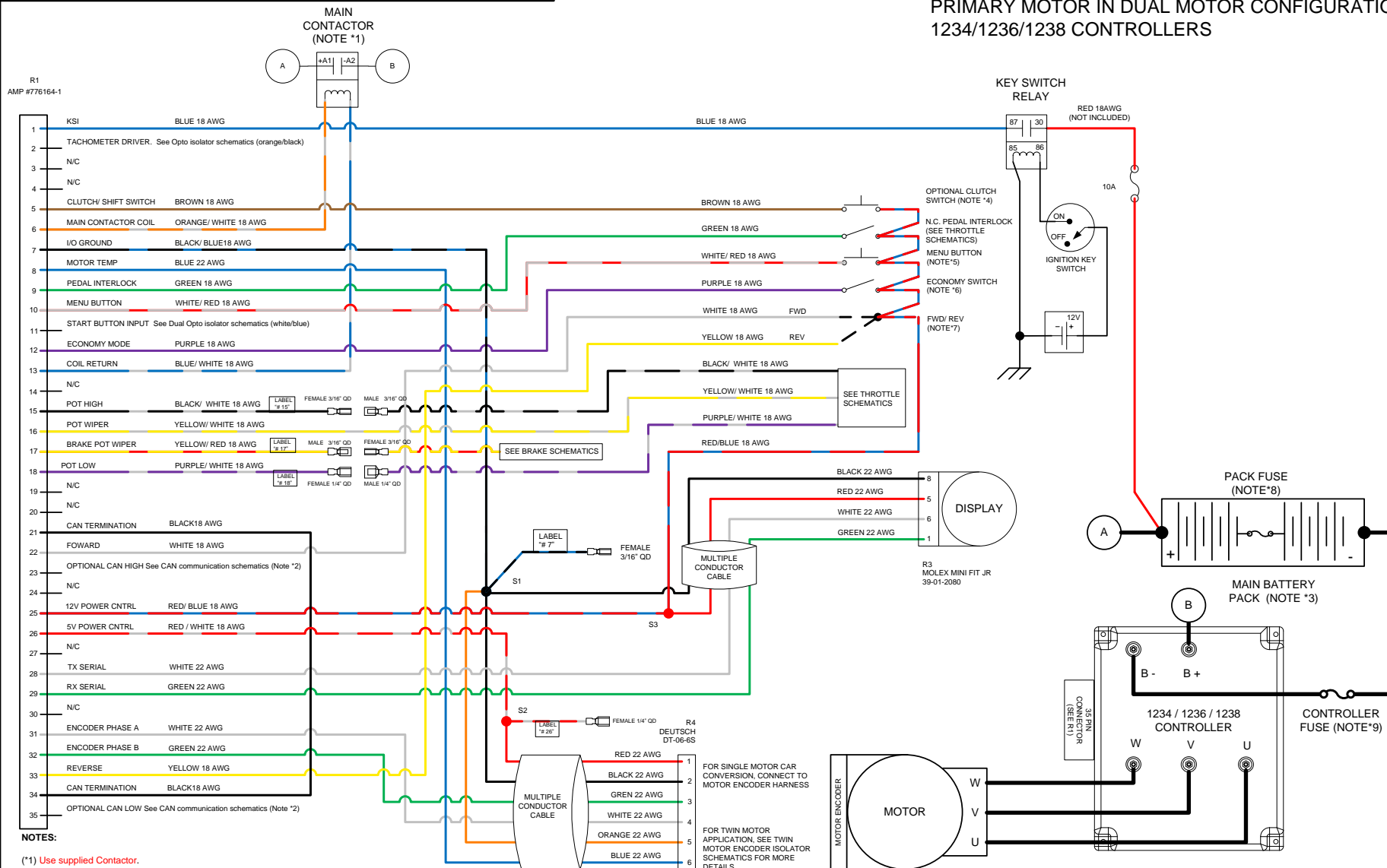
FOR SOFTWARE VERSIONS 5.00 TO 5.12

FOR CURTIS CONTROLLERS 1234/1236/1238

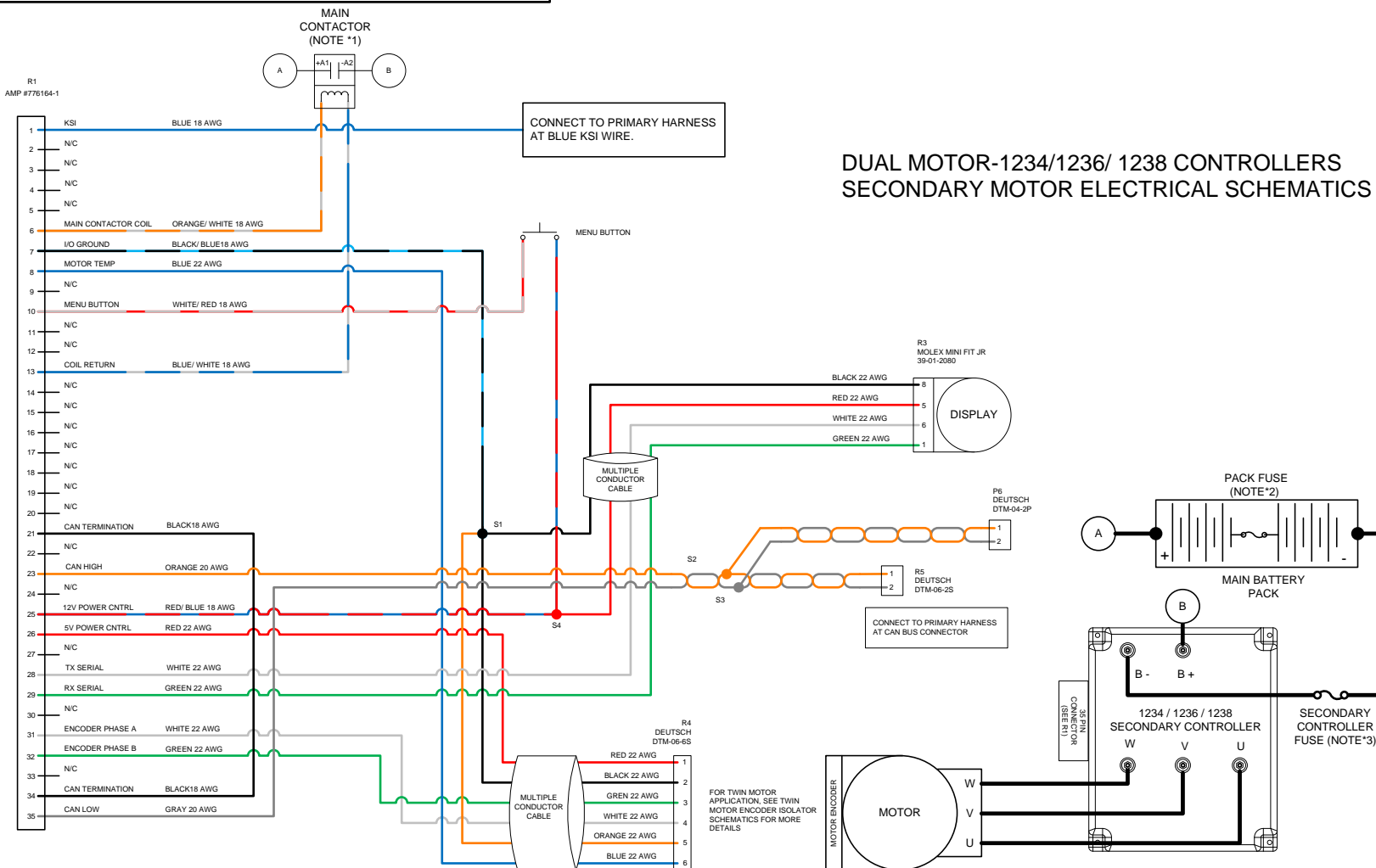
REVISION: C
Date: 5/28/14

NOTICE: This drawing is the property of Hi Performance Electric Vehicle Systems Inc., and/or its subsidiaries and affiliates (individually and collectively "HPEVS"), and contains highly proprietary, confidential, and trade secret information of HPEVS. The recipient of this drawing agrees (a) to use the information contained herein for the purpose for which it was furnished by HPEVS (b) to return this drawing upon HPEVS request. This notice shall appear on any complete or partial reproduction of this drawing.

ELECTRICAL SCHEMATICS FOR SINGLE MOTOR OR PRIMARY MOTOR IN DUAL MOTOR CONFIGURATION 1234/1236/1238 CONTROLLERS



NOTICE: This drawing is the property of H Performance Electric Vehicle Systems Inc. and/or its subsidiaries and affiliates (individually and collectively "HPEVS"), and contains highly proprietary, confidential, and trade secret information of HPEVS. The recipient of this drawing agrees: (a) to use the information contained herein for the purpose for which it was furnished by HPEVS; (b) to return this drawing upon HPEVS request. This notice shall appear on any complete or partial reproduction of this drawing.



NOTES:

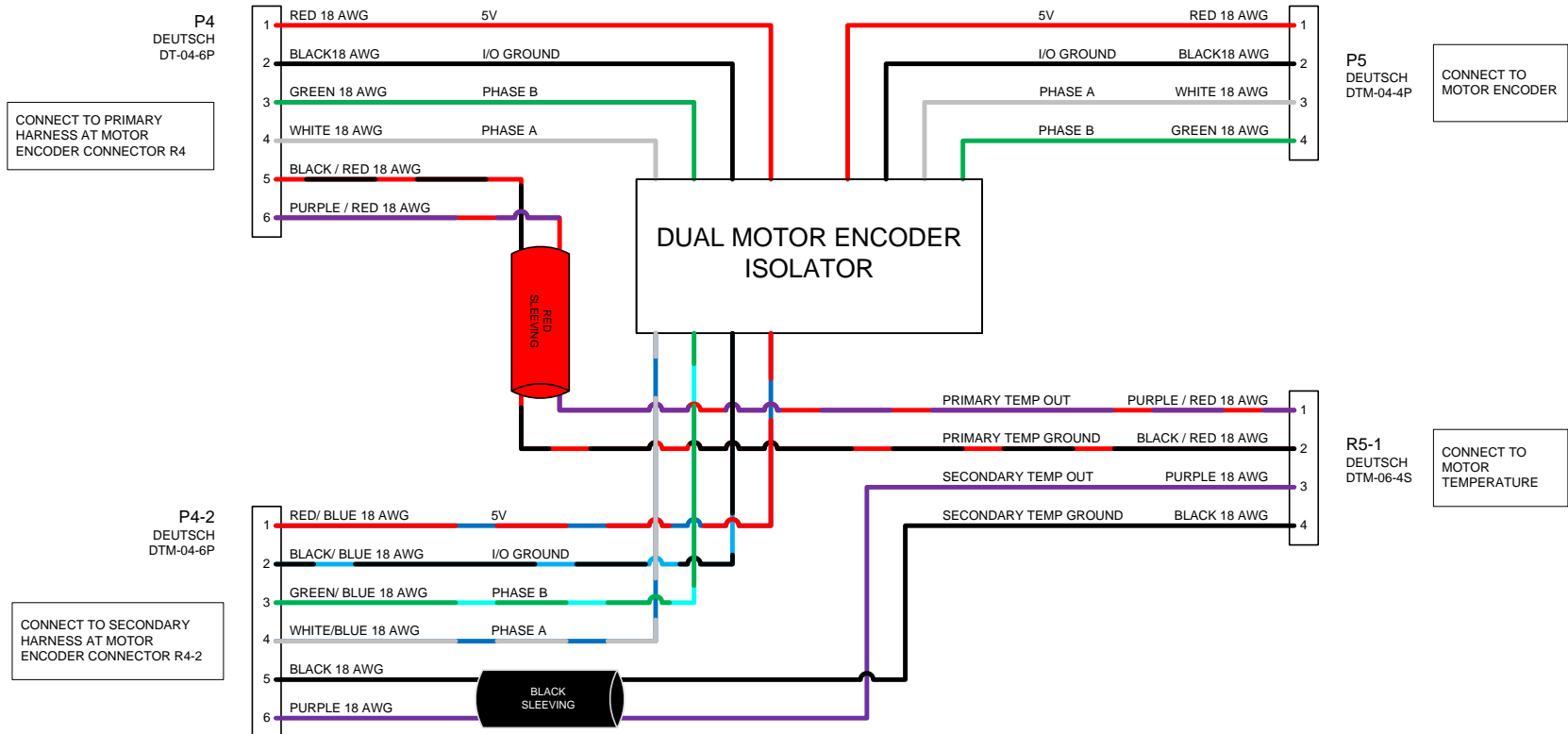
(*1) USE SUPPLIED CONTACTOR

(*2) Use Pack Fuse rated at 500A for Single controller applications. For Dual controller use 800A Pack fuse.

(*3) Only for Dual motor application. Use Controller Fuse rated at 500A for each controller.

CAD TYPE	VISIO	APPLICABLE SOFTWARE	VERSION 5.00 TO 5.12
UNIT	NONE	DRAWING	1010-AUTO-CONVERSION-TWIN MOTOR
DRW SIZE	A	TITLE	
DATE	4/2/13		
SCALE	1:1	SHEET 1 OF 1	REVISION B HPEVS

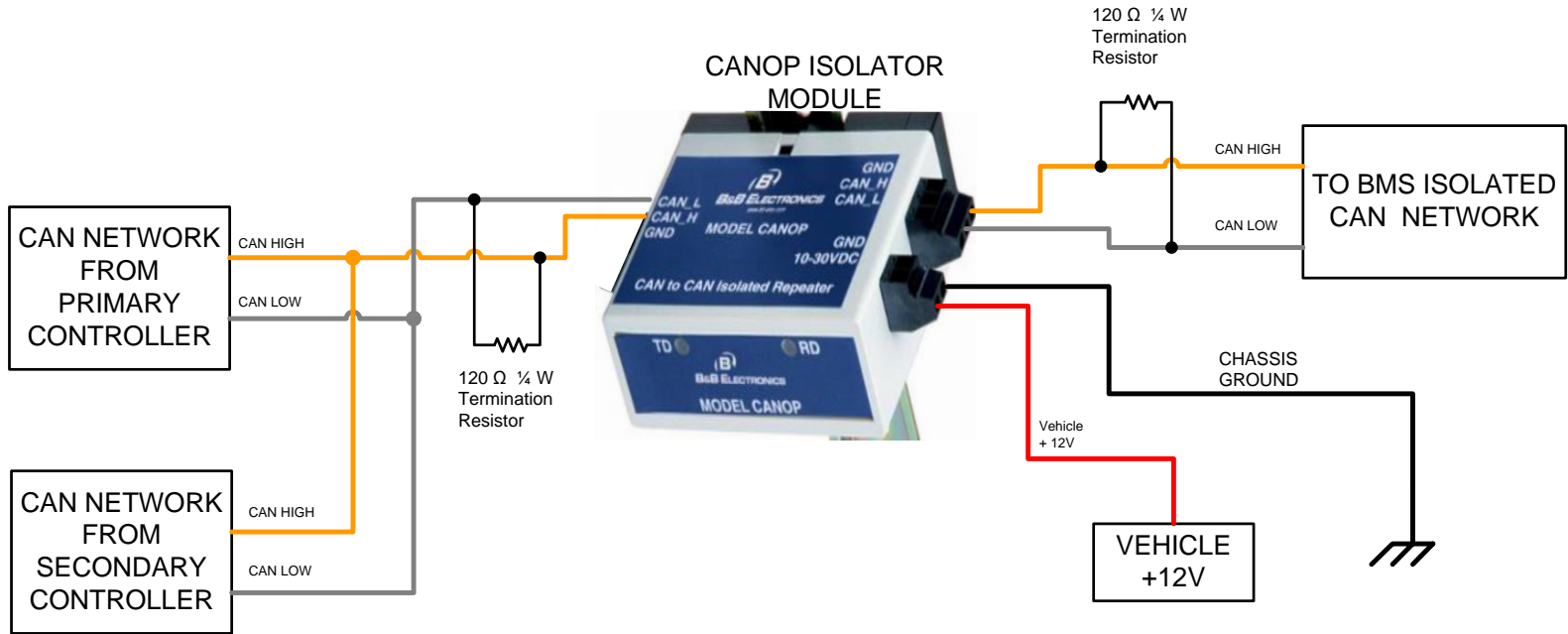
NOTICE: This drawing is the property of Hi Performance Electric Vehicle Systems Inc., and/or its subsidiaries and affiliates (individually and collectively "HPEVS"), and contains highly proprietary, confidential, and trade secret information of HPEVS. The recipient of this drawing agrees (a) to use the information contained herein for the purpose for which it was furnished by HPEVS (b) to return this drawing upon HPEVS request. This notice shall appear on any complete or partial reproduction of this drawing.



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

NOTICE: This drawing is the property of Hi Performance Electric Vehicle Systems Inc., and/or its subsidiaries and affiliates (individually and collectively "HPEVS"), and contains highly proprietary, confidential, and trade secret information of HPEVS. The recipient of this drawing agrees (a) to use the information contained herein for the purpose for which it was furnished by HPEVS (b) to return this drawing upon HPEVS request. This notice shall appear on any complete or partial reproduction of this drawing.

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 CAN ISOLATOR DUAL 1238 CONTROLLER	
CHECKED	SAFETY		
SCALE NONE	DATE 4/17/13	REVISION B SHEET 1 OF 1	HPEVS

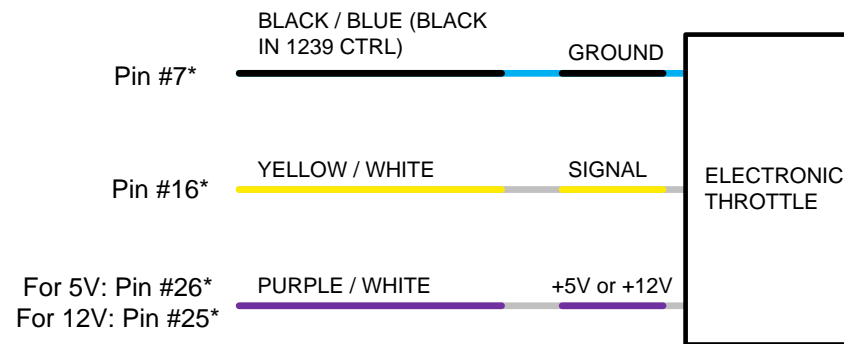
THROTTLE CONFIGURATION

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

THROTTLE CONFIGURATION	TYPE
ELECTRONIC without SWITCH	TYPE 1
2 WIRE with SWITCH 0-5k Ω	TYPE 2
3 WIRE with SWITCH 0-5k Ω	TYPE 3
CURTIS PB8 THROTTLE ASSEMBLY	TYPE 3

NOTICE: This drawing is the property of Hi Performance Electric Vehicle Systems Inc., and/or its subsidiaries and affiliates (individually and collectively "HPEVS"), and contains highly proprietary, confidential, and trade secret information of HPEVS. The recipient of this drawing agrees (a) to use the information contained herein for the purpose for which it was furnished by HPEVS (b) to return this drawing upon HPEVS request. This notice shall appear on any complete or partial reproduction of this drawing.

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



TYPE 1 ELECTRONIC THROTTLE**

* Typical connection, verify correct voltage and connection in throttle documents or instructions.

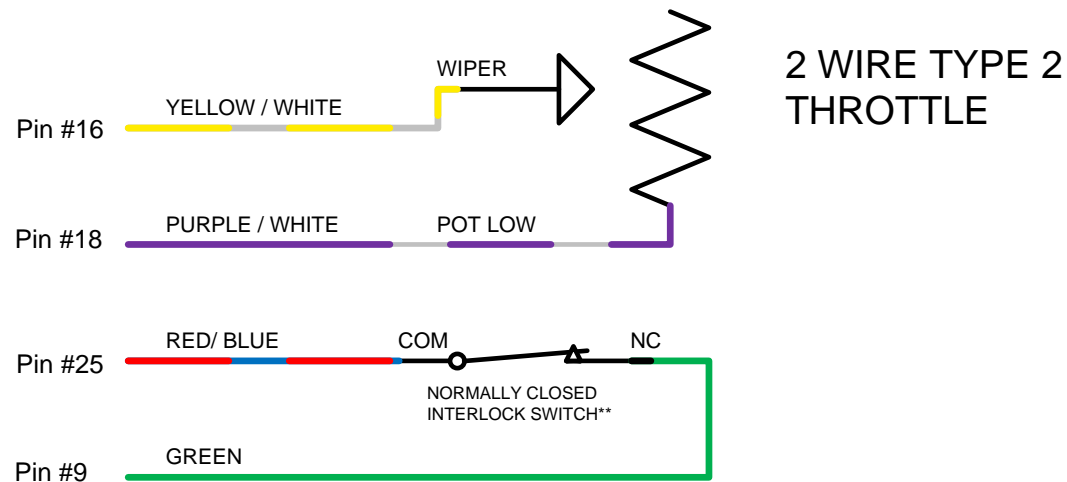
Not all Electronic Throttles supported

** When an electronic throttle is used, the GREEN wire from the pedal interlock does not need to be connected.

CAD TYPE VISIO	APPLICABLE SOFTWARE		
UNIT NONE	DRAWING 1010-THROTTLE-001		
DRW SIZE A	TITLE ELECTRONIC THROTTLE		
DATE 1/22/13			
SUPPLIER PART			
SCALE NONE	SHEET 4 OF 4	REVISION B	HPEVS

NOTICE: This drawing is the property of Hi Performance Electric Vehicle Systems Inc., and/or its subsidiaries and affiliates (individually and collectively "HPEVS"), and contains highly proprietary, confidential, and trade secret information of HPEVS. The recipient of this drawing agrees (a) to use the information contained herein for the purpose for which it was furnished by HPEVS (b) to return this drawing upon HPEVS request. This notice shall appear on any complete or partial reproduction of this drawing.

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

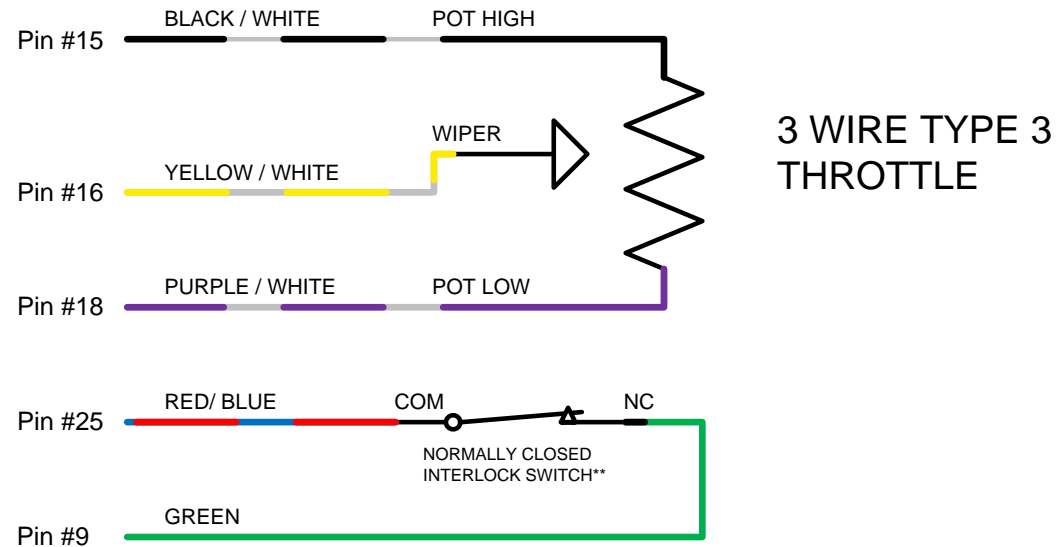


** When the accelerator pedal IS PRESSED the interlock switch is released to its NORMAL position (switch not activated) thus completing the circuit since its green wire is connected to the normally closed (NC) connection.

CAD TYPE VISIO	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

NOTICE: This drawing is the property of Hi Performance Electric Vehicle Systems Inc., and/or its subsidiaries and affiliates (individually and collectively "HPEVS"), and contains highly proprietary, confidential, and trade secret information of HPEVS. The recipient of this drawing agrees (a) to use the information contained herein for the purpose for which it was furnished by HPEVS (b) to return this drawing upon HPEVS request. This notice shall appear on any complete or partial reproduction of this drawing.

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

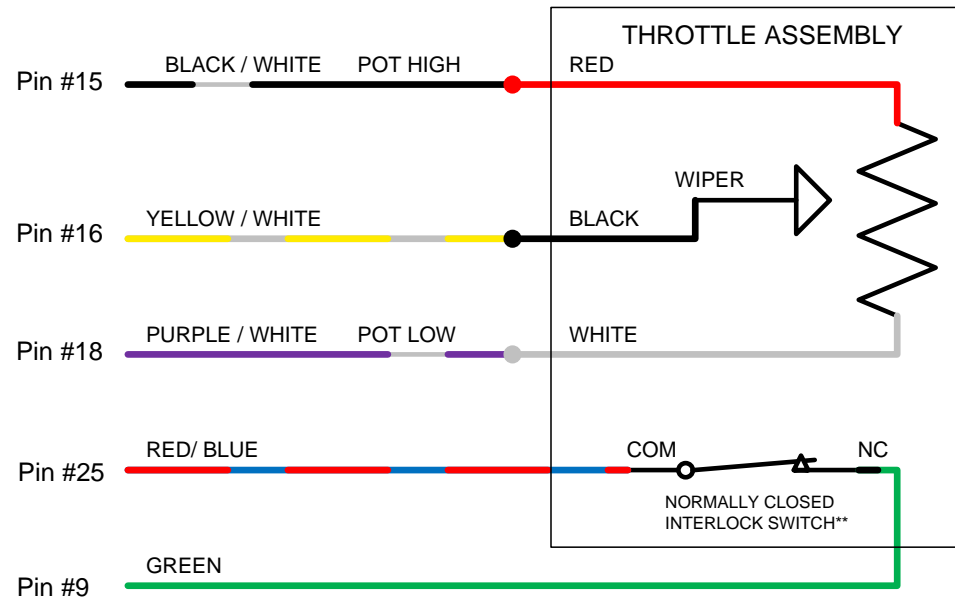


** When the accelerator pedal IS PRESSED the interlock switch is released to its NORMAL position (switch not activated) thus completing the circuit since its green wire is connected to the normally closed (NC) connection.

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

NOTICE: This drawing is the property of Hi Performance Electric Vehicle Systems Inc., and/or its subsidiaries and affiliates (individually and collectively "HPEVS"), and contains highly proprietary, confidential, and trade secret information of HPEVS. The recipient of this drawing agrees (a) to use the information contained herein for the purpose for which it was furnished by HPEVS (b) to return this drawing upon HPEVS request. This notice shall appear on any complete or partial reproduction of this drawing.

REVISIONS		
REV	DESCRIPTION	APPROVED
A	INITIAL RELEASE	1/27/2013



CURTIS PB8 THROTTLE ASSEMBLY

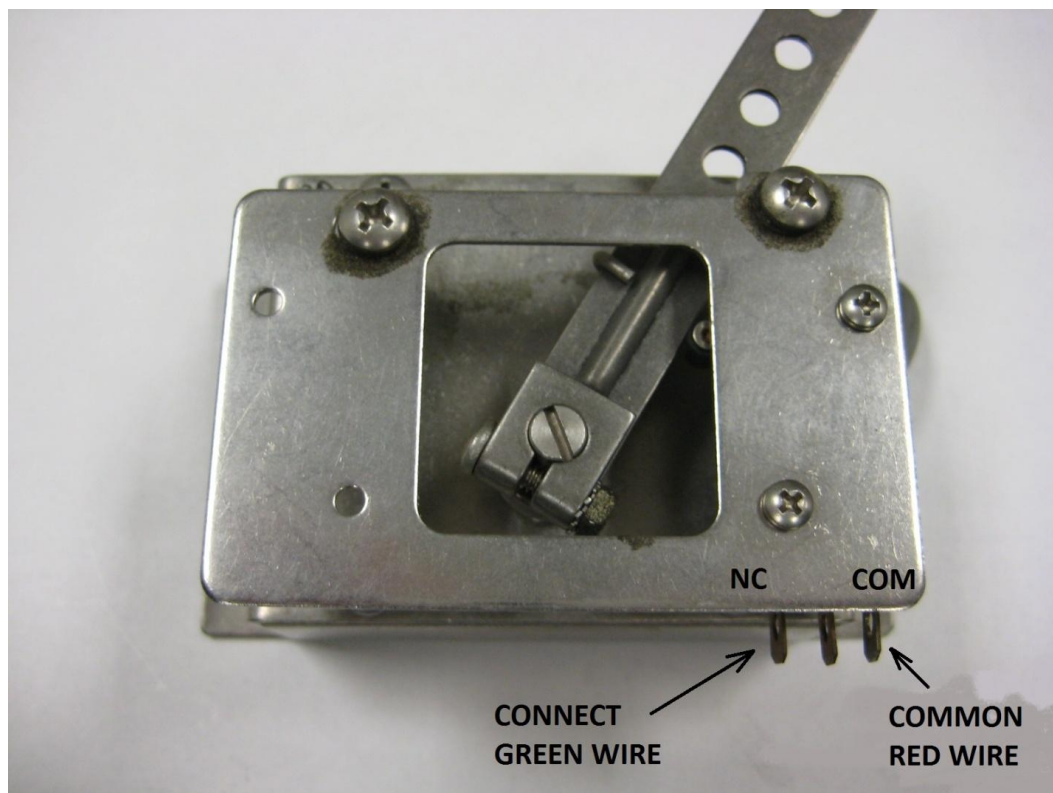
** When the accelerator pedal IS PRESSED the interlock switch is released to its NORMAL position (switch not activated) thus completing the circuit since its green wire is connected to the normally closed (NC) connection.

CAD TYPE VISIO	APPLICABLE SOFTWARE		
UNIT NONE	DRAWING 1010-THROTTLE-001		
DRW SIZE A	TITLE CURTIS PB8 THROTTLE ASSEMBLY		
DATE 1/22/13			
SUPPLIER PART			
SCALE NONE	SHEET 3 OF 4	REVISION A	HPEVS

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.



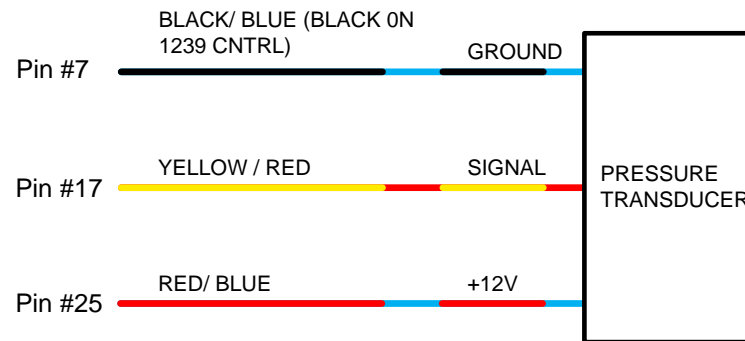
BRAKE INPUT CONFIGURATION

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

BRAKE INPUT CONFIGURATION	TYPE
PRESSURE TRANSDUCER/ ELECTRONIC 0-5V INPUT	TYPE 1
2 WIRE 0-5k Ω	TYPE 2

NOTICE: This drawing is the property of Hi Performance Electric Vehicle Systems Inc., and/or its subsidiaries and affiliates (individually and collectively "HPEVS"), and contains highly proprietary, confidential, and trade secret information of HPEVS. The recipient of this drawing agrees (a) to use the information contained herein for the purpose for which it was furnished by HPEVS (b) to return this drawing upon HPEVS request. This notice shall appear on any complete or partial reproduction of this drawing.

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



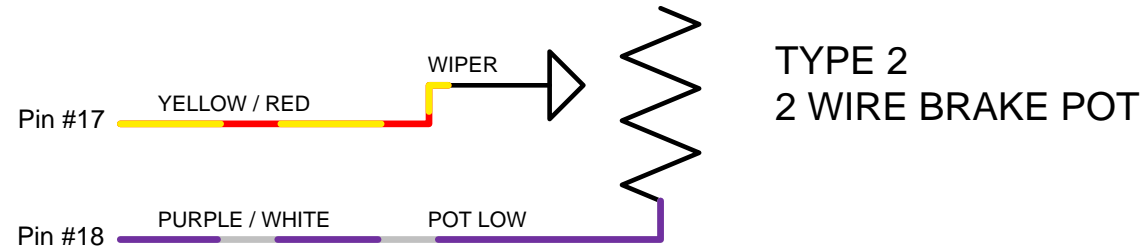
TYPE 1 PRESSURE TRANSDUCER

**** Typical Pressure Transducer Ratings**
 8-30 Volt Input
 1-5 Volt Output
 2500 PSI

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

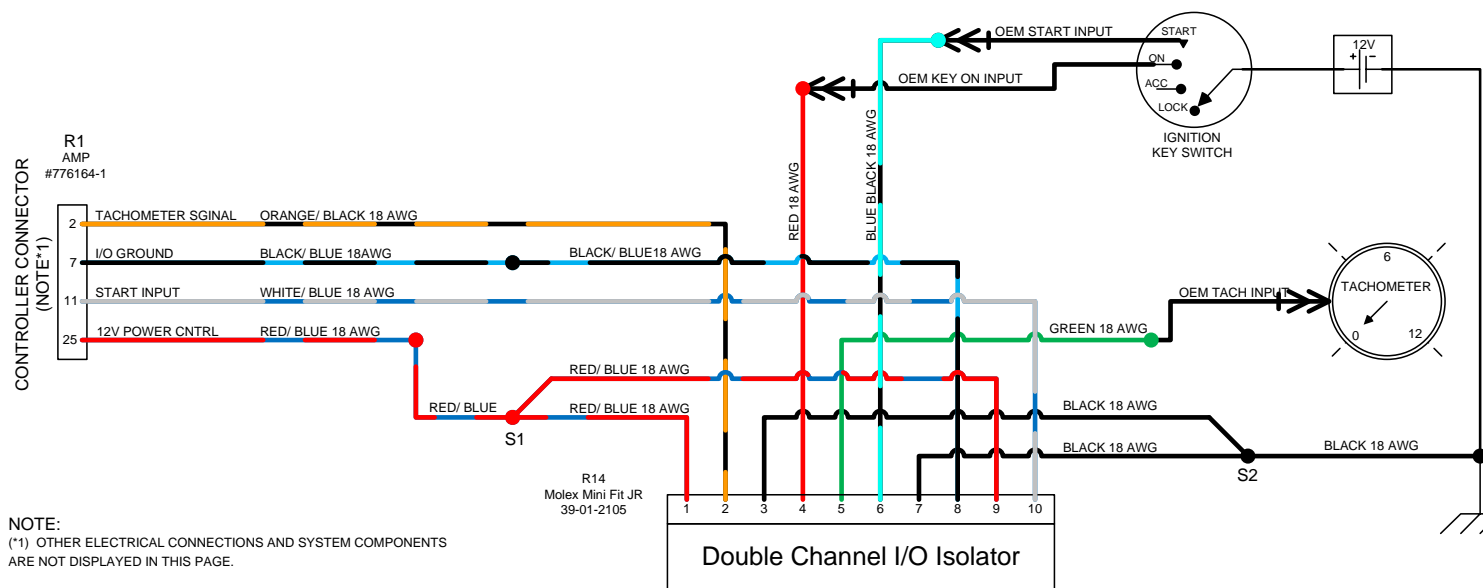
NOTICE: This drawing is the property of Hi Performance Electric Vehicle Systems Inc., and/or its subsidiaries and affiliates (individually and collectively "HPEVS"), and contains highly proprietary, confidential, and trade secret information of HPEVS. The recipient of this drawing agrees (a) to use the information contained herein for the purpose for which it was furnished by HPEVS (b) to return this drawing upon HPEVS request. This notice shall appear on any complete or partial reproduction of this drawing.

REVISIONS		
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	
DESIGN	DETAIL	TITLE 2 WIRE BRAKE POT	
CHECKED	SAFETY		
SCALE NONE	DATE 2/19/13	REVISION A SHEET 1 OF 2	HPEVS

NOTICE: This drawing is the property of Hi Performance Electric Vehicle Systems Inc., and/or its subsidiaries and affiliates (individually and collectively "HPEVS"), and contains highly proprietary, confidential, and trade secret information of HPEVS. The recipient of this drawing agrees (a) to use the information contained herein for the purpose for which it was furnished by HPEVS (b) to return this drawing upon HPEVS request. This notice shall appear on any complete or partial reproduction of this drawing.



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 DUAL CHANNEL OPTO-ISOLATOR SYSTEM SCHEMATICS	
CHECKED	SAFETY		
SCALE NONE	DATE 4/19/12	REVISION B SHEET 1 OF 1	HPEVS