FLOWAIR
intelligent air flow

# Air curtains
# ELiS A

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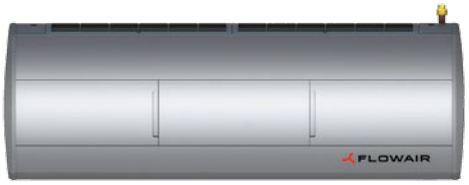


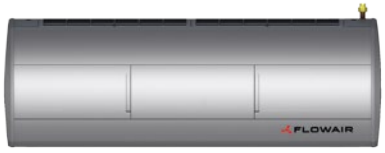


| Air curtain ELiS A | |
|---|---|
| Max. range[1] [m] | 3,0 |
| Heating capacity[2] [kW] | 12,3–28,0 |
| Air flow [m³/h] | 850–3500 |
| Weight [kg] | 18,4–39,0 |
| Materials | steel + plastic |
| Colour | silver (RAL 9006) / white (RAL 9010) |

[1] Vertical range of isothermal stream, at velocity limit above 2 m/s
[2] For A-W during operation at 3rd step, at inlet air temperature 10°C and water temperature 90/70°C

ELiS A air curtains generate an effective air barrier protecting the entire entrance to the building They are designed to ensure thermal protection of the rooms preventing the inflow of cold air during the winter and the inflow of warm air into the air-conditioned rooms during the summer.They effectively secure the room against the inflow of insects and dust.

ELiS A air curtains:
- are available in 3 lengths: 1 m, 1,5 m, 2 m
- are available in 3 versions:
  - N – without heating elements (ambient) (N)
  - W – with water heat exchanger (W)
  - E – with electric heaters (E)
- are designed for horizontal installation




A-N/W/E-100


A-N/W/E-150


A-N/W/E-200

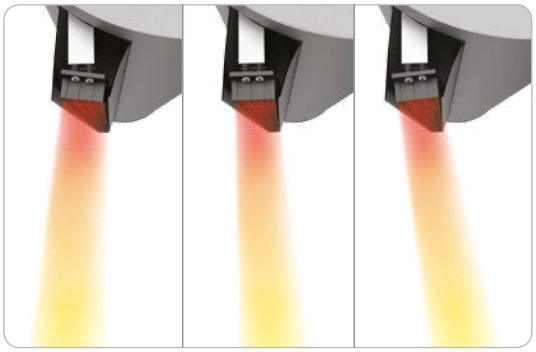
**DESIGNATION OF ELiS A AIR CURTAINS ELiS A**

A-W-100
1 2 3

1 A – ELiS A, range of air curtain 3 m

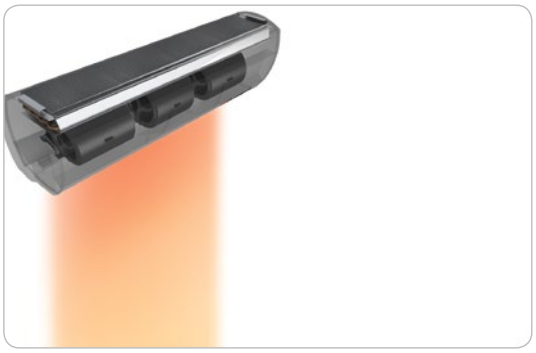
2 N – curtain without heat exchanger (ambient)
W – curtain with water heat exchanger
E – curtain with electric heaters

3 100/150/200 – length of air outlet



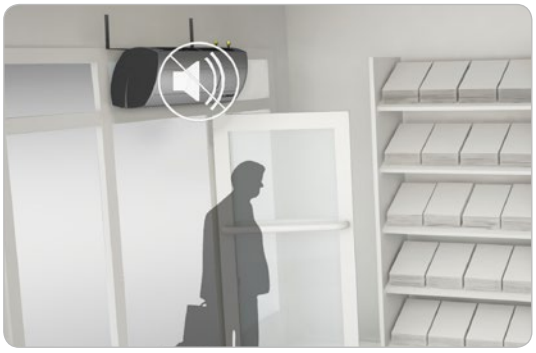
## ADJUSTABLE AIR STREAM

Adjustable air outlet enables enables setting the right angle of the air stream.



## HEATING ELEMENTS

Air curtains can be equipped with water heat exchanger made of aluminium fins set on copper tubes.



## QUIET FANS

Radial fans-characterized by quiet operation and low power consumption are housed in a casing made of light and durable material.

## BMS CONTROL SYSTEMS

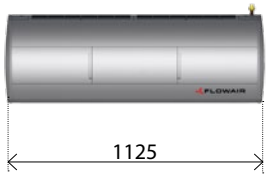
Advanced control system enables chaining of the units and easy BMS control.


## MODERN DESIGN

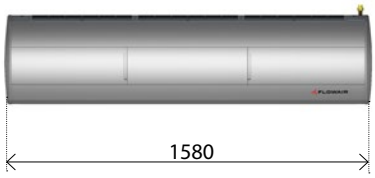
Modern design of the unit came into existence in cooperation with an experienced team of industrial designers.

## Dimensions

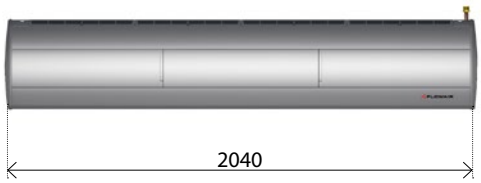
A-N/W/E-100

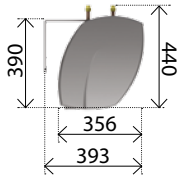



A-N/W/E-150




A-N/W/E-200



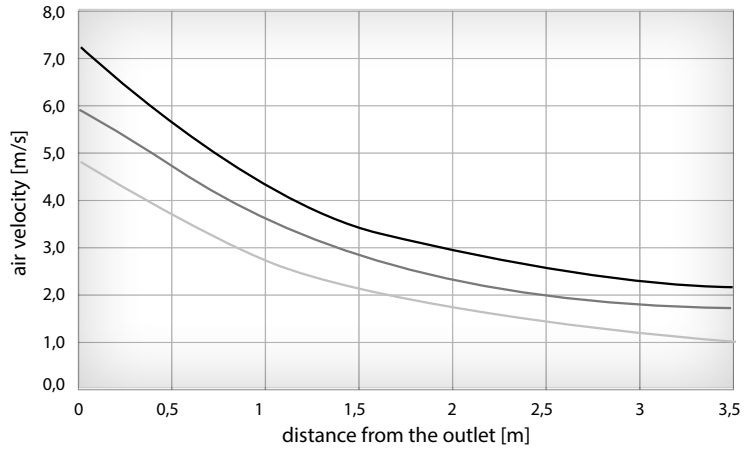




## Technical data

| | A-N-100 | A-W-100 | A-E-100 | A-N-150 | A-W-150 | A-E-150 | A-N-200 | A-W-200 | A-E-200 |
|---|---|---|---|---|---|---|---|---|---|
| Fan | 2 x radial with double air inlet, single phase, AC | | | 3 x radial with double air inlet, single phase, AC | | | 4 x radial with double air inlet, single phase, AC | | |
| Max. air flow stream of curtain [m³/h] | 1500 | | | 2500 | | | 3500 | | |
| Power supply of fans [V/Hz] | 230/50 | | | | | | | | |
| Max. current consumption of fans [A] | 0,72 | | | 1,1 | | | 1,45 | | |
| Power consumption of fans [kW] | 0,17 | | | 0,25 | | | 0,34 | | |
| IP | 21 | | | | | | | | |
| Max. acoustic pressure level(1) [dB(A)] | 49 | | | 53 | | | 54 | | |
| Max. range of air stream(2) [m] | 3 | | | | | | | | |
| | **A-N/W/E-100** | | | **A-N/W/E-150** | | | **A-N/W/E-200** | | |
| Fan setting | I step | II step | III step | I step | II step | III step | I step | II step | III step |
| Fans revsa [1/min] | 850 | 1020 | 1350 | 850 | 1020 | 1350 | 850 | 1020 | 1350 |
| Air flow [m³/h] | 1000 | 1210 | 1500 | 1650 | 2100 | 2500 | 2400 | 2900 | 3500 |
| Current consumption of fan [A] | 0,54 | 0,7 | 0,72 | 0,81 | 1,05 | 1,08 | 1,29 | 1,34 | 1,45 |
| Power consumption of fan [W] | 124 | 160 | 168 | 186 | 240 | 248 | 297 | 308 | 335 |
| Acoustic pressure level(1) [dB(A)] | 39 | 43 | 50 | 42 | 46 | 53 | 44 | 48 | 55 |
| | **A-W-100** | | | **A-W-150** | | | **A-W-200** | | |
| Heat exchanger | Cu–Al, one row | | | | | | | | |
| Heating capacity(3) [kW] | 17,9 | | | 20 | | | 28 | | |
| Air temperature rise for curtain (ΔT)(3) [°C] | 34 | | | 24 | | | 24 | | |
| Max. water pressure [MPa] | 1,6 | | | | | | | | |
| Max. water temperature [°C] | 95 | | | | | | | | |
| Connection [″] | ½″ | | | | | | | | |
| | **A-E-100** | | | **A-E-150** | | | **A-E-200** | | |
| Heat source | 2 x PTC heating board | | | 3 x PTC heating board | | | 4 x PTC heating board | | |
| Power supply [V/Hz] | 3x400/50 | | | | | | | | |
| Rated current(3) [A] | 10,0 | | | 15,5 | | | 21,5 | | |
| Power of electric heaters (heating capacity)(3) [kW] | 7,0 | | | 10,7 | | | 15,0 | | |
| Air temperature rise for curtain (ΔT)(3) [°C] | 25 | | | 21 | | | 18 | | |
| | **A-N-100** | **A-W-100** | **A-E-100** | **A-N-150** | **A-W-150** | **A-E-150** | **A-N-200** | **A-W-200** | **A-E-200** |
| Weight of unit [kg] | 18,4 | 20,9 | 21,4 | 25,3 | 28,3 | 28,5 | 33,6 | 37,1 | 39,0 |
| Weight of unit filled with water [kg] | – | 22,3 | – | – | 29,6 | – | – | 38,8 | – |

(1) Acoustic pressure level measured in the room with average sound absorption, capacity 500 m³, at distance of 3 m from the unit
(2) Vertical range of isothermal stream, at velocity limit above 2 m/s
(3) For operation at 3rd step, at inlet air temperature 10°C, for A-W at inlet/outlet water temperature 90/70°C

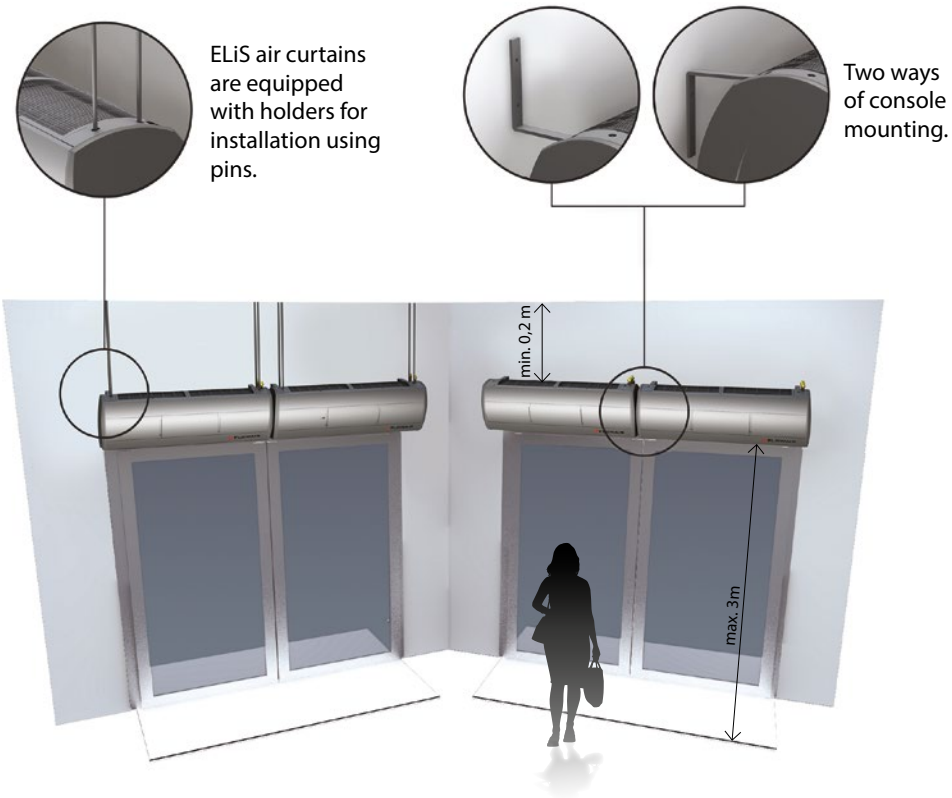
## Nomograms of air flow velocity




Permissible installation height for ELiS A series air curtains is closely related to parameter of vertical air stream range. It is recommended that for ELiS A air curtain it was max. 3 m.

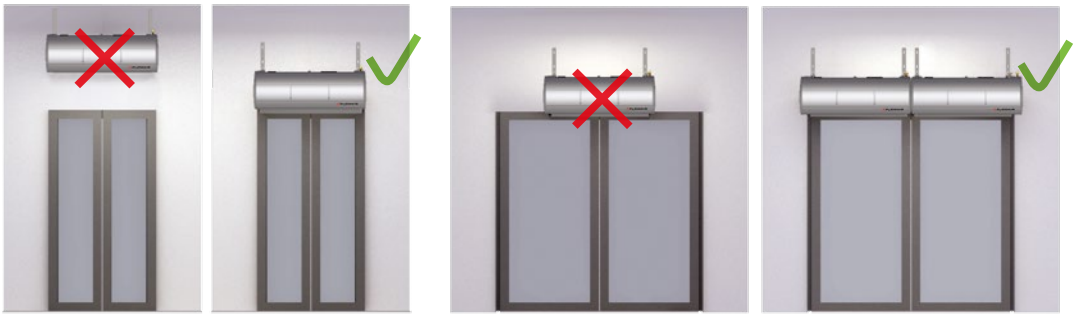
— 1st step
— 2nd step
— 3rd step

## Installation




## Correct installation

The key to the correct operation of the unit is to ensure an effective air barrier in the entire door opening/entrance area. ELiS A curtains are ready for chaining..



| | TS control | T-box control |
|---|---|---|
| |  |  |
| **Controlling options** | | |
| Manual 3-step air flow control | ✔ | ✔ |
| **Modes** | | |
| Heating / Ventilation | ✔ | ✔ |
| Operation depending on door sensor and temperature | ✔ | ✔ |
| Weekly programmer | | ✔ |
| BMS | ✔ | ✔ |
| Curtain switch off delay | | ✔ |
| Idle speed mode | | ✔ |
| Integration with FLOWAIR SYSTEM | | ✔ |
| **Max. number of connected units** | | |
| Via controller | 5 | 31 |
| **Type of controller** | | |
| TS – 3-step fan speed controller with thermostat | ✔ | |
| T-box – intelligent controller with touch screen | | ✔ |
| **Type of fan** | | |
| AC – standard 3-step fan | ✔ | ✔ |

## TS control


ELiS A air curtain is equipped with control system, enabling you to connect:

- DCm/DCe door sensor,
- TS 3-step fan speed controller with thermostat.

Controller enables choice of 2 operating modes:

- Configuration 1 - curtain operation when overriding signal comes from door sensor as well as from 3-step fan speed controller with thermostat.
- Configuration 2 - curtain operation when overriding signal comes from door sensor, while 3-stem fan speed controller with thermostat is responsible for fan speed control and heating engagement signal.

CHAINING OF CURTAINS:

The control system is ready for chaining of the curtains and is able to control up to 5 units via single TS controller.

BMS:

The control system can be connected to BMS- intelligent building management system. This solution enables you to save and load operating parameters of the curtain (e.g. fan step).

## T-box control


ELiS A air curtain is equipped with control system, enabling you to connect:

DCm/DCe door sensor,

- T-box intelligent controller with touch screen.

Controller enables choice of 2 operating modes:

- Configuration 1 - curtain operation when overriding signal comes from door sensor as well as from T-box controller.
- Configuration 2 - curtain operation when overriding signal comes from door sensor, while T-box is responsible for fan speed control and heating engagement signal.

Additionally, for both configurations it is possible to choose idle speed mode, curtain switch-off delay time and heating signal.

CHAINING OF CURTAINS:

The control system is ready for chaining of the curtains and is able to control up to 31 units via a single T-box controller.

BMS:

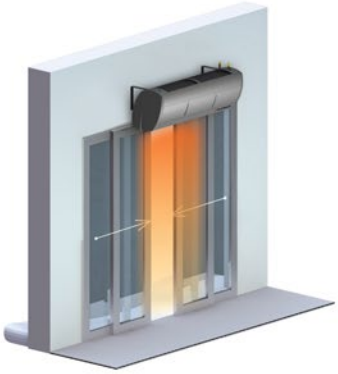
The T-box controller can be connected to BMS- intelligent building management system. This solution enables you to control all of the units, which communicate with T-box controller.

## Idle speed mode

When the doors are closed, fans are operating with a lower speed. This solution eliminates delay in the air barrier formation, which is caused by the time needed to switch on the fans.

A) Doors are closed – fans operate with a lower speed.

B) Doors are opening – speed of fan is rising.



C) Doors are closing – fans still operate with increased speed.

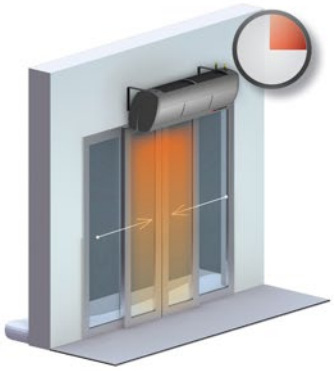
D) Doors are closed – fan operate with a lower speed again.

## Curtain switch off delay time

If the doors in the building keep opening and closing constantly, it is possible to set a switch-off time delay. After closing the doors, curtain is still operating for the set time. If the doors  open shortly, there is no need to switch off/on the curtain again. This solution increases reliability of the components and improves the air barrier effectiveness.

A) Doors are closed – fans are stopped.

B) Doors are open – fans operate with speed set on the controller.



C) Doors are closed – fans operate for a delay time set by the user. After that time, curtain may switch off or return to idle speed mode.

D) Doors are closed – fans will switch off after delay time.

# BMS programming

## Version 1

In the case of controlling the units via T-box controller using one address in BMS it is possible to control up to 31 units independently.

**Communication parameters:**

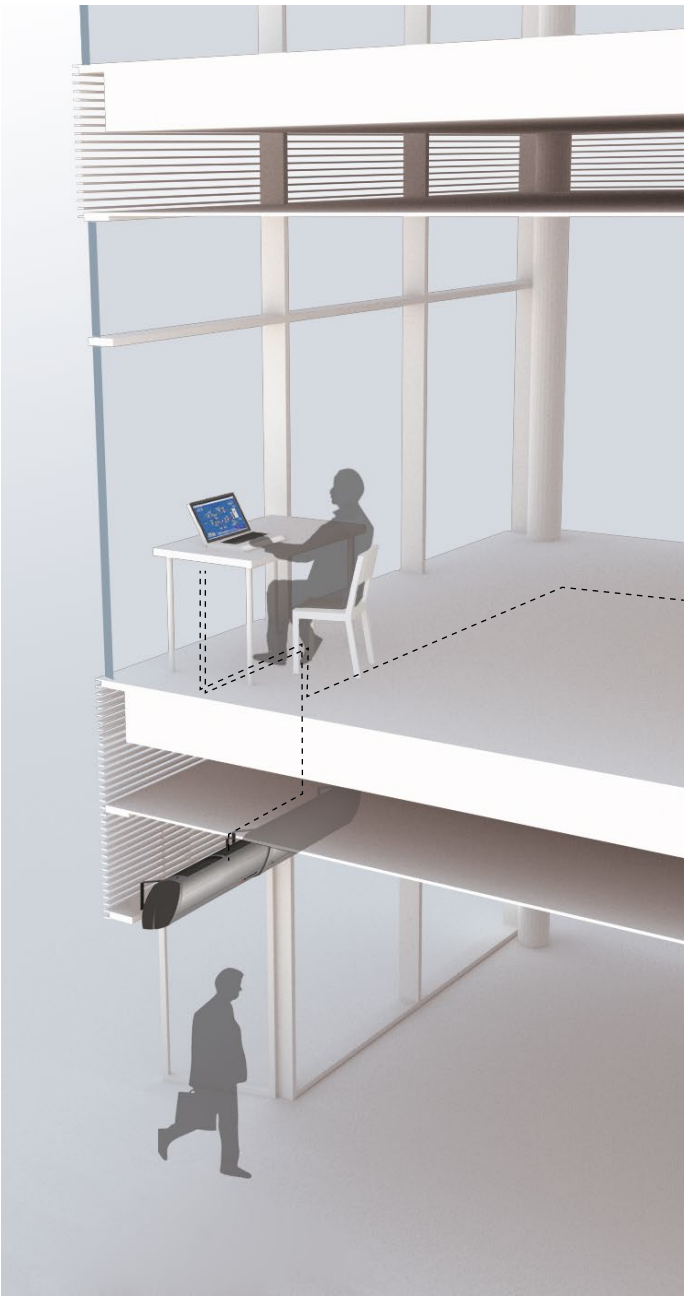
| Name | Description |
|---|---|
| Physical layer | RS485 |
| Protocol | MODBUS-RTU |
| Transmission rate | 9600, 19200, 38400, 57600 or 115200 [bps] |
| Parity | Even |
| Number of data bits | 8 |
| Number of stop bits | 1 |

## Version 2

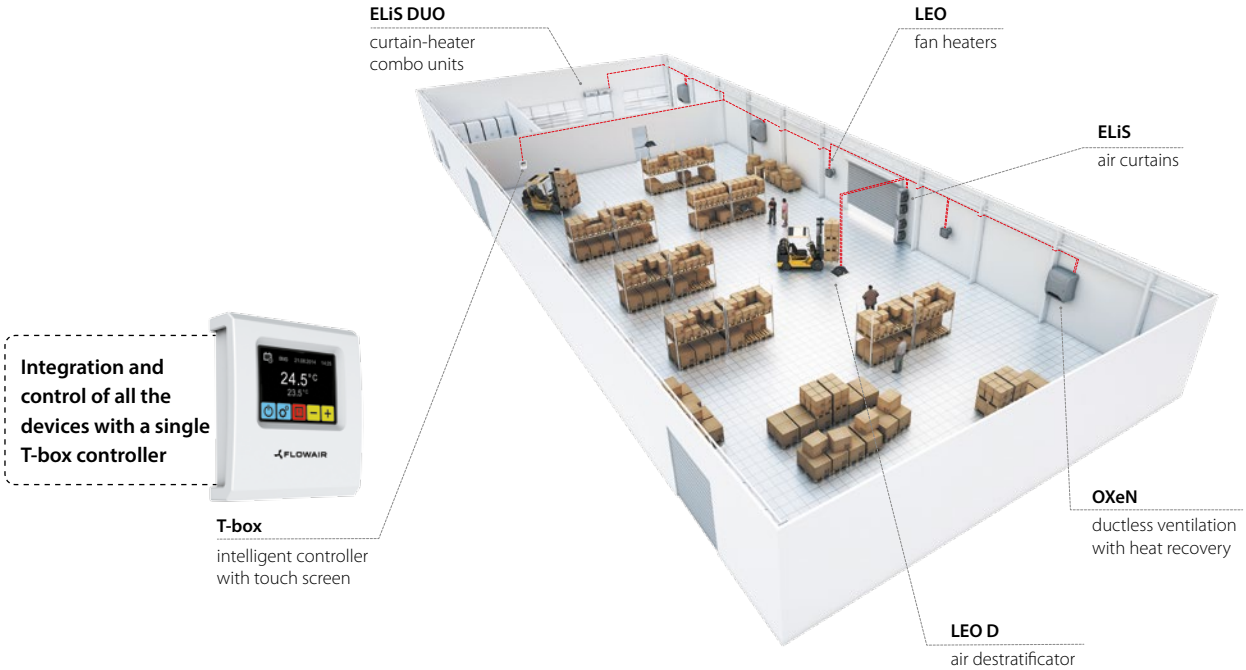
ELiS A curtains are equipped with a BMS compatible control system. It is possible to set up to 31 addresses. Setting the address for each unit enables independent loading and saving their operating parameters separately.

**Communication parameters:**

| Name | Description |
|---|---|
| Physical layer | RS485 |
| Protocol | MODBUS-RTU |
| Transmission rate | 38400 [bps] |
| Parity | Even |
| Number of data bits | 8 |
| Number of stop bits | 1 |



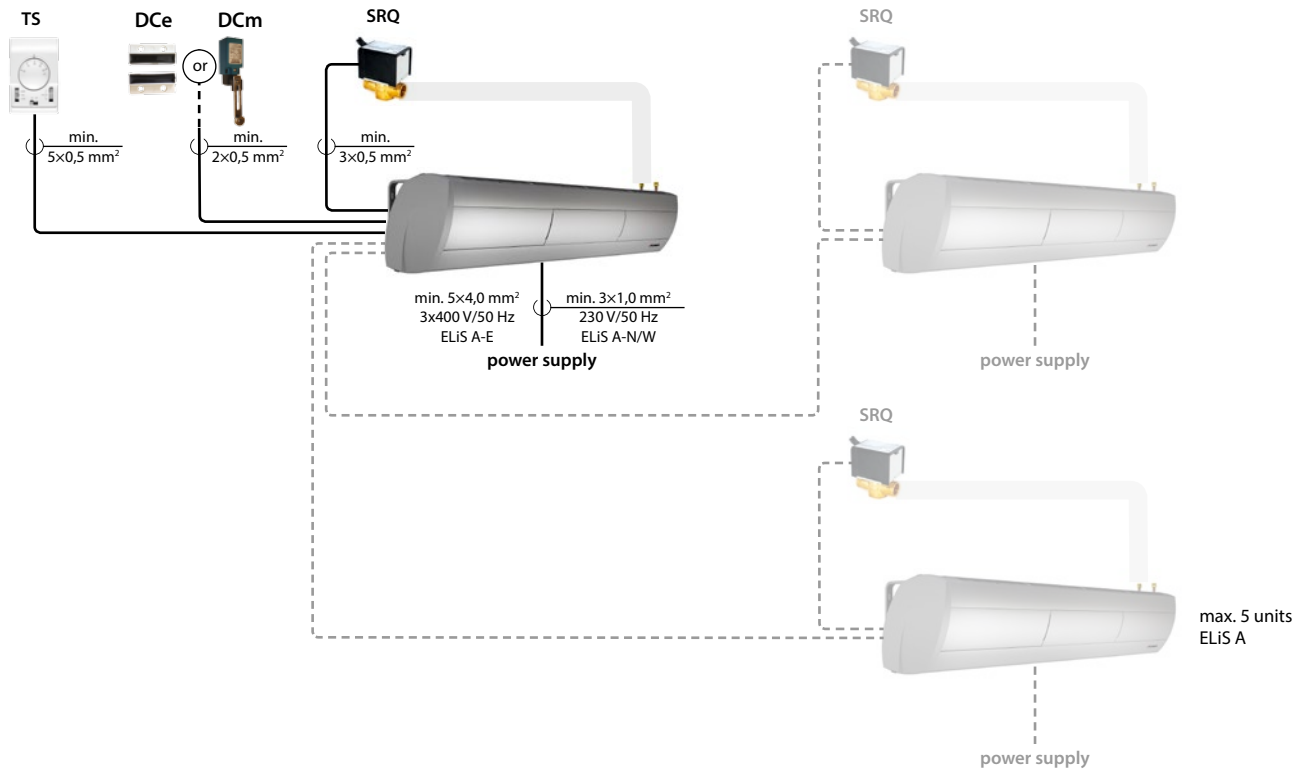
FLOWAIR SYSTEM is a complete offer of heating and ventilation devices integrated with one T-box controller enabling you to control all the units from one location.



| Category | Name | Picture | Technical data |
|---|---|---|---|
| Controller | T-box<br>intelligent controller with touch screen |  | Protection degree: IP 20<br>Power supply: 24 VDC<br>Operating temperature range: -10 … +60°C<br>Temperature adjustment range: +5 … +35°C |
| | TS<br>3-step fan speed controller with touch screen |  | Protection degree: IP30<br>Temperature adjustment range: +10 … +30°C<br>Operating temperature range: 0 … +40°C<br>Contacts load: inductive 5 A, resistance 6 A |
| Door sensors | DCe<br>magnetic<br>door sensor |  | Operating temperature range: -5 … +60°C<br>Protection degree: IP64<br>Material: plastic<br>Length of connection wire: 2 m<br>Jumpers: NC<br>Resistance contacts load: 0,5 A<br>Max. contacts voltage: 175 VDC<br>Max. distance between contacts: 8 mm |
| | DCm<br>mechanical<br>door sensor |  | Operating temperature range: -10 … +80°C<br>Protection degree: IP65<br>Material: plastic<br>Length of connection wire: none<br>Jumpers: 1xNC i 1xNO<br>Inductive contacts load: 3 A<br>Max. contacts voltage: 300 VAC or 250 VDC |
| Valves with actuator | SRQ2d<br>two-way valve 1/2"<br>with actuator |  | Protection degree: IP20<br>Power supply: 200–240 V 50/60 Hz<br>Max. water temperature: +93°C<br>Max. water pressure: 1,6 MPa<br>Kvs: 3,0 $m^3/h$<br>Installation: on water outlet pipe<br>Opening/closing time: 18s/5s<br>Dimensions (HxWxD): 108x86x66 mm |
| | SRQ3d<br>three-way valve 1/2"<br>with actuator |  | Protection degree:IP20<br>Power supply: 200–240 V 50/60 Hz<br>Max. water temperature: +93°C<br>Max. water pressure: 2 MPa<br>Kvs: 3,4 $m^3/h$<br>Installation: on water inlet pipe<br>Opening/closing time: 18s/5s<br>Dimensions (HxWxD): 118x86x66 mm |

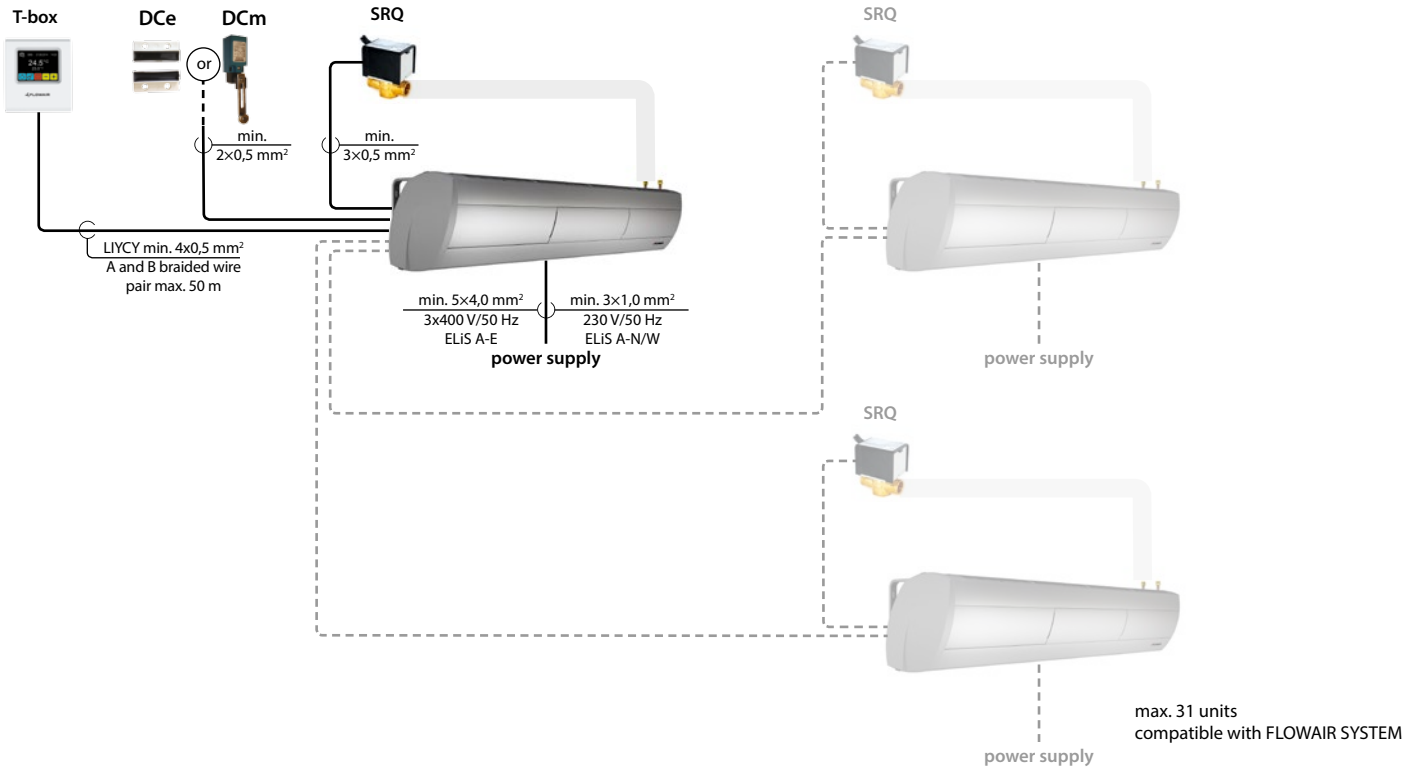
## TS control

Control via DCe or DCm door sensor and TS 3-step fan speed controller with thermostat.




## T-box control

Control via DCe or DCm door sensor and T-box controller.



## ELiS A with water heat exchanger

### ELiS A-W-100

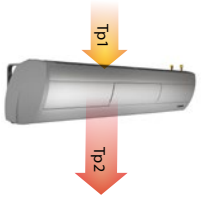
| Tp1 | V | PT | Qw | Δpw | Tp2 | PT | Qw | Δpw | Tp2 |
|---|---|---|---|---|---|---|---|---|---|
| °C | m³/h | kW | l/h | kPa | °C | kW | l/h | kPa | °C |
| | | **Tw1/Tw2 = 90/70°C** | | | | **Tw1/Tw2 = 80/60°C** | | | |
| **0** | 850/ 1150/ 1500 | 14,4/17,7/21,0 | 637/781/927 | 4,4/6,4/8,8 | 47/43/39 | 12,4/15,2/18,0 | 545/668/793 | 3,4/5,0/6,8 | 40/37/33 |
| **5** | | 13,3/16,4/19,4 | 588/721/857 | 3,8/5,5/7,6 | 49/45/41 | 11,3/13,9/16,5 | 497/610/724 | 2,9/4,2/5,7 | 43/39/36 |
| **10** | | 12,3/15,0/17,9 | 541/663/788 | 3,3/4,8/6,5 | 51/47/44 | 10,3/12,6/15,0 | 451/553/657 | 2,4/3,5/4,8 | 45/41/39 |
| **15** | | 11,2/13,7/16,3 | 494/606/721 | 2,8/4,0/5,5 | 53/50/47 | 9,2/11,3/13,5 | 405/497/591 | 2,0/2,9/4,0 | 47/44/41 |
| **20** | | 10,2/12,5/14,8 | 448/550/654 | 2,3/3,4/4,6 | 55/52/49 | 8,2/10,1/12,0 | 360/442/526 | 1,6/2,4/3,2 | 49/46/44 |
| | | **Tw1/Tw2 = 70/50°C** | | | | **Tw1/Tw2 = 70/40°C** | | | |
| **0** | 850/ 1150/ 1500 | 10,4/12,7/15,1 | 453/555/659 | 2,5/3,7/5,0 | 34/31/28 | 8,6/10,5/12,5 | 249/306/363 | 0,9/1,3/1,7 | 28/25/23 |
| **5** | | 9,3/11,4/13,5 | 407/498/592 | 2,1/3,0/4,1 | 36/33/30 | 7,5/9,2/10,9 | 218/268/319 | 0,7/1,0/1,4 | 30/28/26 |
| **10** | | 8,3/10,1/12,0 | 361/443/526 | 1,7/2,4/3,3 | 38/35/33 | 6,4/7,9/9,4 | 186/230/274 | 0,5/0,8/1,1 | 31/30/28 |
| **15** | | 7,2/8,9/10,5 | 316/388/461 | 1,3/1,9/2,6 | 40/37/35 | 5,2/6,6/7,9 | 153/191/229 | 0,4/0,6/0,8 | 33/32/30 |
| **20** | | 6,2/7,6/9,1 | 271/334/397 | 1,0/1,5/2,0 | 42/40/38 | 3,9/5,1/6,3 | 114/150/182 | 0,2/0,4/0,5 | 34/33/32 |
| | | **Tw1/Tw2 = 60/40°C** | | | | **Tw1/Tw2 = 50/40°C** | | | |
| **0** | 850/ 1150/ 1500 | 8,3/10,1/12,0 | 360/442/525 | 1,8/2,5/3,4 | 27/24/22 | 8,0/9,8/11,6 | 693/850/1010 | 5,8/8,3/11,4 | 26/24/21 |
| **5** | | 7,2/8,9/10,5 | 315/386/459 | 1,4/2,0/2,7 | 29/27/25 | 6,9/8,5/10,1 | 603/740/880 | 4,5/6,5/8,9 | 28/26/24 |
| **10** | | 6,2/7,6/9,0 | 269/331/394 | 1,0/1,5/2,0 | 31/29/27 | 5,9/7,3/8,6 | 515/633/752 | 3,4/4,9/6,7 | 30/28/27 |
| **15** | | 5,1/6,3/7,5 | 224/276/329 | 0,8/1,1/1,5 | 33/31/30 | 4,9/6,1/7,2 | 428/526/626 | 2,4/3,5/4,8 | 32/30/29 |
| **20** | | 4,1/5,1/6,1 | 177/220/264 | 0,5/0,7/1,0 | 34/33/32 | 3,9/4,9/5,8 | 343/422/502 | 1,6/2,4/3,2 | 34/32/31 |

### ELiS A-W-150

| Tp1 | V | PT | Qw | Δpw | Tp2 | PT | Qw | Δpw | Tp2 |
|---|---|---|---|---|---|---|---|---|---|
| °C | m³/h | kW | l/h | kPa | °C | kW | l/h | kPa | °C |
| | | **Tw1/Tw2 = 90/70°C** | | | | **Tw1/Tw2 = 80/60°C** | | | |
| **0** | 1650/ 2100/ 2500 | 17,9/20,7/22,9 | 791/914/1011 | 5,3/6,9/8,3 | 32/29/27 | 15,3/17,7/19,6 | 672/777/861 | 4/5,6/6,3 | 27/25/23 |
| **5** | | 16,8/19,4/21,4 | 740/855/946 | 4,7/6,1/7,4 | 35/32/30 | 14,1/16,3/18,1 | 621/718/795 | 3,5/4,5/5,5 | 30/28/26 |
| **10** | | 15,6/18/20 | 688/795/881 | 4,1/5,3/6,5 | 38/35/34 | 13/15/16,6 | 569/658/728 | 3/3,9/4,7 | 33/31/30 |
| **15** | | 14,4/16,7/18,5 | 636/735/814 | 3,5/4,6/5,6 | 41/38/37 | 11,8/13,6/15 | 517/597/661 | 2,5/3,2/3,9 | 36/34/33 |
| **20** | | 13,2/15,3/17 | 584/674/748 | 3/3,9/4,8 | 43/41/40 | 10,6/12,2/13,5 | 464/532/593 | 2/2,7/3,2 | 39/37/36 |
| | | **Tw1/Tw2 = 70/50°C** | | | | **Tw1/Tw2 = 70/40°C** | | | |
| **0** | 1650/ 2100/ 2500 | 12,7/14,6/16,2 | 554/640/709 | 2,9/3,8/4,6 | 23/21/19 | 10,1/11,7/12,9 | 294/340/377 | 0,9/1,2/1,5 | 18/16/15 |
| **5** | | 11,5/13,3/14,7 | 502/580/643 | 2,4/3,2/3,8 | 26/24/22 | 8,8/10/11,4 | 257/299/331 | 0,7/1/1,2 | 21/19/18 |
| **10** | | 10,3/11,9/13,2 | 450/520/576 | 2/2,6/3,1 | 28/27/26 | 7,6/8,8/9,8 | 220/256/284 | 0,6/0,7/0,9 | 23/22/21 |
| **15** | | 9,1/10,5/11,6 | 397/459/508 | 1,6/2,1/2,5 | 31/30/29 | 6,2/7,2/8,1 | 179/211/235 | 0,4/0,5/0,6 | 26/25/24 |
| **20** | | 7,84/9,1/10 | 343/397/439 | 1,2/1,6/1,9 | 34/33/32 | 2,9/5,5/6,2 | 83/160/181 | 0,1/0,3/0,4 | 25/28/27 |
| | | **Tw1/Tw2 = 60/40°C** | | | | **Tw1/Tw2 = 50/40°C** | | | |
| **0** | 1650/ 2100/ 2500 | 10/11,5/12,8 | 434/502/556 | 1,9/2,5/3 | 18/16/15 | 10/11/12,6 | 857/992/1099 | 6,8/8,9/10,7 | 18/16/15 |
| **5** | | 9/10,1/11,2 | 381/441/489 | 1,5/2/2,4 | 21/19/18 | 8,7/10/11,1 | 754/872/967 | 5,4/7/8,5 | 21/19/18 |
| **10** | | 7,5/8,7/9,7 | 328/380/421 | 1,2/1,5/1,8 | 23/22/21 | 7,5/8,6/9,6 | 649/751/832 | 4/5,3/6,4 | 23/22/21 |
| **15** | | 6,3/7,3/8 | 273/316/351 | 0,8/1,1/1,3 | 26/25/24 | 6,3/7,2/8 | 543/629/696 | 3/3,9/4,7 | 26/25/24 |
| **20** | | 4,9/5,7/6,4 | 214/250/279 | 0,6/0,7/0,9 | 29/28/27 | 5/5,8/6,4 | 436/504/559 | 2/2,6/3,1 | 29/28/28 |

To obtain operating parameters concerning other water temperatures, please contact Sales Office.

PT – heating capacity
Tp1 – inlet air temperature
Tp2 – outlet air temperature
Tw1 – inlet water temperature
Tw2 – outlet water temperature
Qw – water stream flow in the heat exchanger
Δpw – water pressure drop in the heat exchanger



## ELiS A with water heat exchanger

### ELiS A-W-200

| Tp1 | V | PT | Qw | Δpw | Tp2 | PT | Qw | Δpw | Tp2 |
|---|---|---|---|---|---|---|---|---|---|
| °C | m³/h | kW | l/h | kPa | °C | kW | l/h | kPa | °C |
| | | **Tw1/Tw2 = 90/70°C** | | | | **Tw1/Tw2 = 80/60°C** | | | |
| **0** | 2400/ 2900/ 3500 | 25,7/29/32,2 | 1135/1271/1419 | 12/14,5/18 | 32/29/27 | 22/24,7/27,6 | 970/1086/1212 | 9/11,1/13,6 | 27/25/23 |
| **5** | | 24/27/30 | 1063/1191/1329 | 10,4/13/16 | 35/32/30 | 20,4/22,9/25,5 | 898/1006/1122 | 7,8/9,7/11,8 | 30/28/27 |
| **10** | | 22,5/25,1/28 | 992/1110/1240 | 9,2/11,3/14 | 38/36/34 | 18,8/21/23,5 | 825/924/1031 | 6,7/8,3/10,1 | 33/31/30 |
| **15** | | 20,8/23,3/26 | 918/1027/1147 | 7,9/9,8/12 | 40/38/37 | 17,1/19,1/21,4 | 751/841/939 | 5,7/7/8,5 | 36/34/33 |
| **20** | | 19/21,4/24 | 844/945/1054 | 6,8/8,4/10,3 | 43/42/40 | 15,4/17,3/19,2 | 677/758/845 | 4,7/5,8/7 | 39/37/36 |
| | | **Tw1/Tw2 = 70/50°C** | | | | **Tw1/Tw2 = 70/40°C** | | | |
| **0** | 2400/ 2900/ 3500 | 18,4/20,6/23 | 805/902/1007 | 6,6/8,1/10 | 23/21/20 | 15,2/17/1,49 | 443/496/554 | 2,3/2,8/3,4 | 19/17/16 |
| **5** | | 16,8/18,8/21 | 733/821/916 | 5,6/6,9/8,4 | 26/24/23 | 13,5/15,1/16,9 | 394/441/492 | 1,8/2,3/2,8 | 22/20/19 |
| **10** | | 15,1/16,9/18,9 | 660/739/824 | 4,6/5,7/6,9 | 29/27/26 | 11,8/13,2/14,7 | 343/384/429 | 1,4/1,8/2,2 | 24/23/22 |
| **15** | | 13,4/15/16,7 | 586/655/731 | 3,7/4,6/5,6 | 31/30/29 | 10/11,2/12,5 | 291/326/364 | 1,1/1,3/1,6 | 27/26/25 |
| **20** | | 11,7/13/14,6 | 510/571/637 | 2,9/3,5/4,3 | 34/33/32 | 8,1/9,1/10,2 | 237/266/297 | 0,7/0,9/1,1 | 30/29/28 |
| | | **Tw1/Tw2 = 60/40°C** | | | | **Tw1/Tw2 = 50/40°C** | | | |
| **0** | 2400/ 2900/ 3500 | 14,7/16,5/18,4 | 641/717/801 | 4,5/5,5/6,7 | 18/17/16 | 14,2/16/17,8 | 1237/1386/1548 | 15,2/18,8/23 | 18/16/15 |
| **5** | | 13/14,6/16,3 | 568/636/709 | 3,6/4,5/5,4 | 21/20/19 | 12,5/14/15,7 | 1092/1223/1366 | 12,1/14,9/18,3 | 20/19/18 |
| **10** | | 11,3/12,7/14,1 | 493/552/616 | 2,8/3,5/4,2 | 24/23/22 | 10,9/12,2/13,6 | 945/1059/1182 | 9,3/11,5/14 | 23/22/21 |
| **15** | | 9,6/11/12 | 418/468/522 | 2/2,6/3,1 | 27/26/25 | 9,2/10,3/11,5 | 797/892/996 | 6,8/8,4/10,3 | 26/25/24 |
| **20** | | 7,8/8,7/9,8 | 340/381/425 | 1,4/1,8/2,2 | 30/29/28 | 7,4/8,3/9,3 | 646/724/808 | 4,7/5,7/7 | 29/28/27 |

To obtain operating parameters concerning other water temperatures, please contact Sales Office.

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Tw1 – inlet water temperature
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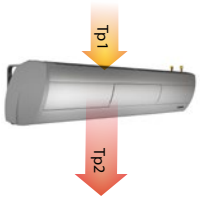


## ELiS A with electric heaters

| | A-E-100 | | | A-E-150 | | | A-E-200 | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 step | 2 step | 3 step | 1 step | 2 step | 3 step | 1 step | 2 step | 3 step |
| Power supply [V/Hz] | 3x400/50 | | | | | | | | |
| Rated current of unit[1] [A] | 9,5 | 9,8 | 10 | 14,8 | 15,2 | 15,5 | 20,7 | 21,2 | 21,5 |
| Heating capacity[1] [kW] | 6,6 | 6,8 | 7 | 10,2 | 10,5 | 10,7 | 14,4 | 14,7 | 15 |
| Air temperature rise for curtain (ΔT)[1] [°C] | 27 | 26 | 25 | 24 | 22 | 21 | 22 | 20 | 18 |

[1] At inlet air temperature 10°C