

## Part No. EFC-K1 Installation Instructions

### Product Features

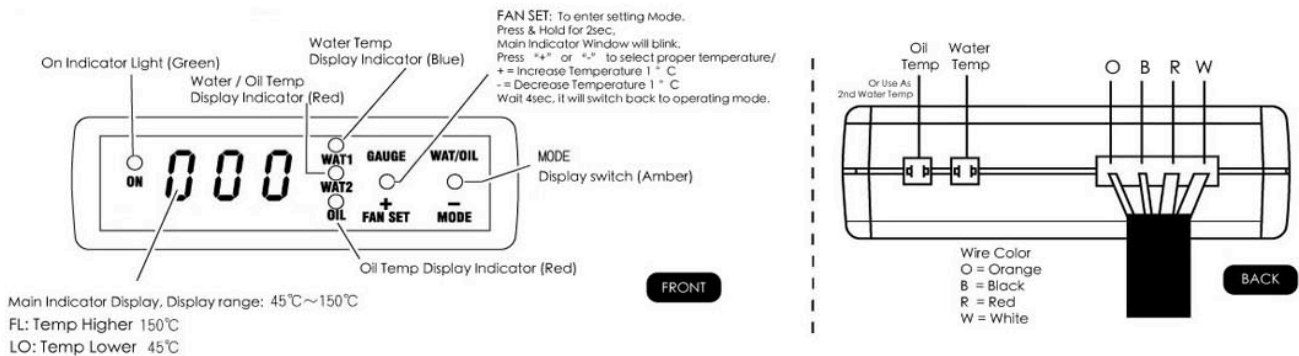
- Enhance cooling and stability engine efficiency.
- EFC-K1 is a stand-alone unit, without modify original Water Temperature Sensor or signal.
- EFC-K1 easily allow user to adjust demanded cooling temperature setting (increment  $\pm 1^{\circ}\text{C}$ ).
- Accuracy  $\pm 1^{\circ}\text{C}$  with fine-tune the range of  $65^{\circ}\text{C} \sim 95^{\circ}\text{C}$ , Display range from  $45^{\circ}\text{C}$  to  $150^{\circ}\text{C}$ .
- When EFC-K1 temperature is set higher than the factory set temperature setting, it will automatically bypass EFC-K1 controls and resume factory desired settings.
- Two temperature display mode main mode for water temp and optional mode for 2ndary water or oil temp monitoring ( $\pm 0.5^{\circ}\text{C}$ ).
- Compact Design with easy to view high bright display panel.
- Can be installed in series with factory equipped fan or any aftermarket fan (not exceeding 30amp) with supplied relay kit.

### Enclosing Components

- Electronic Fan Control unit x 1
- 1/8 NTP Temperature Sensor (Water and/or Oil) x 2
- Extension cable (178cm) x 2
- 30 Amp Relay & wiring harness x 1
- Zip Ties x 3
- Double side sided tape x 1

**\*\* Note: Water Temp Adapters Not Included \*\***

### Panel/Display



### Wiring Code

- (O)range: ACC 12V+ (Input)
- (B)lack: Negative (Ground -)
- (R)ed: Positive +12V (input)
- (W)hite: Negative signal (Output/Trigger)

### Installation In Series with Factory Fan

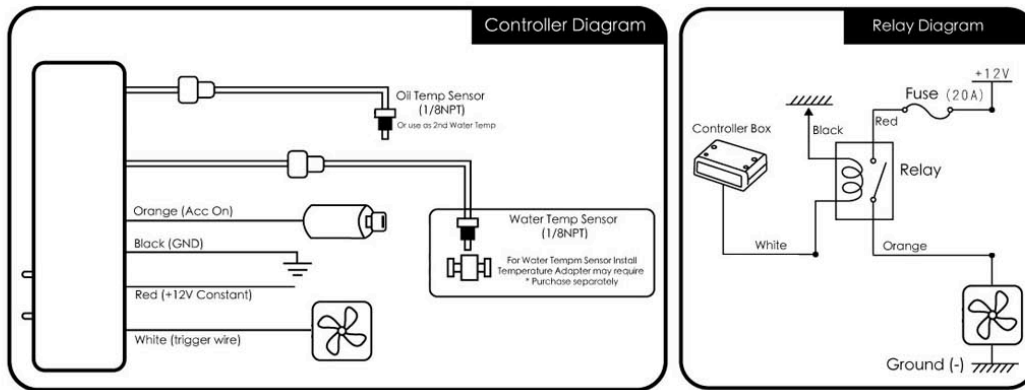
Check your OEM Fan trigger signal is a positive or negative. \* Circuit Sports EFC-K1 default trigger signal is "Negative"  
 Installer must verify the type of cooling fan signals your fan is accepting. To work in series with stock OE fan the negative trigger wire needs to be spliced into the factory fan wiring trigger harness to the fan. To install as standalone mode (using the ECK to control temperature bypassing factory fan turn on setting) please use supplied wiring relay. If OE fan trigger is turn on by positive trigger, then you must install standalone mode with the relay kit.

If you have doubt or question, it is recommended you contact a professional technician for further assist.

### Installation With Aftermarket Fan

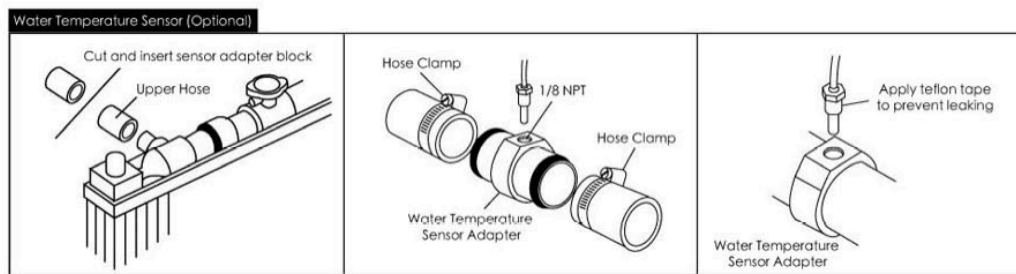
Please determine your aftermarket fan[s] operates in less than 30amp before install. Please use supplied relay wiring kit for install as standalone mode to operate the fan operation by negative trigger (please see wiring diagram below)

## Wiring & Installation Diagram



## Install Water Temperature Sensor (WTS)

Please locate the location to install the main “water” temp sensor used to trigger the fan speed controller. Normally, sensor is installed in either the upper or lower radiator hose with use of radiator hose adapter (not included in this fan kit). 2ndary optional temp sensor can be used for secondary water or oil temp monitoring (doesn't affect the function of the fan control unit, only for monitoring purpose).



## Programming The Fan Turn On Temperature

Hold down the left button “Fan Set” for 2 seconds to enter the temperature setup mode. \* You will notice the display in “blinking mode”.

By pressing “+” to increase the expect temperature setting and press “-“ to reduce the expect temperature setting. Adjust temperature to allow the fan control unit to turn on the fan.

Once the desired temperature is reached the fan will turn on with a **“COOL OFF”** range of 5 deg C until fan shut off (i.e. fan turn on at 75 deg C, will auto shut off when 70 deg C is measured).

## Warnings & Troubleshooting

- Display monitor displaying **“FL”**

**FL** : Indicates the system temperature exceeds 150°C (302°F) or a short circuit between control unit and the sensor. Please check the temperature sensor wiring circuit for faults or leaking / empty coolant system.

- Display monitor displaying **“LO”**

**LO** : Indicates the system temperature is below 38°C (100°F) or open circuit, check the temperature sensor and wiring for open circuit or poor connection. \* If a vehicle been park for a while, its temperature might show below 38°C (100°F), which it is consider normal.

- Fan indicator light is on, but fan is not functioning?

This means water temperature exceeds desire temperature setting and fan is still not on. Please check the wiring between the control signal outputs and relay connection signal output with a multi-meter to make sure all signals are present. if you still have issue, please professional technician to assist.

- No Display or No response,

Make sure you connected the main wires on the fan unit accordingly to its proper source.

- How to check a failing trigger signal issue?

Disconnect the white trigger wire going to the relay. Ground the relay wire directly to any ground (-) source to bridge the relay. If relay is working it will turn on the fan automatically, then main unit needs to be replaced. If there is no response from the relay after direct grounding, then relay needs to be replaced.