VEI Systems Installation Instructions
D1-FQM-FQM-Mx – Dual Fuel Level Gauge

Please read these instructions completely before beginning installation to ensure that you have the tools and skills necessary for installation and operation of this instrument. If you are not sure that you can perform the installation safely, then consult a qualified installer. Further instructions available at www.VEISystems.com/technical.html .

FEATURES
This dual-function instrument monitors engine the level of two fuel tanks simultaneously on two independent displays within a single gauge housing.

MOUNTING
Install the unit through the front of the mounting hole in the dash pod or panel. If you are making a custom dash panel, you will need to drill a 2-1/16" hole. Slide the clamp onto the 2 studs on the back of the instrument. Secure with the 2 thumb-nuts. Use a small drop of threadlocker or nail polish on the thumb-nuts to prevent them from loosening under vibration.

This gauge is designed to work with most stock senders, or we can provide a sender if required. One side of the sender should be grounded (usually the body).

WIRING
The wires should be connected as below using crimp-on butt-splice connectors, or soldered and sealed with heat-shrink tubing. Before connecting any wires, you should either disconnect the battery power, or carefully connect the wires in the order shown. If not, you may damage the instrument. Use an existing fuse in the fuse panel, or an external fuse to supply power to the instrument. The D1 series instruments use approx. 130mA of current average and approx. 210mA maximum, so ensure the fuse is sized appropriately. For a single gauge, a 0.5 Amp or 1 Amp fuse is good. For a typical 6- or 7-gauge setup, a single 5 Amp fuse is good.
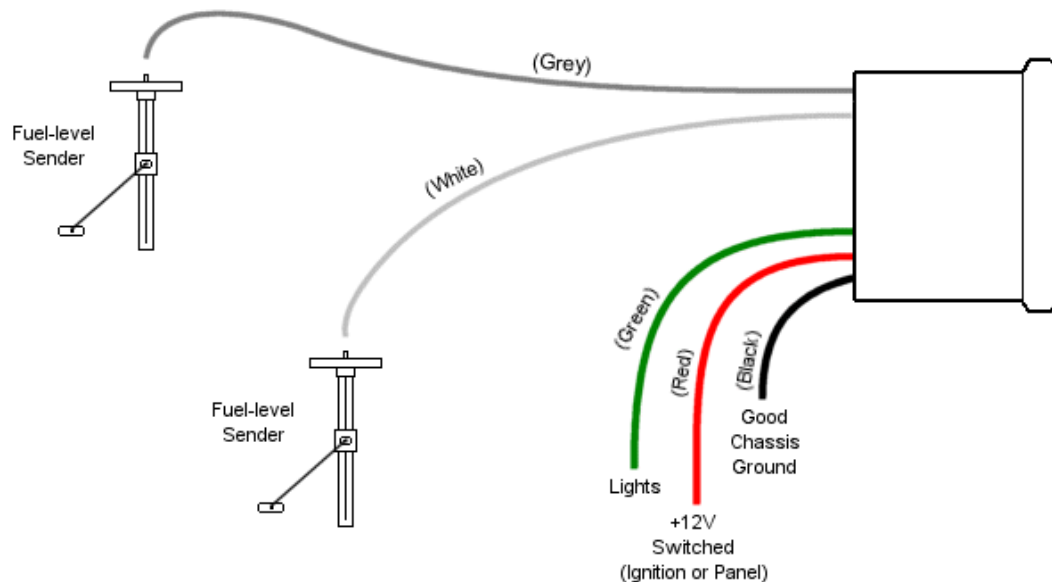
- o BLACK – connect to a solid chassis ground under the dash or directly to the battery. You may need to expose the metal connection point under the dash by scraping or lightly sanding it. A ring terminal and a screw should work well in most cases.

- o RED – connect this to a source of **switched** +12V power. This will usually be found at or near the ignition switch, and will usually have a relay wired through the ignition switch. An alternate source of this is a switched power line from a nearby light or accessory (radio, etc). If you are unsure that the wire can support the power required for the instrument, then use an external relay.

- o GREEN – connect this wire to the positive line (+12V) from the headlight switch. When this line receives a positive voltage, the gauge will use the "park-lights" brightness setting. Alternatively, if setting up a racing-mode display, this can be connected to a separate mode switch (12V or 0V signal).

o WHITE – This is the Channel-1 (upper display) input for the fuel level sensor. Connect this wire to the tip or non-grounded side of the fuel-level sender for either tank. The other side is usually grounded for OEM and most metal tanks, but if your sender has 2 wires, connect the other wire to ground.

o GREY – This is the Channel-2 (lower display) input for the fuel level sensor. Connect this wire to the tip or non-grounded side of the fuel-level sender for the other tank. The other side is usually grounded for OEM and most metal tanks, but if your sender has 2 wires, connect the other wire to ground.

OPERATION

There are 2 operation "sections" – one for normal operation mode with brightness and other general settings, and the other for configuring the gauge to match the sender.

In either section, press and hold the button for a few seconds to change the mode. Press and release quickly (tap the button) to change the setting in any mode. Normal operation modes are as follows:

MODE	DISPLAY	SETTINGS
Normal	`(Fuel % 1 /` `Fuel % 2)`	Shows fuel level for channel/sender 1 in upper display and fuel level for channel/sender 2 in lower display (explained below).
Channel swap	`Ch1 / Ch2`	Allows you to swap the position of the upper & lower displays if required. Note that this just swaps the displays, and wiring does not need to be swapped.
Set sender-1 low alarm	`L.10 /`	Sets the channel/sender 1 low fuel-level alarm threshold from OFF to 40%
Set sender-2 high alarm	`/ L.10`	Sets the channel/sender 2 low fuel-level alarm threshold from OFF to 40%
Brightness Regular	`Br . 9`	Last digit shows regular brightness level from 1 to 9.
Brightness park-lights on	`BP . 1`	Last digit shows brightness level with lights on from 1 to 9.
Set configuration mode	`Cfg.Off/On`	Turn on configuration mode to enter the configuration section/menu. Once you do this, cycle power to the gauge off and back on, and the gauge will be in the configuration section.

Configuration:

Once you set and enter the configuration section (as explained above), you will be presented with this menu. Again, press and hold the button for a few seconds to change the mode. Press and release quickly (tap the button) to change the setting in any mode. Modes are as follows:

MODE	DISPLAY	SETTINGS
Set full-point (channel 1)	`FUL /`	With the fuel tank for sender/channel 1 full of fuel, you can select this mode, then tap the button to mark that fuel level as the full point. The display will show "Set" to indicate that this has been set successfully.
Set empty-point (channel 1)	`EtY /`	With the fuel tank for sender/channel 1 empty (you can leave a gallon or so as a reserve), you can select this mode, then tap the button to mark that fuel level as the empty point. The display will show "Set" to indicate that this has been set successfully.
Set full-point (channel 2)	`/ FUL`	With the fuel tank for sender/channel 2 full of fuel, you can select this mode, then tap the button to mark that fuel level as the full point. The display will show "Set" to indicate that this has been set successfully.
Set empty-point (channel 1)	`/ Ety`	With the fuel tank for sender/channel 2 empty (you can leave a gallon or so as a reserve), you can select this mode, then tap the button to mark that fuel level as the empty point. The display will show "Set" to indicate that this has been set successfully.

To return to the normal menu from the configuration menu, simply power the gauge off and back on.

WARRANTY & LIABILITY

Neither VEI Systems, nor its dealers or agents shall be liable in any way, for any damage, loss, injury or other claims, resulting from the installation or use of this product. By purchasing or installing this product, you assume all liability of any kind connected with the use and/or application of this product. If you are unsure that you can safely install and use this product, consult a qualified installer or mechanic. The warranty on this product covers only the product itself for a period of 1 year from the date of purchase, and it will be at our discretion to repair or replace the affected parts. No user serviceable parts inside. Warranty void if product enclosure opened.