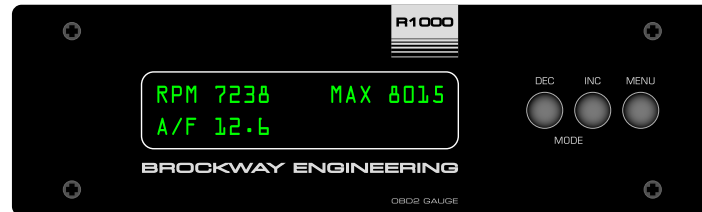


R1000 User Manual

v2.5.2



Compatibility: ISO9141 and KWP2000 (ISO14230)

Installation

The R1000 only requires one cable. Connect the 8-pin connector to the middle header on the back of the R1000. The other end of the cable connects to the vehicle Data Link Connector. This is usually located under the dash on the drivers side of the vehicle.

The R1000 should power up immediately if the vehicle ignition is on. If the vehicle ignition is not on, then the R1000 will go to sleep after about 5 seconds. After the ignition is turned on and the R1000 starts communicating with the ECU, then it will initialize and start retrieving sensor data.

Operation

To change the screen display mode, press the INC or DEC buttons. The display will increment or decrement to the next or previous 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 5 seconds)

MODE 3 - ECT, IAT

MODE 4 - RPM, O2 (voltage or A/F ratio)

MODE 5 - RPM and RPM Bar Meter

MODE 6 - RPM, MAP/MAF (boost pressure available on vehicles with a MAP sensor)

MODE 7 - VSS and Acceleration Timer

Note: The unit 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 unit 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. If a MAP sensor is present, then you can select either kPa or psi values to be displayed.

Limited 1 Year Warranty

Brockway Engineering, LLC hereby warrants that this product will be free of defects in materials and workmanship for a period of 1 year after date of purchase.

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

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) or psi.

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 also a A/F ratio conversion available for Honda/Acura vehicles with K-series engines. Vehicles factory equipped with wideband O2 sensors will always display A/F ratio. B2O2 (bank 2) is available on vehicles with 2 cylinder banks.

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

STFT - Short Term Fuel Trim.

CLV - Calculated Load Value.

Option Menu

To select an option, press the MENU button. The display will increment through the options and then return back to the previous screen mode. To change an option value, press the INC or DEC buttons.

Available Options

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

Mode 1 Line 1 sensor selection and Mode 1 Line 2 sensor selection.

Shift Light RPM setting - 3000 to 9900 - increments/decrements by 100 rpm.

Vehicle Speed Correction - 75% to 150% - increments/decrements by 1%.

O2 Sensor Display - Voltage or A/F ratio (or Honda K-Series A/F)

MAP/MAF sensor display - MAP or MAF (if only one sensor type is present, then you cannot change this selection).

MAP Units - kPa or psi (only available if "MAP" is selected in previous menu).

ECT Alarm - 70C to 125C in 5C increments (value shown is converted to F when "English Units" is selected in the first menu option).

Stored DTCs

Clear DTCs and DTC status (this menu option is skipped over if no DTCs are found).

Shift Light

The shift light illuminates whenever the engine rpm is above the RPM setting. The unit must be in a screen mode with RPM in order for this option to work. The shift light output is intended to be used with the SL2 shift light.

Acceleration Timer

The acceleration timer is active in screen mode 7 and 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 the vehicle comes to a complete stop, at which time it will be reset. The timer is exceptionally accurate and 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.

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. Pressing the 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 pressing the MENU button will increment to this screen. "Clear DTC's?" is displayed. Pressing the INC button will clear the DTC's (and turn off a CEL). After the DTC's have been cleared, then "DTC's Cleared" is displayed. Pressing the MENU button exits the Option Menu.

ECT Alarm

The ECT Alarm is active whenever the ECT value is displayed. The ECT value will blink whenever the alarm setting is exceeded. The setting is adjusted in 5C increments from 70C to 130C. However, when "English Units" is selected, the actual displayed value is in F, so the value increments from 158F to 266F.

Vehicle Speed Correction

The vehicle speed (VSS) can be corrected by entering a percent change. The range is 75% to 150%. If a smaller than stock tire is used then a % less than 100 is needed. If a tire larger than stock is used, then a % greater than 100 is needed. To calculate the tire diameter % difference, use this formula:

$$(\text{new tire diameter}) / (\text{stock tire diameter}) * 100$$

example: $35 / 31 * 100 = 113$ (round to nearest whole number)

To calculate gear ratio % difference, use this formula:

$$(\text{stock gear ratio}) / (\text{new gear ratio}) * 100$$

example: $3.73 / 4.10 * 100 = 91$ (round to nearest whole number)

The speed displayed on the unit will be corrected, however the vehicle speedo will still be *off*.