



Winterwarm Duct heater

Winterwarm presents the TRD heater which is suitable to be placed in duct systems without fans.



Winterwarm
heating solutions 

Characteristics Winterwarm TRD:

- Robust tubular heat exchanger
- Modulating burner
- Simple two wire connection
- 0-10 V. connection possible

The TR Duct heater is the basic heater module from the standard TRC heater (with centrifugal fans). The TRD is supplied without fans with the purpose to be placed in a duct system in which fans will be placed separately. In such situations one can vary more with the available pressure and the amount of air which goes through the heater.

Efficient heating

The TRD heater is a gas fired unit air heater equipped with an atmospheric gas burner. The tubular heatexchanger is positioned in a unique S-shape to ensure maximum transfer of heat to the air. Optionally, one can chose for a stainless steel heatexchanger. This is highly recommended when outside air is taken in, and the temperature of the air can get below -5°C.

The burner modulates between 100% and 65% which ensures an efficient energy consumption.

Balance air volume and air temperature

Very important is that the minimum amount of air is taken into account in order to cool off the heat exchanger sufficiently. If the volume of air is insufficient or the temperature too high, the heatexchanger will thermally be overloaded. There must be a balance between air volume and the air temperature. In the table below, the minimum air volume necessary is listed with an air supply temperature of 20°C. When the supply air temperature is lower, the amount of air can be less. For every 10 degrees lower, the air volume may be reduced with 15%.

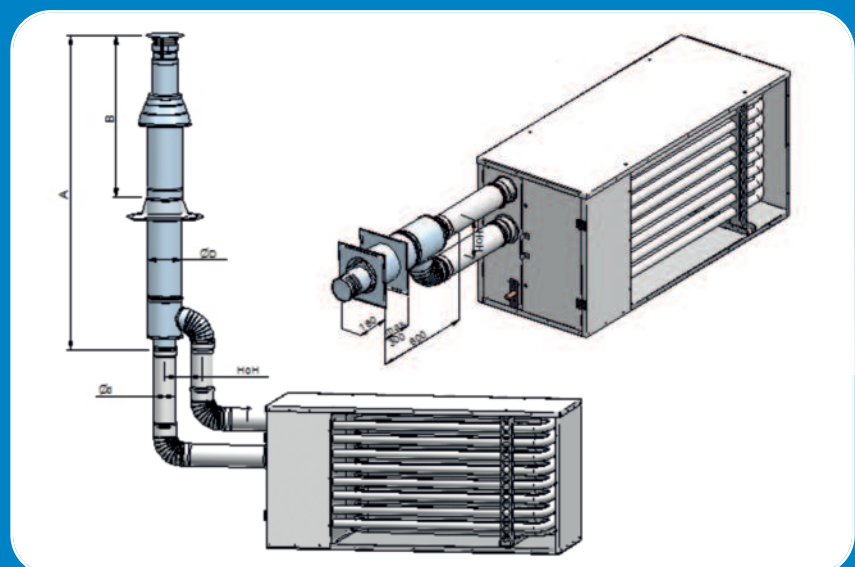
Installation

The TRD heaters are provided with M10 attachment points on top of the heater where threaded rods can be screwed. The heater can be suspended on these rods. The front and the back of the heater are provided with flanges to which ducting can directly be connected (see measurement drawings). This ducting should have a straight section at the front and the rear of the heatexchanger to ensure a correct air flow. In the instruction manual a table is listed how much pressure loss occurs per type of heater with different air volumes. This has to be taken into account when calculating the duct work.

Winterwarm has concentric roof terminals and wall terminals in 3 diameters available for the TRD. The CE-approval on the heaters is only valid when installed with the corresponding approved flue material.

Air volume at 20°C	type	24	28	40	50	60	80	100	125	150
Min. air high setting	m ³ /hr	2500	2700	3600	4500	5400	7200	9000	11000	13000
Min. air low setting	m ³ /hr	1800	1800	2400	3000	3600	4800	6000	7500	9000

	A	B	ød	øD	HOH
TRD 24-28	1280	500	80	125	110
TRD 40-50	1360	550	100	150	140
TRD 60-150	1850	955	130	200	225



As the TRD heaters are provided with a combustion flue fan, no problems arise when there is a bend in the flue pipe, or when a horizontal flue is applied.

- Compensation for influence of walls
- Frost protection
- Failure diagnosis and re-set (for each heater)
- 2 wire connection
- Control of 1-8 appliances possible

Controls

The MultiTherm thermostat controls the TRD heater. Maximum comfort, with minimum energy consumption can be achieved by means of several adjustable functions. The MultiTherm is a digital room thermostat, available in 2 versions:

MultiTherm S (MTS)

- Permanent display of the room temperature
- Allows air heater to control the room temperature
- Summer ventilation

MultiTherm C (MTC) - a clock thermostat with the same basis functions as the MTS and as extra:

- Clock function
- 10 programmable time frames
- Overwork timer
- Keyboard locking
- Remote sensor possible

The TRD heaters can also be connected to a building management system (0-10 V) with various input/output signals. Winterwarm has an Interface board available for this purpose.



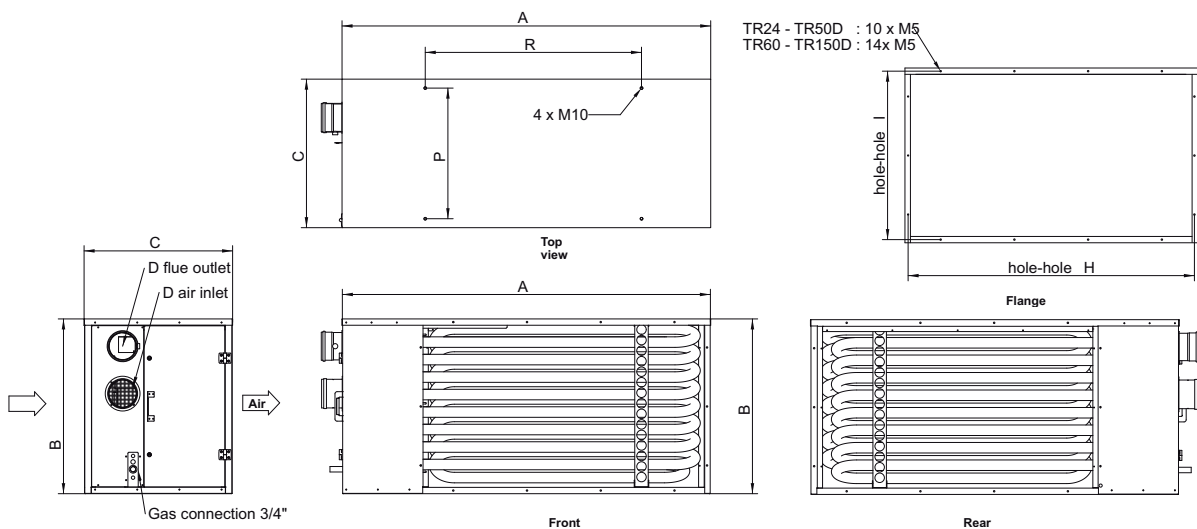
MultiTherm S
(art.no. IX.3911)

MultiTherm C
(art.no. IX.3912)



Interface board for 1-8 heaters

- 0 - 10 V. analogue input (reacts between 2-10 V)
- Entrance burner on/off
- Entrance ventilation on/off
- Reset function
- Output failure signal
- Output "in operation" signal



Measurements

Type	TRD 24	TRD 28	TRD 40	TRD 50	TRD 60	TRD 80	TRD100	TRD125	TRD150
A	1100	1100	1100	1100	1750	1750	1750	1750	1750
B	700	700	700	700	665	665	830	1000	1165
C	600	600	600	600	705	705	705	705	705
D ϕ	80	80	100	100	130	130	130	130	130
H	810	810	810	810	1360	1360	1360	1360	1360
I	665	665	665	665	635	635	800	970	1135
P	385	385	385	385	620	620	620	620	620
R	545	545	545	545	1025	1025	1025	1025	1025

Technical data TR-series

Type	Unit	TRD 24	TRD 28	TRD 40	TRD 50	TRD 60	TRD 80	TRD100	TRD125	TRD150
Nominal heat input (max.)	kW	26.0	30.0	43.5	54.0	65.5	83.0	110.0	134.5	159.0
Nominal heat input (min.)	kW	17.5	20.5	30.0	36.5	44.0	53.5	73.5	90.0	105.0
Efficiency max. power	%	92.1	92.3	91.7	91.6	91.5	91.5	91.5	91.5	91.5
Efficiency min. power	%	89.1	89.5	88.7	88.4	88.0	88.0	89.0	89.5	89.5
Maximum heat output	kW	23.9	27.7	39.9	49.5	59.9	75.9	100.7	123.1	145.5
Minimum heat output	kW	15.6	18.3	26.6	32.3	38.7	47.1	65.4	80.6	94.0
Gas connection	G"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Gas consumption max. G20	m ³ /h	2.8	3.2	4.6	5.7	6.9	8.8	11.6	14.2	16.8
Electric connection	Vac	230	230	230	230	230	230	230	230	230
Power consumption max	W	190	200	300	425	350	600	750	1100	1200
Power consumption Amps	A	0.8	0.9	1.3	1.8	1.5	2.6	3.3	4.8	5.2
Max. length flue terminal vertical**		9	9	9	9	9	9	9	9	9
Max. length flue terminal horizontal**		6	6	6	6	6	6	6	6	6

*) measured 4 m. in front of the heater **) for each 90° elbow, 1.5m. less; for each 45° elbow, 1 m. less

Winterwarm: leading

Winterwarm has been engaged in the development, production and sales of industrial heating in Europe since 1936.

The company not only specialises in indirect fired unit air heaters, but also sells radiant tubes, rooftops, water heaters, destratification fans and direct fired heaters for the agricultural and horticultural industry.



Winterwarm
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Famous Winterwarm quality

- 75 years of experience
- ISO 9001-2000 certified
- Quick delivery
- Reliable