



finder[®]
SWITCH TO THE FUTURE

Heaters (10...550)W

7H
SERIES



Drying kilns



Hoists and cranes



Road / tunnel
lighting



Plastic
moulding
machines



Automatic
car-washes



Panels for
electrical
distribution



Control panels



Forced-air ventilators



Heaters for the cabinet

- Heating power (10...50)W
- Operating voltage (120...240)V AC/DC
- Without fan
- Safety insulation by plastic housing
- Low surface temperature on touch-safe principle
- Dynamic heating and temperature-limiting with PTC as heating element
- Small dimensions
- Fast mounting by clip fixing

7H.11.0.230.1010



- Heating power 10 W
- Without fan
- Operating voltage (120...240)V AC/DC

7H.11.0.230.1020

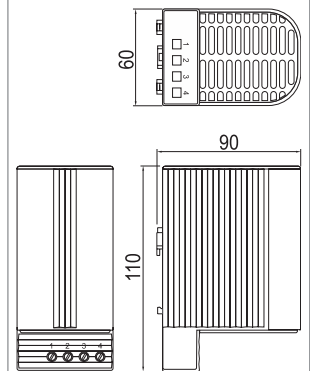
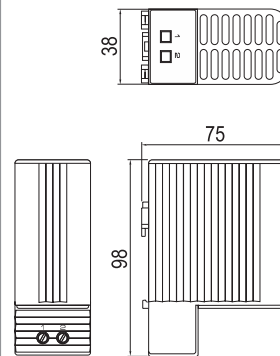
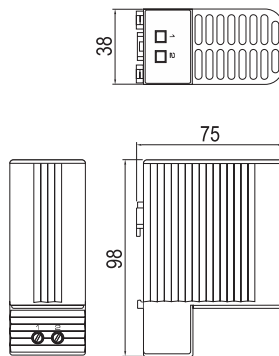


- Heating power 20 W
- Without fan
- Operating voltage (120...240)V AC/DC

7H.11.0.230.1050



- Heating power 50 W
- Without fan
- Operating voltage (120...240)V AC/DC



** except upper protection grille

Heater Data

Heating power	W	10	20	50
Heating element		PTC thermistor - temperature limiting		
Surface temperature**	°C	< +85	< +85	< +80
Fan		without	without	without
Air volume of fan	m ³ /h	—	—	—
Life time of fan at 40 °C	h	—	—	—

Electrical data

Operating voltage*	V AC/DC	120...240	120...240	120...240
Operating voltage	V AC (50/60 Hz)	—	—	—
Max. peak current	A	1.0	2.5	2.5
Recommended fuse (slow)	A	2	4	4

General data

Housing		Plastic, black, UL94 V-0		
Electrical connection/max. wire size		2-pole terminal/2.5 mm ²		4-pole terminal/2.5 mm ²
Screw torque of the terminals	Nm	max. 0.8		
Type of mounting		Clip for 35 mm DIN rail (EN 60715)		
Position of installation		Direction of air flow: vertical (air outlet: upwards)		
Ambient/storage temperature	°C	-45...+70		
Protection class		II (safety insulation)		
Protection category		IP20		

Approvals (according to type)



* Operating range: (min. 110, max. 265)V AC/DC, when operated at 140 V AC/DC the heating power is about 10% less

Heaters for the cabinet

- Heating power (100...150)W
- Operating voltage (120...240)V AC/DC or 230 V AC (50/60 Hz)
- With or without fan
- Safety insulation by plastic housing
- Low surface temperature on touch-safe principle
- Dynamic heating and temperature-limiting with PTC as heating element
- Small dimensions
- Fast mounting by clip fixing

7H.11.0.230.1100

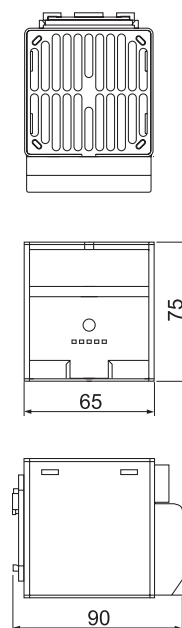
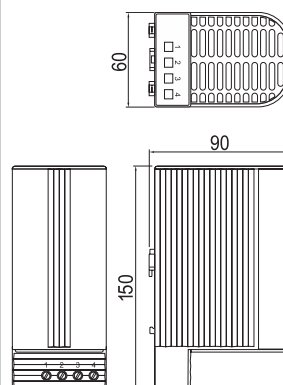
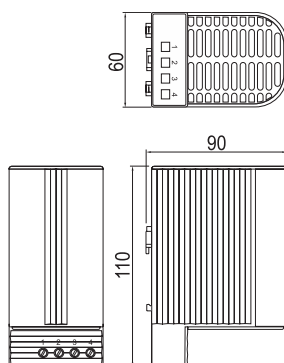
- Heating power 100 W
- Without fan
- Operating voltage (120...240)V AC/DC

7H.11.0.230.1150

- Heating power 150 W
- Without fan
- Operating voltage (120...240)V AC/DC

7H.12.8.230.1150

- Heating power 150 W
- With fan
- Operating voltage 230 V AC (50/60 Hz)



** except upper protection grille

Heater Data

Heating power	W	100	150	150
Heating element		PTC thermistor - temperature limiting		
Surface temperature**	°C	< +80	< +80	< +50
Fan		without	without	with
Air volume of fan	m ³ /h	—	—	13.8
Life time of fan (at 40 °C)	h	—	—	40 000

Electrical data

Operating voltage*	V AC/DC	120...240	120...240	—
Operating voltage	V AC (50/60 Hz)	—	—	230
Max. peak current	A	4.5	8	12
Recommended fuse (slow)	A	8	10	10

General data

Housing		Plastic, black, UL94 V-0		
Electrical connection/max. wire size		4-pole terminal/2.5 mm ²		2-pole terminal/2.5 mm ²
Screw torque of the terminals	Nm	max. 0.8		
Type of mounting		Clip for 35 mm DIN rail (EN 60715)		
Position of installation		Direction of air flow: vertical (air outlet: upwards)		
Ambient/storage temperature	°C	-45...+70		
Protection class		II (safety insulation)		
Protection category		IP20		

Approvals (according to type)

* Operating range: (min. 110, max. 265)V AC/DC, when operated at 140 V AC/DC the heating power is about 10% less

Heaters for the cabinet

- Heating power (250...550)W
- Operating voltage 230 V AC (50/60 Hz) or (220...240)V AC
- With fan
- Safety insulation by plastic housing
- Low surface temperature on touch-safe principle
- Dynamic heating and temperature-limiting with PTC as heating element
- Small dimensions
- Fast mounting by clip fixing

7H.12.8.230.1250



- Heating power 250 W
- With fan
- Operating voltage 230 V AC (50/60 Hz)

7H.12.8.230.1400

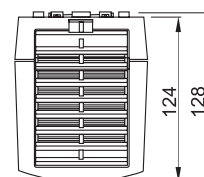
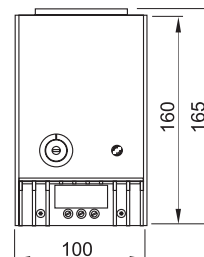
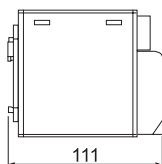
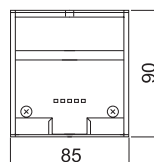
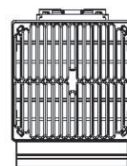
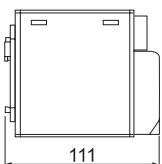
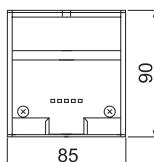


- Heating power 400 W
- With fan
- Operating voltage 230 V AC (50/60 Hz)

7H.12.8.230.1xxx



- Heating power 475/550 W
- With fan
- With LED
- With adjustable temperature regulator (0...+60)°C
- Operating voltage (220...240)V AC



* Overheating protection (see note on page 7)
 ** except upper protection grille

Heater Data		7H.12...475	7H.12...550
Heating power	W	250	400
Heating element		PTC thermistor - temperature limiting	
Surface temperature**	°C	< +50	< +65
Fan		with	with
Air volume of fan	m ³ /h	45	45
Life time of fan (at 40 °C)	h	40 000	40 000
Adjustable temperature/Switch hysteresis	°C/K	—	—
			0...+60/±4
Electrical data			
Operating voltage	V AC/DC	—	—
Operating voltage	V AC (50/60 Hz)	230	230
Max. peak current	A	9	15
Recommended fuse (slow)	A	10	16
			10
General data			
Housing		Plastic, black, UL94 V-0	Plastic, light grey, UL94 V-0
Electrical connection/max. wire size		2-pole terminal/2.5 mm ²	
Screw torque of the terminals	Nm	max. 0.8	
Type of mounting		Clip for 35 mm DIN rail (EN 60715)	
Position of installation		Direction of air flow: vertical (air outlet: upwards)	
Ambient/storage temperature	°C	-45...+70	
Protection class		II (safety insulation)	
Protection category		IP20	
Approvals (according to type)			

Ordering information

Example: Series 7H, heater 250 W with fan, for 35 mm DIN rail (EN 60175), supply voltage 230 V AC.

7 H . 1 . 2 . 8 . 2 3 0 . 1 2 5 0

Series

Type

1 = 35 mm DIN rail mounting (EN 60715)

Fan

1 = Without fan (10 – 20 – 50 – 100 – 150)W

2 = With fan (150 – 250 – 400 – 475 – 550)W

Supply version

0 = AC (50/60 Hz)/DC

8 = AC (50/60 Hz)

Supply voltage

230 = (120...240)V AC/DC

230 = 230 V AC

Variant

1 = Production line 1

Heating power

010 = 10 W

020 = 20 W

050 = 50 W

100 = 100 W

150 = 150 W

250 = 250 W

400 = 400 W

475 = 475 W (with adjustable temperature regulator)

550 = 550 W (with adjustable temperature regulator)

All types

7H.11.0.230.1010

7H.11.0.230.1020

7H.11.0.230.1050

7H.11.0.230.1100

7H.11.0.230.1150

7H.12.8.230.1150

7H.12.8.230.1250

7H.12.8.230.1400

7H.12.8.230.1475

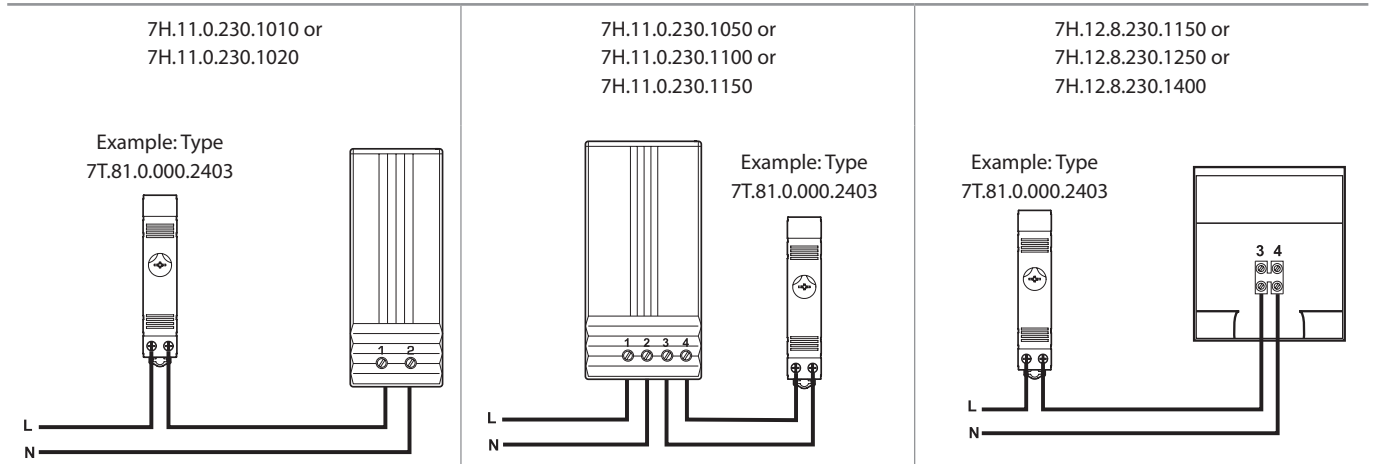
7H.12.8.230.1550

General data

Insulation acc. EN 60664-1

Rated voltage of power supply system	V AC	230
Rated insulation voltage	V AC	250
Pollution degree		3
Insulation on the terminals		
Dielectric strength between L and N against the metal clip or the housing	V AC 50 Hz (3s)	2500
Overvoltage category		II
Rated impulse voltage (1.2/50 μs)	kV	2.5

Wiring diagrams



If the preset temperature is undershot, the heater turns on and when crossing the heater turns off.

Application notes

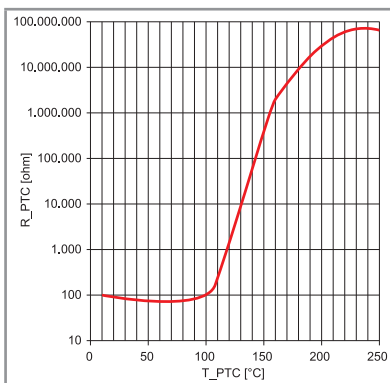
Heating element:

The heating element of the heater is a thermistor (PTC resistance). This thermistor is a temperature-dependent resistor of semiconducting, polycrystalline ceramic material (e.g. barium titanate, BaTiO₃).

PTC resistors = (Positive Temperature Coefficient) consist of conductive materials that can conduct electricity better at low temperatures than at high temperatures. Their electric resistance grows as temperature rises.

Functionality of a PTC when turned on:

The cold resistance of a PTC is 100 Ω (at +20 °C). The current flowing through the PTC heats it up. The temperature of the resistor rises to a maximum of +120 °C (the Curie temperature) while its current consumption simultaneously drops. The result is a self-regulating, temperature limited heating system.



Advantages:

- Self-regulating characteristic
- No risk of overheating
- Fast heating

Disadvantages:

- High peak current (max. 15 A for the heater with 400 W heating power)

Fan:

Heaters with a heating power from 150 W (Type 7H.12.8.230.1150) are equipped with a fan. The fan consists of a ball bearing-mounted axial fan with different air volume of (13.8...45)m³/hr depending on the type. The fan ensures even temperature control in the cabinet and housing. The connection of the fan takes place by an internal terminal in the heaters.

Touch-safe principle:

The heaters are located in a plastic housing. Since the surface temperature of the heaters can be up to +85 °C the plastic housing provides protection against burns (Touch-safe).

Position of installation:

The position of installation of the heater is vertical (air flow direction), air outlet: upwards, electrical connection: on the bottom. The air outlet grille may not be covered.

Installation note:

Above the heater is a safe distance of 120 mm (with fan heater 150 mm) as well as on the side of 20 mm (with fan heater 50 mm) and the mounting should not be carried on easily inflammable material (wood, plastic).

Overheating protection: (Type 7H.12.8.230.1475/1550)

If a fan fails the overheating protection switched off the heater at +80°C (bimetal).

The automatic reset at the heater switch on again when it falls below a certain temperature.

