WIRING SCHEMATICS

FOR SOFTWARE VERSIONS 5.13 AND HIGHER

FOR CURTIS 1239 CONTROLLER

ON-ROAD VEHICLE CONVERSION

FOR SINGLE AND WITH DUAL MOTOR APPLICATIONS

REVISION: D
Date 10/28/15
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Use Supplied GIGAVAC Contactor
PART# GV200PA-1

PART# GV200PA-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) Tachometers that are designed to work off of
an ignition coil may not function properly in this
application. Some tachometers may need a pull
up resistor of 4.7k Q to function

(4) 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)

(5) A start switch is required if idle or Creep
Torque parameters are ENABLED. See
Programming Instructions. A start switch CAN be
used without Idle. See programming instructions for
information.

(6) Install the Optional Clutch/ Shift Switch so
that is ON when the clutch pedal is pressed. When
clutch pedal is pressed the regen setting is
changed to Shift Neutral Braking Parameter to
prevent the motor from stalling during gear
shifting. In a clutchless system, this allows you to set
the coast down rate of the motor so that the
gears align properly. See instructions on SHIFT-
NEUTRAL BRAKING PARAMETERS.

(7) Gives access to Drive System information.
Required to access Programming and Diagnostic
modes. See Programming Instructions.

(8) Allows the use of ECONO Mode Parameters. See
Programming Instructions.

(9) Forward is CLOCKWISE motor rotation from
Encoder end view. Depending on Transmission
configuration, use either wire to obtain desired
rotation. Use FWD & REV Switch in direct drive
applications.

(10) See Brake Schematics

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

(12) Only for dual motor applications. Use
Controller Fuse rated at 400A for each controller.
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.

<table>
<thead>
<tr>
<th>THROTTLE CONFIGURATION</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECTRONIC without SWITCH</td>
<td>TYPE 1</td>
</tr>
<tr>
<td>2 WIRE with SWITCH 0-5k Ω</td>
<td>TYPE 2</td>
</tr>
<tr>
<td>3 WIRE with SWITCH 0-5k Ω</td>
<td>TYPE 3</td>
</tr>
<tr>
<td>CURTIS PB8 THROTTLE ASSEMBLY</td>
<td>TYPE 3</td>
</tr>
</tbody>
</table>
** When an electronic throttle is used, the GREEN wire from the pedal interlock does not need to be connected.
** 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.
**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.**
**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.
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 within the following pages.

<table>
<thead>
<tr>
<th>BRAKE INPUT CONFIGURATION</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO BRAKE INPUT USED</td>
<td>TYPE 0</td>
</tr>
<tr>
<td>PRESSURE TRANSDUCER/ELECTRONIC 0-5V INPUT</td>
<td>TYPE 1</td>
</tr>
<tr>
<td>2 WIRE 0-5kΩ POT</td>
<td>TYPE 2</td>
</tr>
<tr>
<td>SWITCH</td>
<td>TYPE 3</td>
</tr>
</tbody>
</table>
** 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
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Pin #17  YELLOW / RED  WIPER

Pin #18  PURPLE / WHITE  POT LOW

TYPE 2
2 WIRE BRAKE POT

<table>
<thead>
<tr>
<th>CAD TYPE</th>
<th>CAD LOCS.</th>
<th>CAD FILE</th>
<th>DRW SIZE A</th>
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<tbody>
<tr>
<td>VSSD</td>
<td>UNIT</td>
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<td>2/19/13</td>
<td>A</td>
<td>HPEVS</td>
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</tbody>
</table>
OPTIONAL ACTIVE BRAKE LIGHT CONFIGURATIONS

These optional active brake light configurations are used to activate the brake lights during regenerative braking or when the vehicle brakes are being applied. Based on the brake type configuration that is being used in the application use one of the following wiring 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.**

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**ACTIVE BRAKE LIGHT CONFIGURATION**

OPTION 1

FOR BRAKE TYPE 0, 1 OR 2 CONFIGURATIONS

BRAKE LIGHT RELAY (pin #3) ORANGE / RED

COIL RETURN (pin #13) BLUE / WHITE

TO BRAKE LIGHT

OEM BRAKE SWITCH

+12V
**This option will turn ON the brake lights when either of two conditions are satisfied:
1. The users foot is OFF of the accelerator pedal and REGEN is active.
2. Brake pressure is applied and the OEM brake switch is active.**
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BRAKE SWITCH INPUT LIGHT CONFIGURATION
OPTION 3
FOR BRAKE TYPE 3 CONFIGURATION
1239 CONTROLLER

** This option will provide single level BOOSTED REGEN when brake pedal pressure is applied.
** Brake lights will not turn on during ACCELERATOR PEDAL UP/REGEN.