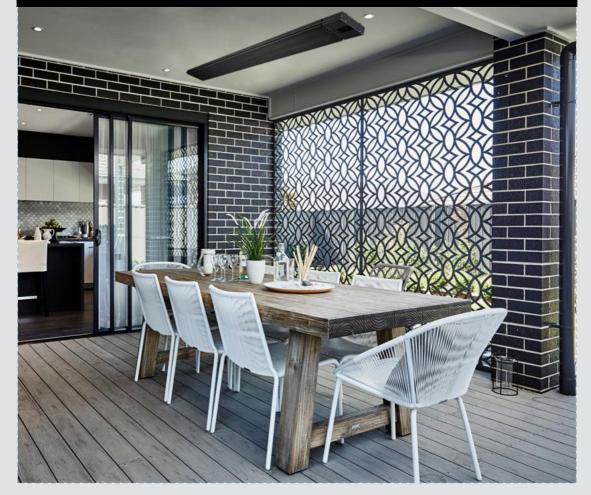
RADIANT OUTDOOR HEATERS

Product & Installation Manual



HEATSTRIP® Design with Remote (THHA-R)

The heater that is a design feature!





Product Overview

Rev B MAR21

There are 5 different ranges within the electric HEATSTRIP® product category. Each has a different temperature rating making them suited to a variety of applications. Below is a list of some common applications, to assist with the selection of the most effective and efficient series. This is a general guide only, please refer to the Product Manual for each product, for more information.

HEATSTRIP[®] **Indoor** (THS-A models) is a medium intensity heater used for protected indoor applications only with installation heights up to 2.5m (THS800A) or 2.7m (all other THS-A models).

HEATSTRIP[®] **Design** (THHA & THHA-R models) is a premium high temperature heater and is primarily used for protected outdoor areas with an ideal mounting height of 2.3m to 2.5m and maximum mounting height of 2.7m.

HEATSTRIP[®] **Elegance** (THE, THER, THE-RA models) is a premium high temperature heater and is primarily used for protected outdoor areas with an ideal mounting height of 2.3m to 2.5m and maximum mounting height of 2.7m.

HEATSTRIP® Max (THX, THXDCR models) is an ultra high temperature heater used for uncovered or open indoor or outdoor areas with an ideal mounting height of 2.3 m to 2.7m, and up to a maximum 3.5m for protected indoor applications.

HEATSTRIP[®] **Intense** (THY, THYW models) is an instant high temperature heater perfect for any exposed outdoor or indoor areas with an ideal mounting height of 2.3m to 2.8m, and a maximum of 3m in an outdoor exposed application.

APPLICATION	THS	THH-R THE	ТНХ	THY
Indoor insulated areas: classrooms, offices, bathrooms, wet areas, drying rooms	\checkmark	V		\checkmark
Outdoor under cover: café, veranda, patio, balcony ceiling height 2.7m or less		V	V	$\sqrt{}$
Outdoor under cover: café, veranda, patio, balcony ceiling height 2.7m or more			$\sqrt{}$	
Highly exposed outdoor area			$\sqrt{}$	$\sqrt{}$
Indoor open area: warehouse, factory, production areas, sports facilities	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$
Indoor spot heating, above tables, assembly areas		\checkmark	$\sqrt{}$	$\sqrt{}$







Efficient, cost effective electric heating

The innovative design of the HEATSTRIP[®] enables comfortable and even heat dispersion from the surface with minimal operating costs.

Design flexibility

Two HEATSTRIP® models are available, ensuring the heating requirements of any undercover outdoor or open indoor area is possible. Brackets for direct ceiling or wall/ceiling angled mounting are supplied as standard. Optional HEATSTRIP® accessories include extension mount brackets and flush mounting enclosures.

Minimal maintenance

The HEATSTRIP® incorporates no internal moving parts ensuring quiet and virtually maintenance free operation.

Australian Designed

Designed and engineered in Australia HEATSTRIP® is fully backed by a 24 month residential warranty, and 12 month commercial warranty.

Stylish design— The Heater that is a Design Feature!

The attractive HEATSTRIP® Design comes with a standard black face and black anodised alloy rear casing.

Easy to use

The HEATSTRIP® Design with remote operates with the remote control provided. With easy On/Off function, 3 heat levels and an adjustable timer option with 0-24 hours. The unit takes approximately 15 minutes to heat up to maximum temperature and approximately 30 minutes to cool down, depending upon the ambient temperature. Please don't forget to turn it off.







Why choose HEATSTRIP[®] electric radiant heaters for your outdoor or hard-to-heat indoor area?

Many conventional patio heaters rely on convection heating which works by heating the surrounding air to provide comfort. This can be quite impractical for outdoor and open-indoor areas as there is typically constant air movement which can easily blow away the warmed air. Radiant style heaters transfer heat directly to objects through infra-red waves. While convection heaters heat the air between objects, radiant heaters directly heat the surface of the objects themselves. HEATSTRIP® electric radiant heaters are more effective within an outdoor or uninsulated indoor area because they provide targeted warmth directly to the people and objects in their path.

Discrete, stylish heating for undercover outdoor and indoor open areas

Using the radiant heating principle, HEATSTRIP® can provide effective and energy efficient comfort heating for undercover outdoor and indoor open areas. HEATSTRIP® has successfully enabled many entertainment venues such as restaurants, pubs and clubs to utilise their outdoor dining areas day and night, through all seasons. Within your workplace or business, HEATSTRIP® can provide comfort heating for designated outdoor smoking and leisure areas, as well as for workstation spot heating in factories, warehouses and showrooms. Within your home, HEATSTRIP® can provide comfort heating for undercover alfresco dining and BBQ area, patios, verandas, courtyards and balconies.

Subtle, minimalist design

The stylish, slimline black face of the HEATSTRIP[®] does not emit light or glow when in use, blending elegantly into your décor. Ceiling, wall and umbrella mounting options ensure that your valuable floor and table space is not wasted.

Efficient, cost effective electric heating

The innovative design of the HEATSTRIP[®] enables comfortable and even heat dispersion from the heater surface with minimal operating costs.

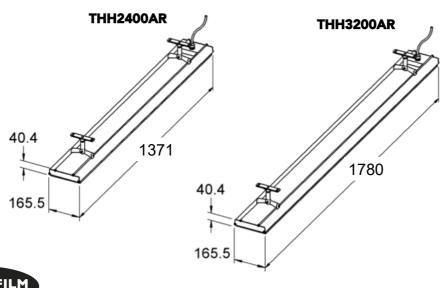




Specifications - Australia

MODEL	POWER (WATTS)	CURRENT (AMPS)	DIMENSIONS (mm)	WEIGHT (Kg)	LEAD LENGTH (mm)	PLUG
THH2400AR	2400	10	1371 x 165 x 48	7	1000	YES
THH3200AR	3200	13.3	1780 x 165 x 48	9	500	NO

MODEL			
MODEL			
HEATER TYPE	High intensity electric radiant overhead heater with high surface area profiled alloy		
OUTPUT	Refer to model code chart above		
POWER	230-240 Volts Nominal at 50—60 Hertz, Single Phase		
CONNECTION	3 Core Cable 2.5mm ²		
APPROVALS	AUSTRALIA/NZ		
MOUNTING HEIGHT	MINIMUM RECOMMENDED 2.3 m to 2.5 m MAXIMUM 2.7 m in a fully enclosed outdoor area (For higher ceiling heights, units can be lowered using optional bracket kits or extension poles see Page 19)		
MOUNTING OPTIONS	Suitable for ceiling, wall, beam, fixed umbrella and recess mounting. Also available for extension mount using rigid fixing poles and chains/wires.		
PROTECTION RATING	IP55 Protection from water ingress from all directions		









Specifications - International

HEATSTRIP® is supplied to many international markets, and therefore is available in a range of voltages and lead configurations to meet local market approvals. HEATSTRIP® is fully compliant to the following international standards.

Europe CE, ROHS, IEC 60335-2-30:2002

USA/Canada UL/CSA E321442

Japan PSE

MODEL	REGION	VOLTAGE (Volts)	POWER (WATTS)	CURRENT (AMPS)	DIMENSIONS (mm)	WEIGHT (Kg)	LEAD LENGTH (mm)	PLUG
THH1500AEU	EUROPE	230	1500	6.3	924 x 165 x 48	5	1000	YES 230V
THH2400AEU	EUROPE	230	2400	10	1364 x 165 x 48	7	1000	YES 230V
THH3200AEU	EUROPE	230	3200	13.3	1774 x 165 x 48	8	500	NO
THH1500AUK	UNITED KINGDOM	240	1500	6.3	924 x 165 x 48	5	1000	YES 240V
THH2400AUK	UNITED KINGDOM	240	2400	10	1364 x 165 x 48	7	1000	YES 240V
THH3200AUK	UNITED KINGDOM	240	3200	13.3	1774 x 165 x 48	8	500	NO
THH1500US-A	NORTH AMERICA	115	1500	12.5	924 x 165 x 115	5	NONE	NO
THH2400US-A (240V)	NORTH AMERICA	240	2400	10	1364 x165 x 115	7	NONE	NO
THH3200US-A (240V)	NORTH AMERICA	240	3200	13.3	1774 x 165 x 115	9	NONE	NO
THH2400US-A (208V)	NORTH AMERICA	208	2400	11.53	1364 x 165 x 115	7	NONE	NO
THH3200US-A (208V)	NORTH AMERICA	208	3200	15.4	1774 x 165 x 115	9	NONE	NO
THH1300AJP	JAPAN	100	1300	6.3	924 x 165 x 48	5	1000	YES 100V
THH1400AJP	JAPAN	200	1400	7.5	924 x 165 x 48	5	1000	YES 200V
THH1600AJP	JAPAN	200	1600	10	1104x 165 x 48	6	1000	YES 200V





Operating cost comparison

In many instances, patio heaters powered by gas bottles are used as an outdoor heating source. The below table shows the operational cost comparison between HEATSTRIP® and mushroom—style bottled gas outdoor heater. Not only are the hourly running costs considerably less with HEATSTRIP®, but you never have to worry about running out of gas, no refilling, no unattractive gas bottle to waste space; and HEATSTRIP® actually improves the value of your property.

RUNNING COST	OUTDOOR GAS HEATER	HEATSTRIP [®] CLASSIC ELECTRIC RADIANT HEATER	
		THH2400AR	THH3200AR
PER HOUR	\$2.78/hr	\$0.60/hr	\$0.80/hr
PER YEAR	\$500.40	\$108.00	\$144.00

Notes:

- 1. Calculations of hourly running cost for outdoor gas heater is based on \$25.00 average to fill a 9kg gas bottle and average running time of 9 hours. \$25.00 / 9 hours = \$2.78 per hour
- 2. Electricity rate of 25 cents/kWh
- 3. All calculations are excluding GST.
 - 2.4kW x 0.20 cents = \$0.60 cents per hour
 - 3.2kW x 0.20 cents = \$0.80 cents per hour

Calculations of yearly running cost are based on 180 hours usage 180 hours x \$2.78 = \$500.40 yearly running cost for outdoor gas heater 180 hours x \$0.60 = \$108 yearly running cost for 2400W HEATSTRIP[®] 180 hours x \$0.80 cents = \$144 yearly running cost for 3200W HEATSTRIP[®]











Spot heating principle

In most outdoor or difficult-to-heat indoor applications, there are 2 options when looking at the size and quantity of the heaters required.

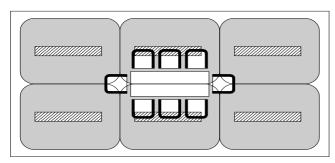
Option 1 is to comfort heat the entire area based on the total dimensions of the space, regardless of whether the entire area is being fully occupied.

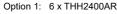
Option 2 is to spot heat the high use areas, such as over outdoor tables, BBQ's, lounges, assembly lines or indoor workstations.

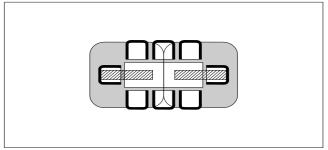
Often it is more practical and efficient to spot heat high use areas. Spot heating will reduce both the initial capital cost as well as the ongoing running costs. Spot heating will allow the area to be "zoned", meaning only the areas that are being used are heated, such as tables in a restaurant or outdoor alfresco area.

Option 1 and 2 show a comparison between heating an entire area or spot heating over a table.

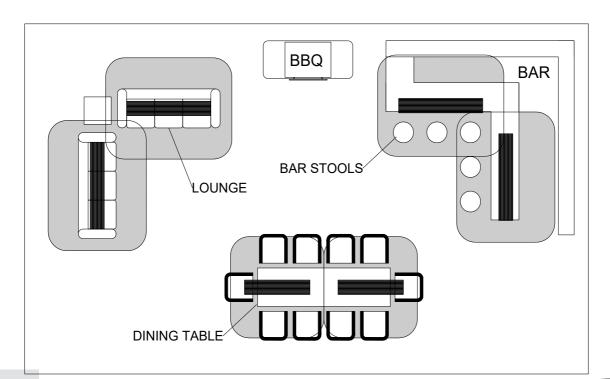
The bottom layout shows the flexibility of using HEATSTRIP® to provide a comfortable environment, even when the layout of the area is very unusual.







Option 2: 2 x THH2400AR





Radiant footprint

HEATSTRIP® electric heaters produce radiant heat which heats objects rather than the air. Therefore, it is imperative that

objects to be heated (ie. people), are within the direct radiant footprint of the heater.

The diagram to the left shows the radiant footprint of HEATSTRIP® Design, and is an approximate guide based on a fully enclosed outdoor environment.

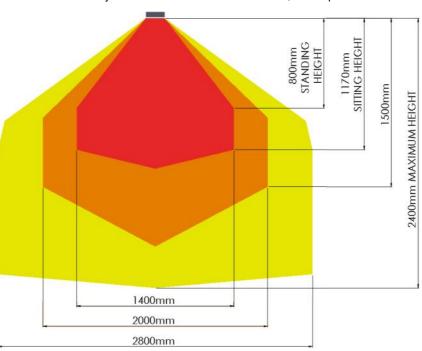
This diagram shows that the maximum heat output is found directly under the heater, and the temperature decreases as you move away from the heater.

It highlights the importance of maintaining recommended mounting heights, and if possible, positioning the heater directly above the area to be heated.

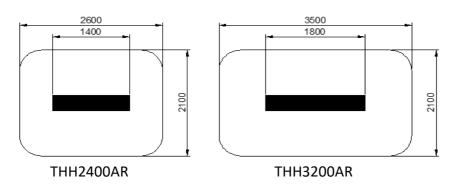
Note that the temperature is the same for the 2 models, regardless of the wattage. However, as the size increases and the length of the unit increases, the radiant footprint will be longer.

The below diagrams show the approximate

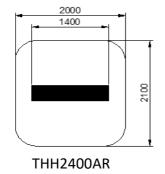
heating area for each model, based on both an indoor and outdoor enclosed environment, with direct overhead mounting. The radiant footprint is reduced in angled, wall mounted installations.

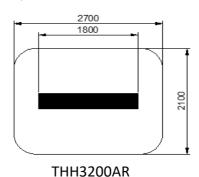


Outdoor Layout



Indoor Layout





THERMOFILM



Selection guide

General recommendations for **HEATSTRIP**® **Design with remote**:

- Ideal mounting height: 2.3m to 2.5m. Maximum is 2.7m in a fully protected/enclosed outdoor environment.
- Ideal mounting location: ceiling mounted, directly above area to be heated (eg. above a table)
- Based on the radiant footprint of the previous page, for a protected outdoor area, a minimum of 500W/m² is required. For indoor spot heating, a minimum heating capacity of 400W/m² is recommended.

The table below outlines the coverage of each **HEATSTRIP**® **Design with remote** model based on 3 different scenarios with direct overhead mounting. For example, for an outdoor area that is protected from prevailing winds by walls, café blinds etc, Model THH2400AR will cover 4.8m² and Model THH3200AR will cover 6.4m² For angled wall mounting applications, the coverage is reduced by up to 40%.

MODEL	INDOOR PROTECTED (m ²)	OUTDOOR ENCLOSED (m ²)	OUTDOOR EXPOSED (m ²)
THH 2400AR	6	4.8	4
THH 3200AR	8	6.4	5.3



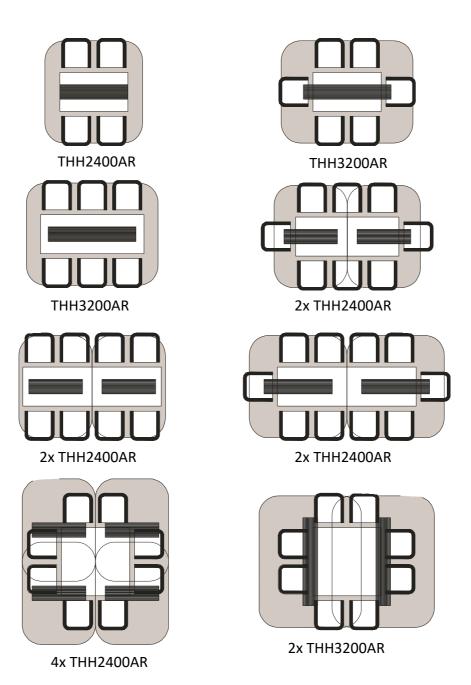




Table layout

For the majority of outdoor applications, the most effective method is to spot heat a table or similar area. The diagrams below provide an easy selection guide for the approximate model and quantity of heaters required to heat common residential table settings.

Selections are based on HEATSTRIP® Design with remote being mounted at 2.4m from the floor in a fully enclosed undercover outdoor area.









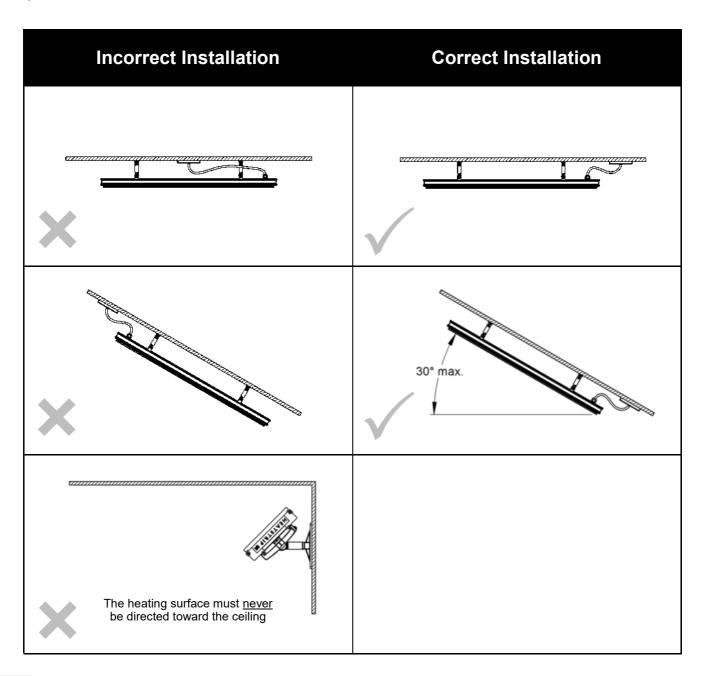
Installation Requirements

The ideal mounting position for the HEATSTRIP® Design with remote is on the ceiling directly above the area to be heated. If this is not possible, HEATSTRIP® can be mounted on a wall and angled downwards. In this situation, ensure the mounting height is in the range of 2.1m to 2.7m and the table is within 2.5m of the wall.

For mounting heights more than 2.7m, we recommend the use of the optional accessories to reduce the height of the heater to 2.3m—2.5 m. This will increase the effectiveness of your HEATSTRIP[®]. Refer to the Mounting Accessory section for more information.

Electrical connections/GPO's should not be located at the back of the heater. They should be located outside the physical footprint of the units to minimize heat build-up behind the units.

If the heater is to be mounted on an incline (e.g. vaulted ceiling), ensure the electrical connection is located at the lowest point of the heater.

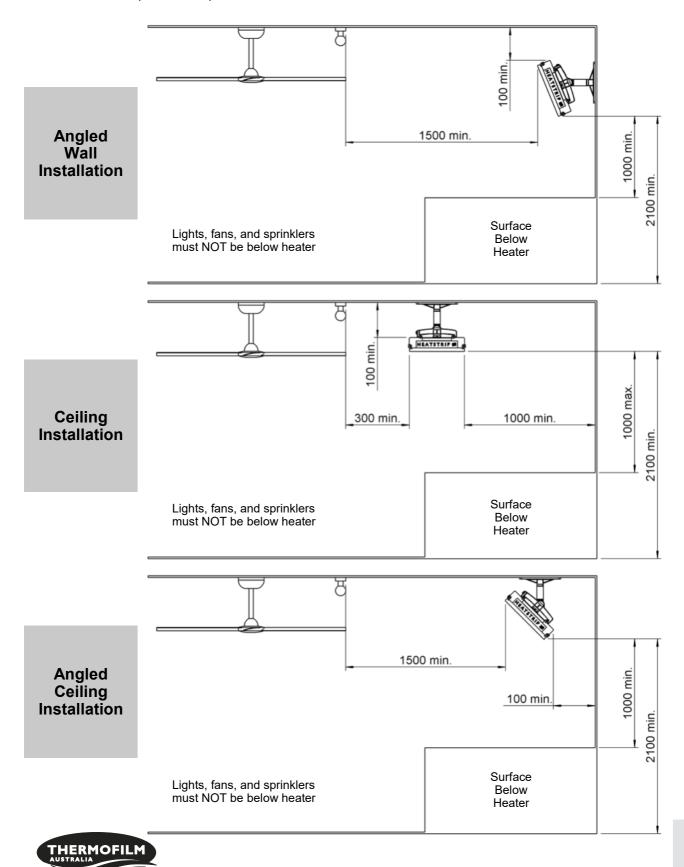






Installation location = the diagrams below provide the minimum recommended clearances in mm.

WARNING: This heater is not equipped with a device to control the room temperature. Do not use this heater in small rooms when they are occupied by persons not capable of leaving the room on their own, unless constant supervision is provided.

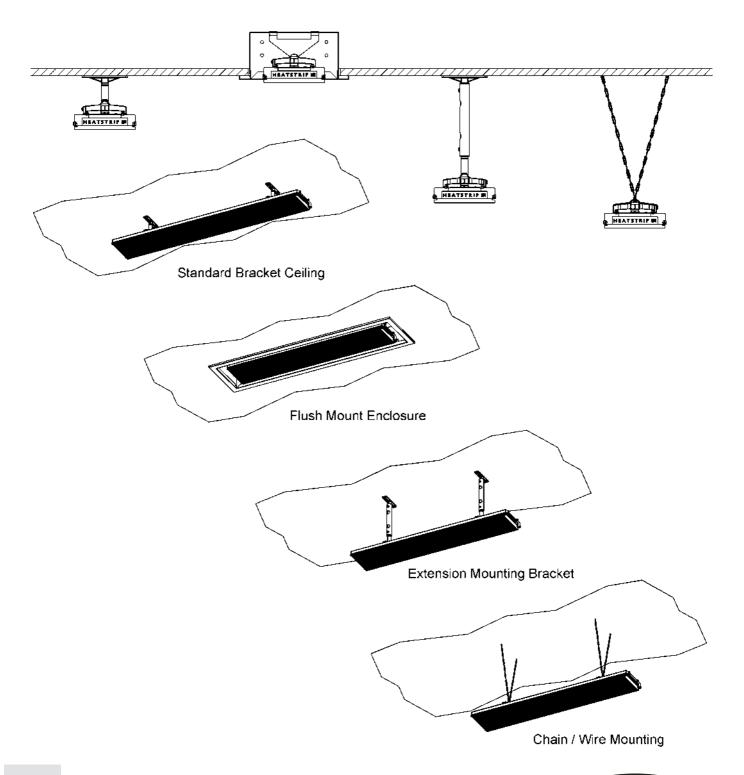




Mounting options

Installing the HEATSTRIP® Design with remote is simple and easy using the standard mounting brackets supplied. For other irregular locations there are range of mounting options available - refer to diagrams below

The HEATSTRIP® Design with remote can be mounted directly to the ceiling, angled downwards on a wall, fitted flush with the ceiling, suspended on chains or poles, attached to beams or poles, or mounted end-to-end. Refer to the following pages for more detailed information on each mounting option.

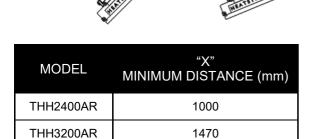




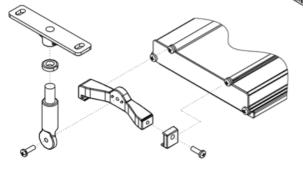


Standard mounting brackets

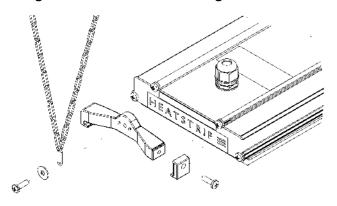
The HEATSTRIP $^{\otimes}$ Design comes with a pair of standard mounting brackets. These adjustable brackets allow direct ceiling or wall mount, and come with preset angle options of parallel, 22.5 $^{\circ}$ and 45 $^{\circ}$.



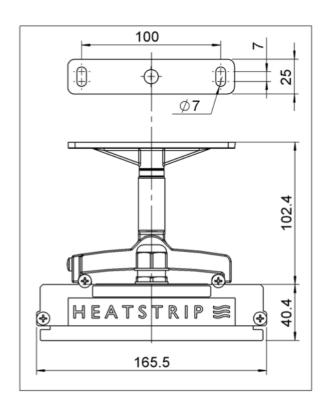
Putting the Standard Mounting Bracket together



Adding chains to Standard Mounting Bracket



PART No	PACKAGED DIMENSIONS (mm)	WEIGHT (kg)	MATERIAL
ZBRAK-113B	125 x 150 x 40	0.2	ALLOY







Flush mount enclosure

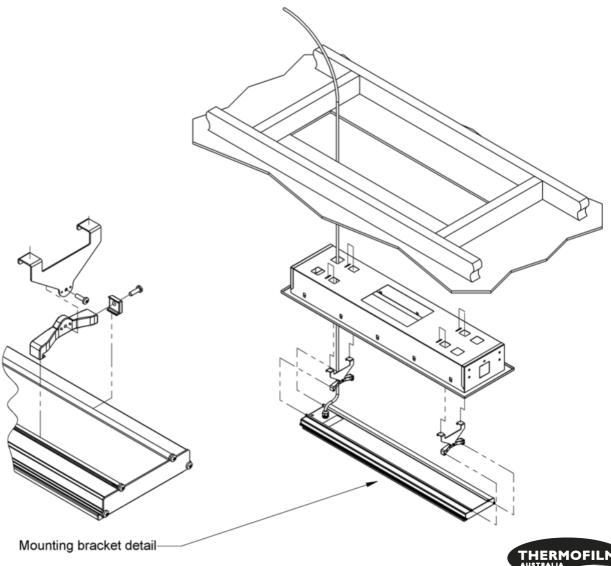
The Flush Mount Enclosure is an ideal way to neatly install the HEATSTRIP® into a ceiling. They are available for all HEATSTRIP® Design models, and are supplied as a one-piece unit suitable for mounting individual heaters. Flush mounting can be used with plaster or timber lined ceiling materials.

An ideal mounting height is 2.3m-2.5m, with a maximum ceiling height of 2.7m in an outdoor enclosed environment. Maximum mounting heights should be strictly followed, otherwise the performance of the units may be reduced.

The facia of the enclosure is matte black and the rear casing is black zinc coated steel.

Please refer to the Flush Mount Enclosure Installation Manual for more detailed installation information.

SUITABLE FOR MODELS	PART No	HOLE CUTOUT DIMENSIONS (mm)	OVERALL DIMENSIONS (mm)	WEIGHT (kg)
THH 2400AR	THHAC-013	1420 x 230	1470 x 280 x 125	8
THH 3200AR	THHAC-014	1830 x 230	1880 x 280 x 125	9







HEATSTRIP Wall Mounting Kit - (THHAC-028)

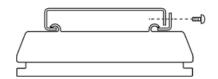
HEATSTRIP Wall Mounting Kit is an ideal way to install units into hard to mount applications where wall mounting is preferable to direct overhead mounting, applications include heating over tables, lounges, work stations etc. These kits are suitable for all HEATSTRIP Elegance & Design models.

Instructions:

Fix the wall bracket in the desired location using 6 x 8 mm fasteners that will be more than adequate to safely support the bracket and the HEATSTRIP unit.

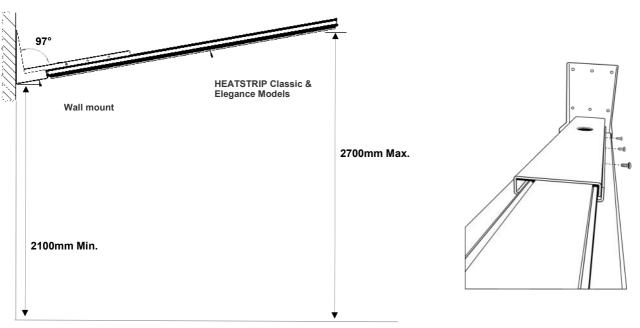
When bracket is installed lift the heater into position passing the power cord through the hole. Locate the heater so the L bracket fits into the mounting grove located on the back of the HEATSTRIP. Position the angle piece into the mounting grove on opposite side of the heater and secure firmly onto the bracket using the 3 screws provided.





Installation Location - The below diagram outlines the recommended clearances.

Note: The minimum height from the ground to bottom of the bracket is 2.1m, and the maximum height from the ground to the end of the heater is 2.7m. We recommend a mounting height of 2.3 to 2.5m.



FLOOR DIMENSION (mm)		WEIGHT (Kg)	MATERIALS
	550 (L) x 165 (W) x 250 (H)		Powder coated Mild Steel

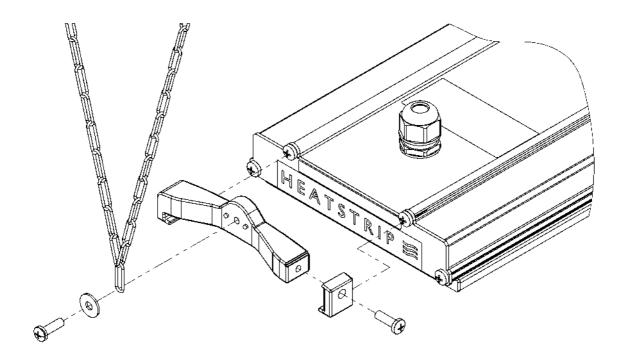




Suspension mount bracket

If the space to be heated is an enclosed outdoor environment with a ceiling height of 2.7m or more, it is recommended to lower the heaters to an ideal mounting height of 2.3m—2.5m. The Suspension Mount bracket provides a cheap, easy and effective option for lowering the HEATSTRIP® Design from high ceilings. The bracket is designed to be used with chains or wires. There can be multiple chain/wire arrangement options, as per the diagram below.

Note: chains or cable are not supplied with heaters or brackets.



Chain / Wire Suspension Mount

SUITABLE FOR MODELS	PART No	PACKAGED DIMENSIONS (mm)	WEIGHT (kg)	MATERIALS
THH 2400AR	THHAC-002	300 x 150 x 50	1	Alloy
THH3200AR	THHAC-003	1200 x 120 x 50	2	Alloy



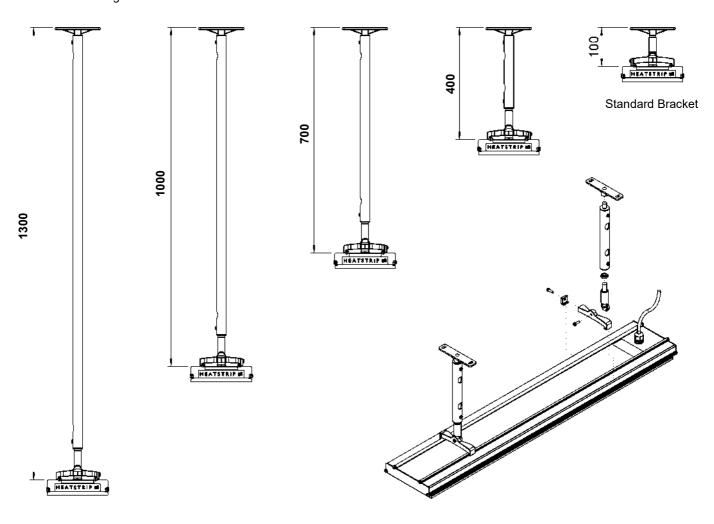


Extension Mount Bracket

The Extension Mount bracket allows HEATSTRIP® Design units to be lowered from high ceilings using rigid connections. The brackets are designed to be used with 20mm x 1mm round tube (and supplied as a complete kit that attaches to standard mounting brackets supplied with the heater. The standard length options as part of the kit are 150mm, 300mm, 600mm, 900mm and 1200mm.

The extension mount brackets utilise components from the standard bracket kit which is supplied with each heater and it provides an extra 100mm of length

*screws to ceiling are not included



PART No	DIMENSIONS (mm)	WEIGHT (kg)	MATERIALS	NOTES
THYAC-047	300 x 20 x 20	0.21	ALLOY	Kit Includes 2 x 300mm Extension Poles , Black
THYAC-048	600 x 20 x 20	0.38	ALLOY	Kit Includes 2 x 600mm Extension Poles, Black
THYAC-049	900 x 20 x 20	0.55	ALLOY	Kit Includes 2 x 900mm Extension Pole, Black
THYAC-050	1200 x 20 x 20	0.71	ALLOY	Kit Includes 2 x 1200mm Extension Pole, Black





HEATSTRIP® Design with Remote

The THHA-R is a custom designed and manufactured heater. It has been designed for ease of use and provide low running cost of your heater. It provides 3 levels of temperature control, Adjustable set timer option from 0-24 hours with the touch of a button.

When the heater is plugged in or hardwired , press "power" on the remote, the power indicator light on the unit will light up and indicate the L1, L2, L3 using the + or - to change the heat settings, To set the timer click through the 0-24 hour timer.

THHA-R Functions

L1 is the lowest heat setting and L3 is the highest heat setting.

The timer function has 0-24 hour timer. This feature is ideal for applications such as alfresco areas, restaurant dining, assembly line production etc. when continuous heat is not required. The timer also reduces the likelihood of heaters being inadvertently left turned on.

Remote pairing

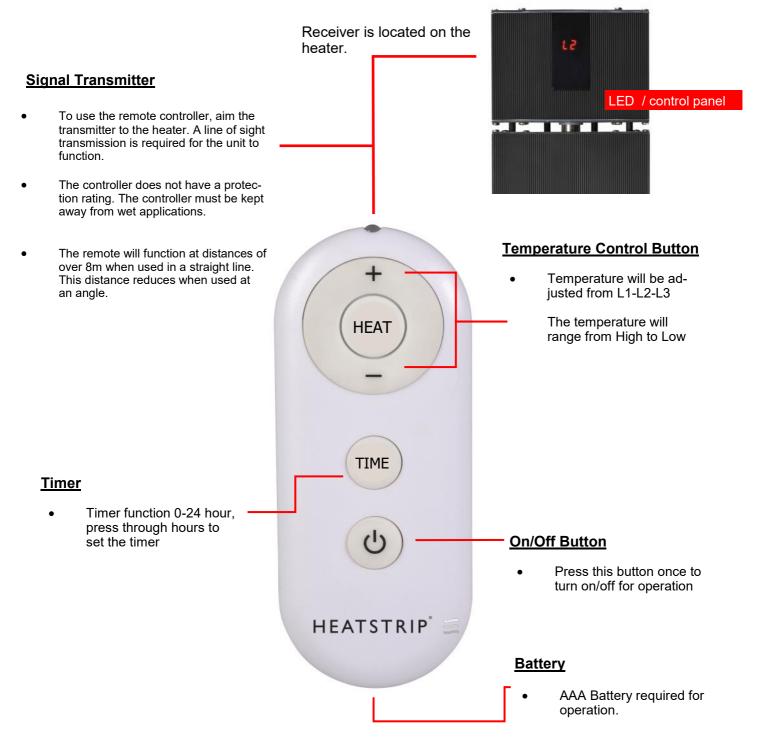
All units operate using the same remote control frequency, therefore, multiple heaters can be operated using a single remote control. The remote will function at distance of over 8m when used in a straight line. This distance reduces when used at an angle.







Remote Control Operation









Warranty Terms & Conditions

The below Warranty Terms and Conditions apply for New Zealand and Australia only. For international warranty please refer to international warranty terms and conditions.

Thermofilm warrants to the original owner that HEATSTRIP® products will be free from defects in materials and workmanship for a period of 24 months for residential applications and 12 months for commercial applications from the date of purchase in accordance with the following warranty terms and conditions.

Provision of this warranty is subject to:

- The HEATSTRIP[®] products must be installed in accordance with the Installation Instructions and relevant electrical standards and codes.
- The HEATSTRIP® products must be maintained and cleaned according to instructions detailed in the Installation Manual.
- There is no warranty expressed or implied with regard to capacity requirements. The selection of the unit or units depends entirely upon the system design and capacities as determined by the purchaser.
- The customer has not repaired, opened or altered the product in any unauthorised manner.
- This warranty excludes damage to the product or components arising from circumstances outside the control of Thermofilm, including, but not limited to, where the product is not used for intended purpose; where the product has been rectified in any way; incorrect installation; incorrect power supply; damaged caused during delivery; misapplication, misuse, abuse, vandalism, lack of maintenance or accident.
- Thermofilm's obligations under this warranty are limited to repair or replacement at Thermofilm's factory of any components of the product which Thermofilm identifies to its satisfaction to be defective.
- Transportation charges involved in return of the product to the Thermofilm factory (or any other location authorised in writing by Thermofilm) is the sole responsibility of the customer.
- All products are inspected and tested before despatch and are at the risk of the purchaser after the shipment from the Thermofilm factory, if not delivered by Thermofilm to destination.
- No products or components will be supplied in advance of an examination of the faulty product or components by Thermofilm or an authorized representative of Thermofilm.
- Thermofilm does not participate in any site related costs or labour expenses incidental to replacement of parts, repairing, removing, installing, servicing, transportation or handling of parts to complete products, and assumes no liability on parts repaired or replaced without written authorisation. Thermofilm shall not be liable for any default or delay in performance of its warranty obligations caused by any circumstances beyond its control, including, but not limited to, judicial or government restrictions, strikes, fires, floods, abnormal weather conditions, delayed supply of components.

Should products be determined as damaged on arrival, immediately notify the transport company of the condition and have them noted on the freight documents. If damage is discovered after unpacking, demand immediate inspection by the transportation company and insist that a record of the damage is made on the freight documentation.

The customer warrants using the product in accordance with:

- Any instructions provided to it by Thermofilm from time to time.
- All government and local regulations, including but not limited to all relevant electrical, environmental laws and regulations governing the installation, storage, use, handling and maintenance of the goods.
- All necessary and appropriate precautions and safety measures relating to the installation, storage, use, handling and maintenance of goods.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

All warranty requests for repairs or replacements must be accompanied by a complete "Warranty Claim Form" available from Thermofilm, together with proof of purchase (and where possible, photos of the installation) and the heater returned to the place of purchase.

In the event of a warranty claim, the goods need to be returned to the distributor/retailer for repair/replacement. Contact

Thermofilm Australia Pty Ltd 17 Johnston Court, Dandenong South, Victoria 3175, Australia Telephone: (03) 9562 3455, Email: info@thermofilm.com.au

