

DESCRIPTION

These rectangular duct heaters are available in ratings of up to 2000kW and are used for heating the supply air in duct system, in central ventilation units and for various industrial processes. If correctly rated, the rectangular duct heaters can provide heating for entire houses and buildings. The flexible production system enables us to adapt the duct heaters accurately to the application. This may concern heaters for air handling units, industrial processes or very arduous environments. This may involve the need for strengthened electrical insulation, the use of stainless steel, high power ratings, high operating temperatures or the like. The casing is made of aluzinc-coated steel sheet (AZ185) that conforms to the requirements for corrosivity class C4. The heater elements are made of stainless steel EN 1.4301. The junction box includes the terminal blocks necessary for the electrical connections. The duct heaters are produced to degree of protection IP43, but are also available IP55 to special order. All duct heater models have at least two overheating protections: one with automatic reset and one with manual reset. All duct heaters have the overheating protection reset button on the heater cover.

The –MTEML and –MTXL models have potential-free alarm contacts that indicate tripping of the overheating protection with manual reset.

A built-in regulator ensures simple installation, e.g. due to fewer cable runs, which lowers the installation cost and reduces the risk of incorrect wiring. The regulator is electronic and controls the output across a triac by means of time proportional control (intermittent ON/OFF control). This provides very accurate temperature control. Since control is electronic, it is entirely silent and sustains a minimum of wear. On heaters with higher ratings, parts of the output are controlled by a step controller. However, fine adjustment of the temperature is always carried out by the electronic ON/OFF control. The following models are available with built-in regulator:

- -MTEML, for one or two sensors;
- -MTXL, for 0...10V control signal.

Some duct heaters can be specified without built-in regulator, and an external regulator must then be added. The following model is available for external regulator:

- -M.

Optional execution:

- other materials – the casing can be made of stainless steel, EN 1.4301, or of acid-proof stainless steel, EN 1.4404;
- duct heater for outlet temperatures of 41°C ÷ 120°C – the overheating protection is matched to the operating temperature. The junction box is provided with 25mm thick insulation on the duct side;
- duct heater for outlet temperatures of 121°C ÷ 400°C – casing of hot-rolled sheet steel or stainless steel. The overheating protection is matched to the operating temperature. The junction box is provided with 100 mm thick insulation on the duct side. An air gap is provided between the duct and the junction box. Degree of protection IP30;
- strengthened electrical insulation – in order to avoid leakage currents to earth, the elements are mounted on electrically insulating material. Suitable in, for instance, marine applications, when it is difficult to provide electrical connection to earth;
- degree of protection – to special order, duct heaters can be produced to degree of protection IP55;
- heater in the junction box – a heater is available for use during stoppages, e.g. in humid environments, in order to avoid admission of moisture at the element ends, or to reduce the risk of condensation in the junction box when cold air is flowing in the duct;



- circular connection – if the output needed or the connection diameter exceeds what is available in the standard range of CV circular duct heaters, rectangular duct heaters can be produced with circular connections;
- non-standard supply voltages – voltages up to and including 690V3~ are only produced in model –M (for external control);
- built-in main switch – available only for models –MTEML and –MTXL (with built-in control equipment).

TECHNICAL SPECIFICATION & DIMENSIONS

The minimum air velocity of 1.5 m/s must also be taken into account.

		Model		
		-MTEML	-MTXL	-M
Versions	VFL	X	X	X
	VFLPG	X	X	X
	VTL	X	X	X
	VRA	X	X	X

	Dimensions [mm]	
	Min.	Max.
B	200	2000
H	200	2000
D	270	500

Note: standard for D=370mm

Air pressure drop across the duct heater

The pressure drop of the air flowing through the duct heater is dependent on the air velocity and the number of heater element rows in the heater. The approximate number of heater element rows can be calculated from the following formula:

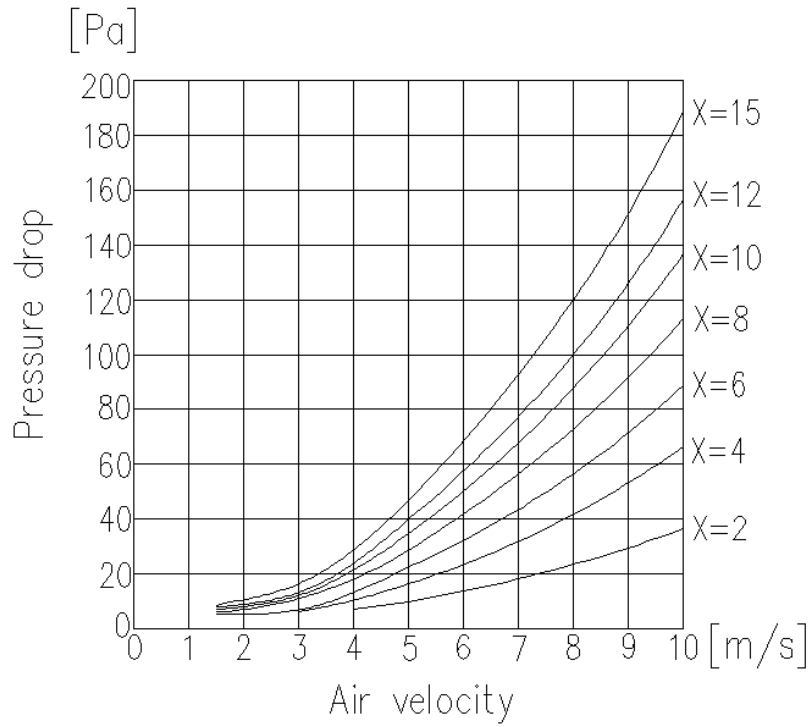
$$X = \frac{P}{A \cdot 15}$$

where:

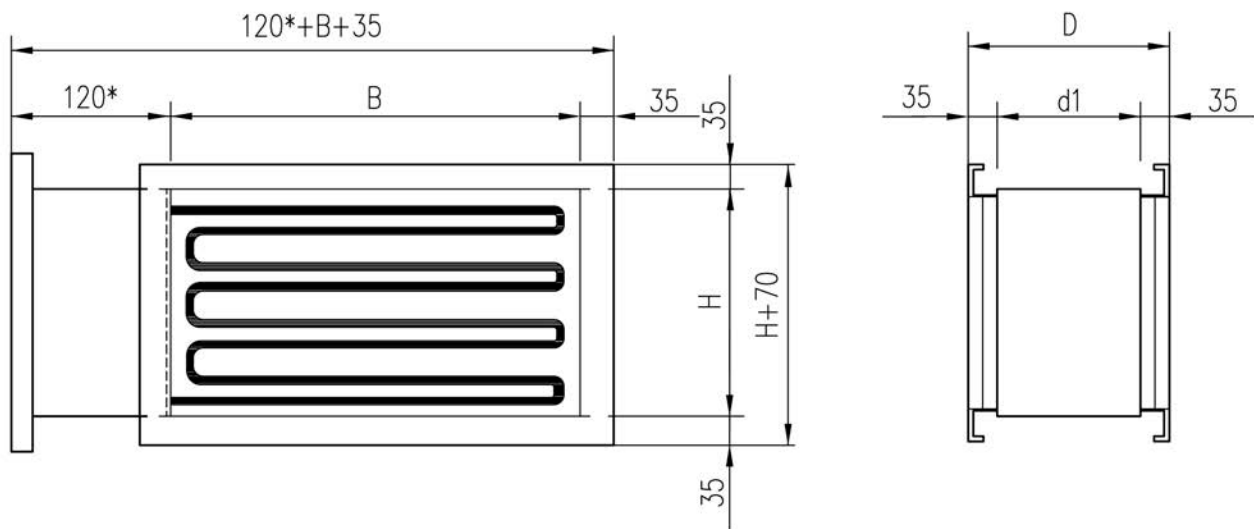
X – number of element rows;

A – flow area of duct heater, (B·H), m²;

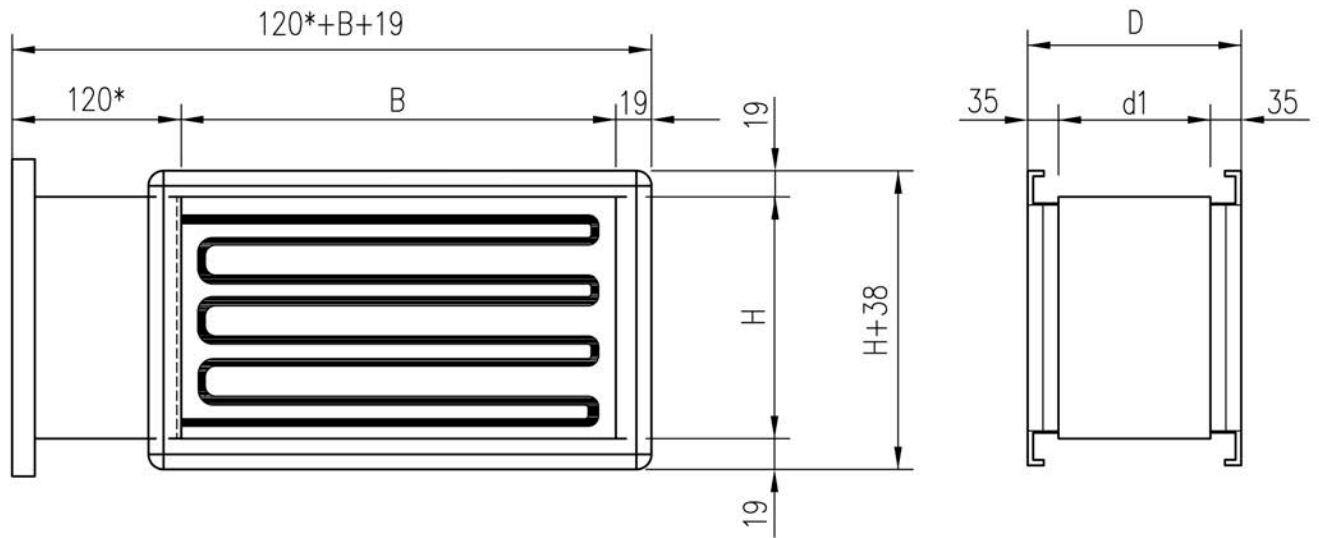
P – total power, kW.



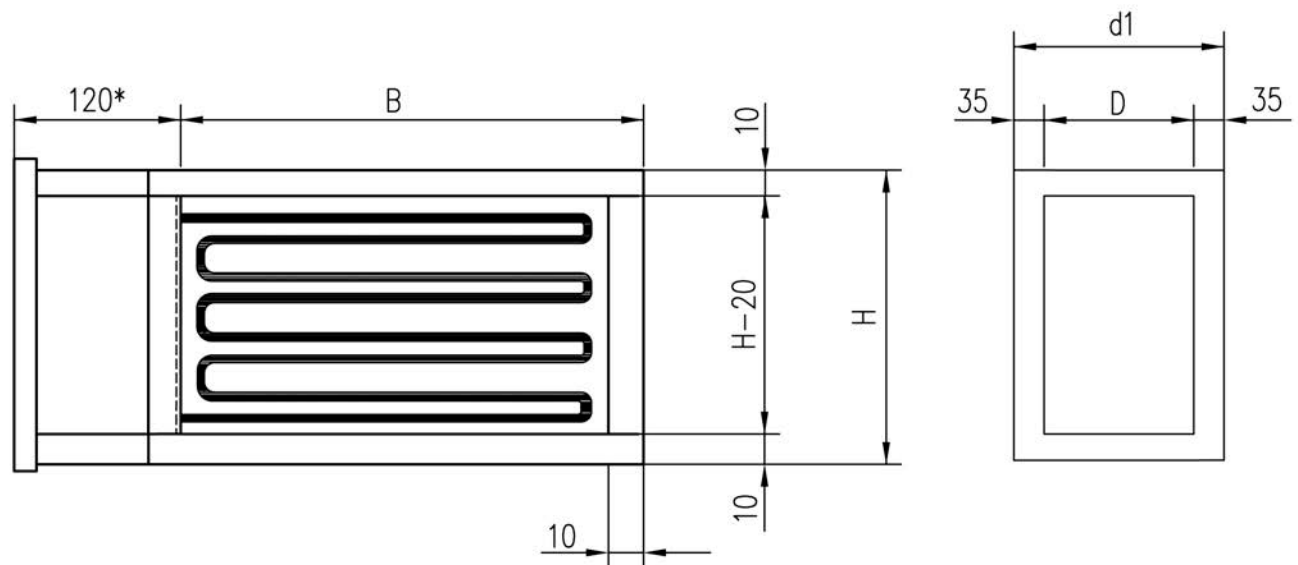
VFL with flanges



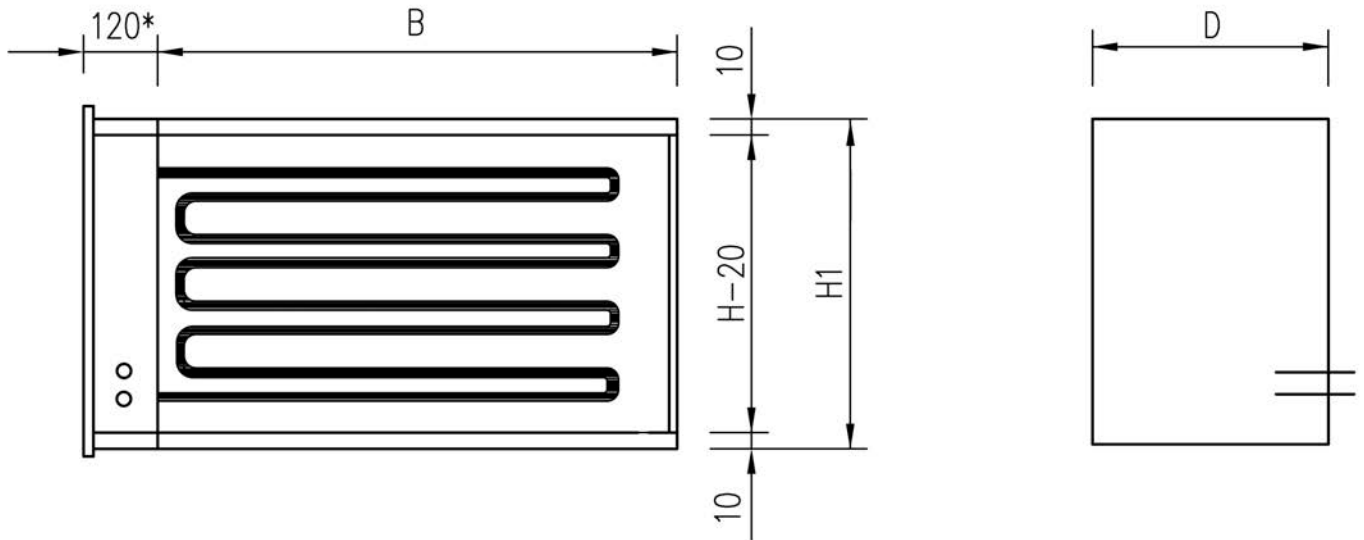
*The dimension is 200mm for duct heaters with built-in control equipment.

VFLPG suitable for PG slip clamps


*The dimension is 200mm for duct heaters with built-in control equipment.

VTL for insertion mounting in the duct


*The dimension is 200mm for duct heaters with built-in control equipment.

VRA for air handling unit

*The dimension is 200mm for duct heaters with built-in control equipment.