INSTALLATION INSTRUCTIONS

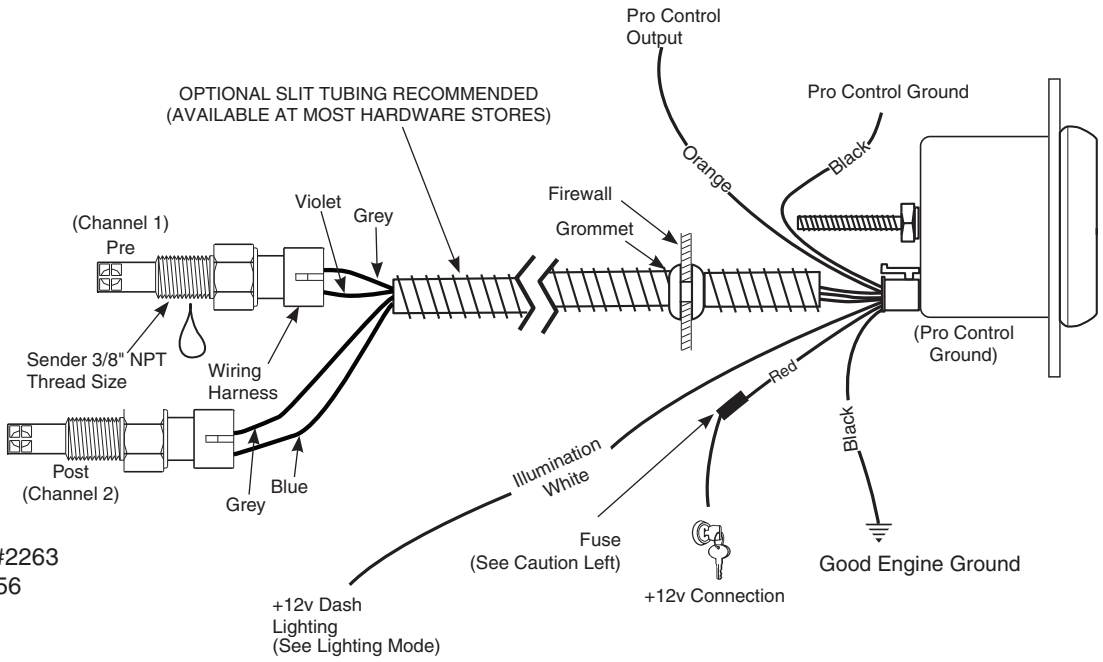
DUAL AIR INTAKE

2650-1847-77 Rev. A

IMPORTANT
WEAR SAFETY GLASSES

USE TEFLON SEALING TAPE OR SEALING COMPOUND ON PIPE THREADS

CAUTION!
As a safety precaution, the red wire of this product should be fused before connecting to the 12V ignition switch. We recommend using a 3 AMP automotive type fuse.



Optional 3/8" NPT weld in bung #2263
Replacement Sensor Model #2256

Installation

NOTE: Some late model vehicles use electronic sensors in their pressure and temperature senders for engine control functions. Before removing the original sender, we recommend that you contact your automotive dealer to be sure no critical functions will be disrupted.

1. Check that you have all parts required for installation, and the engine is cool.
2. Disconnect the negative (-) battery cable.
3. Gauge mounts in a 2-1/16" hole. Use supplied brackets and nuts to secure gauge to dash.
4. Drill 1" diameter hole where wires pass through sheet metal (such as firewall and install rubber grommet provided. (Grommet will require slit.)
5. Connect the white wire to dash lighting or switchable 12v light source, the red wire to switched +12V source and the black wire to ground.(see diagram for details)
6. Install temperature sender(s) into a 3/8" NPT hole.
   * If a new hole is needed, you may use a 9/16" drill bit and 3/8" NTP pipe tap, or obtain a 3/8" NPT bung.
7. Reconnect negative (-) battery cable.

NOTE: Test all fittings and connections for leaks. If any leaks are detected, determine the cause of the leak and repair. Do not operate vehicle if any leaks are detected.

Operation Guide

Mode	Description
Real-Time	Real time readings from the temperature sensor(s)
Peak Recall	Highest temperature reached since the peak was last cleared.
Alarm/Warning	User definable warning point of post intercooler temperatures.
BGD Channel	This is the channel being displayed as a radial bar graph around the perimeter of the gauge. This can be pre intercooler, post intercooler, or the difference between the two.
BDG Range Setting	This allows you to fine tune the resolution of your bar graph display.
Pro Control Enable	Enabling or disabling the Pro Control circuit used for triggering a relay at your Alarm set point.
Pro Control Active State	Choosing whether the pro control wire is active/grounds at temperatures above or below your alarm set point.
Set Units	Choosing either Fahrenheit or Celsius.
Factory Reset	Setting all gauge settings back to as-new set points

This product has many features that can be adjusted for your specific application. Use the MODE (-) and SELECT (+) buttons to navigate menu options, confirm selections, and fine tune options to your needs.

Acronyms:
A list of acronyms and abbreviations are defined below in order to help you more clearly understand the menu operations, functions, and components available on your AutoMeter Two Channel Air Intake Gauge:
BGD – Bar Graph Display. This is the curved, multi-color, LED radial display used to indicate temperature of the selected channel.
SSD – Seven Segment Display. This is the digital numeric display that indicates your current temperature of the selected channel. This display is also used to help you navigate and make changes to your settings.

Temperature Channels
PrE - Temperature input on channel 1. Pre-Intercooler.
PSt - Temperature input on channel 2. Post-Intercooler.
dIF - Differential Temperature. diff = (pre – post)

To Change Channel View on the SSD:
From Real-Time Mode, press SELECT (+) to scroll through the three temperature channels. Changing between channels shows the channel name for 1 second (PrE, PSt, and dIF) followed by the real-time value for the selected channel. The default channel display on the SSD is Post-Intercooler Temperature. To change the default SSD channel shown on startup, see SSD Channel below.

Channel Formatting (SSD)
To change the default SSD channel shown on startup, see SSD Channel below.
Pre - whole number no decimal “123”
Post - whole number no decimal “123.” - note the decimal point at the far right to indicate post temperature is displayed.
Differential - whole number no decimal “123”

Menu Options
There are several other features provided by your AutoMeter 2-Channel Intake Temperature Gauge gauge. Use the MODE (-) button to navigate through the following options in order:

Peak/Recall – SSD will display “P”
Alarm/Warning - SSD will display “ALr”
BGD Range Set Points – SSD will display “dSP”
BGD Channel – SSD will display “bAr”
SSD Channel – SSD will display “SSd”
Pro Control Enable– SSD will display “PCE”
Pro Control Active State– SSD will display “PCS”
Set Units – SSD will display “uni”
Firmware Revision – SSD will display “#.##” representing the firmware version. (eg. “1.23”)

Once the desired option is displayed on the gauge, press the SELECT(+) button to confirm your selection. Specific Menu options are outlined in the following section.
If no selection is desired, press neither button for 10 seconds and the gauge will return to Real-Time Mode on its own.

SSD Channel:
The Seven Segment Display (SSD) Channel Setting Mode allows you to define the channel assigned to the SSD on startup. The default channel assigned to the SSD on startup is Post-Intercooler Temperature.

To view your current SSD Default Channel settings:
From Real-Time Mode, press MODE (-) to scroll until the display indicates “SSd”, then press SELECT (+)

The SSD of your gauge will show “PrE”, “PSt”, or “dIF” to indicate the channel assigned to the SSD.

To Change your default SSD Channel setting:
When the current SSD Channel “PrE”, “PSt”, or “dIF” is displayed, press MODE (-) to cycle through the three channel names on the SSD (PrE, PSt, and dIF). Press and release SELECT (+) to confirm you selection. After you have selected your new SSD Channel setting, the gauge will flash your new setting one time on the display and return the gauge to Real-Time mode.
If neither button is pressed for 3 seconds after the Channel Setting Mode is displayed, the gauge will return to Real-Time Mode, discarding any changes.

Peak/Recall Mode:
Peak/Recall mode provides you with a quick and easy way to find out the peak temperature value for the temperature mode currently displayed on the SSD. The gauge continuously monitors for peak conditions on the channel being displayed on the SSD.

To View:
From Real-Time Mode, press MODE (-) to scroll until the display indicates “P”, then press SELECT (+) to display your Peak.

To Clear:
Clear will reset all 3 peak channels (PrE, PSt, and dIF).
When the Peak value is displayed, press SELECT (+) to clear your Peak values and return to Real-Time Mode. The SSD will display “---” once the peak has been cleared and until a new peak value has been recorded.
If neither button is pressed for 3 seconds after the Peak Value is displayed, the gauge will return to Real-Time Mode without clearing peaks. Clearing peaks does so for all three temperature channels.

Alarm/Warning Mode:
Alarm/Warning mode enables you to program a visual alert point into the gauge in order to warn you of when post inter-cooler temperatures are running high. The visual alarm or warning activates when the post inter-cooler temperature reading reaches or exceeds your programmed alarm point. When the alarm activates the BGD will blink rapidly to warn the driver of the Alarm condition. The SSD and BGD will automatically change to display post-intercooler temperature. Similar to Peak/Recall Mode, this function continuously monitors for the alarm/warning condition.

If the Pro-Control feature is enabled, the Pro Control output activates with the high post-temp warning.

To View your current Alarm Point Setting:
From Real-Time Mode, press MODE (-) to scroll until the display indicates “ALr”, then press SELECT (+) to display your current Alarm set point.
If neither button is pressed for 3 seconds after the Alarm Point Setting is displayed, the gauge will return to Real-Time Mode.

To Change your Alarm Point Setting:
When the current Alarm set point is displayed, press SELECT (+) to increase your alarm point setting, and MODE (-) to decrease your alarm point setting. To turn the Alarm OFF, hold MODE (-) until the display decrements below the minimum value. The Display will show “OFF”.

After you have selected your new alarm set point (or “OFF”), the gauge will flash your new set point 5 times on the display and then the SSD will display “S C” for Save/Cancel.
To confirm your new alarm point setting, press MODE (-). This will save your Alarm set point changes and return the gauge to Real-Time mode.
To cancel the changes and return to your previous set point, press SELECT (+). This will cancel the Alarm set point changes and return the gauge to Real-Time mode.

BGD Channel:
The Bar Graph Display (BGD) Channel Setting Mode allows you to define the channel assigned to the BGD. The default channel assigned to the BGD is Pre-Intercooler Temperature.

To view your current BGD Channel settings:
From Real-Time Mode, press MODE (-) to scroll until the display indicates “bAr”, then press SELECT (+)

The SSD of your gauge will show “PrE”, “PSt”, or “dIF” to indicate the channel assigned to the BGD.

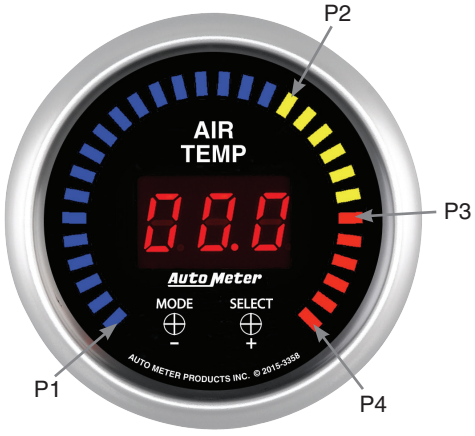
To Change your BGD Channel setting:
When the current BGD Channel “PrE”, “PSt”, or “dIF” is displayed, press MODE (-) to cycle through the three channel names on the SSD (PrE, PSt, and dIF). Press and release SELECT (+) to confirm you selection. After you have selected your new BGD Channel setting, the gauge will flash your new setting one time on the display and return the gauge to Real-Time mode.
If neither button is pressed for 3 seconds after the Channel Setting Mode is displayed, the gauge will return to Real-Time Mode, discarding any changes.

BGD Range Setting Mode:
The Bar Graph Display (BGD) Range Setting Mode allows you to fine tune the resolution of this instrument for your specific application. With four position set point adjustability, you can set the BGD to utilize the exact range that the engine / vehicle operates within and see exactly how your system is performing in relation to your current set up and tune. The BGD Range for each channel is configured independently.

The four position set points are defined as P1, P2, P3, and P4.
P1 is the value assigned to the first (far left) blue led.
P2 is the value assigned to the first yellow LED.
P3 is the value assigned to the first red LED.
P4 is the value assigned to the last (far right) red LED.

Four set points allows configuration of up to three linear regions on the bar graph display. This allows the gauge to be tuned precisely for the temperature that activates each color region.

Additional considerations:
If P2 and P3 are set to Zero (default) the bar graph is linear from P1 to P4.
If P2 is Zero, the bar graph is linear from P1 to P3, and P3 to P4.
If P3 is Zero, the bar graph is linear from P1 to P2, and P2 to P4.
If P1 is Zero, the blue band of the bar graph is not used.
If P4 is Zero, the red band of the bar graph is not used.



To view your current BGD Range settings:
From Real-Time Mode, press MODE (-) to scroll until the display indicates “dSP”, then press SELECT (+) to select BGD Range channel (PrE, PSt, and dIF).

The SSD of your gauge will show “Pre” on the display to indicate that you will be viewing the Pre Temp settings.
Press MODE (-) to cycle through the three channel names on the SSD (PrE, PSt, and dIF). When the desired channel name is displayed, confirm this selection by pressing SELECT (+).

The SSD of your display will show “P1” in the display to indicate that you will be viewing the P1 set point. Press MODE (-) to cycle through the set points (P1, P2, P3, and P4). When the desired set point name is displayed, confirm this selection by pressing SELECT (+).

The set point value will then be displayed in the SSD of your gauge corresponding to your selection.
Note: When your selection is made and the numeric range value is shown, LEDs in the BGD will light to indicate which set point you are viewing.

If the LED to the far left (first blue LED) is lit, you are viewing the “P1” set point.
If the first yellow LED is lit, you are viewing the “P2” set point.
If the first red LED is lit, you are viewing the “P3” set point.
If the LED to the far right (last red LED) is lit, you are viewing the “P4” set point.

If neither button is pressed for 3 seconds, the gauge will return to Real-Time Mode.

To Change your BGD Range setting:
When the current BGD Range “P1”, “P2”, “P3”, or “P4” set point is displayed, press SELECT (+) to increase your chosen BGD Range setting, and MODE (-) to decrease your BGD Range setting.
After you have selected your new BGD Range set point, the gauge will flash your new set point 5 times on the display and then the SSD will display “S C” for Save/Cancel.
To confirm your new BGD Range setting, press MODE (-). This will save your BGD Range set point changes and return the gauge to Real-Time mode.
To cancel the changes and return to your previous set point, press SELECT (+). This will cancel the BGD Range set point changes and return the gauge to Real-Time mode.

Pro-Control Enable:
This product incorporates the Pro Control feature. Pro Control activates a switched ground output at the user defined Alarm Point. Pro Control can be used to switch on a relay to activate ignition kill, cooling fans, lamps, alarms, etc. Pro Control is active when the feature is enabled and when the post temperature reaches or exceeds the Alarm Point. You may enable or disable this feature. The Pro-Control mode is set to “off” from the factory.

To view your current Pro Control setting:
From Real-Time Mode, press MODE (-) to scroll until the display indicates “PCE”, then press SELECT (+) to display your current Pro Control setting which will be indicated as either “On” or “OFF” in the SSD.
If neither button is pressed for 3 seconds after the Pro Control mode is displayed, the gauge will return to Real-Time Mode, discarding any changes.

To Change your Pro Control setting:
When the current Pro Control setting is displayed, press MODE (-) to toggle between “On” and “OFF”.
After you have selected your new Pro Control setting, press and release SELECT (+) to confirm your selection. The gauge will flash your new setting one time on the display and return the gauge to Real-Time mode.

Pro-Control Active State:
This feature allows the user to determine if Pro Control is Active High or Active Low.
When set to Active High (PcH) the pro control output is active (ON) when the temperature exceeds the alarm temperature. When set to Active Low (PcL), the pro control is active (ON) when the temperature is less than the alarm temperature.

To view your current Pro Control setting:
From Real-Time Mode, press MODE (-) to scroll until the display indicates “PCS”, then press SELECT (+) to display your current Pro Control setting which will be indicated as either “HI” or “LO” in the SSD.
If neither button is pressed for 3 seconds after the Pro Control mode is displayed, the gauge will return to Real-Time Mode, discarding any changes.

To Change your Pro Control setting:
When the current Pro Control setting is displayed, press MODE (-) to toggle between “LO” and “HI”.
After you have selected your new Pro Control setting, press and release SELECT (+) to confirm your selection. The gauge will flash your new setting one time on the display and return the gauge to Real-Time mode.

Set Units Mode:
This product allows measured temperature to be displayed in either Fahrenheit or Celsius units.

To view your current Units setting:
From Real-Time Mode, press MODE (-) to scroll until the display indicates “uni”, then press SELECT (+) to display your current Units setting which will be indicated as either “F” or “C” on the SSD.
If neither button is pressed for 3 seconds after the Units mode is displayed, the gauge will return to Real-Time Mode, discarding any changes.

To Change your Units setting:
When the current Units setting is displayed, press MODE (-) to toggle between “F” and “C”.
After you have selected your new Units setting, press and release SELECT (+) to confirm your selection. The gauge will flash your new setting one time on the display and return the gauge to Real-Time mode.

Lighting Mode:
This gauge allows the dial lighting to operate in two modes, Full On or Dimmable.

Full On: Leave the white wire disconnected. The gauge LED lighting is always on at full brightness.
If using Full On mode, white wire hook-up is not needed.

Dimmable: In this mode, the white wire is used to set the intensity of the dial lighting. Connect the white wire to your dimmer circuit. The dimming range is from 1 volt to 12 volts. In this mode when the lights are OFF (dimmer is below 1 volt) the gauge will illuminate at full brightness for daylight visibility.

Factory Reset:
It may be desired to reset the gauge. This clears programmable settings to a factory default state.

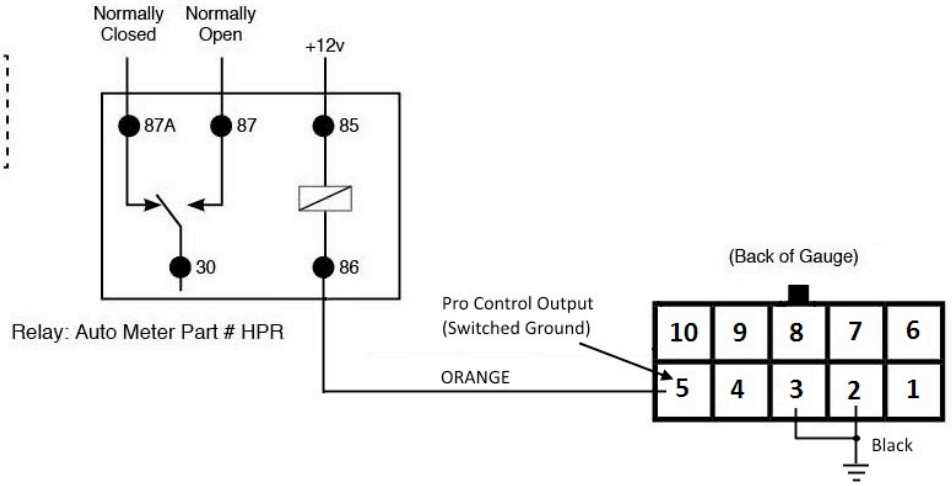
With power off, hold in both buttons. Apply power to the gauge, wait two seconds, and release both buttons. The BGD will flicker several times while the SSD will shows “rSt”, then return to normal operation. At this point, the gauge has been reset

Pro Control:
The Pro Control feature activates a switched ground output at a user defined set point. Pro Control can be used to switch on a relay to activate ignition kill, cooling fans, lamps, alarms, etc.
If the Pro-Control feature is enabled, the Pro Control output activates with the high post-temp warning.

	Pro Control - ACTIVE STATE LOW				
Post Temp	**Pro Control Output**	**Normally Open Contact**	**Normally Closed Contact**		**Alarm**
> = Alarm	OFF	OPEN (OFF)	CLOSED (ON)		Normal
< Alarm	Active (ON)	CLOSED (ON)	OPEN (OFF)		Flashing

	Pro Control - ACTIVE STATE HIGH				
Post Temp	**Pro Control Output**	**Normally Open Contact**	**Normally Closed Contact**		**Alarm**
>= Alarm	Active (ON)	CLOSED (ON)	OPEN (OFF)		Normal
< Alarm		OPEN (OFF)	CLOSED (ON)		Flashing

WARNING
Pro Control Outputs shall not exceed 2.0 amps at 12 volts.



SERVICE

For service send your product to AutoMeter in a well packed shipping carton. Please include a note explaining what the problem is along with your phone number. If you are sending product back for Warranty adjustment, you must include a copy (or original) of your sales receipt from the place of purchase.

12 MONTH LIMITED WARRANTY

AutoMeter Products, Inc. warrants to the consumer that all AutoMeter High Performance products purchased from an Authorized AutoMeter Reseller will be free from defects in material and workmanship for a period of twelve (12) months from date of the original purchase. Products that fail within this 12 month warranty period will be repaired or replaced at AutoMeter's option, when determined by AutoMeter that the product failed due to defects in material or workmanship. This warranty is limited to the repair or replacement of parts in the AutoMeter High Performance product and the necessary labor done by AutoMeter to effect the repair or replacement of the AutoMeter High Performance product. In no event shall AutoMeter’s cost to repair or replace an AutoMeter High Performance Product under this warranty exceed the original purchase price of the AutoMeter High Performance Product. Nor shall AutoMeter Products, Inc. be responsible for special, incidental or consequential damages or costs incurred due to the failure of an AutoMeter High Performance Product. This warranty applies only to the original purchaser of the AutoMeter High Performance Product and is non-transferable. This warranty also applies only to AutoMeter High Performance Products purchased from an Authorized AutoMeter Reseller. All implied warranties shall be limited in duration to the said 12 month warranty period. Breaking the instrument seal, improper use or installation, accident, water damage, abuse, unauthorized repairs or alterations voids this warranty. AutoMeter disclaims any liability for consequential damages due to the breach of any written or implied warranty on all products manufactured by AutoMeter Products, Inc. For a comprehensive listing of Un-Authorized AutoMeter Resellers please visit www.autometer.com/autometerlocator/index/unauthorized.

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