



1551 S. Vineyard Avenue  
Ontario, CA 91761  
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## **WIRING SCHEMATICS**

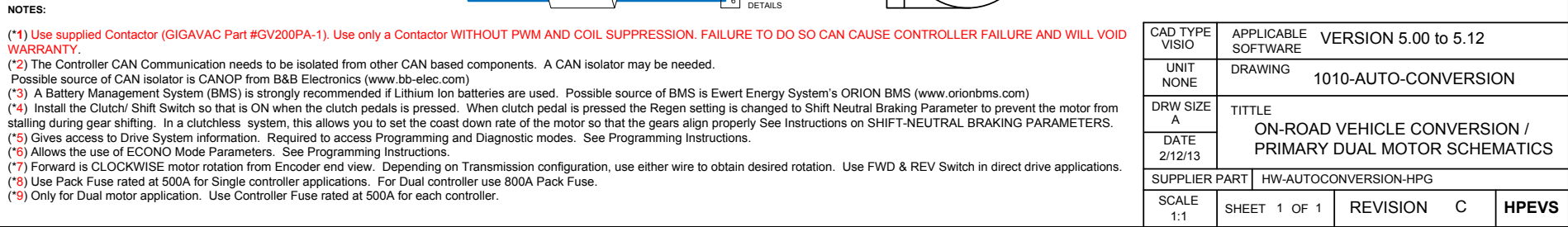
# **ON-ROAD VEHICLE CONVERSION SINGLE AND DUAL MOTOR APPLICATION**

**FOR SOFTWARE VERSIONS 5.00 TO 5.12**

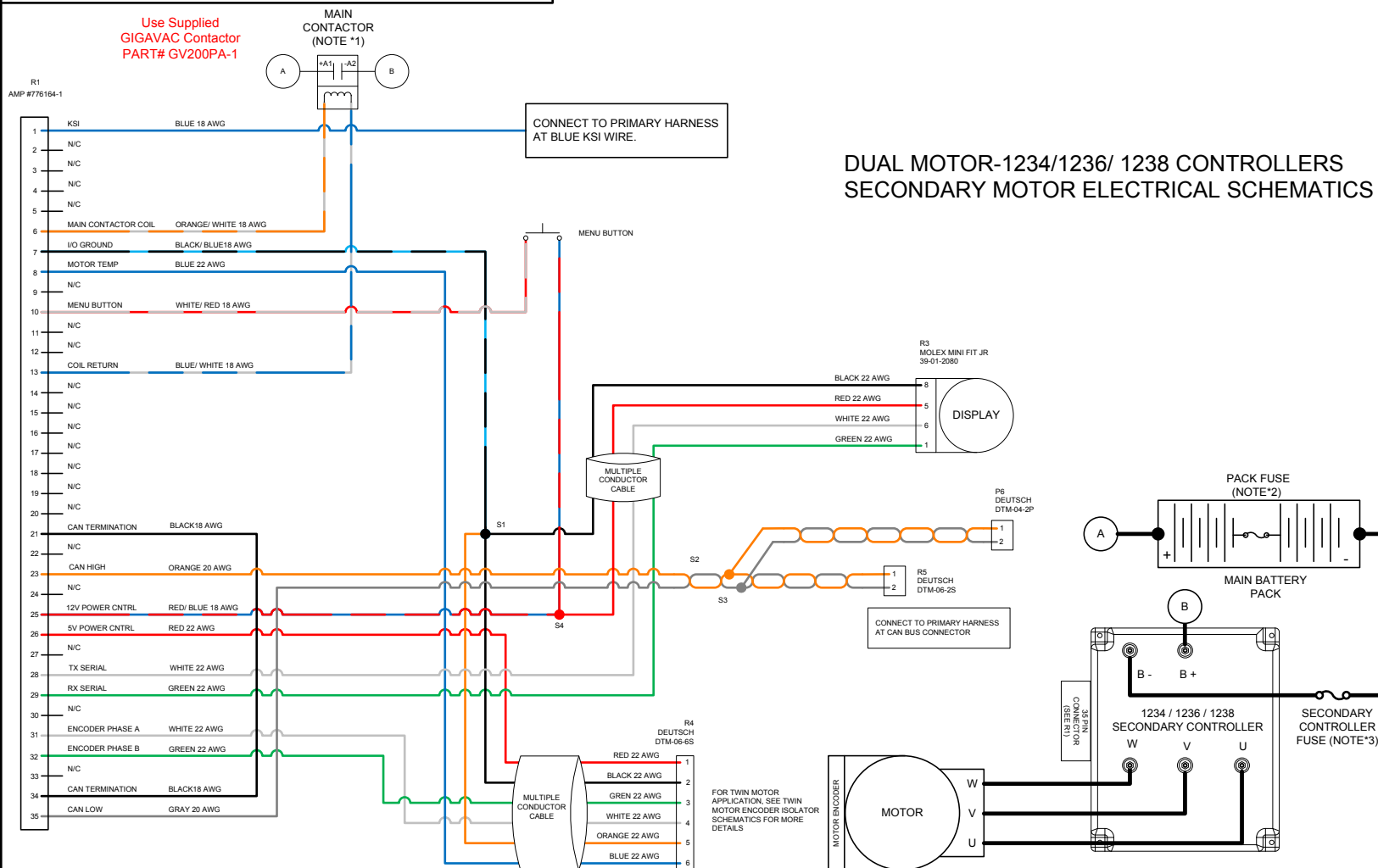
**FOR CURTIS CONTROLLERS 1234/1236/1238**

**REVISION: C**  
**Date: 5/28/14**

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



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**NOTES:**

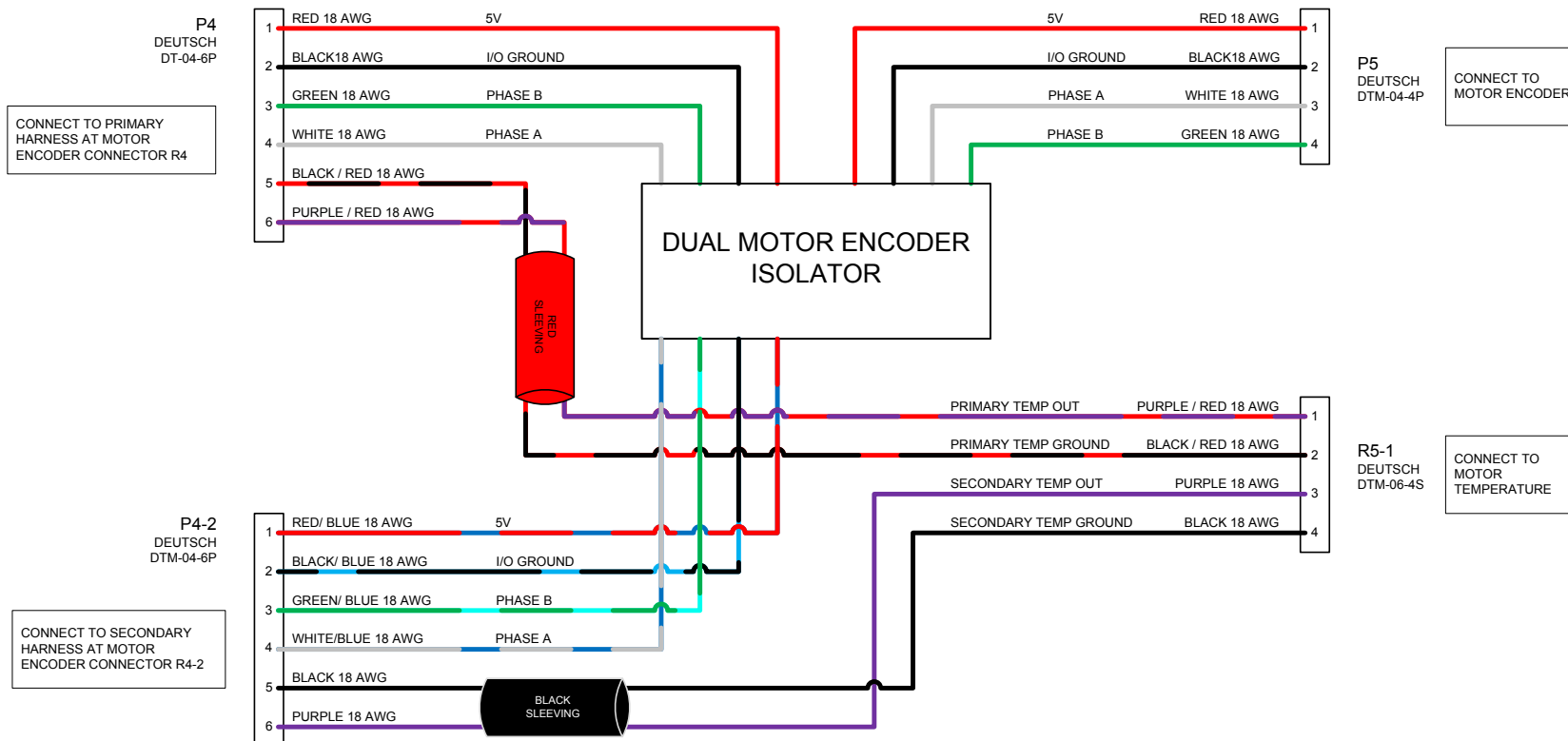
**(\*)1 Use supplied Contactor (GIGAVAC Part #GV200PA-1). Use only a Contactor WITHOUT PWM AND COIL SUPPRESSION. FAILURE TO DO SO CAN CAUSE CONTROLLER FAILURE AND WILL VOID WARRANTY.**

(\*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 SECONDARY DUAL MOTOR SCHEMATICS		
DATE 4/2/13			
SCALE 1:1	SHEET 1 OF 1	REVISION B	HPEV

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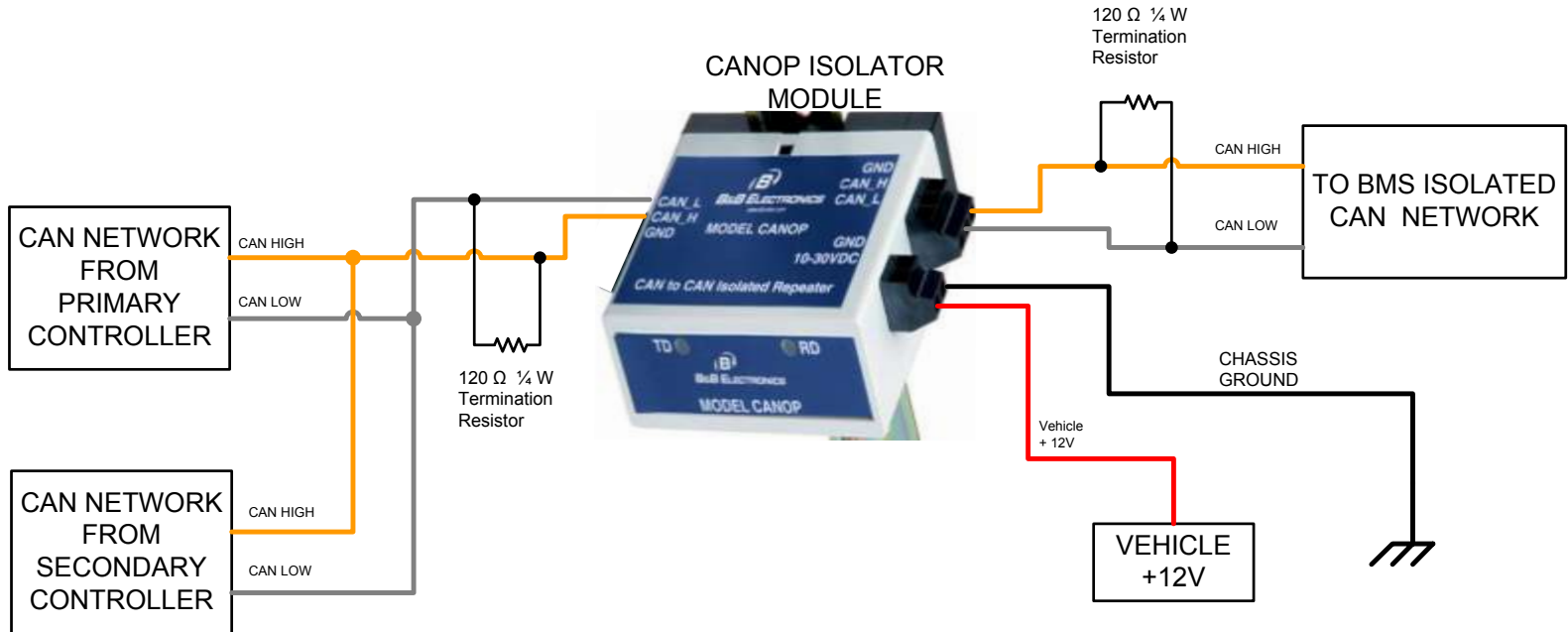


CAD TYPE VISIO	CAD LOC.	APPLICABLE SOFTWARE	DRW SIZE B
OPER. NO.	UNIT	DRAWING 1010-TWIN-ENCODER-ISOLATOR	
DESIGN	DETAIL	TITLE DUAL MOTOR ENCODER ISOLATOR SCHEMATICS	
CHECKED	SAFETY		
SCALE NONE	DATE 4/2/2013	REVISION A SHEET 1 OF 1	<b>HPEVS</b>



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

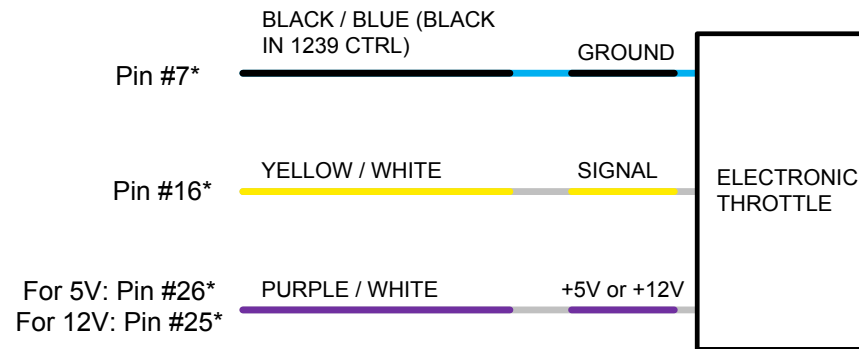
## THROTTLE CONFIGURATION

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 $\Omega$	TYPE 2
3 WIRE with SWITCH 0-5k $\Omega$	TYPE 3
CURTIS PB8 THROTTLE ASSEMBLY	TYPE 3

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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.

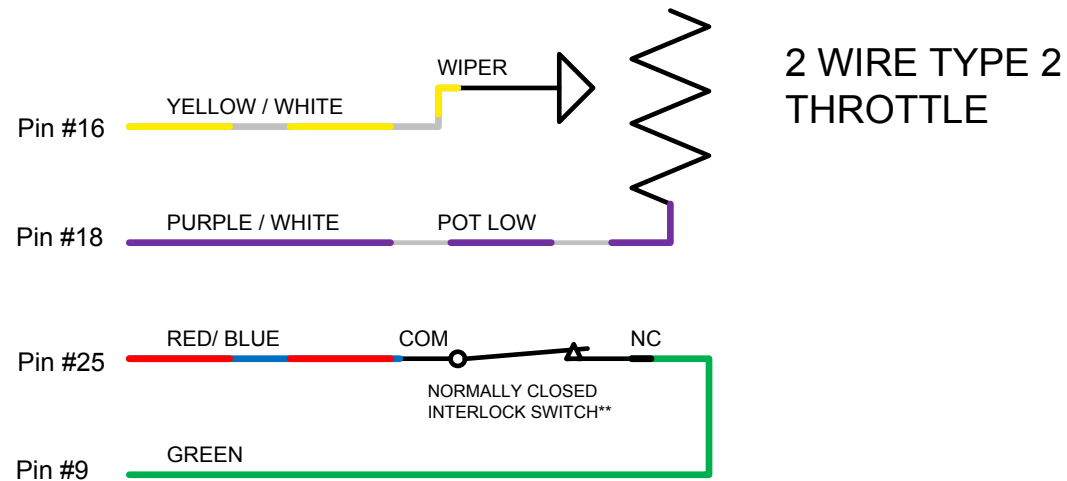
**Not all Electronic Throttles supported**

\*\* 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		
DATE 1/22/13	ELECTRONIC THROTTLE		
SUPPLIER PART			
SCALE NONE	SHEET 4 OF 4	REVISION B	HPEVS

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A	INITIAL RELEASE	1/22/2013

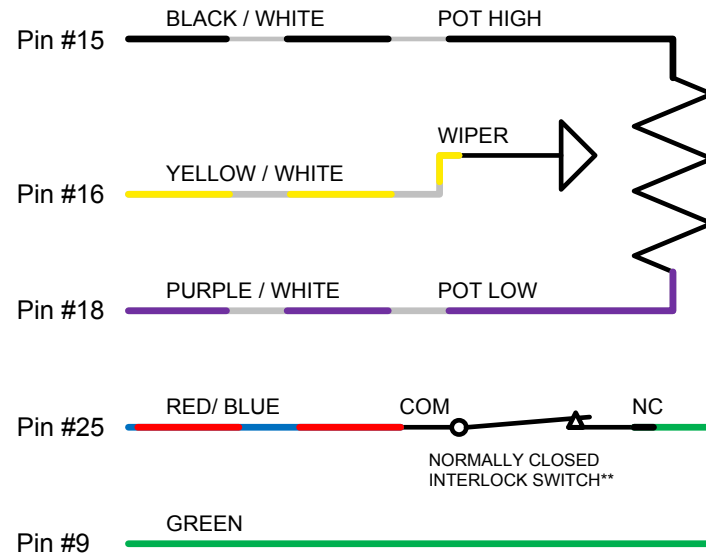


\*\* When the accelerator pedal IS PRESSED the interlock switch is released to its NORMAL position (switch not activated) thus completing the circuit since its green wire is connected to the normally closed (NC) connection.

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

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A	INITIAL RELEASE	1/22/2013



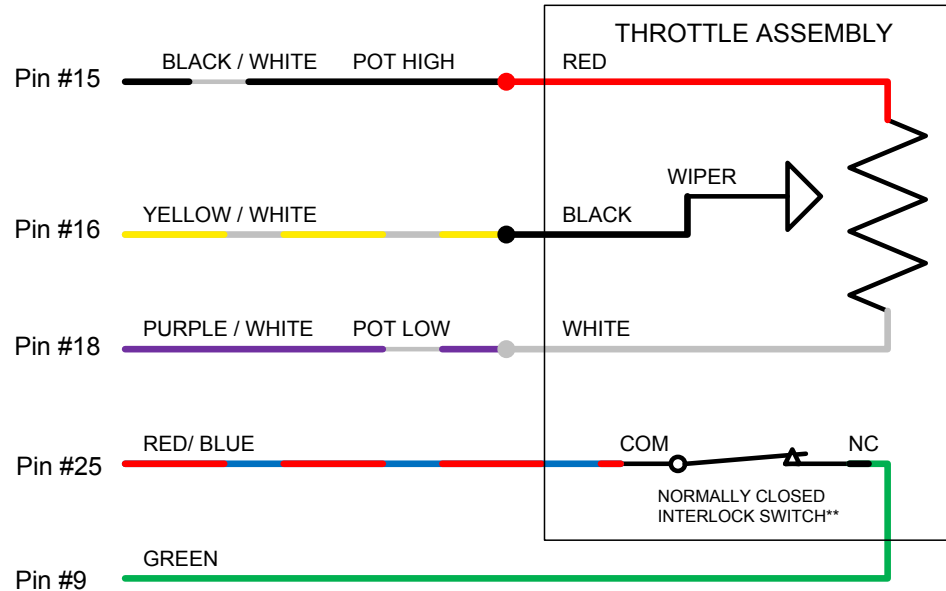
3 WIRE TYPE 3  
THROTTLE

\*\* 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

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## CURTIS PB8 THROTTLE ASSEMBLY

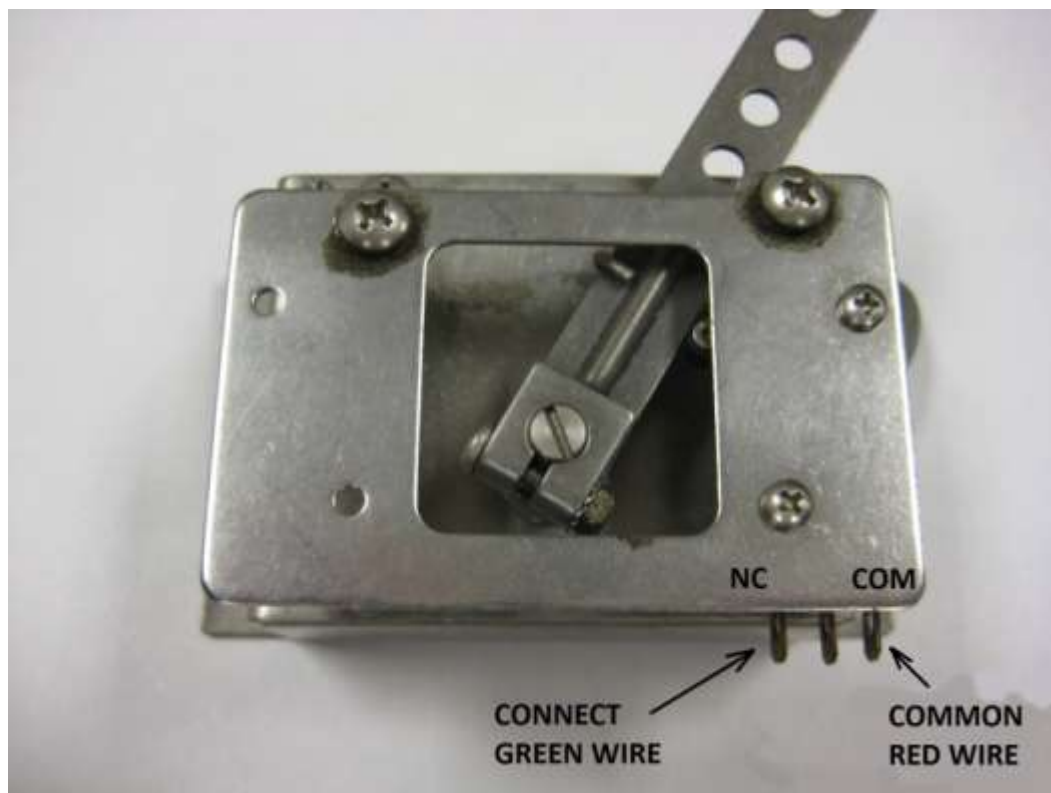
\*\* When the accelerator pedal IS PRESSED the interlock switch is released to its NORMAL position (switch not activated) thus completing the circuit since its green wire is connected to the normally closed (NC) connection.

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

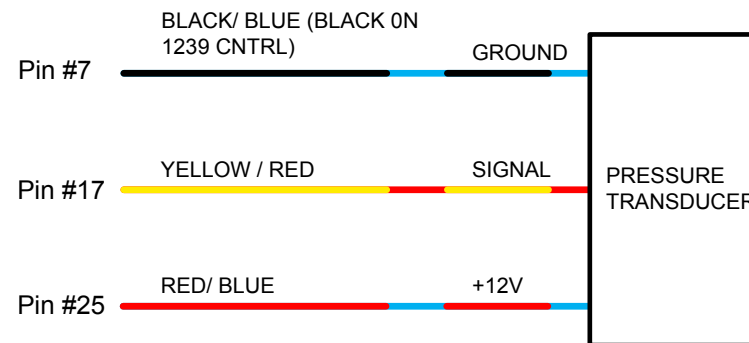
Depending on the type of brake input used for the application, the different types of brake input configurations are listed in the table below. Electrical schematics are also included in the following pages.

<b>BRAKE INPUT CONFIGURATION</b>	<b>TYPE</b>
PRESSURE TRANSDUCER/ ELECTRONIC 0-5V INPUT	TYPE 1
2 WIRE 0-5k $\Omega$	TYPE 2



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REV	DESCRIPTION	APPROVED
A	INITIAL RELEASE	2/19/2013



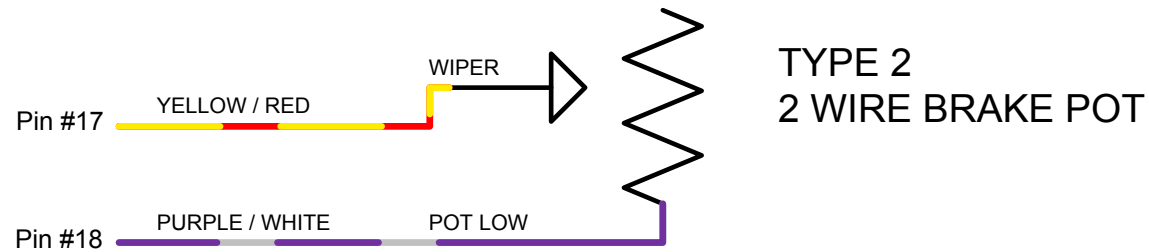
## TYPE 1 PRESSURE TRANSDUCER

**\*\* 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

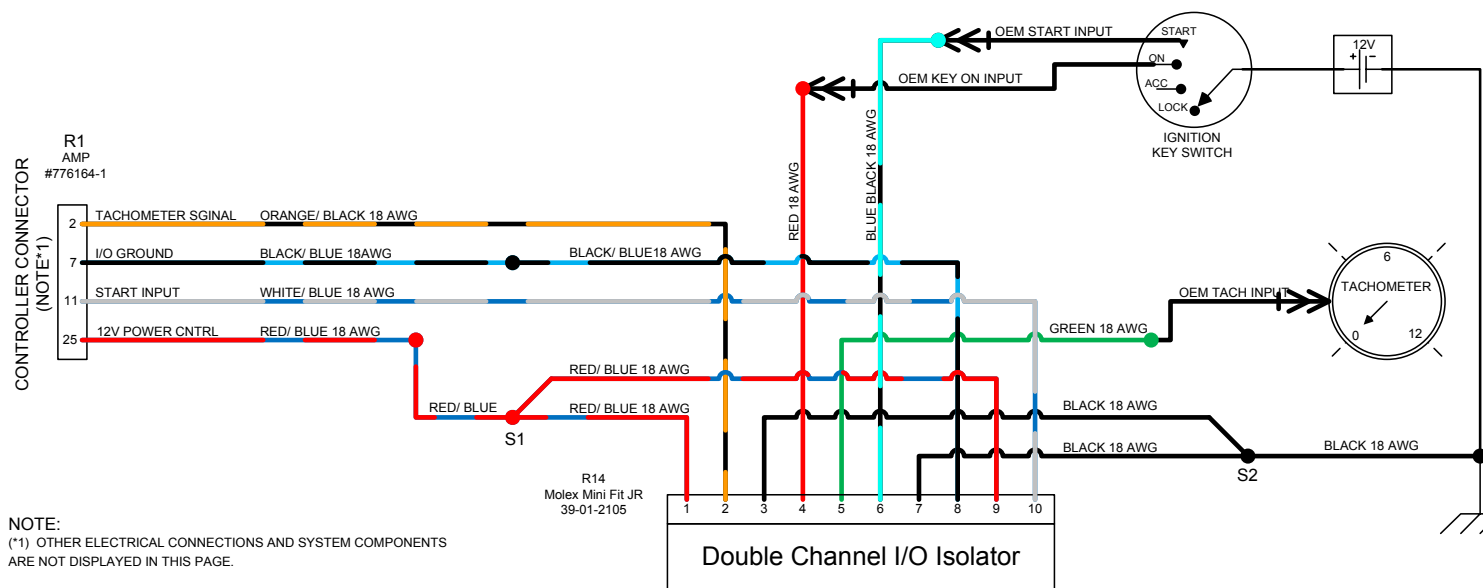
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CAD TYPE VISIO	CAD LOC.	CAD FILE	DRW SIZE A
OPER. NO.	UNIT	DRAWING 1010-BRAKE	
DESIGN	DETAIL	TITLE 2 WIRE BRAKE POT	
CHECKED	SAFETY		
SCALE NONE	DATE 2/19/13	REVISION A SHEET 1 OF 2	HPEVS

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