



**AKRON**<sup>®</sup>  
BRASS COMPANY

**STYLE 6051 CAN GATEWAY/REPEATER  
INSTALLATION, OPERATION & MAINTENANCE MANUAL**



ISO 9001 REGISTERED COMPANY

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# SAFETY SUMMARY

## SIGNAL WORD DEFINITION

Per the ANSI Z535.4 standard, the following signal words and definitions are used to indicate hazardous situations:

### **DANGER**

DANGER indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

### **WARNING**

WARNING indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

### **CAUTION**

CAUTION indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It is also used to alert against unsafe practices.

## GENERAL SAFETY PRECAUTIONS

The following are general safety precautions that are not related to any specific procedures and therefore do not appear elsewhere in this publication. These are recommended precautions that personnel must understand and apply during many phases of operation and maintenance.

### **WARNING**

For fire fighting use only by trained fire fighters.

### **WARNING**

Do not use the Toggle Switch Box when the override cranks are being used or are in position for use.

### **CAUTION**

Although the enclosure for the Toggle Switch Box is water-resistant, it is important to keep water out of the enclosure. Prolonged exposure to water will cause damage. When the cover of the enclosure is removed, make sure the seal under the cover is intact and free of dirt and debris.

### **CAUTION**

This product must be wired in adherence with the SAE J1939/11 specification.  
Failure to do so may result in sporadic operation or non-operation.

### **CAUTION**

While this device is designed to reside on a standard J1939 CAN network, it is recommended that Akron Brass CAN products operate on their own CAN network isolated from the other CAN networks on the vehicle.

## PRODUCT SPECIFICATIONS

### 6051 CAN GATEWAY/REPEATER

- Power - 8 to 33 volts DC, <.25 amperes
- Operating Temperature - -40°C. to +85°C.
- Storage Temperature - -50°C. to +85°C.
- Communications – J1939/11 CAN Network

Figure 1



CAN Gateway Connector Location

# INSTALLATION INSTRUCTIONS

## TOOLS & MATERIALS REQUIRED

- Deutsch Crimping Tool
- Deutsch DTM06-4S-CE13 or equivalent and associated crimp terminals
- Optional Akron Brass 721579 pre-wired connector/harness

## MECHANICAL INSTALLATION

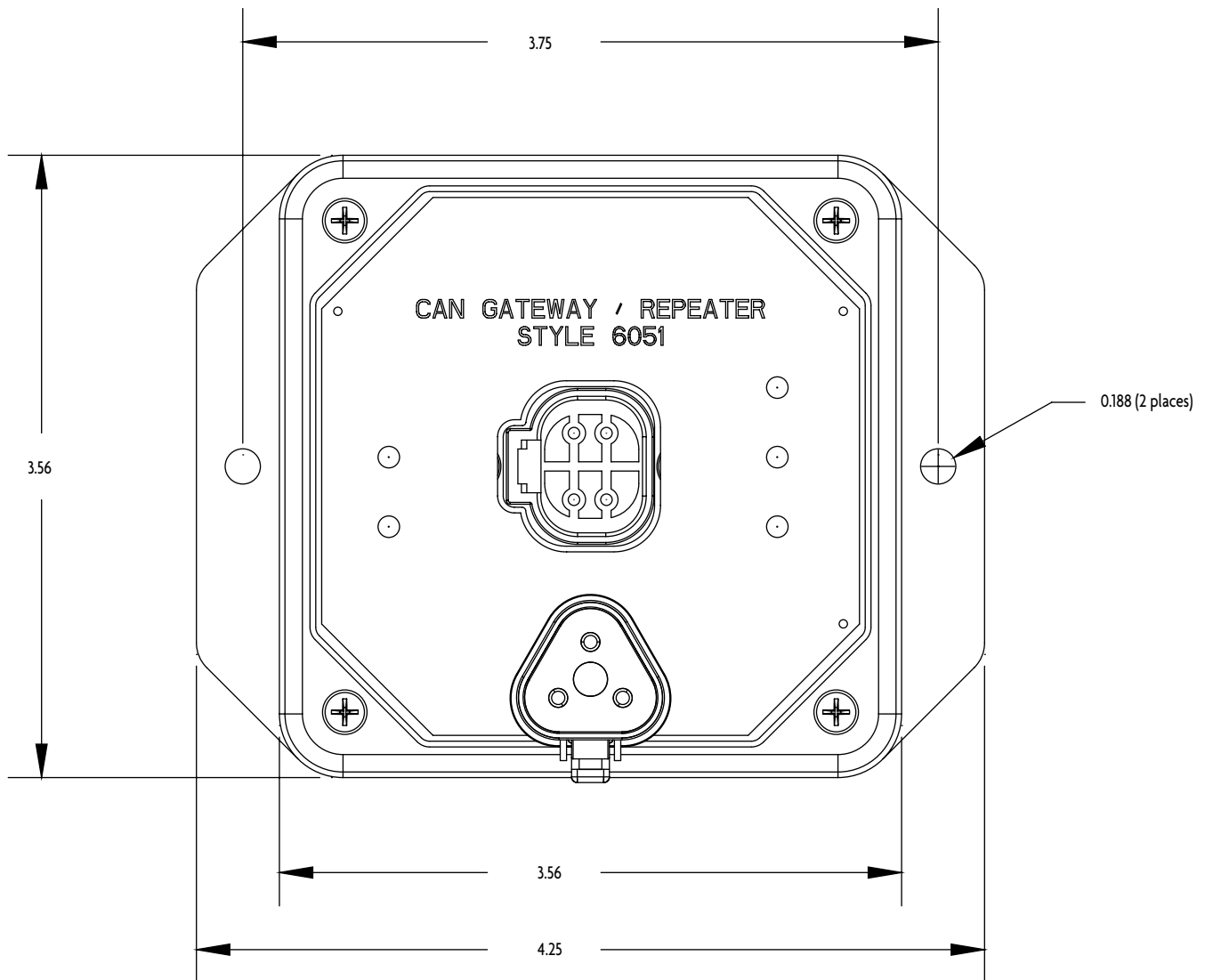
The 6051 CAN Gateway/Repeater comes with a mounting tabs that allow surface mounting.

For a surface mount application, use two screws through the two mounting tabs to directly mount the Gateway to the surface. See Figure 2 for recommended hole layout.

### **CAUTION**

Although the enclosure for the Gateway is potted and water-resistant, it is important to keep water out of the enclosure. Prolonged exposure to water will cause damage.

**Figure 2**



**CAN Gateway Mounting Holes Layout**

## ELECTRICAL INSTALLATION

The following is intended to provide the basic instructions for installation of the 6051 CAN Gateway/Repeater. Refer to Figure 5, Figure 3, Figure 4, and Figure 5 for additional information. Wiring must be in compliance with **SAE J1939** for proper operation.

- Step 1** Connect Battery Positive to Pin #1 of Primary Network connector. (use of Akron Brass Harness stub part number 721579 is recommended)
- Step 2** Connect Battery Negative to Pin #2 of Primary Network connector.
- Step 3** Connect CAN HI to Pin #3 of Primary Network connector. (Akron Brass Harness stub part number 721579 already has this pin properly connected to a J1939 CAN network stub connector)
- Step 4** Connect CAN LO to Pin #4 of Primary Network connector. (Akron Brass Harness stub part number 721579 already has this pin properly connected to a J1939 CAN network stub connector)
- Step 5** Add a terminating resistor if this device is at the end of either network.
- Step 6** Plug secondary network connector into vehicle network.

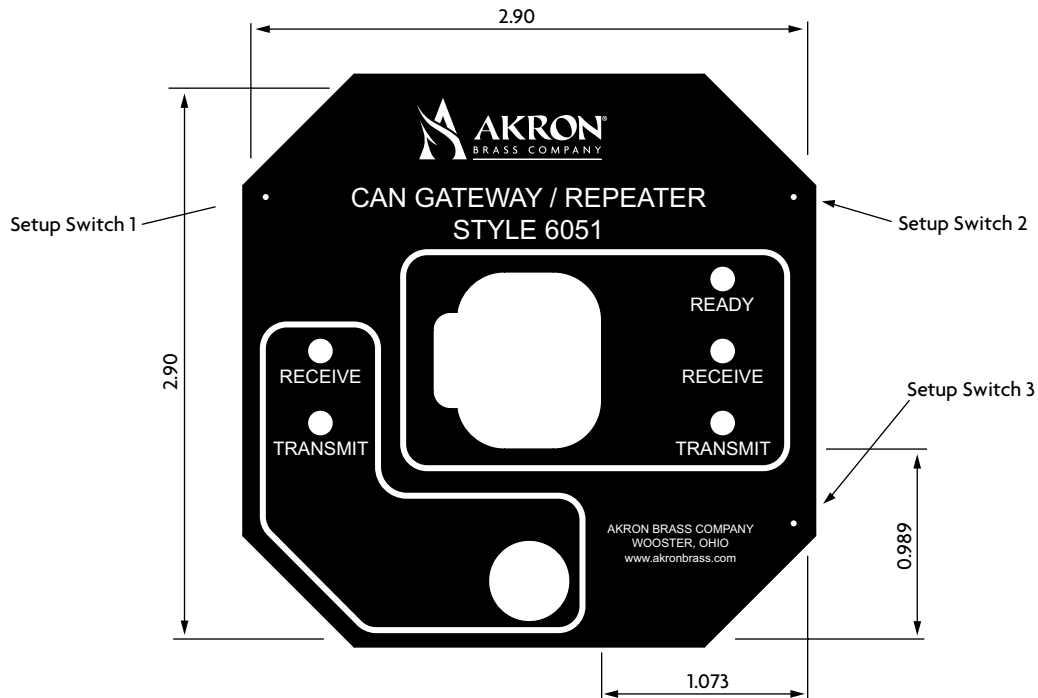
### ⚠ CAUTION

This product must be wired in adherence with the SAE J1939/11 specification. Failure to do so may result in sporadic operation or non-operation.

### ⚠ CAUTION

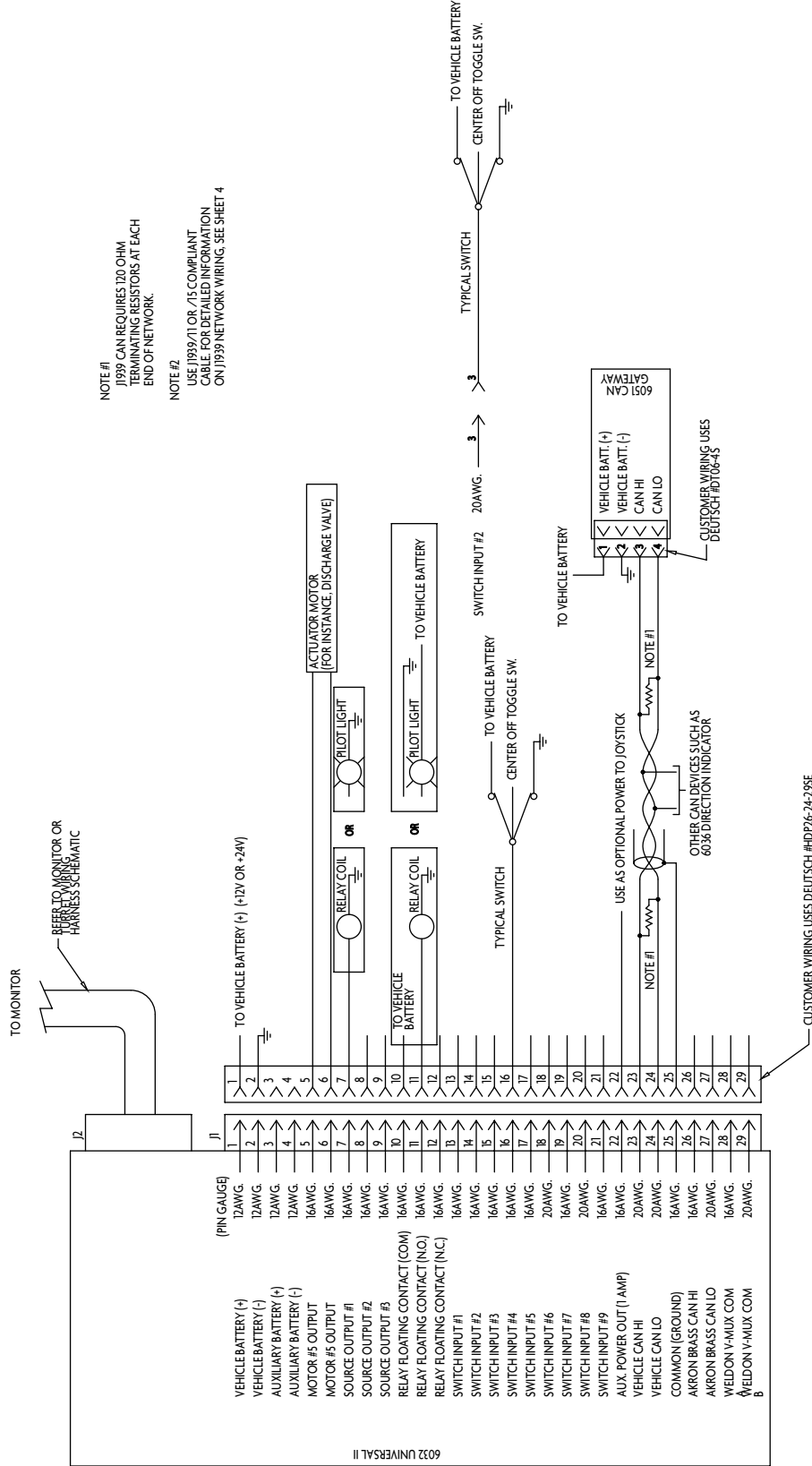
While this device is designed to reside on a standard J1939 CAN network, it is recommended that Akron Brass CAN products operate on their own CAN network isolated from the other CAN networks on the vehicle.

**Figure 3**



**Gateway Label**

**Figure 4**



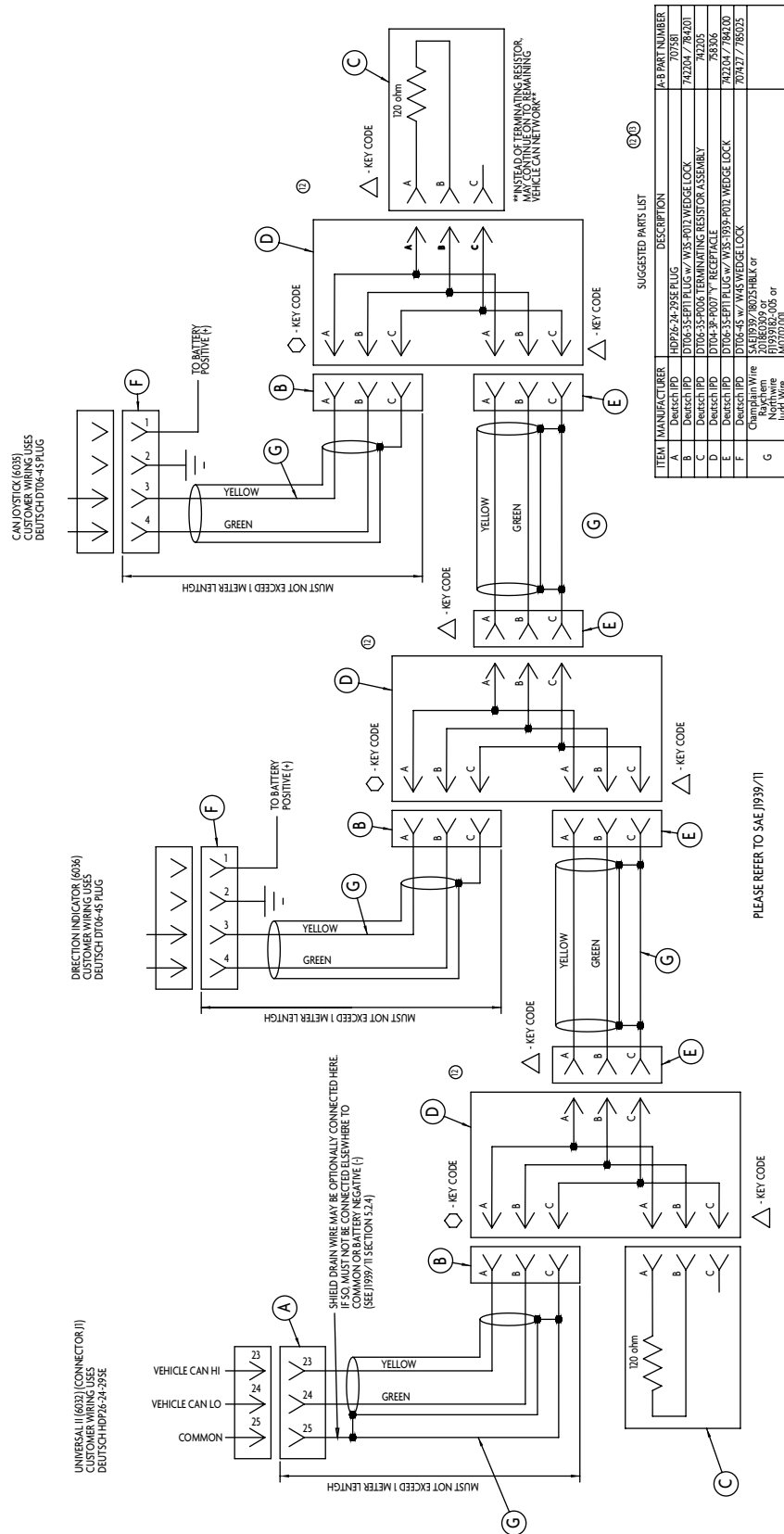
**NOTE #1**  
 J1939 CAN REQUIRES 120 OHM TERMINATING RESISTORS AT EACH END OF NETWORK.

**NOTE #2**  
 USE J1939/11 OR /15 COMPLIANT CABLE FOR DETAILED INFORMATION ON J1939 NETWORK WIRING. SEE SHEET 4

**Typical Electrical Connections**



Figure 5



Typical J1939 Wiring

## OPERATING INSTRUCTIONS

### NORMAL OPERATION

The 6051 CAN Gateway/Repeater is Plug and Play, and comes ready to use. Once installed, the CAN Gateway/Repeater can be used in conjunction with a Universal II control box or other Akron Brass CAN based controllersto operate the monitor/turret.

**NOTE:** The 6051 CAN Gateway/Repeater is designed to be as benign as possible on typical CAN networks. It performs standard address claiming on the J1939 (primary) side. It issues standard J1939 Joystick messages. It is possible to have multiple Universal II's on the same network all driven by a common CAN Gateway/Repeater. Contact Akron Brass customer support for custom software if this is a requirement.

#### **WARNING**

For fire fighting use only by trained fire fighters.

#### **WARNING**

Do not use the Toggle Switch Box when the override cranks are being used or are in position for use.

There are several 6051 CAN secondary CAN Gateway/Repeater variants programmed to meet specific OEM needs. If you are unsure of the variant you need, please contact an Akron Brass customer service representative for assistance.

## **SETUP AND CALIBRATION**

Changes to the behavior of the Gateway/Repeater can be achieved by entering the setup mode. This can be done in the field with a small magnet. Three small dots located on the connector label (see Figure 2) identify the location of Hall Effect switches inside the box. Do not attempt to use these unless instructed to do so by Akron Brass personnel.

Please refer to the 6051 CAN Gateway Messaging Reference Manual found on the Akron Brass website.

## **MAINTENANCE INSTRUCTIONS**

The 6051 CAN Gateway/Repeater has no user serviceable parts inside. If the device fails to operate properly, please contact an Akron Brass customer service representative for a replacement.

## TROUBLESHOOTING

### DIAGNOSTIC LEDs

The CAN Gateway/Repeater has five LEDs divided into two groups. One is located near the 4 pin connector labeled Ready, Receive, and Transmit. Their colors are Green, Yellow, and Red respectively. Under normal operation, the Green Ready LED indicates the unit is powered and that the unit's microprocessor is running. The Yellow LED will blink on and off when there are CAN messages sent by other devices on the network that pertain to the primary J1939 4 pin connector. The Red LED will light when the gateway is sending CAN messages that have been received/translated from the secondary CAN network. When the gateway returns to a quiescent state, the Red LED will turn off.

The second group of LED's is associated with the secondary CAN network pigtail connector labeled Receive and Transmit. Their colors are Yellow and Green respectively. Under normal operation, the Yellow LED will blink on and off when there are CAN messages sent by other devices on the network that pertain to the secondary CAN network pigtail connector. The Red LED will light when the gateway is sending CAN messages that have been received/translated from the primary CAN network's 4 pin connector. When the gateway returns to a quiescent state, the Red LED will turn off.

### AKROVIEW SOFTWARE

As with all of the Akron Brass CAN product family, the 6051 CAN Gateway/Repeater supports the Akroview Software. The software provides additional diagnostics as well as software updating and other capabilities. Contact Akron Brass for additional information on how you can obtain a copy of Akroview software.

## REVISION HISTORY

Revision 0 – 5/06/13 Initial release.



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