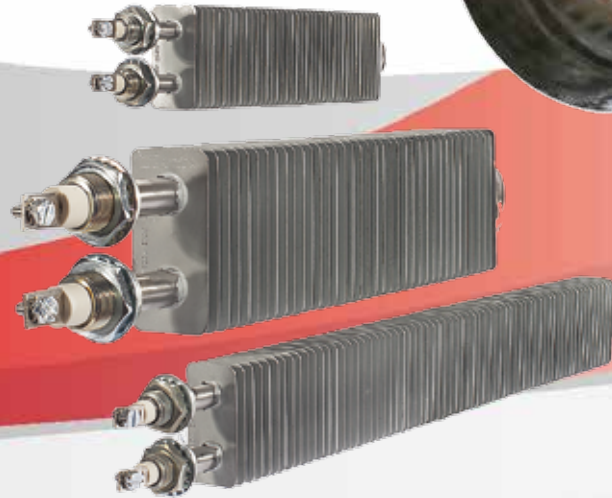


For all your standard
air heating applications



Fin heaters
page 2-5



Industrial convectors
page 6-9

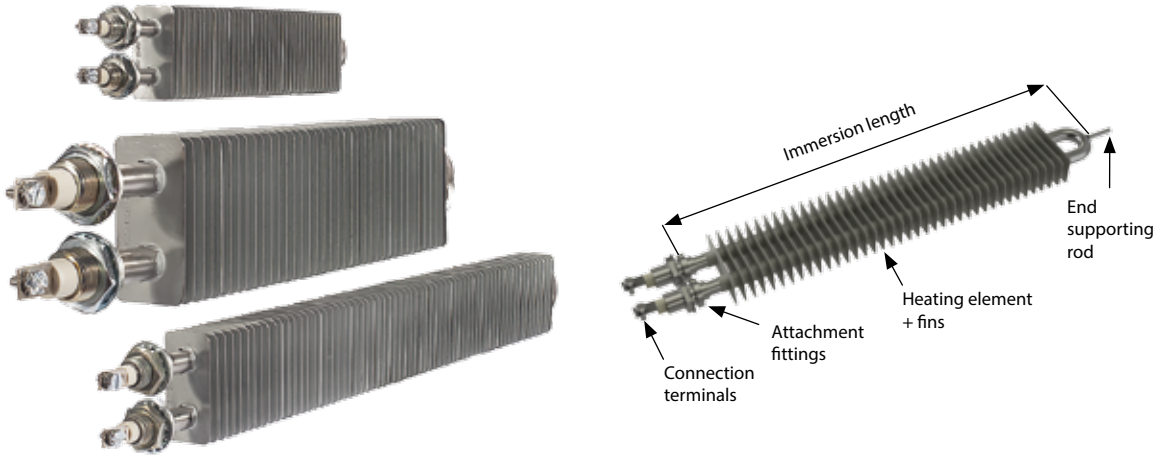


Duct heaters
page 10-14



Rectangular fin heaters

A-R8 model
A-R10 model
A-R16 model



- Tubular heating elements in AISI 321 stainless steel equipped with zinc-coated fins
- Mounting with crimped steel connector
- U-shaped terminals
- Well-designed for premises air heating or gas heating in natural or forced circulation
- Max. sheath tube temperature:
 - 350°C for steel fins
 - 600°C for stainless steel fins (option)
- Used for example in duct heaters

A-R8 model: 8.5 mm diameter, 230 V, 25 x 50 fins

| Ref. | Immersion length (mm) | Power (W) | Weight (kg) |
|---------|-----------------------|-----------|-------------|
| A-R8-02 | 140 | 200 | 0.25 |
| A-R8-05 | 250 | 500 | 0.45 |
| A-R8-07 | 350 | 750 | 0.6 |
| A-R8-10 | 450 | 1000 | 0.75 |
| A-R8-15 | 650 | 1500 | 1.05 |
| A-R8-20 | 850 | 2000 | 1.35 |

AR-10 model: 10 mm diameter, 230 V, 25 x 50 fins

| Ref. | Immersion length (mm) | Power (W) | Weight (kg) |
|----------|-----------------------|-----------|-------------|
| A-R10-05 | 225 | 500 | 0.4 |
| A-R10-07 | 325 | 750 | 0.55 |
| A-R10-10 | 425 | 1000 | 0.77 |
| A-R10-15 | 620 | 1500 | 1. |
| A-R10-20 | 810 | 2000 | 1.35 |
| A-R10-30 | 1305 | 3000 | 2.1 |

Rectangular fin heaters

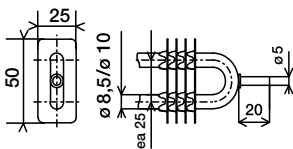
Model A-R16: 16 mm diameter, 230 V, 40 x 80 fins

| Ref. | Immersion length (mm) | Power (W) | Weight (kg) |
|----------|-----------------------|-----------|-------------|
| A-R16-10 | 290 | 1000 | 1.1 |
| A-R16-12 | 340 | 1250 | 1.3 |
| A-R16-15 | 390 | 1500 | 1.5 |
| A-R16-17 | 440 | 1750 | 1.7 |
| A-R16-20 | 490 | 2000 | 1.85 |
| A-R16-25 | 590 | 2500 | 2.25 |
| A-R16-30 | 690 | 3000 | 2.65 |
| A-R16-35 | 790 | 3500 | 3.05 |
| A-R16-40 | 890 | 4000 | 3.4 |
| A-R16-45 | 990 | 4500 | 3.75 |
| A-R16-50 | 1090 | 5000 | 4.2 |
| A-R16-60 | 1290 | 6000 | 5.25 |
| A-R16-80 | 1690 | 8000* | 6.3 |

* 400 V

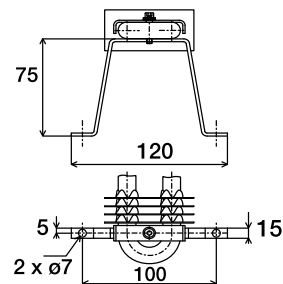
Accessories for A-R8/10

End supporting rod in stainless steel
SEAR8 / SEAR10



End supporting rod used for horizontal mounting in duct heaters

Supporting kit
JSAR8 / JSAR10



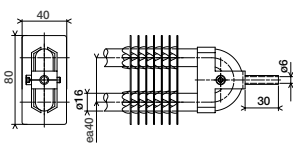
Connection box + supporting rods in stainless steel, particularly suitable for small convectors (air conditioning) or defrosting for cabinets.

Connection box with PE13 cable gland
ORPMA



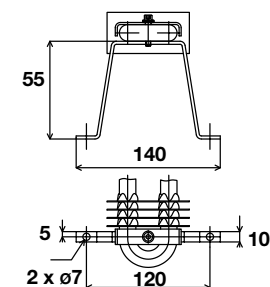
Accessories for A-R16

End supporting rod in steel
SEAR16



End supporting rod used for horizontal mounting in duct heaters

Supporting kit
JSAR16



Connection box + supporting rods in stainless steel, particularly suitable for small convectors (air conditioning) or defrosting for cabinets.

Connection box with PE16 cable gland
ORGMA



Round fins

AHA model
AHB model
AHC model



General characteristics

- Shielded heating elements in AISI 304 of Ø10 mm.
- Stainless steel AISI 430 fin of Ø26 mm outer diameter
- Ni-Cr alloy resistive wire
- Zinc steel M14 crimped connectors
- Sealed with silicone (up to 200 °C on continuous)
- Threaded connection of M4 or M6 depending on models.
- Standard voltage ~230 V

Options

- All stainless steel
- Spiral fin:
 - * For Ø8 mm pipe: stainless steel finning → Ø18, Ø24 iron finning → Ø23
 - * For Ø10 mm pipe: stainless steel finning → Ø20, Ø26, Ø30 iron finning → Ø25, Ø30
- Other dimensions, wattages and voltages available on request

Usual applications

To heat forced circulation air for heating premises, closed drying circuits in heaters, charge benches, etc.

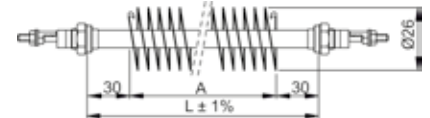
In general, for any application of forced air heating up to 200°C (Maximum temperature with $v_{air} = 4$ m/sec → 200 °C).

Round fins

AHA model

| Ref. | Length L | Active zone A | Power (W) | W/cm ² | Weight (kg) |
|---------|-------------|------------------|-----------|-------------------|----------------|
| AHA1000 | 470 | 410 | 1000 | 8.1 | 0.28 |
| AHA2000 | 900 | 840 | 2000 | 7.7 | 0.53 |
| AHA3000 | 1320 | 1260 | 3000 | 7.7 | 0.78 |
| AHA4000 | 1750 | 1690 | 4000 | 7.6 | 1.03 |
| AHA5000 | 2180 | 2120 | 5000 | 7.6 | 1.29 |
| AHA6000 | 2600 | 2540 | 6000 | 7.6 | 1.54 |

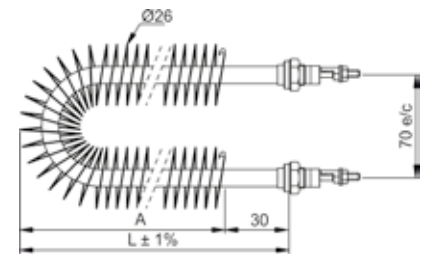
(Minimum temperature -40 °C ; Max. temperature under regular use 200 °C, maximum temperature under peak 250 °C).



AHB model

| Ref. | Length L | Active zone A | Power (W) | W/cm ² | Weight (kg) |
|---------|-------------|------------------|-----------|-------------------|----------------|
| AHB1000 | 230 | 200 | 1000 | 8.1 | 0.28 |
| AHB2000 | 445 | 415 | 2000 | 7.7 | 0.53 |
| AHB3000 | 655 | 625 | 3000 | 7.7 | 0.78 |
| AHB4000 | 870 | 840 | 4000 | 7.6 | 1.03 |
| AHB5000 | 1085 | 1055 | 5000 | 7.6 | 1.29 |
| AHB6000 | 1295 | 1265 | 6000 | 7.6 | 1.54 |

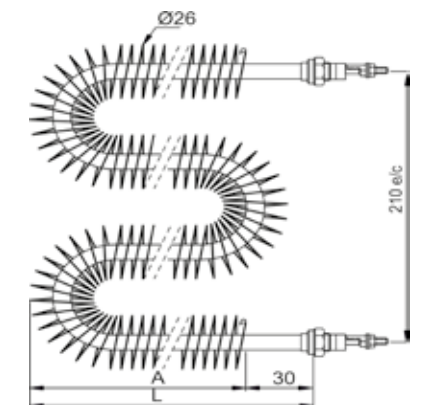
(Minimum temperature -40 °C ; Max. temperature under regular use 200 °C, maximum temperature under peak 250 °C).



AHC model

| Ref. | Length L | Active zone A | Power (W) | W/cm ² | Weight (kg) |
|---------|-------------|------------------|-----------|-------------------|----------------|
| AHC2000 | 232 | 202 | 2000 | 7.7 | 0.53 |
| AHC3000 | 337 | 307 | 3000 | 7.7 | 0.78 |
| AHC4000 | 445 | 415 | 4000 | 7.6 | 1.03 |
| AHC5000 | 552 | 522 | 5000 | 7.6 | 1.29 |
| AHC6000 | 657 | 627 | 6000 | 7.6 | 1.54 |

(Minimum temperature -40 °C ; Max. temperature under regular use 200 °C, maximum temperature under peak 250 °C).



Standard industrial electric convectors

RIM model
RIT model
RE model
RIC model



These convectors, with their robust design, are especially suited for the heating of industrial premises or control booths. The electrical connection is done via a cable gland on the connection box. The different models can be equipped with a thermostat for temperature control (on request).

RIM model: single-phase industrial convector 230 V

- Aluminium connection box IP55
- Heating element with fins, 4 W/cm² watt density
- Partially open steel frame
- Options:
 - Thermostat 0 to 40 °C, external adjustment knob (on request inside the connection box)
 - Wall support

| Ref. | Power (W) | Weight (kg) | L (mm) |
|---------|-----------|-------------|--------|
| RIM 050 | 500 | 2.5 | 385 |
| RIM 075 | 750 | 3.5 | 490 |
| RIM 100 | 1000 | 4.5 | 595 |

Wall support: reference SMRIM (1 kg)

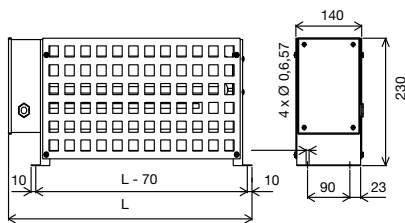
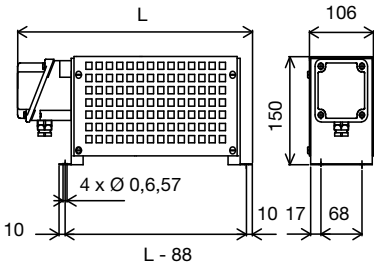
RIT model: single-phase or three-phase industrial convector 230 / 400 V

Especially suited for heating public spaces

- Aluminium connection box IP55
- Heating element with fins, 2.5 W/cm² watt density
- Partially open protected steel frame
- Options:
 - Thermostat 0 to 40 °C, external adjustment knob (on request inside the connection box)
 - Wall support

| Ref. | Power (W) | Weight (kg) | L (mm) |
|---------|-----------|-------------|--------|
| RIT 150 | 1500 | 6.5 | 520 |
| RIT 200 | 2000 | 7 | 625 |
| RIT 300 | 3000 | 8.5 | 865 |

Wall support: reference SMRIT (1.5 kg)



Standard industrial electric convectors

RIM model
RIT model
RE model
RIC model

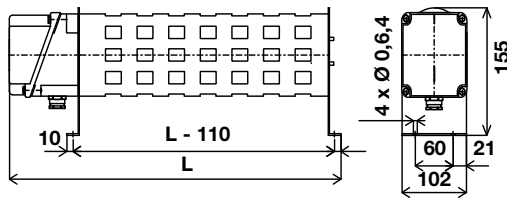
RE model: single-phase industrial convector 230 V

- Aluminium connection box IP55
- Heating element with fins, 2.5 W/cm² watt density
- Partially open protected steel frame

| Ref. | Power (W) | Weight (kg) | L (mm) |
|--------|-----------|-------------|--------|
| RE 040 | 400 | 1.5 | 800 |
| RE 060 | 600 | 1.8 | 1000 |

RIC model: single-phase or three-phase industrial convector 230 / 400 V

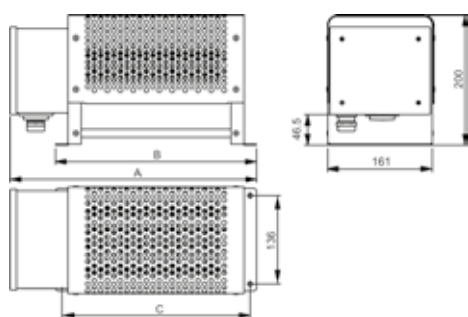
- ORGM-type aluminium connection box IP55
- Thermostat 0 to 40 °C, external adjustment knob (on request inside the connection box)
- Partially open protected steel frame



| Ref. | Coupling | Power (W) | Weight (kg) | L (mm) |
|--------|----------|-----------|-------------|--------|
| RIC04M | Mono | 450 | 1.5 | 490 |
| RIC09M | Mono | 900 | 1.5 | 490 |
| RIC04T | Tri | 450 | 1.5 | 490 |
| RIC09T | Tri | 900 | 1.5 | 490 |

Standard industrial electric convectors

RITE model



RITE model, three-phase industrial convector

- Class I electrical device
- Zinc-plated steel chassis
- Connection box in zinc-plated steel with degree protection against moisture IP54
- Connection box and chassis supplied in stainless steel on request
- Metallic cable gland
- Tubular elements in stainless steel tube AISI 321 or 304 with Aluzinc fin of 25 x 50 mm
- Models RITE1_5T and RITE3T with three-phase thermostat for control and safety
- High resistance to impact, rough handling and water or oil splashes
- Standard voltage 3~230 Δ 3~400 V star

| Ref. | Voltage (V) | Power (W) | Dimensions (mm) | | | Weight (kg) |
|-------------|--------------------|-----------|-----------------|-----|-----|-------------|
| | | | A | B | C | |
| RITE1_5 | 3~230 Δ 3~400 Y | 1500 | 380 | 310 | 290 | 5.4 |
| RITE1_5T(*) | 3~230 Δ 3~400 Y | 1500 | 380 | 310 | 290 | 5.5 |
| RITE3 | 3~230 Δ 3~400 Y | 3000 | 620 | 550 | 530 | 7.6 |
| RITE3T(*) | 3~230 Δ 3~400 Y | 3000 | 620 | 550 | 530 | 7.7 |

(*) Models with built-in thermostat. See characteristics in table below.

Three-phase thermostat for RITE industrial convectors

| Three-phase control and safety thermostat with 2 bulbs of Ø 6.5 x 95 and Ø 6.5 x 29 mm | Ref. | Operation as control thermostat with automatic reset. Temperature range: | Operation as safety thermostat with manual reset. Safety temperature: |
|--|-----------|---|--|
| 20 A ~230 V 15 A ~400 V | 122015000 | from 13 °C to 83 °C ±7 °C | 115 °C ±7 °C |

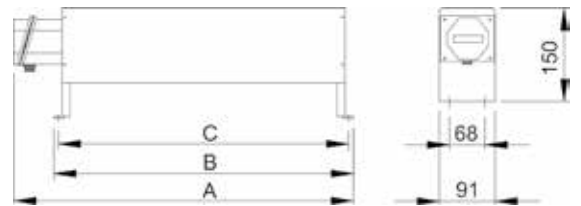
Standard industrial electric convectors



RIME model

RIME model, single-phase industrial convector

- Class I electrical device
- Zinc-plated steel chassis
- Aluminium connection box with IP66 degree of protection
- Connection box and chassis supplied in stainless steel on request
- Connection cable 3 x 1.5 mm² and 1500 mm length, with 16 A Schuko-type connection plug
- Metallic cable gland
- Tubular elements in stainless steel tube AISI 321 or 304 with Aluzinc fin of 25 x 50 mm
- High resistance to impact, rough handling and water or oil splashes
- Standard voltage 230 V



| Ref. | Voltage (V) | Power (W) | Dimensions (mm) | | | Weight (kg) |
|---------|-------------|-----------|-----------------|------|------|-------------|
| | | | A | B | C | |
| RIME1 | 230 | 1000 | 620 | 570 | 550 | 3.5 |
| RIME1_5 | 230 | 1500 | 880 | 830 | 810 | 4.8 |
| RIME2 | 230 | 2000 | 1120 | 1070 | 1050 | 5.7 |

Air heaters – Multi-use electrical air heaters for mobile or wall installation



FHA, FHB, FHC models

Read the online brochure!

www.cetal.com/medias/CETAL_Air_Heaters.pdf



Standard airduct heaters

TFAN DHC model



DHC model

- Heating of air up to 250°C

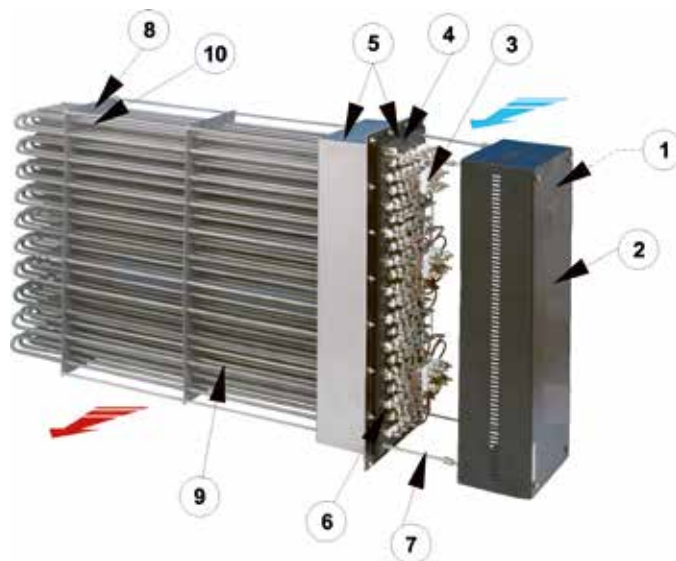
Note : The above temperature refers to recirculated air systems with thermal insulation. Note that the final heating temperature may vary in accordance with the system's operating conditions (recirculation of air or not, the material being heated, losses of heat, etc.). Our technical department is at your service to assist in the selection of the most appropriate duct heater for any given situation.

- Minimum air speed for all models: 2 m/sec
- Easily interchangeable heating elements
- Other wattage, voltages, and dimensions are available on request.
- Manufactured in compliance with the EN 60335-1 standard.
- Three-phase power supply 3 ~ 400 V star with earth connection (*).

(*) The DHC batteries are supplied connected at the stated voltage. Optionally, they may be supplied connected for an operating voltage of 3 ~ 230 V Δ . If this is required, please state so in your order.

Technical characteristics of construction

1. From one to three cable glands per heat stage, plus a cable gland for control components
2. Steel connection cover, with oven-treated paint, resistant to temperatures of up to 250 °C without deterioration.
3. From one to three steatite connection boards, one per stage. Nickel-plated internal connection bridges.
4. Bases for securing heating elements with tightening screws
5. Mineral fibre insulation (in base box and drawer)
6. Steel base box for heating elements, with oven treated paint resistant to temperatures of up to 250 °C without deterioration, and stainless steel inner box
7. Stainless steel bars for securing final guide base and tightening of cover
8. Stainless steel final guide for supporting the heating elements
9. Tubular elements in Ø10 mm AISI 321 or 304L. Stainless steel tube, in alignments of 6 heating elements at ~230 V with wattage of 1000 W
10. Thermocouple probe Ø 6 Ni Cr / Ni Al (K type) with 3000 mm long compensating cables.



Standard air duct heaters

Model TFAN DHC

Option: all in stainless steel: If you require, we can supply the DHC models with connection cover (2), big box and base box for heating elements (5) all in stainless steel

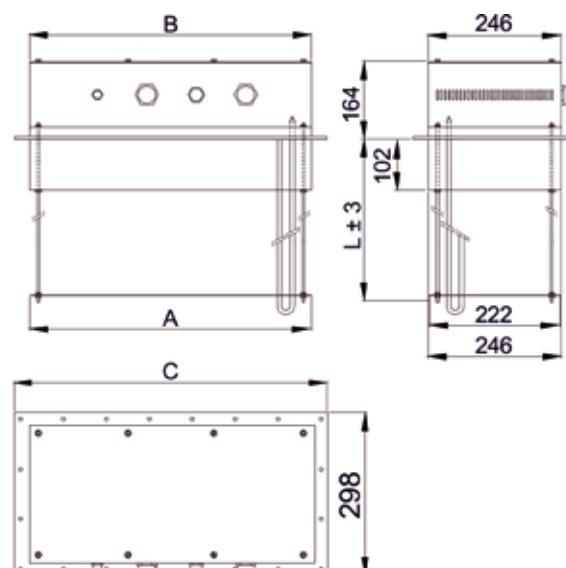
Note : The DHC duct heaters incorporate a thermocouple type “K” with aerial male connector and female bayonet. Although for some applications they are not necessary, CETAL recommends to install always at least a limiter sensor (sensor-regulator) and a flow switch.

Models available with elements in stainless steel tube AISI 321 of Ø10 mm.

| Ref. | Power (kW) | N° elements | N° stages | Dimensions (mm) | | | | Weight (kg) |
|-------|------------|-------------|--|-----------------|-----|-----|-----|-------------|
| | | | | A | B | C | L | |
| DHC6 | 6 | 6 | 1 to 6 KW | 90 | 118 | 162 | 440 | 6.3 |
| DHC12 | 12 | 12 | 1 to 12 KW | 150 | 178 | 222 | 440 | 9.8 |
| DHC18 | 18 | 18 | 1 to 6 KW 1 to 12 KW | 210 | 238 | 282 | 440 | 13.2 |
| DHC24 | 24 | 24 | 2 to 12 KW | 270 | 296 | 343 | 440 | 16.7 |
| DHC30 | 30 | 30 | 1 to 6 KW 2 to 12 KW | 330 | 352 | 404 | 440 | 20.1 |
| DHC36 | 36 | 36 | 3 to 12 KW | 390 | 416 | 464 | 440 | 23.6 |
| DHC42 | 42 | 42 | 2 to 12 KW 1 to 18 KW | 450 | 472 | 524 | 440 | 27 |
| DHC48 | 48 | 48 | 1 to 12 KW 2 to 18 KW | 510 | 532 | 584 | 440 | 30 |
| DHC54 | 54 | 54 | 1 to 12 KW 1 to 18 KW 1 to 24 KW | 570 | 592 | 644 | 440 | 33.9 |
| DHC60 | 60 | 60 | 1 to 12 KW 2 to 24 KW | 630 | 652 | 704 | 440 | 37.4 |

“K” type thermocouple for DHC duct heaters

| Ref. | Description | Dimensions (mm) |
|-----------|--|-----------------|
| 517380000 | “K” type thermocouple aerial male connector and female bayonet connector | “K” Ø6 x 475 |



Standard air duct heaters

ALBAT DHS model

DHS model, duct heater with rectangular fin heating elements

- Galvanized Fe plate frame. Optionally, and to order, stainless steel chassis
- Dismountable connection box
- Shielded tubular heating elements in AISI 304 stainless steel of Ø8 mm, heating element insulated with electro-smelted magnesium oxide and compressed by lamination
- Aluminised plate fins 25 x 50 mm
- Crimped M12 zinc steel connectors
- Maximum application temperature: air output 100 °C with $v_{air} = 2$ m/sec
- Klixon thermostat included with 75°C protection.
Optionally, with 120 °C thermostat
- Possibility of connecting various models
- 1 or 2 power stages depending on models, both in single-phase and three-phase.
- Heating elements in single voltage ~230 V to enable different connection options
- Standard voltage: 3~230 V Δ , 3~400 V star
- Options:
 - All stainless steel
 - For Ø8 mm tube: 25 x 50 mm fins /// 40 x 70 mm fins
 - For Ø10 mm tube: 25 x 50 mm fins /// 40 x 70 mm fins

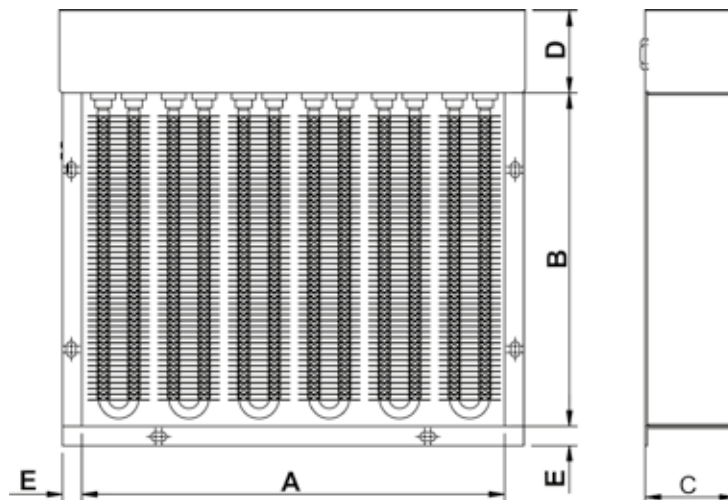


On request, we can supply other dimensions, wattages or voltages, as well as different rectangular finned heating element options.

Note: The batteries are supplied without being wired, for you to carry out the electrical assembly according to your requirements.

Usual applications

To heat forced circulation air for heating premises, closed drying circuits in heaters, charge benches, etc. In general, for any application of forced air heating up to 100 °C.



Standard air duct heaters

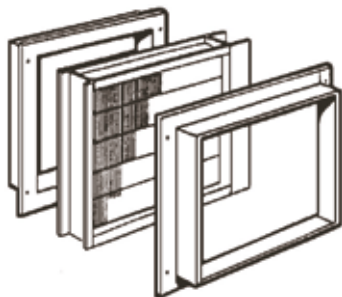
ALBAT DHS model

| Ref. | Dimensions (mm) | | | | | Power (W) | Number of elements |
|---------|-----------------|-----|-----|----|----|-----------|--------------------|
| | A | B | C | D | E | | |
| DHS3 | 200 | 400 | 50 | 75 | 25 | 3000 | 3 |
| DHS3-2 | 450 | 400 | 50 | 75 | 25 | 3000 | 3 |
| DHS4_5 | 200 | 500 | 50 | 75 | 25 | 4500 | 3 |
| DHS6 | 200 | 400 | 75 | 75 | 25 | 6000 | 6 |
| DHS6-2 | 450 | 400 | 75 | 75 | 25 | 6000 | 6 |
| DHS9 | 450 | 400 | 75 | 75 | 25 | 9000 | 9 |
| DHS9-2 | 200 | 500 | 75 | 75 | 25 | 9000 | 6 |
| DHS9-3 | 450 | 500 | 50 | 75 | 25 | 9000 | 6 |
| DHS12 | 450 | 400 | 100 | 75 | 25 | 12000 | 12 |
| DHS13_5 | 450 | 500 | 75 | 75 | 25 | 13500 | 9 |
| DHS15 | 450 | 400 | 100 | 75 | 25 | 15000 | 15 |
| DHS18 | 450 | 400 | 100 | 75 | 25 | 18000 | 18 |
| DHS18-2 | 450 | 500 | 75 | 75 | 25 | 18000 | 12 |
| DHS21 | 450 | 400 | 100 | 75 | 25 | 21000 | 21 |
| DHS22_5 | 450 | 500 | 75 | 75 | 25 | 22500 | 15 |
| DHS24 | 450 | 400 | 100 | 75 | 25 | 24000 | 24 |
| DHS27 | 450 | 500 | 100 | 75 | 25 | 27000 | 18 |

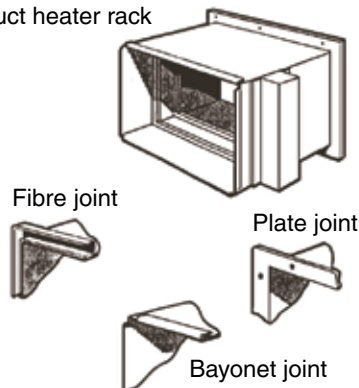
Accessories for DHS duct heaters

| Ref. | Description |
|------------|--|
| 517541075 | Klixon 75 °C thermostat. Loose |
| 1017000000 | Klixon 75 °C thermostat. Mounted with tube and connector |
| EC10001 | DHS framework with dimensions A x B = 500 x 250 mm |
| EC10002 | DHS framework with dimensions A x B = 500 x 500 mm |
| EC10003 | DHS framework with dimensions A x B = 600 x 250 mm |
| EC10004 | DHS framework with dimensions A x B = 600 x 500 mm |
| EC10111 | DHS support with dimensions A x B = 500 x 250 mm |
| EC10112 | DHS support with dimensions A x B = 500 x 500 mm |
| EC10113 | DHS support with dimensions A x B = 600 x 250 mm |
| EC10114 | DHS support with dimensions A x B = 600 x 500 mm |

Front and back frames



Duct heater rack



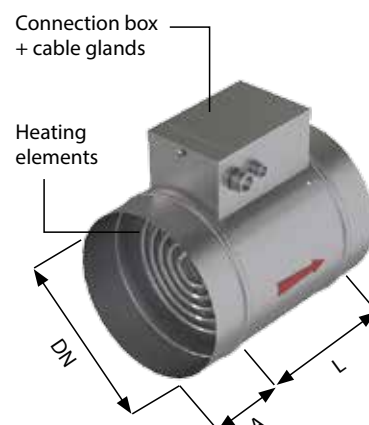
Standard duct heaters

BTO model

BTO model, duct heaters for round air ducts



- These duct heaters, with their robust design, are used for premises air heating with a minimum speed of 2 m/s
- Equipped with one or more bended heating elements, mounted in T-shaped galvanized steel, they can be directly connected to standard-diameter ducts
- Equipped with a limiter (LR series) with pre-set temperature at 90°C, with automatic reset, unipolar
- Heating element 230 V
- Cable gland included
- Three-phase version on request
- Cabling on request



| Ref. | DN | Power (W) | Power unit | Weight (kg) | L (mm) | A (mm) | B (mm) |
|------------|-----|-----------|------------|-------------|--------|--------|--------|
| BTO-12-005 | 125 | 500 | 500 | 3 | 180 | 35 | 60 |
| BTO-12-010 | 125 | 1000 | 1000 | 3.5 | 180 | 35 | 60 |
| BTO-16-005 | 160 | 500 | 500 | 3.5 | 180 | 45 | 60 |
| BTO-16-010 | 160 | 1000 | 1000 | 4 | 180 | 45 | 60 |
| BTO-16-015 | 160 | 1500 | 500 | 4.5 | 180 | 45 | 60 |
| BTO-20-005 | 200 | 500 | 500 | 5 | 180 | 45 | 60 |
| BTO-20-010 | 200 | 1000 | 333 | 5.5 | 180 | 45 | 60 |
| BTO-20-015 | 200 | 1500 | 500 | 6 | 180 | 45 | 60 |
| BTO-20-020 | 200 | 2000 | 666 | 6.5 | 180 | 45 | 60 |
| BTO-20-030 | 200 | 3000 | 1000 | 7 | 180 | 45 | 60 |
| BTO-25-007 | 250 | 666 | 666 | 6.5 | 180 | 45 | 60 |
| BTO-25-010 | 250 | 1000 | 333 | 7 | 180 | 45 | 60 |
| BTO-25-015 | 250 | 1500 | 500 | 7.5 | 180 | 45 | 60 |
| BTO-25-020 | 250 | 2000 | 666 | 8.5 | 180 | 45 | 60 |
| BTO-25-030 | 250 | 3000 | 1000 | 8.5 | 180 | 45 | 60 |
| BTO-25-045 | 250 | 4500 | 1500 | 9 | 180 | 45 | 60 |
| BTO-31-010 | 316 | 1000 | 1000 | 10 | 180 | 55 | 60 |
| BTO-31-015 | 316 | 1500 | 500 | 11 | 180 | 55 | 60 |
| BTO-31-020 | 316 | 2000 | 666 | 11.5 | 180 | 55 | 60 |
| BTO-31-030 | 316 | 3000 | 1000 | 12 | 180 | 55 | 60 |
| BTO-31-045 | 316 | 4500 | 1500 | 13 | 180 | 55 | 60 |
| BTO-31-060 | 316 | 6000 | 2000 | 14 | 180 | 55 | 60 |
| BTO-35-020 | 350 | 2000 | 666 | 12 | 180 | 55 | 60 |
| BTO-35-030 | 350 | 3000 | 1000 | 13 | 180 | 55 | 60 |
| BTO-35-045 | 350 | 4500 | 1500 | 14 | 180 | 55 | 60 |
| BTO-35-060 | 350 | 6000 | 2000 | 16 | 180 | 55 | 60 |
| BTO-35-075 | 350 | 7500 | 2500 | 18 | 180 | 55 | 60 |
| BTO-40-015 | 400 | 1500 | 1500 | 14 | 260 | 70 | 60 |
| BTO-40-015 | 400 | 2000 | 666 | 15 | 260 | 70 | 60 |
| BTO-40-015 | 400 | 3000 | 1000 | 15.5 | 260 | 70 | 60 |
| BTO-40-015 | 400 | 4500 | 1500 | 16 | 260 | 70 | 60 |
| BTO-40-015 | 400 | 6000 | 1000 | 18 | 260 | 70 | 60 |
| BTO-40-015 | 400 | 9000 | 1500 | 20 | 260 | 70 | 60 |

All CETAL products can be adapted to your specifications.

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