



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

WIRING SCHEMATICS

ON-ROAD VEHICLE CONVERSION SINGLE AND DUAL MOTOR APPLICATION

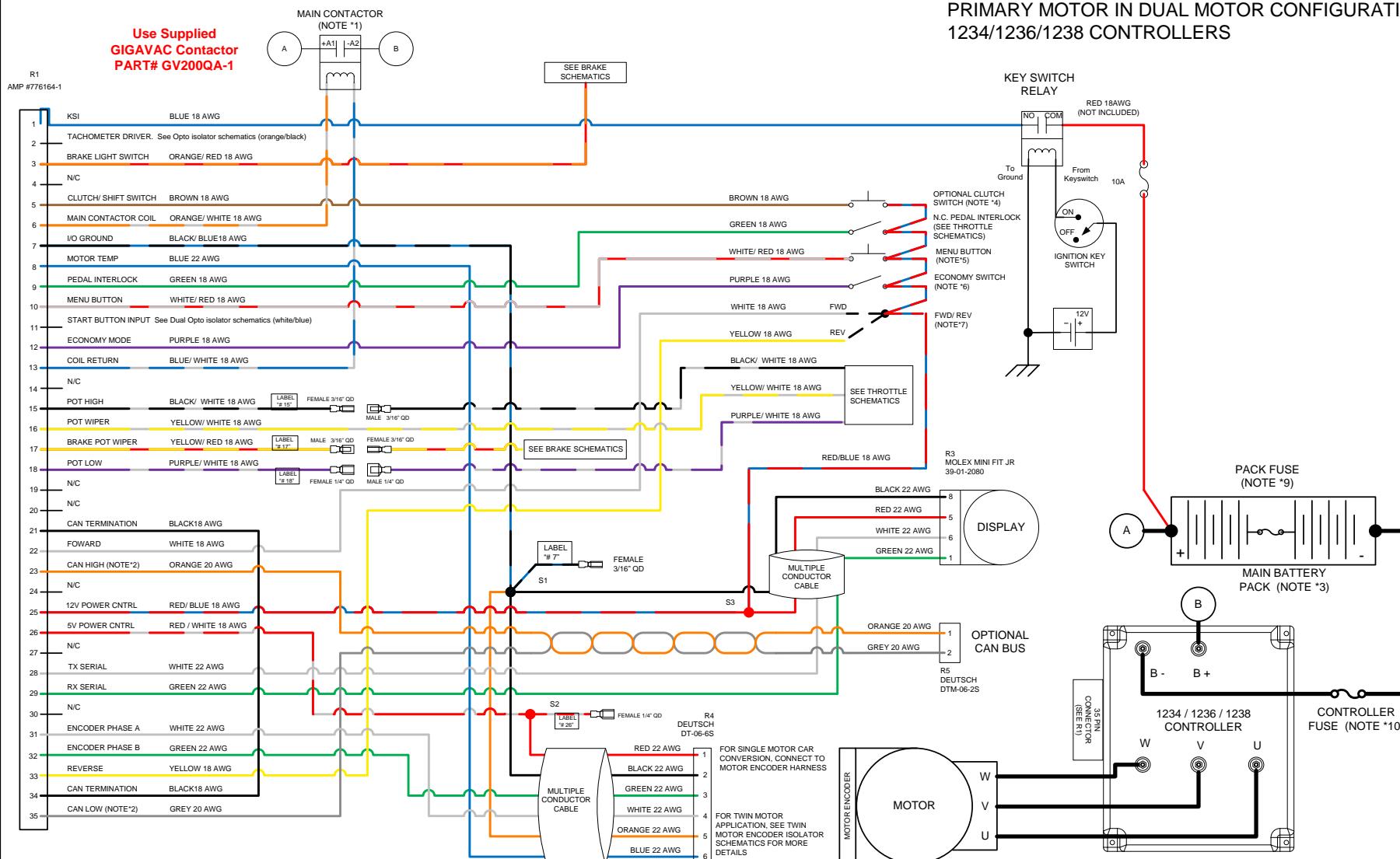
FOR SOFTWARE VERSIONS 5.13 AND HIGHER

FOR CURTIS CONTROLLERS 1234/1236/1238

**REVISION: E
Date: 10/27/15**

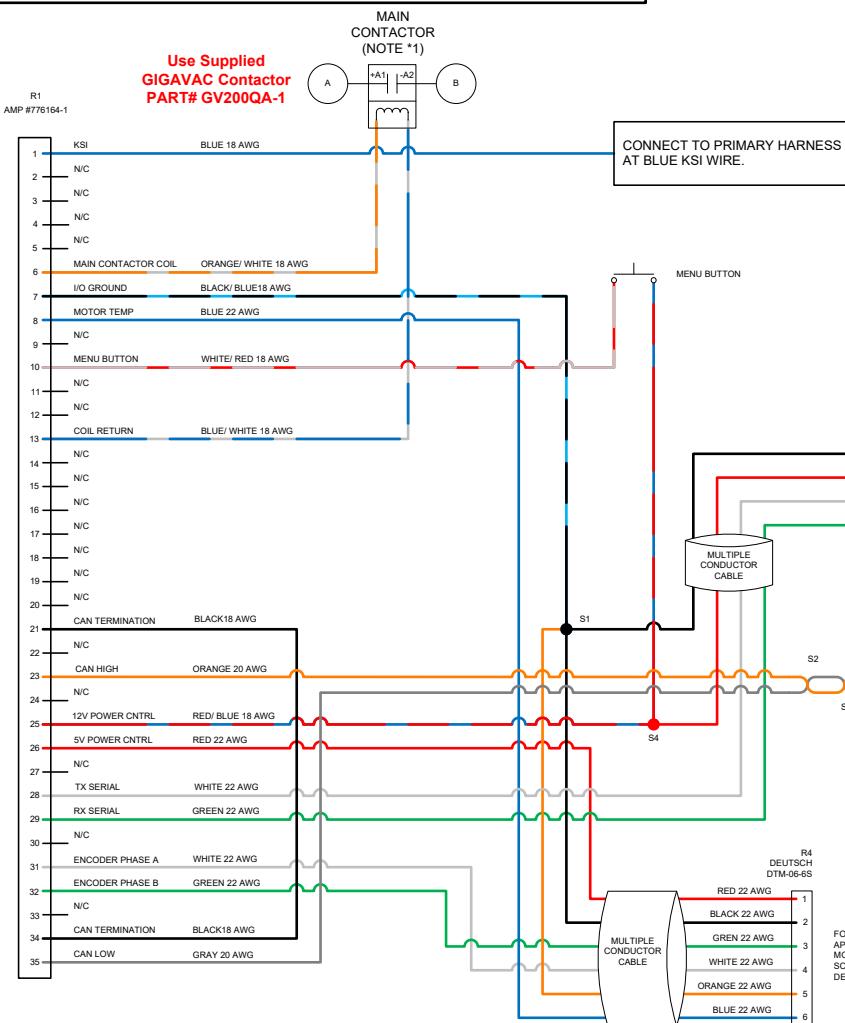
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ELECTRICAL SCHEMATICS FOR SINGLE MOTOR OR PRIMARY MOTOR IN DUAL MOTOR CONFIGURATION 1234/1236/1238 CONTROLLERS



CAD TYPE	APPLICABLE SOFTWARE	VERSION 5.13
UNIT	DRAWING	1010-AUTO-CONVERSION
DRW SIZE	TITLE	
A	ON-ROAD VEHICLE CONVERSION / PRIMARY DUAL MOTOR SCHEMATICS	
DATE	2/12/13	
SUPPLIER PART	HW-AUTOCONVERSION-HPG	
SCALE	SHEET 1 OF 1	REVISION D
NONE		HPEVS

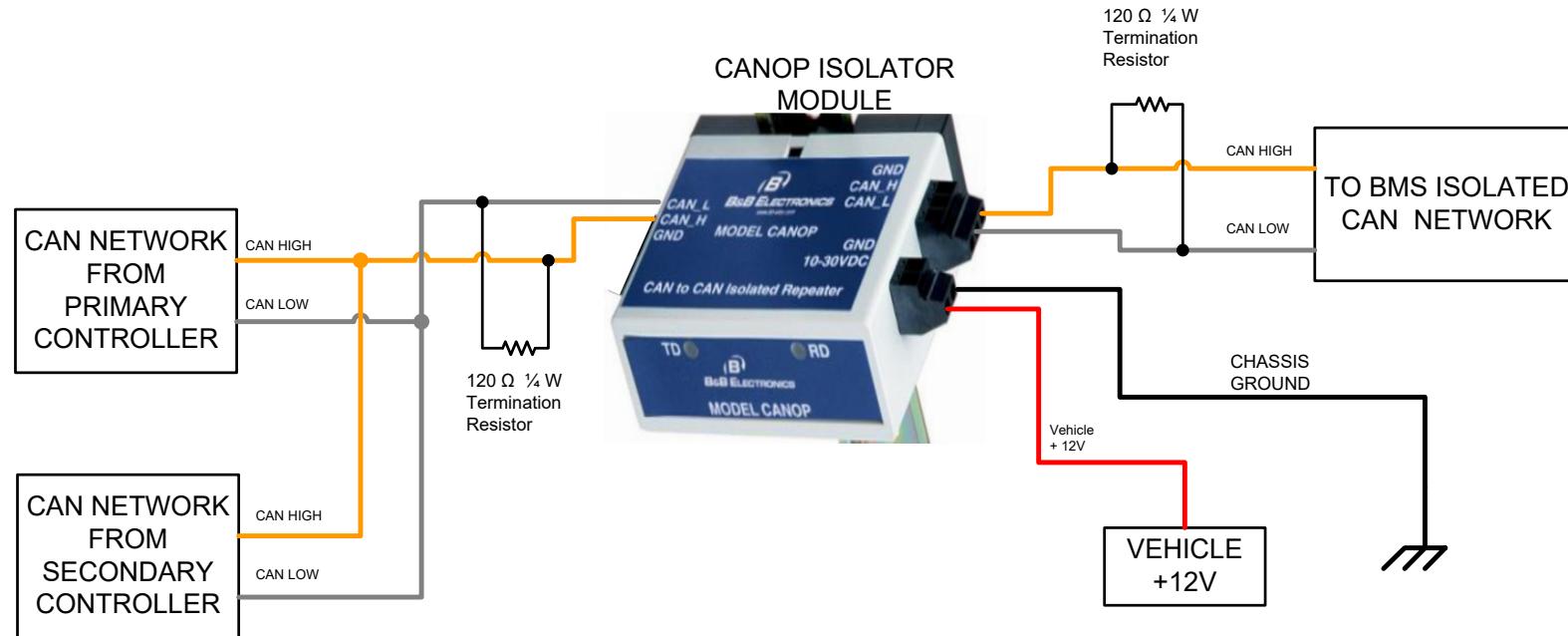
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CAD TYPE	APPLICABLE SOFTWARE	VERSION 5.13
UNIT	DRAWING	1010-AUTO-CONVERSION-TWIN MOTOR
DRW SIZE	TITLE	SECONDARY DUAL MOTOR SCHEMATICS
A	DATE	4/2/13
SCALE	SHEET	1 OF 1
1:1	REVISION	B
		HPEVS

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



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

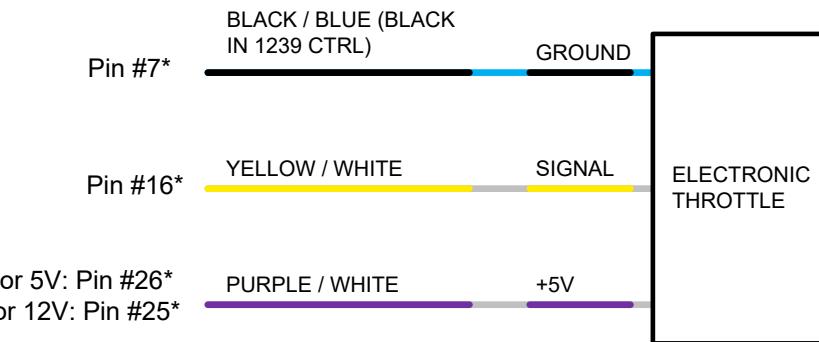
THROTTLE CONFIGURATION

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.

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

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TYPE 1 ELECTRONIC THROTTLE**

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

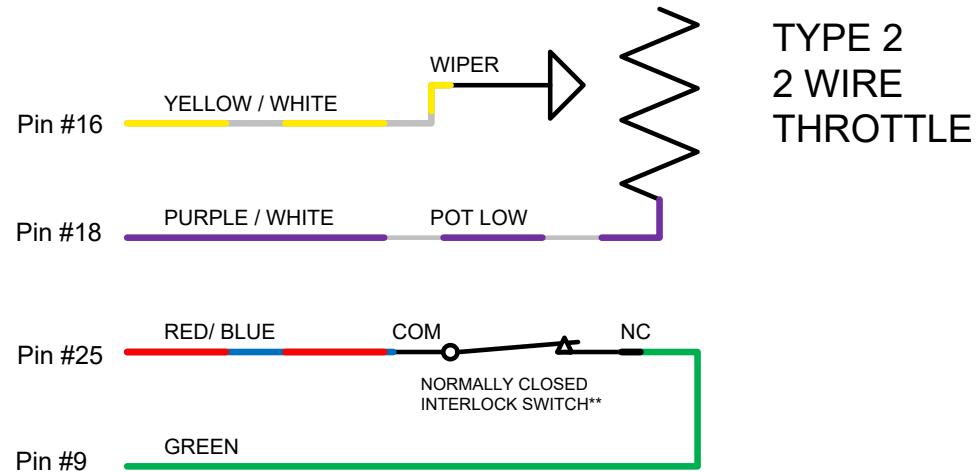
Not all Electronic Throttles supported

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

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

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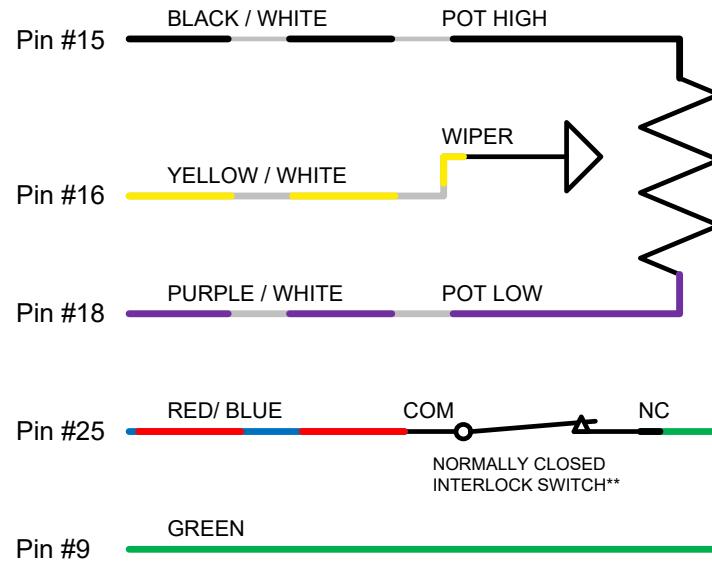


** When the accelerator pedal IS PRESSED the interlock switch is released to its NORMAL position (switch not activated) thus completing the circuit since its green wire is connected to the normally closed (NC) connection.

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

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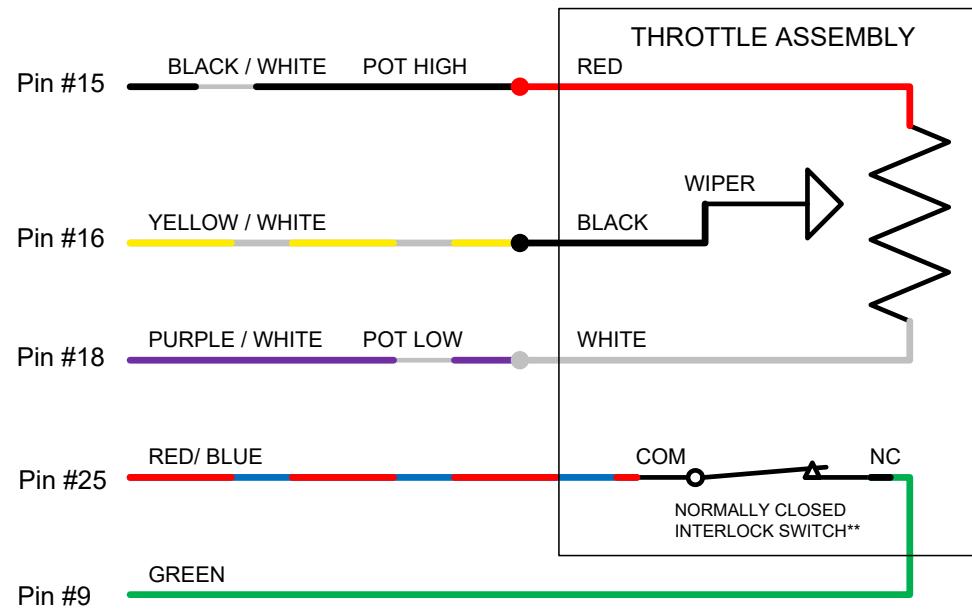
TYPE 3 3 WIRE THROTTLE

** 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	TYPE 3 3 WIRE THROTTLE
CHECKED	SAFETY		
SCALE NONE	DATE 1/22/13	REVISION A SHEET 2 OF 3	HPEVS

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CURTIS PB8 THROTTLE ASSEMBLY

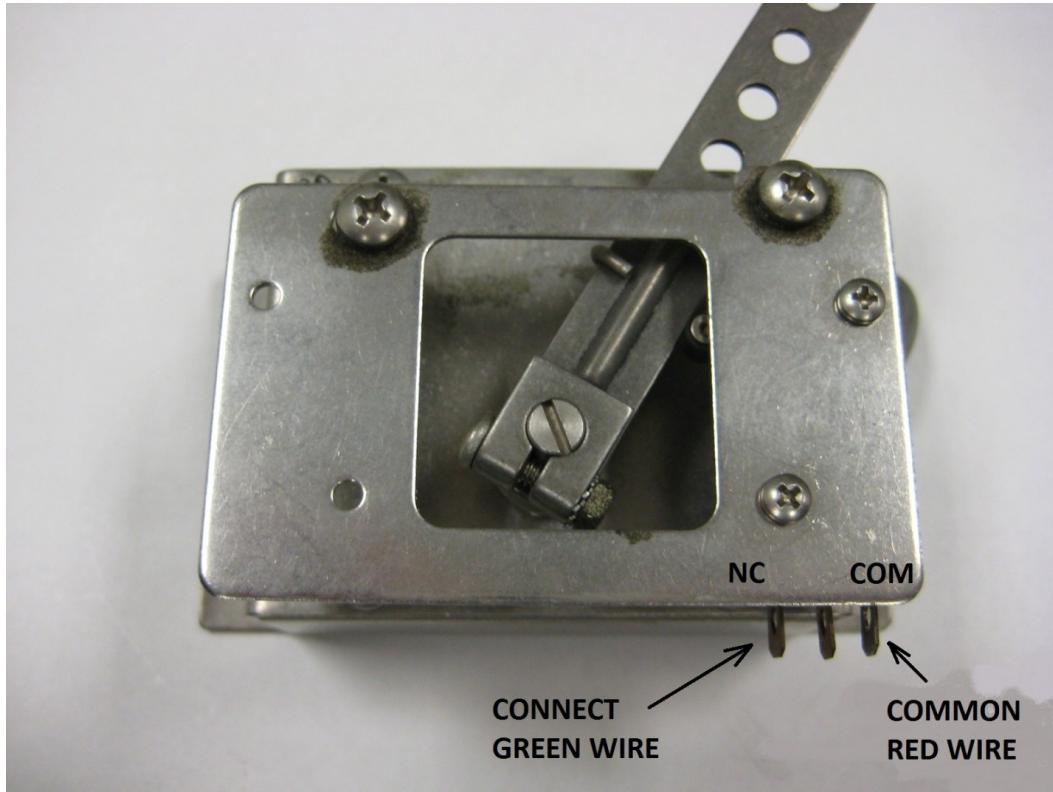
** When the accelerator pedal IS PRESSED the interlock switch is released to its NORMAL position (switch not activated) thus completing the circuit since its green wire is connected to the normally closed (NC) connection.

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.



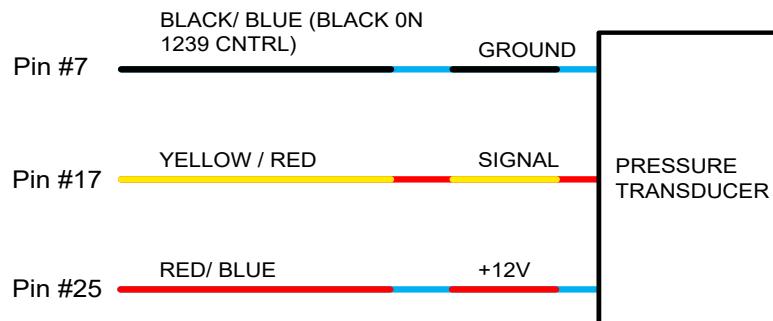
BRAKE INPUT CONFIGURATION

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

BRAKE INPUT CONFIGURATION	TYPE
NO BRAKE POT INSTALLED	TYPE 0
PRESSURE TRANSDUCER/ ELECTRONIC 0-5V INPUT	TYPE 1
2 WIRE 0-5k Ω POT	TYPE 2
SWITCH	TYPE 3

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TYPE 1 PRESSURE TRANSDUCER



** Typical Pressure Transducer Ratings

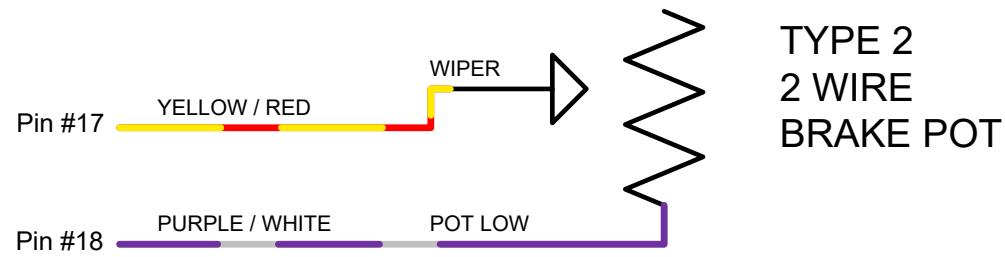
8-30 Volt Input
1-5 Volt Output
2500 PSI

Website Link: www.digikey.com
Part Number: M3041-000005-2K5PG-ND
Manufacturer Part #: M3041-000005-2K5PG

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

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REV	DESCRIPTION	APPROVED
A	INITIAL RELEASE	2/19/2013

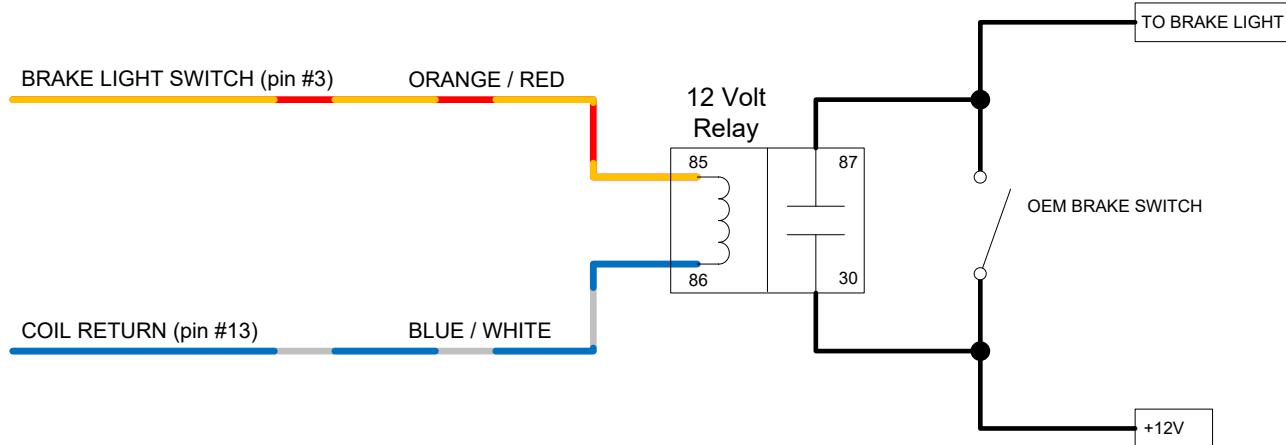


CAD TYPE VISIO	CAD LOC.	CAD FILE	DRW SIZE A
OPER. NO.	UNIT	DRAWING 1010-BRAKE	
DESIGN	DETAIL	TITLE TYPE 2 2 WIRE BRAKE POT	
CHECKED	SAFETY		
SCALE NONE	DATE 2/19/13	REVISION A	HPEVS
		SHEET 1 OF 2	

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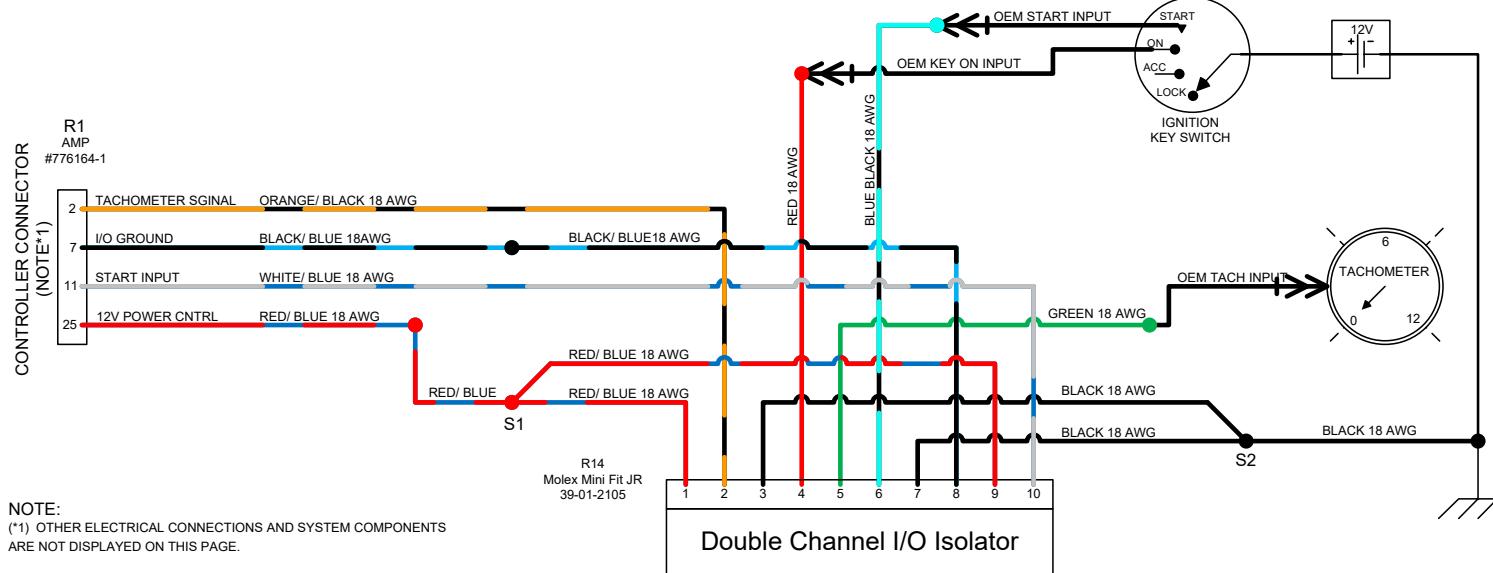
ACTIVE BRAKE LIGHT CONFIGURATION FOR BRAKE TYPE 0, 1 OR 2 CONFIGURATIONS



** 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.

CAD TYPE VISIO	CAD LOC. UNIT	CAD FILE DRAWING 1010-BRAKE	DRW SIZE A
OPER. NO.	DETAIL	TITLE	
DESIGN	SAFETY	BRAKE LIGHT CONFIGURATION	
CHECKED	SAFETY	REVISION A	
SCALE NONE	DATE 12/5/13	SHEET 3 OF 4	HPEVS

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