



Daspass

Safe Heating Solutions

Since 1968



DASPASS SALES CORPORATION

Head Office & Works:

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COMPANY PROFILE

Company	:	Daspass Sales Corporation
Head Office & Works	:	A-4, Street No.-4, Anand Parbat Industrial Area, New Delhi-110005 (India)
Contact	:	+91-9810038626 /+91-9718998007, +91-9718998006 /+91-9718998027
Email	:	daspass@hotmail.com / info@daspass.in
Established	:	June 1968
Name of	:	a. K.G. Sharma – President
Representative's	:	b. Brijesh Sharma – Director Marketing & Sales c. Rajesh Sharma – Director Works & Technical
Certificates &	:	(i) ISO 9001:2008 from Bureau of Veritas
Standards	:	(ii) CE Certification (iii) BIS Certification (a) IS: 4159 for Tubular Heaters (b) IS: 302 for Safety Standard (c) IS: 3017 for Stem type Thermostats
Covered Area	:	35000 Sq. Feet
Production Capacity	:	4,00,000 Units Per Annum (Approx.)
Sector of Industries	:	HVAC, Railways, Pharmaceuticals, Chemicals, Petroleum & Refineries, Hydro + Thermal Power Plants, Textiles, Boilers, Appliances Etc.

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Daspass Duct Heaters



DDH

Application

Air-conditioning (AHU – FCU), High Temperature Batteries, Load Bank of Generators, Industrial Drying Ovens, Heat Treatment, Offices, Buildings, Institutes, Retail Stores, and Much More.

Available Types

- Unitary Commercial Industrial Heaters
- Custom – Built (CB) Duct Heaters
- Stock – Line (SL) Duct Heaters
- Remote Panel (RP) Duct Heaters
- Flange Mount (FM) Duct Heaters
- Slip – Mount (SM) Duct Heaters
- Round Mount (RM) Duct Heaters
- Bottom Mount (BM) Duct Heaters
- Double Deckkar Mount (DDM) Duct Heaters

Characteristics

- Capacity-3Kw to 1000 Kw
- Operating Voltage 110, 220, 230, 415, 600 (1-3 PH) AC/50-60 Hz

Features:

- Constructed as standard units
- Tailored to suit Customer's Specific requirement
- Designed for operation in temperature conditions upto 950° F
- Suitable for use in relative humidity upto 90%.

Construction:

Incoloy – 800, Stainless Steel – 321 Sheathing of tubular elements with / without fins. U/M shape elements are mounted on a detachable terminal plate using galvanized retainers. A mounting flange permits attachment to the duct work. Individual elements are easily replaced or interchanged. Where the application calls for a higher temperature, the case is constructed from heat resisting steels. A thermal Cut-out fitted for protection against overheating. Safety Auto Thermostat Cut-off required temp. Control, contractor and fan interlock device, SSR, SCR, BMS Compatible are available as optional extras, M / Explosion resistant covers (Flame Proof) and element are also available. Zero Clearance Construction / selected elements by calculated wire temperature method.

OPEN COIL CONSTRUCTION :

Heating Element Shall be Open coil 80% nickel 20% chrome type resistance wire shall be machine crimped into stainless steel. Terminals are supported by ceramic bushings staked into supporting brackets.

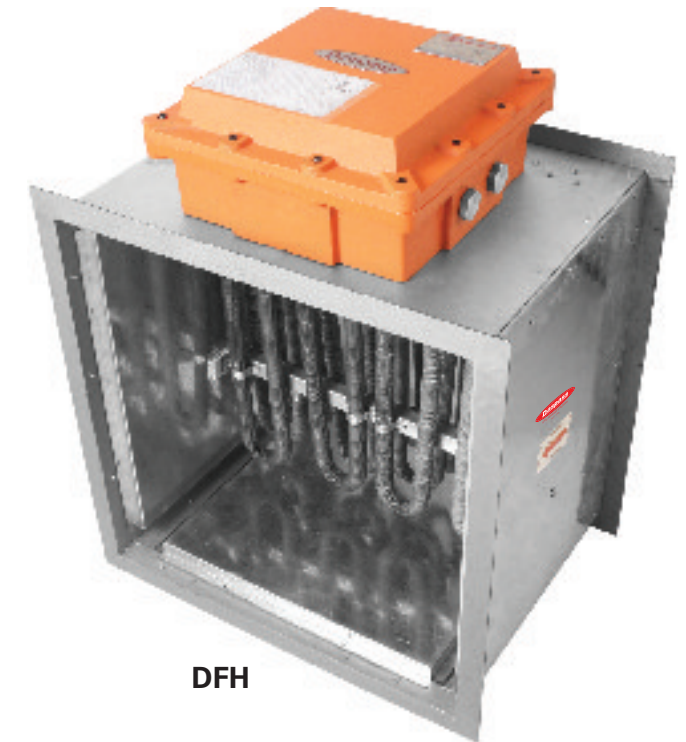
DUCT HEATERS FOR EXPLOSION / HAZARDOUS AREAS : -

Daspass offer a wide selection of custom built electric duct heaters designs for outdoor, wet, dusty typical applications include use with roof top air-handling unit, in wash down areas such as food processing plants, wet & humid spaces near indoor swimming pools, Sub-marine or Casino boat applications including shipboard use.

Duct Heaters With Flame Proof Junction Box

Application

Duct heater with flame proof junction boxes are available in rating upto 500 Kw and are used for heating air in duct systems, Central ventilation units and for various industrial processes in environments in where occasionally occur danger of explosion (Class 1, Zone 1 and Zone 2 Group IIA, IIB, T3). Our flexible production enables us to adapt the duct heater to different sectors of applications such as offshore, chemical industries, pharmaceuticals, oil industries, shipyard, vessels.



DFH

FFAU



Features:

- Power rating 1.0 Kw to 400 Kw
- Supply: 230-415V/1-3 PH/ AC/50 Hz
- Temperature Class T3 (maximum 200° C)
- For use in areas in which the danger of explosion are due to gases or flames
- Degree of protection IP 64
- Can be installed horizontally or vertically
- Duct Mounting

Construction:

The casing is made of G.I. is available in different sizes. The duct heaters are produced to degree of protection IP64 accordance with EN6059. The tubular heating elements with Continuous Fins are made of Stainless Steel which are suitable for black heat operations. The elements are attached with a alloy casted Terminal Box with powder coating paint upto 500 micron.

Hazardous Location Heaters



Certification

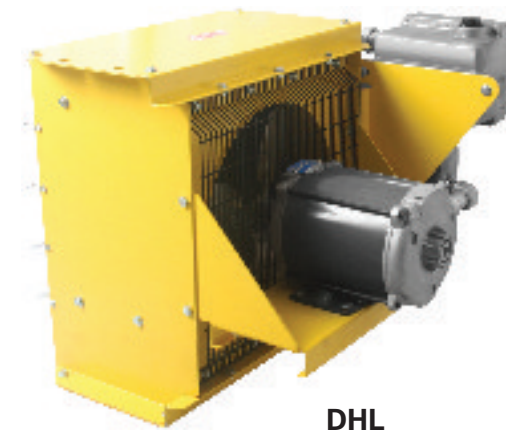
Designed to meet United States and Canadian Certification standards.

RATING

Class 1, Group C & D, Division 1 & 2
 Temperature Code T3B, 165 Degrees C (329 Degrees F). CLASS 1, ZONES 1 & 2, GROUPS IIA & IIB, T3

Applications

- Oil & Gas Drilling Rigs
- Aircraft Servicing Area
- Grain Elevators
- Metal Dusts Containing Areas
- Oil Refineries
- Sewage treatment plants
- Petrochemical Plants
- Oil Protection
- Unattended pumping stations
- Chemical Storage
- Paint Storage Areas
- Coal Mines
- Other hazardous areas covered by these classifications



Features

- Excellent for providing seasonal heating in hazardous environments.
- All aluminium, spark resistant constructions on heater housing
- 24 Volts Control
- Durable epoxy coating on heater housing
- Manual reset
- Hazardous location unit mounted male female plug
- Adjustable louvers

Specifications:

- Capacities — 3.0 Kw to 30.0 Kw
- Operating Voltage — 230V / 1 PH / AC / 50 Hz or 415V / 3 PH / AC / 50 Hz
- Explosion Proof Thermostats
 Explosion Proof Disconnect Switch N. Explosion Proof Indicators
- High Quality Manual Cutout / Automatic Cutout
- Fan & Motor — ball Bearing Permanently lubricated / Explosion Proof Motor with Built in thermal overload protection
- Mounting — Pole / Wall / Ceiling / Hang / Portable.

Electric Control Panel For Duct Heaters

Application

Simple operation and precise control. Adopting PID regulatio technology, the control accuracy is < 2%. The phase shift trigger is used in the SCR, according to the temperature, it regulates the effective input power. Interlock failure alarm, when the temperature exceeds the alarm value, the sound and light alarm runs and the power is automatically cut off with the power regulator. Security protection: built-in dedicated fast fuse and automatic air circuit breaker, greatly increase system security, ensure accuracy and control system is safe and reliable



Characteristics

- Capacity-3Kw to 1000 KwOperating
- Voltage 110, 220, 230, 415, 600 (1-3 PH) AC/50-60 Hz



Accessories Optional

Magnetic Contactors



Magnetic Contactors are used to de-energize the circuit or interrupt the flow of current to heaters controlled by thermostat.

Features

- Coil voltage : 24, 120 and 240VAC
- Resistance Load : 18 to 300 AMP.
- Number of Poles : 1, 2, 3 and 4.

Air Pressure Differential Switch

Differential Air Pressure Switch (DAPS) standard for all heaters, prevents heaters from operating if there is no airflow.



Features

- Protection Levels : IP - 54 : IP - 54
- Measuring Range : 30 Pa - 300 Pa
: 50 Pa - 500 Pa
: 100 Pa - 1000 Pa
- Max - Med Pressure : 1000 Pa
- Supply : 250V, 2 Amp
- Dimensions : 81mm dia x 53 mm Height

Power Fusing

Power Fuses installed either on supply line (LF) or individual Bank (Stage (SF) of Heaters.

Features

- Maxi voltage : 600V AC
- Current : 1 to 600 Amp
- Type : HRC From



Control Transformers

The transformers supplies power to the control circuit. If you prefer that the control power be supplied by others, you must specify this with your order.

Features

- Primary Voltage : 120, 240, 480V AC
- Secondary Voltage : 24 or 120V AC
- Insulation : Class B

Automatic Reset Thermostat

Standard for all Units.

The Capillary / Stem type de-energize power from elements, if overheating occurs and re-energize the element after temperature has lowered.



Features

- Maxi voltage / Amp : 240V/20 Amp
- Working Temp : 25° to 75° C

Pilot Lights (Indicators)

Pilot lights are installed on front / side door of control panel. Which indicates as follow :

- Main Power Line
- Electric Elements
- Air Flow on Elements
- Bank / Stages
- Over Heating



Features

- Voltage : 24V / 110V / 230V
- Colors : Red, Green, Blue of as per application

Insulated Panels

To Prevent Possible Condensation from forming in heater / control panel when heaters installed in open weather.



Accessories Optional

SCR Control

The SCR (Silicon Controlled Rectifiers) Control is used to provide continuous modulation from zero to maximum and provides output from the heater direct proportions to the temperature demand.



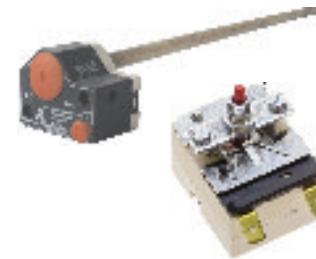
Features

- Rated Current : 40-80Amp. Max.
- Protection fuse : 40-80Amp.
- Min. Block Voltage : 600-800V AC
- Cooling fan : 80x80 / 12V DC
- Main Power Supply : 180 ~ 440V AC 50-60 Hz
- Aux. Power Supply : 220/380V AC ± 20% 50-60 Hz

Manual Reset Thermal Cutout

Standard for All Units.

The Capillary / Stem type de-energize power from element permanently if overheating occurs the device must be manually reset to re-energize the element again.



Features

- Max. Voltage Amp : 240V / 20 Amp
- Cut off Temp. : 75°C

MCB

MCB or miniature circuit breaker is an electromagnetic device that embodies complete enclosure in a molded insulating material. The main function of an MCB is to switch the circuit, i.e., to open the circuit (which has been connected to it) automatically when the current passing through it (MCB) exceeds the value for which it is set. It can be manually switched ON and OFF as similar to normal switch if necessary



Emergency Switch

Emergency Switch Cut the power supply to the heaters immediately and open the door in order to safely perform Installation and maintenance tasks.



Features

- Number of Poles : 2 Pole
- Maxi. Voltage : 600V / 30Amp

Proportional Control (Modulating)

The Control panel of a proportional electric heater includes the following components

- Transformer and control fuse
- Automatic reset thermal cutout
- Manual reset thermal cutout
- SCR
- Fuses
- Relays
- Disconnect Switch
- Emergency Switch
- Factory Internal Wiring with Best quality Copper Conductor.



Tubular Heating Elements

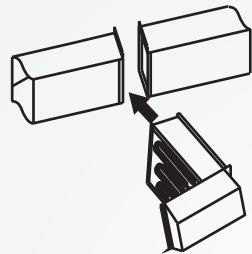
Air heaters are manufactured out of high temperature resistance chrome nickel steel tube to withstand a surface temperature upto 600 C. Each element to provided with two adjustable fixing brackets. Fins are provided to enlarge the heat surface. Supply Voltage 230V/AC/1PH/50Hz



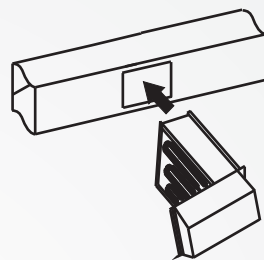
Installation Cautions:

Installation, Operating and Maintenance Manual Daspass Electrical Duct Heaters

FLANGE - IN - TYPE (FM) DUCT HEATERS

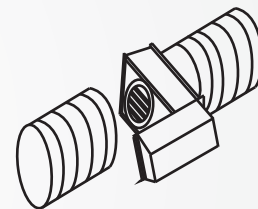


SLIP-IN-TYPE (SM) DUCT HEATERS



ROUND MOUNT (RM) TYPE DUCT HEATER

Round Mount Duct Heaters are available for installation on round duct system with a 30 mm Extension on each side of the frame by male and female adaptor.



Read And Save These Installation Instructions

Technical Data	Description
Minimum distance from obstacle or obstruction in duct	48" (1.2m) upstream and downstream of electric heater
Airflow direction	Horizontal or vertical (refer to Approved GA Drawing)
Voltage	See the Name Plate
Capacity	See the Name Plate
Power	See the Name Plate
Control Voltage	As per approved GA Drawing
Minimum Air Velocity	Ensure minimum Air Flow

Caution, Risk of malfunction: In case alteration (drilling holes or other) to the electrical compartment, ensure proper protection of all electrical components installed. Chips may cause short circuit or effect operation of electrical components.

General

This document is to be used for all Duct / AHU / FCU heaters installation unless the heater is used in a piece of equipment supersedes this document. In that case, it is the responsibility of the end user equipment manufacturer to have performed testing for the end use application

Application Information

Follow the procedure given on the sheet to find the minimum air velocity for safe operation. At least this minimum velocity must be provided at all points over the heater face area. Failure to meet this requirement may result in serious damage or nuisance thermal cutout tripping.

In the duct which may result in no uniform airflow. Duct elbows/ turns / fan of filters must be located at least 4 feet from the inlet of the heater and 2 free from the outlet of the heaters.

Mechanical Installation

1. All heaters are suitable for installation with zero spacing between the duct and combustible surfaces.
2. The heater must be installed in the correct position as shown by the arrows marked on the terminal box.
3. Sufficient clearance for convention cooling must be allowed for all heaters with built-in SCR power controllers. Provide at least 5 inches of free air space above and below cooling fins extending from heater terminal box.

Flange Type Heaters

1. Provide flanges on the duct to match the heater flanges, both the entering and leaving air sides.
2. Attach the duct flanges to the heater flanges with bolts, sheet metal screws or slip and drive connectors when the heater has matching connectors for the purpose.

Slip-In Type Heaters

1. Cut a hole in the side of the duct to accommodate the body of the heater (excluding terminal box). This hole should be 1/8" larger than the heater frame.
2. Slip the heater into the duct and attach the back of the terminal box to the duct with sheet metal screws.

Electrical Installation

1. Follow the wiring diagram pasted inside of the terminal box.
2. Supply connections must be made with copper wiring rates for 75 degree C minimum.
3. If supply connections are for 230 volts or greater, all wiring must be insulated for 600 volts.
4. When making line connections to heater element terminal, must be tight properly otherwise damage to terminal may result.
5. Supply conductors for heaters rated Kw, must be sized at 125% of rates load. The line current of either a single or three phase load is calculated as follows :

$$\text{Single Phase Line Current} = \text{Kw} \times 1000 / \text{Voltage}$$

$$\text{Three Phase Line Current} = \text{Kw} \times 1000 / \text{Voltage} \times 1.73$$

6. The heater must be wired so that it cannot operate unless air is flowing over it. This can be accomplished by using a built-in Air Pressure Differential Switch. See the wiring diagram for the method used with this heater and provide appropriate interlock wiring as illustrated.
7. All electrical connections in the heater, including both field and factory made connections, should be checked for tightness before operating the heater. In addition after a short period of operation, all connections should again be checked for tightness.
8. If heater is wired to a heating / cooling thermostat, use a thermostat with isolating circuits to prevent possible interconnection.

Calculating KW Requirement

Once the volume of airflow (CFM - in cubic feet per minute and the required temperature rise (Delta T degrees F) through the heater are known, the required Kw rating (Kw) of the heaters can be determined from the formula :-

$$KW \text{ (Capacity)} = \frac{CFM \times \Delta T^{\circ}F}{3193}$$

$$KW \text{ (Capacity)} = \frac{\text{Liters} / \Delta T^{\circ}C}{837}$$

Where the desired heating capacity in BTU / Hr is known the Kw is determined from the formula :-

$$KW \text{ (Capacity)} = \frac{BTU / Hr}{3412}$$

SINGLE PHASE (1 PHASE)

$$AMPERES = \frac{WATTS}{LINE VOLTAGE}$$

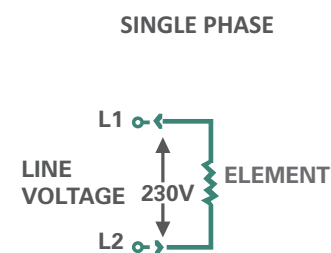
THREE PHASE (3 PHASE)

$$AMPERES = \frac{WATTS}{LINE VOLTAGE \times 1.73}$$

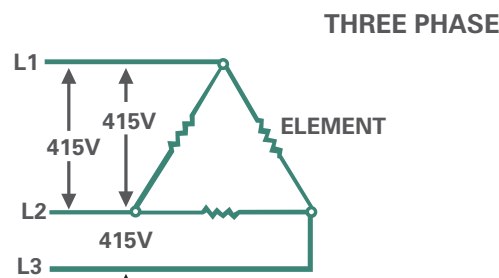
The following load calculations and recommended operating ranges are based on standard 750 F entering air (comforting heating) Consult factory for other applications.

- Conversion 1 Kw = 3413 BTU
- Load Requirement Kw = (cubic feet per min x Temperature to rise) / 3193
- Ohm's Law Watts = (Volts)² / Resistance = volts x Amps
- Line Current, 1 Phase : Amps = Watts / Volts
- Line Current, 3 Phase: Amps = Watts / (Volts x 1.73)
- Pressure Drop Inches = H₂O = [(Kw / Ft²) / 760] x [velocity in F.P.M / 500/2]
- C.F.M / F.P.M Velocity VEL. / FPM CFM / (Duct Area / Ft.²)
- Relationship Kw per Sq. Ft. Kw / Sq. Ft. Kw / [(Duct width (inches) x Duct Height (Inches) / 144]

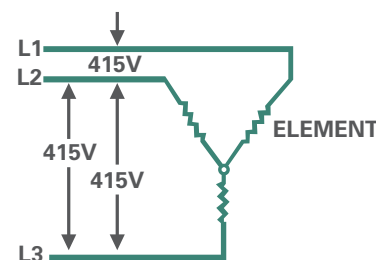
Heating Element Wiring Configurations



Element Voltage = Line Voltage



THREE WIRE "DELTA" CONNECTION
 1. Element Voltage = Line Voltage
 2. Phase Currents In = L1 = L2 = L3



THREE WIRE STAR CONNECTION
 1. Element Voltage = $\frac{\text{Line Voltage}}{1.73}$
 2. Phase Currents In = L1 = L2 = L3

VAV Heaters

Application

- Eliminate excess humidity
- Cleaning air from smoke / pets.
- Rise in Temperature
- Offices
- Workshops
- Lobbies
- Bath Rooms
- Bed Rooms
- Nurseries
- Garages
- Under Floor



Features

- Modulating Controller
- Maintaining the Air flow
- Compact Design
- Silent Operations
- Washable Air Filters
- Prevent Air stratifications
- Insulation outside
- Individuals room temp. Controller

Consisting

- Mineral filled finned tubular heating/open type elements
- Filters
- Thermostat (Auto)
- Thermal Cutout(Manual)
- Air Fan Motor Propeller type.
- Insulation
- Sensors

Cat. No	CFM	Capacity	Voltage	Coller Size (inches)	Size (Inches)
DVA-03	100	3.0 Kw	415V / 3 PH / AC / 50 Hz	6	18 x 9 x 9
DVA-06	300	6.0 Kw	415V / 3 PH / AC / 50 Hz	9	30 x 15 x 15
DVA-09	600	9.0 K	415V / 3 PH / AC / 50 Hz	12	36 x 18 x 18
DVA-12	600	12.0 Kw	415V / 3 PH / AC / 50 Hz	12	42 x 18 x 18

Finned Strip Heaters (FSH)



FSH

Application

Air-conditioning, Stoving Paints, Textiles, Leather Drying Chambers, Heating – Arrangements.

Technical Data

Generally available from 0.5 Kw to 3.5 Kw, 240 Volts / AC / 50 Hz / Single Phase, Operates upto 4000F Spl. Heater can also be made according to specification.

Construction

Are made of Stainless Steel, GP Sheathing having the heat resistance Chrome nickel 80/20 element coil protected under the best insulation to avoid the leakage of current and to ensure the long life of the heaters. Finns *(3" x 1.5"), ** (3.5" x 1.5") which increase the output of heat to the maximum dissipation and having screw type terminals on one end for proper connection.

Installation

Within forced air only in horizontal position

Cat. No	Watts	Total length Inches	Hole to Hole Distance Inches
*FSH 05	500	12	10.25
*FSH 07	750	12	10.25
*FSH 10	1000	18	16.25
*FSH 15	1500	18	16.25
*FSH 20	2000	29	27.25
*FSH 25	2500	33.50	32.75
*FSH 30	3000	33.50	32.75
**FSH 30+	3000	33.50	32.75
**FSH 35	3500	33.50	32.75

Double Tube Type (DTA)

Technical Data

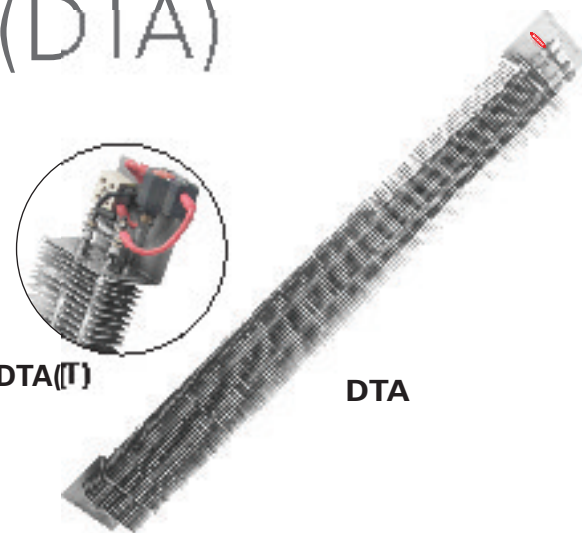
Generally available from 1.5 Kw to 4.0 Kw, 230 Volts / AC / 50 Hz / Single Phase, Operates upto 5500 F . Two L-clamps are provided on both ends of heaters for proper installation.

Construction

Finned Air Heaters are consisting of two tubular mineral filled incoloy-800/stainless steel – 321 sheathed elements dia 8 mm, in one unit G.P. Finns (3.5" x 1.5") are provided for quick dissipation of heat. It can be installed in any position as per space requirements. Its 50% wattage can be utilized if required. Its special feature – maximum wattage in minimum space.

Installation

Within forced air with Thermostat (Optional) in any position



DTA(T)

DTA

Cat. No	Watts	Total length Inches	Hole to Hole Distance Inches
DTA -15	1500	12	10.25
DTA -20	2000	18	16.25
DTA -20+	2000	29	27.25
DTA -30	3000	24	22.25
DTA -30+	3000	33.5	32.75
DTA -40	4000	36	34.25

Pan Type (Steam) Humidifiers



Application Uses

Industrial humidifiers are used when a specific humidity level must be maintained to prevent static electricity build-up, preserve material properties and ensure a comfortable and healthy environment in Halls / Industry / Residence. Static problems are prevalent in industries such as Packaging, printing, paper, plastics, textiles, electronics, automotive manufacturing and pharmaceuticals. Friction can produce static build-up and sparks when humidity is below 45% relative humidity (RH). Between 45% and 55% RH, static builds up at reduced levels, while humidity above 55% RH ensures that static will never build up. The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) has traditionally recommended a range of 45-55% RH in data centers to prevent sparks that can damage IT equipment. Humidifiers are also used by manufacturers of semiconductors and in hospital operating rooms. Printers and paper manufacturers use humidifiers to prevent shrinkage and paper curl. Humidifiers are needed in cold storage rooms to preserve the freshness of food against the dryness caused by cold temperatures. Art museums use humidifiers to protect sensitive works of art, especially in exhibition galleries, where ever they combat the dryness caused by heating for the comfort of visitors during winter.

Notice of Safety

Potentially hazardous situation, if mishandling, may result in death or serious injury

- Disconnect of All sources of supply before servicing.
- See Wiring Diagram on Cover, for required supply sue copper conductor.
- Ensure the Unit properly earthed.
- Water flow to the Humidifiers must be free from particulars, gaps.
- The Humidifiers are not approved for outdoor use.
- If the Humidifier stops functioning, check the controller like thermostat / thermal cutout / which are installed in series.
- The elements can be replaced through nipples brazed on both ends of elements.
- Terminal box should be closed.

K.W.	L	H	D
3 Kw to 6 Kw	22" + 5"	12"	12"
7Kw to 9 Kw	26" + 5"	14"	14"
10Kw to 12 Kw	26" + 5"	15"	15"
13 Kw to 18 Kw	29" + 5"	18"	14"

Hot Air Blowers

Applications

- Incubation rooms
- Poultry farms
- Drying of engine components after washing
- Drying of match sticks
- Curd from milk
- Canteens
- Drying papers after printing
- Drying Paint of motor Vehicles
- Drying of Corrugation Paper after paste
- Ware Houses Etc.

Standard Control Panel

- Main Switch L & or Equivalent
- Magnetic Contractor L & T or Equivalent
- Disconnect Switch
- Indicators
- Primary Thermostat
- Secondary Thermal Cut-out
- 4 Legs with Moving Wheels
- Factory Internal wiring with best quality copper conductor, fiber wire, lugs etc.
- Glanding / Earthing Etc.
- Supply 415V/3PH/AC/50Hz



Tests

- Visual
- Input
- High Voltage
- Insulation Resistance as per IS 302

Available Models

- Type HAB (Daspass Air Blower Heaters)
- Type HAU (Daspass Air Blower Heaters)

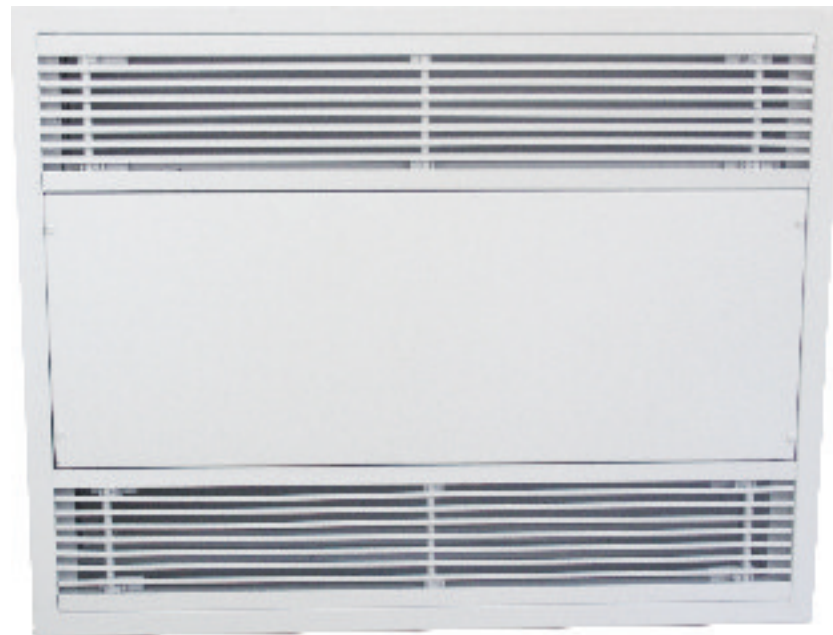
Technical Specifications

- The Electric Finned air Elements, Blower, electric motor.
- All equipments are totally installed in box type unit
- The units are moving grill on front side.
- The units are wire gurads on rear side.

Cat. No	Specifications	CMH	RPM	Approx. Temp. Rise
HAB06	6.0 Kw / 415V-3PH-AC-50Hz	2450	900	06°
HAB09	9.0 Kw / 415V-3PH-AC-50Hz	2450	900	13°
HAB12	12.0 Kw / 415V-3PH-AC-50Hz	2450	900	15°
HAB18	18.0 Kw / 415V-3PH-AC-50Hz	2450	900	20°
HAB24	24 Kw / 415V-3PH-AC-50Hz	2450	900	30°
HAB30	30 Kw / 415V-3PH-AC-50Hz	2450	900	40°

Note: Custom-Built Heaters upto 600° C undertaking

Cabin Heaters



HAC

Applications:

- Reception Areas
- Lobbies
- Corridors
- Entranceways
- Stairways
- Offices

Features:

- Architectural style bar grilles can be field relocated for top/bottom inlet/out arrangements Direct drive blower wheel connection.
- Thermal limit switch for safety shut-off.
- Time delay relay utilize residual heat before shut-off.
- Flexible mounting Options

Specifications

Voltage	:	240, 440, 415, 600V – 1/3 Phase
Wattage	:	2 Kw to 18 Kw
Airflow	:	32" Unit – 250/200 CFM 45" Unit - 500/400 CFM 65" Unit – 750/600 CFM
Color	:	White and Almond (As per customer requirement)
Construction	:	All panels are fabricated with 16 swg steel. Cabinet grilles can be field relocated and are shipped standard as front inlet/outlet.
Heating Element	:	Spiral fins provide maximum heating surface and maximum heat transfer at a safe temperature level. Overheat protection is provided by means of a linear type thermal limit switch.

Wall Heaters



HAW

Applications:

- Food Processing Plants
- Marine and offshore
- Wastewater treatment plants
- Dairies
- Cement plants
- Car washes
- Power generating stations
- Coal handling areas
- Swimming Pools

Specifications

Voltage	:	240, 440, 415, 600V – 1/3 Phase
Wattage	:	2 Kw to 45 Kw
Color	:	White and Almond (As per customer requirement)
Finish	:	Cabinet is coated with a hybrid polyester epoxy power coat print.
Construction	:	16 swg corrosion resistance housing with adjustable louvers to direct airflow up, down left or right.
Heating Element	:	The heating element has a totally enclosed nickel chromium resistance element within steel sheathing, brazed with spiral steel fins for maximum heat transfer.
Discharge	:	Horizontal
Airflow / CFM	:	700 to 2400
Controls & Wiring	:	Automatic reset over temperature cutout, fan delay relay, controlling contactor, transformer for 24V control circuit, terminal block for field wiring and separate motor contactor.
Mounting	:	Comes with swivel mounting bracket for wall or ceiling installation.

Features:

- All the necessary safety and temperature controls are built-in to a single package
- Components and motor are factory-wired to a single terminal Specially formed concentric Finned Elements yield maximum heat transfer
- Heater, fan motor and controls are all connected at the same branch circuit.
- Epoxy-coated construction & Fanblade.

Industrial Unit Heaters



HAT

Applications:

- Shipping Areas
- Receiving Areas
- Warehouses
- Storage Areas
- Garages

Features:

- Built-in adjustable thermostat on models upto and including 12 Kw
- Ceiling hanger bracket included, optional wall bracket available (allows swivel movement).
- Five-way adjustable louvers to direct airflow.

Specifications

- Voltage : 240, 440, 415, 600V – 1/3 Phase
- Wattage : 3 Kw to 12 Kw
- Color : White and Almond (As per customer requirement)
- Finish : Cabinet is coated with a hybrid polyester epoxy power coat print.
- Construction : The cabinet is constructed of 18 swg die formed steel. The units have individual adjustable 20 swg convex profile air directing louvers. The louvers are friction fastened to a single piece frame to prevent movement, once adjusted to the desired position.
- Heating Element : The heating element has a metal tubular sheath fused with spiral steel finns. The heating element contains a high quality nickel chromium wire, encased in solidly packed magnesium oxide insulation.
- Motor & Fan : The fan size and pitch is matched to the power and speed of the unit, to optimize CFM, airflow, temperature rise, and quietness. The motor is heavy duty, continuous operation, totally enclosed, thermally protected with permanently lubricated ball bearing.
- Controls & Wiring : A jumper is provided to disable built-in-thermostats when remote thermostats are required. Summer fan control and low voltage control options are field installed.

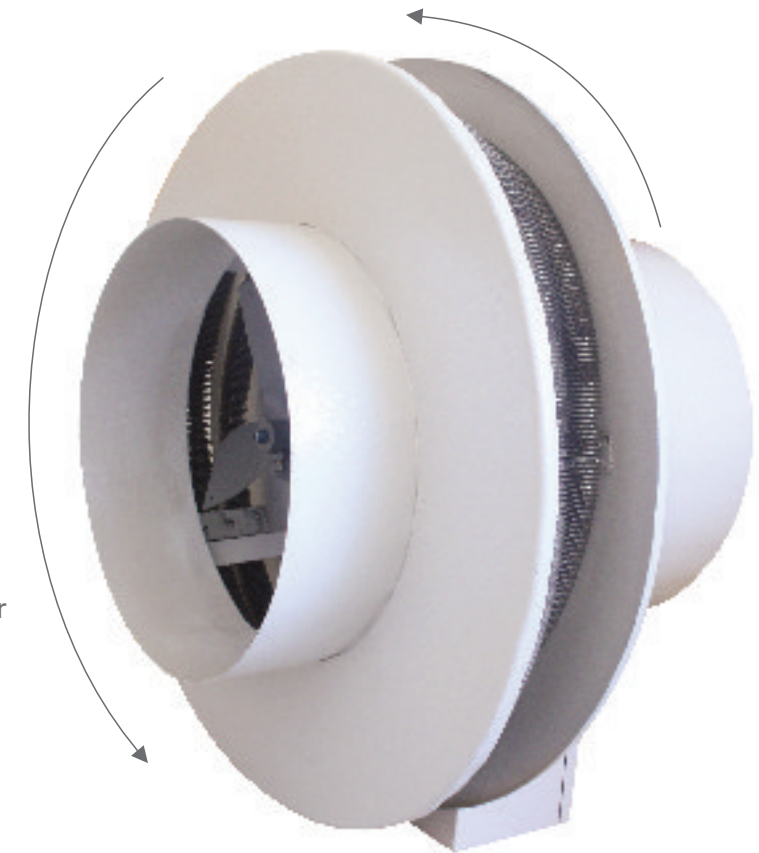
Ceiling Heaters

Applications:

- High bay Buildings
- Shipping Areas
- Warehouses
- Garages
- Shopping Centers

Features:

- Specially formed concentric Finned Elements yield maximum heat transfer
- Fan Only operation circulates ceiling level heat.
- Choice of diffusers for various airflow options.



HAR

Specifications

- Voltage : 240, 440, 415, 600V – 1/3 Phase
- Wattage : 5 Kw to 50 Kw
- Color : White and Almond (As per customer requirement)
- Finish : Cabinet is coated with a hybrid polyester epoxy power coat print.
- Fan & Motor : The motor is a heavy duty permanently lubricated ball bearing type mounted on resilient base to absorb vibration. The fan is a propeller type, accurately balanced and correctly pitched for each individual unit.
- Heating Element : The heating element has a totally enclosed nickel chromium resistance element within steel sheathing, brazed with spiral steel fins for maximum heat transfer.

Construction Heaters

Applications

Electric Heaters are ideal for construction sites where no gas is available for where flameless operations are required. Because they do not produce combustion emissions, DEHC-Series heaters can work well in confined spaces. Electric heat requires accessibility to high voltage and high amperage power:

Features

- Temperature controls provide precise discharge temperatures.
- Built-in circuit breaker



HFM

Cabin Heaters

Applications

Control Cabin. Travelling Cranes. Guard Houses. Ships. Site Offices. Excavators. Warehouses etc.

Cabin heaters have a further application in large switchrooms, generator houses and control centres as anti-condensation heaters-minimising the risk of electrical leakage and flashover.



DCH (W)



DCH (F)

Model No.	Voltage	Rating	Thermostat
DCH-F/05 DCH-W/05	240V	500W	30-120°C
DCH-F/1.0 DCH-W/1.0	240V	1000W	30-120°C
DCH-F/1.5 DCH-W/1.5	240V	1500W	30-120°C

Drain Pipe Defrost Heaters

Applications

- Refrigerators
- Warehouses
- Cold stores
- Road Defrosting Deep Freezers

Characteristics

- Complete with water proof design
- Double layer insulation
- Mould pressing knot, flexibility
- Silicon rubber insulation applicable scope : 600C to 2000C



DPDH

Characteristics & Features

- Good temperature resistance.
- The whole body uses silicon rubber as the insulation heat conduction material (including power cord), and work environment temperature is 600 to 2000 C
- Good Heat conducting Property
- Generate heat energy by passing to directly conduct heat, high thermal efficiency, capable of heating in short time to achieve the effect.
- Reliable Electrical property
- Firm structure, flexibility and easy bending
- Combine the whole cooling end section, no binding point. Rational structure, easy installation.
- Strong design ability
- Heating length, lead wire length, rated voltage and power are determined by users.

Parallel Constant Power wire Heaters



DHF

Applications Field

- Ground Heating of Buildings
- Refrigerators and warehouses
- Chute Heating
- Gutter and roof defrosting

Characteristics & Features

The whole body uses silicon rubber as the insulation heat conduction material (including power cord), and work environment temperature is 600 to 2000 C

- Good Heat conducting Property
- Generate heat energy by passing to directly conduct heat, high thermal efficiency, capable of heating in short time to achieve the effect.
- Reliable Electrical property
- Firm structure, flexibility and easy bending
- Combine the whole cooling end section, no binding point. Rational structure, easy installation.
- Strong design ability
- Heating length, lead wire length, rated voltage and power are determined by users.
- Other test to ensure quality

Product Structure

- Heating Wires are two tinned copper wires with section of 75 m2.
- Isolated layer is made of silicon rubber by extrusion
- High strength alloy wire spiral and silicon rubber surface are the heating centre
- Airtight cladding made by extrusion method

Product Specifications:

The voltage 36V-240V is determined by the user.

- 25 W / m, Withstand voltage AC 3500V, use longest limit 65 mtr.
- 40 W / m, Withstand voltage AC 3500V, use longest limit 50 mtr.
- 50 W / m, Withstand voltage AC 3500V, use longest limit 44 mtr.

Defrost Heaters

Heat Tracer



DH

Applications Field

- Cold Storage doors
- Drain Pipes Etc.

Technical Data

- Available in Standard lengths of 3,5,6,11 & 25 Mtr.
- 110, 230V / AC / 50 Hz

Type

- Single Side Connection 45 W / mtr.
- Double Side Connection 25 W / mtr.

Construction

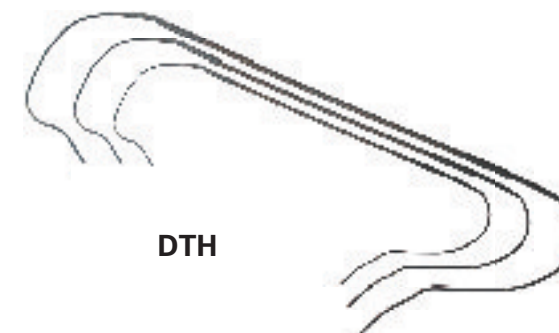
- The element of Nickle 80/20 is wrapped on fiber thread then insulated by Teflon coating and then braided by stainless steel wire

Tubular Type Defrost Heaters

For Trays, cooling & condensing coils, refrigerators, Deep Freezers Etc. Both ends of heaters are sealed with silicon leads for connection available in different shapes, watts, & Sheathing.



DTH



DTH

Working Condition

- Max. Rating voltage 250V / 50-60 Hz, Relevant Humidity < 90%
- Power Tolerance : < 5%
- Insulation Resistance (Immersion, Under Normal Temp) : > 100 mΩ
- Insulation Strength (Immersion , Under Normal Temp) : 1500V 1 min no checkmate and flash
- Leaking Electric Current (Immersion, Under Normal Temp) : < 0.02 mA / meter
- Terminal Connecting Strength : 58.5N 1 min no abnormality
- Tube Diameter keeping Rate When Bended : > 85%
- Overload Test : 1.15 times of rated voltage
- Tube Size : Diameter 4.5 or 6.35 mm

Air-conditioning Compressor Crankcase Heaters

Function & Introduction

- When the air conditioner is used under severe cold condition, driver engine oil inside can condense, and affect the normal starting of the unit. The heating belt can promote to thermalize engine oil, and help the unit to be started normally.
- It can protect compressor from being damaged in the starting in cold winter, and prolongs the service life. In cold winter, engine oil condenses, hard friction can generate in starting, and may cause damages.

Applications Range

Cabinet Refrigeration units / low Temp. Refrigeration Units.

- Wall – Mounted Air conditioners
- Window Air conditioners

Technical Parameters:

- Continuous max Use Temperature : 250 Deg C,
- Minimum Ambient Temperature : 40 DEG C below Zero.
- Max Surface Power Density : 2W / cm²
- Min Making Thickness : 0.5 mm

Tests

- Voltage : 230V / 1 PH / AC / 50 Hz
- High Voltage : Withstand >5KV
- Insulation Resistance : > 10M-2
- Power Input : + 5%
- Other Test to ensure quality



Characteristics & Features

- Random bending and winding according to the demand of to be heated component, small occupied space and volume.
- Simple and fast installation mode
- Sleeve silicon rubber insulator on heating body
- Tin copper braided layer can prevent machine from being damaged, and conduct electric power to the ground
- Moisture resistance entirely
- Customize according to the required length
- Core cold tail end.

Crank Case Heaters For A/C Compressors

Are made from Brass/ Stainless Steel/ Special Steel and used to heat oil in various makes of following Air Conditioning Compressors. Kirlaskar, Frick, York, Voltas, K.G. Khosla, Carrier Trane, Copeland Etc. Some of Them are having flanges for fixing in Compressors. Some heaters have provision for Thermostat and operated at 230V. AC 50Hz.

Cat. No	Watts	Cat. No	Watts	Cat. No	Watts
CC-07	75	ES-10	100	KC-10	100
CC-10	100	ES-20	200	KC-20	200
CC-20	200	ES-30	300	FC-50	500



Industrial Water Immersion Heaters

Made our of copper tube brazed to brass flange and duly nickel plated.

Caution: All industrial water Immersion Heaters are meant for heating water only and these must be fully immersed in water before putting them in operation.

Cat. No	Watts	Volts	Brass Flange BSPP	Dept. Of Immersion (mm)
IWI-20	2000	230	1 1/2"	220
IWI-20+	2000	230	1 1/2"	220
IWI-30	3000	230 / 415	1 1/2"	280
IWI-30+	3000	230 / 415	1 1/2"	220
IWI-30++	3000	230 / 415	2"	220
IWI-40	4000	230 / 415	2"	260
IWI-50	5000	230 / 415	2"	320
IWI-60	6000	230 / 415	2"	380
IWI-75	7500	230 / 415	2"	470
IWI-90	9000	230 / 415	2"	610
IWI-120	12000	230 / 415	2"	710



Industrial Water Immersion Heaters For Hot Water Generators



Elements are made from INC / Stainless Steel / Copper Sheathing. Brazed with M.S. Flanges suitable for mating Flange. Elements are designed for 70 watts / sq inch maximum. Available in different wattage from 5 kw to 300 Kw – 230/440V / AC / 50 Hz .

Immersion & Chemical Heaters



ALI/LCI/CIT

Daspass Over The Side Alkaline/ Lead Covered/ Chemical Immersion Heaters

FOR ALL:- These Heaters are used for alkaline cleaning solution, citrus juices and very mild acid bath not corrosive to stainless steel sheet.

FOR LCI:- These heaters are recommended for nickle, copper or chrome, plating baths and sulphuric acid solution having not more than 10% concentration. Caution. These heaters are not recommended for any other acid.

FOR CIT:- These heaters are recommended for plating baths such nickels, chorme, gold, silver including ferric and iron chloride solution bright dips and nickels containing, nitric, Phosphoric and chromic acids, permagenates, persulphats. Supply voltage 230v/1Ph. /AC/50Hz

Sr.No.	Cat No.	Watts	Total Length	Effective Length	Cold Length
345	ALI 20	(2000)	525	335	200
346	ALI 30	(3000)	685	385	300
347	LCI 20	(2000)	625	335	200
348	LCI 30	(3000)	685	385	300
349	CIT 20	(2000)	525	335	200
350	CIT 30	(3000)	685	385	300

Industrial Oil Immersion Heaters

Manufactured out of special steel tube with auto black coating brazed to M.S. Flange provided with thermostat pocket. Used for fuel oil heating, oil circulating, oil jacketing etc.

Caution: To be fully immersed in oil before putting in operation

Cat. No	Watts	Volts	M.S. Flange BSPP	Dept. Of Immersion (mm)
OLI-20	2000	230	2 ½"	440
OLI-30	3000	230 / 415	2 ½"	440
OLI-40	4000	230 / 415	2 ½"	580
OLI-50	5000	230 / 415	2 ½"	600
OLI-60	6000	230 / 415	2 ½"	650
OLI-90	9000	230 / 415	2 ½"	650
OLI-120	12000	230 / 415	2 ½"	760



OLI

Tubular Heating Elements (Air)

Air heaters are manufactured out of S.S. 304/316L/321/INC sheathed tube for higher temperature upto 600 C. Each heating element is made of NiCr 80/20 resistance wires. Each element is provided with two adjustable fixing arrangements. Tube diameter varies from 8.0mm to 15mm

Fins of S.S./G.I. are provided to enlarge the heat surface.

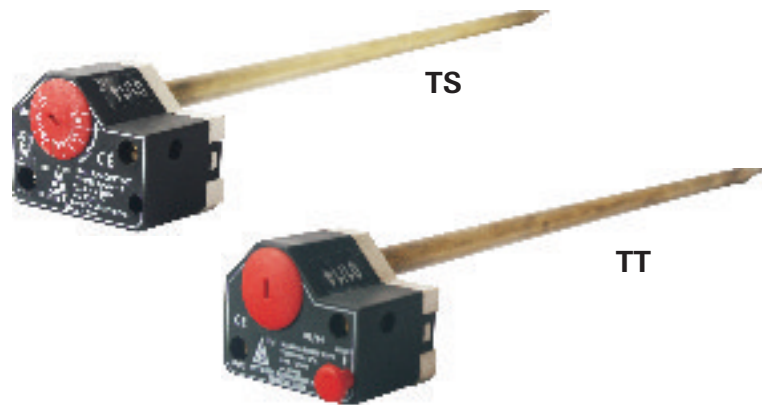
Supply Voltage varies from 74V to 240V/AC/1PH/50-60Hz

Cat. No	Watts	Length (mm)	Width (mm)	Height (mm)
FAU / AHU-05	500	254	55	40
FAH / AHU-07	750	450	55	40
FAH / AHU-10	1000	610	55	40
FAH / AHU-10+	1000	762	55	40
FAH /AHU-15	1500	762	55	40
FAH / AHU-15+	1500	990	55	40
FAH / AHU-20	2000	990	55	40



Thermostats

Thermostats Cutout



Applications

- Thermostats are ideal for temperature control of Electric Geysers, Boilers, Ovens, Panel Boards, Air Handling Units Etc.

Construction

- The micro gap switch assembly is mounted on a heat resistance base, with rigid brass pillar terminals. Heavy duty contacts are provided for long trouble free life. A thermosetting cover with clear and precise graduations is provided along with a setting knob. Thermostat can be fixed in any position.
- These are available in standard stem lengths of 7" (175 mm) / 230 Volts and 11" (275 mm) / 230 Volts, 18" (457 mm) / 230 Volts, on the operational load of 20 amps. Also available in 110 V & 415 V

Principal of Operation

- With temp rise, the principal of differential expansion of brass tube and a Nickel / Iron (Invar) Rod is used to actuate a highly accurate snap action micro gap switch located in the head which makes it keep the temperature constant within the differential i.e. A single pole, single throw, normally closed circuit breaks (opens) on rise of temperature.



Features:

Combistat control and safety function Patented MFS technology or traditional bimetal for independent non self resetting safety option Direct plug-in to heating element to reduce wiring and mounting costs Tamper proof housing Factory pre-set fixed temperature, OEM adjustable or end-user adjustable temperature Multiple control knob options connection for signal lamp.

Description:

Water, Geyser Heating Elements 1.5,2.0, 3.0, 4.5 Kw, at 230V/1PH/AC/50 Hz in different brass flanges with / without thermostat pockets, Heavy Copper sheathed with Nickel Plated.



Combistat

Description:

Combistat with single pole stem control and double pole safety limiter

Operation

The differential expansion of the sensing element causes the opening of a snap-action switch in the thermostat head. In case of abnormal temperature rise, the patented MFS technology in the stem or traditional bimetal ensures double pole safety. The limiter is manually resettable.

Heating Films

Applications

Heating Films are concerted for walls and floor heating, they can be used in following : -
Restaurants

- Hotels
- Houses
- Balcony
- Religious places
- Parking lots
- Dormitory
- Offices
- Step roads
- Apartments
- Swimming pools
- Nursing homes Etc.

Features

- Economical : Fast Installation, Cost & Space Saving Uniform heat dissipation
- Health full : Far infrared rays & negative ions, clean Electric energy
- Effective : Fast & Concentrated floor heating, partial operating
- Energy Saver : Save Energy cost as much as 30-60% compared with conventional heating system

Easy Installation

- Does not need water boiler piping construction.
- No Need of better room
- Good for partial heating or remodeling
- Water – proof coating for safe use.
- Installation is very simple with a 0.33 mm thin film
- Construction time can be significantly decreased
- Light weight & convenient to handle

Classification	Specification
Film Size (Width in mm)	500, 630, 800
Wattage	220 watt / m ² (Adjustable)
Voltage	220V / 50 Hz or 100V (Adjustable)
Operating Temp.	40 degree C to 80 degree C



Healthy

- Far Infrared ray radiation-3.49x10² watt / m²
- Anion radiation-more than 500 (ions/cc)
- The control of electromagnetic waves generation
- High anti-bacteria effect with nano-silver tech
- Applied to high temp. Under floor heating system
Good for the student who in need far infrared ray without quake & noise.
- Anion helps the recovery of patient after surgery
- There is on ventilation with heating no consumption, no smell, clean cozy heating system.

Safety

- It does not exceed the default highest temp.
- The distribution of temperature is even, therefore, no particle overheating though heated area may be partially damaged.
- Long life span is ensured.
- There are two sensors in the temperature controller
- One in for temperature adjusting & the other is for preventing over heating
- In the case of electricity leakage or an excess current breaker will cut the circuit.

Drum - Jacket Heaters



Heating Schemes:

- System uses silicon rubber heater and is added heat insulation sleeve in outside. When heating, it is divided into three sections of control : upper, middle and lower to ensure cylinder temperature uniformity. RDB silicon rubber heater can be used for pipes, tanks, cabinets, boxes and insulation.

Heater's main technical parameters:

- Rated Voltage : 220V
- Dielectric Strength : 2000V / min
- Insulation Resistance : > 50 M ohms
- Insulating Material (Silicon rubber) resist temperature : 600 C + 2500 C

Heat-jacket container's heat control system's design calculation: -

Known Conditions and system requirements

Nh3 Max. Flow rate : 150SLM (ammonia physical properties : $\rho=0.780\text{g/l}$, below in 00 C)

Latent heat of vaporization $r = 1263.2\text{KJ / kg}$, heat cp 11 = 4.8kj / Kg)

Heating requirements: At-100 Ambient temperature, enable cylinder's temperature upto 250 C, required time < 10 hours

Insulation requirements: 25 + 50 C

Cylinder Capacity: 440 (L)

Weight of liquid ammonia: 230 Kg

Cylinder weight : 550 Kg

Coefficient thermal conductivity 22 (W / 0 C)

Characteristics:

- Using Nichrome wires as heating element have advantage of heating fast, high thermal efficiency, long service time.
- Moisture – Proof Silicone rubber and E-glass fiber enable heaters double insulation and more reliable insulativity.
- Aluminium pad assist heating and cooling, improve heater's thermal efficiency, and extend its service life.
- Easy installation with inbuilt Thermostat

Drum Trolley Heaters

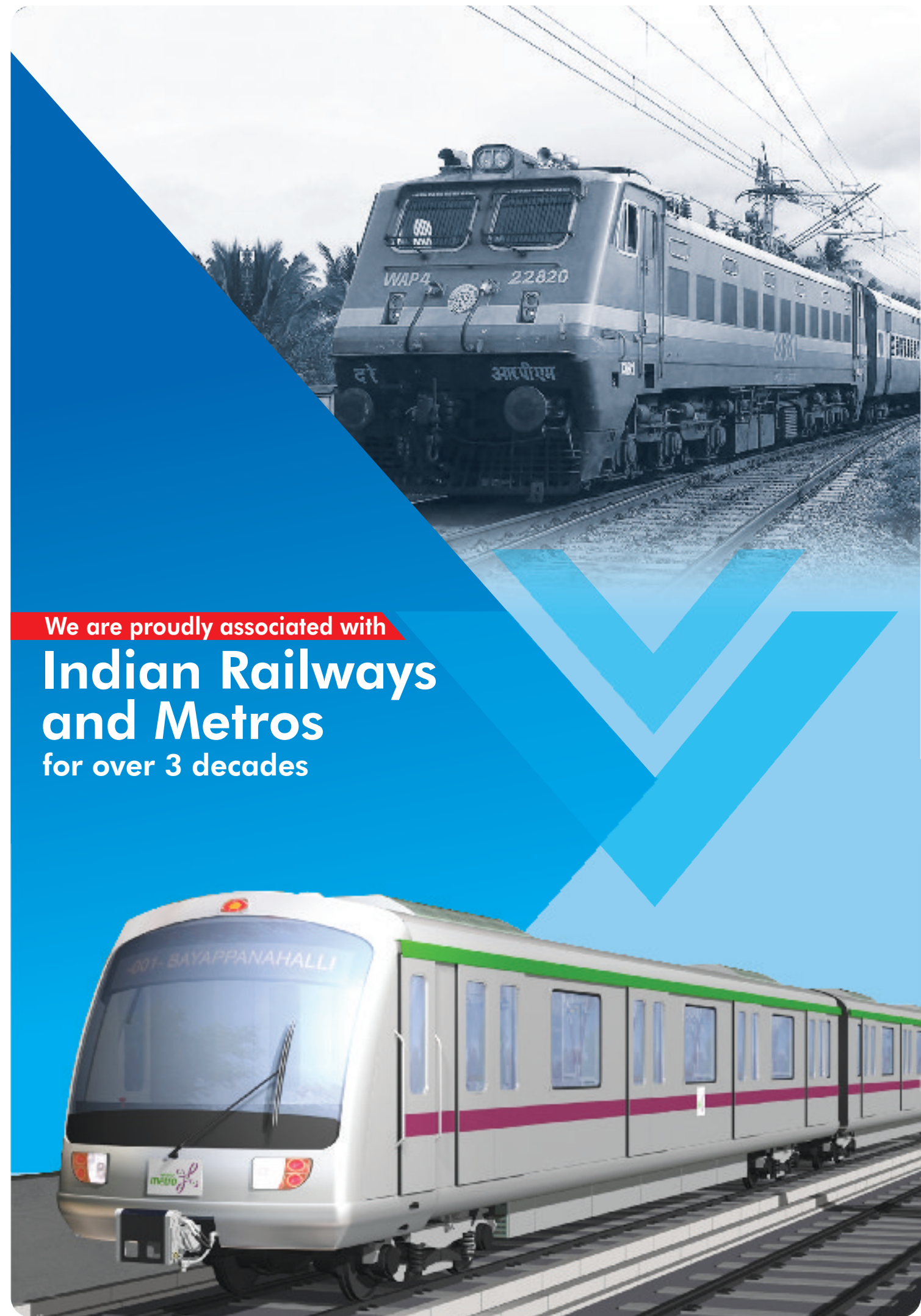
Daspass radiant drum heater has been designed to overcome the problem to handling heating 45 gallon drums containing oil, wax, resin, fats, food products or chemicals. The specially unit is mobile, being fitted with four Castor wheels with Optional brake feature. the 6kw heating unit consists of INC SS.321 sheathed heating elements which are located within a polished aluminum reflector. The elements are controlled by a switch. Other safety featured incorporated in the design of the unit include a wire mesh elements guard, a mains-on neon warning light and drain holes in the polished aluminum reflector to cope with accidental spillage.

The radiant heating unit can be supplied separately or complete with the welded, tubular stand. Standard units are available for operation on 230/415 volts, 50Hz AC/DC, Electricity Supply



Note :

This unit should not be used for heating drums containing highly inflammable liquids.



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