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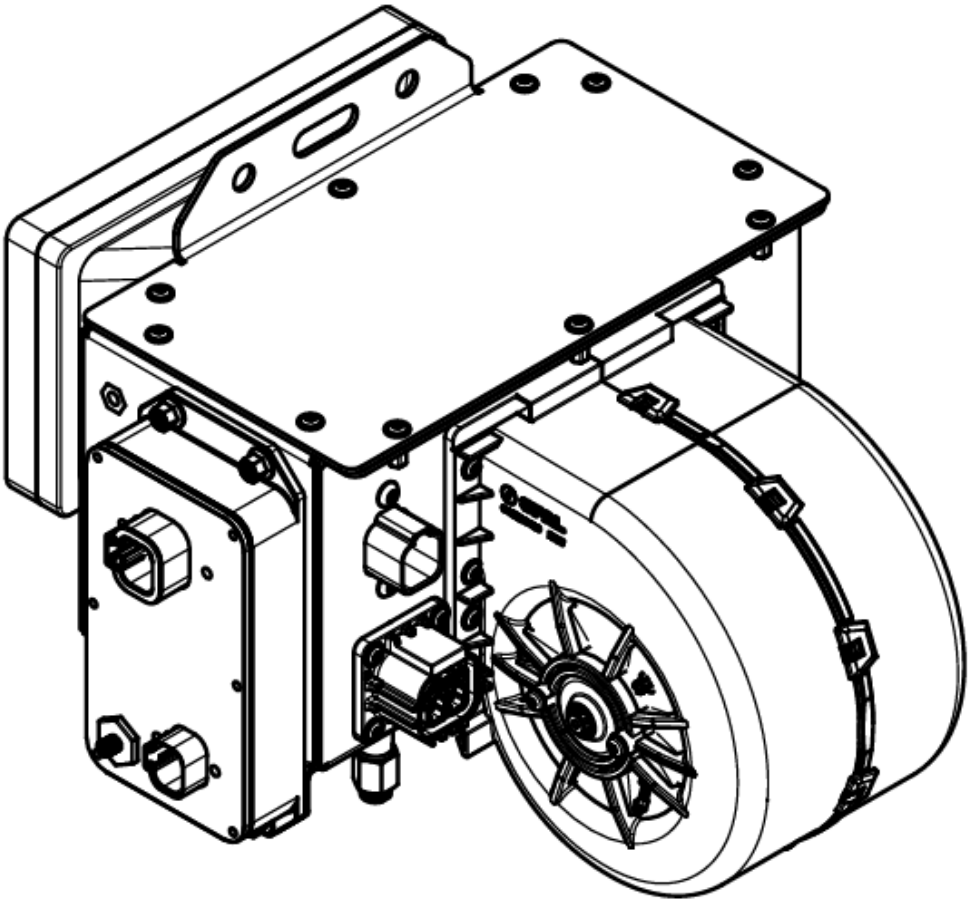
Heater Box User Guide



Introduction

This user guide provides comprehensive information for the Universal Heater Box, a complete plug-and-play heating solution from Fellten Electrified Systems. It features a powerful centrifugal fan and a High Voltage (HV) Positive Temperature Coefficient (PTC) heating element. This document outlines important disclaimers, installation procedures, control functions, pinout information, fault codes, and technical specifications for the Universal Heater Box V1.0. As a live document, users are advised to check for any version changes

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Disclaimer

Important Notice

The manufacturer disclaims all liability for any loss, damage, or injury, whether direct or indirect, resulting from the use or inability to use these products. This installation guide is provided for informational purposes only. Always adhere to applicable safety regulations and consult a qualified professional when necessary.

Responsibility

Before installation, it is the sole responsibility of the installer to:

- Assess the suitability of the product for their intended application.
- Assume full responsibility for the proper installation and safe use of the product.
  The manufacturer accepts no liability for any damages, injuries, or malfunctions arising from improper installation or use.

Risks Associated with Installation

The installation process involves certain risks, including but not limited to:

1. **High Voltage Hazards**: Handling high-voltage equipment poses a risk of severe injury or death.
2. **Tool Safety**: Some installation tools have sharp edges and require careful handling to avoid injury.

Personnel Requirements

Installation must only be carried out by qualified and experienced technicians who are:

- Proficient in handling high-voltage systems.
- Familiar with and compliant with all safety regulations and the manufacturer's guidelines.

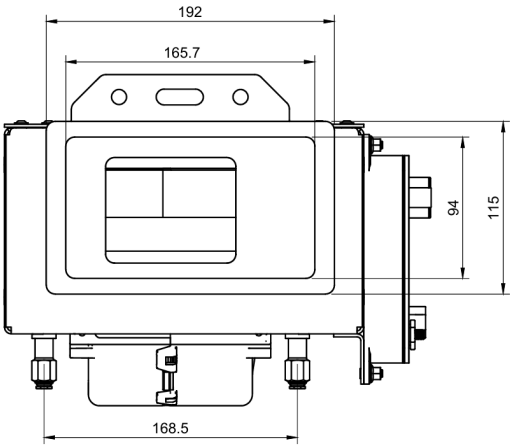
It is essential to use appropriate Personal Protective Equipment (PPE) at all times during the installation process.

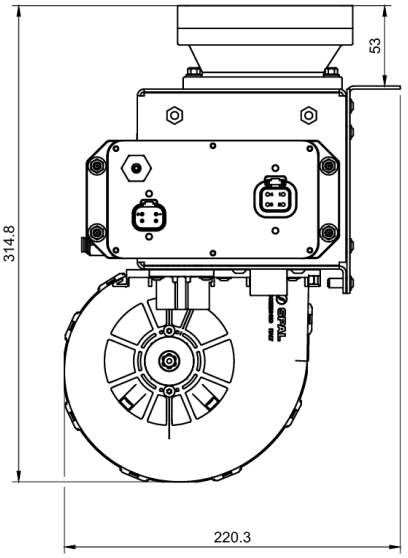
Legal Compliance

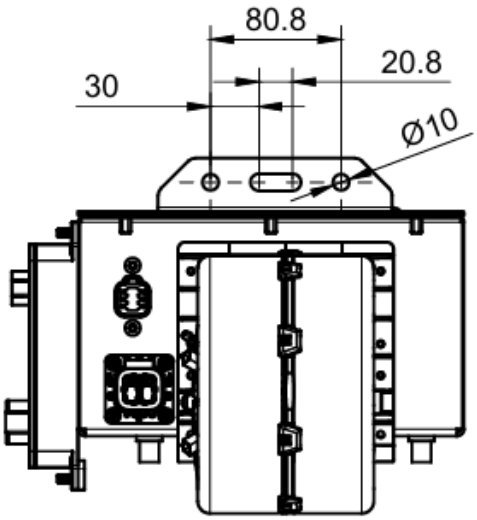
This disclaimer is governed by the laws of England and Wales. By proceeding with installation, you acknowledge and agree to the terms outlined in this disclaimer.

Installation

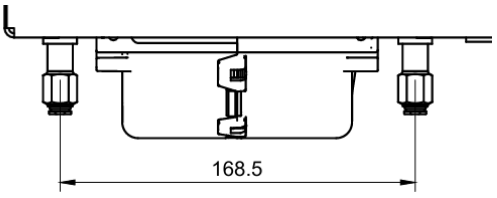
Heater Enclosure







The heater box can be mounted using the two 10mm mounting holes



Ensure both drainage holes are clear

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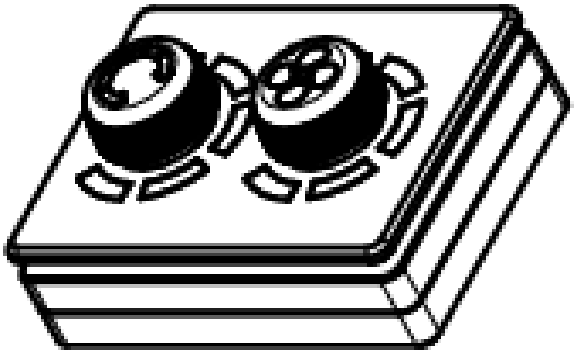
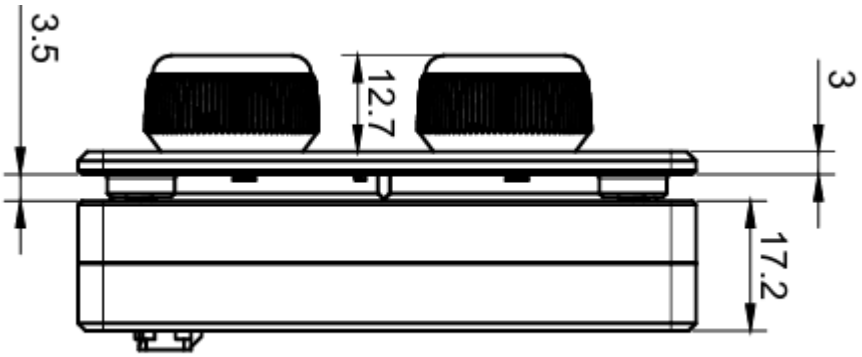
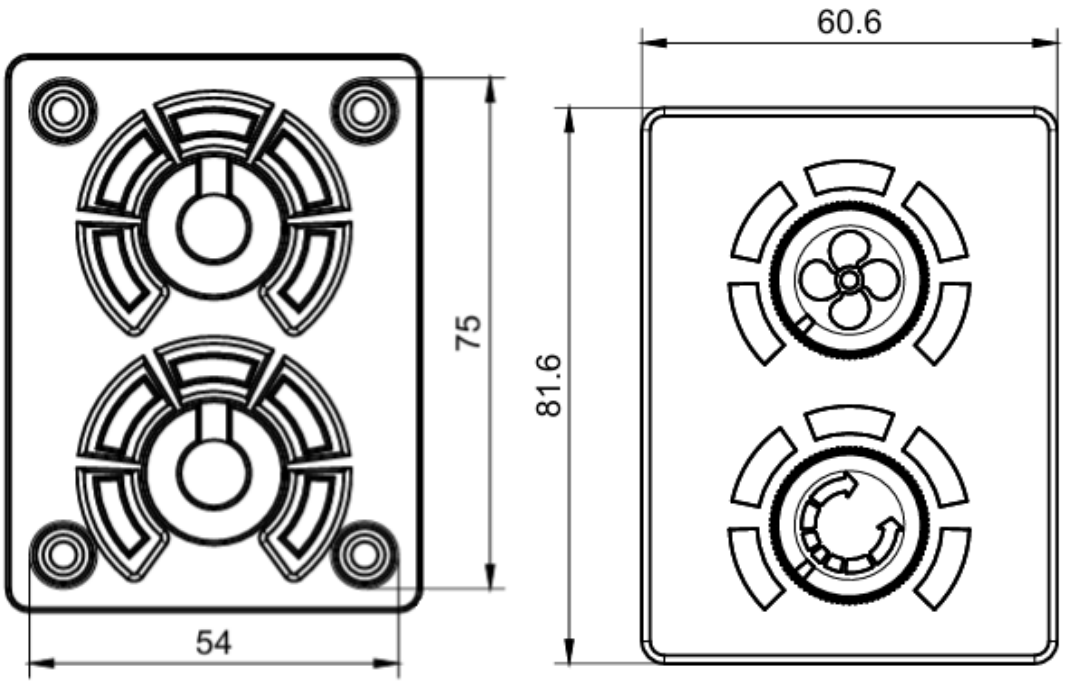
Controls



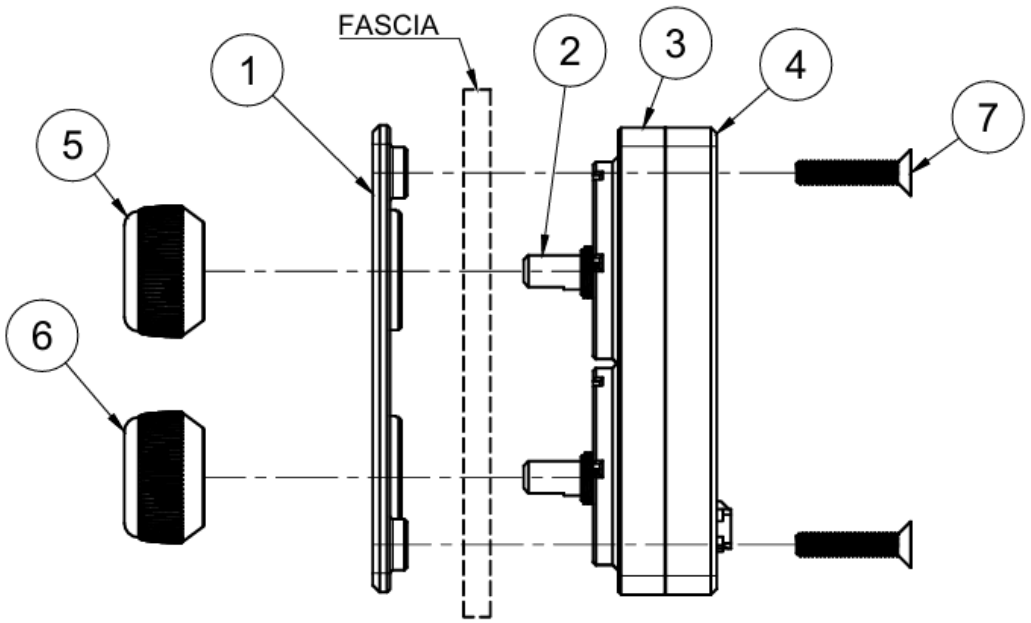


The minimum and recommended fascia gap to work with the screws provided is 3.5mm.
The maximum allowed thickness is 5mm.



Cut a 54mm x 75mm hole into the fascia panel.
Be careful not to overrun with cutting tools, the flange overhang is minimal

Ensure you have adequate space for the face plate



1	Faceplate	2	PCB
3	LED diffuser	4	Rear cover
5	Fan control dial	6	Heat control dial
7	4 x M4x20mm bolts		

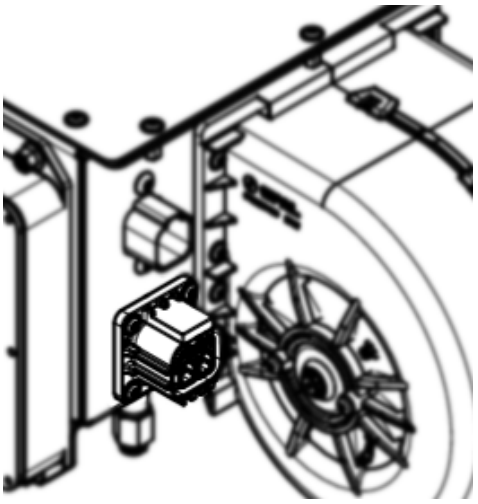
Items 2, 3, and 4 (the PCB, light guide, and rear panel) are assembled.

To secure this combined unit to **Item 1** (the main component), you will use **four M4 x 20 countersunk screws (Item 7)**. These screws will sandwich your **fascia panel** between Item 1 and the combined unit of Items 2, 3, and 4.

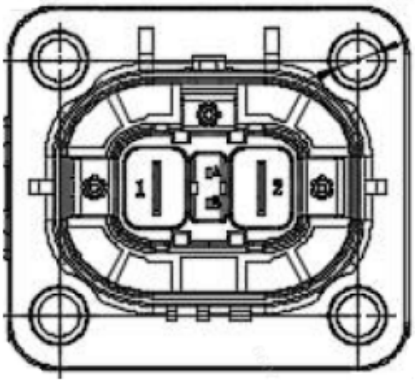
Finally, **Items 5 and 6** (the control knobs) should be **pressed onto their respective shafts** after the main assembly. They are held in place by friction.

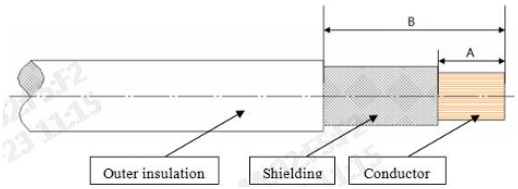
Pinout information

HV pinout

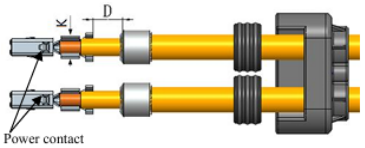


1	POSITIVE
2	NEGATIVE

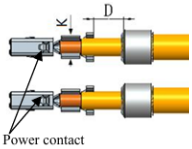




On the end of each cable cut the outer orange insulation back by 20mm(B) and
Cut the white by 5mm(A), twist the shield together and fold back.



Slide backshell and grounding rings over the folded back braid.



Crimp pins to each cable using IWISS SN-2546B crimp pliers.
Ensure that the shield and HV pin are clear of each other.

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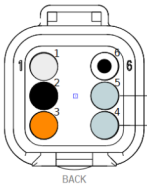
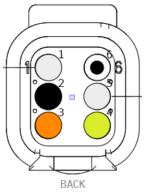
LV pinout

Harness Interface Connector Pinout

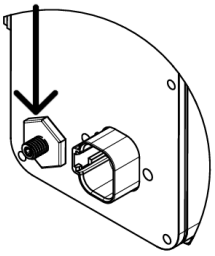


Cavity	Signal
1	HV Present
2	Ground
3	Ignition
4	HVIL
5	HVIL

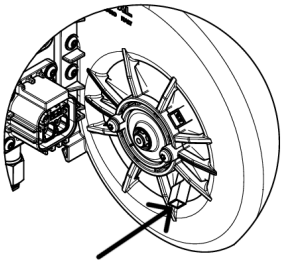
HMI Interface Connector → Heater Box Control Pinout



HMI Interface Cavity	Heater Box Control Cavity	Signal
1	1	HV Present
2	2	Ground
3	3	Ignition
4	4	CAN High
5	5	CAN Low



The Main 12v+ supply must be ≥2mm² - connect this to the M6 stud shown above. Use the supplied ring terminal.



The GND must be ≥2mm² - connect this to the spade on the side of the fan, shown above. Use the supplied 6.35mm(¼”) spade terminal

Fault Codes

Fan control LEDs flashing	Fan has failed - PTC’s will be inactive
Heat control LEDs flashing	PTC has failed - Fans will work as normal
Both controls LEDs flashing	PTC controller or Solid State Relay (SSR)

Turn both controls to the off position to stop the error flashing, this will not reset the fault.

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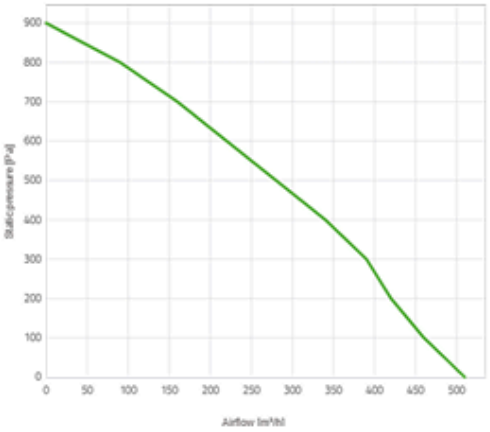
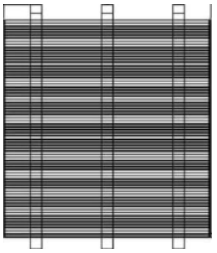
Technical Specifications



Performance chart

Static pressure	Static pressure	Airflow	Current draw	Airflow	Static pressure
Pa	mm H_2O	m^3/h	A	CFM	in H_2O
0.0	0.0	510.0	19.9	301.0	0.0
100.0	10.0	460.0	18.5	271.0	0.4
200.0	20.0	420.0	17.3	248.0	0.8
300.0	30.0	390.0	16.3	230.0	1.2
400.0	40.0	340.0	14.4	201.0	1.6
500.0	50.0	280.0	13.3	165.0	2.0
600.0	60.0	220.0	11.3	130.0	2.4
700.0	70.0	160.0	10.3	94.0	2.8
800.0	80.0	90.0	9.1	53.0	3.2
900.0	90.0	0.0	8.0	0.0	3.6

PTC AIR HEATER 	Voltage range	300v - 400v
	Power	1200W (@6.4m/s)