

► **UniLine**  
Door air curtains

## UniLine 260 / Cassette UniLine

High-output door air curtains, quickly and inexpensively delivered


► **Technical catalogue**

**KAMPMANN**



# Contents

<b>01 ▶ Product information</b>	<b>6</b>
▶ Overview	7
▶ Product data	8
▶ Selection guide: Overview of models	9
▶ UniLine at a glance	10
<b>02 ▶ Technical data</b>	<b>12</b>
▶ Information on use	13
▶ UniLine AC, models 10 to 30	14
▶ UniLine EC, models 10 to 30	16
▶ Cassette UniLine AC, models 10 to 25	18
▶ Cassette UniLine EC, models 10 to 25	20
<b>03 ▶ Design information</b>	<b>22</b>
▶ Unit selection and combination options	24
▶ Selection process	26
▶ SAM – Silent AutoMotion	27
▶ Brackets	28
▶ UniLine: Fixing points and LPHW connection	29
▶ Cassette UniLine: Fixing points and LPHW connection	30
<b>04 ▶ Controls</b>	<b>32</b>
▶ Control valves	32
▶ Description of control of UniLine AC with electromechanical control	33
▶ UniLine AC door air curtains, electrical installation	34
▶ Description of control of UniLine AC with P control	35
▶ Description of control of UniLine EC, electromechanical model	36
▶ Electrical installation of UniLine EC, electromechanical model	38
▶ Description of control of UniLine AC and EC, KaControl model	44
▶ Electrical installation of UniLine EC and CA, KaControl model	44
▶ KaControl – Integration into intelligent building networks (IoT)	48
<b>05 ▶ Ordering information</b>	<b>50</b>
▶ UniLine	50
▶ Cassette UniLine for 625 mm grid	51
▶ Cassette UniLine for 600 mm grid	52
▶ Accessories	53



UniLine door air curtains:  
Effective cold air screening  
for a comfortable  
interior climate.



Porsche Centre, Moscow:  
The screening effect of UniLine door air curtains effectively counters heat losses and produces a comfortable interior climate.

# 01 ▶ Product information

---



## UniLine – Low investment with top output

Encased door air curtains for visible installation or as an in-ceiling unit for all standard applications.

### Open doors

are a natural part of the leisure "shopping" experience. An inviting open entrance with an unrestricted view of the goods on offer and more customers. During the heating season, the screening effect of door air curtains creates a comfortable interior climate when the doors are open. Customers enjoy a pleasant entrance into the store.

Thanks to the optional use of EC technology, the UniLine door air curtain features the most energy-efficient drive concept and can now be used wherever energy needs to be saved over the long term.

### Use

This cost-effective model for use in DIY stores, garden centres and retail outlets etc., has technical features specifically tailored to this use:

- ▶ water and electrical connections are on the one side, protrude upwards or to the side (Cassette UniLine door air curtains) out of the casing, for ease of connection

- ▶ UniLine door air curtains are very maintenance-friendly, thanks to the easy-to-open air intake grille with large easily removable filter
- ▶ the lower casing panel can be hinged down for maintenance purposes

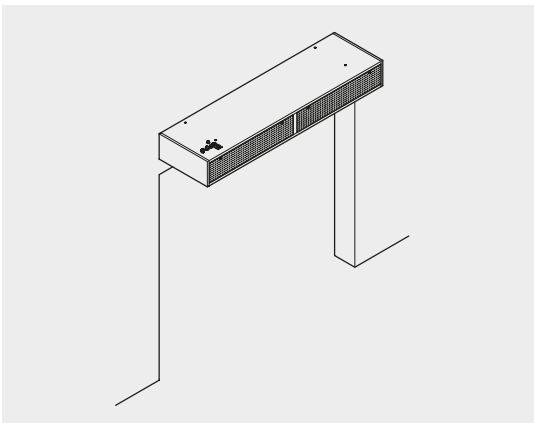
### Operating principle

Air is drawn by high-performance radial fans through the filter and the high-output copper/aluminium heat exchanger. The deflection grille in the air outlet ensures minimal turbulence and even discharge of the heated air.

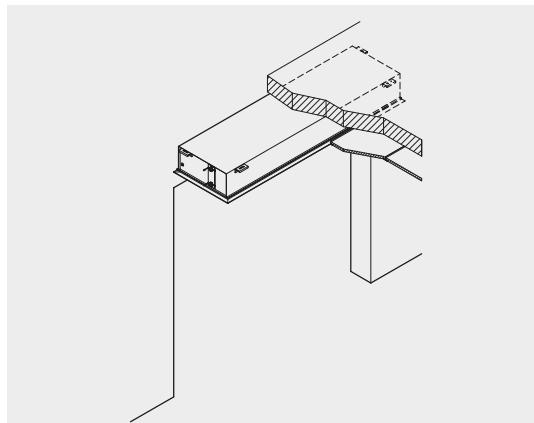
Unit and casing, including top panel, form a compact unit.

- ▶ upper side closed
- ▶ decorative air intake grille and air outlet rectifier
- ▶ casing powder coated in RAL 9016 traffic white; air intake grille and outlet air rectifier in RAL 9006 (similar to) white aluminium
- ▶ extensive control accessories
- ▶ Cassette UniLine specifically designed for 625 mm or 600 mm ceiling grids

Installation sketch of UniLine 260



Installation sketch of Cassette UniLine

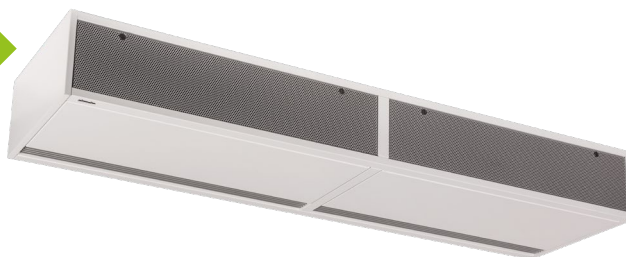


## Product data



### Product advantages

- ▶ energy efficiency through EC technology
- ▶ filter can be changed with ease without tool
- ▶ low investment, top performance



### Features

- ▶ water and electrical connections protrude out of the top of the casing
- ▶ unit and casing form a compact unit

- Heating** ▶ PWW
- Installation** ▶ wall or ceiling-mounted, horizontal
- ▶ installation flush with the ceiling
- KaControl** ▶ optional

#### Connections

- ▶ heat exchanger connection 3/4"

### Performance data

#### Heat output<sup>1)</sup> [kW]

▶3.4–44.2

#### Air volume<sup>2)</sup> [m<sup>3</sup>/h]

▶290–5330

#### Sound pressure level<sup>3)</sup> [dB(A)]

▶27–64

#### Operating limits

- ▶ max. operating pressure: 10 bar
- ▶ max. entering water temperature: 90 °C
- ▶ min. entering air temperature: 6 °C
- ▶ max. air outlet temperature: 40 °C<sup>4)</sup>

### Applications

UniLine door air curtains efficiently screen sold outside air at open doorways.



Retail chains



Showrooms and shop floors



Restaurants and cafés



Public buildings

<sup>1)</sup> at LPHW 75/65 °C,  $t_{L1} = 20$  °C

<sup>2)</sup> at low to medium pressure, requirements and conditions, see page 23

<sup>3)</sup> The sound pressure level was calculated based on an assumed room insulation of 16 dB(A). This corresponds to a distance of 3 m, a room volume of 2000 m<sup>3</sup> and a reverberation time of 1.0 s (in accordance with VDI 2081).

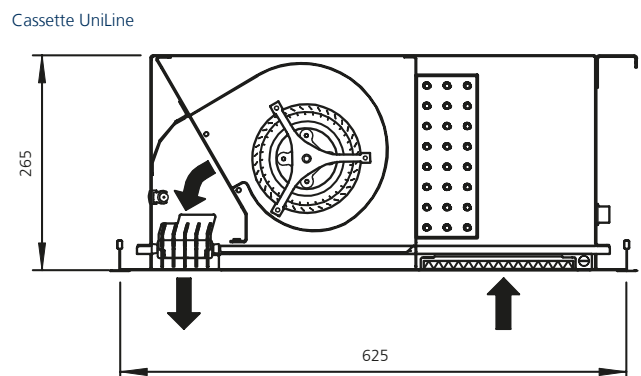
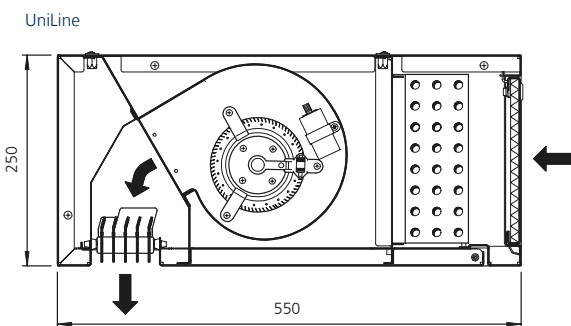
<sup>4)</sup> The use of an outlet temperature limiting valve is essential with leaving air temperatures of > 40 °C



# Selection guide: Overview of models

Model	Version	Motor	Max. discharge height <sup>1)</sup>	Max. door width	Air volume <sup>2)</sup>	Heat output <sup>3)</sup>	Outlet air temperature <sup>3)</sup>	Sound pressure level <sup>4)</sup>	Sound power level	Further information
			[m]	[m]						
10	UniLine	AC	2.3 - 3.0	1.0	600 - 1390	6.7 - 10.2	41.6 - 52.6	38 - 59	54 - 75	▶ Page 14
		EC			290 - 1410	3.4 - 10.3	41.5 - 54.8	27 - 56	43 - 72	▶ Page 16
	Cassette UniLine	AC			600 - 1390	6.7 - 10.2	41.6 - 52.6	38 - 59	54 - 75	▶ Page 18
		EC			290 - 1410	3.4 - 10.3	41.5 - 54.8	27 - 56	43 - 72	▶ Page 20
15	UniLine	AC	2.3 - 3.0	1.5	930 - 2130	9.6 - 17.4	44.0 - 50.5	39 - 60	55 - 76	▶ Page 14
		EC			410 - 2540	5.3 - 19.5	42.6 - 58.2	31 - 57	47 - 73	▶ Page 16
	Cassette UniLine	AC			930 - 2130	9.6 - 17.4	44.0 - 50.5	39 - 60	55 - 76	▶ Page 18
		EC			410 - 2540	5.3 - 19.5	42.6 - 58.2	31 - 57	47 - 73	▶ Page 20
20	UniLine	AC	2.3 - 3.0	2.0	1210 - 2820	13.1 - 24.2	45.2 - 51.9	41 - 61	57 - 77	▶ Page 14
		EC			580 - 2820	7.6 - 24.1	45.1 - 58.7	30 - 59	46 - 75	▶ Page 16
	Cassette UniLine	AC			1210 - 2820	13.1 - 24.2	45.2 - 51.9	41 - 61	57 - 77	▶ Page 18
		EC			580 - 2820	7.6 - 24.1	45.1 - 58.7	30 - 59	46 - 75	▶ Page 20
25	UniLine	AC	2.3 - 3.0	2.5	1660 - 4000	18.0 - 33.9	44.9 - 51.8	42 - 62	58 - 78	▶ Page 14
		EC			710 - 3980	9.6 - 33.7	44.9 - 59.7	33 - 60	49 - 76	▶ Page 16
	Cassette UniLine	AC			1660 - 4000	18.0 - 33.9	44.9 - 51.8	42 - 62	58 - 78	▶ Page 18
		EC			710 - 3980	9.6 - 33.7	44.9 - 59.7	33 - 60	49 - 76	▶ Page 20
30	UniLine	AC	2.3 - 3.0	3.0	2210 - 5330	24.1 - 44.2	44.4 - 52.1	44 - 64	60 - 80	▶ Page 14
		EC			810 - 5080	11.1 - 42.8	44.8 - 60.3	34 - 60	50 - 76	▶ Page 16

## Sectional views



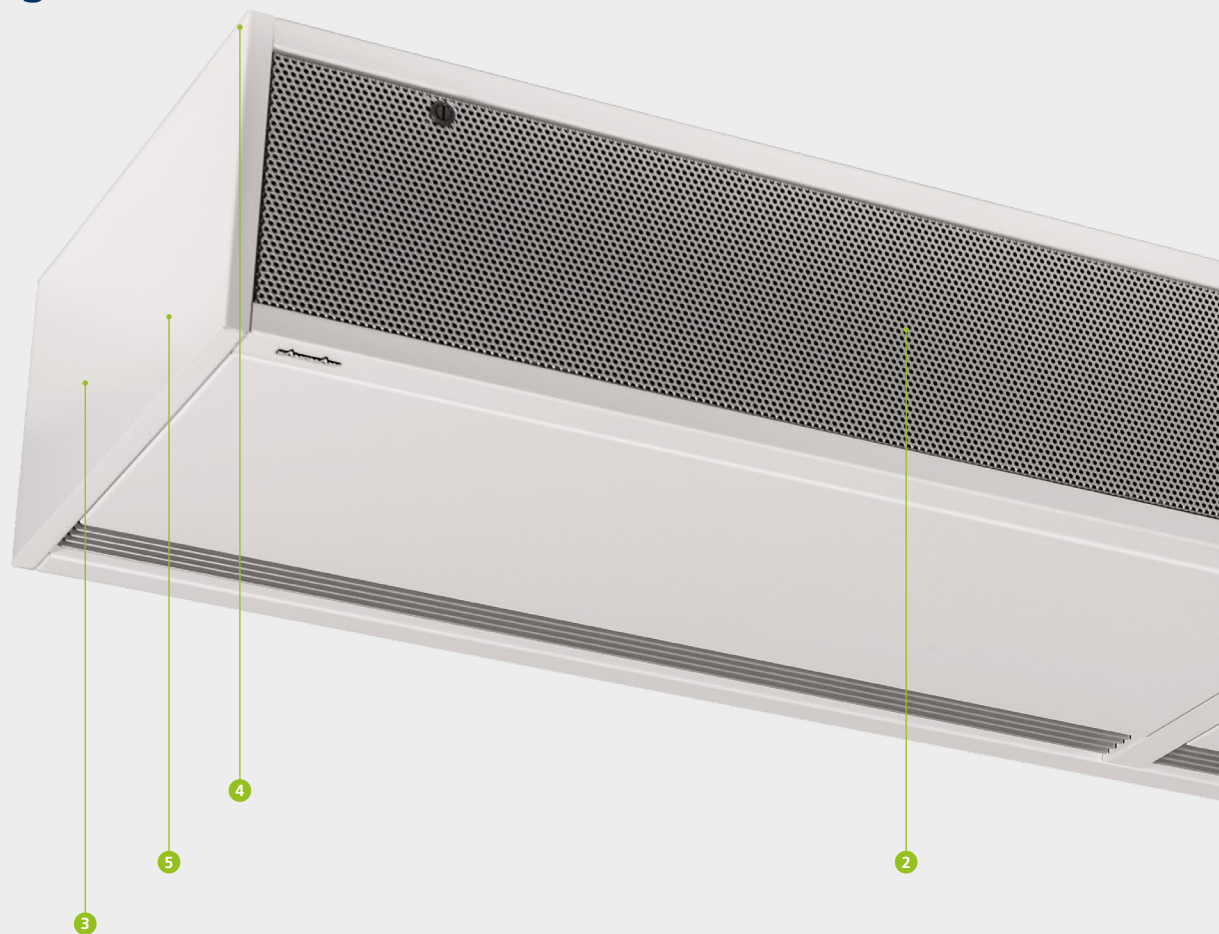
<sup>1)</sup> at low to medium pressure, requirements and conditions, see page 23

<sup>2)</sup> continuously variable control (EC) or switches between 5 stages (AC)

<sup>3)</sup> at LPHW 75/65°C, t<sub>L1</sub> = 20°C

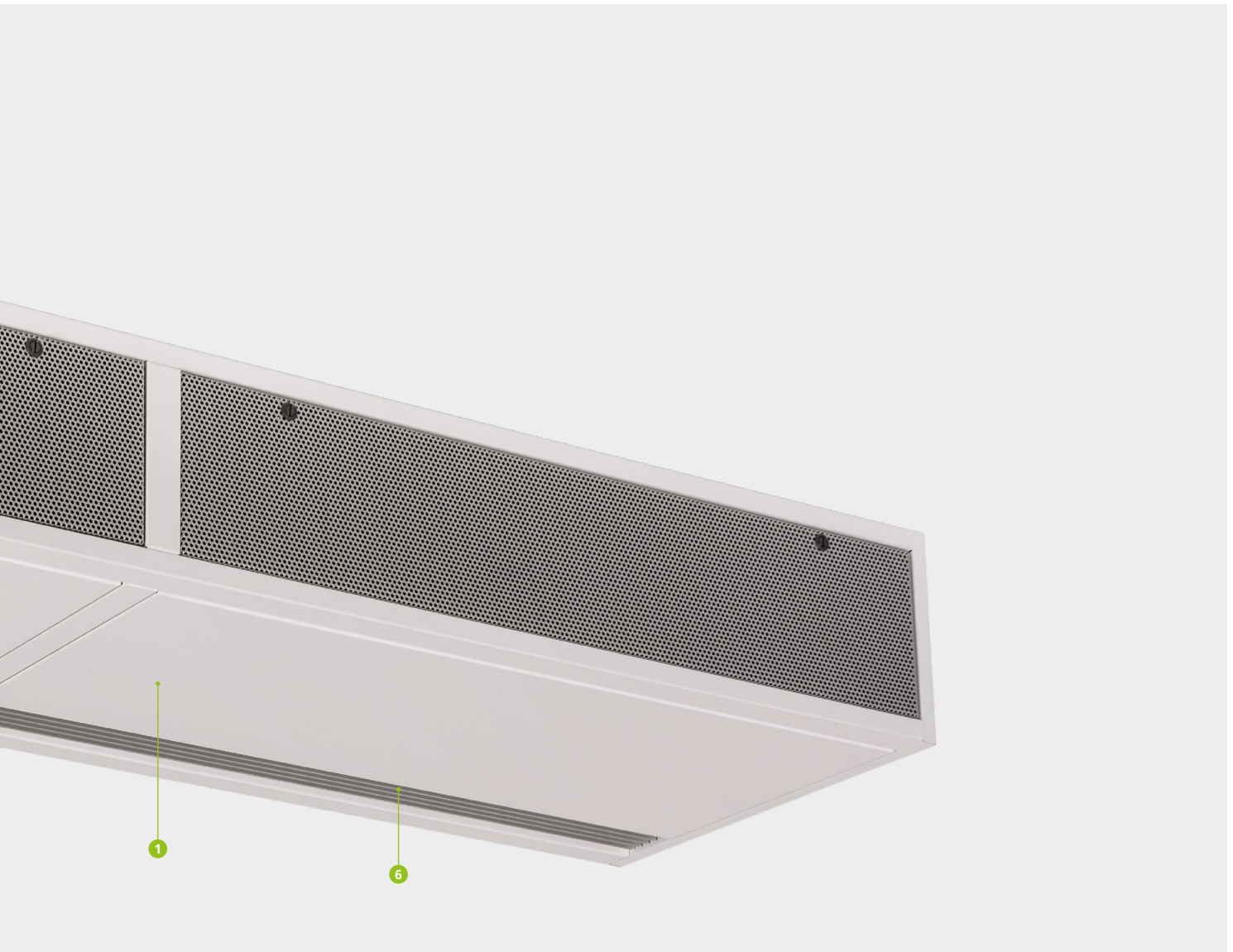
<sup>4)</sup> The sound pressure levels were calculated based on an assumed room insulation of 16 dB(A). This corresponds to a distance of 3 m, a room volume of 2000 m<sup>3</sup> and a reverberation time of 1.0 s (in accordance with VDI 2081).

## UniLine at a glance



## Features



**1 Service hatch:**

- ▶ simple and quick to open
- ▶ quick access for maintenance

**2 Air inlet grille with filter:**

- ▶ opens with minimal effort
- ▶ simple filter replacement without tools

**3 Radial fans:**

- ▶ high-performance radial fans for high air output, wired ready for connection
- ▶ switchable between 5 stages (AC) or continuously variable (EC)

**4 Anti-twist device for heating connection:**

- ▶ prevents damage to the heat exchanger when fitting the valves
- ▶ optional: valves (accessories)

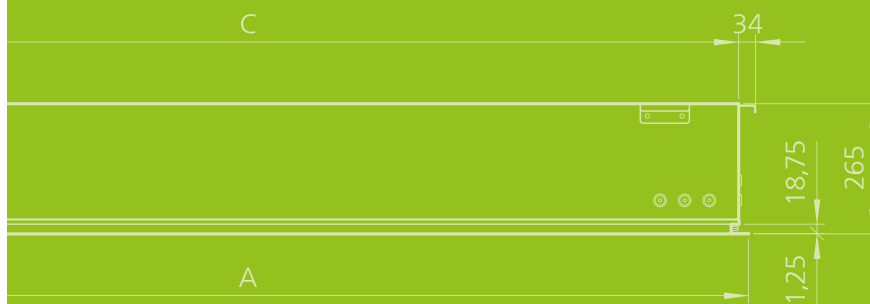
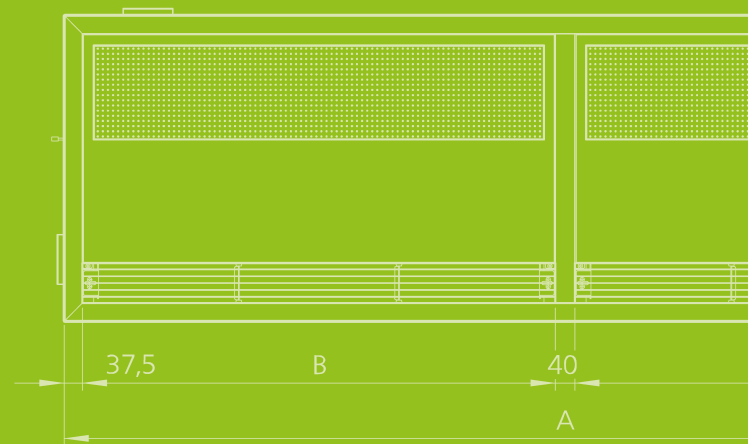
**5 High-output heat exchanger:**

- ▶ proven combination of copper/aluminium
- ▶ optimised for air flow and heat dissipation

**6 Outlet air rectifier:**

- ▶ consisting of an airflow-optimised, adjustable louvre package
- ▶ outlet air rectifier in the air outlet for minimal turbulence and even air discharge, powder-coated in RAL 9006
- ▶ with integral, self-regulating discharge flap for efficient screening at low fan speeds

# 02 ▶ Technical data



## Information on use

Ideally, door air curtains should have a largely continuous air discharge opening to cover the entire width or height of the doorway.

The outlet temperature should be controllable, depending on the heat or cooling requirement in the room. In heating mode, preferably design the outlet temperature at 32°C, although 36°C is recommended. This requirement applies to the room-side layer with multi-stream systems.

Door air curtains are generally sized in line with VDI 2082 taking into account:

- ▶ door width and door height
- ▶ building position and height
- ▶ wind pressure conditions
- ▶ number and position of entrances
- ▶ type of entrance doors
- ▶ size of sales floor
- ▶ installation height
- ▶ volume of traffic

### Compliance with the Energy-related Products Directive 2015

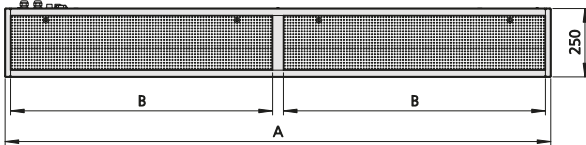
In accordance with the ERP Directive ("LOT 11"), the efficiency requirements have heightened on fans with an electric drive output of 125 watts to 500 kilowatts. The inlet nozzle used in the unit has to be taken into account along with the fan, in terms of energy. The UniLine range of door air curtains is solely fitted with ErP-compliant fans. The UniLine range of door air curtains and the components used are produced and tested in line with the applicable state of the art.



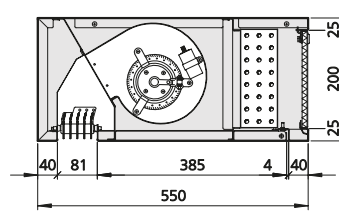
# UniLine AC

## Models 10 to 30

### Technical drawings (dimensions in mm)

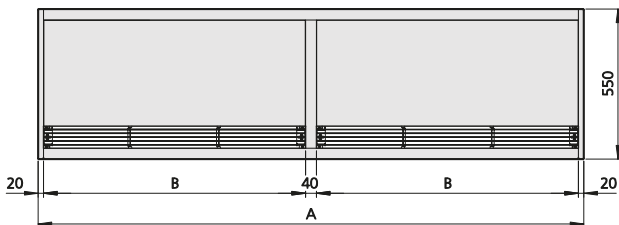


Front view

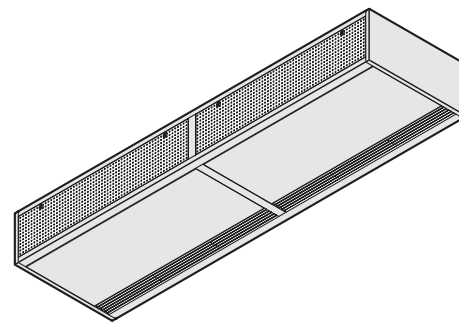


Cross-section

Model	A	B
	[mm]	[mm]
10	1000	960
15	1500	1460
20	2000	960
25	2500	1210
30	3000	1460



View from below



Isometric drawing, view from below

### Specifications

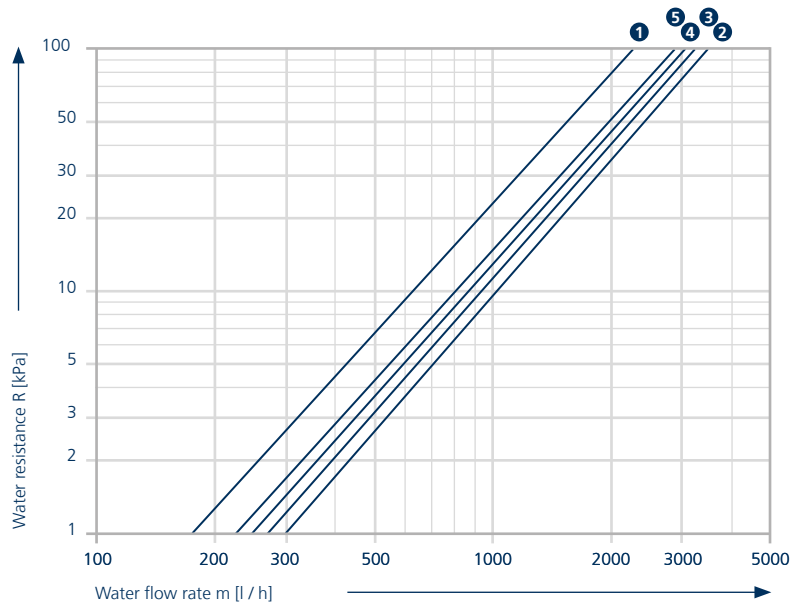
#### Weights

Model	Weight
	[kg]
10	45
15	62
20	79
25	104
30	124

#### Water content of heat exchanger

Model	Water content
	[l]
10	1.0
15	1.8
20	2.6
25	3.5
30	4.5

### Pressure drop diagram



- 1 Model 10
- 2 Model 15
- 3 Model 20
- 4 Model 25
- 5 Model 30

Make use of our online calculation programs to calculate your heat outputs and flow rates with a couple of clicks!

► [Kampmann.co.uk/uniline/calculation](http://Kampmann.co.uk/uniline/calculation)

## Model outputs: AC



Model	Max. discharge height <sup>1)</sup> [m]	Max. door width [m]	Operating level	Air volume V [m <sup>3</sup> /h]	Heat outputs <sup>2)</sup>				Power consumption P [W]	Current consumption I [A]	Sound pressure level <sup>3)</sup> L <sub>pA</sub> [dB(A)]	Sound power level L <sub>WA</sub> [dB(A)]
					at LPHW 75/65 °C		at LPHW 82/71 °C					
					Q <sub>H</sub> [kW]	t <sub>12</sub> [°C]	Q <sub>H</sub> [kW]	t <sub>12</sub> [°C]				
10	2.3 - 3.0	1.0	5	1390	10.2	41.6	11,7	44,8	382	1.82	59	75
			4	1220	9.6	43.2	11,1	46,7	299	1.43	56	72
			3	1050	9.0	45.1	10,3	48,9	228	1.09	52	68
			2	920	8.4	46.8	9,6	50,8	193	0.92	49	65
			1	600	6.7	52.6	7,7	57,5	113	0.54	38	54
15	2.3 - 3.0	2.0	5	2130	17.4	44.0	20,0	47,6	565	2.67	60	76
			4	1880	15.9	44.9	18,3	48,7	438	2.07	57	73
			3	1610	14.3	46.1	16,5	50,1	330	1.56	53	69
			2	1400	13.0	47.2	14,9	51,3	275	1.30	50	66
			1	930	9.6	50.5	11,1	59,3	156	0.74	39	55
20	2.3 - 3.0	2.0	5	2820	24.2	45.2	27,8	49,0	757	3.70	61	77
			4	2480	22.1	46.2	25,4	50,2	586	2.80	58	74
			3	2140	19.9	47.4	22,9	51,5	450	2.20	55	71
			2	1850	18.0	48.6	20,7	52,8	368	1.80	51	67
			1	1210	13.1	51.9	15,1	56,7	205	1.00	41	57
25	2.3 - 3.0	2.5	5	4000	33.9	44.9	38,9	48,6	940	4.75	62	78
			4	3450	30.6	46.0	35,1	50,0	800	4.04	58	74
			3	2980	27.6	47.2	31,7	51,3	604	3.05	54	70
			2	2620	25.1	48.2	28,9	52,5	509	2.58	51	67
			1	1660	18.0	51.8	20,7	56,6	287	1.45	42	58
30	2.3 - 3.0	3.0	5	5330	44.2	44.4	50,8	48,0	1604	7.81	64	80
			4	4600	40.1	45.6	46,1	49,5	1260	6.05	60	76
			3	3970	36.4	47.0	41,8	51,0	958	4.62	56	72
			2	3490	33.3	48.1	38,3	52,3	915	3.86	53	69
			1	2210	24.1	52.1	27,7	56,9	479	2.27	44	60

V [m<sup>3</sup>/h] = air volume, free-blowing; Q<sub>H</sub> [kW] = heat output; t<sub>11</sub> [°C] = air inlet temperature; t<sub>12</sub> [°C] = air outlet temperature

<sup>1)</sup> at low to medium pressure / requirements / conditions, see page 23

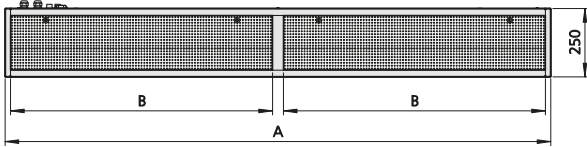
<sup>2)</sup> at air intake temperature t<sub>11</sub> = 20 °C

<sup>3)</sup> The sound pressure level was calculated based on an assumed room insulation of 16 dB(A). This corresponds to a distance of 3 m, a room volume of 2000 m<sup>3</sup> and a reverberation time of 1.0 s (in accordance with VDI 2081).

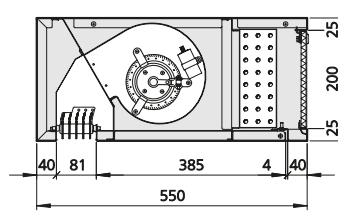
# UniLine EC

## Models 10 to 30

### Technical drawings (dimensions in mm)

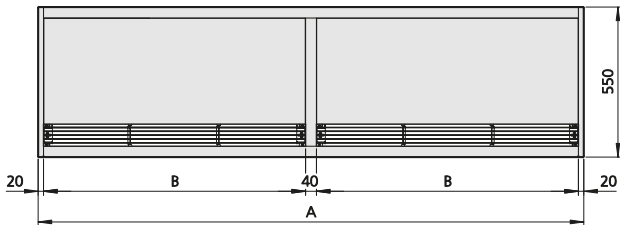


Front view

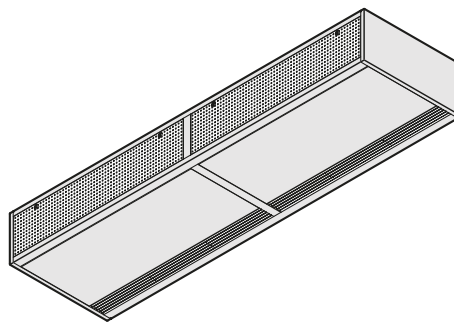


Cross-section

Model	A	B
	[mm]	[mm]
10	1000	960
15	1500	1460
20	2000	960
25	2500	1210
30	3000	1460



View from below



Isometric drawing, view from below

### Specifications

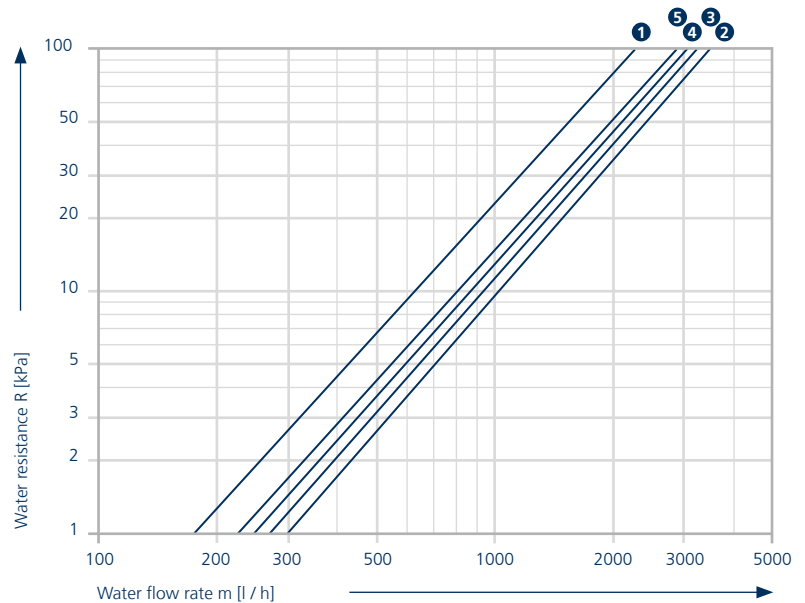
#### Weights

Model	Weight
	[kg]
10	39
15	56
20	70
25	88
30	104

#### Water content of heat exchanger

Model	Water content
	[l]
10	1.0
15	1.8
20	2.6
25	3.5
30	4.5

### Pressure drop diagram



- 1 Model 10
- 2 Model 15
- 3 Model 20
- 4 Model 25
- 5 Model 30

Make use of our online calculation programs to calculate your heat outputs and flow rates with a couple of clicks!

► [Kampmann.co.uk/uniline/calculation](http://Kampmann.co.uk/uniline/calculation)



**Model outputs: EC**

Model	Max. discharge height <sup>1)</sup> [m]	Max. door width [m]	Control voltage [V]	Air volume V [m³/h]	Heat outputs <sup>2)</sup>				Power consumption P [W]	Current consumption I [A]	Sound pressure level <sup>3)</sup> L <sub>pA</sub> [dB(A)]	Sound power level L <sub>WA</sub> [dB(A)]
					at LPHW 75/65 °C		at LPHW 82/71 °C					
					Q <sub>H</sub> [kW]	t <sub>12</sub> [°C]	Q <sub>H</sub> [kW]	t <sub>12</sub> [°C]				
<b>10</b>	2.3 - 3.0	1.0	10	1410	10.3	41.5	11,8	44,7	148	1.04	56	72
			8	1170	9.1	43.0	10,5	46,3	92	0.64	52	68
			6	930	7.9	44.9	9,1	48,7	49	0.34	48	64
			4	620	6.0	48.3	6,9	52,7	20	0.15	43	59
			2	290	3.4	54.8	3,9	59,7	6	0.07	27	43
<b>15</b>	2.3 - 3.0	2.0	10	2540	19.5	42.6	22,4	46,0	254	1.73	57	73
			8	2110	17.3	44.1	19,9	47,7	156	1.07	53	69
			6	1570	14.2	46.6	16,3	50,6	79	0.57	49	65
			4	1010	10.5	50.6	12,1	55,2	33	0.27	42	58
			2	410	5.3	58.2	6,1	63,7	12	0.13	31	47
<b>20</b>	2.3 - 3.0	2.0	10	2820	24.1	45.1	27,7	48,9	296	2.07	59	75
			8	2350	21.3	46.7	24,5	50,7	184	1.28	55	71
			6	1850	18.1	48.8	20,8	53,1	98	0.69	51	67
			4	1250	13.9	52.7	16,0	57,6	40	0.30	46	62
			2	580	7.6	58.7	8,7	64,3	12	0.13	30	46
<b>25</b>	2.3 - 3.0	2.5	10	3980	33.7	44.9	38,8	48,6	409	2.82	60	76
			8	3310	29.8	46.5	34,3	50,5	252	1.74	56	72
			6	2520	24.8	48.9	28,5	53,3	130	0.93	51	67
			4	1650	18.3	52.6	21,0	57,5	54	0.42	45	61
			2	710	9.6	59.7	11,0	65,7	18	0.19	33	49
<b>30</b>	2.3 - 3.0	3.0	10	5080	42.8	44.8	49,2	48,5	508	3.46	60	76
			8	4220	37.9	46.4	43,6	50,4	312	2.14	56	72
			6	3130	30.9	49.0	35,5	53,4	158	1.14	52	68
			4	2010	22.8	53.4	26,2	58,4	66	0.53	46	62
			2	810	11.1	60.3	12,8	66,4	24	0.27	34	50

V [m³/h] = air volume, free-blowing; Q<sub>H</sub> [kW] = heat output; t<sub>11</sub> [°C] = air inlet temperature; t<sub>12</sub> [°C] = air outlet temperature

<sup>1)</sup> at low to medium pressure / requirements / conditions, see page 23

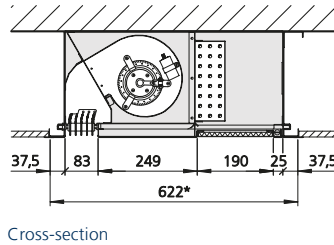
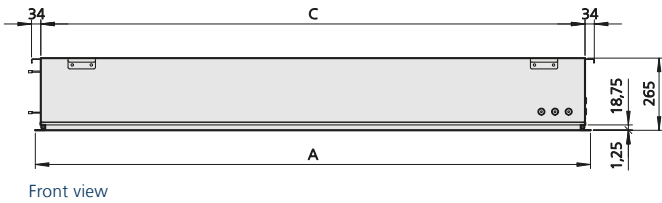
<sup>2)</sup> at air intake temperature t<sub>11</sub> = 20 °C

<sup>3)</sup> The sound pressure level was calculated based on an assumed room insulation of 16 dB(A). This corresponds to a distance of 3 m, a room volume of 2000 m³ and a reverberation time of 1.0 s (in accordance with VDI 2081).

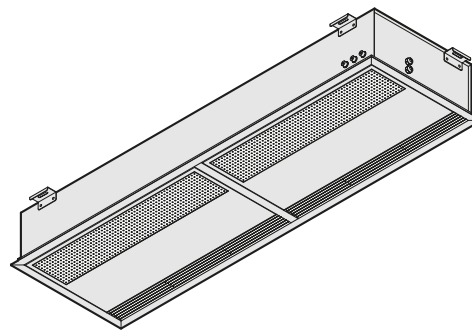
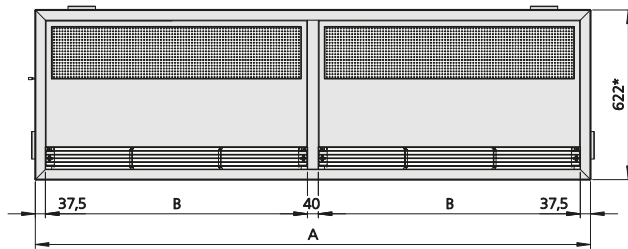
# Cassette UniLine AC

## Models 10 to 25

Technical drawings (dimensions in mm)



Model	A	B
	[mm]	[mm]
10	1035	960
15	1535	1460
20	2035	960
25	2535	1210



### Specifications

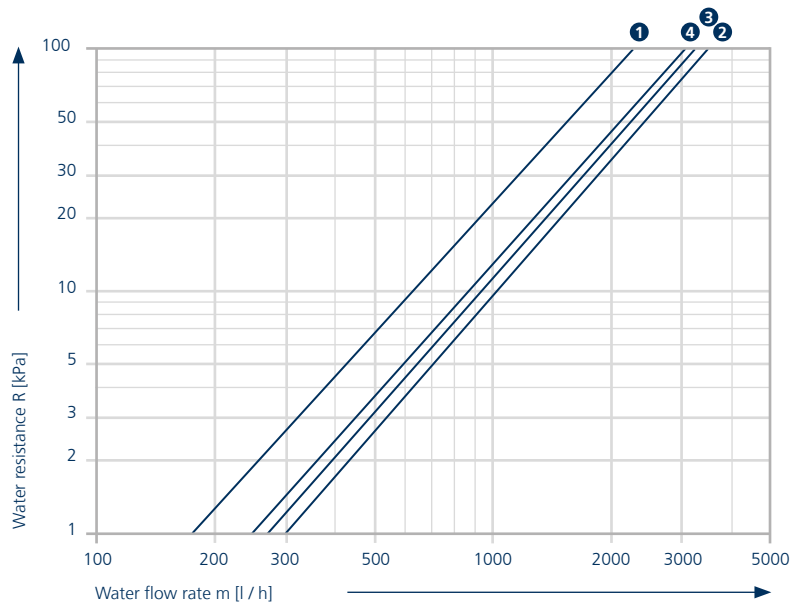
#### Weights

Model	Weight
	[kg]
10	49
15	68
20	87
25	115

#### Water content of heat exchanger

Model	Water content
	[l]
10	1.0
15	1.8
20	2.6
25	3.5

### Pressure drop diagram



- 1 Model 10
- 2 Model 15
- 3 Model 20
- 4 Model 25

Make use of our online calculation programs to calculate your heat outputs and flow rates with a couple of clicks!

► [Kampmann.co.uk/uniline/calculation](http://Kampmann.co.uk/uniline/calculation)

**Model outputs: AC**

Model	Max. discharge height <sup>1)</sup> [m]	Max. door width [m]	Operating level	Air volume V [m <sup>3</sup> /h]	Heat outputs <sup>2)</sup>				Power consumption P [W]	Current consumption I [A]	Sound pressure level <sup>3)</sup> L <sub>pA</sub> [dB(A)]	Sound power level L <sub>WA</sub> [dB(A)]
					at LPHW 75/65 °C		at LPHW 82/71 °C					
					Q <sub>H</sub> [kW]	t <sub>L2</sub> [°C]	Q <sub>H</sub> [kW]	t <sub>L2</sub> [°C]				
<b>10</b>	2.3 - 3.0	1.0	5	1390	10.2	41.6	11,7	44,8	382	1.82	59	75
			4	1220	9.6	43.2	11,1	46,7	299	1.43	56	72
			3	1050	9.0	45.1	10,3	48,9	228	1.09	52	68
			2	920	8.4	46.8	9,6	50,8	193	0.92	49	65
			1	600	6.7	52.6	7,7	57,5	113	0.54	38	54
<b>15</b>	2.3 - 3.0	2.0	5	2130	17.4	44.0	20,0	47,6	565	2.67	60	76
			4	1880	15.9	44.9	18,3	48,7	438	2.07	57	73
			3	1610	14.3	46.1	16,5	50,1	330	1.56	53	69
			2	1400	13.0	47.2	14,9	51,3	275	1.30	50	66
			1	930	9.6	50.5	11,1	59,3	156	0.74	39	55
<b>20</b>	2.3 - 3.0	2.0	5	2820	24.2	45.2	27,8	49,0	757	3.70	61	77
			4	2480	22.1	46.2	25,4	50,2	586	2.80	58	74
			3	2140	19.9	47.4	22,9	51,5	450	2.20	55	71
			2	1850	18.0	48.6	20,7	52,8	368	1.80	51	67
			1	1210	13.1	51.9	15,1	56,7	205	1.00	41	57
<b>25</b>	2.3 - 3.0	2.5	5	4000	33.9	44.9	38,9	48,6	940	4.75	62	78
			4	3450	30.6	46.0	35,1	50,0	800	4.04	58	74
			3	2980	27.6	47.2	31,7	51,3	604	3.05	54	70
			2	2620	25.1	48.2	28,9	52,5	509	2.58	51	67
			1	1660	18.0	51.8	20,7	56,6	287	1.45	42	58

V [m<sup>3</sup>/h] = air volume, free-blowing; Q<sub>H</sub> [kW] = heat output; t<sub>L1</sub> [°C] = air inlet temperature; t<sub>L2</sub> [°C] = air outlet temperature

<sup>1)</sup> at low to medium pressure / requirements / conditions, see page 23

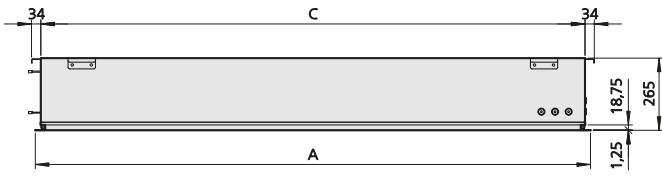
<sup>2)</sup> at air intake temperature t<sub>L1</sub> = 20 °C

<sup>3)</sup> The sound pressure level was calculated based on an assumed room insulation of 16 dB(A). This corresponds to a distance of 3 m, a room volume of 2000 m<sup>3</sup> and a reverberation time of 1.0 s (in accordance with VDI 2081).

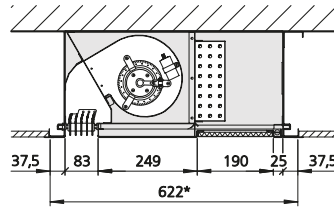
# Cassette UniLine EC

## Models 10 to 25

Technical drawings (dimensions in mm)

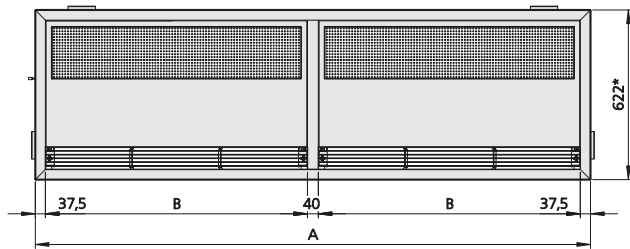


Front view

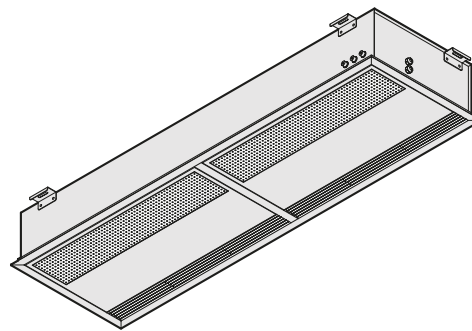


Cross-section

Model	A	B
	[mm]	[mm]
10	1035	960
15	1535	1460
20	2035	960
25	2535	1210



View from below



Isometric drawing, view from below

### Specifications

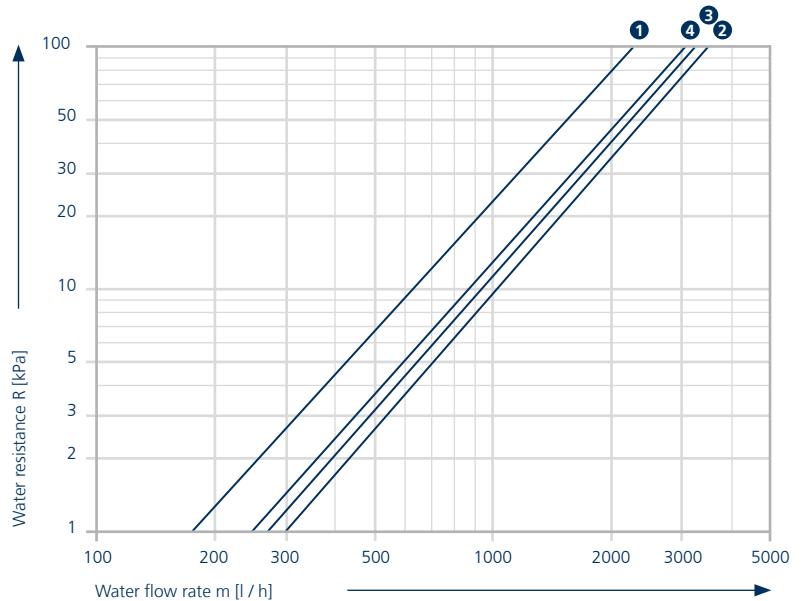
#### Weights

Model	Weight
	[kg]
10	43
15	62
20	78
25	99

#### Water content of heat exchanger

Model	Water content
	[l]
10	1.0
15	1.8
20	2.6
25	3.5

### Pressure drop diagram



- 1 Model 10
- 2 Model 15
- 3 Model 20
- 4 Model 25

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► [Kampmann.co.uk/uniline/calculation](http://Kampmann.co.uk/uniline/calculation)

**Model outputs: EC**

Model	Max. discharge height <sup>1)</sup> [m]	Max. door width [m]	Control voltage [V]	Air volume V [m <sup>3</sup> /h]	Heat outputs <sup>2)</sup>				Power consumption P [W]	Current consumption I [A]	Sound pressure level <sup>3)</sup> L <sub>pA</sub> [dB(A)]	Sound power level L <sub>WA</sub> [dB(A)]
					at LPHW 75/65 °C		at LPHW 82/71 °C					
					Q <sub>H</sub> [kW]	t <sub>L2</sub> [°C]	Q <sub>H</sub> [kW]	t <sub>L2</sub> [°C]				
<b>10</b>	2.3 - 3.0	1.0	10	1410	10.3	41.5	11,8	44,7	148	1.04	56	72
			8	1170	9.1	43.0	10,5	46,3	92	0.64	52	68
			6	930	7.9	44.9	9,1	48,7	49	0.34	48	64
			4	620	6.0	48.3	6,9	52,7	20	0.15	43	59
			2	290	3.4	54.8	3,9	59,7	6	0.07	27	43
<b>15</b>	2.3 - 3.0	2.0	10	2540	19.5	42.6	22,4	46,0	254	1.73	57	73
			8	2110	17.3	44.1	19,9	47,7	156	1.07	53	69
			6	1570	14.2	46.6	16,3	50,6	79	0.57	49	65
			4	1010	10.5	50.6	12,1	55,2	33	0.27	42	58
			2	410	5.3	58.2	6,1	63,7	12	0.13	31	47
<b>20</b>	2.3 - 3.0	2.0	10	2820	24.1	45.1	27,7	48,9	296	2.07	59	75
			8	2350	21.3	46.7	24,5	50,7	184	1.28	55	71
			6	1850	18.1	48.8	20,8	53,1	98	0.69	51	67
			4	1250	13.9	52.7	16,0	57,6	40	0.30	46	62
			2	580	7.6	58.7	8,7	64,3	12	0.13	30	46
<b>25</b>	2.3 - 3.0	2.5	10	3980	33.7	44.9	38,8	48,6	409	2.82	60	76
			8	3310	29.8	46.5	34,3	50,5	252	1.74	56	72
			6	2520	24.8	48.9	28,5	53,3	130	0.93	51	67
			4	1650	18.3	52.6	21,0	57,5	54	0.42	45	61
			2	710	9.6	59.7	11,0	65,7	18	0.19	33	49

V [m<sup>3</sup>/h] = air volume, free-blowing; Q<sub>H</sub> [kW] = heat output; t<sub>L1</sub> [°C] = air inlet temperature; t<sub>L2</sub> [°C] = air outlet temperature

<sup>1)</sup> at low to medium pressure / requirements / conditions, see page 23

<sup>2)</sup> at air intake temperature t<sub>L1</sub> = 20 °C

<sup>3)</sup> The sound pressure level was calculated based on an assumed room insulation of 16 dB(A). This corresponds to a distance of 3 m, a room volume of 2000 m<sup>3</sup> and a reverberation time of 1.0 s (in accordance with VDI 2081).

# 03 ▶ Design information

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### Layout

When positioned over the door, the equipment needs to be installed in such a way that the air outlet grille is positioned as closely as possible to the door opening, preferably directly adjacent to the door.

With horizontal and vertical gaps of more than 500 mm between the door opening and outlet grille, select the next model length up or provide for side panelling similar to a corridor.

### Operating limits

Extremely poor operating conditions, such as

- ▶ strong negative pressure in the rooms, e.g. produced by mechanical ventilation without the supply of outside air
- ▶ extremely adverse weathering conditions with high wind speeds in an unprotected position
- ▶ several open openings to the outside, especially if they are positioned opposite each other can impair the effective screening effect of the door air curtains. Additional measures, may need to be put in place, to compensate for the pressure in the room. When designing thoroughfares, note that it may be necessary to close the doors during business hours as well.

Provide for units with higher air outputs and heat outputs should doors need to remain open in large department stores, even in the event of unfavourable or extreme weather.

They have to be in a position to heat up the large volumes of cold air, which can penetrate under certain circumstances.

### Low temperature operation

Modern low temperature and condensing boilers only achieve the highest levels of efficiency with low flow temperatures. Kampmann UniLine door air curtains have high-output copper / aluminium heat exchangers and are suitable for low temperature operation at a flow temperature of approx. 50°C. Thanks to their extremely low water content and fan operation with high air volumes, they react extremely quickly after long cooling down periods.

### Sound pressure level

The aerodynamic construction of UniLine units only produces a very low noise level, in spite of the high outlet air speeds. Nevertheless, it is important to note that the sound levels may be troubling at high fan speeds. Sound pressure levels are listed in the technical data tables.

The sound pressure levels were calculated with an assumed room insulation of 16 dB(A). This corresponds to a distance of 3 m, a room volume of 2000 m<sup>3</sup> and a reverberation time of 1.0 s (in accordance with VDI 081). As the actual sound pressure level is seriously dependent on the acoustic properties of the space, the stated figures can deviate in practice. Increased sound levels of approx. 3 – 6 dB (A) can occur under acoustically unfavourable conditions, such as "acoustically hard" ceilings, closed doors and poor absorption surfaces. If two models of the same door air curtain are arranged adjacent to each other, the increased sound pressure level will be approx. 2 – 3 dB (A).

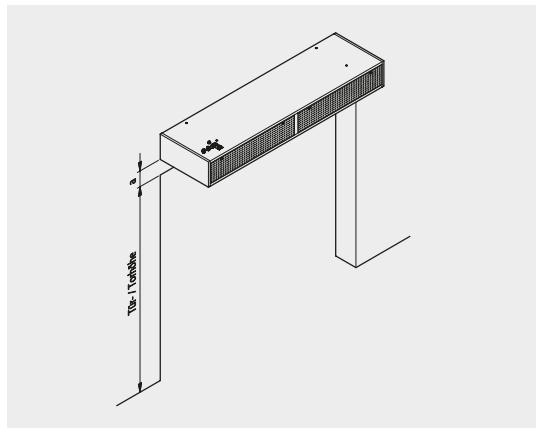
### Max. electrical rating for UniLine

Motor version	Model	Voltage [V] / Frequency [Hz]	Power consumption [kW]	Current consumption [A]	Speed [rpm]
AC	Model 10	230 / 50	0.4	1.8	1600
	Model 15	230 / 50	0.6	2.7	1600
	Model 20	230 / 50	0.8	3.6	1600
	Model 25	230 / 50	1.2	5.4	1600
	Model 30	230 / 50	1.6	7.2	1600
EC	Model 10	230 / 50/60	0.5	3.6	1400
	Model 15	230 / 50/60	0.7	5.4	1400
	Model 20	230 / 50/60	1.0	7.2	1400
	Model 25	230 / 50/60	1.5	10.8	1400
	Model 30	230 / 50/60	1.9	14.4	1400

The power and current consumption of the transformer (AC), control and actuators (optional) is not taken into account.

## Unit selection and combination options

### Selection of the unit configuration based on maximum discharge height



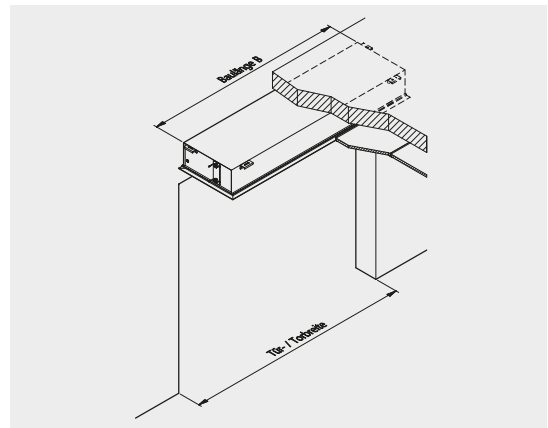
1. Based on discharge height:
  - ▶ max. discharge height  $H_{max} = \text{doorway height} + a$

Also consider:

- ▶ wind pressure conditions
- ▶ impact of thoroughfare, porch, position of the building
- ▶ space occupied by people
- ▶ pressure conditions caused by mechanical ventilation etc.

Max. discharge height $H_{max}$ <sup>1)</sup> [m]	Door air curtain
2.3–3.0	UniLine
2.3–3.0	Cassette UniLine

### Selection of the unit configuration based on door/doorway width



2. Based on door/doorway width:
 

The required model of door air curtain is selected on the basis of the door width:

- ▶ door / doorway width = unit length B

The unit lengths are based on common door opening dimensions.

Other unit lengths can be obtained by combining units of the same or different model, obtained by hydraulic and electrical connection on the upper side (see table below).

Door/doorway width [m]	Models of door air curtain	
	UniLine	Cassette UniLine
1.0	Model 10	Model 10
1.5	Model 15	Model 15
2.0	Model 20	Model 20
2.5	Model 25	Model 25
3.0	Model 30	–

<sup>1)</sup> at low to medium pressure, requirements and conditions



# To assist with selection

Assessment criteria	Pressure / Requirements / Conditions							Points*
<b>1. Wind pressure conditions</b>	0	1	2	3	4	5	6	<input type="text"/>
	weak air flow, densely populated position			medium air flow		strong air flow, close to the sea, on a slope		
<b>2. Passage / Porch</b>	0	1	2	3	4			<input type="text"/>
	available, closed		open	not available				
<b>3. Position of building</b>	0	1	2	3	4	5	6	<input type="text"/>
	normal, protected			open buildings		free-standing, unprotected		
<b>4. Area constantly occupied by people</b>	0	1	2					<input type="text"/>
	zone I	zone II	zone III					
<p>B = Door width</p>								
<b>5. Pressure conditions caused by mechanical ventilation</b>	0	1	2	3	4			<input type="text"/>
	overpressure		pressure equalisation	slight negative pressure				
<b>6. Other thoroughfares / doors</b>	0	1	2	3	4			<input type="text"/>
	none		at the side of the door opening	opposite the door opening				
<b>7. Ceiling height</b>	0	1	2	3	4			<input type="text"/>
	up to 2.5 m		up to 3.5 m	more than 4.5 m and/or with staircase				
<b>8. Floor area</b>	0	1	2	3	4			<input type="text"/>
	up to 100m <sup>2</sup>		400m <sup>2</sup>	from 800m <sup>2</sup>				
<b>9. Gap between door opening – air outlet</b>	0	1	2	3	4	5	6	<input type="text"/>
	a = 0		a = 300 mm		a = 600 mm			
<p>1 = Door air curtain, 2 = Door a = Distance</p>								

**Points total**

\* Please enter points.

# Selection process

## Selection process

Enter points on each scale in line with the conditions on site for the various factors / assessment criteria

- ▶ intermediate values are also possible
- ▶ in extreme cases, factors outside of the point scale can also be taken into consideration. The total of points in the right column of the table gives the total points for determining the maximum discharge heights and discharge widths depending on the

switching stage in diagram 1

- ▶ note the limits of use (see page 23) when the doors are continuously open

In this case,  $H_{\max.}$  stands for maximum discharge height for UniLine door air curtains.

## Selection example

Specification: Door air curtain for showroom, door: height 2.20m, width 2.00m

- ▶ weak air flow (1 point)
- ▶ porch or passage fitted (0 points)
- ▶ normal, protected location (0 points)
- ▶ sales personnel in Zone II (1 point)
- ▶ minimal positive pressure in the room (1 point)
- ▶ side thoroughfare fitted (2 points)
- ▶ room height 3.00m (1 point)
- ▶ room area 200m<sup>2</sup> (1 point)
- ▶ distance from door opening – air outlet 100mm (1 point)

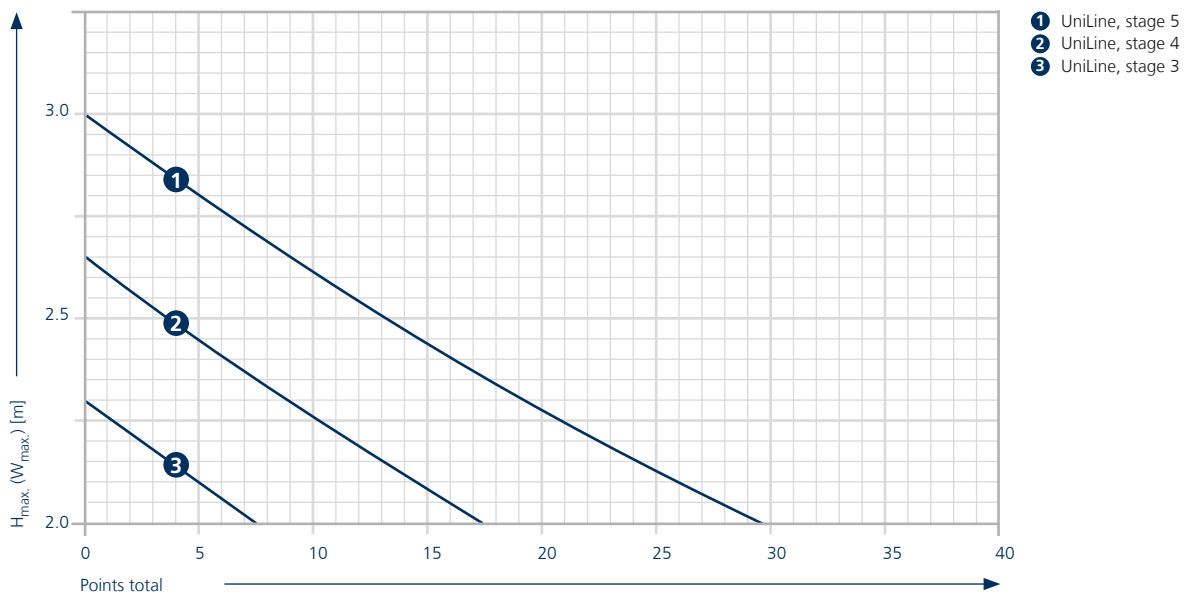
**total points:** 8 points

## Selection

- ▶ door air curtain size 20, thus unit length = door width
- ▶ assessment as per table: Total points = 8
- ▶ discharge height = door height + a = 2.2 m + 0.1 m = 2.3 m
- ▶ from Diagram 1:  
at 8 points as a minimum:  
UniLine door air curtain operating at stage 4 with  $H_{\max.} = 2.30$  m

**Result:** UniLine door air curtain, model 20

## Diagram 1



## SAM – Silent AutoMotion

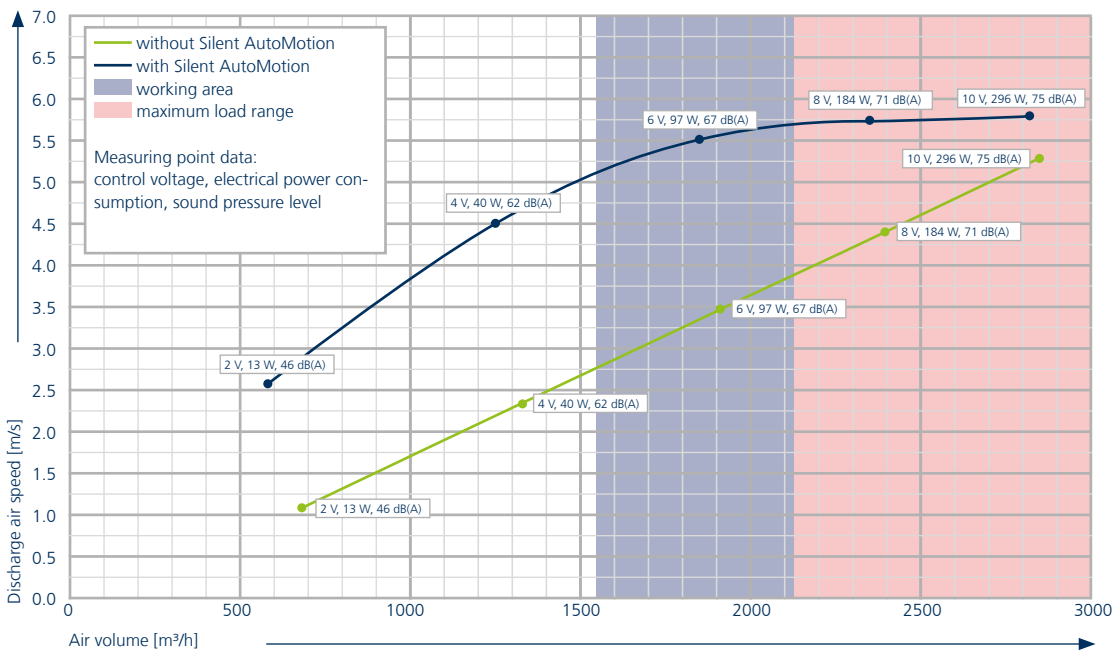
UniLine EC door air curtains are equipped ex works with SAM functionality. With the aid of a self-regulating discharge flap in the occupied working area, SAM creates higher air outlet speeds by reducing the outlet cross-section. The flap fully opens at maximum air volume.

Depending on the heat requirement on site, open entrances can now be efficiently screened with minimal power consumption and low sound power levels.

In extremely adverse conditions and winds, it may be necessary to raise the air volume to maximum load and associated heat output.



### Discharge air speed (example: UniLine EC, model 20)

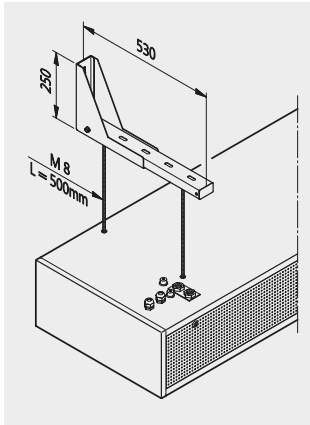


The diagram shows the air outlet speeds above the air volume above the air volume without Silent AutoMotion (green curve) and with Silent AutoMotion (blue curve) and the working range (highlighted in blue) and the maximum load range (highlighted in red). The maximum air outlet speeds for efficient screening are reached in the working range between 5 and 7 V. Unlike the conventional air outlet without SAM function at 10 V actuation (296 W electrical power consumption, 75 dB (A) sound power), the air outlet speeds with the new air outlet with SAM function are achieved at 6 V (97 W electrical power consumption, 67 dB (A) sound power).

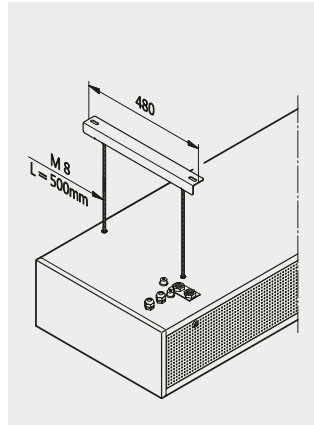
This leads to a reduced sound power level of approx. 8 dB(A) and a 67% saving of electrical energy with comparable penetration depth providing the local conditions permit the heat output to be reduced. With more exacting requirements (e.g. with extremely adverse conditions), the heat output required can be adapted by increasing the air volume in the maximum load range.

# Brackets

## Overview of types

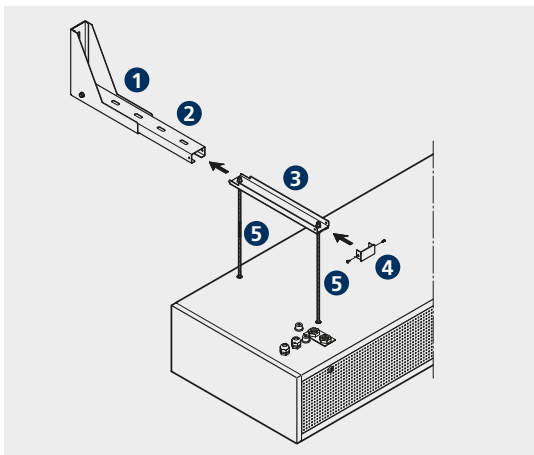


Wall brackets  
UniLine models 10 – 30<sup>1)</sup>



Ceiling brackets  
UniLine models 10 – 30<sup>1)</sup>

## Slot-in design for wall and ceiling brackets



- 1 Fixing bracket for wall bracket
- 2 U-shaped rail
- 3 Slide-in rail
- 4 Cover
- 5 Threaded rod

Cassette-UniLine are supplied as standard with 4 fixing brackets (5 with model 25). The unit is then fixed to the ceiling with these brackets using bolts/threaded rods and rawplugs provided on site. Other articles, such as wall or ceiling brackets are therefore not required (details see page 30).

## Overview

Door air curtain	Model	Wall bracket	Ceiling bracket
UniLine	Models 10–25	Type 500890	Type 500895
	Model 30	Type 500892	Type 500897

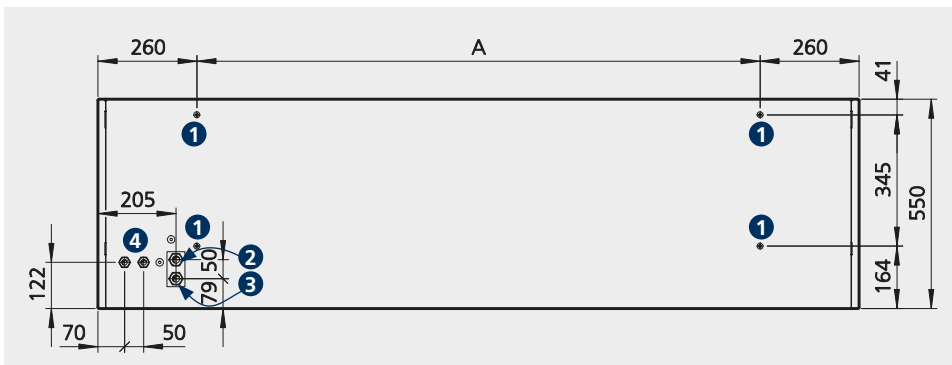
<sup>1)</sup> 3 brackets are used with model 30

# UniLine: Fixing points and LPHW connection

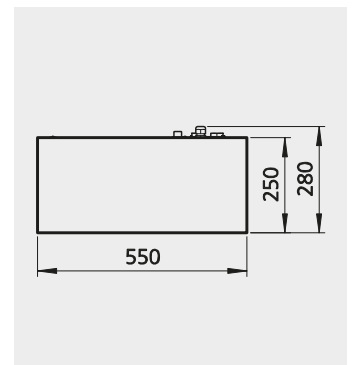
UniLine door air curtains are either suspended using wall and ceiling brackets or a bracket on site. 4 no. M8 rivet nuts (or 6 no. rivet nuts for model 30) are fitted to the unit.

The LPHW and electrical connection is located on the upper side of the unit, on the left-hand side, seen from the air intake.

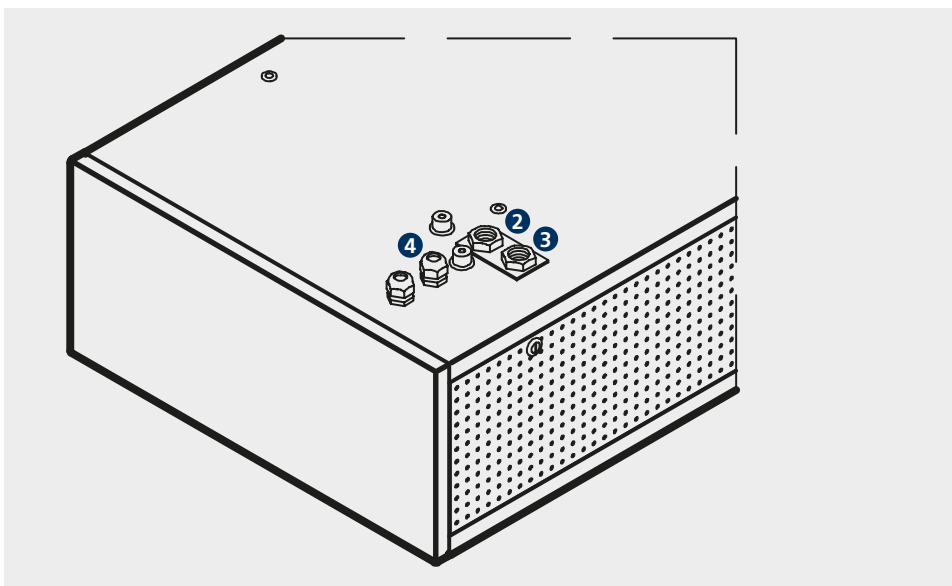
Dimensions and spacings can be taken from the following drawings and table.



Top view



Side view



Isometric view, connection area

- 1 Fixing point
- 2 Flow 3/4"
- 3 Return 3/4"
- 4 Openings for electrical connection and sensor

## Spacing of fixing points (dimensions in mm)

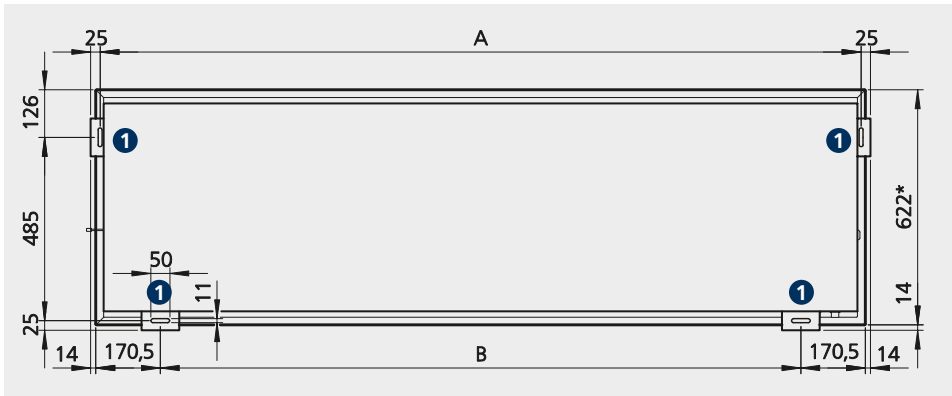
Model	10	15	20	25	30
A	480	980	1480	1980	2 x 1240

# Cassette UniLine: Fixing points and LPHW connection

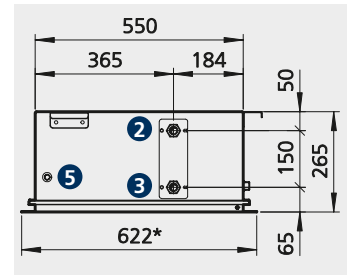
Cassette UniLine door air curtains are suspended on the ceiling, either using on-site brackets or bolts. 4 no. installation brackets (or 5 no. installation brackets for model 25) are supplied with the unit.

The LPHW connection is located on the side of the unit, on the left-hand side (seen from the air intake), the electrical unit on the right-hand side (seen from the air intake).

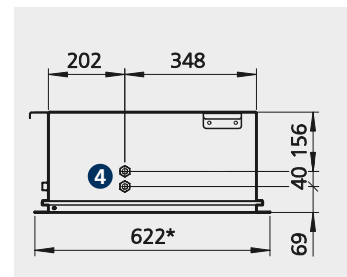
Dimensions and spacings can be taken from the following drawings and table.



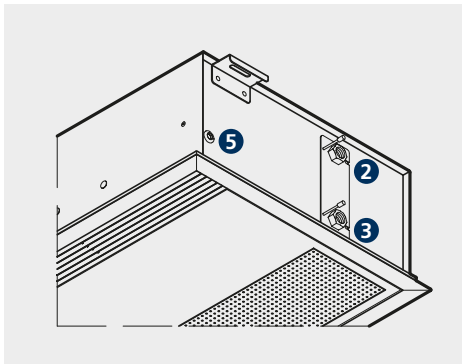
Top view



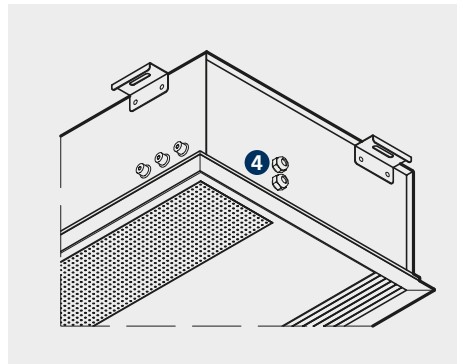
Side view, LPHW connection



Side view, electrical connection



Isometric view, LPHW connection



Isometric view, electrical connection

- 1 Fixing point
- 2 3/4" flow with air vent
- 3 3/4" return with air vent
- 4 Openings for electrical connection
- 5 Opening for sensor

## Spacing of fixing points (dimensions in mm)

Model	10	15	20	25
A	1012	1512	2012	2512
B	694	1194	1694	2 x 1097



# 04 ▶ Controls

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## Control valves

### Outlet air temperature limiting valve



The discharge temperature is a key factor for the effectiveness of a door air curtain. Too high outlet air temperatures reduce the penetration depth of the air stream and can have an unpleasant effect. For energy-saving reasons, the outlet temperature should not be higher than 40 °C during the heating season: a temperature of between 32 °C and 36 °C is recommended according to VDI 2082.

The outlet temperature limiting valve offers the opportunity to limit the outlet temperature. The limit is adjusted on the valve itself.

### Thermoelectric shut-off valve



A warm air stream is not needed with warm outside temperatures in summer. In the same way, when switched off, the warm medium should not flow through the heat exchanger. The use of an NC 230 V AC shut-off valve therefore makes sense in terms of energy use.



# Description of control for UniLine AC with electromechanical control

## Product features

### Switching the fans

The fan motors integrated in UniLine AC door air curtains can be switched between 5 stages by integral transformers. The summer / winter switches enable pure ventilation operation without the supply of heat in summer with the thermoelectric shut-off valve.

### Electrical wiring

Please refer to page 39 for wiring. The electrical rating values are stated in the technical data on pages 14 – 21. The rated values are maximum values under the most unfavourable conditions. The actual values may be lower depending on the installation location, accessories and level of dirt on the filter.

The connection should comply with the VDE regulations and provisions laid down by the regional electricity providers.

### Cascade module

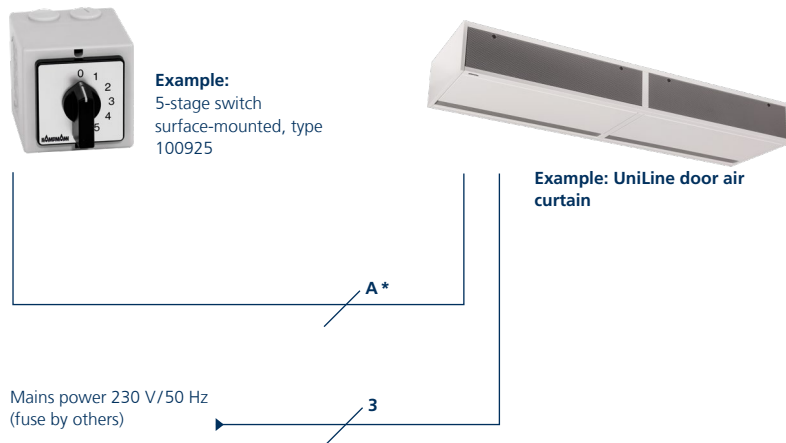
With door air curtains systems operated by a stage switch, up to 10 electromechanical door air curtains can be operated in parallel when using cascade modules (see following table).

**Number of cascade modules when operating door air curtains in parallel (maximum 10 units)**

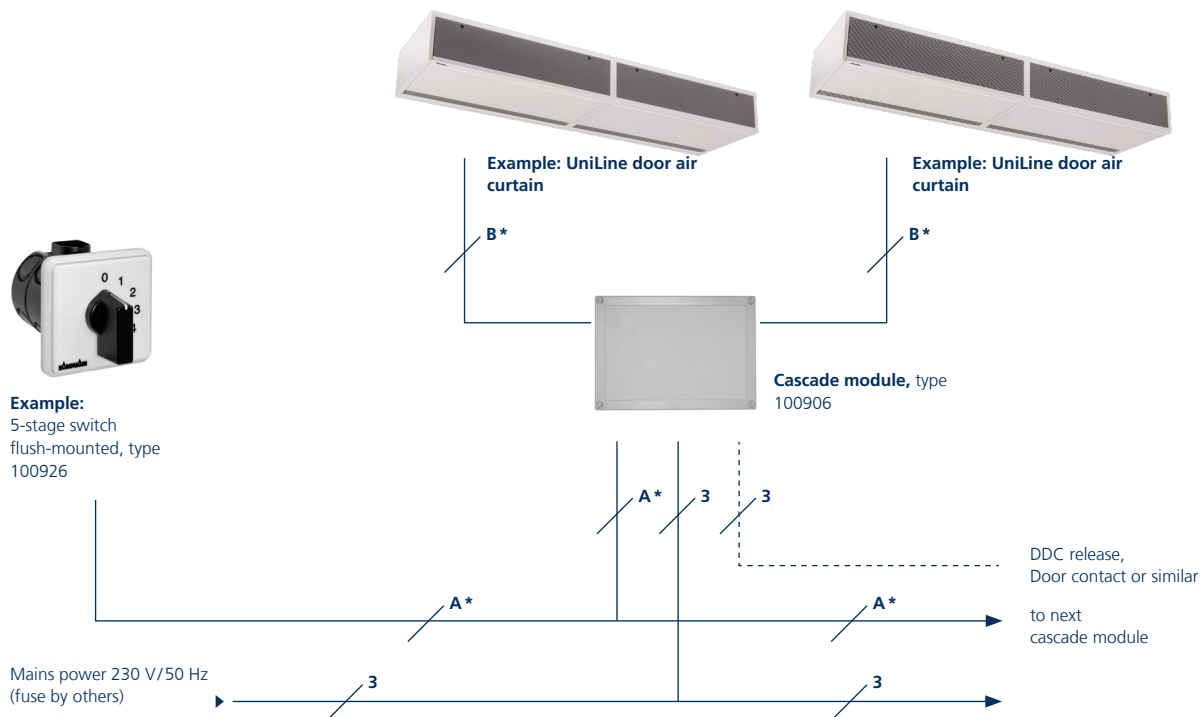
	Number of									
UniLine door air curtains	1	2	3	4	5	6	7	8	9	10
Cascade modules with controller used stage switch	0	1	2	2	3	3	4	4	5	5

# UniLine AC door air curtains, electrical installation

## Single operation of UniLine door air curtain



## Parallel operation of UniLine door air curtains



### Number of lines including fuse

Line	5-stage switch, type 100925 / 100926	5-stage summer-winter switch, type 100928 / 100929
A	7	8
B	8	9

\* Refer to the above table ("Number of lines including fuse") for the number of wires in the labelled cables. The number of wires including fuse for all other cables is listed in the wiring diagram.

# Description of control for UniLine AC with P-control

## Single circuit control – control version for in situ control

### Product features

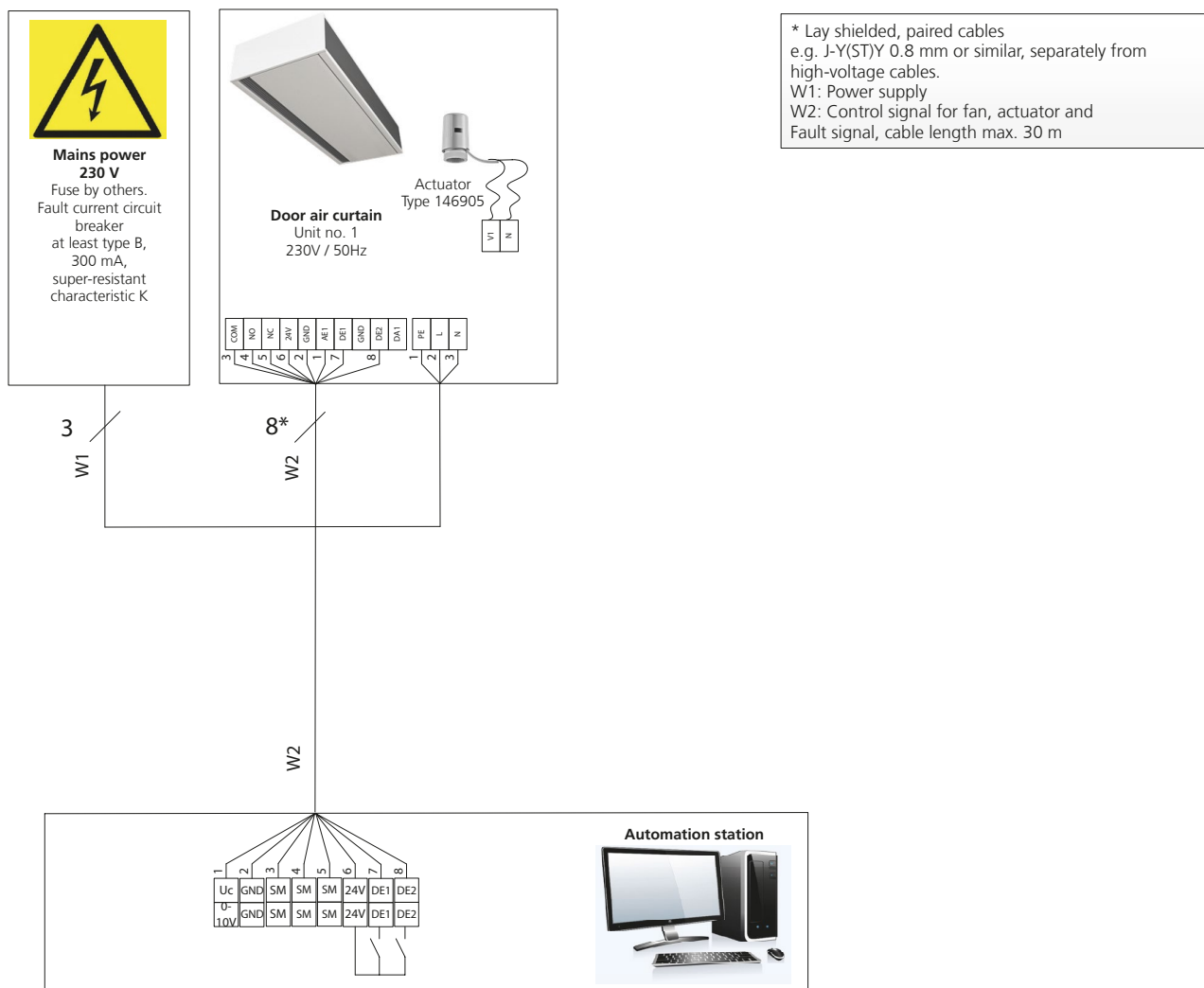
With control configuration \*P, the door air curtain is ideally equipped for integration into on-site automation system.

This configuration includes the automatic switchover of an on-site analogue 0..10 V DC signal into 5-stage ventilation operation with optional enabling via an external switch contact.

### Description of controls

BMS interface module for control of a door air curtain via an on-site building management system with the following features:

- ▶ two parametrisable digital inputs, for instance, for:
  - ▶ unit on/off (fan run-on via timer relay (by others))
  - ▶ summer / winter changeover
- ▶ analogue input 0 – 10V for fan stage selection
- ▶ fan monitoring with automatic shut-off
- ▶ fault signal contact potential-free max. 48V / 1A
- ▶ digital output for heating valve 230V AC



\*\* Only use CAT5 (AWG 23 or similar) cable connections.

**Important: Wire all BUS connections in a linear manner – star-shaped cabling is not permitted!**

## Description of control – UniLine EC, electromechanical model

### Product features

The EC fan is connected to terminals with the UniLine EC electromechanical model of door air curtain. There is also an option to connect a 230 V AC thermoelectric shut-off valve.

UniLine door air curtains (EC electromechanical) are available in two models:

- Option 1: Electromechanical without fault alarm contact (type ending in \*00)
- Option 2: Electromechanical with fault alarm contact (type ending in \*T)

### Fans

The speed of EC fans used in UniLine EC door air curtains is continuously variable controlled by a 0-10 V DC signal. The "intelligent" motor electronics detects any possible motor fault and automatically switched the fan off.

Only with version 2, electromechanical with fault alarm contact: A potential-free alarm contact wired to terminals offers the option of calling up and displaying the motor fault on any control units that may be connected.

### Operating units

Two different operating units are available for operation and control.

#### Speed controller, type 30510



The speed controller offers the simplest method of continuously variable fan speed control:

- ▶ large button to activate and adjust the speed
- ▶ limit of minimum and maximum speed via internal trimmer
- ▶ surface-mounted (degree of protection IP54) or flush-mounted (degree of protection IP44)

Important: The thermoelectric shut-off valve cannot be controlled.

### Combined controller type 30158



The combined controller offers all key functions required for a door air curtain:

- ▶ large button to activate and adjust the basic speed
- ▶ operating mode selector for mode switch-over between Standby, Heating(winter), Ventilation (summer)
- ▶ door contact control input for automatic speed increase
- ▶ control input to detect any possible motor fault
- ▶ room temperature control as back-up in the event of absence (mode switch to Heating and button to "0")
- ▶ optional use of an internal or external room temperature sensor (accessory)
- ▶ three-coloured LED control for operating modes and signals
- ▶ surface-mounted installation on a flush back box or using surface-mounted frame (accessory)
- ▶ surface-mounted installation without back box

### Operating using on-site systems

Control via analogue and digital signals is also possible as an alternative to the Kampmann operating units. The following analogue and digital inputs and / or outputs are needed:

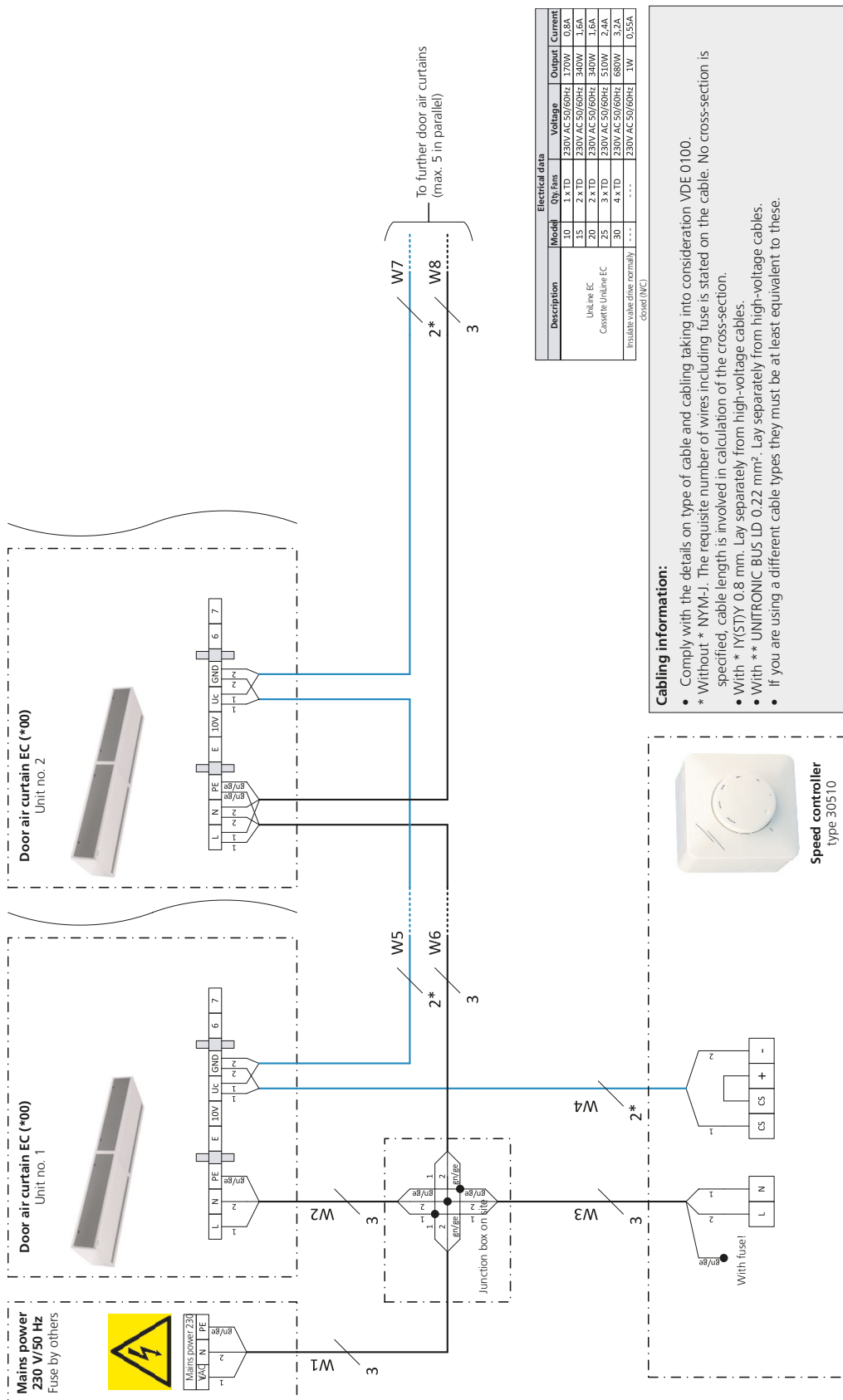
- ▶ speed control via a 0-10 V DC signal The fan starts up safely at 1.5 V DC.
- ▶ 230 V AC switch output for control of a thermoelectric shut-off valve
- ▶ control input for the detection of any possible motor fault (only with electromechanical door air curtains with fault signal contact \*T)

### Information on operation via a door contact

If the fan is activated from idle by a door contact, a certain time is needed before a door air curtain can provide actual screening. Therefore when operated by a door contact with a closed door, the fan should run at basic speed and the speed increased when the door opens. An appropriate run-on at a higher speed should be provided once the door has closed.

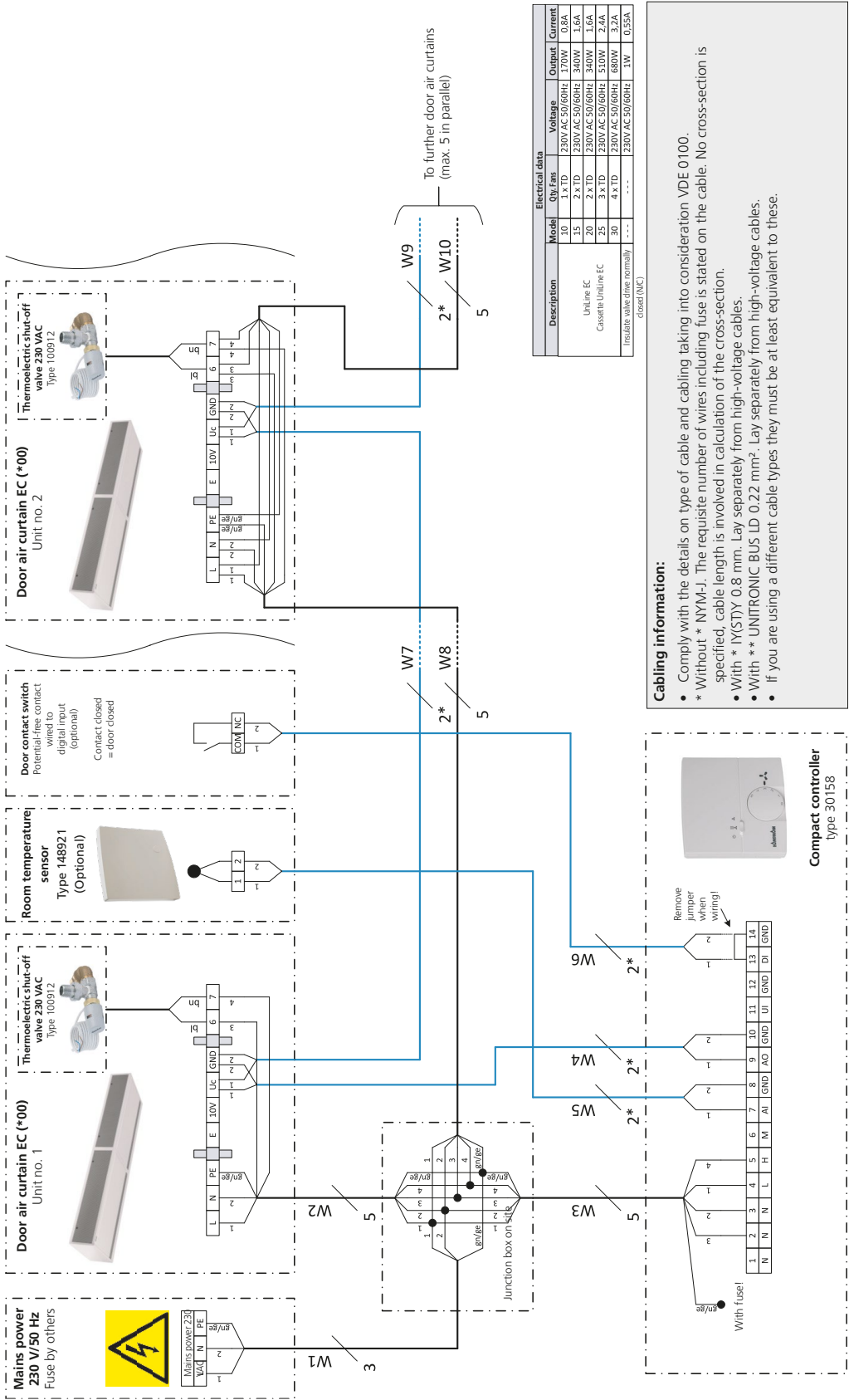
## Electrical installation

### UniLine EC, electromechanical without fault signal contact (\*00), control by speed controller type 30510



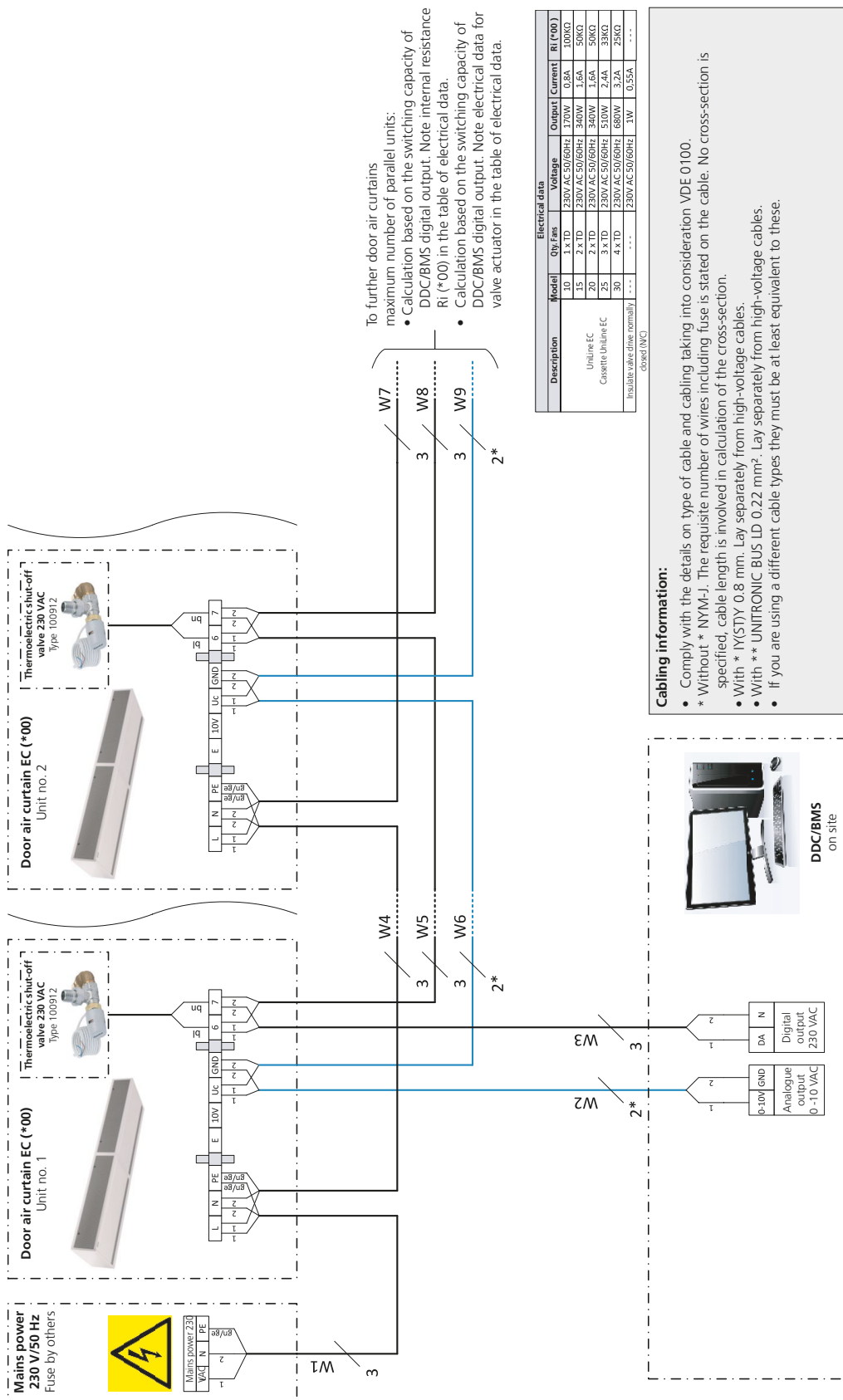
# Electrical installation

## UniLine EC door air curtain, electromechanical, without fault signal contact (\*00), Control by combined controller type 30158



# Electrical installation

## UniLine EC door air curtain, electromechanical, without fault signal contact (\*00), DDC/BMS control



To further door air curtains maximum number of parallel units:

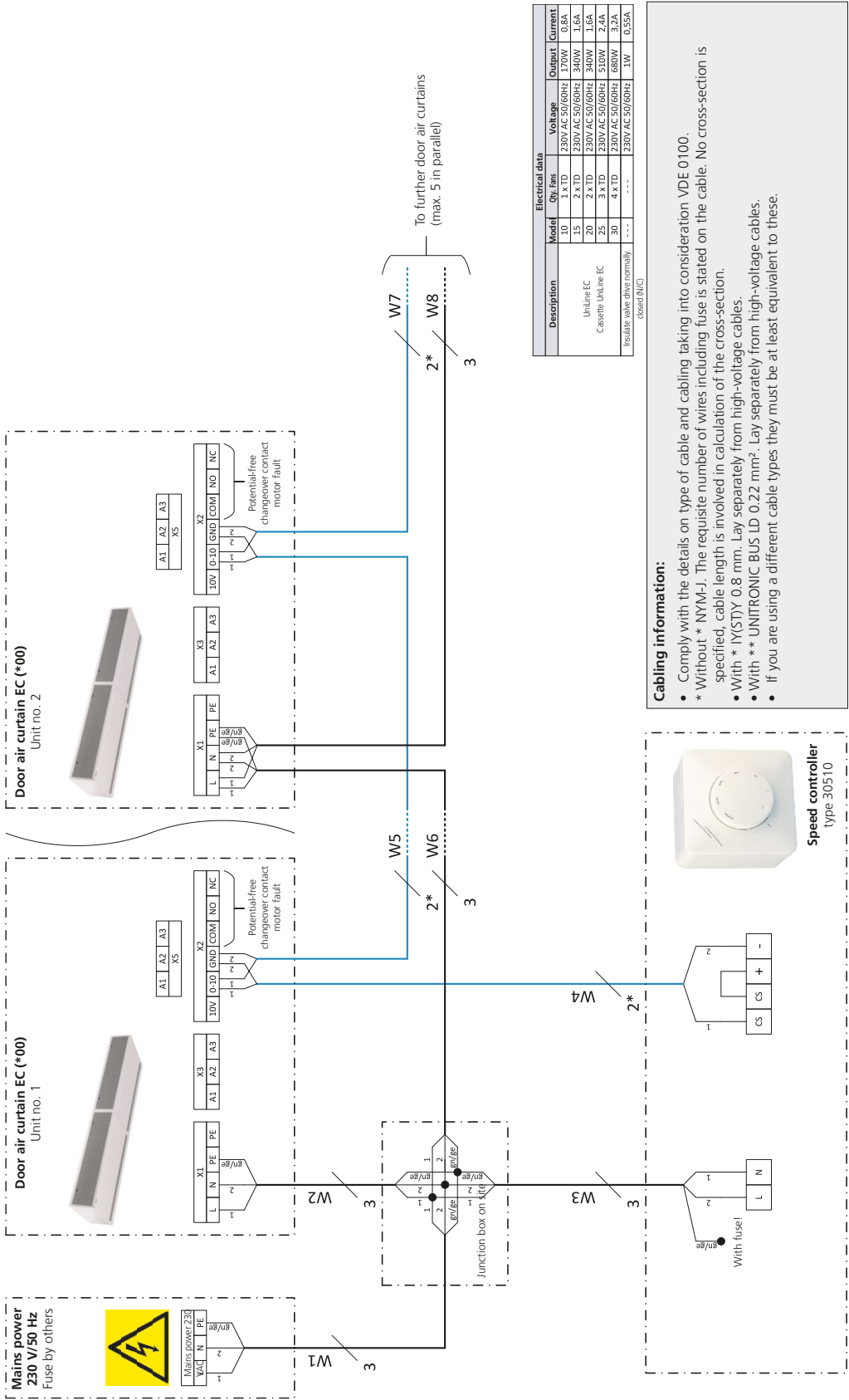
- Calculation based on the switching capacity of DDC/BMS digital output. Note internal resistance RI (\*00) in the table of electrical data.
- Calculation based on the switching capacity of DDC/BMS digital output. Note electrical data for valve actuator in the table of electrical data.

**Cabling information:**

- Comply with the details on type of cable and cabling taking into consideration VDE 0100.
- Without \* NYM-J. The requisite number of wires including fuse is stated on the cable. No cross-section is specified, cable length is involved in calculation of the cross-section.
- With \* IY(STY) 0.8 mm. Lay separately from high-voltage cables.
- With \*\* UNITRONIC BUS LD 0.22 mm<sup>2</sup>. Lay separately from high-voltage cables.
- If you are using a different cable types they must be at least equivalent to these.



# Electrical installation – UniLine EC door air curtain, electromechanical, with fault signal contact (\* T), Control by speed controller type 30510

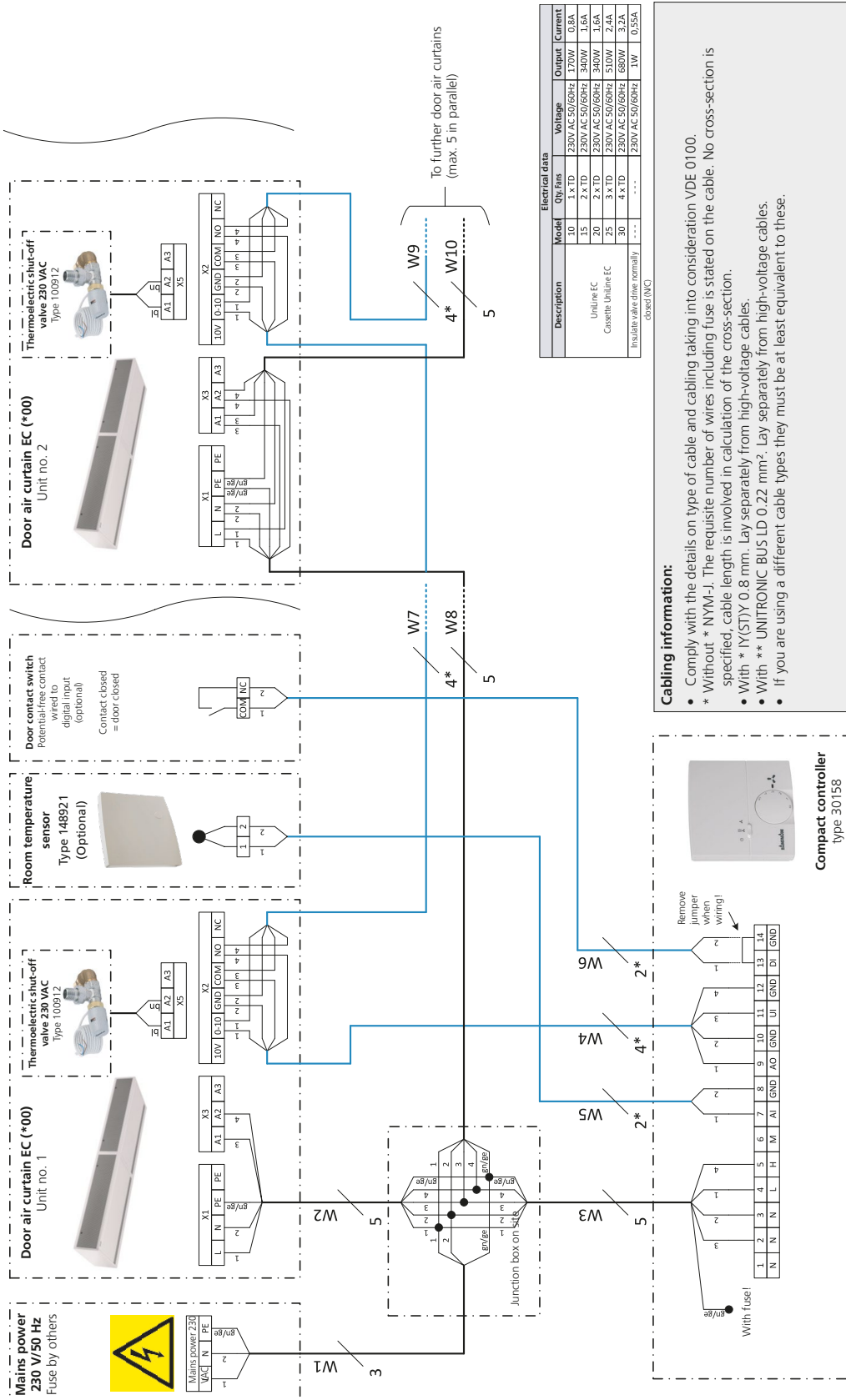


Electrical data		
Description	Model	Current
UniLine EC	10	1.0 A
	15	1.5 A
	20	2.0 A
	25	2.5 A
Cassette UniLine EC	30	3.0 A
	4	4.0 A
	5	5.0 A
	6	6.0 A
Insulate, valve drive normally closed (N/C)		

**Cabling information:**

- Comply with the details on type of cable and cabling taking into consideration VDE 0100.
- \* Without \* NYM-J. The requisite number of wires including fuse is stated on the cable. No cross-section is specified, cable length is involved in calculation of the cross-section.
- With \* IY(STY) 0.8 mm. Lay separately from high-voltage cables.
- With \*\* UNITRONIC BUS LD 0.22 mm<sup>2</sup>. Lay separately from high-voltage cables.
- If you are using a different cable types they must be at least equivalent to these.

# Electrical installation – UniLine EC door air curtain, electromechanical, with fault signal contact (\* T), control by combined controller type 30158



Electrical data			
Description	Model	Voltage	Output Current
UniLine EC	10	230V AC 50/60Hz	1.70W 0.8A
	15	230V AC 50/60Hz	3.40W 1.6A
	20	230V AC 50/60Hz	3.40W 1.6A
	25	230V AC 50/60Hz	5.10W 2.4A
Cassette UniLine EC	30	230V AC 50/60Hz	680W 3.2A
	...	230V AC 50/60Hz	1W 0.55A

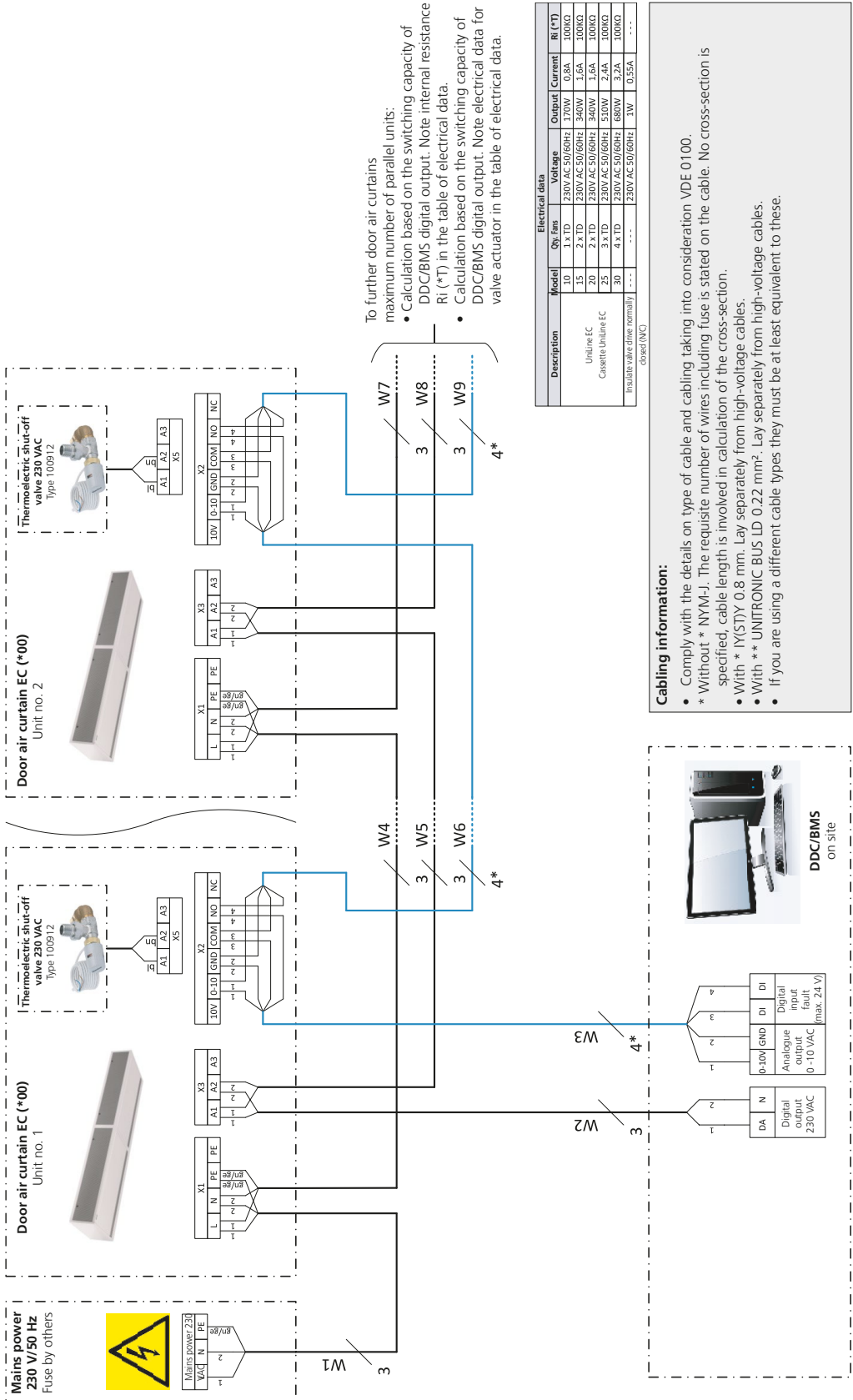
Insulate valve drive normally closed (NC)

**Cabling information:**

- Comply with the details on type of cable and cabling taking into consideration VDE 0100.
- \* Without \* NYM-J. The requisite number of wires including fuse is stated on the cable. No cross-section is specified, cable length is involved in calculation of the cross-section.
- With \* IY(STY) 0.8 mm. Lay separately from high-voltage cables.
- With \*\* UNITRONIC BUS LD 0.22 mm<sup>2</sup>. Lay separately from high-voltage cables.
- If you are using a different cable types they must be at least equivalent to these.

# Electrical installation

## UniLine EC door air curtain, electromechanical, with fault signal contact (\* T), DDC/BMS control



To further door air curtains maximum number of parallel units:

- Calculation based on the switching capacity of DDC/BMS digital output. Note internal resistance Ri (\*T) in the table of electrical data.
- Calculation based on the switching capacity of DDC/BMS digital output. Note electrical data for valve actuator in the table of electrical data.

**Cabling information:**

- Comply with the details on type of cable and cabling taking into consideration VDE 0100.
- Without \* NYM-J. The requisite number of wires including fuse is stated on the cable. No cross-section is specified, cable length is involved in calculation of the cross-section.
- With \* Y(STY) 0.8 mm. Lay separately from high-voltage cables.
- With \*\* UNITRONIC BUS LD 0.22 mm<sup>2</sup>. Lay separately from high-voltage cables.
- If you are using a different cable types they must be at least equivalent to these.

## Control – UniLine AC and EC, KaControl model

### The the all-inclusive solution!

#### Product features

UniLine door air curtain with KaControl (\*C1) are supplied factory-fitted with all electrical parts ready for connection (with the exception of optional accessories). The built-in, high-performance, parametrisable KaControl microprocessor control provides all the functions the door air curtain needs. The "face" of the KaControl is the KaController operating unit.

A group of up to six door air curtains can be formed using a KaController unit without the need for additional addressing.

Optional plug-in interface cards offer the option of connecting to higher-level control systems.

#### Fans

The speed of the fans used in UniLine door air curtains is controlled by a 0-10 V DC signal from the KaControl. The "intelligent" motor electronics detects any possible motor fault and automatically switches the fan off and signals it to the KaControl.

#### Control unit

The KaController operating unit is available for operation and control. It represents the face of the KaControl.

#### KaController type 3210002



The KaController offers maximum operating convenience with a large display, one-touch operation and side operating keys for quick access.

Based on the principle of "as little as possible, as much as required", even untrained users can intuitively get to grips with the control options.

The basic functions are set in a user-friendly way using the KaController.

#### Product features of the KaController

- ▶ high-quality designed wall-mounted room operating units
- ▶ plastic housing, colour similar to RAL 9010
- ▶ large LCD multifunctional display with energy-saving, automatic LED background lighting
- ▶ integral temperature sensor
- ▶ push-turn navigator dial with endless turn/lock function
- ▶ side operating keys for quick access
- ▶ individually adjustable basic display
- ▶ display of fault messages
- ▶ built-in weekly switching program
- ▶ password-protected parameter level

### KaControl

The parametrisable KaControl microprocessor control offers a wealth of functions. The following default settings are factory set for the door air curtain:

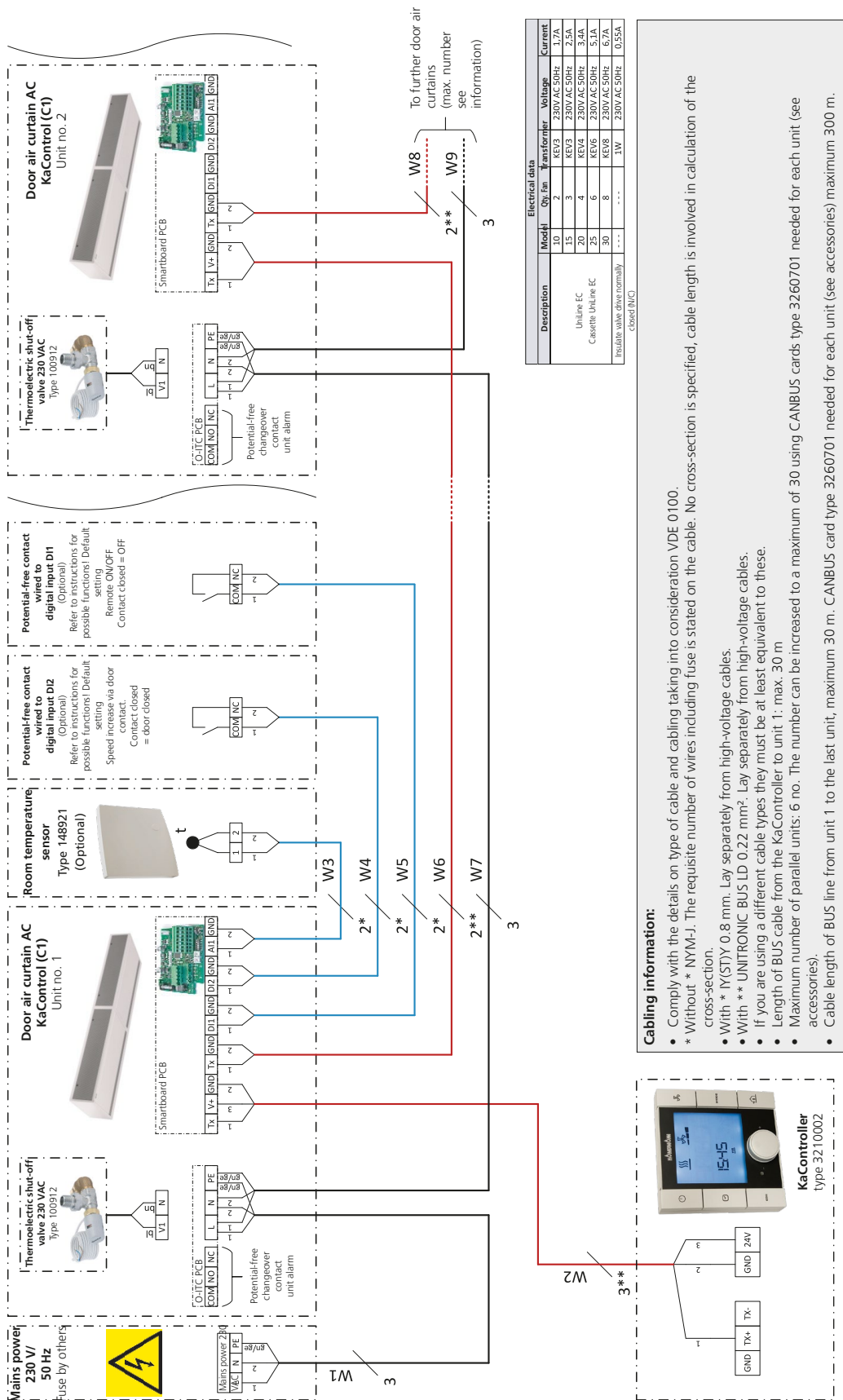
- ▶ remote ON/OFF for activation via external NO contact at digital input DI1
- ▶ basic stage can be set using the KaController operating unit
- ▶ door contact to increase speed including run-on function at DI2
- ▶ ECO mode (room temperature control) can be activated when the door is closed using a key or optional KaController timer program
- ▶ optional use of an internal or external room temperature sensor (accessory)
- ▶ heating (winter) / ventilation (summer) switch-over to close thermoelectric shut-off valve in summer using KaController mode key
- ▶ room frost protection at a room temperature of  $< 8^{\circ}\text{C}$
- ▶ any alert that occurs, such as a motor fault, is detected by the KaControl and issued on the KaController
- ▶ potential-free, changeover contact wired to terminals for the signalling of internal information to external systems (UniLine EC: function parametrisable see instructions, factory setting of unit alarm.  
UniLine AC: function fixed to unit alarm)

Any additional functions required can be parametrised and correspondingly coordinated.

### Information on operation via a door contact

If the fan is activated from idle by a door contact, a certain time is needed before a door air curtain can provide actual screening. Therefore when operated by a door contact with a closed door, the fan should run at basic speed and the speed increased when the door opens. Allow for an appropriate run-on at a higher speed once the door has closed.

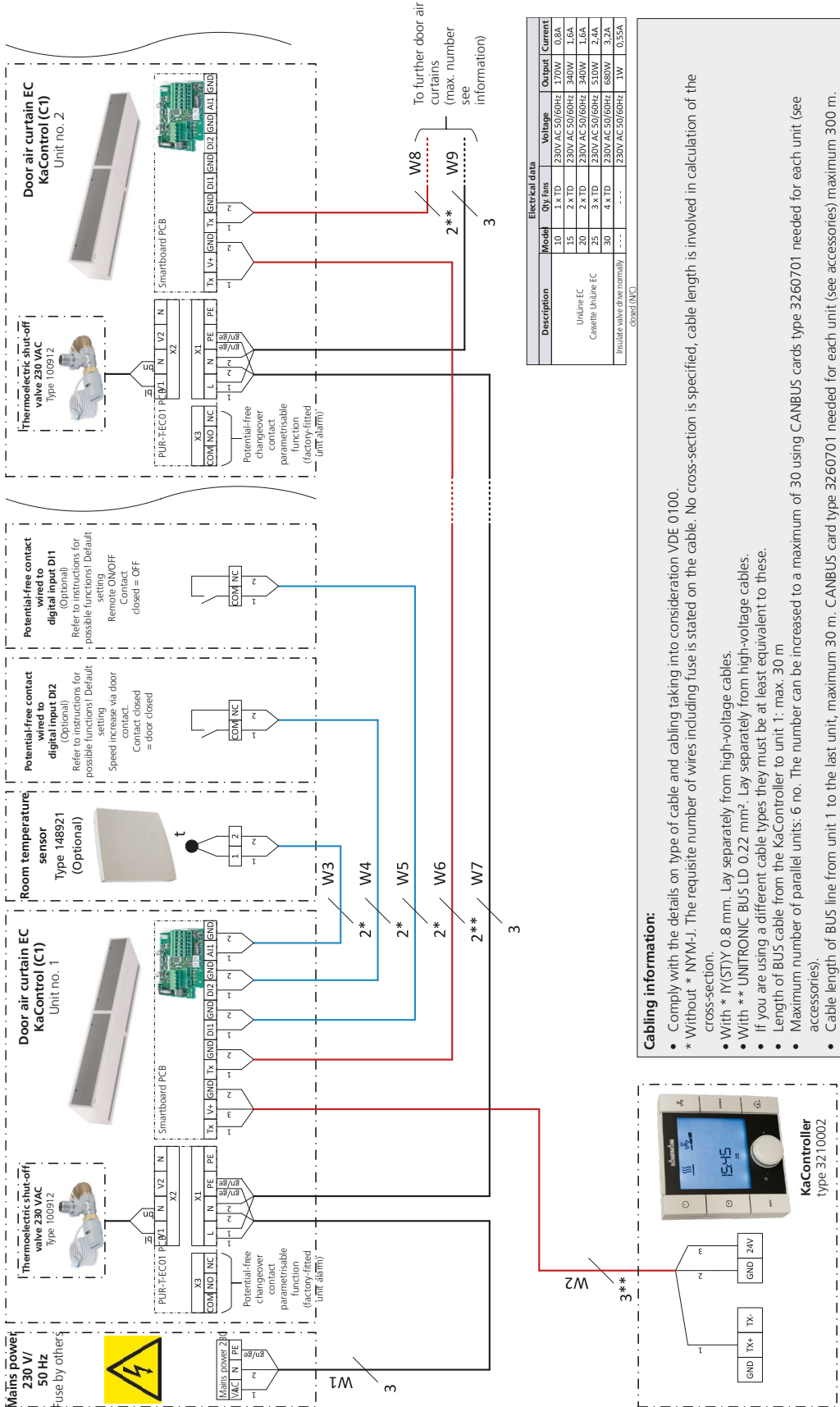
# Electrical installation UniLine AC door air curtain KaControl activation (C1)



**Cabling information:**

- Comply with the details on type of cable and cabling taking into consideration VDE 0100.
- Without \* NYM-J. The requisite number of wires including fuse is stated on the cable. No cross-section is specified, cable length is involved in calculation of the cross-section.
- With \* Y(STY)Y 0.8 mm. Lay separately from high-voltage cables.
- With \*\* UNITRONIC BUS LD 0.22 mm<sup>2</sup>. Lay separately from high-voltage cables.
- If you are using a different cable types they must be at least equivalent to these.
- Length of BUS cable from the KaController to unit 1: max. 30 m
- Maximum number of parallel units: 6 no. The number can be increased to a maximum of 30 using CANBUS cards type 3260701 needed for each unit (see accessories).
- Cable length of BUS line from unit 1 to the last unit, maximum 30 m. CANBUS card type 3260701 needed for each unit (see accessories) maximum 300 m.

# Electrical installation UniLine EC door air curtains KaControl activation (C1)



**Cabling information:**

- Comply with the details on type of cable and cabling taking into consideration VDE 0100.
- \* Without \* N(YM-J). The requisite number of wires including fuse is stated on the cable. No cross-section is specified, cable length is involved in calculation of the cross-section.
- With \* I(Y(STY) 0.8 mm. Lay separately from high-voltage cables.
- With \*\* UNITRONIC BUS LD 0.22 mm<sup>2</sup>. Lay separately from high-voltage cables.
- If you are using a different cable types they must be at least equivalent to these.
- Length of BUS cable from the KaController to unit 1: max. 30 m
- Maximum number of parallel units: 6 no. The number can be increased to a maximum of 30 using CANBUS cards type 3260701 needed for each unit (see accessories).
- Cable length of BUS line from unit 1 to the last unit, maximum 30 m. CANBUS card type 3260701 needed for each unit (see accessories) maximum 300 m.

## KaControl – integration into intelligent building networks (IoT)

KaControl offers a wealth of options for integration into established communication networks. Various building automation strategies can be configured using various options.

### **Individual switching of units**

Units with KaControl configuration can be directly integrated into on-site networks using optional communication interfaces. Control and monitoring is provided via fixed data points. Operation is provided via the KaController operating unit or via the operating units that belong to the network.

### **Switching of groups**

Up to six Units with KaControl configuration can be operated in a single group. Groups of units can be directly integrated into on-site networks using optional communication interfaces. Control and monitoring is provided via fixed data points. Operation of a group is provided via the KaController operating unit or via the operating units that belong to the network.

### **Communication interfaces**

The following communication interfaces can be supplied separately of factory-fitted.

- ▶ Modbus RTU
- ▶ KNX
- ▶ BACnet IP

### **Important:**

More information on integration into intelligent building networks and the associated communication interfaces is available on request!



## KaControl – system controller

The optional Modbus interface allows units with KaControl configuration to be networked into systems individually or in groups with factory-programmed higher-level Kampmann system controllers.

### KaControl SEL control panel



- ▶ up to 24 secondary air units or door air curtains split into up to 24 groups (zones) The same units are needed within a group.
- ▶ optional: KaController can be fitted for each group
- ▶ central heating (winter) / cooling (summer) switch-over of secondary air units or heating (winter) / ventilation (summer) of door air curtains
- ▶ central timer programs
- ▶ optional: BACnet IP gateway for connection to higher-level control systems for the units/zones

### KaControl AUL control panel



- ▶ one Kampmann ventilation system
- ▶ up to 10 groups (zones) with up to 6 Kampmann secondary air units or door air curtains. The same units are needed within a group.
- ▶ optional: KaController is fitted for each group
- ▶ central heating (winter) / cooling (summer) switch-over of secondary air units or heating (winter) / ventilation (summer) of door air curtains
- ▶ 5 timer programs can be assigned to groups
- ▶ optional: BACnet IP gateway for connection to higher-level control systems for the units/zones

### KaControl visualisation



- ▶ up to 100/300 units
- ▶ optional: KaController for each group
- ▶ central heating (winter) / cooling (summer) switch-over of secondary air units or heating (winter) / ventilation (summer) of door air curtains
- ▶ central timer programs
- ▶ visualisation of Kampmann secondary air units, door air curtains and ventilation systems

#### Important:

More information on KaControl system controller can be provided on request!

# 05 ▶ Ordering information

## UniLine

Model	Max. discharge height <sup>1)</sup>	Unit model	Motor version	Length <sup>2)</sup>	Heat output <sup>3)</sup>	Air volume	Sound pressure level <sup>4)</sup>	Sound power level	Control option	Art. no.
	[m]			[mm]	[kW]	[m <sup>3</sup> /h]	[dB(A)]	[dB(A)]		
10	2.3 - 3.0	Unit incl. casing	AC	1000	6.7 - 10.2	600 - 1390	38 - 59	54 - 75	Electromechanical	253000510330
									KaControl	253000510330C1
									Power module	253000510330P
			EC	1000	3.4 - 10.3	290 - 1410	27 - 56	43 - 72	Electromechanical	253003510330
									Electro-mechanical with fault signal monitoring	253003510330T
KaControl	253003510330C1									
15	2.3 - 3.0	Unit incl. casing	AC	1500	9.6 - 17.4	930 - 2130	39 - 60	55 - 76	Electromechanical	253000515330
									KaControl	253000515330C1
									Power module	253000515330P
			EC	1500	5.3 - 19.5	410 - 2540	31 - 57	47 - 73	Electromechanical	253003515330
									Electro-mechanical with fault signal monitoring	253003515330T
KaControl	253003515330C1									
20	2.3 - 3.0	Unit incl. casing	AC	2000	13.1 - 24.2	1210 - 2820	41 - 61	57 - 77	Electromechanical	253000520330
									KaControl	253000520330C1
									Power module	253000520330P
			EC	2000	7.6 - 24.1	580 - 2820	30 - 59	46 - 75	Electromechanical	253003520330
									Electro-mechanical with fault signal monitoring	253003520330T
KaControl	253003520330C1									
25	2.3 - 3.0	Unit incl. casing	AC	2500	18.0 - 33.9	1660 - 4000	42 - 62	58 - 78	Electromechanical	253000525330
									KaControl	253000525330C1
									Power module	253000525330P
			EC	2500	9.6 - 33.7	710 - 3980	33 - 60	49 - 76	Electromechanical	253003525330
									Electro-mechanical with fault signal monitoring	253003525330T
KaControl	253003525330C1									
30	2.3 - 3.0	Unit including casing	AC	3000	24.1 - 44.2	2210 - 5330	44 - 64	60 - 80	Electromechanical	253000530330
									KaControl	253000530330C1
									Power module	253000530330P
			EC	3000	11.1 - 42.8	810 - 5080	34 - 60	50 - 76	Electromechanical	253003530330
									Electro-mechanical with fault signal monitoring	253003530330T
KaControl	253003530330C1									

more >>

<sup>1)</sup> at low to medium pressure, requirements and conditions, see page 23

<sup>2)</sup> including casing elements

<sup>3)</sup> at LPHW 75/65°C,  $t_{L1} = 20^\circ\text{C}$

<sup>4)</sup> The sound pressure levels were calculated based on an assumed room insulation of 16 dB(A). This corresponds to a distance of 3 m, a room volume of 2000 m<sup>3</sup> and a reverberation time of 1.0s.(according to VDI 20810.

## Cassette UniLine for 625 mm grid

Model	Max. discharge height <sup>1)</sup>	Unit model	Motor version	Length <sup>2)</sup>	Heat output <sup>3)</sup>	Air volume	Sound pressure level <sup>4)</sup>	Sound power level	Control option	Art. no.
	[m]			[mm]	[kW]	[m <sup>3</sup> /h]	[dB(A)]	[dB(A)]		
10	2.3 - 3.0	In-ceiling unit for 625x625 mm grid	AC	1035	6.7 - 10.2	600 - 1390	38 - 59	54 - 75	Electromechanical	253000610330
									KaControl	253000610330C1
									Power module	253000610330P
			EC	1035	3.4 - 10.3	290 - 1410	27 - 56	43 - 72	Electromechanical	253003610330
									Electro-mechanical with fault signal monitoring	253003610330T
									KaControl	253003610330C1
15	2.3 - 3.0	In-ceiling unit for 625x625 mm grid	AC	1535	9.6 - 17.4	930 - 2130	39 - 60	55 - 76	Electromechanical	253000615330
									KaControl	253000615330C1
									Power module	253000615330P
			EC	1535	5.3 - 19.5	410 - 2540	31 - 57	47 - 73	Electromechanical	253003615330
									Electro-mechanical with fault signal monitoring	253003615330T
									KaControl	253003615330C1
20	2.3 - 3.0	In-ceiling unit for 625x625 mm grid	AC	2035	13.1 - 24.2	1210 - 2820	41 - 61	57 - 77	Electromechanical	253000620330
									KaControl	253000620330C1
									Power module	253000620330P
			EC	2035	7.6 - 24.1	580 - 2820	30 - 59	46 - 75	Electromechanical	253003620330
									Electro-mechanical with fault signal monitoring	253003620330T
									KaControl	253003620330C1
25	2.3 - 3.0	In-ceiling unit for 625x625 mm grid	AC	2535	18.0 - 33.9	1660 - 4000	42 - 62	58 - 78	Electromechanical	253000625330
									KaControl	253000625330C1
									Power module	253000625330P
			EC	2535	9.6 - 33.7	710 - 3980	33 - 60	49 - 76	Electromechanical	253003625330
									Electro-mechanical with fault signal monitoring	253003625330T
									KaControl	253003625330C1

[more >>](#)

<sup>1)</sup> at low to medium pressure, requirements and conditions, see page 23

<sup>2)</sup> including casing elements

<sup>3)</sup> at LPHW 75/65°C,  $t_{L1} = 20^\circ\text{C}$

<sup>4)</sup> The sound pressure levels were calculated based on an assumed room insulation of 16 dB(A). This corresponds to a distance of 3 m, a room volume of 2000 m<sup>3</sup> and a reverberation time of 1.0s.(according to VDI 20810).

## Cassette UniLine for 600 mm grid

Model	Max. discharge height <sup>1)</sup>	Unit model	Motor version	Length <sup>2)</sup>	Heat output <sup>3)</sup>	Air volume	Sound pressure level <sup>4)</sup>	Sound power level	Control option	Art. no.
	[m]			[mm]	[kW]	[m³/h]	[dB(A)]	[dB(A)]		
10	2.3 - 3.0	In-ceiling unit for 600x600 mm grid	AC	1035	6.7 - 10.2	600 - 1390	38 - 59	54 - 75	Electromechanical	253000710330
									KaControl	253000710330C1
									Power module	253000710330P
			EC	1035	3.4 - 10.3	290 - 1410	27 - 56	43 - 72	Electromechanical	253003710330
									Electro-mechanical with fault signal monitoring	253003710330T
									KaControl	253003710330C1
15	2.3 - 3.0	In-ceiling unit for 600x600 mm grid	AC	1535	9.6 - 17.4	930 - 2130	39 - 60	55 - 76	Electromechanical	253000715330
									KaControl	253000715330C1
									Power module	253000715330P
			EC	1535	5.3 - 19.5	410 - 2540	31 - 57	47 - 73	Electromechanical	253003715330
									Electro-mechanical with fault signal monitoring	253003715330T
									KaControl	253003715330C1
20	2.3 - 3.0	In-ceiling unit for 600x600 mm grid	AC	2035	13.1 - 24.2	1210 - 2820	41 - 61	57 - 77	Electromechanical	253000720330
									KaControl	253000720330C1
									Power module	253000720330P
			EC	2035	7.6 - 24.1	580 - 2820	30 - 59	46 - 75	Electromechanical	253003720330
									Electro-mechanical with fault signal monitoring	253003720330T
									KaControl	253003720330C1
25	2.3 - 3.0	In-ceiling unit for 600x600 mm grid	AC	2535	18.0 - 33.9	1660 - 4000	42 - 62	58 - 78	Electromechanical	253000725330
									KaControl	253000725330C1
									Power module	253000725330P
			EC	2535	9.6 - 33.7	710 - 3980	33 - 60	49 - 76	Electromechanical	253003725330
									Electro-mechanical with fault signal monitoring	253003725330T
									KaControl	253003725330C1

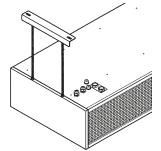

<sup>1)</sup> at low to medium pressure, requirements and conditions, see page 23

<sup>2)</sup> including casing elements

<sup>3)</sup> at LPHW 75/65°C,  $t_{L1} = 20^\circ\text{C}$

<sup>4)</sup> The sound pressure levels were calculated based on an assumed room insulation of 16 dB(A). This corresponds to a distance of 3 m, a room volume of 2000 m³ and a reverberation time of 1.0s.(according to VDI 20810.

# Accessories

Figure	Article	Properties	Suitable for	Art. no.	
<b>Replacement filter mats</b>					
	<b>Replacement filter mats</b>	1 set = 5 mats	UniLine	Model 10	<b>253000510820</b>
				Model 15	<b>253000515820</b>
				Model 20	<b>253000520820</b>
				Model 25	<b>253000525820</b>
				Model 30	<b>253000530820</b>
			Cassette UniLine	Model 10	<b>253000610820</b>
				Model 15	<b>253000615820</b>
				Model 20	<b>253000620820</b>
Model 25	<b>253000625820</b>				
<b>Brackets</b>					
	<b>Wall brackets</b>	1 set = 2 mats	UniLine	Model 10–25	<b>253000500890</b>
		1 set = 3 mats		Model 30	<b>253000500892</b>
	<b>Ceiling brackets</b>	1 set = 2 mats	UniLine	Model 10–25	<b>253000500895</b>
		1 set = 3 mats		Model 30	<b>253000500897</b>
<b>Valves</b>					
	<b>Thermoelectric shut-off valve</b>	230 V, 3/4" for KaControl and stage switch	All UniLine	All models	<b>196000100912</b>
	<b>Outlet air temperature limiting valve</b>	3/4", temperature setting range 20–50°C	All UniLine		<b>196000100967</b>

01 Product information






02 Technical data

03 Design information



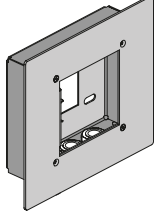

04 Controls

05 Ordering information






## Control accessories for UniLine AC

Figure	Article	Properties	Suitable for	Art. no.	
<b>Electromechanical control accessories</b>					
	<b>5-stage switch</b>	0-1-2-3-4-5, surface-mounted	All UniLine with AC motors and electromechanical control	<b>196000100925</b>	
	<b>5-stage switch</b>	0-1-2-3-4-5, flush-mounted		<b>196000100926</b>	
	<b>5-stage summer-winter switch</b>	0-1-2-3-4-5, surface-mounted (only for use in conjunction with thermoelectric shut-off valve)		All models	<b>196000100928</b>
	<b>5-stage summer-winter switch</b>	0-1-2-3-4-5, flush-mounted (only for use in conjunction with thermoelectric shut-off valve)			<b>196000100929</b>
	<b>Cascade module</b>	For the parallel operation of two units by a stage switch			<b>196000100906</b>

## Control accessories for UniLine EC

Figure	Article	Properties	Suitable for	Art. no.
<b>Control accessories for electromechanical control (*00) and electromechanical control with fault signal evaluation (*T)</b>				
	<b>Speed controller</b>	For the continuously variable speed control, surface-mounted and flush-mounted, no control of the thermoelectric shut-off valve is possible	All UniLine door air curtains with control version *00 and *T	<b>196000030510</b>
	<b>Combined controller</b>	Combined controller for fan speed control and room temperature control, surface-mounted on back box or on surface-mounted frame 196000030159	All UniLine door air curtains with control version *00 and *T	<b>196000030158</b>
	<b>Surface-mounted frame</b>	For surface mounting of the combined controller 196000030158 if no back box is possible.	All UniLine doors air curtains with control version *00 and *T	<b>19600030159</b>
	<b>Room temperature sensor</b>	For wall mounting, IP30 surface-mounted, white similar to RAL 9010, alternative to the temperature sensor in the Climate controller type 30158	All UniLine door air curtains with control version *00 and *T	<b>196000148921</b>

## Calculation accessories for UniLine AC and EC

Figure	Article	Properties	Suitable for	Art. no.
<b>KaControl accessories</b>				
	<b>KaController operating unit</b> with one-touch operation and side operating keys	Room control unit, wall-mounted, in high-grade design, plastic housing, colour similar to RAL 9010, large LCD multifunctional display, integrated room temperature sensor, communication interface to Kampmann T-LAN bus system, automatically switching LED backlight, press/turn dial with endless click/stop function, side operating keys for easy access to fan setting, operating modes, Eco mode, time and built-in day, night and weekly switching programme, individually adjustable basic display, password-protected parametrisation level	All UniLine door air curtains with KaControl configuration (*C1)	<b>196003210002</b>
	<b>Surface-mounted frame for KaController</b>	For surface-mounted installation of the KaController type 3210002		<b>197901081889</b>
	<b>KaControl room temperature sensor</b>	For wall mounting, IP30 surface-mounted, colour white RAL 9010, alternative to the temperature sensor in the KaController		<b>196003250110</b>
	<b>KaControl outdoor sensor configured as industrial room sensor</b>	For wall mounting, IP65 surface-mounted, white RAL 9010, alternative to the temperature sensor in the KaController		<b>196003250112</b>
	<b>Serial CANBus card</b>	To increase the number of units from 6 units to up to 30 units in a control circuit and/or extend the cable length of the BUS cable between the first and last unit from 30 m to 300 m		<b>196003260301</b>



01 Product information

02 Technical data

03 Design information

04 Controls

**05 Ordering information**





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