

CHARACTERISTICS

PARAMETER	MIN	TYP	MAX	UNITS
OPERATING VOLTAGE	9	12	18	VOLTS
OPERATING TEMPERATURE	-40	-	85	°C
STORAGE TEMPERATURE	-55	-	105	°C
SUPPLY CURRENT @12V				
ACTIVE MODE		0.3		AMPS
SLEEP MODE		0.001		AMPS
COMPASS ACCURACY	+/- 5			DEGREES
COMPASS RESOLUTION			45	DEGREES
TEMPERATURE MEASUREMENT ACCURACY	+/- 1			°C
TEMPERATURE DISPLAY	-40		127	°F
	-40		53	°C

VACUUM FLUORESCENT COMPASS & OUTSIDE TEMPERATURE SYSTEM

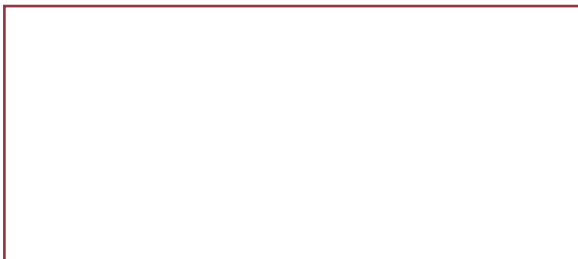


AccuTech C/T

VFD COMPASS/OUTSIDE TEMPERATURE SYSTEM



Distributed by:



rev. 03.19.01

OPERATION MANUAL



COMPASS MODES OF OPERATION

Unit has two (2) buttons - MODE and °F/°C - which are used to change the unit between the various operating modes.

IGNITION ON OPERATION:

1. Unit displays temperature and heading.
2. Press the °F/°C button to toggle between displaying °C and °F.
3. If the unit has been properly calibrated, the heading will remain 'on' continuously. If the unit does not have a valid calibration, the word "CAL" will flash continuously.
4. If the temperature reading is valid, the temperature display will remain 'on' continuously. If the temperature reading is invalid (due to an open or shorted temperature sensor), the temperature reading will read -40 (open), and 127 (shorted).
5. Unit goes to SLEEP MODE when ignition is turned off.

SLEEP MODE OPERATION:

1. Unit enters SLEEP MODE when ignition is turned off.
2. The display is blank and the unit is in a LOW POWER MODE.
3. Unit wakes from SLEEP MODE and enters:
 - A. Ignition ON operation when the ignition is turned on, or
 - B. CAMPING MODE when the °F/°C or the MODE button is pressed for three (3) seconds.

CAMPING MODE OPERATION:

1. Unit enters CAMPING MODE after the °F/°C button or MODE is pressed for (three) 3 seconds while in SLEEP MODE.
2. Unit displays temperature and heading for ten (10) seconds; the display stays 'on' if you continue to push either button and then returns to SLEEP MODE ten (10) seconds after the last button was pushed.

NIGHTTIME DIMMING:

The display's brightness will be decreased by 50% when the vehicle headlamps are turned on.

COMPASS TROUBLE SHOOTING

Display wont work	Verify with a multi-meter that you have +12vdc Battery (constant) voltage on the Red wire, +12vdc Ignition hot (switched) on the Orange wire, and that you have a good chassis ground on the Black wire.
Display wont dim with headlights	Verify with a multi-meter that you have +12vdc on the White wire when the headlights are turned on and zero volts when headlights are off.
Calibration failed. "CAL" still flashing.	Make sure that after you push the F/C button to start the calibration countdown timer you drive the vehicle at a speed in which you complete 2-4 circles while the display is counting from 60 down to 0.
Heading flashes	Check for a loose or bad connection in the compass sensor harness. See that the wires are snapped into the 3-pin housing securely, and check for a cut or broken wire in the harness.
Temp flashes	Check for a loose or bad connection in the Temp sensor harness. See that the wires are snapped into the 2-pin housing securely, and check for a cut or broken wire in the harness.
Temperature reading is inaccurate	Make sure the Temp sensor is mounted in a location away from heat sources. And where fresh air can blow over it as you drive.
Compass reading is inaccurate	Make sure you have the correct zone selected where you are located. Make sure the compass label is mounted with the labeled side facing up and the arrow facing the front of the vehicle. Make sure the compass sensor is mounted level, if the sensor is 90 degrees off level the compass reading will be off by 90 degrees.

INSTALLATION

1. Determine the desired location of the display unit.
2. Cut a 1-5/8"H x 3-7/16"W mounting hole.
3. Starting from the display unit opening, route the compass sensor and temperature sensor harnesses to where each sensor will be mounted. When the wires are routed, keep them away from any high voltage wires which may be routed in the same area.
4. Connect the 4-WAY POWER HARNESS into the vehicle electrical system; refer to figure 1-1 for color and function.
5. Plug the three harness connectors into the corresponding connectors on the back of the display unit
6. Remove the bezel from the display unit, insert the unit into your opening, mount the display using four #6 pan head screws, then replace the bezel.
7. Determine the best place to mount the temperature sensor - it must be in the flow of outside air and away from external heat sources.
8. Mount the temperature sensor using two #8 pan head self-taping screws.
9. Determine the best place to mount the compass sensor module. The compass sensor can be mounted up to 15 feet away from the display and should be mounted as far as possible from large, varying magnet sources (i.e. large speakers, fans, blower motors, etc.). The compass sensor should be mounted in an interior location where it is protected from the elements. It is not weatherproof and cannot be mounted outside. It is acceptable to mount the sensor near fixed metallic components, such as brackets, frames, etc. When the compass is calibrated, it will compensate for any interference from the surrounding metal components. A label, which is affixed to the sensor module, reads 'THIS SIDE UP'. When mounting the sensor, make certain the label is facing 'UP' and the arrow on the label is facing toward the front of the vehicle - directly in line with the vehicle axis as it goes down the road. Try to keep the sensor level wherever it is to be mounted - the closer it is to being level, the more accurate the reading.
10. Mount the compass sensor using two #8 self-taping screws.
11. Connect the compass sensor harness to the compass sensor module.
12. Connect the temperature sensor harness to the temperature sensor module.
13. Power the system up and follow the calibration procedure [PAGE 3] to set the correct zone of operation and calibrate the compass.
14. Review the section on compass modes of operation - and enjoy your new COMPASS & OUTSIDE TEMPERATURE SYSTEM!

CALIBRATION:

The compass must be calibrated after its initial installation and anytime the compass sensor is replaced or relocated. The calibration values are saved in EPROM memory, so it is not necessary to recalibrate if the battery is disconnected.

CALIBRATION ROUTINE:

1. Press and hold the MODE button until the words 'ZONE' and 'CAL' appear (approximately ten (10) seconds). The unit will display the current zone value.
2. Press the °F/°C button to increment the zone value.
3. Press the MODE button to store the zone value.
4. The unit now displays the word 'CAL'. Press the °F/°C button to enter the calibration mode. The display will begin counting down from 60 seconds and the word 'CAL' will flash. The driver should slowly drive in a circle during the 60 second calibration period. If the calibration procedure failed, the unit will flash the word 'CAL' continuously. If the calibration procedure is successful, the unit will display the word 'CAL' for five (5) seconds and then return to normal ignition 'on' operation.

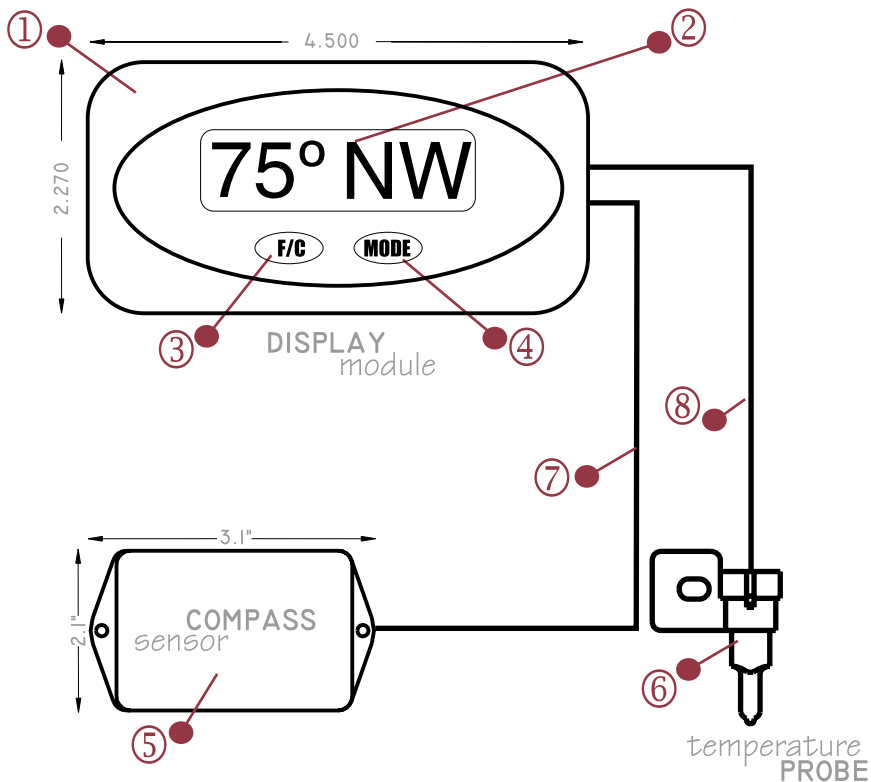
ZONE ADJUSTMENT:

When you travel outside the zone, the unit is currently set 'on', the compass has reduced accuracy. To achieve maximum accuracy, it is recommended to change the zone setting when travelling to a new zone in the U.S. To change the zone setting, follow steps (1.) through (3.) of the CALIBRATION ROUTINE, at which point the unit will display the word 'CAL'. Press the MODE button again to skip calibrating. It is not necessary to recalibrate the compass when you change zones.



COMPASS ZONES FOR THE U.S.

COMPONENT AND FEATURE DESCRIPTIONS



- ① In dash or console mountable display panel with bezel to hide mounting screws.
- ② Vacuum fluorescent display shows both:
 - A. Outside temperature in either degrees Fahrenheit (-40°F to 127°F) or degrees Celsius (-40°C to 53°C)
 - B. Cardinal point heading - N, NE, E, SE, S, SW, W, NW
- ③ °F/°C button used to switch between Fahrenheit and Celsius, and in conjunction with the MODE button to change the unit between various operating modes.
- ④ MODE button used in conjunction with the °F/°C button to change the unit between various operating modes
- ⑤ Remote compass sensor module
- ⑥ Moisture-proof temperature sensor
- ⑦ 15' 3-way compass sensor harness
- ⑧ 15' 2-way temperature sensor harness

SYSTEM INCLUDES

You should have:

- Compass display unit
- Remote mountable compass sensor module
- Moisture proof outside temperature sensor module
- 4-way power harness (see fig. 1-1)
- 3-way 15' compass sensor harness
- 2-way 15' temperature sensor

FIGURE 1-1

WIRE COLOR	CIRCUIT	PIN #
RED	BATTERY	1
ORANGE	IGNITION	2
WHITE	HEADLAMP	3
BLACK	GROUND	4

Choose a location:

These guidelines should be followed when selecting a place to mount each of the system components.

Display unit:

The display unit can be mounted in the dash, in an overhead or center console. When mounted, the display should be easily viewed by the driver.

Temperature Sensor:

The temperature sensor should be mounted on the exterior of the vehicle, away from heat sources, in a location up to 15 feet from the display unit which would receive outside air flow.

Compass Sensor:

The compass sensor can be mounted up to 15 feet away from the display and should be mounted as far as possible from large, varying magnet sources (i.e. large speakers, fans, blower motors, etc.). The compass sensor should be mounted in an interior location where it is protected from the elements. It is not weatherproof and cannot be mounted outside. It is acceptable to mount the sensor near fixed metallic components, such as brackets, frames, etc. When the compass is calibrated, it will compensate for any interference from the surrounding metal components. A label, which is affixed to the sensor module, reads 'THIS SIDE UP'. When mounting the sensor, make certain the label is facing 'UP' and the arrow on the label is facing toward the front of the vehicle - directly in line with the vehicle axis as it goes down the road. Try to keep the sensor level wherever it is to be mounted - the closer it is to being level, the more accurate the reading.