VEI Systems Installation Instructions
D1-ASB-ASB-Mx – Dual Gauge – Air Suspension Pressure (Bar)

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 air suspension pressure, displays them simultaneously on two independent displays on the same gauge, and is configurable for use with any one of a few different sensors that would best suit your air suspension system, needs, and budget. Adjustable alarms will warn you of under- or over-pressure conditions.

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.

SENSOR MOUNTING:

This gauge works with any of the following sensors:

- SEN-PZ150A: 10.3-Bar piezo sensor, quick-responding and accurate. You will need on of these for each zone.
- SEN-PZE150: 5-zone version of SEN-PZ150A above, making for easier installation/wiring. One of these can provide signals for up to 5 zones, across a couple or up to 5 gauges, depending on your setup.
- SEN-F250: 17.2-Bar ultra-high accuracy sensor, intended for applications requiring greater measurement range.

A typical setup would be as follows:

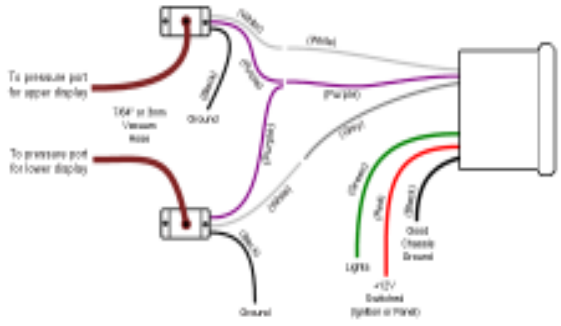
- 2 dual-display gauges (to show pressure at the four wheel corners).
- 1 single-display gauge (to show tank pressure).
- 1 SEN-PZE150 which provides the signals for all 5 sensor points.

For this setup, you can ignore one zone on the SEN-PZE150 and instead use a SEN-F250 to provide more range for the single gauge to show tank pressure.

There is a configuration setting on the gauge which needs to be changed to match the sensor type you're using.

Depending on the sensor you have selected for use with this gauge follow the appropriate section below:

SEN-PZ150A: Mount the sensor on flat surface using double-sided tape or two screws. Do not mount on any surface that will get very hot. Connect to the air source you want to measure using the 1/8" I.D. hose. DO NOT use push-to-connect air line as the rigid line will easily break the barbed nipple on the sensor. If you need to mate these sensors to PTC air line, you can use a shorter length of softer hose designed for barbed fittings, with a PTC coupler. Also be careful to push the hose straight down into the barbed fitting and not twist or bend as this could break the nipple on the sensor. If you have to remove the hose for any reason first carefully cut the line near the barb using a sharp knife or blade so only the stub if left near the nipple. Then slice the hose longitudinally with a sharp knife or blade and carefully peel it off of the nipple to avoid breaking the nipple.

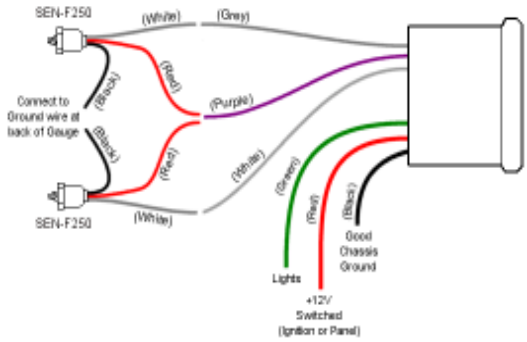


SEN-PZ150A Wiring: The wires should be connected as below using crimp-on butt-splice connectors, or soldered and sealed with heat-shrink tubing. Before connecting any wires, you should either disconnect the battery power, or carefully connect the wires in the order shown. If not, you may damage the instrument. Use an existing fuse in the fuse panel, or an external fuse to supply power to the instrument. The V1 series instruments use an average of 105mA of current, and a maximum of about 175mA, so ensure the fuse is sized appropriately. For a typical 6- or 7-gauge setup, a single 5 Amp fuse is good.

- BLACK (on gauge) -- connect to a solid chassis ground under the dashboard, 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.

- RED (on gauge) -- 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 supply the power required for the instrument, then use an external relay.
- GREEN (on gauge) -- 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).
- WHITE (on gauge) -- connect this wire to the white wire on the first pressure sender.
- PURPLE (on gauge) – connect this wire to the purple wires on both pressure senders.
- GREY (on gauge) – connect this wire to the white wire on the second pressure sender.
- WHITE (on sender) – connect this wire to the white / grey wire on the gauge.
- PURPLE (on sender) – connect this wire to the purple wire on the gauge.
- BLACK (on sender) – connect this wire together with the black (ground) wire at the back of the gauge. Both of these wires together would then be connected to a good chassis ground.

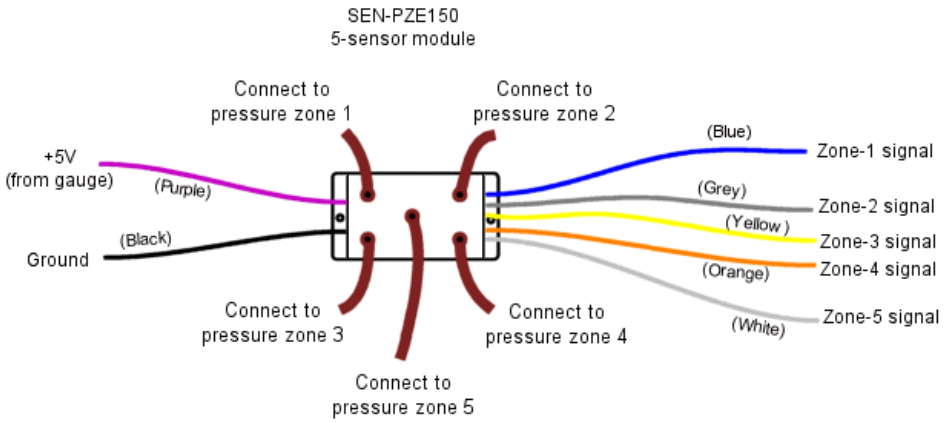
SEN-F250: This sensor has 1/4"-18 threads. Mount the sensor directly to the tank or valve block assembly using appropriate NPT adapter(s). Alternatively, you can use an NPT-to-barbed hose adapters and connect it to the air system with the air-line. In this latter case, mount the sensor using a P-clamp. If you need teflon tape, use it only on the rear threads to prevent any tape breaking off and getting into the air-stream.



SEN-F250 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 V1 series instruments use an average of 105mA of current, and a maximum of about 175mA, so ensure the fuse is sized appropriately. For a typical 6- or 7-gauge setup, a single 5 Amp fuse is good.

- BLACK (on gauge) -- connect to a solid chassis ground under the dashboard, 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.
- 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 supply the power required for the instrument, then use an external relay.
- 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).
- WHITE -- connect this wire to white wire on the air-pressure sender.
- PURPLE – connect this wire to the red wire on the air-pressure sender.
- BLACK on sender – connect this wire together with the black (ground) wire at the back of the gauge. Both of these wires together would then be connected to a good chassis ground.

SEN-PZE150: This sensor is similar to the PZ150A, except that it has 5 pressure measurement zones, rather than just one. Use the SEN-PZ150A setting on the gauge for this sensor, as it's the same output specifications. Mount the sensor on flat surface using double-sided tape or two screws. Do not mount on any surface that will get very hot. Connect to the air source you want to measure using the 1/8" I.D. hose. DO NOT use push-to-connect air line as the rigid line will easily break the barbed nipple on the sensor. If you need to mate these sensors to PTC air line, you can use a shorter length of softer hose designed for barbed fittings, with a PTC coupler. Also be careful to push the hose straight down into the barbed fitting and not twist or bend as this could break the nipple on the sensor. If you have to remove the hose for any reason first carefully cut the line near the barb using a sharp knife or blade so only the stub if left near the nipple. Then slice the hose longitudinally with a sharp knife or blade and carefully peel it off of the nipple to avoid breaking the nipple.



SEN-PZE150 Wiring:

- PURPLE -- The purple wire on the gauge can be powered from the 5V source of any one of the gauges that is taking a signal from this sensor, and the other gauge's purple wire should be left unused – taped up to prevent shorting to anything else.
- BLACK -- connect to a solid chassis ground under the dashboard, 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.
- 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 supply the power required for the instrument, then use an external relay.
- 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).
- BLUE – This wire provides the signal for the pressure at Zone-1. Connect this to the appropriate input on the gauge that should show this pressure. This would be either the white or grey wire on the gauge..
- GREY-- This wire provides the signal for the pressure at Zone-2. Connect this to the appropriate input on the gauge that should show this pressure. This would be either the white or grey wire on the gauge.
- YELLOW – This wire provides the signal for the pressure at Zone-3. Connect this to the appropriate input on the gauge that should show this pressure. This would be either the white or grey wire on the gauge.
- ORANGE – This wire provides the signal for the pressure at Zone-4. Connect this to the appropriate input on the gauge that should show this pressure. This would be either the white or grey wire on the gauge.
- WHITE -- This wire provides the signal for the pressure at Zone-5. Connect this to the appropriate input on the gauge that should show this pressure. This would be either the white or grey wire on the gauge.

OPERATION

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. There are two mode menus on this gauge – standard and calibration. Modes are as follows:

MODE	DISPLAY	SETTINGS
Normal	(air suspension pressure)	Channel 1 shown on upper display and channel 2 on lower display, unless swapped (see next setting below).
Channel swap	Ch1 / Ch2	Allows you to swap the position of the upper & lower displays if required.
Set low pressure alarm	L1 . 20	Sets the low pressure alarm threshold in Bar.
Set high pressure alarm	H1 . 70	Sets the high pressure alarm threshold in Bar.
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.
Calibration	CAL / Off	Sets calibration mode on or off. When on, the gauge enters the calibration menu on next power up.

In calibration menu (gauge power on after calibration mode is turned on), the gauge enter this menu, where sensor selection can be made.

MODE	DISPLAY	SETTINGS
Channel-1 sensor selection	SE1 / P15	Select “P15” for the PZ150A sensor or PZE150. Select “F25”for SEN-F250.
Channel-2 sensor selection	SE2 / P15	Select “P15” for the PZ150A sensor or PZE150. Select “F25”for SEN-F250.

To exit calibration mode, 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.