

Compass Display Installation Instructions (Rev.2)

K425 – Compass Display

K406 – Compass Display Driver

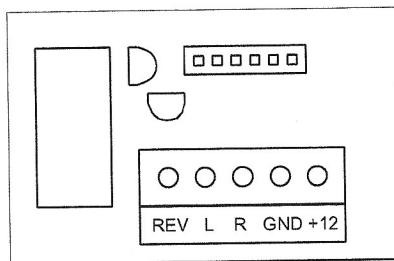
The Compass Display is a two-board assembly, composed of a display board installed on top of a driver board. It has been designed to be installed in the left side corner of a 4th season dashboard.

This version is a dummy display that reacts to the activation of turn signals and to the engagement of the reverse gear. Default display is the forward pointing arrow. Please take note that some segments of the bar graph displays are not used and will never light.

You will need to take the two boards apart in order to gain access to the screw-type terminals and to install the unit.

Be careful not to bend the 6-pin header standing out the back of the display board.

After removal of the display board, you have access to the screw terminals illustrated below. Using 18 to 22 AWG wires, connect the driver board as indicated.



The GND or « - » input shall be connected with the vehicle ground.

The « + » input must be connected to a fused +12V supply, switched on and off by the ignition key. The accessory terminal of the fuse block is recommended.

The L and R inputs go to the left and right turn signal indicators, respectively.

The REV input connects to reverse gear detect switch, located in the bottom part of the shift lever. This is the switch used to activate the backup lights of the car.

This completes the wiring instructions for the Compass Display.

You can send questions or comments to techsupport@jupiterE.com.

Compass Display Installation Instructions (Rev.2)

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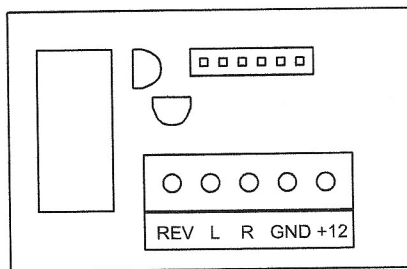
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This version is a dummy display that reacts to the activation of turn signals and to the engagement of the reverse gear. Default display is the forward pointing arrow. Please take note that some segments of the bar graph displays are not used and will never light.

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Be careful not to bend the 6-pin header standing out the back of the display board.

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This completes the wiring instructions for the Compass Display.

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Functional compass

The installation instructions are for the standard, non-functional version. There are no instructions specific to the functional version as the connections are the same. The only difference in installation is that the functional version includes a sensor. The magnetic field sensor is located on a smaller printed circuit board, connected to the main compass driver board with a long flat cable. It is suggested to install the sensor in the back of the car, in the trunk area.

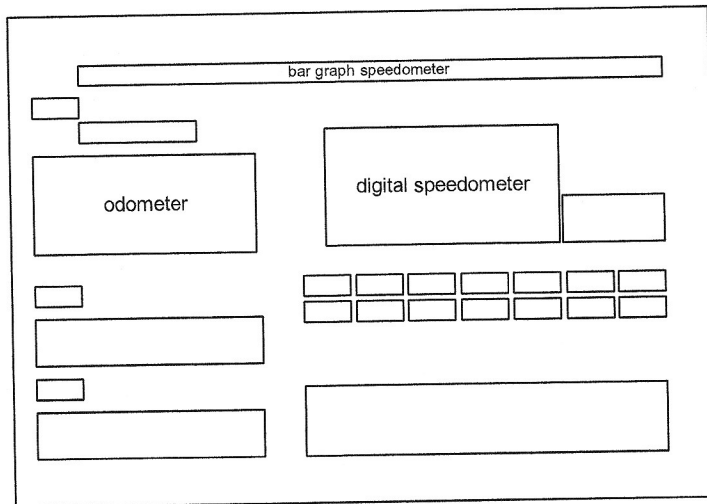
The sensor should be installed at zero degree angle (flat), in reference to the printed circuit board.

Speedometer Installation Instructions (Rev.1)

K445 – Speedometer Display

K408 – Speedometer Driver

The Speedometer is a two-board assembly, composed of a display board installed on top of a driver board. It has been designed to be installed in a 4th season dashboard, on either side of the central voicebox.



The Speedometer assembly indicate velocity and distance, in the following formats:

- digital speedometer
- bar graph speedometer
- digital odometer

Location of each meter is indicated on the drawing to the left. Other LEDs and bar graphs are dummy displays.

The built-in electronic odometer has a memory back-up capacitor that will hold a value for approximately two weeks if power is totally removed from it. That gives you enough time to change a dead car battery or to perform major mechanical work such as replacing the engine. During normal operation, the unit will rely on the car battery to keep its memory, similar to a

car clock or radio memory. The odometer display will be ON only when the ignition switch will be turned ON.

You will need to take the two boards apart in order to gain access to the screw-type terminals and to install the unit.

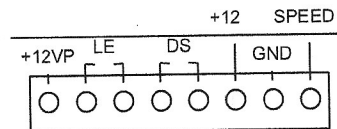
With your hands, firmly hold the driver board and slowly pull on the display board. The pulling force must be equally applied on the four sides of the board. Be very careful not to bend the headers standing out the back of the display board.

After removal of the display board, you have access to the screw terminals illustrated below. Using multistrand wires of size 18 to 22 AWG, connect the driver board as indicated. It is recommended to use wires of different colors to prevent confusion and damageable wiring errors.

The GND or « - » input shall be connected with the vehicle ground.

The « +12VP » input shall be connected to a fused, permanent +12 V supply.

The « + » or « +12 » input must be connected to a fused +12V supply, switched on and off by the ignition key. The accessory terminal of the fuse block is recommended.



The SPEED input connects to the vehicle speed sensor.

DS and LE terminals are reserved for future use. (See Custom Installation section.)

This completes the wiring instructions for the standard installation of the Speedometer. Carefully put back the display board on top of the driver board before applying power to the assembly. Check that a legible number is displayed on the odometer display and that it is turned ON and OFF with the ignition key.

Additional installation instructions are provided on the back of this sheet.

Notice

The electronic odometer is not a replacement unit for a factory-installed odometer. To be in compliance with Federal Regulations, you must keep your original odometer operational if you plan on registering the car and using it on the road.

Speedometer Installation Instructions (cont.)

K445 – Speedometer Display

K408 – Speedometer Driver

Basic installation instructions are given on the reverse side of this sheet. Additional instructions and guidelines for calibration and custom installations are presented here.

Speedometer Calibration

Speedometer calibration is performed by adjusting the remote potentiometer, located on a small rectangular board. You can adjust it in reference to your stock speedometer or in reference to another car.

Odometer Calibration

Locate the four red rotary switches on the driver board. These are used to dial-in a divider factor. To begin the calibration procedure, set the rotary switches to 0 0 0 1 using a small flat screwdriver.

Go to a parking lot, place a mark on the ground and accurately measure a distance of one tenth of a mile.

Align the center of one rear wheel with the starting mark, and take note of the mileage indicated. Drive the distance and stop with the center of the rear wheel aligned with the 1/10 mile mark. It is a good idea to have an helper here.

Now, take note of the new odometer reading and subtract from it the start number, noted previously. The result is the N number of the divide-by-N circuit; this is the number you want to set the odometer for. Rotate each switch to write the resulting number. As an example, if the N number is 539, set the four switches to 0 5 3 9.

Once the number is set, you could drive the distance again and check that the odometer will increment only by one count.

Start number

A square wave generator is supplied on a separate board. This board will only be used to set the odometer to any desired start count. To do this, apply power (12 V and GND) to the odometer assembly and to the generator board. Connect the output wire of the generator and set the dials to 0001 to get a divide-by-one ratio, as per the previous instructions. As you reach the desired number, slow down the odometer by dialing-in a higher division factor such as 0901.

Once the start number has been set, the square wave generator is no longer needed and should be disconnected. Remove the generator and store it in a convenient location.

Custom Installation

Momentary switches can be installed between the DS (display select) and the LE (latch enable) terminals. That would allow you to use the memory feature of the digital odometer to keep track of the last oil change mileage, as an example.

Additional note about the speed sensor

This electronic odometer has been designed to operate with an aftermarket vehicle speed sensor that mounts on the speedometer cable or directly at the speedometer cable output of the transmission. It is item SC-1, manufactured by Blue Streak and available from most auto parts stores. This unit is equivalent to Chrysler part number 4312186.

If there is a different or unknown speed sensor already installed on your vehicle, you can connect its signal to the odometer input and check if it works. If the odometer gives erratic readings or only starts to count at higher speeds such as 40 or 55 MPH, please contact Jupiter Electronics.

Legends

Dry transfer lettering can be applied directly to the surface of the 10×20mm LED to indicate “MPH”, if desired.

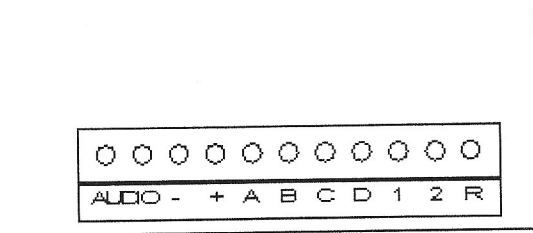
You can send questions or comments about these instructions to techsupport@jupiterE.com.

Voice Box Installation Instructions (Rev.7)

Kx63 - Voice Display K264 - VU-meter/5-step sequencer K265 – Tone Generator

The Voice Box is a three-board assembly, composed of the Voice Display board, stacked on top of the two driver boards. The tone generator is the last board on the back, and can be recognized by its speaker. The VU-meter/5-step sequencer board mounts in the middle of the stack, right behind the display board.

To install the Voice Box, the display board must be taken apart from the driver boards. With your hands, firmly hold the driver board and pull on the display boards. The pulling force must be equally applied on the four sides of the board to prevent the stack connectors from bending.



After removal of the display board, you have access to the screw terminals illustrated below. Using 18 to 22 AWG .

The GND or “-“ input must be connected with the vehicle ground.

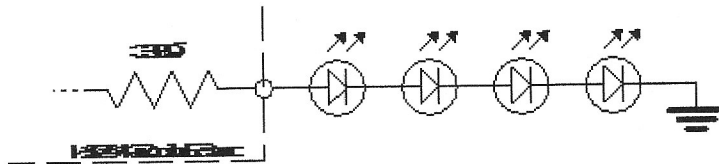
The “+” input must be connected to a fused +12V supply, switched on and off by the ignition key. The accessory terminal of the fuse block is recommended.

The two Audio inputs connect to any car speaker, in parallel. The audio input is isolated from the electronic VU-meter circuit by a high-impedance signal transformer and will not affect the audio quality of your vehicle sound system.

This completes the wiring instructions for the basic installation. Display board should be put back on top of driver boards before power is applied to the circuit.

Custom Installation

Four sequencing outputs are provided, labeled A to D. These outputs are turned on in sequence with the LED blocks on each side of the voice display. A 330Ω series resistor limits the current on each of these outputs, and was calculated to drive 4 LEDs (not provided) in series to ground. Please see illustration below.



Instead of LEDs, one 12V incandescent lamp bulb can be driven by each of the sequencing outputs. To do so, locate and bypass the 330Ω series resistors on the driver board. These resistors are located close to the screw terminals, and should not be mistaken for other 330Ω resistors used in the VU-meter circuit.

Additional custom installation instructions are given on the back of this sheet.

Calibration

The Voice Box can be installed without any calibration or adjustment. If required, speed of the sequencing circuit can be adjusted by the only potentiometer accessible from the side of the assembly, on the VU-meter board. The other potentiometer, close to the screw terminals, adjusts the VU-meter circuit sensitivity. Please note that the boards must be powered off and taken apart before making this adjustment.

Jupiter Electronics

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Voice Box Installation Instructions (cont.)

Kx63 - Voice Display K264 - VU-meter/5-step sequencer K265 – Tone Generator

Basic installation instructions are given on the reverse side of this sheet. Additional instructions and guidelines for custom installations are described here.

Normal – Auto – Pursuit Selection

The first LED below the voice display is lighted by default and stays ON unless there is a signal present on the selection inputs identified 1 and 2. Please refer to illustration on the reverse side. To switch to the second or third LED, simply connect one of the two selection inputs directly to ground. The easiest way to accomplish this could be such as the opening of an intake air trap or the transmission kickdown. with pushbutton switches. For automated operation, you can install microswitches or limit switches to detect events

Please note that only one of the three LEDs below the voice display can be ON at the same time.

Extra Tone inputs

Three extra tone inputs are provided, and are accessible by the screw terminal mounted on the tone generator board.

Simply connect any of the three inputs directly to ground to generate distinct tones. The use of momentary pushbuttons can be connected to the same input. Please note however that only one tone can be generated at pushbuttons is recommended, as the tones will sound for as long as any of the three inputs is shorted to ground.

a given time and that the output is disabled when more than one tone are requested simultaneously.

Delayed start

A signal output is provided for people who would like to implement a delayed dashboard start. The screw terminal output is identified R on the illustration on the reverse side of this page. This terminal will present a low to high transition at the end of the start-up sequence and can be used to energize a relay coil. The relay can then be used to switch the power supply to other boards of the dash. **Do not use this output to supply power directly to other boards. This would result in permanent damage to the circuit.**

Legends

Dry transfer lettering can be applied directly to the surface of the display LEDs.

You can send questions or comments about these instructions to techsupport@jupitere.com.

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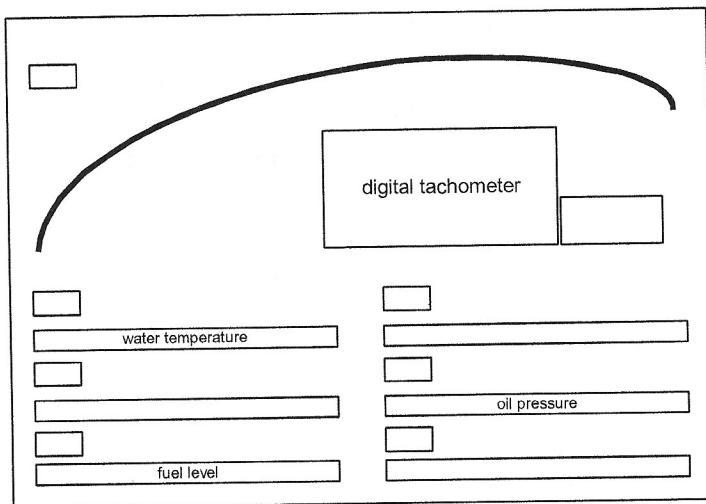
Tachometer Installation Instructions (Rev.1)

K446 – Tachometer Display

K409 – Tachometer Driver

The Tachometer is a two-board assembly, composed of a display board installed on top of a driver board. It has been designed to be installed in a 4th season dashboard, on either side of the central voicebox.

This unit is compatible with the electrical system of any 1982-1992 Pontiac Trans-Am or Firebird. It will also operate without modifications in most GM models from the 1950's to present, provided it is a 12 V system with negative ground.



The tachometer assembly monitors and reports the status of several vital signs of the engine, namely the engine speed, coolant temperature and oil pressure.

Data is reported by the following meters:

- digital tachometer
- bar graph tachometer
- bar graph water temperature meter
- bar graph oil pressure meter
- bar graph fuel level meter

Location of each meter is indicated on the drawing to the left. Other bar graphs are dummy displays.

You will need to take the two boards apart in order to gain access to the screw-type terminals and to install the unit.

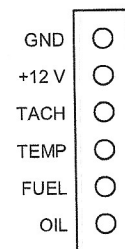
With your hands, firmly hold the driver board and slowly pull on the display board. The pulling force must be equally applied on the four sides of the board. Be very careful not to bend the headers standing out the back of the display board.

After removal of the display board, you have access to the screw terminals illustrated below. Using multistrand wires of size 18 to 22 AWG, connect the driver board as indicated. It is recommended to use wires of different colors to prevent confusion and damageable wiring errors.

The GND or « - » input shall be connected with the vehicle ground.

The « + » or « +12 » input must be connected to a fused +12V supply, switched on and off by the ignition key. The accessory terminal of the fuse block is recommended.

TACH, TEMP, FUEL and OIL inputs shall be connected to their respective signal, coming from the car ignition system or from a sending unit. All required signals are available from the back of the original instruments cluster, provided that the car was delivered with the Rally instruments option. Information about sending units is provided on the reverse side of this sheet for cars that do not have a full instruments package from the factory.



This completes the wiring instructions for the standard installation of the Tachometer. Carefully put back the display board on top of the driver board before applying power to the assembly.

Custom Installation

Additional installation instructions are provided on the back of this sheet.

Tachometer Installation Instructions (cont.)

K446 – Tachometer Display

K409 – Tachometer Driver

Basic installation instructions are given on the reverse side of this sheet. This section provides technical specifications and additional information about signals location, sending units and custom installations.

Technical Specifications

Operating voltage range 10.5 to 15.5 Vdc
Operating temperature range -20 °C to + 55 °C

Resolution

Tachometer	digital	0-7990 RPM, 10 RPM steps
	bar graph	0-6000 RPM, 200 RPM steps
Water temp.	bar graph	100-280 °F, exponential
Oil pressure	bar graph	10-55 PSI, 6 PSI steps
Fuel level	bar graph	E-F, 15 % steps

Signals Location

While removing the factory instruments, notice how the signals were connected to the analog meters. For each meter, you should find three tabs; two are for power and one is for the signal coming from a sending unit. By looking at each meter and by studying the instruments cluster, you should be able to identify and locate the necessary signals.

Sending Units Information

If the car was not equipped with a full instruments package like the Rally option, you might have to install new sending units and to run wires through the firewall. The tachometer does not require any extra sensor; the signal is available in the engine compartment, on the TACH terminal of the distributor housing.

When required, oil pressure and water temperature sending units can be purchased from a GM dealer or from most auto parts stores. The following Table provides OEM and aftermarket equivalent numbers.

Oil Pressure sender (all numbers are equivalent)		Water Temperature Sender (all numbers are equivalent)	
GM #14040816	GM #10030966	GM #8993146	
GM #14078954	GM #15591103	GM #8993164	
Blue Streak equivalent	PS - 155	Blue Streak equivalent	TS - 76

Engine Select Option

The tachometer is preset for operation with an 8-cylinder engine. Should you need to configure the tachometer for a 6- or 4-cylinder engine, simply relocate the jumper block on the driver board, as indicated. The jumper block is located next to the screw terminals.

Legends

Dry transfer lettering can be applied directly to the surface of the 10×20mm LED to indicate “RPM”, if desired.

You can send questions or comments about these instructions to techsupport@jupiterE.com.

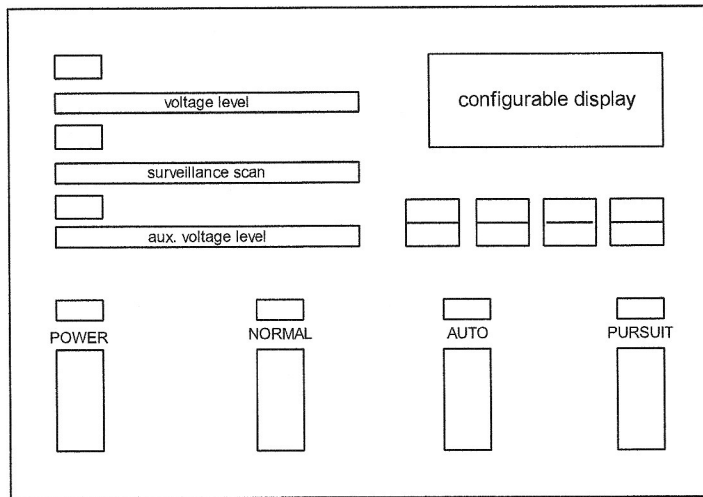
Power Display Installation Instructions (Rev.2)

K435 – Power Display

K407 – Power Display Driver

The Power Display is a two-board assembly, composed of a display board installed on top of a driver board. It has been designed to be installed in the right hand side of a 4th season dashboard, next to the video monitor.

This unit is called Power Display because its most useful function is to monitor the condition of your car charging and electrical system and to indicate the voltage level on a bar graph display. The Power Display also has provisions for the monitoring of a second, backup battery.



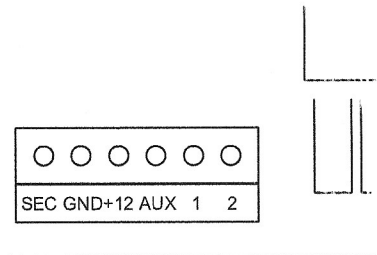
You will need to take the two boards apart in order to gain access to the screw-type terminals and to install the unit.

Be careful not to bend the headers standing out the back of the display board.

After removal of the display board, you have access to the screw terminals illustrated below. Using multistrand wires of size 18 to 22 AWG, connect the driver board as indicated. It is recommended to use wires of different colors to prevent confusion and damageable wiring errors.

The GND or « - » input shall be connected with the vehicle ground.

The « + » or « +12 » input must be connected to a fused +12V supply, switched on and off by the ignition key. The accessory terminal of the fuse block is recommended.



Inputs identified « 1 » and « 2 » are used to switch between the Normal, Auto and Pursuit modes. These should be connected with the Voice Box unit, item Kx63.

This completes the wiring instructions for the basic installation of the Power Display. Carefully put back the display board on top of the driver board before applying power to the assembly.

Custom Installation

Additional installation instructions are provided on the back of this sheet.

Power Display Installation Instructions (cont.)

K435 – Power Display

K407 – Power Display Driver

Basic installation instructions are given on the reverse side of this sheet. This section provides instructions and guidelines to activate additional features and for custom installations.

Normal – Auto – Pursuit Selection

The NORMAL LED, second in the series of 4 large LEDs on the bottom half of the Power Display, is lighted by default and stays ON unless there is a signal present on the selection inputs identified 1 and 2. Please refer to illustration on the reverse side. To switch to the AUTO or PURSUIT LED, simply connect one of the two selection inputs directly to ground. These inputs should be tied with the similar inputs of the Kx63 Voice Box unit for automated operation.

Please note that only two out of the four large LEDs will be ON at the same time.

Auxiliary Battery

A second, separate input is provided on the Power Display driver circuit to monitor the voltage level of an auxiliary battery. This input is labeled AUX. Should you decide to install a backup battery in your car, be sure to use an isolation device designed to allow the charging of both batteries while running and to discharge the auxiliary battery first. Devices such as this are usually available from automotive parts stores or from RV equipment suppliers.

Adding a backup battery could be useful for car shows or just to keep the dashboard alive for long periods of time without having the engine running. If you do not need this feature, the AUX input can be connected with the « + » or « +12 » input of the Power Display driver board to operate the second voltmeter circuit. The auxiliary circuit voltage monitor bar graph display will not operate if the AUX input is left open (not connected).

Surveillance Scan

Another extra feature of the Power Display is a surveillance mode scanner, reminiscent of the previous generation of the electronic dashboard. To activate this feature, you simply need to supply +12V to the SEC (security) input of the Power Display driver board. A switch can be used to turn on and off this scanner.

You will notice that the use of the surveillance scan feature will also make the last dual LED arrangement under the 4 digits alternate between the top and the bottom LED. If the driver board has a visible removable jumper block on the left hand side, you can experiment with various blinking rates by moving the jumper block from one position to the other.

Configurable Display

The 4-digit display on the upper right corner of the Power Display can be set to any number by using the 4 red dials on the right hand side of the assembly. The dials can be turned with a small flat screwdriver. This feature has been designed to allow the configuration of the digital display at the time of installation and the numbers can be changed with power on.

You can send questions or comments about these instructions to techsupport@jupiterE.com.