



INDUSTRIES

# RATIOVENT

<sup>®</sup>EVOLVENT

With the patented Teddington  
EVOLVENT<sup>®</sup> Nozzle Technology.

TEDDINGTON



# Powerful, effective and superior.



The RATIOVENT air curtain systems from Teddington for vertical or horizontal installation are ideal for all fields of application in the industry.

Whether with conventional lamella system or with the patented EVOLVENT® nozzle technology in the air outblow sector – the RATIOVENT units adapt to your individual requirements.

Powerful and effective in its performance. Reliable and energy efficient in its everyday usage.





A RATIOVENT system vertically installed with two devices one over the other. The patented EVOLVENT® nozzle saves up to 40% energy compared with systems with conventional lamella technology.



Also horizontally installed above the door, the EVOLVENT® nozzle provides for an optimal screening performance down at ground level.

## RATIOVENT

Teddington RATIOVENT is a powerful and high performance air curtain system, which can be fitted optionally with conventional lamella technology or with the patented EVOLVENT® pressure-chamber-nozzle-system.

The EVOLVENT® nozzle system has got a big displacement angle range to adjust the air blow out direction with almost no performance loss. For the same shielding effect as a lamella device the EVOLVENT® nozzle system requires **approx. 40 % less energy consumption.**

## Fields of application

The powerful and high performance RATIOVENT air curtain system from Teddington is ideal for usage in the industrial sector, installed either horizontally or vertically.

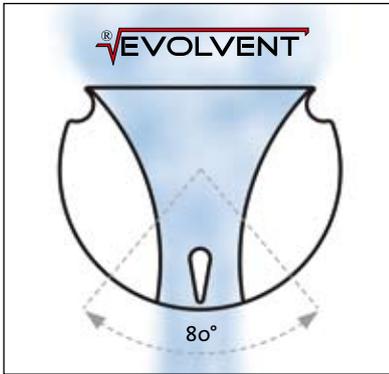
## Performance

- A robust housing from galvanised sheet steel, powder coated in the colour RAL 7011 (dark grey) or according to the customer's specification.
- Air intake through a powder coated lattice, with an optimally designed cross-section.
- High performance axial fans, 400 V, 50 Hz, 3 Ph, protection class IP 54, with outgoing thermal contacts, with dynamic balanced wings.
- High performance heat exchangers in Al-Cu design. Test pressure 16 bar and connections with internal thread (inch), according to size and performance.
- Device version optionally with or without heat exchanger.

## Your advantages

- Variable air outlet system
- Low energy consumption
- High air throwing range
- Compact design
- Extremely user-friendly to install
- Applicable horizontally and vertically
- Considerable energy saving
- Low investment
- Quick amortisation

# The nozzle makes the difference.



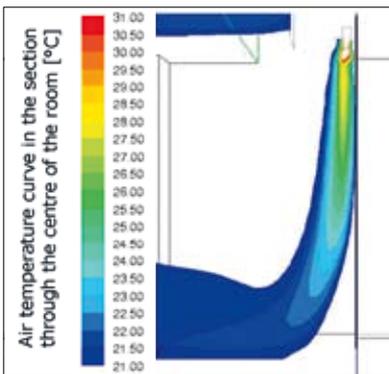
The secret from EVOLVENT®.  
The air flow is compressed, bundled and accelerated through the nozzle.

The RATIOVENT devices are alternatively available with conventional lamella technology or with the patented EVOLVENT® nozzle technology.

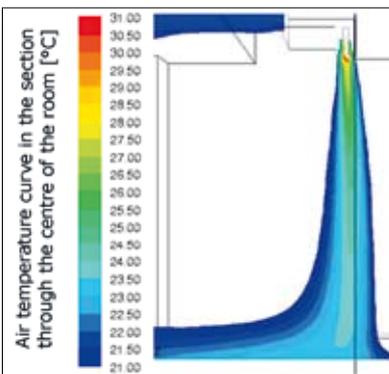
With lamella technology, the resulting air curtain is relatively turbulent and only limited in its adjustability. It requires a high air volume and a lot of necessary warm energy, in order – especially at the big doors – to generate the air curtain.

Inside the RATIOVENT units with the patented EVOLVENT® pressure-chamber-nozzle-system the air flow is compressed in the pressure chamber and distributed by the nozzle over the entire blow-out width. The air flow is accelerated by the concave nozzle cheeks to such an extent, that a concentrated, induction-poor and against the outside air directed air curtain develops. For the same screening effect as with the conventional lamella system, less air is clearly needed and consequently less energy.

## Comparison of systems



A conventional lamella device in the test chamber. The air flow is pushed from the area underneath to the internal area. A higher performance is required in order to balance this out, therefore more energy required.



A device with EVOLVENT® nozzle system at the same output power. The air flow remains stable until the ground. The energy demand is clearly lower than with conventional lamella equipment.

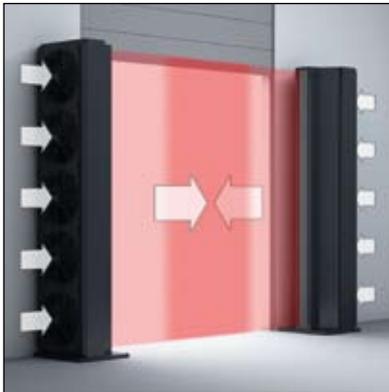
			
Horizontal installation with heater.	RATIOVENT L-420 N	RATIOVENT SW-420 N	RATIOVENT DW-420 N
Door size 4.2 x 4.5 m	Conventional lamella system with greatest heat transfer.	Nozzle system with single nozzle for the highest energy efficiency.	Nozzle system with double nozzle combining the advantages of the nozzle system with the greatest comfort.
Outside temperature 5 °C Room temperature 20 °C			
<b>The energy loss of an unclosed, unprotected door is approx. 500 kW</b>			
Inlet/ blow-out air temp.	22 °C / 35 °C	22 °C / 35 °C	22 °C / 35 °C
Air volume required for 2.0 m/s shielding effect	24.300 m³/h	11.200 m³/h	14.500 m³/h
Necessary heating capacity	<b>113 kW</b>	<b>52 kW</b>	<b>69 kW</b>
Under consideration of the efficiency factor energy saving rates arise up to:	<b>52 %</b>	<b>74 %</b>	<b>71 %</b>

## EVOLVENT® - advantages at a glance

- Bundled, homogenous air stream with high air throwing range
- High shielding capacity
- Continuously and precisely adjustable outblowing angle
- Low noise operation level
- Up to 80% energy saving at open doors
- Up to 40% less energy demand compared with conventional equipment

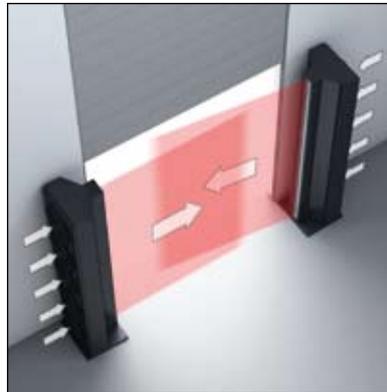


# It is your choice.



## RATIOVENT-L Type

Dual system with lamella at the blow-out section, vertical installation.



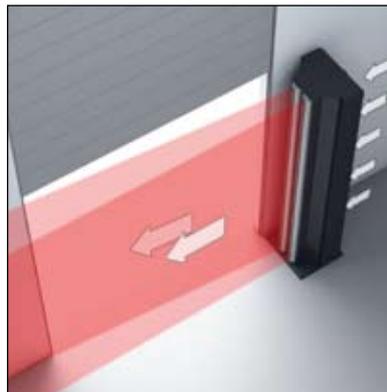
## RATIOVENT-SW Type

Dual system with single nozzle at the blow-out section, vertical installation.



## RATIOVENT-SW Type

Dual system with single nozzle at the blow-out section, vertical installation with two devices above one another.



## RATIOVENT-DW Type

Single system with double nozzle at the blow-out section, vertical installation.



## RATIOVENT-SW

Single system with single nozzle horizontally installed overhead.



## RATIOVENT-Turbo Type

Single system with Turbo-double nozzle horizontally installed overhead.

The RATIOVENT series offers the perfect equipment for every situation.

The installation can be either horizontal or vertical.

Standard situations with reasonable requests are covered by the RATIOVENT lamella equipment.

The equipment with EVOLVENT® single nozzle offers a higher performance with considerably reduced energy consumption.

For high levels of comfort, with the best possible shielding effect, Teddington equipment with double nozzle system is available.

And in extreme cases, Teddington equipment from the RATIOVENT-Turbo-Series is available.

## Ordering key

RATIOVENT	
L = lamella technology	
SW = EVOLVENT® single nozzle	
DW = EVOLVENT® double nozzle	
T = Turbo (device widths 950, 1900, 2700)	
H = Horizontal installation	
V = Vertical installation	
120, 180, 240, 300, 360, 420, 480, 950, 1900, 2700 = Width	
N = PWW 60/40°C - 70/50°C	
W = PWW 80/60°C - 90/70°C	
K = without heat exchangers	
RAL 7011 (Colour)*	
<b>L - V - 240 - N 7011 = Example</b>	

\* RAL 7011 = Standard colour.  
Other colours are available on request.

## Technical Data

Ratiovent with lamella						2 Devices			
<b>RATIOVENT-L type</b>		120	180	240	300	360	420	480	
Overall length / height „B“	[mm]	1.200	1.800	2.400	3.000	3.600	4.200	4.800	
Blow-out width max.	[m]	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Weight	[kg]	90	125	165	200	250	290	330	
Air volume									
Nominal volume flow	[m³/h]	7.400	11.100	14.800	18.500	22.200	25.900	29.600	
Work volume flow	[m³/h]	6.900	10.400	13.900	17.400	20.800	24.300	27.800	
Blow-out speed	[m/s]	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
Heating capacity Δt 15K 70/50	[kW]	35.97	54.22	72.47	90.72	108.45	126.69	144.94	
Water pressure loss	[kPa]	4.0	6.0	5.0	6.0	6.0	6.0	5.0	
Water flow	[m³/h]	1.55	2.33	3.12	3.90	2 x 2.33	3.12 + 2.33	2 x 3.12	
Pipe connections upstream + downstream	[Inch]	3/4" / 3/4"	3/4" / 3/4"	1" / 1"	1" / 1"	3/4" / 3/4"	3/4" / 3/4"	1" / 1"	
						3/4" / 3/4"	1" / 1"	1" / 1"	
Ventilators									
	[V/Hz]	400/50	400/50	400/50	400/50	400/50	400/50	400/50	
	[A]	2.72	4.08	5.44	6.8	8.16	9.52	10.88	
	[kW]	1.6	2.4	3.2	4	4.8	5.6	6.4	
Noise Level									
	[dB(A)]	49-66	51-67	51-68	52-68	53-70	53-70	53-70	

Subject to technical alterations.

The installation can be assembled from single devices according to the dimensions of your door to reach the necessary total length or height.

Ratiovent with single nozzle						2 Devices			
<b>RATIOVENT-SW type</b>		120	180	240	300	360	420	480	
Overall length / height „B“	[mm]	1.200	1.800	2.400	3.000	3.600	4.200	4.800	
Blow-out width max.	[m]	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
Weight	[kg]	90	125	165	200	250	290	330	
Air volume									
Nominal volume flow	[m³/h]	7.400	11.100	14.800	18.500	22.200	25.900	29.600	
Work volume flow	[m³/h]	4.500	6.700	9.000	11.300	13.400	15.700	18.000	
Blow-out speed	[m/s]	17.5	17.5	17.5	17.5	17.5	17.5	17.5	
Heating capacity Δt 15K 70/50	[kW]	23.46	34.93	46.92	58.92	69.86	81.86	93.85	
Water pressure loss	[kPa]	4.0	6.0	5.0	6.0	6.0	6.0	5.0	
Water flow	[m³/h]	1.01	1.50	2.02	2.53	2 x 1.50	1.50 + 2.02	2 x 2.02	
Pipe connections upstream + downstream	[Inch]	3/4" / 3/4"	3/4" / 3/4"	1" / 1"	1" / 1"	3/4" / 3/4"	3/4" / 3/4"	1" / 1"	
						3/4" / 3/4"	1" / 1"	1" / 1"	
Ventilators									
	[V/Hz]	400/50	400/50	400/50	400/50	400/50	400/50	400/50	
	[A]	2.72	4.08	5.44	6.8	8.16	9.52	10.88	
	[kW]	1.6	2.4	3.2	4	4.8	5.6	6.4	
Noise Level									
	[dB(A)]	49-66	51-67	51-68	52-68	53-70	53-70	53-70	

Subject to technical alterations.

The installation can be assembled from single devices according to the dimensions of your door to reach the necessary total length or height.



Ratiovent with double nozzle						2 Devices			
<b>RATIOVENT-DW type</b>		120	180	240	300	360	420	480	
Overall length / height „B“	[mm]	1.200	1.800	2.400	3.000	3.600	4.200	4.800	
Blow-out width max.	[m]	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Weight	[kg]	90	125	165	200	250	290	330	
Air volume									
Nominal volume flow	[m³/h]	7.400	11.100	14.800	18.500	22.200	25.900	29.600	
Work volume flow	[m³/h]	5.700	8.700	11.500	14.500	17.400	20.200	23.000	
Blow-out speed	[m/s]	13.5	13.5	13.5	13.5	13.5	13.5	13.5	
Heating capacity Δt 15K 70/50	[kW]	29.72	45.36	59.96	75.60	90.72	105.32	119.92	
Water pressure loss	[kPa]	4.0	6.0	5.0	6.0	6.0	6.0	5.0	
Water flow	[m³/h]	1.28	1.95	2.58	3.25	2 x 1.95	1.95 + 2.58	2 x 2.58	
Pipe connections upstream + downstream	[Zoll]	3/4" / 3/4"	3/4" / 3/4"	1" / 1"	1" / 1"	3/4" / 3/4"	3/4" / 3/4"	1" / 1"	
						3/4" / 3/4"	1" / 1"	1" / 1"	
Ventilators									
	[V/Hz]	400/50	400/50	400/50	400/50	400/50	400/50	400/50	
	[A]	2.72	4.08	5.44	6.8	8.16	9.52	10.88	
	[kW]	1.6	2.4	3.2	4	4.8	5.6	6.4	
Noise Level									
	[dB(A)]	49-66	51-67	51-68	52-68	53-70	53-70	53-70	

The installation can be assembled from single devices according to the dimensions of your door to reach the necessary total length or height.

Subject to technical alterations.

Ratiovent Turbo					2 Devices	
<b>RATIOVENT-Turbo type</b>		950	1900	2700	3800	4600
Overall length / height „B“	[mm]	950	1.900	2.700	3.800	4.600
Blow-out width max.	[m]	7.0	7.0	7.0	7.0	7.0
Weight	[kg]	90	125	165	250	290
Air volume						
Nominal volume flow	[m³/h]	14.160	28.320	42.480	56.640	70.800
Work volume flow	[m³/h]	8.400	17.000	29.000	34.000	46.000
Blow-out speed	[m/s]	18	18	18	18	18
Ventilators						
	[V/Hz]	400/50	400/50	400/50	400/50	400/50
	[A]	5.5	11.10	16.65	22.20	27.75
	[kW]	2.66	5.32	7.98	10.64	13.30
Noise Level						
	[dB(A)]	75	78	80	81	82

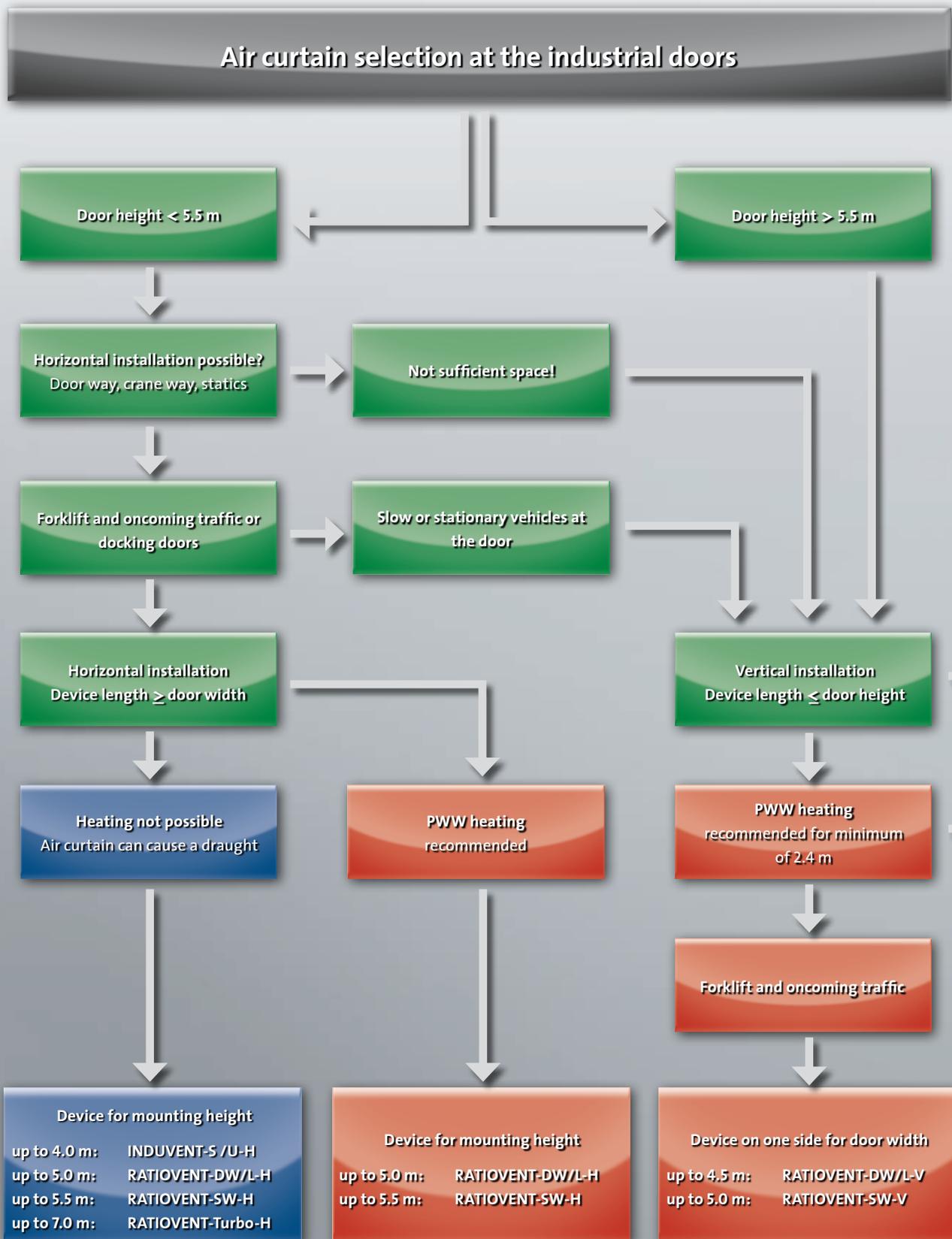
The installation can be assembled from single devices according to the dimensions of your door to reach the necessary total length or height.

Subject to technical alterations.





# It depends on the situation.



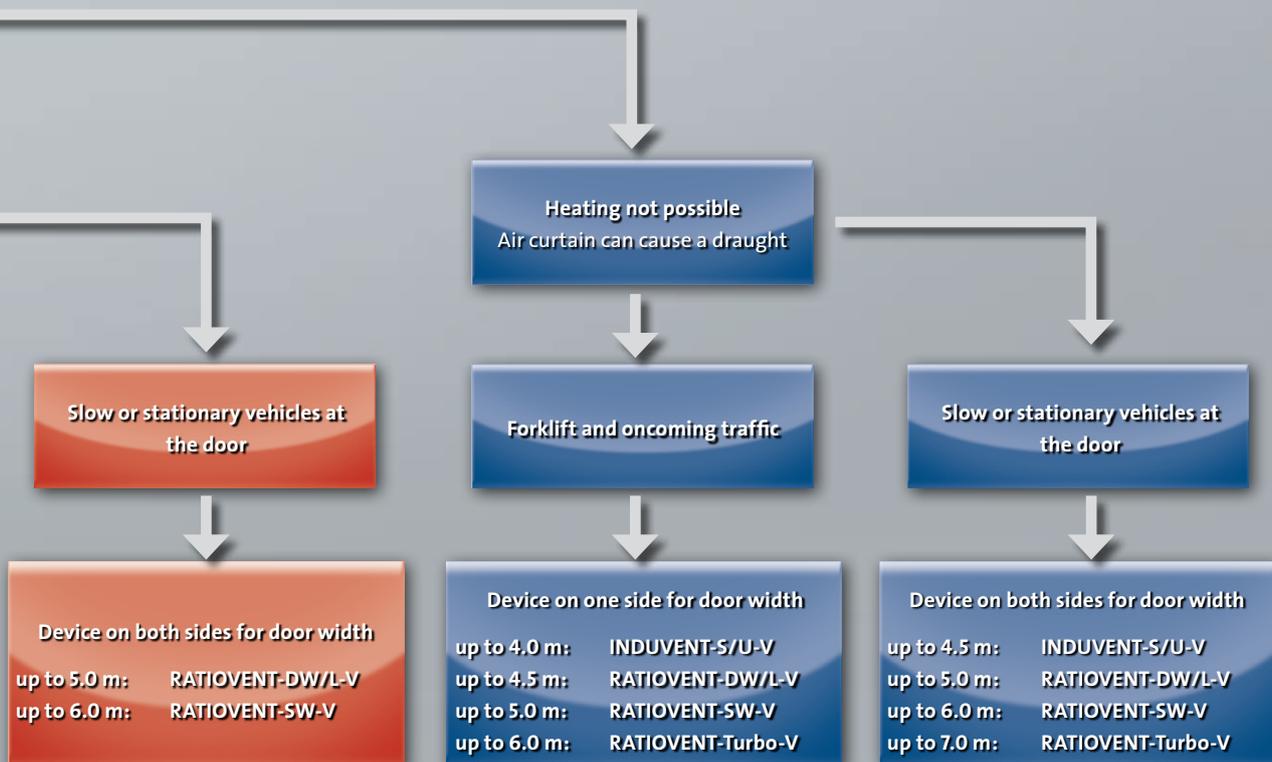


## Main selection guidelines for air curtain systems at the industrial doors

- Selection applies to balanced pressure conditions inside the building
- No facing building vents
- Installation preferably horizontal above the door
- Heating preferably included
- Air flow always kept away from working places

The above mentioned schema does not cover all factors, which are determined by the selection of the appropriate air curtain system. The optimal choice depends on a variety of individual factors.

We like to give you our long-standing experience whilst advising you in person, in order to ascertain the best air curtain solution according to your requirements.



**Controller/shut-off and magnetic valves**

	<p><b>Thermostatic control valve Type KR 3-L DN 32</b>                  Thermostatic control valve (three way valve) KR 3-L with thermostat head for controlling on constant blow out temperature, unpacked in the by-pack.                  Special valve for controlling especially large water quantities. Capillary pipe length sensor 2 m, DN 32 kvs 9.5.</p>
	<p><b>Magnetic valve MV</b>                  230 V, closed at no current, immediately closing, closing for water shut-off purposes via summer/winter switch, unpacked in the by-pack. DN 32 kvs 30.</p>

**Thermostats**

	<p><b>Frost protection thermostat FTE</b>                  For protecting the hot water system with capillary pipe sensor, capillary pipe length 3 m, self protecting as single pole, potential free toggle switch, protection grade IP 30, ready installed in the device.</p>
	<p><b>Industry thermostat IRT</b>                  Switching capacity: 15 (8) A, 24 - 250 V ~ bei 24 V ~ min. 150 mA                  Contact: 1 micro switch as a potential free change-over contact                  Ambient temperature: -20 °C ... +40 °C                  Protection grade: IP 54, safety class I                  Sensor: V2A (1.4301), max. sensor temperature 40 °C                  Control range: 0 ... 35 °C                  Differential gap: 1.5 K                  Features: Internal setting                  Colour: grey, base part RAL 7016, top part RAL 7035</p>

**Door contact and repair switch**

	<p><b>Door contact Type TK</b>                  Protection grade IP 65, jumper switch with H switches and full contact up to time of switching, shock-proof terminals according to VDE 0106, part 100 (VGB 4), cable gland 2 x PG 13.5, at bottom and at side, switching voltage 230 V AC, 24 V DC, switching current 6 A AC, 4 A DC.</p>
	<p><b>Repair switch REP-L</b>                  3 pole repair switch as wall mounting type, as unpacked by-pack for installation at site in the connection cable.</p>



## Installation accessories

	<b>Base plate (BP)</b> for a vertical installation.
	<b>Connection brackets</b> for the mechanical connection of several devices with one another.
	<b>Ceiling mounting bracket DH</b> Suspension bracket, vibration damper, threaded rods 1 m, securing and counter nut, anchor bolt, minimum space required 0.1 m, hanging down length 1 m (number of items depending on device length and type).
	<b>Comfort ceiling mounting bracket DHD</b> Suspension bracket, vibration damper 17 dB, turnbuckle, right-left threaded bolt, threaded rods 1 m, securing and counter nut, drive in dowel, minimum space required 0.2 m, hanging down length 1.1 m (number of items depending on device length and type).

## Controller



### Durable intelligence for industrial applications.

The TSDM5 controller offers all possibilities, which you require for your industrial air curtain system. The durable processing provides a high level of reliability for the daily operation.

- ▶ VDE 0660 part 500 DIN EN 60439-1
- ▶ Insulation class E
- ▶ IP 23 (optional IP 54)
- ▶ Service and fault message
- ▶ Integrated repair switch
- ▶ Branch circuit protection device
- ▶ 5-stage
- ▶ Manual / automatic change-over switch, activation through external contact
- ▶ Potential free service and fault message (optional)
- ▶ Base load function available with variable or fix adjusted base load level (optional)

# Quality is our highest demand.





Independently of what device you may decide for – at Teddington's you can be sure to have chosen a high performance product having a name in the market and featuring the latest state of the art technology.

With our experience over many years we can guarantee, that each device is composed of high grade, well proven components. And we are continuously developing new techniques, which are minimizing your operating costs and optimize the efficiency of the devices.

Teddington is a long lasting partner of the specialized craft business, of trade and industry.

A staff of experienced specialists care almost around the clock for making sure to continuously satisfying the world wide demands for precise and high quality air curtain products.

Teddington runs a network of competent special firms, which are always available for you.

We will assist you in planning and supporting your choice for that device, which suits your needs most and will also support you after the time of putting the equipment into operation by a comprehensive service.

*... typically Teddington.*



**Device technology, intelligent controller systems and service – all matching perfectly.**

The better the consultation, the better the result will be.

Modern production facilities with CNC technology ensure a very high quality standard.

Innovation is our main commitment. For example, the patented nozzle technology.

No device will leave the production, which has not been tested entirely on all functions.



[www.teddington.de](http://www.teddington.de)

**TEDDINGTON.** Pioneers of the Air Curtain Technology.

**Innovative Technology**

**Highest Economy**

**Trendsetting Design**

**Top Quality**

**Perfect Service**

*... that's Teddington.*



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