



Technology for life.

Warm air curtain unit TL



Description

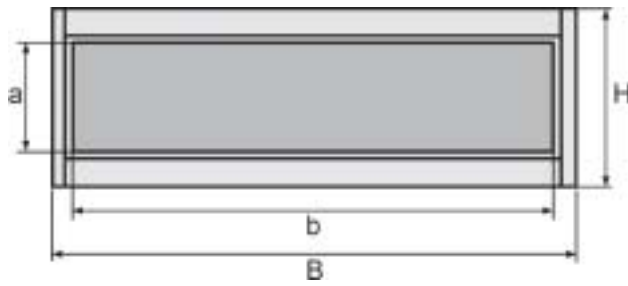


- Sturdy, self-supporting construction, powder coated, colour white RAL 9010.
- Without externally visible screws or rivets due to especially designed edge covers of sheet steel.
- Air intake on the front with perforated sheet steel, powder coated with same colour as unit, removable for filter replacement.
- Fins of discharge louvre manually adjustable.
- Access door to be opened for servicing.
- For serial arrangement (several units side by side) adapters are available.
- Fabricated in accordance with the quality assurance system DIN EN ISO 9001-1994.

Casing	Self-supporting casing of powder coated sheet steel, colour RAL 9010 (white), designed without visible screws, lateral edge covers of sheet steel.
Air intake grille	Air intake grille of perforated sheet steel, powder coated with same colour as unit, removable for filter service (grille fitted with clips).
Filter	Regenerable filter, class G 2.
Heat exchanger	<p>Heat exchanger Co/Al</p> <p>3 heat exchanger types per unit size available for LPHW, MPHWH or steam (on request). Heat exchangers made of Co/Al, header of Co, secured against torsion, to be loosened via quick locks and removable from the bottom.</p> <p>Connections with thread basing on inch-system (internal thread) for LPHW und MPHWH Flange and counter-flange for steam heat exchanger</p> <p>Important note:</p> <p>For LPHW and MPHWH: Threaded connection suitable for PN 16 up to 100°C water flow and return on top of l.h.s. in direction of airflow</p> <p>Possible modifications: on top of r.h.s., at the side on left or right (on request).</p> <p>For steam: with flange and counter-flange up to 9 bar saturated steam</p> <p>Steam connection on top</p> <p>Condensate return on bottom</p> <p>Connections only possible on l.h.s. in direction of airflow</p>
Optional:	<p>Heat exchanger of galvanized steel.</p> <p>Heat exchanger and header of galvanized steel removable from the bottom and suitable for LPHW and MPHWH.</p> <p>Frame consisting of zinc plated sheet steel.</p> <p>Connections with flange and counter-flange.</p>
Fans	Radial fans with single phase AC motors 230 V/50Hz with thermal cutout, with AV-bedding, direct driven, forward curved, low noise level, high pressure losses possible.
Discharge louvre	Discharge louvre with aerodynamically shaped fins of aluminium, separately adjustable, eloxadized E6EV1(natural aluminium).

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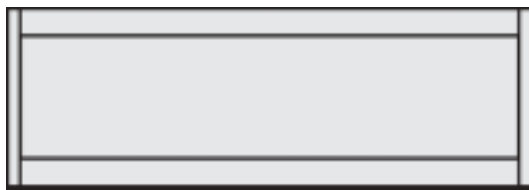
Dimensions



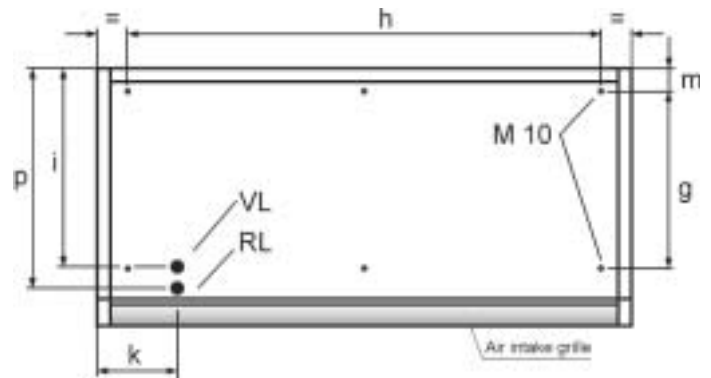
Front view



Bottom view



Rear view



Top view

Type	TL			10	20	30	40
Dimensions	Width	B*	[mm]	1000 / 1500 / 2000 / 2500 / 3000			
	Height	H	[mm]	260	260	260	450
Unit	Depth	T	[mm]	480	480	480	770
	Height	a	[mm]	210	210	210	400
Air intake grille	Width	b	[mm]	B-50	B-50	B-50	B-50
	Depth	c	[mm]	70	70	70	110
Discharge louvre	Width	d	[mm]	B-50	B-50	B-50	B-50
	Depth	g	[mm]	330	330	330	500
Installation	Width	h	[mm]	B-80	B-80	B-80	B-80
		m	[mm]	35	35	35	35
LPHW-connection							
	Flow with valve	i	[mm]	370	370	370	660
	Return	p	[mm]	410	410	410	700
		k	[mm]	150	150	150	150

* 5 different construction widths per type available

Type	TL	10					20				
Item no.		21 00 311	21 00 312	21 00 313	21 00 314	21 00 315	21 00 321	21 00 322	21 00 323	21 00 324	21 00 325
Construction width [mm]		1000	1500	2000	2500	3000	1000	1500	2000	2500	3000
Installation height max. m		2,3	2,3	2,3	2,3	2,3	2,6	2,6	2,6	2,6	2,6
Air volume 3rd stage m ³ /h		1200	1800	2400	3000	3600	1800	2500	3600	4400	5000
Discharge velocity max. m/s		5,4	5,4	5,4	5,4	5,4	7,6	7,2	7,3	7,3	7,3
Sound pressure level* (3 m distance) dB(A)		53	54	55	56	58	54	55	56	57	59
Heating capacity	(80/60°C)** max. kW	7,5	11,3	15,1	18,8	22,6	11,3	15,7	22,6	27,6	31,4
	(60/40°C)** max. kW	6,5	10	14,1	18,7	20	9,7	13,3	20,8	24,1	26,6
Flow rate (80/60°C) m ³ /h		0,33	0,5	0,67	0,83	1	0,5	0,69	1	1,22	1,38
Water pressure drop (80/60°C) kPa		7,2	3,4	8	3	7,6	5,2	3,6	10	4,8	4,8
Pipe connections (internal thread)											
	Flow/Return Inch	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Electrical data Fans 230V	kW	0,37	0,56	0,74	0,93	1,1	0,56	0,56	0,93	1,11	1,11
	A	1,66	2,49	3,32	4,15	4,98	2,49	2,49	4,15	4,98	4,98
Weights	kg	45	76	105	135	152	47	78	108	140	156

Type	TL	30					40				
Item no.		21 00 331	21 00 332	21 00 333	21 00 334	21 00 335	21 00 341	21 00 342	21 00 343	21 00 344	21 00 345
Construction width [mm]	1000	1500	2000	2500	3000	1000	1500	2000	2500	3000	
Installation height max. m		3	3	3	3	3	3,5	3,5	3,5	3,5	3,5
Air volume 3rd stage m ³ /h		2700	3600	5400	6300	7200	4000	6000	8000	10 000	12 000
Discharge velocity max. m/s		9,7	9,6	9,5	9,4	9,4	11,5	11,3	11,2	11,1	11,1
Sound pressure level* (3 m distance) dB(A)		55	56	57	58	60	57	57	58	60	62
Heating capacity	(80/60°C)** max. kW	15,5	22,6	33,5	39,6	45,2	28,6	42,8	50,4	70,6	85,6
	(60/40°C)** max. kW	10,8	18,1	26,1	32,6	36,2	21,8	33,5	45	56,7	67
Flow rate (80/60°C) m ³ /h		0,69	1	1,49	1,75	2	1,27	1,89	2,22	3,11	3,77
Water pressure drop (80/60°C) kPa		2,27	7,3	5,5	7,5	8,2	4,1	5,9	8,7	10,2	8,6
Pipe connections (internal thread)											
	Flow/Return Inch	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1 1/4"	1 1/4"	1 1/4"
Electrical data Fans 230 V	kW	0,82	1,1	1,64	1,92	2,2	1,14	1,14	1,71	2,28	2,85
	A	3,57	4,76	7,14	8,33	9,52	5,2	5,2	7,8	10,4	13
Weights	kg	50	80	110	142	160	110	125	155	200	240

* Sound pressure level - centre of area, distance 3,0 m, room volume 3.000 m³, reverberation time 1,0 s

** Heating capacity based on air-on temperature 18°C

Selection of warm air curtain installations taking all important criteria into account.

TL-evaluation check based on ambient and local features

1. Installation height: max. (passage)	max. 2,3 m	① ... points	6. Vestibule:	closed (double door)	① ...
	max. 2,5 m	③ ...		open	② ...
	max. 3,0 m	④ ...		without	④ ...
2. Passage width:	max. 1,5 m	① ...	7. Climatic cond.:	overpressure	① ...
	max. 2,0 m	② ...		pressure compensation	④ ...
	max. 3,0 m	③ ...		Vacuum	⑥ ...
	max. 4,0 m	⑤ ...	8. Local cond.:	block of buildings	① ...
	≥ 6,0 m	⑧ ...		corner position/at a place	⑤ ...
3. Room surface:	up to 100 m ²	① ...		extreme position (i.e. on a hill)	⑩ ...
	up to 250 m ²	② ...	9. Wind exposure:	generally weak	② ...
	up to 500 m ²	③ ...		medium	⑤ ...
	up to 750 m ²	④ ...		strong	⑩ ...
	up to 1.000 m ²	⑤ ...	10. Cardinal points:	North, East, South, West	-
	over 1.000m ²	⑦ ...			① ...
4. Room height:	normal height	① ...	<hr/>		
	big height	③ ...	Total amount of points		...
	superior floor				
	with stairway (internal)	⑤ ...			
5. Further passages	none or same wall	① ...			
	lateral	③ ...			
	opposite	⑤ ...			

Capacity selection according to table (depending on determined amount of points)

Amount of points	Unit types	Door widths in m	Air volume per m door width m ³ /h	Heating capacity per m curtain kW	Discharge velocity curtain m/s	Installation height m
10	TL 10	1 / 1,5 / 2 / 2,5 / 3	1200	7,5	5,4	2,3
20	TL 20	1 / 1,5 / 2 / 2,5 / 3	1800	11,3	7,3	2,6
30	TL 30	1 / 1,5 / 2 / 2,5 / 3	2700	15,5	9,5	3
40	TL 40	1 / 1,5 / 2 / 2,5 / 3	4000	28,6	11,3	3,5

Control systems

Control unit type WTL3 (with summer/winter switch)

3-stage control of warm air curtain unit with touch control switch, with concealed attachment (standard accessory), delivered not fitted.

Control unit type WTL5, item no. 21 00 351

5-stage control of warm air curtain unit with touch control switch, in surface type casing, with concealed attachment.

Control unit type WTL 3-MVS, item no. 21 00 352

3-stage control of warm air curtain unit with cam switch and full motor protection - connections of thermal cutout via external terminal box - in surface type casing, with concealed attachment. 3 stages for motor/fan assembly, summer/winter switch or Manual-O-Automatic switch.

Control unit type WTL 5-MVS, item no. 21 00 353

5-stage control of warm air curtain unit with cam switch and full motor protection - connections of thermal cutout via external terminal box - in surface type casing, with concealed attachment. 5 stages for motor/fan assembly, summer/winter switch or Manual-O-Automatic switch.

Anti-frost thermostat

Anti-frost thermostat type WTF, item no. 21 00 355

Design with capillary sensor

Capillary length 3 m, with 1 switching circuit, designed as change-over switch.

Suitable for units with control systems **WTL 3, WTL 5, WTL 3-MVS und WTL 5-MVS.**

Functional description

The anti-frost thermostat is provided with a change-over contact, that switches if the temperature falls below 5°C. The temperature may be set between -10°C and +12°C.

Example:

If the temperature falls below 5°C, the thermostat switches off the fans to prevent the heat exchangers from freezing.

Thermostatic control valve

Type WTR 2 (2-way-valve) / WTR 3 (3-way-valve)

Thermostatic control valve WTR 2 / WTR 3 with thermostatic head, for the adjustment of a constant discharge temperature.

The thermostatic control valves WTR 2 / WTR 3 are proportional controllers to optimize water flow rates. The valve opens when the sensor temperature drops.

Capillary length of sensor 2 m

Design option WTR 2: straight-way or corner valve, kvs = 1,1

Connection: ND 20 (TL 10 / TL 20); ND 25 (TL 30 / TL 40)

Optional: fitted (WTR 2 only)

Thermoelectric shut-off valve

Type WTAV (2-way-valve)

Thermoelectric shut-off valve type **WTAV**, 230 V, currentless closed.

Suitable for combination with 3- or 5-stage switches **WT 3, WT 5, WT 3-MVS, WT 5-MVS.**

To shut off the water flow in the „summer“-mode, in combination with our control systems, or to control the water flow rate in combination with control systems on site.

Design option WTAV: straight-way or corner valve, kvs = 1,1

Connection: ND 20 (TL 10 / TL 20); ND 25 (TL 30 / TL 40)

not fitted

Ceiling suspension device

Type WDH 4 / WDH 6

The length of the ceiling suspension device type **WDH 4 / WDH 6** is variable due to threaded rods.

The threaded rods allow an adjustment of the ceiling suspension devices (which are required for warm air curtain units) in a way that the units may be brought to the same level.

Design option: WDH 4 up to 2,0 m width, WDH 6 from 2,5 m width on.

Item	Pcs.		Item no.	Single price	Total price
		<p>Warm air curtain compact unit for return air function and for warm water heating for a recommended door height of max.: m; door width: m consisting of: sturdy, self-supporting construction of powder coated sheet steel, colour RAL 9010 (white), without externally visible screws or rivets. For wall or ceiling installation rivet nuts M 8 (TL 40;M10) integrated. Air intake on the front via filter class G2 and perforated sheet steel with same colour as unit, removable for filter service (grille fitted with clips). DWDI-radial fans on AV-bedding with single phase AC motors 230 V / 50 Hz, low noise level, with full motor protection via thermal cutouts. Heat exchanger PN 16, for warm water heating of Co/Al with hard-soldered connection. Discharge louvre with aerodynamically shaped fins of aluminium, separately adjustable, eloxadized E6EV1(natural aluminium).</p> <p>Accessories</p> <p>Speed/air volume control type WTL 3, 3-stages with touch control switch, summer/winter switch, max. 16 A, standard scope of supply, delivered not fitted.</p> <p>Speed/air volume control type WTL 5, 5-stages with touch control switch, in surface type casing, max. 16 A.</p> <p>Speed/air volume control type WTL 3-MVS, 3-stages with touch control switch, summer/winter switch or Manual-0-Automatic switch in surface type casing, with concealed attachment, max. 16 A.</p> <p>Speed/air volume control type WTL 5-MVS, 5-stages with cam switch, summer/winter switch or Manual-0-Automatic switch in surface type casing, with concealed attachment, max. 16 A.</p> <p>Anti-frost thermostat type WFT, design with capillary sensor, capillary length 3,0 m, with 1 switching contact, designed as change-over switch, fitted.</p> <p>Thermostatic control valve type WTR 2, designed as straight 2-way valve with thermostatic head for a constant discharge temperature, ND 20 for TL 10 / TL 20 fitted.</p> <p>Thermostatic control valve type WTR 2, designed as straight 2-way valve with thermostatic head for a constant discharge temperature, ND 20 for TL 10 / TL 20 not fitted.</p> <p>Thermostatic control valve type WTR 2, designed as corner 2-way valve with thermostatic head for a constant discharge temperature, ND 20 for TL 10 / TL 20 fitted.</p> <p>Thermostatic control valve type WTR 2, designed as corner 2-way valve with thermostatic head for a constant discharge temperature, ND 20 for TL 10 / TL 20 not fitted.</p> <p>Thermostatic control valve type WTR 2, designed as straight 2-way valve with thermostatic head for a constant discharge temperature, ND 25 for TL 30 / TL 40 fitted.</p> <p>Thermostatic control valve type WTR 2, designed as straight 2-way valve with thermostatic head for a constant discharge temperature, ND 25 for TL 30 / TL 40 not fitted.</p> <p>Thermostatic control valve type WTR 2, designed as corner 2-way valve with thermostatic head for a constant discharge temperature, ND 25 for TL 30 / TL 40, fitted.</p> <p>Thermostatic control valve type WTR 2, designed as corner 2-way valve with thermostatic head for a constant discharge temperature, ND 25 for TL 30 / TL 40, not fitted.</p>			
			21 00 351		
			21 00 352		
			21 00 353		
			21 00 355		
			21 00 360		
			21 00 361		
			21 00 362		
			21 00 363		
			21 00 365		
			21 00 366		
			21 00 367		
			21 00 368		

