

EWP® & FAN DIGITAL CONTROLLER (Part #8002)

INSTALLATION INSTRUCTIONS

Congratulations on your purchase of the Davies, Craig EWP® and Fan Digital Controller. This Controller will manage the operation of your chosen EWP® Remote Electric Water Pump by varying the speed of your pump in response to coolant temperature and control your Thematic® Fan. The integrated LCD display allows you to monitor your cooling system.

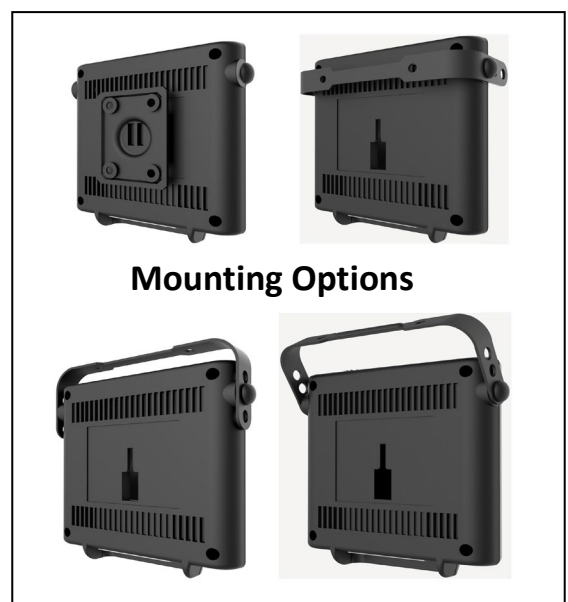
PLEASE READ ALL THESE INSTRUCTIONS THOROUGHLY BEFORE YOU START WORK. DON'T RUSH - ENSURE YOU HAVE FULL UNDERSTANDING OF THE WORK AHEAD BEFORE YOU COMMENCE. ENSURE YOU HAVE ALL TOOLS AND COMPONENTS REQUIRED.

KIT COMPONENTS

- | | |
|---|---|
| <ul style="list-style-type: none"> ⊕ 1 – EWP® & FAN Digital Controller ⊕ 1 – Inline Adapter ⊕ 1 – Wiring Harness w/ Fuse ⊕ 1 – Thermal Sensor ⊕ 2 – Rubber Sleeve 3mm ⊕ 2 – Hose Clamps | <ul style="list-style-type: none"> ⊕ 1 – 6mm Ring Terminal ⊕ 1 – Self-Tapping Screw ⊕ 1 – Mounting Plate ⊕ 1 – Mounting U-Bracket ⊕ 1 – Assorted Mounting Hardware |
|---|---|

EWP® & Fan Digital Controller Features

- ⊕ Set any target temperature from 40°C (104°F) to 110°C (230°F)
- ⊕ Digital temperature and voltage readout
- ⊕ Celsius or Fahrenheit display option
- ⊕ Integrated mounting options
- ⊕ Warning alarm and indicators
- ⊕ Automated run-on function runs the pump and fan after shutdown to dissipate heat and avoid heat-soak



EWP® & FAN DIGITAL CONTROLLER MOUNTING

- ⊕ The Controller **MUST** be mounted inside the passenger compartment to minimise its ambient temperature and exposure to water.
- ⊕ Locate a hole in the firewall (approx. 20mm in diameter) and pass the wiring harness through (including the sensor & pump T-connector) from the passenger cabin to the engine bay. **Thermal Sensor wire MUST NOT be cut in ANY circumstances.**
- ⊕ Ensure the unit is mounted allowing easy access to the set button and to minimise exposure to direct sunlight.
- ⊕ The Controller has 2 solid mounting options and Velcro to assist your installation.
 - U-Bracket – ideal for under dash mounting
 - Mounting plate – Ideal for mounting to dash or custom brackets

THERMAL SENSOR INSTALLATION OPTIONS

The Thermal Sensor provided MUST be used. The use of any other sensor will result in Thermal Sensor errors and incorrect operation.

Ensure all wiring is protected from rubbing on bare metal or other sharp edges.

INLINE ADAPTER INSTALLATION (RECOMMENDED)

- ⊕ Install the Thermal Sensor into the Inline Adapter, making sure not to over tighten or damage the sensor.
 - You may require some thread tape or sealant to achieve a watertight seal.
 - Rubber sleeves (supplied) may be required to accommodate larger hose sizes.
- ⊕ Cut approximately 20mm out of the top radiator hose and install the Inline Adapter assembly using the hose clamps provided.

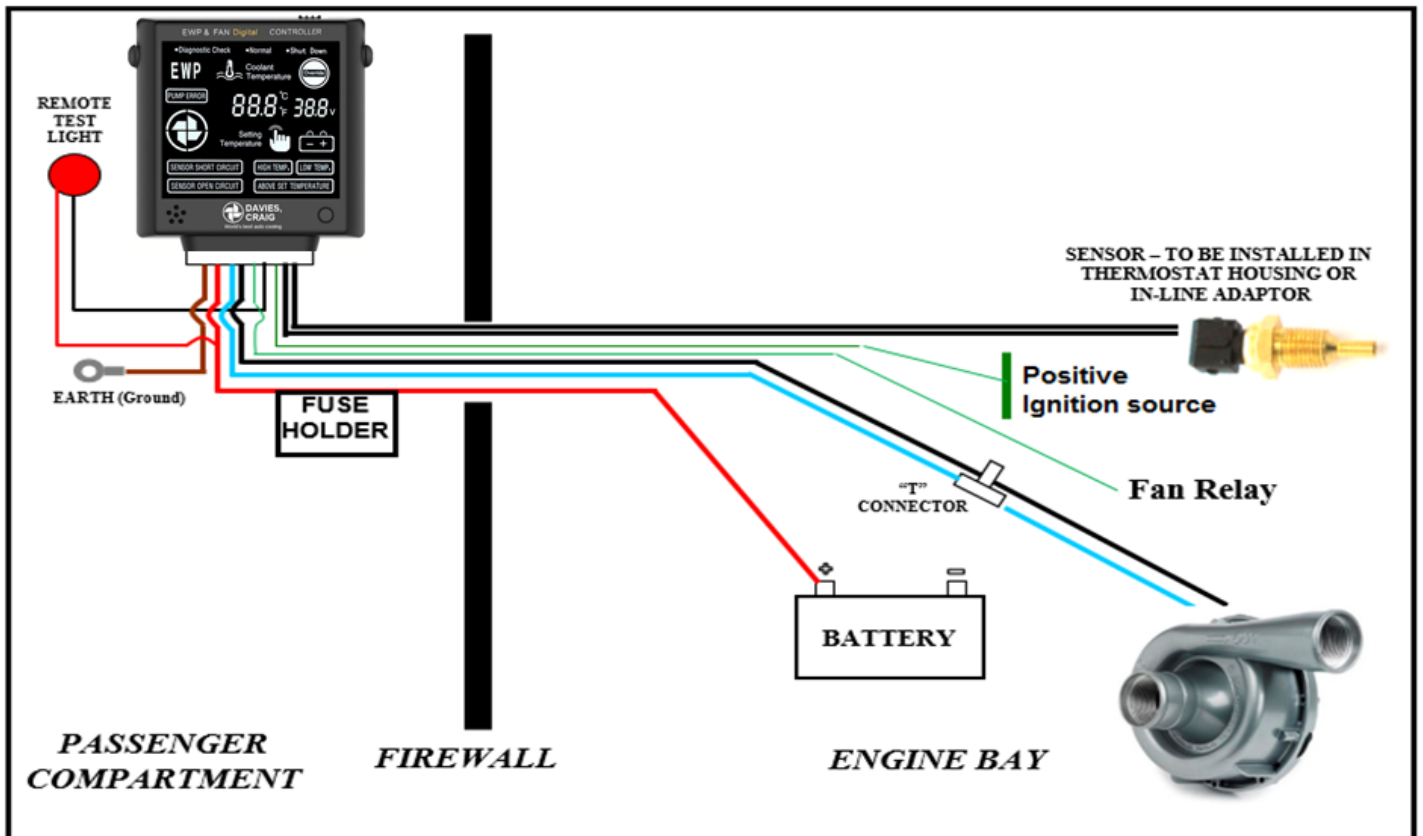
THREADED PORT INSTALLATION (ALTERNATIVE)

For installing the Thermal Sensor into the thermostat housing, engine block, or directly into the radiator.

- ⊕ The Thermal Sensor provided has a male 1/4NPT thread that allows installation into a threaded port within the cooling system. Adapter fittings (not supplied) may be required.
 - You need to be mindful that the location of the Thermal Sensor can affect the temperature reading and adjustments may be needed when setting the target temperature.
 - When a port is not available, it is possible to drill and tap a hole for locating the Thermal Sensor. When tapping a custom port, you need to be certain there is a minimum wall thickness of 3mm.
 - When tapping a hole is not possible, a weld-on fitting can be installed.
- ⊕ Install the Thermal Sensor into the port, making sure not to over tighten or damage the sensor.
 - You may require some thread tape or sealant to achieve a watertight seal.
 - If a threaded port cannot be made available, then install the Thermal Sensor using the Inline Adapter.

EWP® & FAN DIGITAL CONTROLLER WIRING

- ⊕ Plug the 'Temperature Sensor' wiring into the installed Thermal Sensor.
- ⊕ Connect the **RED** 'Battery +VE' wire to battery positive (+).
- ⊕ Connect the **BROWN** 'Earth' wire to the chassis using the self-tapping screw.
 - Ensure there is a good connection between the ring connector and chassis.
- ⊕ Connect the **GREEN** 'Ignition' wire to an ignition controlled +12V/24V source. If necessary, the 'Ignition' wire may be spliced and soldered.
 - The ignition source must be a constant +12V/24V when the key is in the **ON** position. A manually switched +12V/24V source can also be used.
 - **DO NOT** connect the 'Ignition' wire to the ECU or the ignition coils as this can cause operational issues with the Controller or damage to the ECU.
- ⊕ To control the electric fan/s, connect the **GREEN** and **BLACK** striped 'Fan Relay' wire to the fan relay. The Controller will earth the 'Fan Relay' wire not power it.
- ⊕ Mount the 'Remote Test Light' in a location where it will be easily visible.
 - The 'Remote Test Light' may be fitted by inserting through a 4.6mm diameter hole or with adhesive tape.
 - The 'Remote Test Light' has **RED** and **BLACK** pin connectors that **MUST** be connected to the same coloured pin connectors on the wiring harness.
- ⊕ Connect the T-connector from the EWP® to the 'Pump' T-Connector from the Controller wiring.
- ⊕ Plug the wiring harness into the socket of the Digital Controller.



For positive earth systems wire 'Earth' to battery negative not the chassis

THERMATIC® FAN INSTALLATION AND WIRING

Thermatic® Fan wiring and installation hardware not included. For wiring Davies Craig Thermatic® Fan/s to the EWP®/FAN Controller we recommend using Part # 1000, #1001 for single 12V or 24V fans and Part #1002 or #1003 for dual 12V or 24V fans.

Although we recommend the use of Davies, Craig Thermatic® Fans our Controller is able to control any single speed 12V or 24V electric cooling fan.

THERMATIC® FAN INSTALLATION

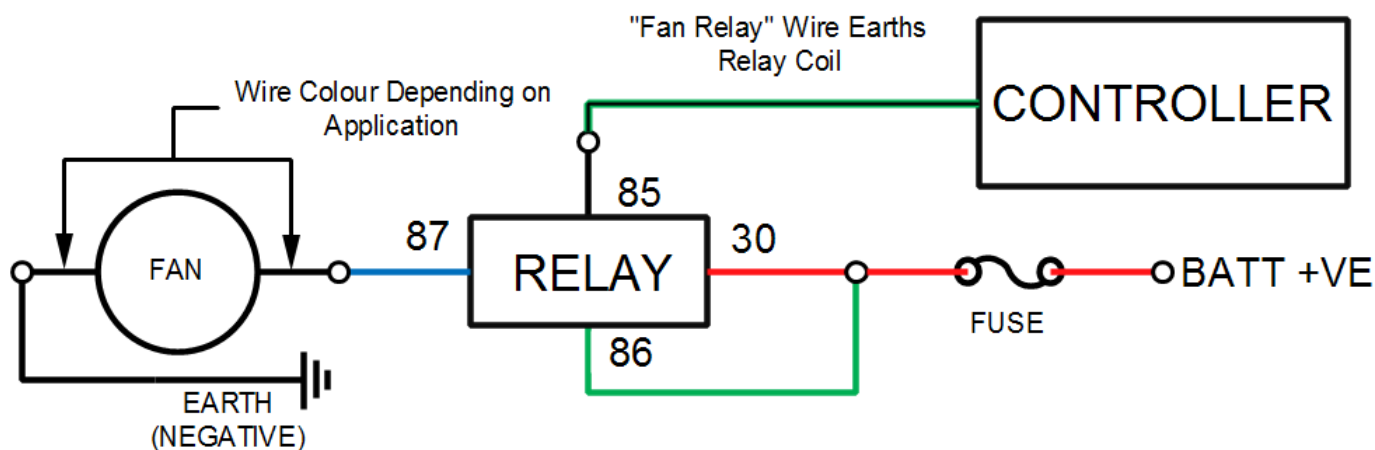
- Install your fan/s as per the instructions included with your fan/s.
- To wire your fan/s relay please follow wiring instructions provided below.
 - For correct operation ensure the fan/s blade is rotating in the correct direction.

THERMATIC® FAN WIRING

Wire colours are based on Davies, Craig's standard fan wiring harness.

- For single fan applications refer to wiring connections below.

Relay Pin	Connection location
85	GREEN and BLACK 'Fan Relay' wire
86	Battery Positive or Pin 30
30	Fused Battery Positive a fuse and holder may need installing
87	Fan wire**



**Check direction of rotation before making permanent connections

- For dual fan applications repeat the above wiring connections. You need to be mindful of the total current draw as the fans will start up at the same time.
- When using the Davies, Craig fan wiring harness from Part #1000, #1001, #1002 or #1003 the ring terminal on the **BLACK** wire connecting to **Relay Pin 85** should be removed before the **GREEN** and **BLACK** 'Fan Relay' wire is attached.
- To allow proper control over the fan/s when not installing an EWP®, connect the 'Remote Test Light' to the wires labelled "PUMP". The **RED** wire must go to the **BLUE** "PUMP" wire.

EWP® & FAN DIGITAL CONTROLLER OPERATION

ADJUSTING TARGET TEMPERATURE SETTING factory set to 85°C (185°F)

- Push the **'Set Button'** once to indicate the present temperature setting.
- Push the **'Set Button'** repeatedly until the desired set temperature is displayed and then hold down the button to confirm. If the new setting is not confirmed within 2 seconds, the Digital Controller will revert to previous set temperature.
 - We recommend setting the target temperature to at least 5°C/9°F more than the rated temperature of the factory thermostat.

EWP® SYMBOL

FLASHING = EWP® operating in pulse mode.

ON = EWP® running continuously.

FAN SYMBOL

- rotating = fan triggered.

DIAGNOSTIC CHECK

- The Digital Controller will perform a system check every start-up.
- If a system warning has been triggered. **'Remote test light'** (RED LED) will flash and the **'Diagnostic Check'** indicator will be on. Refer to Diagnostic Chart.



SHUT DOWN MODE

- Controller will continue to operate your EWP® and fan/s for three (3) minutes or until the coolant temperature has reduced to 10°C/18°F below your set temperature.

OVERRIDE

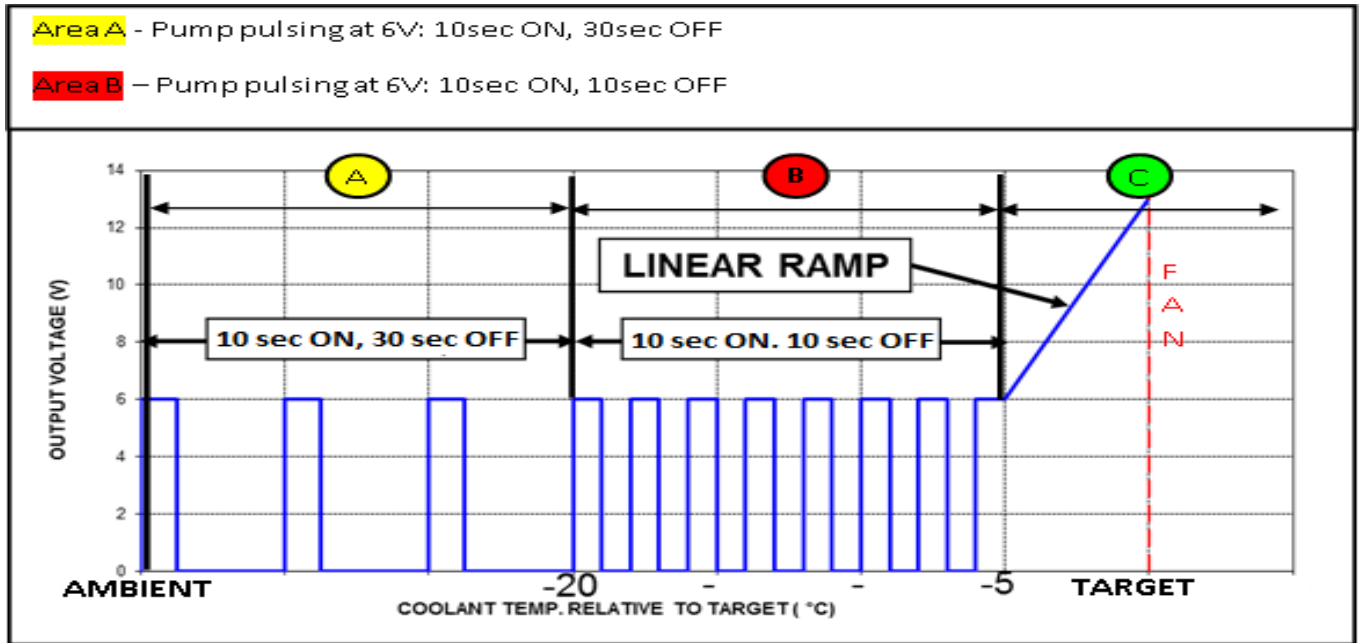
Override function will override the Controller's program and turn on the EWP® &/or Fan.

- Press & hold the **'Set Button'** for 5 seconds to run the EWP®.
- Press & hold the **'Set Button'** for 7 seconds to run the EWP® & Fan.
- Press & hold the **'Set Button'** for 5 seconds or switch off the ignition to cancel override.

CHANGING TEMPERATURE UNITS BETWEEN °C & °F

- Press & hold the **'Set Button'** for 3 seconds to toggle between °C and °F.

EWP® & FAN DIGITAL CONTROLLER OPERATION CHART



EWP® & FAN DIGITAL CONTROLLER DIAGNOSTIC CHART

Condition	Troubleshooting
Controller does not operate	<ul style="list-style-type: none"> ⊕ Blown fuse ⊕ Check all the wire connections
12V voltage indicator flashing	<ul style="list-style-type: none"> ⊕ Controller receiving low voltage < 10.5V ⊕ Controller receiving high voltage > 17.5V
24V voltage indicator flashing	<ul style="list-style-type: none"> ⊕ Controller receiving low voltage < 21.5V ⊕ Controller receiving high voltage > 27.5V
Sensor open circuit	<ul style="list-style-type: none"> ⊕ Check sensor wiring for any open circuits
Sensor short circuit	<ul style="list-style-type: none"> ⊕ Check sensor wiring for any short circuits
Low Temp <40°C (104°F) after 5 Minutes	<ul style="list-style-type: none"> ⊕ Check engine temperature
Above Set Temperature	<ul style="list-style-type: none"> ⊕ Sensor temperature is at least 10°C (18°F) above the set temperature.
Pump Error	<ul style="list-style-type: none"> ⊕ Check pump wiring for open/short circuits
Override ON	<ul style="list-style-type: none"> ⊕ EWP® manually overridden by the user. ⊕ To turn OFF, Press & hold the set button for 5 to 7 seconds or switch OFF & ON the IGN.
Temperature doesn't increase or has constant high reading	<ul style="list-style-type: none"> ⊕ Thermal Sensor Open or Short circuit

INSTALLATION RECOMMENDATIONS

- ⊕ The installation of an EWP® may affect coolant flow through auxiliary coolant loops. This change in flow may affect the performance of auxiliary systems like the heater, LPG converter and Turbo cooling. In these cases, you may require an Electric Booster Pump (EBP) to provide constant flow to these systems.
- ⊕ For some vehicles, cold climates you may require the use of a thermostat to help control the coolant temperature. In these cases, you will need to drill 2 x 3mm (1/8") holes in the thermostat plate.

WARNINGS

- ⊕ Engine temperature must be monitored closely at all times, especially, immediately after EWP® installation and until the EWP® operation and capability have been confirmed.
- ⊕ The ignition source needs to be a constant and stable positive 12-29 volts DC, connecting the ignition directly to the coils or other high load components can cause errors.
- ⊕ Do not use the vehicle's engine management system or wiring connected to the vehicle's engine management system as an ignition source because it may cause failure of the management system and/or the electrical system.
- ⊕ **DO NOT ATTEMPT to tamper with the Digital controller including loosening or removing any screws as this will void any warranty. If you suspect there is a fault or defective product please contact Davies, Craig IMMEDIATELY.**

These installation instructions will suit most applications but there are circumstances surrounding some engine designs, environments, and the nature of the system involved, which may require other installation arrangements not outlined here. Frequently Asked Questions (FAQ) are listed on our website www.daviescraig.com.au Emails can be directed to info@daviescraig.com.au or Telephone +61 (0) 3 9369 1234 during business hours.

WARRANTY



Davies, Craig Pty Ltd warrants for a period of two years or 2000 hours continuous running (whichever is the lesser) from the date of purchase. Davies, Craig shall carry out, free of cost, any repairs that are reasonably necessary to correct any fault in the operation of your Davies, Craig product provided that such a fault is directly attributable to a defect in the workmanship or materials used in the manufacture of the part(s). This warranty is void if the product is misused, altered, tampered with or is installed or used in a manner that is inconsistent with Davies, Craig's written recommendations and/or installation instructions. Labour and consequential costs are excluded. **DAVIES, CRAIG PTY. LTD.**

Register your warranty at: daviescraig.com.au under the support tab.



**DAVIES,
CRAIG**

World's best auto cooling



WHY IS DAVIES CRAIG *THE WORLD'S BEST AUTO COOLING?*

Davies Craig is at the forefront of automotive cooling technology. Having been in the industry for nearly 50 years, Davies, Craig products are trusted by some of the world's leading automotive distributors and are fitted to iconic performance vehicles around the globe.

The ability to innovate and a commitment to technology, quality and service have made Davies Craig the industry leader in automotive cooling. Whatever your automotive cooling needs, Davies, Craig has the product for the job.

AUTO COOLING EXPERTS *IT'S WHAT WE DO!*

- ⚡ At the forefront of automotive technology
- ⚡ First to develop Electric Fan and Electric Water Pump
- ⚡ Nearly 50 years in the automotive cooling industry
- ⚡ Global leader in automotive cooling patented products
- ⚡ Trusted by the world's leading automotive distributors
- ⚡ Fitted to iconic performance vehicles around the globe
- ⚡ Trusted in almost all forms of motorsport
- ⚡ Hundreds of testimonies from leading motorsport teams owners and drivers

For all your automotive cooling needs, visit;

www.daviescraig.com.au