Au Gateway 5 (GW5) User Manual

Rev. A   November 2022

Au Gateway 5 (GW5) is a gateway device. It converts pressure signals from up to two pressure sensors to digital format of "Brake Primary Pressure " and "Brake Secondary Pressure" information onto J1939 and J1708/J1587 network. GW5 supports Bendix pressure sensor part # 5005758, 5008677.

Figure 1 - Au Gateway 5 (GW5)

Support Parameters

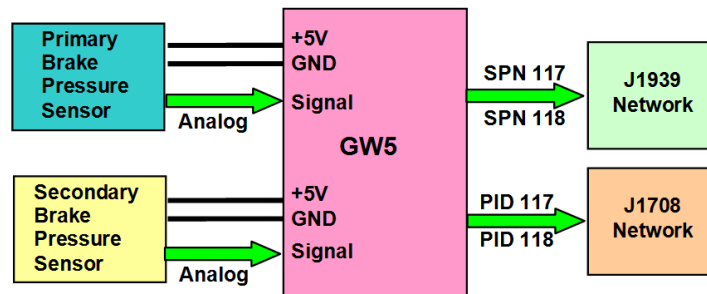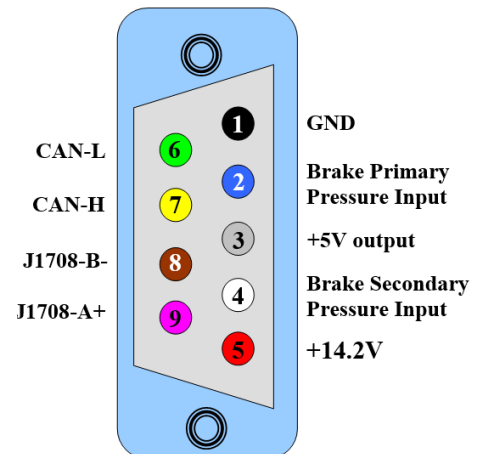|	J1939 Parameters (SA: 23 and 33)	J1708 Parameters (MID: 140 and 249)
Brake Primary Pressure	65274 (0x00FEFA) byte 2 SPN 117	PID117
Brake Secondary Pressure	65274 (0x00FEFA) byte 3 SPN 118	PID118

GW5 function Block

Figure 2 - GW5 function block

Features

- Nominal Power Supply: 12V DC nominal input, +14.2V DC recommended
- Operating Electric current: 65mA typical, 250mA max
- Operating Temperature: -4˚F to 158˚F (-20˚C to 70˚C)
- Size: 4-1/8" L X 1-3/4"W X 7/8"H
- Enclosure Color: Black
- Dual CAN Baud Rate: supports Two field configurable CAN baud rate: 250K and 500K
- Audile warning and LED indicators
- RS232 side DB9 female connector: for firmware boot-loading purpose
- BUS side DB9 male connector: for power, J1939 network, J1708 network, pressure sensor signal inputs and output +5V to pressure sensors.

DB9 Pin #	Color Code	Signal Definition
1	Black	GND input for GW5 and Pressure Sensor
2	Blue	Brake primary pressure sensor input
3	Grey	+5V output for pressure sensors
4	White	Brake secondary pressure sensor input
5	Red	+14.2V input
6	Green	CAN-L
7	Yellow	CAN-H
8	Brown	J1708-B-
9	Purple	J1708-A+

Bus side DB9 male connector

Website: www.AuElectronics.com   Email: Support@AuElectronics.com

Hardware Connection

Au GW5 is a handheld gateway device. It can run independently without a computer.
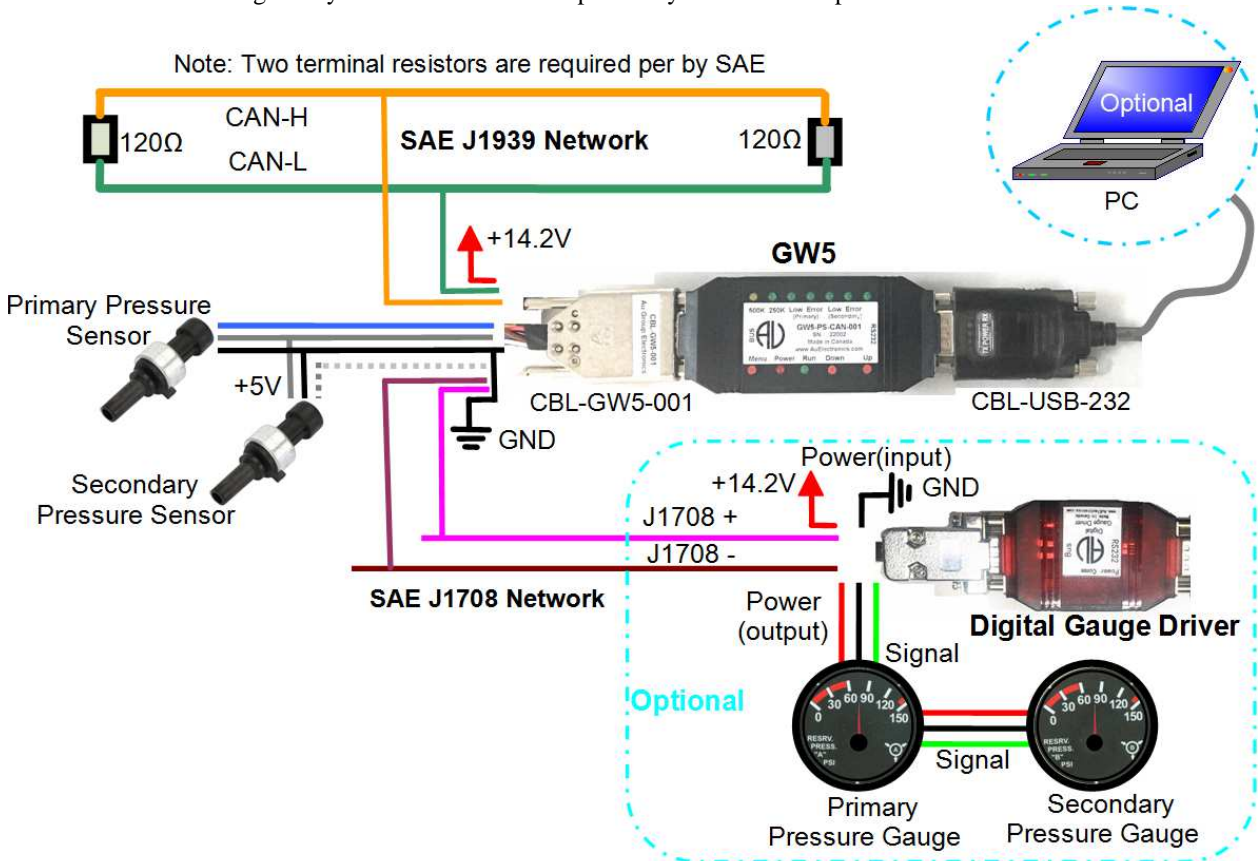

Figure 4 - GW5 Network connection

On the RS232 side, Au Gateway 5 (GW5) can be connected to a computer through a USB to RS232 convert cable (part #: CBL-USB-01). Connection to PC is only used for firmware boot-loading purpose, computer is not necessary during general use.

On the Bus side, a 9-wire pigtail cable (part #: CBL-GW5-001) can be used to connects GW5 to power supply, J1939 network, J1708 network, and up to two pressure sensors.

For testing purpose, an optional Digital Gauge Driver can be used to connect to the J1708 network and drive Primary pressure gauge and Secondary pressure gauge.

Note: All devices must use the same reference ground.

GW5 Settings and Status

Au GW5 equipped with 3 push buttons (**Menu**, **Down**, **Up**) and 9 LEDs (one of the LED is not in-use for GW5).
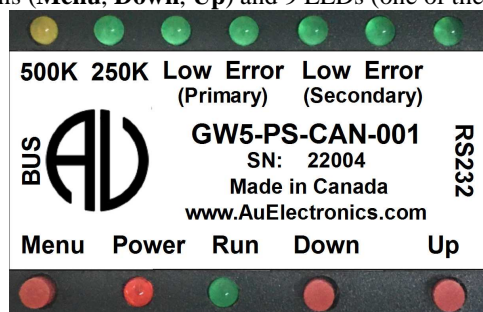

Figure 5 - Push button and LED on GW5

When GW5 is powered up with +14.2V DC, Power LED will be constant on, Run LED will blink at 1 second interval.

One of the CAN baud rate LED (250K/500K) will lit depends on the device CAN baud rate setting.
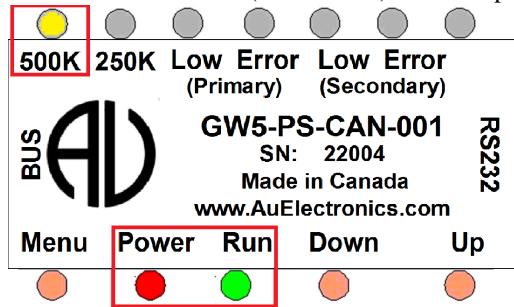

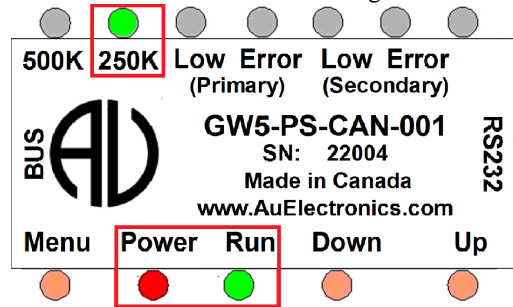Figure 6 - GW5 CAN baud rate is setting at 500K   Figure 7 - GW5 CAN baud rate is setting at 250K

To switch CAN baud rate, press and hold both **Menu** and **Down** buttons at the same time until LED status change.

In Figure 6, the first LED (Yellow) lit up indicates GW5 device is setting at 500K CAN baud rate

In Figure 7 the second LED (Green) lit up indicates GW5 device is setting at 250K CAN baud rate

Here is the summary of LED indicators on device status, and how to use push buttons to change device settings.

LED	Device Status
Power	Constant on. Device is powered up
Run	Blink every 1s. Device runs normally
500K	When the LED is on, Devices running at 500K CAN baud rate [1]
250K	When the LED is on, Devices running at 250K CAN baud rate[1]
(Primary) Low	When the LED is on, Primary brake Pressure is below 60 PSI
(Primary) Error	When the LED is on, Primary brake Pressure Sensor not connected or malfunction
(Secondary) Low	When the LED is on, Secondary brake Pressure is below 60 PSI
(Secondary) Error	When the LED is on, Secondary brake Pressure Sensor not connected or malfunction

Note 1: the 500K and 250K LED are mutual exclusive, only one LED will be on at a time. They cannot be both on, nor both off.

Push Button Operation	Device Settings
Press **Down** button	Decrease backlight
Press **Up** button	Increase backlight
Press and hold both **Menu** + **Down** button	Switch between 250K / 500K CAN baud rate
Press and hold both **Up** + **Down** button	Silent the buzzer, the buzzer can only be turn off when warning is on, it will be automatically turned on at each power reset.

Buzzer Warning

GW5 has both audible and LED warning indication.

If GW5 detects one of the following situation, a beeping will sound out at 1 second interval:
- GW5 is not connected to primary pressure sensor or primary pressure sensor malfunction
- Primary brake pressure is lower than 60 PSI
- GW5 is not connected to Secondary pressure sensor or Secondary pressure sensor malfunction
- Secondary brake pressure is lower than 60 PSI

To silent the buzzer, press and hold both **Up** and **Down** button. The buzzer can only be turn off when warning is on, it will be automatically turned on at each power reset.