

## Technical data

Type	Unit	TR 20	TR 24	TR 28	TR 40	TR 50	TR 60	TR 80	TR 100
Nominal heat input max. (nett)	kW	21,5	26,0	30,0	43,5	54,0	65,5	87,0	110,0
Nominal heat input min. (nett)	kW	14,5	17,5	20,5	30,0	36,5	44,0	59,0	73,5
Efficiency max. power	%	91,8	92,1	92,3	91,5	91,6	91,8	92,4	92,0
Maximum heat output	kW	19,7	23,9	27,7	39,8	49,5	60,1	80,4	101,2
Mimumum heat output	kW	12,8	15,6	18,3	26,6	32,3	39,1	52,9	66,2
Maximum air output	m <sup>3</sup> /h	2000	3000	3000	4000	5000	6000	8000	10000
Throw horizontal max.	m	12	16	16	22	26	28	30	30
Throw vertical max.	m	4	5	5	6	6	6	6	6
Noise level (5m. from unit)	dB(A)	42	45	45	48	50	50	52	54
Electrical supply	Vac	230	230	230	230	230	230	230	230
Power consumption	W	175	190	200	300	425	350	600	750
Power consumption Amps	A	0,8	0,8	0,9	1,3	1,8	1,5	2,6	3,3
Gas connection	G"	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	3/4"
Flue/air connection- parallel	mm	80	80	80	100	100	130	130	130
Min. suspension height hor. throw	m	1,7	1,7	1,7	1,7	1,7	1,7	1,7	1,7
Min. suspension height vert. throw	m	4	4	4	4	4	4	4	4
Weight	kg	65	67	70	85	100	135	150	200
Class	Clas.	B22, C12, C32							
<b>Natural gas G20</b>		<b>Gas category II2E3P, II2ELL3P, II2ELwLs3P, II2Er3P, I2E(S)B, II2H3P, I3P</b>							
Min. supply pressure G20 (E)	mbar	20	20	20	20	20	20	20	20
Max. gas consumption G20 (E)	m <sup>3</sup> /h	2,3	2,8	3,2	4,6	5,7	6,9	9,2	11,6
Burnerpressure gasvalve high	mbar	10,0	9,5	9,0	7,3	7,3	8,0	7,8	8,0
<b>Propane G31</b>		<b>Gas category II2L3P, II2LL3P, II2E3P, II2ELwLs3P, II2Er3P, I2E(S)B, II2H3P, I3P</b>							
Min. supply pressure G31 (P)	mbar	30	30	30	30	30	30	30	30
Max. gas consumption G31 (P)	kg/h	1,7	2,1	2,4	3,5	4,3	5,2	6,9	8,8
Burnerpressure gasvalve high	mbar	22,7	20,0	27,5	23,0	22,4	23,5	22,8	20,1



## 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 and destratification fans.

## Winterwarm TR Series

Winterwarm presents the TR series: an indirect gas-fired unit air heater that is ideal for industrial applications.



**Winterwarm**  
heating solutions

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### Famous Winterwarm quality

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



**Winterwarm**  
heating solutions

### Characteristics Winterwarm TR series:

- Robust tubular heat exchanger
- Variable air distribution
- Modulating burner control
- Modulating fan
- Gradient control
- Low-maintenance
- Simple 2-wire control

## General

For those searching for a “reliable cost effective” unit air heater, the Winterwarm TR is certainly the best choice. This modern air heater has all the features which are usually associated to heaters with high technical specifications, for example variable air distribution, modulating burner and fan and a very clever gradient control, all being completely maintenance friendly. The TR-range consist of 8 capacities from 20 to 100 kW.

## Horizontal and vertical outlet

Characteristically for these types of air heaters are the S-shaped tubes forming the heat exchanger with an atmospheric gas burner. The design of the tubular heat exchanger makes it possible to tilt the air heater, so that the heater can direct the air both horizontally and vertically downwards (max. 6m.). Both the burner and fan modulate (100% to 60%), which promotes the efficient heating of the room. The room thermostat determines

whether the burner is used at full or partial capacity on the basis of the difference between the actual temperature and the desired (set) temperature. In practice, this means that the heater will only operate at full capacity during the start-up period (e.g. in the morning) and will use partial capacity to maintain the room temperature for the rest of the time.

## Gradient control

The heaters are also provided with a vertical gradient control (or delta T-Control). When the burner is not in use, the air heater can function as a circulation unit. A sensor in the air heater and a sensor in the room thermostat constantly measure the difference between the temperature differences between the two. Should the temperature gradient increase beyond the set value, the unit will switch on the fan and circulate the

warm air. Naturally, the TR also has a summer ventilation setting.

## Suspension

The TR has 3 suspension options:

- Swivelling console (*art. no. GA. 8670*) for mounting on walls, consisting of 2 plates and 2 lateral supports. The air heater can be placed on top of the console or suspended from it. In the first position it is possible to tilt the heater forwards from 0° to 45° to distribute air at an angle. In the second position, the device can be swivelled horizontally through 180° for placement in corners. Suitable for TR 20, TR 24 and TR 28.
- Brackets (*art.nr. 8580*) for wall mounting, consisting of 2 x 3 steel U-profiles. The heater can be placed on top of both supports and can also be suspended from them. Suitable for all types.

- threaded rods for suspension from the ceiling. The top and back of the TR-heater is provided with M10 fastening points (for vertical suspension) in which threaded rods can be inserted. Suitable for all types. Three types of flue terminals are available for the TR series: concentric roof terminal, concentric wall terminal and 2-pipe wall terminal (types 20, 24 en 28).

## Control

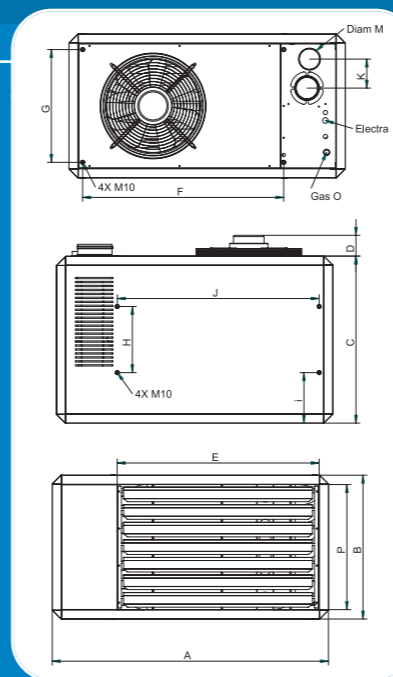
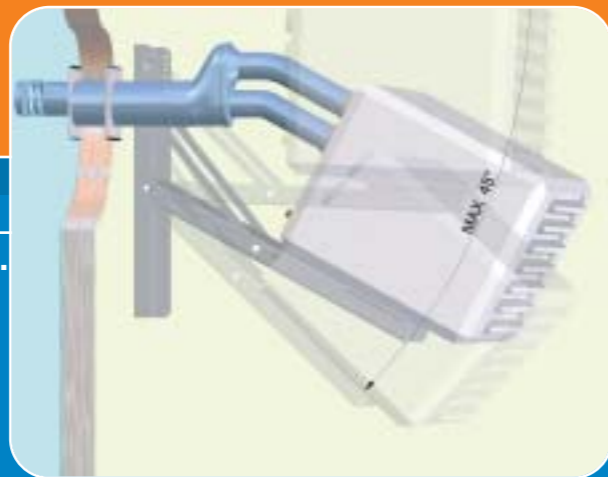
The TR-series is controlled by the DB 8, a 7-day programmable thermostat, which gets the best from the heater. Thanks to a number of functions which are simple to operate, a maximum comfort level can be achieved at minimum energy consumption. The DB 8 incorporates an optimizing program, therefore determining the start time of the heaters enabling the building to be at the correct temperature at the desired occupancy time. The DB 8 is provided with the following functions:

- 7 day programme
- 10 different on / off programs
- Permanent display of the room temperature
- Modulates on room temperature
- Frost protection
- Keyboard locking
- Manual override
- Summer ventilation
- Compensation for the influence of walls
- Controls 1-8 heaters
- Failure diagnosis and reset per unit air heater
- Wired in twisted pair screened cable

Available option: Interface board - for building management systems (0-10 V)



DB 8  
(art.nr. IX.3912)



Measurements mm	TR 20	TR 24	TR 28	TR 40	TR 50	TR 60	TR 80	TR 100
A	1105	1040	1040	1130	1130	1130	1130	1130
B	290	540	540	540	670	1000	1000	1250
C	630	630	630	700	700	700	700	700
D	-	80	80	120	120	80	120	120
E	760	760	760	760	760	760	760	760
F	-	763	763	763	763	763	763	763
G	-	426	426	426	550	875	875	1125
H	250	250	250	250	250	580	580	580
I	190	190	190	225	225	60	60	60
J	763	763	763	763	763	763	763	763
K	110	110	110	140	140	225	225	225
M	ø80	ø80	ø80	ø100	ø100	ø130	ø130	ø130
N	ø80	ø80	ø80	ø100	ø100	ø130	ø130	ø130
O	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	3/4"
P	250	470	470	470	600	930	930	1180