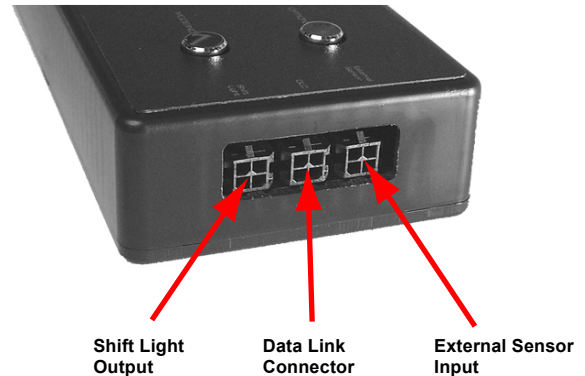


R920 User Manual



Installation

The R920 only requires one cable. Connect the 4-pin connector to the middle header on the R920 labeled "DLC". The other end of the cable connects to the vehicle Data Link Connector. This is always located under the dash on the drivers side of the vehicle.

The R920 should power up immediately. If the vehicle ignition is not on, then the R920 will go to sleep after about 5 seconds. After the ignition is turned on and the R920 starts communicating with the ECU, then it will initialize and start retrieving sensor data.

Operation

To change the screen display mode, depress the MODE/INC button. The display will increment to the next screen mode. Here is a list of the available screen modes.

- MODE 1 - Any, Any (custom screen mode)
- MODE 2 - RPM, VSS and RPM MAX Hold (displays peak RPM for about 3 seconds)
- MODE 3 - ECT, IAT
- MODE 4 - RPM, O2 (voltage or A/F ratio)
- MODE 5 - RPM and Bar Meter
- MODE 6 - RPM, MAP/MAF and boost pressure (boost only available on vehicles with a MAP sensor)
- MODE 7 - RPM, BAT
- MODE 8 - VSS and Acceleration Timer

Note: The R920 will display either the MAP or the MAF but not both. If the vehicle has a MAF sensor, then it will be displayed. Otherwise the R920 will default to MAP. If the vehicle has both a MAP and a MAF sensor, then you can choose which one to be displayed in the option menu.

Sensor Description

RPM - Engine RPM.

TPS - Throttle Position Sensor. Displayed in %. Most vehicles read around 8% at closed throttle and around 90% at full throttle. This is perfectly normal and actually recommended in the OBD-II specification.

MAP - Manifold Absolute Pressure. Displayed in kPa (kiloPascals).

MAF - Mass Air Flow. Displayed in g/s (grams per second).

IGN - Ignition timing advance. Displayed in degrees.

ECT - Engine Coolant Temperature. Displayed in degrees (Celsius or Fahrenheit).

IAT - Intake Air Temperature. Displayed in degrees (Celsius or Fahrenheit).

O2 - Oxygen Sensor. Displayed in volts or A/F ratio. There is currently a Honda LEV-II conversion available for Honda/Acura vehicles with K-series engines. Vehicles factory equipped with wideband O2 sensors will always display A/F ratio.

A/F ratio will be displayed when using an Innovate! LC-1.

VSS - Vehicle Speed Sensor. Displayed in mph or km/h.

BAT - Battery Voltage

Option Menu

To select an option, depress the OPTION button. The display will increment through the options and then return back to the previous screen mode. To change an option value, depress the MODE/INC button.

Available options

Metric/English Units - Metric or English. This option effects VSS, ECT and IAT.

Mode 1 Line 1 and Line 2 sensor selection.

Shift Light RPM 1 and 2 - increments by 100 rpm from 3,000 to 11,500.

Vehicle Speed Set - increments by 10 mph or km/h from 10 to 200.

Shift Light Output type - On/Off signal or serial data.

O2 Sensor Display - Voltage or A/F ratio (Honda LEV-II or Innovate! LC-1)

MAP/MAF sensor display - MAP, MAF or External MAP (AP1)

Stored DTC's

DTC status

Shift Light

The shift light illuminates whenever the engine rpm is above the RPM 1 setting and below the VSS Set Speed.

The shift light illuminates whenever the engine rpm is above the RPM 2 setting and above the VSS Set Speed.

The R920 must be in screen mode 2 in order for this option to work. The shift light output is intended to be used with the SL1 LED shift light or the S100 sequential shift light meter.

Acceleration Timer

The acceleration timer is active in screen mode 8. This screen mode is only available if the Acceleration Timer module is installed. The timer is completely automatic. The timer resets when the vehicle speed is at 0. The vehicle must be stopped for about a second before the timer is ready, at which time an "R" will be displayed in the upper rightmost position of the display. The timer starts as soon as the vehicle starts moving and stops at either 60 mph or 100 km/h. The value is then displayed in seconds and tenths of a second. This value will continue to be displayed until it is replaced by another acceleration run. The timer is very repeatable (within a tenth of a second), however it's "true" accuracy cannot be guaranteed due to variations in tire diameter and speed sensor gearing. This timer is intended to be used as a tuning tool to verify the effectiveness of a vehicle modification.

Stored DTC's

If there are no DTC's stored, then 0 is displayed. If there are DTC's stored in the ECU, then the number of DTC's is displayed on the first line and "Retrieve DTC's?" is displayed on the second line. Depressing the MODE/INC button will retrieve the DTC's and display them. Up to 6 DTC's will be displayed.

Clear DTC's

If there are DTC's stored in the ECU, then depressing the OPTION button will display this screen. "Clear DTC's?" is displayed. Depressing the MODE/INC button will clear the DTC's. After the DTC's have been cleared, then "DTC's Cleared" is displayed. Depressing the OPTION button exits the Option Menu.

Stand-alone Mode

The R920 can be operated without vehicle ECU communication. To do this, you must depress both buttons before plugging the unit into the Data Link Connector. The unit will then start up in Stand-alone Mode. This mode is for A/F ratio display and wideband sensor calibration. The A/F ratio is displayed on the top line and a bar meter is displayed on the bottom line. The range is 10:1 to 20:1. The R920 is designed to operate the calibration function of an Innovate! LC-1 wideband sensor. To do this press the OPTION button. The display will read "Calibrating". After about 2 seconds, the calibration is complete. This is the "Free Air" calibration. Consult the LC-1 manual for more information. After calibrating, depress the OPTION button to return to the A/F ratio display. At any time, you can depress the MODE/INC button to exit the Stand-alone mode and enter the normal Data Monitor mode. When in the Stand-alone mode, the upper rightmost character on the display should be a full block when the LC-1 is connected and operating normally. If there is an error with the LC-1, then this block will blink according to the error code. Consult the LC-1 manual for more information.

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Limited One Year Warranty

Brockway Engineering, LLC hereby warrants that this product will be free of defects in materials and workmanship for a period of one year after date of purchase.

At it's option, Brockway Engineering, LLC will repair or replace the defective product.