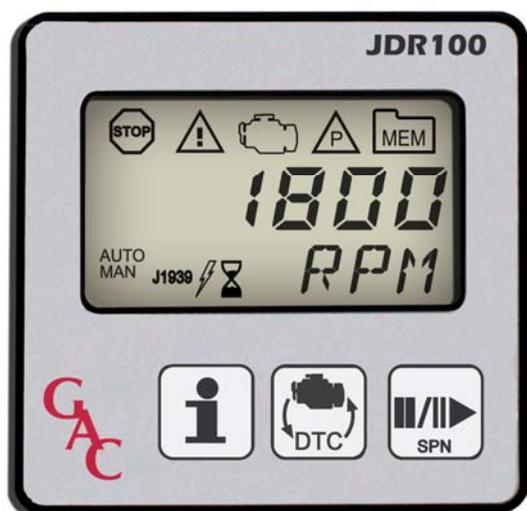


## JDR100 Series - J1939 Diagnostic Reader



- Cost effective, Universal J1939 Live Engine Parameter and Diagnostic Trouble Code Reader
- Displays RPM, Oil Pressure, Coolant Temperature, Fuel Level, Battery Voltage, and Engine Hours
- Low Power Consumption
- Wide Temperature Range (-40 to +85°C. -40 to +185°F)
- Three Button Operation
- Built in CANBus Termination Resistor
- Self Contained, No Configuration Software Required
- Sealed Case, Non-Fogging Display
- Front is Rated to IP67 – Seal from Direct Exposure to Water Spray
- With Duetsch DT06-6S Style Connector, Rear is Rated to IP69K
- Fits in 2" (51mm) Round Standard Panel Opening
- Simple Slide Latch Mounting Ring

### INTRODUCTION

The **JDR100**, **GAC's** J1939 dual function data reader, is a low-cost universal device that allows users to read standard J1939 engine parameters and **Diagnostic Trouble Codes (DTC's)** from engines equipped with J1939 compatible **Engine Control Units (ECU)**. The **JDR100** supports six live engine parameters (RPM, Oil Pressure, Coolant Temperature, Fuel Level, Battery Voltage, Engine Run Hours) along with J1939 stop, warning, malfunction, and protection status messages. Because the JDR100 is a universal diagnostic code reader, its application is not limited to any particular engine manufacturer or engine size. It is easily installed, which makes it ideal for aftermarket prospects, and, it's extremely rugged so off-limit applications are never an issue for this device.

J1939 DTC's are divided into two categories, active and stored (also referred to as previously active). Active codes are present when a condition is present. Stored codes are a record that the condition occurred. Within each DTC, active or stored, there are several distinct data components, the **Suspect Parameter Number (SPN)**, the **Failure Mode Indicator (FMI)**, the **Occurrence Count (OC)**, and the **Source Address (SRC)**. The SPN is the engine parameter that is out of range (e.g., **Oil Pressure, Coolant Temperature**). The FMI provides information about the failure (e.g., **OUT OF CALIBRATION**). The OC indicates the number of times the failure has occurred, and the SRC tells the user the CAN address of the offending device. Note, the JDR100 can record up to 240 DTCs from up to 10 different CAN devices.

If enabled, the **JDR100** will display the text translation of the engine parameter or trouble code information.



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## DESCRIPTION

The **JDR100** reads and displays live engine parameters and DTCs transmitted by the engine ECU. The Engine/DTC button is provided to switch between these two display functions.

**DISPLAYING ENGINE PARAMETERS** - While performing the live engine parameter display function, the **JDR100** accepts RPM, Oil Pressure, Coolant Temperature, Fuel Level, and Battery Voltage messages from the engine ECU. The **JDR100** has its own internal memory to maintain engine run hours. Note, not all engine ECUs supply Fuel Level, and Battery Voltage. The order in which each parameter is displayed can be configured by the user. In Auto Mode, while displaying engine parameters, the **JDR100** continuously scrolls through each parameter. The **JDR100** will also illuminate the J1939 indicators, should the ECU make the request. The **JDR100** can be configured to display parameter units in C° / Bar or F° / PSI.

**DISPLAYING DTCs** - The **JDR100** will accept J1939 **DM1** and **DM2** messages containing the DTCs. The **DTCs** within the **DM1** messages are active codes. The **DTCs** within the **DM2** messages contain the stored messages. In **Auto Mode** while displaying **DTCs**, the **JDR100** continually scrolls through the active **DTCs**. If a stored **DTC** is present, the **JDR100** turns on the **MEM** indicator.

To access the information within the DTC, the user enters **Manual Mode** by pressing the **i** button, or by pressing the **||/||▶** button. When in manual mode, the **JDR100** will reveal the J1939 **Failure Mode Indicator (FMI)**, the **Occurrence Count (OC)**, and the **Source (SRC)** address of the **DTC** with each time the **||/||▶** button is pressed. If the **J1939 Text Translation** is enabled, the **JDR100** will scroll the standard English text for the **SPN** and **FMI**. To return to **Auto Mode** the user can press and hold the button for 3 seconds; the unit will also return to **Auto Mode** if no button is pressed within the number of seconds specified by the return to auto parameter. While in **Manual Mode** and viewing **DTCs**, the user can loop through the list of **SPNs** by pressing the **SPN** button.

**USER CONFIGURATION** - A user configuration mode is made available to adjust the behavior of the **JDR100**. To enter this mode, the **JDR100** must be in **Manual Mode** and then by simultaneously holding the **||/||▶** and **i** buttons for 3 seconds.

Once in this user configuration mode, the user can establish the **CAN** addresses for this device and the **ECU**, the max number of **DTCs** to be logged, the number of seconds before the unit waits before it returns to **Auto Mode**, the number of seconds the unit will display a given **DTC SPN** (when in **Auto Mode**), and the rate at which to scroll the text. The user can also set the function to display on power up (engine parameters or **DTCs**), the number of seconds to display each engine parameter before switching to the next parameter (when in **Auto Mode**), the display units (standard or metric), and the priority for each of the live engine parameters.

To exit, the user can press and hold the **||/||▶** button if no button is pressed within the number of seconds specified by the return to auto parameter.

DIAGRAM 1. JDR100 Dimensions

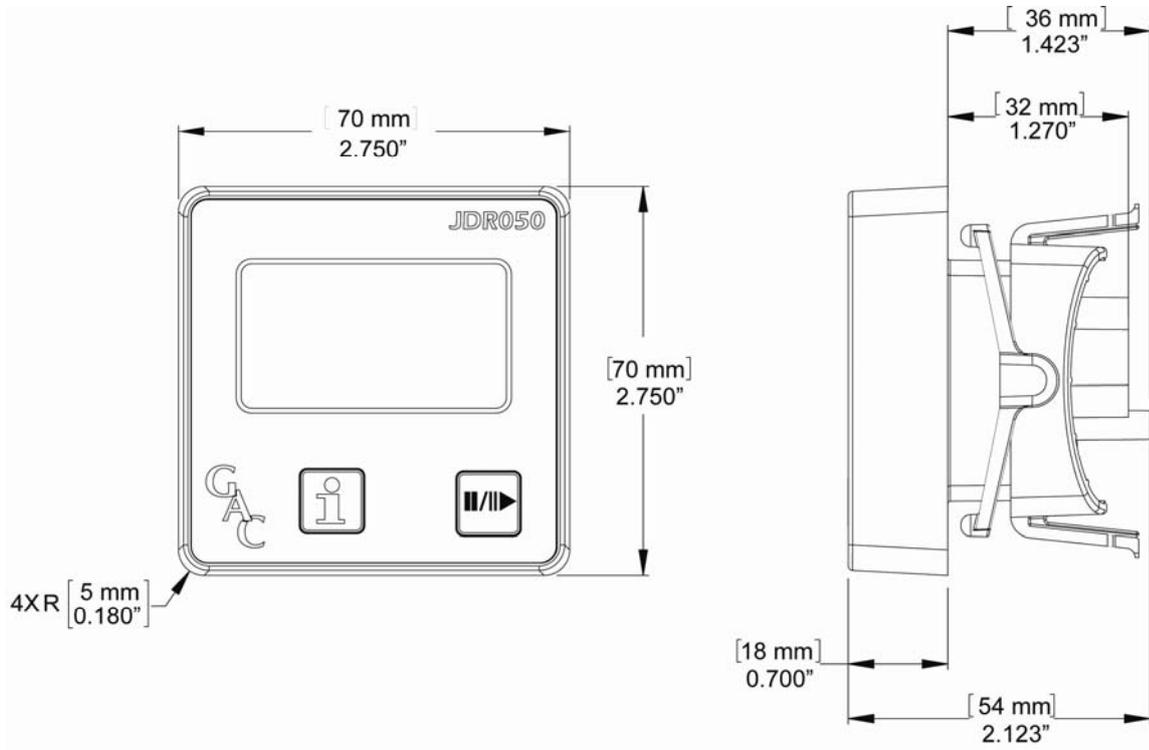


DIAGRAM 2. JDR100 Connections

ENGINE CONTROL  
MODULE  
(SAE J1939 COMPLAINT)

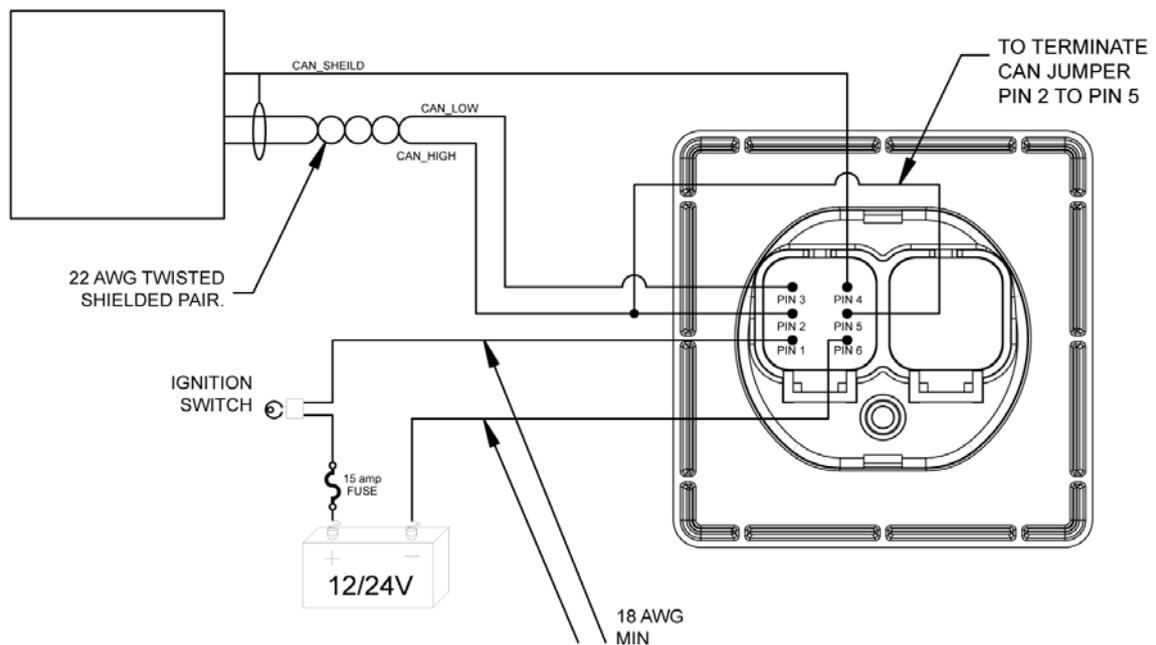
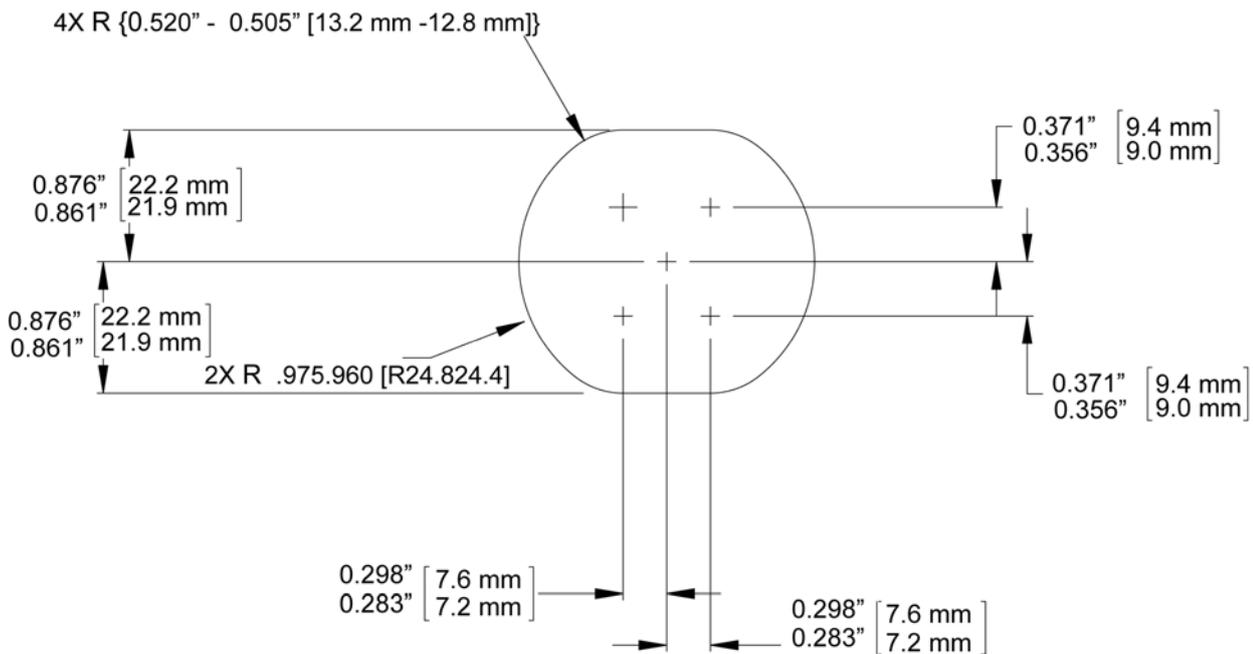


DIAGRAM 3. JDR100 Mounting Hole Dimensions



**SPECIFICATIONS**

**Power Input**

Operating Voltage ..... 8-32 VDC (0V 50ms transient condition)  
 Current Draw ..... 0.25 Amp @ 12V  
 ..... Reverse polarity protected

**Physical**

Overall ..... 2.75" x 2.75" x 2.127" (70mm x 70mm x 54mm)  
 Front to Back ..... 2.75" x 2.75" x 0.7" (70mm x 70mm x 18mm)  
 Panel opening ..... 2" Round (51mm)

**CANbus**

J1939 SAE Compliant ..... (V1 when CM = 1, V4 when CM = 0)  
 ..... 120 CANbus termination resistor included

**Environmental**

Ambient Temperature Range ..... -40 to +85°C (-40 to +185°F)  
 Relative Humidity ..... Up to 100%  
 IP67 Front ..... Resist Direct Spray  
 IP69K Rear (w. Deutsch connector) ..... Sealed (no fogging)  
 Shock/Vibe ..... TBD