HI PERFORMANCE ELECTRIC VEHICLE SYSTEMS

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

WIRING SCHEMATICS

FOR SOFTWARE VERSIONS 320.46 AND HIGHER

FOR CURTIS 1239 CONTROLLER

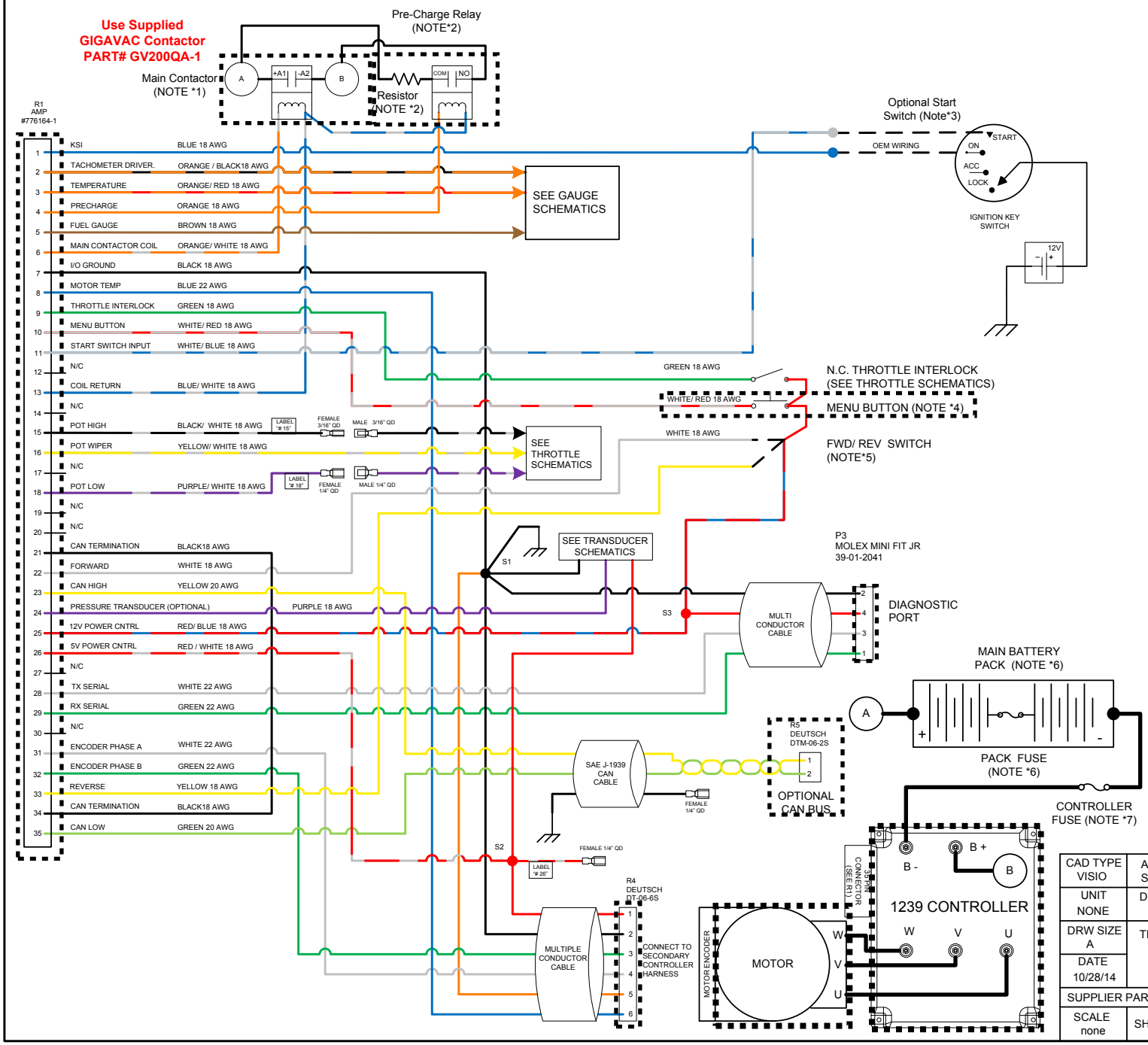
MARINE CONVERSION

FOR DUAL MOTOR

APPLICATION

REVISION: A
Date 6/30/15

REVISIONS		
REV	DESCRIPTION	APPROVED
A	Initial Release	10/ 28/ 2014



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 supplied Pre-Charge Resistor and Relay (Tyco Electronics Part # T9AP1D52-12). For Coil connection, connect to small terminals.

(*3) Start switch is required if Idle parameters are enabled. See Programming Instructions. A start switch can be used without idle. See programming instructions for information

(*4) Gives access to Drive System information.

(*5) Forward is CLOCKWISE motor rotation from encoder end view. Depending on Transmission configuration, use white wire for forward rotation and yellow wire for reverse rotation. Use FWD & REV Switch in direct drive applications.

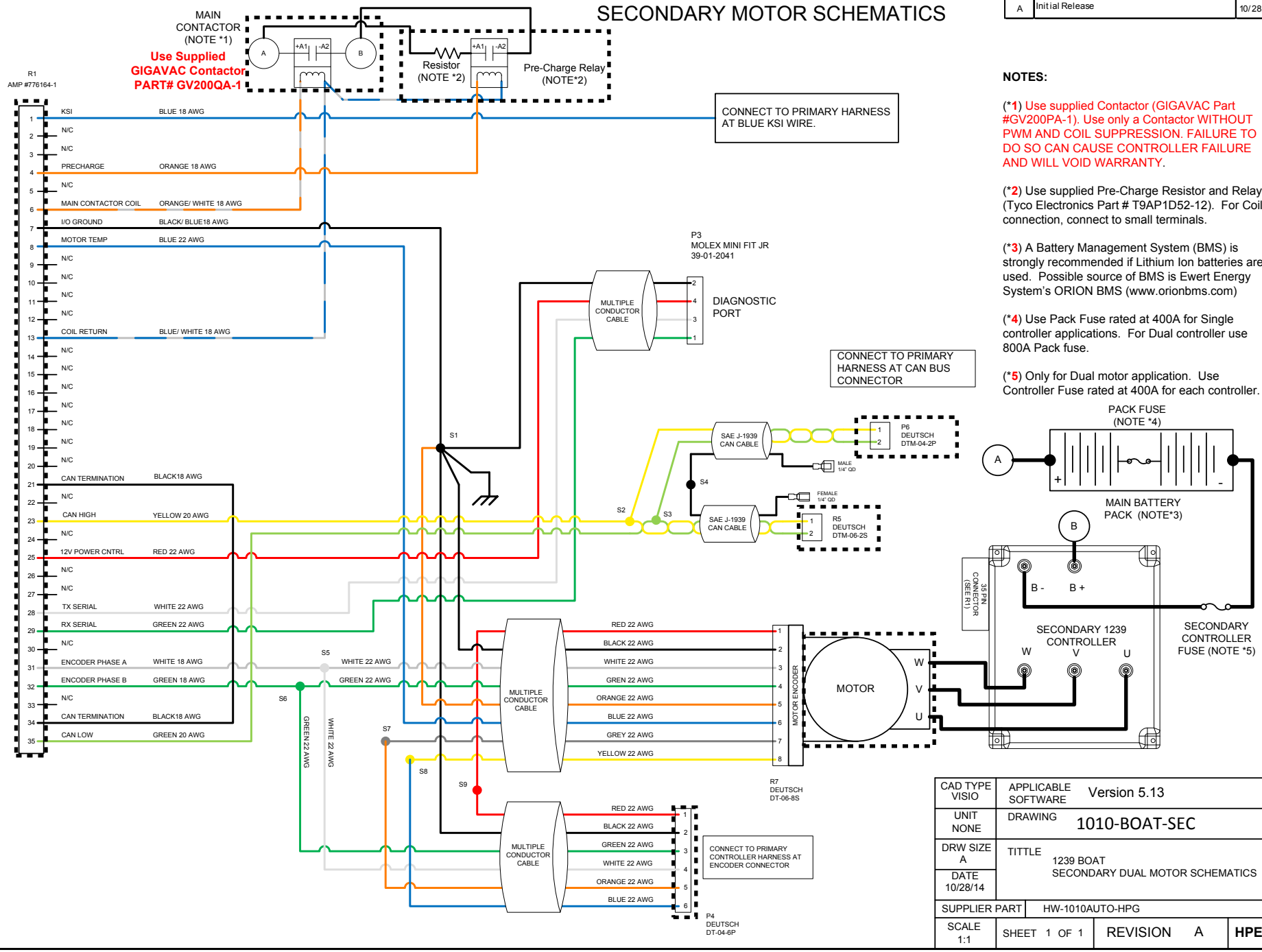
(*6) Use Pack Fuse rated at 400A for Single controller applications. For Dual controller use 800A Pack Fuse.

(*7) Only for Dual motor application. Use Controller Fuse rated at 400A for each controller.

CAD TYPE VISIO	APPLICABLE SOFTWARE	Version 340.46	
UNIT NONE	DRAWING	1010-BOAT-PRI	
DRW SIZE A	TITLE	1239 CONTROLLER MARINE PRIMARY DUAL MOTOR SCHEMATICS	
DATE 10/28/14			
SUPPLIER PART			
SCALE none	SHEET 1 OF 1	REVISION A	HPEVS

DUAL MOTOR – 1239 CONTROLLER SECONDARY MOTOR SCHEMATICS

REVISIONS		
REV	DESCRIPTION	APPROVED
A	Initial Release	10/28/2014



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 supplied Pre-Charge Resistor and Relay (Tyco Electronics Part # T9AP1D52-12). For Coil connection, connect to small terminals.

(*3) A Battery Management System (BMS) is strongly recommended if Lithium Ion batteries are used. Possible source of BMS is Ewert Energy System's ORION BMS (www.orionbms.com)

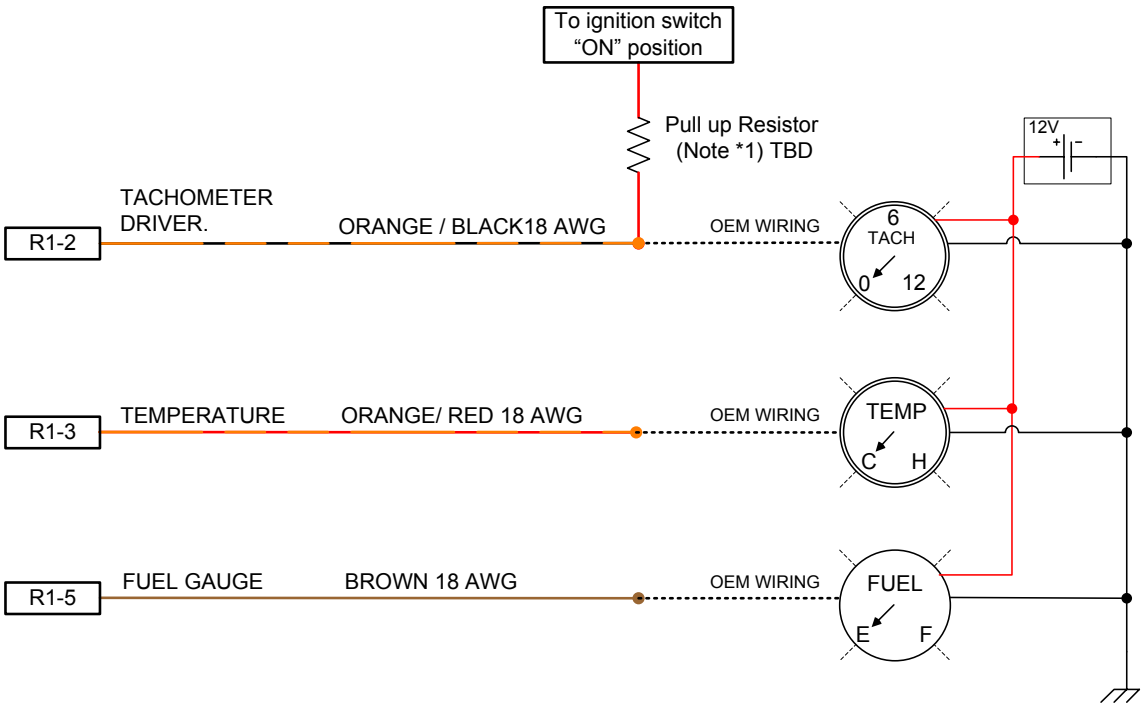
(*4) Use Pack Fuse rated at 400A for Single controller applications. For Dual controller use 800A Pack fuse.

(*5) Only for Dual motor application. Use Controller Fuse rated at 400A for each controller.

CAD TYPE VISIO	APPLICABLE SOFTWARE	Version 5.13	
UNIT NONE	DRAWING	1010-BOAT-SEC	
DRW SIZE A	TITTLE	1239 BOAT SECONDARY DUAL MOTOR SCHEMATICS	
DATE 10/28/14			
SUPPLIER PART	HW-1010AUTO-HPG		
SCALE 1:1	SHEET 1 OF 1	REVISION A	HPEVS

REVISIONS		
REV	DESCRIPTION	APPROVED
A	Initial Release	10/28/2014

GAUGE CONNECTION SCHEMATIC



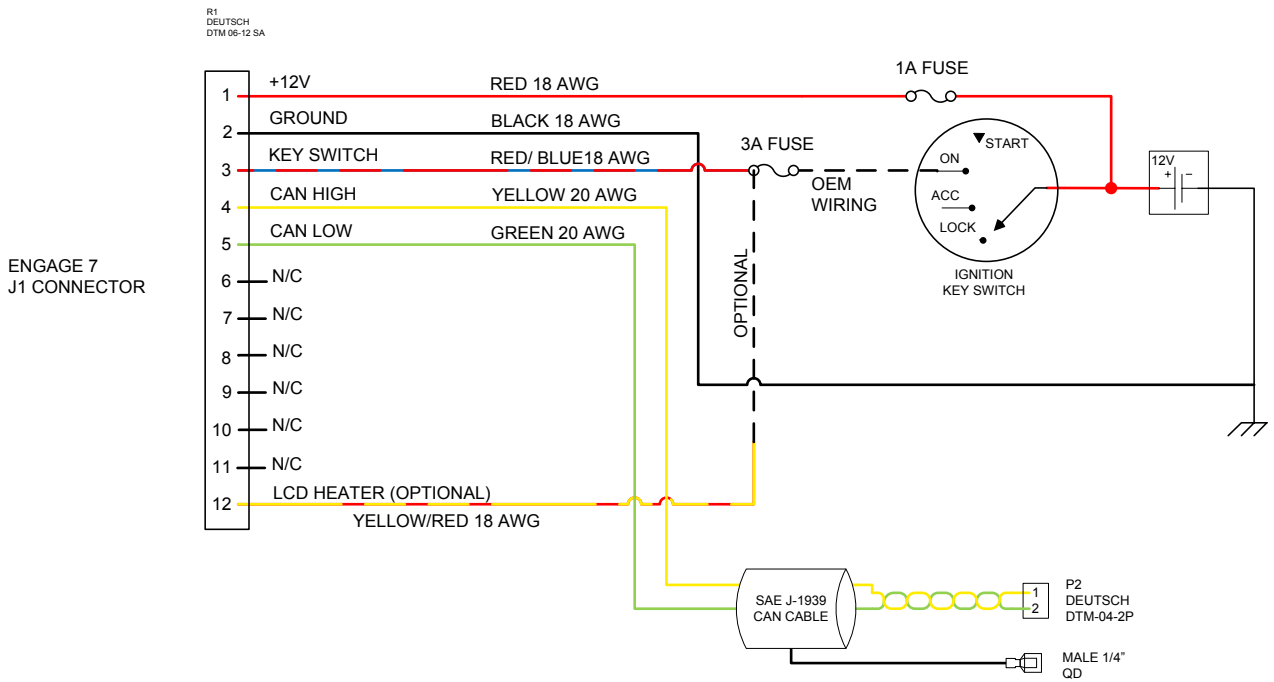
NOTES:

(*1) Tachometers that are designed to Work off of an ignition coil may not f in function in this application. Some Tachometers may need a pull up resistor of 4.7K Ω

CAD TYPE VISIO	APPLICABLE SOFTWARE	Version 320.46	
UNIT NONE	DRAWING	1010-BOAT-PRI	
DRW SIZE A	TITLE	1239 CONTROLLER MARINE GAUGES	
DATE 10/28/14			
SUPPLIER PART			
SCALE none	SHEET 1 OF 1	REVISION A	**HPEVS**

REVISIONS		
REV	DESCRIPTION	APPROVED
A	Initial Release	1/ 5/ 2015

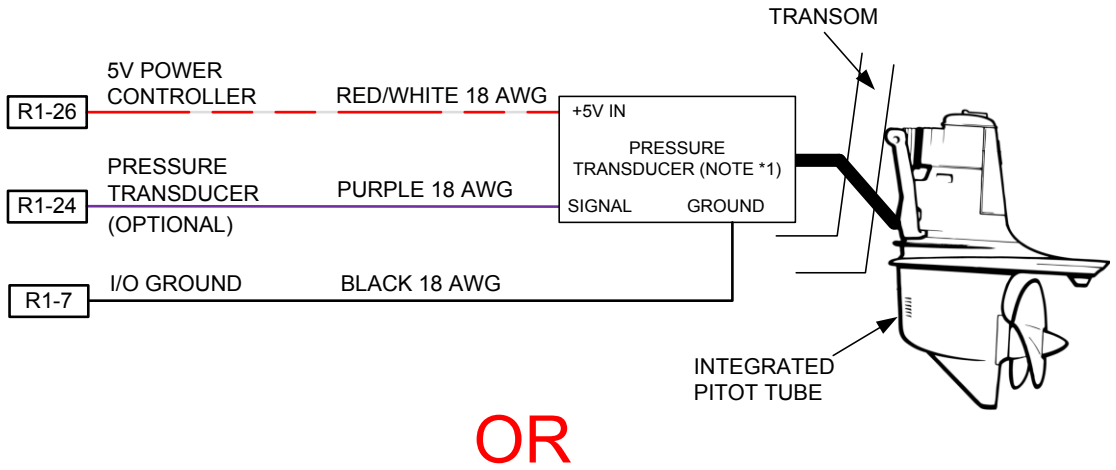
ENGAGE 7 CONNECTION SCHEMATIC



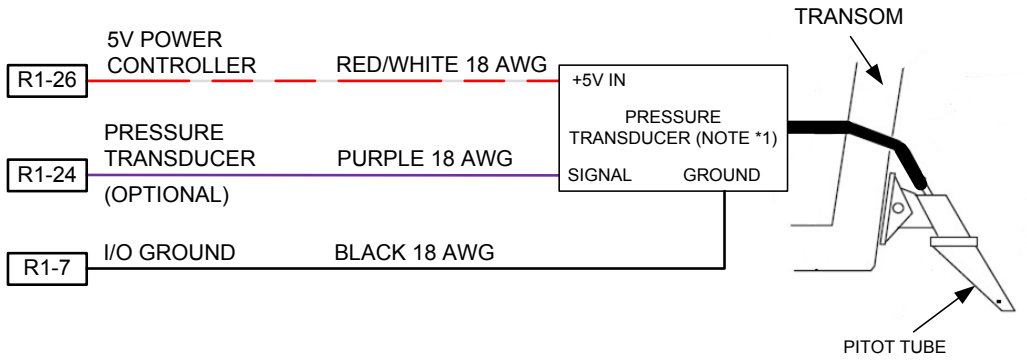
CAD TYPE VISIO	APPLICABLE SOFTWARE		
UNIT NONE	DRAWING 1010-ENGAGE7		
DRW SIZE A	TITLE ENGAGE 7 HARNESS		
DATE 1/5/15			
SUPPLIER PART			
SCALE none	SHEET 1 OF 1	REVISION A	HPEVS

REVISIONS		
REV	DESCRIPTION	APPROVED
A	Initial Release	10/28/2014

TRANSDUCER CONNECTION SCHEMATIC



OR



NOTES:

(*1) Recommended Transducer: Honeywell, Part PX2EF1XX030PAAAX. Output: 5V; Voltage Input: 4.75- 5.25 V; Operating Pressure: 30 PSI Possible Supplier: DIGIKEY P/N:480-5806-ND

CAD TYPE VISIO	APPLICABLE SOFTWARE	Version 320.46	
UNIT NONE	DRAWING	1010-BOAT-PRI	
DRW SIZE A	TITLE	1239 CONTROLLER MARINE TRANSDUCER	
DATE 10/28/14			
SUPPLIER PART			
SCALE none	SHEET 1 OF 1	REVISION A	**HPEVS**

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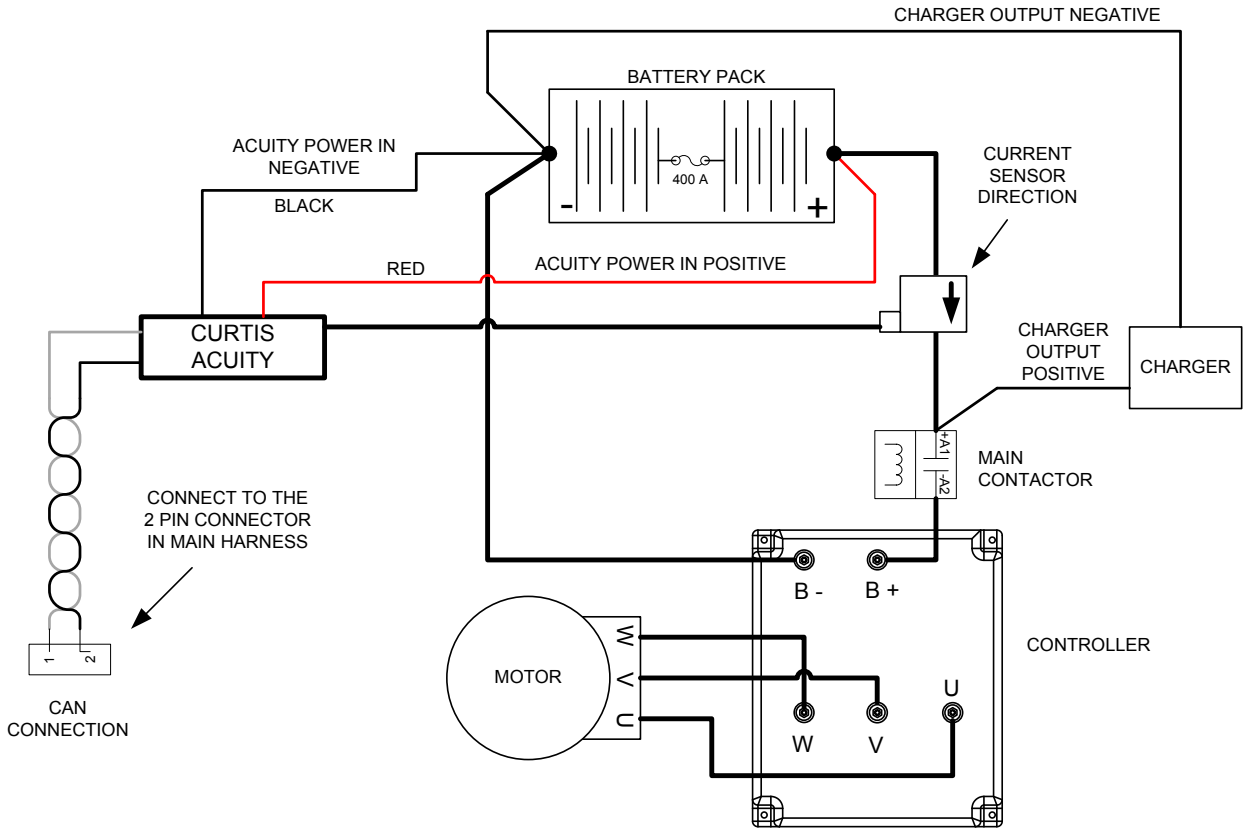
REV	DESCRIPTION	APPROVED
A	INITIAL RELEASE	3/12/2013



CAD TYPE VISIO	CAD LOC.	CAD FILE	DRW SIZE A
OPER. NO.	UNIT	DRAWING 1010-ACUITY-INSTALL	
DESIGN	DETAIL	TITLE ACUITY INSTALLATION	
CHECKED	SAFETY		
SCALE NONE	DATE 3/12/13	REVISION A SHEET 1 OF 1	HPEVS

THROTTLE CONFIGURATION

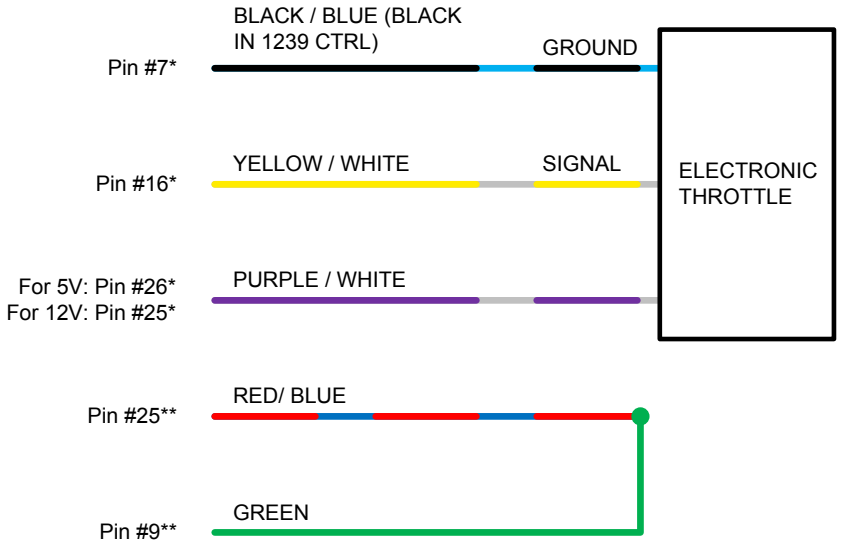
Depending on the type of throttle used for the application, the different types of throttle configurations are listed within the table below. Electrical schematics are also included within the following pages.

THROTTLE CONFIGURATION	**TYPE**
ELECTRONIC without SWITCH	TYPE 2
2 WIRE with SWITCH 0-5k Ω	TYPE 3
3 WIRE with SWITCH 0-5k Ω	TYPE 2
CURTIS PB8 THROTTLE ASSEMBLY	TYPE 2
WIG WAG 3 WIRE	TYPE 4

REVISIONS		
REV	DESCRIPTION	APPROVED
A	INITIAL RELEASE	2/3/2015

TYPE 2 ELECTRONIC THROTTLE

MARINE APPLICATION



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

Not all Electronic Throttles supported

** When Electronic pedal is used, the GREEN wire from pedal interlock MUST be connected to the RED/BLUE wire.

CAD TYPE VISIO	APPLICABLE SOFTWARE		
UNIT NONE	DRAWING 1010-THROTTLE-001		
DRW SIZE A	TITLE ELECTRONIC THROTTLE-MARINE APPLICATION		
DATE 2/3/15			
SUPPLIER PART			
SCALE NONE	SHEET 5 OF 8	REVISION A	HPEVS

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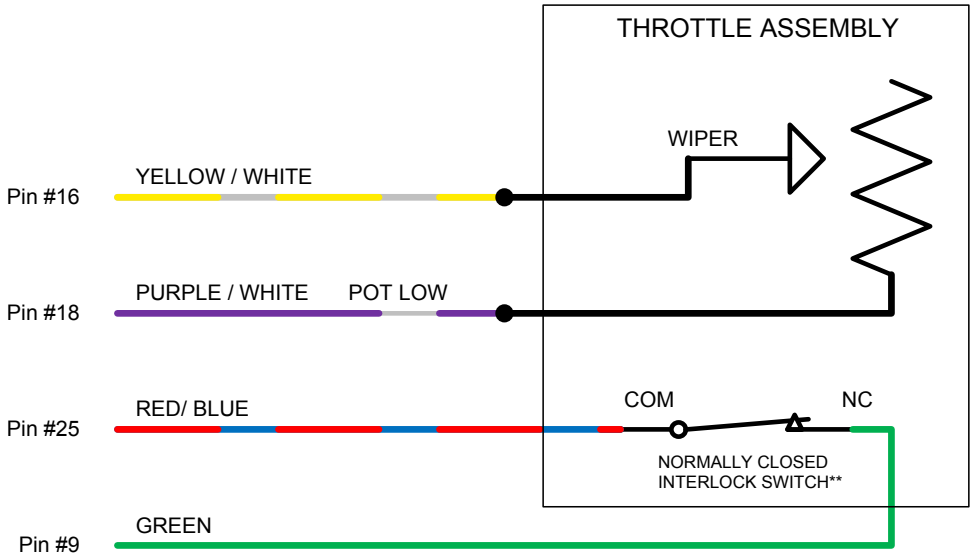
REV	DESCRIPTION	APPROVED
A	INITIAL RELEASE	2/3/2015



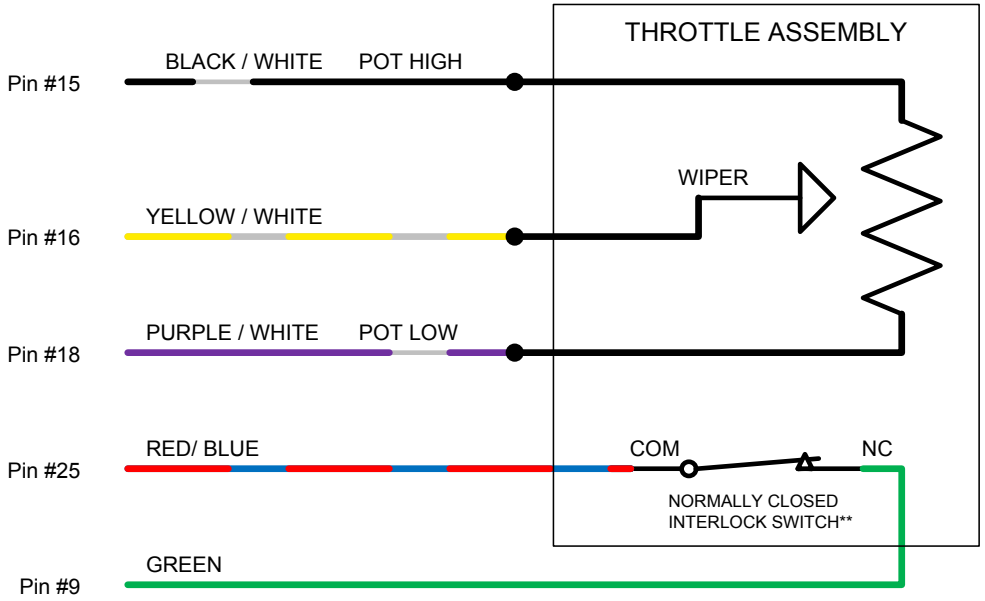
2 WIRE TYPE 3 THROTTLE

MARINE APPLICATION

** 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 VISIO	APPLICABLE SOFTWARE		
UNIT NONE	DRAWING 1010-THROTTLE-001		
DRW SIZE A	TITLE 2 WIRE TYPE 3 THROTTLE – MARINE		
DATE 2/3/15			
SUPPLIER PART			
SCALE NONE	SHEET 6 OF 8	REVISION A	HPEVS

REVISIONS		
REV	DESCRIPTION	APPROVED
A	INITIAL RELEASE	2/3/2015



3 WIRE TYPE 2 THROTTLE

MARINE APPLICATION

** 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 VISIO	APPLICABLE SOFTWARE		
UNIT NONE	DRAWING 1010-THROTTLE-001		
DRW SIZE A	TITLE 3 WIRE TYPE 2 THROTTLE- MARINE		
DATE 1/22/13			
SUPPLIER PART			
SCALE NONE	SHEET 7 OF 8	REVISION A	HPEVS

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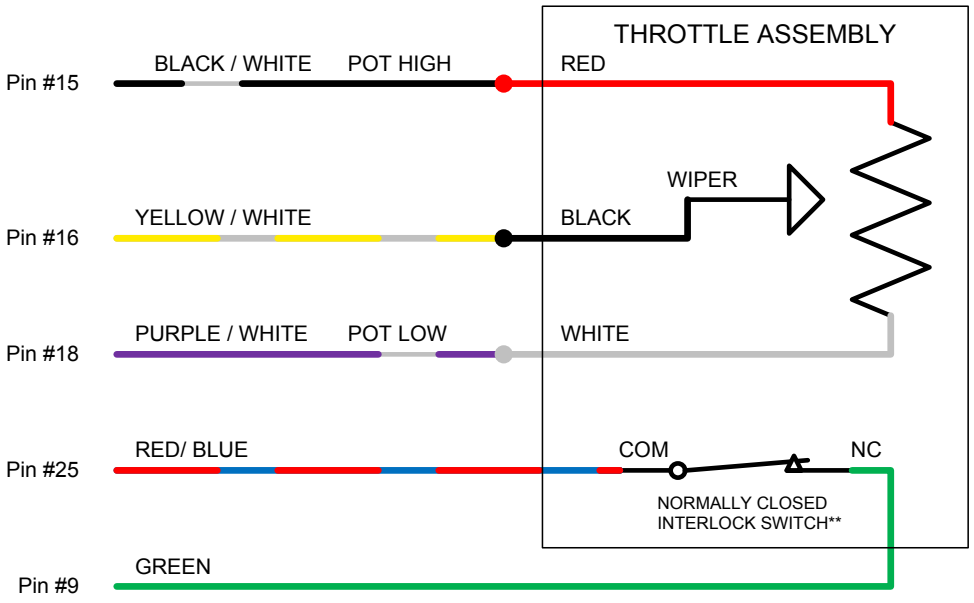
REV	DESCRIPTION	APPROVED
A	INITIAL RELEASE	11/27/2013



CURTIS PB8 THROTTLE ASSEMBPLY

** 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 VISIO	APPLICABLE SOFTWARE		
UNIT NONE	DRAWING 1010-THROTTLE-001		
DRW SIZE A	TITLE CURTIS PB8 THROTTLE		
DATE 1/22/13			
SUPPLIER PART			
SCALE NONE	SHEET 3 OF 8	REVISION A	HPEVS

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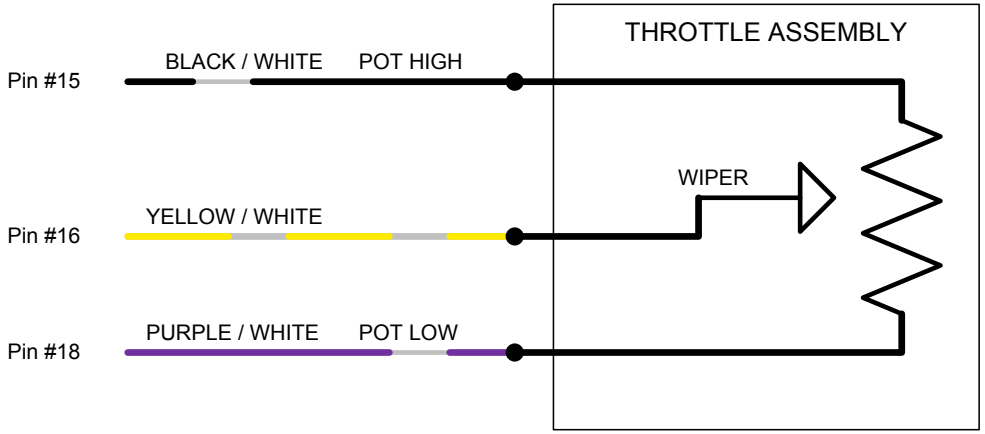
REV	DESCRIPTION	APPROVED
A	INITIAL RELEASE	2/3/2015



3 WIRE WIG WAG TYPE 4 THROTTLE**

MARINE APPLICATION

** No Forward or Reverse input used. No Interlock Switch used.

CAD TYPE VISIO	APPLICABLE SOFTWARE		
UNIT NONE	DRAWING 1010-THROTTLE-001		
DRW SIZE A	TITLE 3 WIRE TYPE 4 WIG WAG - MARINE		
DATE 2/3/15			
SUPPLIER PART			
SCALE NONE	SHEET 8 OF 8	REVISION A	HPEVS

THROTTLE INTERLOCK CONNECTION

The throttle 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 throttle IS ENGAGED 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.