



# FLEXIBLE PEAK PERFORMANCE

**FB-A *flex***

Ceiling mounted ventilation units  
for heating and cooling



Spirit of Air

## FB-A *flex* 73 – K – EC-E (D) / R

### Motor/fan design

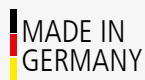
- EC-E = sickle-bladed axial fan 230 V/50 Hz with integral control electronics and Modbus, energy efficiency class IE5, protection class IP 54
- EC-D = sickle-bladed axial fan 400 V/50 Hz with integral control electronics and Modbus, energy efficiency class IE5, protection class IP 54
- EC-R = high performance radial fan 230 V/50 Hz with freewheeling impeller with integral control electronics and Modbus, energy efficiency class IE5, protection class IP 54

### K = design for cooling mode with additional

- ▶ Condensate pan
- ▶ Float switch
- ▶ Condensate pump, delivery head up to 10 m

- 2 = heat exchanger with two pipe rows CuAl
- 3 = heat exchanger with three pipe rows CuAl
- 4 = heat exchanger with four pipe rows CuAl

- 6 = unit size
- 7 = unit size
- 8 = unit size



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# FB-A *flex* - Unit description, areas of application

## ULTRA POWERFUL, WHISPER-QUIET, ATTRACTIVE AND FLEXIBLE

The FB-A from WOLF has long epitomised premium quality in the ceiling mounted air heaters and ventilation units sector.

WOLF units not only provide exceptional manufacturing quality and performance, but also feature an elegant and timeless product design.

Building on this standard, we revised our FB-A and developed the **FB-A *flex*** model.

Scale your unit performance flexibly to suit your requirements while maintaining harmonised and elegant optics, drawing on a huge range of versions and outputs.

The **FB-A *flex*** offers you flexibility!

The use of current EC technology in conjunction with reliable sickle-bladed axial fans or pioneering high performance radial fans with an extremely stable curve across the entire performance range forms the basis for a performance optimised, highly efficient method of operation without compromise.

The exclusive 12-cornered unit housing made of stable sheet steel with high grade powder coating is visually attractive and blends harmoniously into all room concepts. The housing is inclined 5° towards the living space for energy optimised pre-handling of this air current.

Air is distributed via six discharge fins, which are arranged all around the circumference and can be removed without any tools. These are each equipped with four aerodynamically shaped, individually adjustable and flow optimised air guide fins. This ensures user defined air current distribution and control.

The **FB-A *flex*** can be designed and used for heating operation or for combined heating/cooling operation.

Units with a cooling function are equipped with a condensate pan sloping on one side towards the pump reservoir.

All discharge fin combinations can be fully removed quickly and easily without tools for maintenance purposes, and allow free access to the heat exchanger, pump reservoir and float switch.



The WOLF **FB-A *flex*** is designed to be used as a ceiling unit for heating and/or cooling operation, for recirculating air, mixed air or outdoor air operation to ensure maximum thermal comfort in challenging applications.

### Areas of application

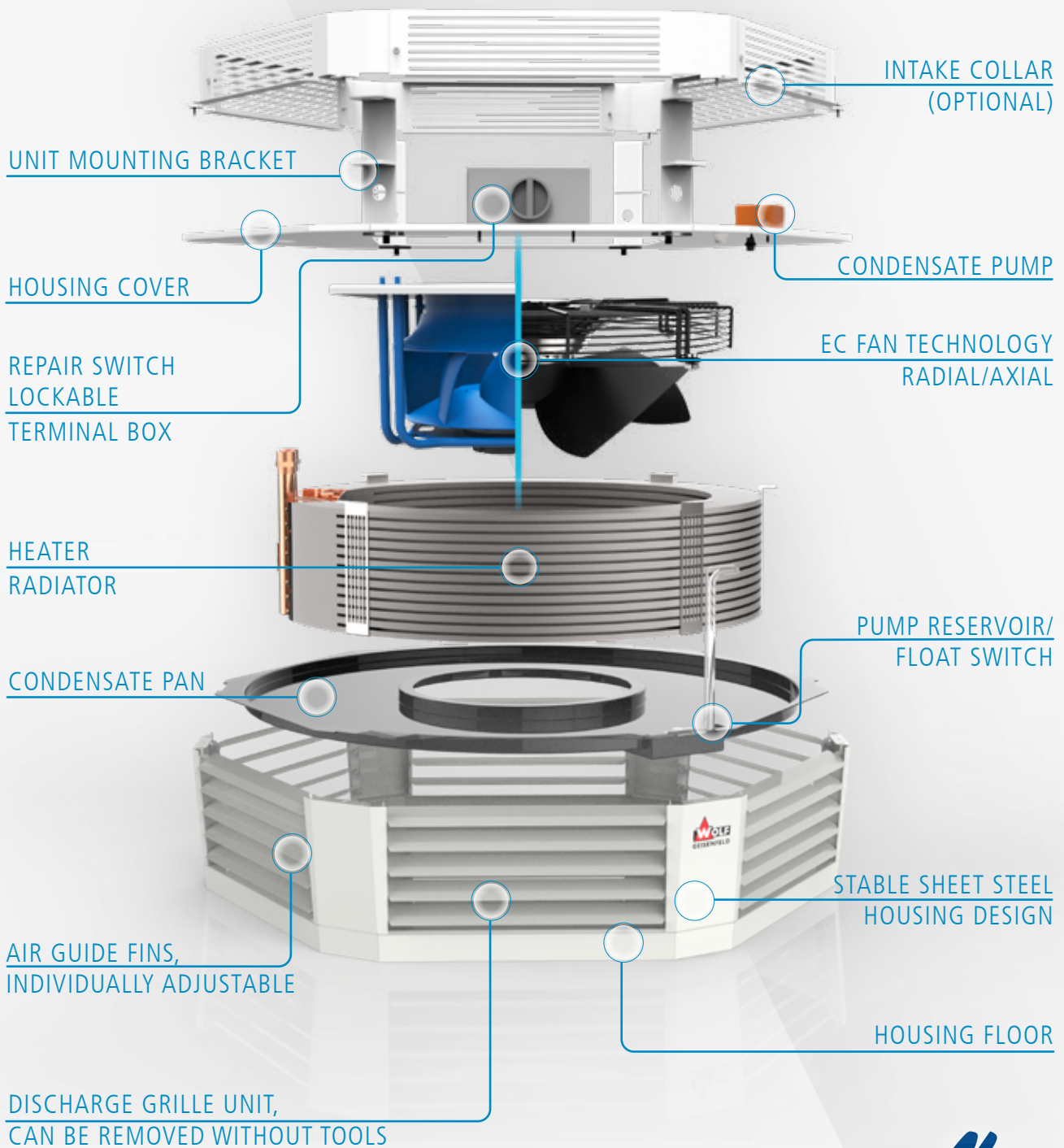
- ▶ Retail premises
- ▶ Showrooms and exhibition spaces
- ▶ Reception areas
- ▶ Exclusive facilities with a room height of 5 m or less



### Pioneering + NEW

Design with highly efficient **EC radial fan**

- ▶ Extremely quiet
- ▶ Very high air flow rate
- ▶ Stable curve
- ▶ For high external resistances at a constant flow rate and stable performance
- ▶ Energy efficiency class IE5
- ▶ Performance data, accuracy class 1 according to DIN 24166

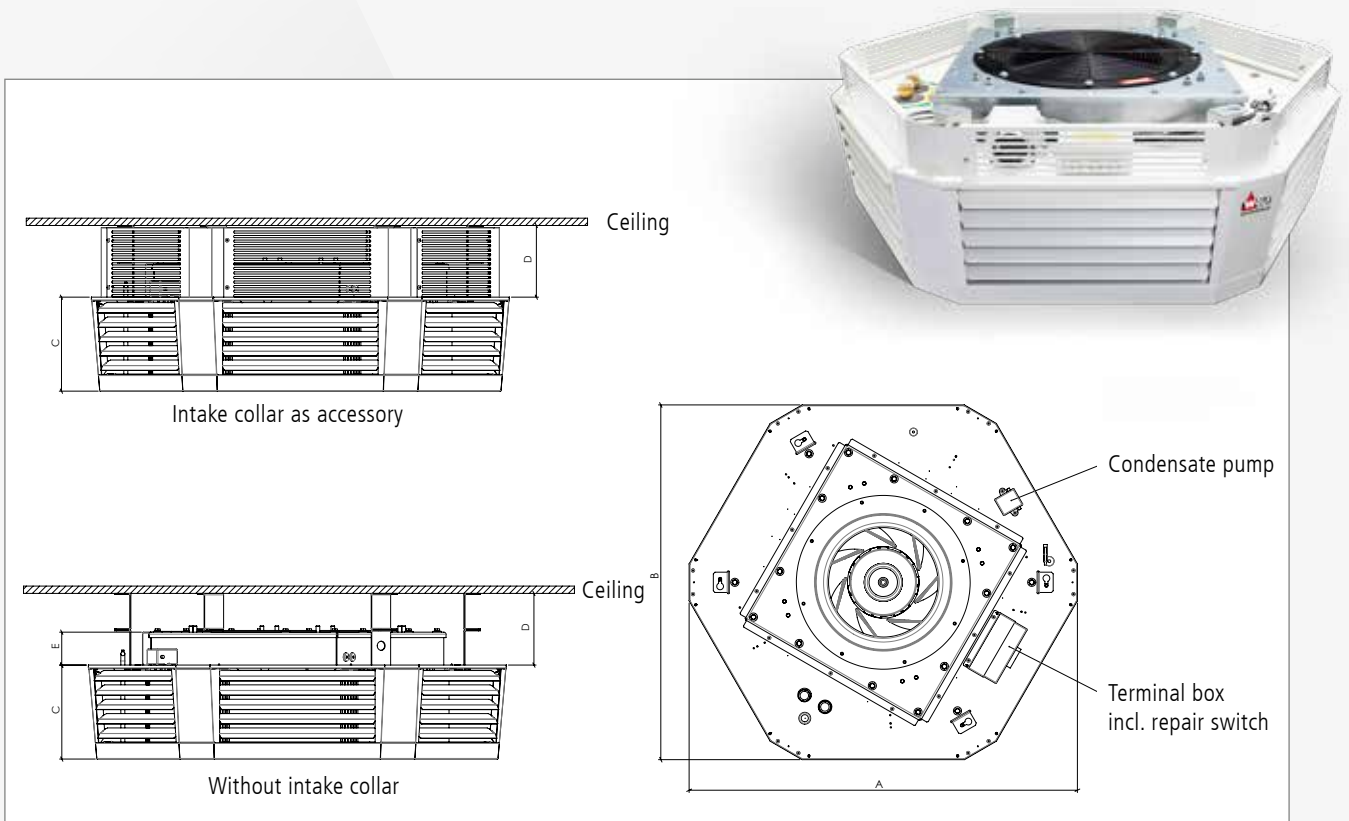


*flex*

## Benefits

- ▶ Highly efficient fans with EC technology
- ▶ Particularly quiet thanks to axial or radial fans
- ▶ Suitable for high external resistances
- ▶ Discharge at the side
- ▶ Pre-determined flow rate thanks to housing geometry
- ▶ Intake at the top, can be above/below ceiling
- ▶ Heating/cooling medium connection at the top
- ▶ Individually adjustable air guide fins
- ▶ Quiet and powerful condensate pump
- ▶ Condensate pan with fall to pump
- ▶ Delivered fully wired and with hose piping connected
- ▶ Recirculating air, mixed air and outdoor air operation
- ▶ EC control unit or WOLF **C-MAX** control
- ▶ Stepless output control

# FB-A flex - with EC high performance radial fan

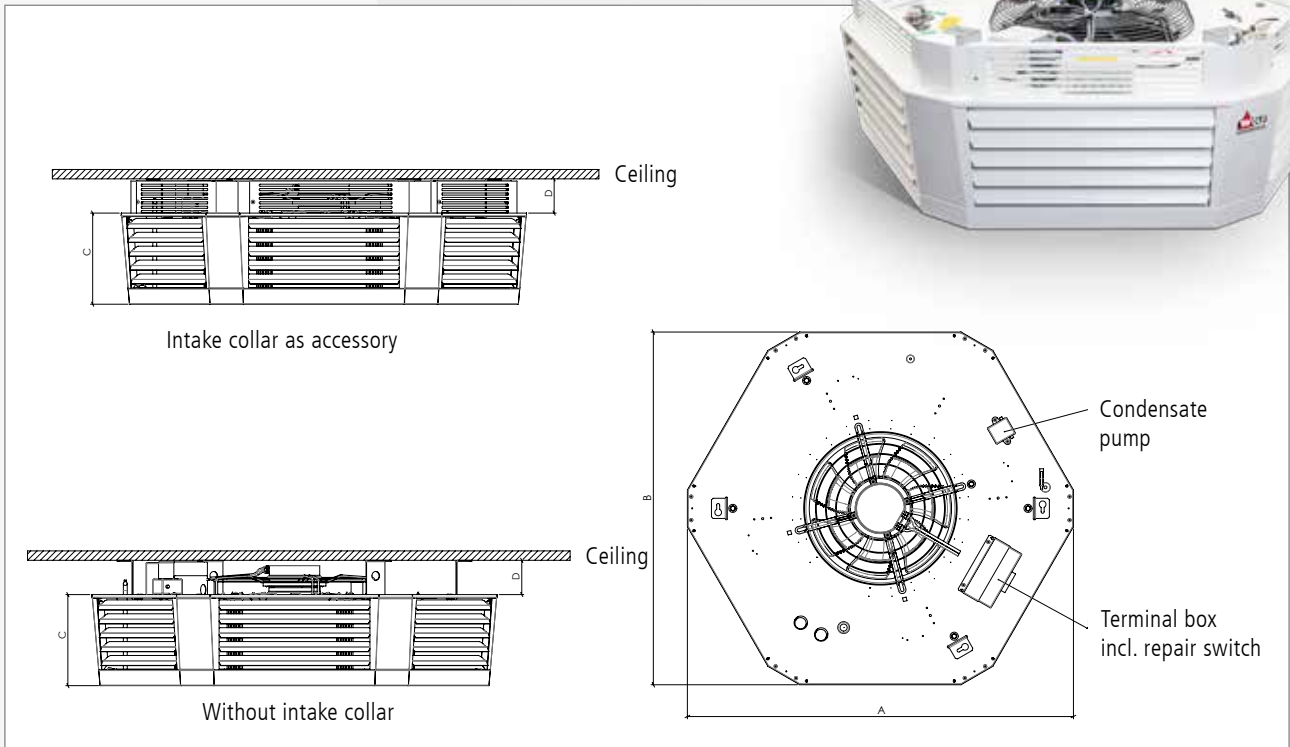


Unit type	A (mm)	B (mm)	C (mm)	Weight (kg)	Recirculating air operation D (mm) <small>Minimum clearance for ceiling mounting</small>	E (mm)
82 EC/R	1148	1049	258	74	200	91
83 EC/R	1148	1049	258	76	200	91
84 EC/R	1148	1049	258	78	200	91

Type	72-EC/R	73-EC/R	74-EC/R	82-EC/R	83-EC/R	84-EC/R
Operating mode*						
EC high performance radial fan 230V, 50Hz, IP 54						
Air flow rate m <sup>3</sup> /h	In preparation	In preparation	In preparation	5740	5500	5050
Heating/cooling coil	2 RR	3 RR	4 RR	2 RR	3 RR	4 RR
Heating output and L <sub>AU</sub> at L <sub>E</sub> : +15 °C, PWW 70/50	In preparation	In preparation	In preparation	32.2 °C 32.6 kW	39.0 °C 43.6 kW	46.7 °C 53.0 kW
Cooling capacity and L <sub>AU</sub> at L <sub>E</sub> : +28 °C/50 % rel. hum., PCW 6/12	In preparation	In preparation	In preparation	21.3 °C/71 % 14.7 kW	18.8 °C/80 % 20.5 kW	16.1 °C/89 % 25.8 kW
Flow rate in m <sup>3</sup> /h at LPA 45 dB(A) at a distance of 3 m	In preparation	In preparation	In preparation	3460 m <sup>3</sup> /h	3380 m <sup>3</sup> /h	3340 m <sup>3</sup> /h

\* Heating = Cooling =

# FB-A flex - with EC sickle-bladed axial fan



Unit type	A (mm)	B (mm)	C (mm)	Weight (kg)	D (mm) Minimum clearance for ceiling mounting
62 EC	878	799	240	32	100
63 EC	878	799	240	34.5	100
72 EC	1148	1049	258	48.5	100
73 EC	1148	1049	258	49.5	100
74 EC	1148	1049	258	51	100
82 EC	1148	1049	258	55	100
83 EC	1148	1049	258	57	100
84 EC	1148	1049	258	59	100

Type	62-EC	63-EC	72-EC	73-EC	74-EC	82-EC	83-EC	84-EC
Operating mode*								
EC sickle-bladed axial fan 230/400 V, 50 Hz, IP 54								
Air flow rate m <sup>3</sup> /h	3870	3750	4290	4090	3765	5330	4820	4590
Heating/cooling coil	2 RR	3 RR	2 RR	3 RR	4 RR	2 RR	3 RR	4 RR
Heating output and L <sub>AU</sub> at L <sub>E</sub> ; 15 °C, PWW 70/50	31.2 °C 20.8 kW	37.9 °C 28.3 kW	32.8 °C 25.2 kW	39.8 °C 33.6 kW	46.0 °C 38.6 kW	32.7 °C 31.1 kW	40.2 °C 40.2 kW	47.8 °C 49.8 kW
Cooling capacity and L <sub>AU</sub> at L <sub>E</sub> ; 28 °C/50% rel. hum., PCW 6/12	—	—	21.1 °C/72 % 11.4 kW	18.5 °C/81 % 15.7 kW	16.3 °C/87 % 19.3 kW	21.1 °C/72 % 14.3 kW	18.4 °C/81 % 19.2 kW	15.7 °C/90 % 24.5 kW

\* Heating = Cooling =

## FB-A *flex* 62 - Performance data

### FB-A *flex* 62-EC-E EC SICKLE-BLADED AXIAL FAN – HEATING

#### MEDIUM 70/50

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	3,870	31.2 °C	20.8	450	63.7
15 °C / 30 %	8	3,075	32.9 °C	18.2	230	57.3
15 °C / 30 %	6	2,270	35.2 °C	15.2	100	49.2
15 °C / 30 %	4	1,505	38.5 °C	11.7	40	37.3

#### MEDIUM 50/30

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	3,870	22.4 °C	9.5	450	63.7
15 °C / 30 %	8	3,075	23.3 °C	8.4	230	57.3
15 °C / 30 %	6	2,270	24.4 °C	7.1	100	49.2
15 °C / 30 %	4	1,505	26.2 °C	5.6	40	37.3



## FB-A *flex* 63-EC-E EC SICKLE-BLADED AXIAL FAN – HEATING

### MEDIUM 70/50

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	3,750	37.9 °C	28.3	460	63.8
15 °C / 30 %	8	2,965	39.9 °C	24.5	240	57.4
15 °C / 30 %	6	2,210	42.6 °C	20.2	100	49.2
15 °C / 30 %	4	1,455	46.4 °C	15.1	40	37.4

### MEDIUM 50/30

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	3,750	25.6 °C	13.2	460	63.8
15 °C / 30 %	8	2,965	26.7 °C	11.5	240	57.4
15 °C / 30 %	6	2,210	28.1 °C	9.6	100	49.2
15 °C / 30 %	4	1,455	30.3 °C	7.3	40	37.4

# FB-A *flex* 72 - Performance data

## FB-A *flex* 72-EC-E EC SICKLE-BLADED AXIAL FAN – HEATING & COOLING

### MEDIUM 70/50

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	4,290	32.8 °C	25.2	340	58.4
15 °C / 30 %	8	3,370	34.6 °C	21.9	180	52.4
15 °C / 30 %	6	2,470	37.1 °C	18.1	80	44.1
15 °C / 30 %	4	1,620	48.3 °C	17.9	30	34.4

### MEDIUM 50/30

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	4,290	23.5 °C	12.0	340	58.4
15 °C / 30 %	8	3,370	24.4 °C	10.5	180	52.4
15 °C / 30 %	6	2,470	25.7 °C	8.7	80	44.1
15 °C / 30 %	4	1,620	31.7 °C	9.0	30	34.4

### MEDIUM 6/12

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	4,290	21.1 °C / 72 %	11.4	340	58.4
28 °C / 50 %	8	3,370	20.4 °C / 74 %	10.2	180	52.4
28 °C / 50 %	6	2,470	19.5 °C / 76 %	8.8	80	44.1
28 °C / 50 %	4	1,620	18.1 °C / 79 %	7	30	34.4

### MEDIUM 8/16

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	4,290	22.2 °C / 70 %	8.1	340	58.4
28 °C / 50 %	8	3,370	21.7 °C / 72 %	7.1	180	52.4
28 °C / 50 %	6	2,470	21.0 °C / 74 %	6.1	80	44.1
28 °C / 50 %	4	1,620	0.0 °C / 78 %	4.8	30	34.4

## FB-A flex 73-EC-E EC SICKLE-BLADED AXIAL FAN – HEATING & COOLING

### MEDIUM 70/50

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	4,090	39.8 °C	33.6	350	58.3
15 °C / 30 %	8	3,190	42.1 °C	28.6	180	52.2
15 °C / 30 %	6	2,400	44.7 °C	23.6	90	44.5
15 °C / 30 %	4	1,500	48.4 °C	17.7	30	34.2

### MEDIUM 50/30

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	4,090	27.0 °C	16.2	350	58.3
15 °C / 30 %	8	3,190	28.2 °C	13.9	180	52.2
15 °C / 30 %	6	2,400	29.7 °C	11.6	90	44.5
15 °C / 30 %	4	1,500	31.8 °C	8.9	30	34.2

### MEDIUM 6/12

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	4,090	18.5 °C / 81 %	15.7	350	58.3
28 °C / 50 %	8	3,190	17.7 °C / 83 %	13.9	180	52.2
28 °C / 50 %	6	2,400	16.7 °C / 85 %	11.9	90	44.5
28 °C / 50 %	4	1,500	15.2 °C / 89 %	9.1	30	34.2

### MEDIUM 8/16

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	4,090	20.1 °C / 79 %	11.1	350	58.3
28 °C / 50 %	8	3,190	19.5 °C / 81 %	9.7	180	52.2
28 °C / 50 %	6	2,400	18.7 °C / 83 %	8.2	90	44.5
28 °C / 50 %	4	1,500	17.5 °C / 87 %	6.3	30	34.2

# FB-A *flex* 74 - Performance data

## FB-A *flex* 74-EC-E EC SICKLE-BLADED AXIAL FAN – HEATING & COOLING

### MEDIUM 70/50

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	3,765	46.0 °C	38.6	360	58.3
15 °C / 30 %	8	2,970	48.3 °C	32.7	190	52.3
15 °C / 30 %	6	2,165	51.3 °C	26.0	90	44.0
15 °C / 30 %	4	1,400	54.6 °C	19.4	30	34.1

### MEDIUM 50/30

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	3,765	30.6 °C	19.5	360	58.3
15 °C / 30 %	8	2,970	32.0 °C	16.7	190	52.3
15 °C / 30 %	6	2,165	33.7 °C	13.4	90	44.0
15 °C / 30 %	4	1,400	35.8 °C	10.2	30	34.1

### MEDIUM 6/12

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	3,765	16.3 °C / 87 %	19.3	360	58.3
28 °C / 50 %	8	2,970	15.4 °C / 89 %	16.8	190	52.3
28 °C / 50 %	6	2,165	14.3 °C / 91 %	13.9	90	44.0
28 °C / 50 %	4	1,400	12.8 °C / 94 %	10.4	30	34.1

### MEDIUM 8/16

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	3,765	18.2 °C / 85 %	13.7	360	58.3
28 °C / 50 %	8	2,970	17.5 °C / 87 %	11.9	190	52.3
28 °C / 50 %	6	2,165	16.7 °C / 90 %	9.8	90	44.0
28 °C / 50 %	4	1,400	15.5 °C / 93 %	7.4	30	34.1

## FB-A *flex* 82-EC-E EC SICKLE-BLADED AXIAL FAN – HEATING & COOLING

### MEDIUM 70/50

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	5,330	32.7 °C	31.2	400	50.9
15 °C / 30 %	8	4,180	34.6 °C	27.0	210	45.9
15 °C / 30 %	6	3,050	37.1 °C	22.3	110	39.8
15 °C / 30 %	4	1,930	41 °C	16.6	40	31.7

### MEDIUM 50/30

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	5,330	23.6 °C	15.1	400	50.9
15 °C / 30 %	8	4,180	24.5 °C	13.2	210	45.9
15 °C / 30 %	6	3,050	25.9 °C	11.0	110	39.8
15 °C / 30 %	4	1,930	28.0 °C	8.3	40	31.7

### MEDIUM 6/12

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	5,330	21.1 °C / 72 %	14.3	400	50.9
28 °C / 50 %	8	4,180	20.4 °C / 74 %	12.8	210	45.9
28 °C / 50 %	6	3,050	19.5 °C / 76 %	11.0	110	39.8
28 °C / 50 %	4	1,930	18.0 °C / 79 %	8.6	40	31.7

### MEDIUM 8/16

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	5,330	22.2 °C / 70 %	10.2	400	50.9
28 °C / 50 %	8	4,180	21.6 °C / 72 %	9.0	210	45.9
28 °C / 50 %	6	3,050	20.9 °C / 74 %	7.6	110	39.8
28 °C / 50 %	4	1,930	19.8 °C / 78 %	5.9	40	31.7

# FB-A *flex* 83 - Performance data

## FB-A *flex* 83-EC-E EC SICKLE-BLADED AXIAL FAN – HEATING & COOLING

### MEDIUM 70/50

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	4,820	40.2 °C	40.2	400	52.7
15 °C / 30 %	8	3,750	42.5 °C	34.1	210	48.0
15 °C / 30 %	6	2,690	45.6 °C	27.2	110	44.6
15 °C / 30 %	4	1,710	49.7 °C	19.6	40	37.3

### MEDIUM 50/30

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	4,820	27.4 °C	19.8	400	52.7
15 °C / 30 %	8	3,750	28.6 °C	16.9	210	48.0
15 °C / 30 %	6	2,690	30.4 °C	13.7	110	44.6
15 °C / 30 %	4	1,710	32.8 °C	10.1	40	37.3

### MEDIUM 6/12

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	4,820	18.4 °C / 81 %	19.2	400	52.7
28 °C / 50 %	8	3,750	17.5 °C / 83 %	16.9	210	48.0
28 °C / 50 %	6	2,690	16.4 °C / 85 %	14.0	110	44.6
28 °C / 50 %	4	1,710	14.8 °C / 89 %	10.6	40	37.3

### MEDIUM 8/16

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	4,820	19.9 °C / 79 %	13.6	400	52.7
28 °C / 50 %	8	3,750	19.3 °C / 81 %	11.9	210	48.0
28 °C / 50 %	6	2,690	18.4 °C / 84 %	9.7	110	44.6
28 °C / 50 %	4	1,710	17.1 °C / 88 %	7.4	40	37.3

## FB-A *flex* 84-EC-E EC SICKLE-BLADED AXIAL FAN – HEATING & COOLING

### MEDIUM 70/50

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	4,590	47.8 °C	49.8	400	54.3
15 °C / 30 %	8	3,515	50.7 °C	41.5	210	51.6
15 °C / 30 %	6	2,520	54.2 °C	32.7	100	47.8
15 °C / 30 %	4	1,600	58.7 °C	23.1	40	39.5

### MEDIUM 50/30

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	4,590	31.8 °C	25.5	400	54.3
15 °C / 30 %	8	3,515	33.5 °C	21.6	210	51.6
15 °C / 30 %	6	2,520	35.7 °C	17.2	100	47.8
15 °C / 30 %	4	1,600	38.6 °C	12.5	40	39.5

### MEDIUM 6/12

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	4,590	15.7 °C / 90 %	24.5	400	54.3
28 °C / 50 %	8	3,515	14.6 °C / 92 %	21.3	210	51.6
28 °C / 50 %	6	2,520	13.3 °C / 94 %	17.5	100	47.8
28 °C / 50 %	4	1,600	11.6 °C / 97 %	12.9	40	39.5

### MEDIUM 8/16

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	4,590	17.5 °C / 88 %	17.9	400	54.3
28 °C / 50 %	8	3,515	16.7 °C / 91 %	15.3	210	51.6
28 °C / 50 %	6	2,520	15.8 °C / 93 %	12.6	100	47.8
28 °C / 50 %	4	1,600	14.5 °C / 96 %	9.3	40	39.5

## FB-A *flex* 82 - Performance data

### FB-A *flex* 82-EC-R EC HIGH PERFORMANCE RADIAL FAN – HEATING & COOLING

#### MEDIUM 70/50

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	5,740	32.2 °C	32.6	410	56.6
15 °C / 30 %	8	4,500	34.0 °C	28.3	200	51.1
15 °C / 30 %	6	3,335	36.4 °C	23.6	90	44.3
15 °C / 30 %	4	2,190	39.6 °C	18.4	30	35.3

#### MEDIUM 50/30

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	5,740	23.3 °C	15.7	410	56.6
15 °C / 30 %	8	4,500	24.2 °C	13.8	200	51.1
15 °C / 30 %	6	3,335	25.5 °C	11.6	90	44.3
15 °C / 30 %	4	2,190	27.2 °C	9.1	30	35.3

#### MEDIUM 6/12

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	5,740	21.3 °C / 71 %	14.7	410	56.6
28 °C / 50 %	8	4,500	20.6 °C / 73 %	13.2	200	51.1
28 °C / 50 %	6	3,335	19.7 °C / 75 %	11.5	90	44.3
28 °C / 50 %	4	2,190	18.4 °C / 78 %	9.2	30	35.3

#### MEDIUM 8/16

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	5,740	22.3 °C / 70 %	10.5	410	56.6
28 °C / 50 %	8	4,500	21.8 °C / 72 %	9.3	200	51.1
28 °C / 50 %	6	3,335	21.1 °C / 74 %	8.0	90	44.3
28 °C / 50 %	4	2,190	20.1 °C / 77 %	6.4	30	35.3



## FB-A *flex* 83-EC-R EC HIGH PERFORMANCE RADIAL FAN – HEATING & COOLING

### MEDIUM 70/50

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	5,500	39.0 °C	43.6	420	56.1
15 °C / 30 %	8	4,310	41.2 °C	37.4	210	50.6
15 °C / 30 %	6	3,175	44.0 °C	30.5	90	43.7
15 °C / 30 %	4	2,040	47.7 °C	23.2	30	34.8

### MEDIUM 50/30

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	5,500	26.8 °C	21.4	420	56.1
15 °C / 30 %	8	4,310	28.0 °C	18.5	210	50.6
15 °C / 30 %	6	3,175	29.5 °C	15.2	90	43.7
15 °C / 30 %	4	2,040	31.6 °C	11.8	30	34.8

### MEDIUM 6/12

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	5,500	18.8 °C / 80 %	20.5	420	56.1
28 °C / 50 %	8	4,310	18.0 °C / 82 %	18.1	210	50.6
28 °C / 50 %	6	3,175	16.9 °C / 84 %	15.4	90	43.7
28 °C / 50 %	4	2,040	15.4 °C / 88 %	12.0	30	34.8

### MEDIUM 8/16

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	5,500	20.3 °C / 78 %	14.6	420	56.1
28 °C / 50 %	8	4,310	19.6 °C / 80 %	12.8	210	50.6
28 °C / 50 %	6	3,175	18.8 °C / 83 %	10.8	90	43.7
28 °C / 50 %	4	2,040	17.7 °C / 86 %	8.3	30	34.8

# FB-A *flex* 84 - Performance data

## FB-A *flex* 84-EC-R EC HIGH PERFORMANCE RADIAL FAN – HEATING & COOLING

### MEDIUM 70/50

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	5,050	46.7 °C	53.0	350	54.4
15 °C / 30 %	8	4,220	48.8 °C	47.1	210	50.4
15 °C / 30 %	6	3,090	52.1 °C	37.9	90	43.4
15 °C / 30 %	4	1,955	56.0 °C	28.4	30	34.3

### MEDIUM 50/30

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q heat kW	Power consumption W	Sound pressure level LP(A) 3 m
15 °C / 30 %	10	5,050	31.2 °C	27.1	350	54.4
15 °C / 30 %	8	4,220	32.4 °C	24.2	210	50.4
15 °C / 30 %	6	3,090	34.4 °C	19.8	90	43.4
15 °C / 30 %	4	1,955	36.8 °C	15.1	30	34.3

### MEDIUM 6/12

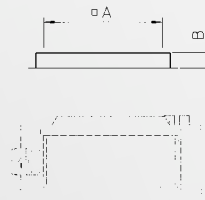
Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	5,050	16.1 °C / 89 %	25.8	350	54.4
28 °C / 50 %	8	4,220	15.3 °C / 91 %	23.5	210	50.4
28 °C / 50 %	6	3,090	14.1 °C / 93 %	19.8	90	43.4
28 °C / 50 %	4	1,955	12.4 °C / 96 %	14.9	30	34.3

### MEDIUM 8/16

Air intake $t_{LE}$ [°C]	Control voltage V	Flow rate $m^3/h$	Air discharge $t_{LA}$ [°C]	Q refrigeration kW	Power consumption W	Sound pressure level LP(A) 3 m
28 °C / 50 %	10	5,050	17.8 °C / 88 %	18.8	350	54.4
28 °C / 50 %	8	4,220	17.3 °C / 90 %	16.9	210	50.4
28 °C / 50 %	6	3,090	16.4 °C / 92 %	14.2	90	43.4
28 °C / 50 %	4	1,955	15.1 °C / 95 %	10.9	30	34.3

**Intermediate frame**  
As a connection between  
FB-A/K and accessories.

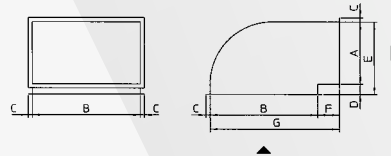
**Order no.**  
**655**



Type	FB-A/K	600	700	800	800R
A/A		391	521	601	521
B		80	80	80	50

**Reducing deflector elbow**

**904**

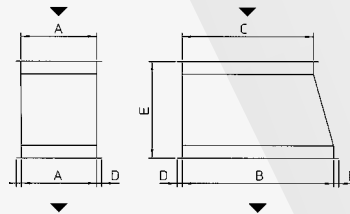


Type	FB-A/K	600	700	800	800R
A		300	300	300	
B		391	521	601	521
C		20	20	20	
D		50	50	50	
E		350	350	350	
F		109	104	99	
G		500	625	750	
Weight	kg		8	11	13

**End piece**

**656**

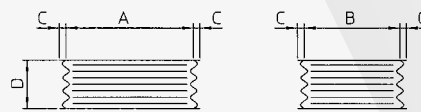
As a connection between  
deflector elbow and accessories.



Type	FB-A/K	600	700	800	800R
A		300	300	300	
B		600	600	600	
C		391	521	601	521
D		20	20	20	
E		445	385	335	
Weight	kg	6	8	11	

**Flexible connection rectangular**

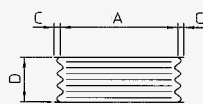
**905**



Type	FB-A/K	600 - 800
A		300
B		600
C		20
D		150
Weight	kg	2

**Flexible connection square**

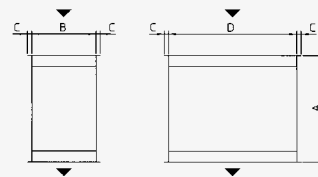
**580**



Type	FB-A/K	600 - 800
A/A		521
C		20
D		150
Weight	kg	3

**Duct, rectangular**

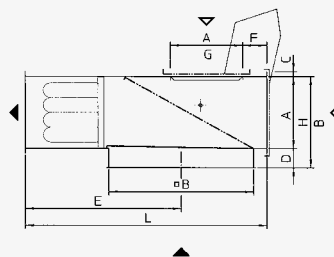
**906**



Type	FB-A/K	600 - 800
A		1000
B		300
C		20
D		6014
Weight	kg	14

**Outdoor air/mixed air part 907-S**

Recirculating air, outdoor air, mixed air part with bag filter ISO Coarse > 60 % acc. to ISO 16890, damper setting through servomotor, continuous, 230 V, with damper position indicator as floating contact, with inbuilt differential pressure switch

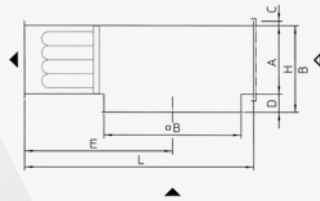


Type	FB-A/K	600 - 800
A		300
B		600
C		20
D		80
E		645
F		100
G		521
H		380
L		1000
Weight	kg	22

# FB-A flex - Accessories, mounted parts

**Recirculating air part**      **Order no. 907-U**

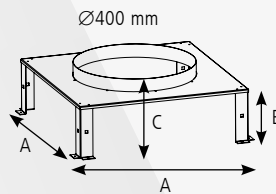
Recirculating air part, with bag filter  
ISO Coarse > 60 % acc. to ISO 16890  
with inbuilt differential pressure switch



Type	FB-A/K	600	700	800
	A			300
	B			600
	C			20
	D			80
	E			645
	H			380
	L			1000
Weight	kg			16

**Connecting plate**      **901-flex**

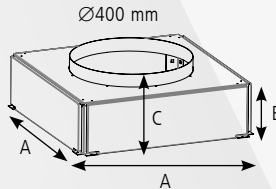
With flanged collar for  
round pipe connection  $\varnothing 400$  mm  
open all around



Type	FB-A/K	600	700	800
A/A	-	578	662	
B	-	175	175	
C	-	217.5	217.5	

**Connecting plate**      **902-flex**

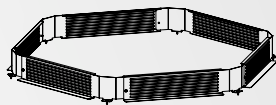
With flanged collar for  
round pipe connection  $\varnothing 400$  mm  
enclosed all around



Type	FB-A/K	600	700	800
A/A	-	578	662	
B	-	175	175	
C	-	217.5	217.5	

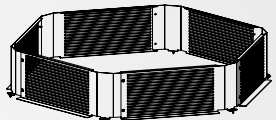
**Intake collar**      **903-100**

Height 100 mm



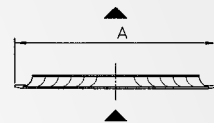
**Intake collar**      **903-200**

Height 200 mm



**Ceiling air grille**      **909**

square  
RAL 9010 pure white finish  
625x625 mm



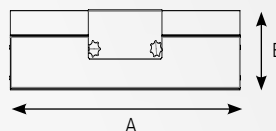
**Cover filter**      **900 RF**

ISO Coarse 30 %  
for design with  
axial fan



**Panel filter**      **900 ASF-R + 900 ASF**

With filter mounting frame  
ISO Coarse 45 % for design  
with high performance radial fan

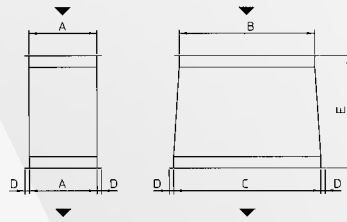


Type	FB-A/K	600	700	800
A/A	-	-	-	592
B	-	-	-	150

### End piece

Mixed air wall duct

Order no.  
910

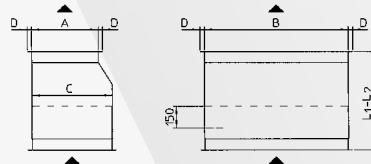


Type	FB-A/K	600 - 800
A		300
B		600
C		651
D		20
E		500
Weight	kg	8

### Wall duct

With installation frame  
for weather protection grille.  
Length adjustable from  
400–550 mm

911

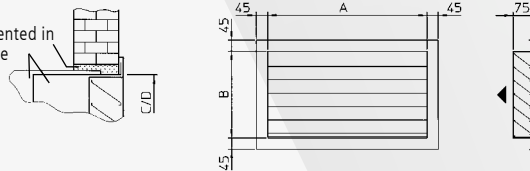


Type	FB-A/K	600 - 800
A		300
B		651
C		363
D		20
L <sub>1</sub>		400
L <sub>2</sub>		550
Weight	kg	10

### Weather protection grille

591

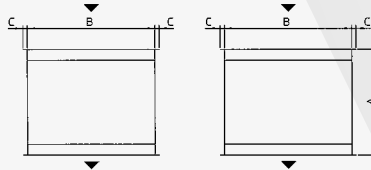
Cemented in  
Sliding piece



Type	FB-A/K	600 - 800
A		640
B		350
C		370
D		660
T max.		160
Weight	kg	11

### Duct, square

912

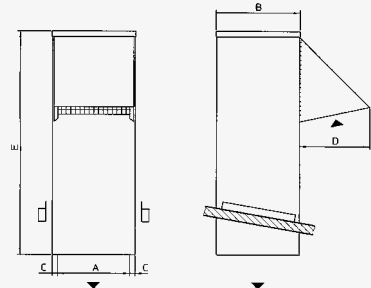


Type	FB-A/K	600 - 800
A		1000
B		521
C		20
Weight	kg	20

### Rain cover

For outdoor air intake via  
the roof, with intake collar  
and bird screen.  
Roof mounting on site

570

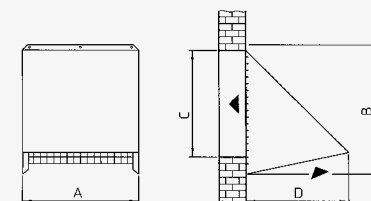


Type	FB-A/K	600 - 800
A		521
B		580
C		29.5
D		490
E		1225
Weight	kg	55

### Intake cover

572-A

With bird screen  
for outdoor air intake  
through the wall



Type	FB-A/K	600 - 800
A		713
B		915
C		655
D		635
Weight	kg	12

## AIR CONDUCTION

### Recirculating air operation

During recirculating air operation, the air from the space to be heated/cooled is drawn in and, after heating/cooling, is blown back into the same space.

This process incurs the lowest running costs.



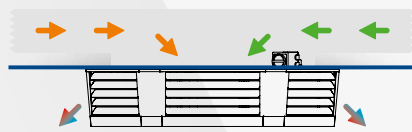
#### Pure recirculating air operation

Intake at the side, discharge at the side

### Mixed air operation/outdoor air

During mixed air operation, outdoor air (variably adjustable outdoor air ratio) is drawn in together with the ambient room air.

This process reduces heating and cooling costs, as it uses some pre-conditioned air from the room, while covering the required outdoor air demand.



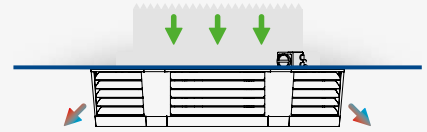
#### Recirculating air, mixed air & outdoor air operation

Intake at the top via air duct in the intermediate ceiling, discharge at the side

### Outdoor air operation

During outdoor air operation, air for heating or cooling is drawn in directly from outside via an outdoor air duct with filter.

This process guarantees clean, fresh air subject to corresponding external conditions.



#### Outdoor air operation

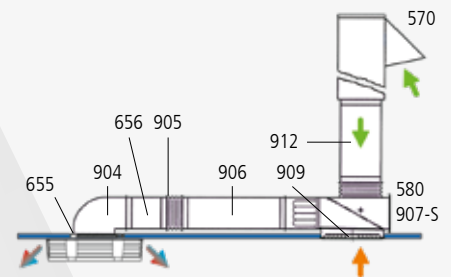
Intake at the top via air duct, discharge at the side

## AIR CONDUCTION VIA WOLF ACCESSORY SYSTEM

### Ceiling mounted ventilation unit with mixed air mounting parts

#### Outdoor air intake via the roof

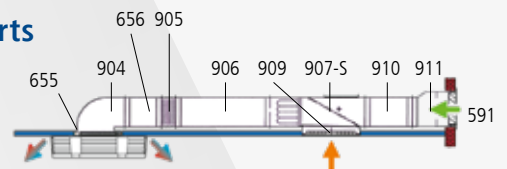
The recirculating air/outdoor air ratio is adequately controlled by the mixed air part. Outdoor air intake vertically via the roof. Recirculating air is drawn in via adjustable recirculating air intake grilles.



### Ceiling mounted ventilation unit with mixed air mounting parts

#### Outdoor air intake via the wall

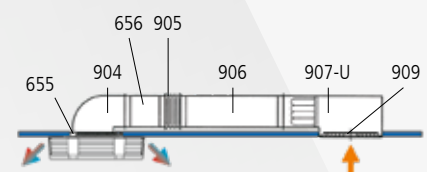
The recirculating air/outdoor air ratio is adequately controlled by the mixed air part. Outdoor air intake horizontally through an exterior wall. Recirculating air intake via recirculating air intake grilles.



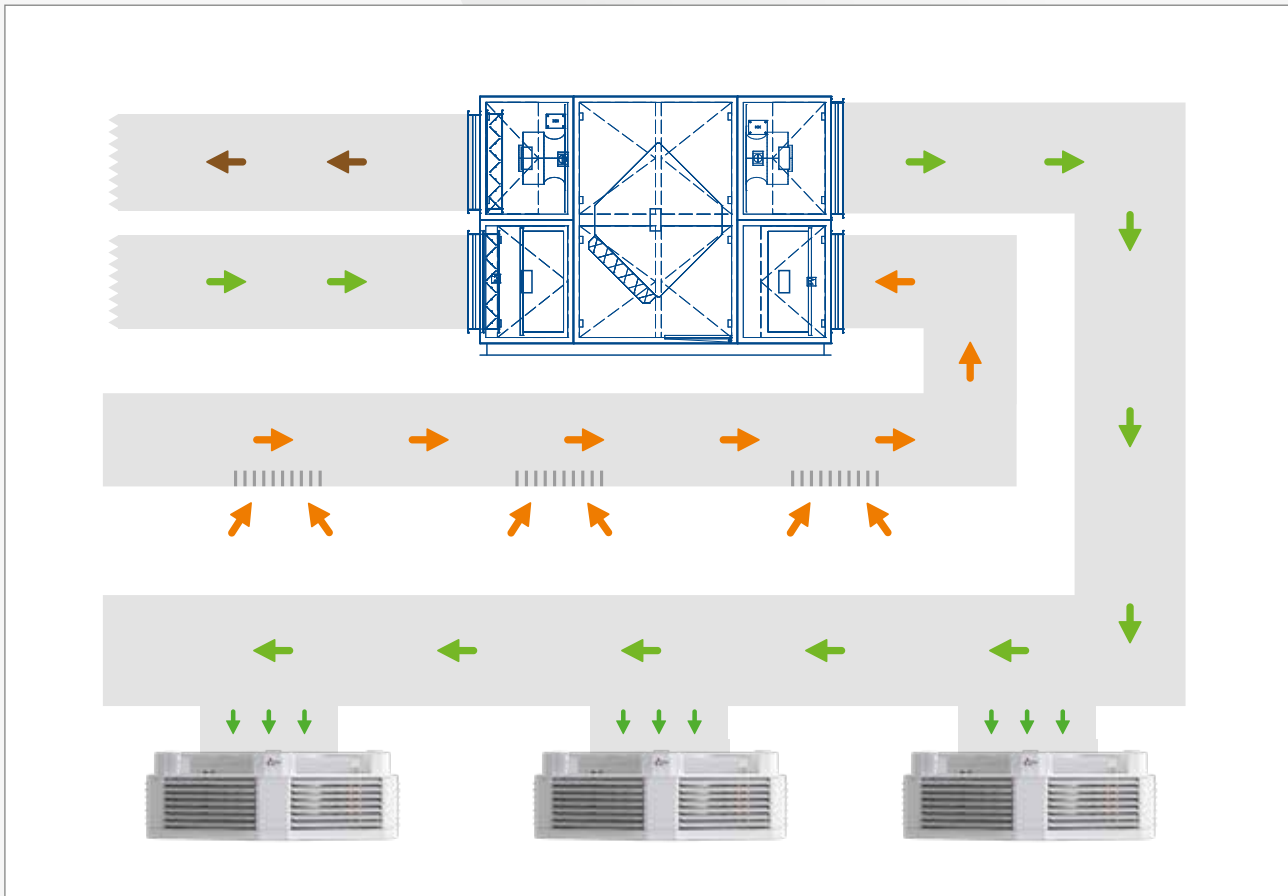
### Ceiling mounted ventilation unit with recirculating air

#### Air intake via intake grilles in the intermediate ceiling

Air intake via recirculating air intake grilles, suitable for grid ceilings 625 x 625.

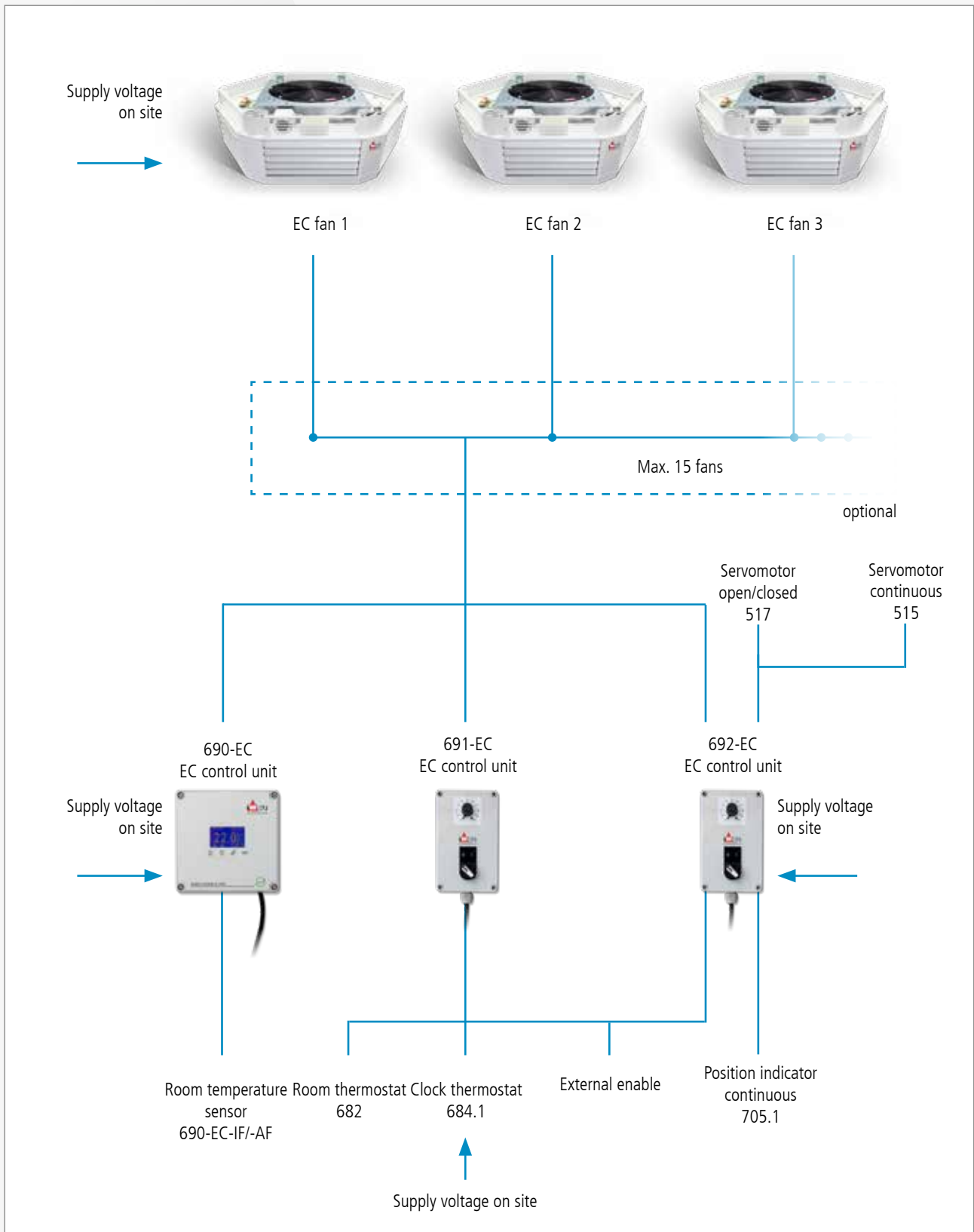


## OUTDOOR AIR AND RECIRCULATING AIR OPERATION THROUGH AN EFFICIENT AND ENERGY OPTIMISED HOLISTIC SYSTEM

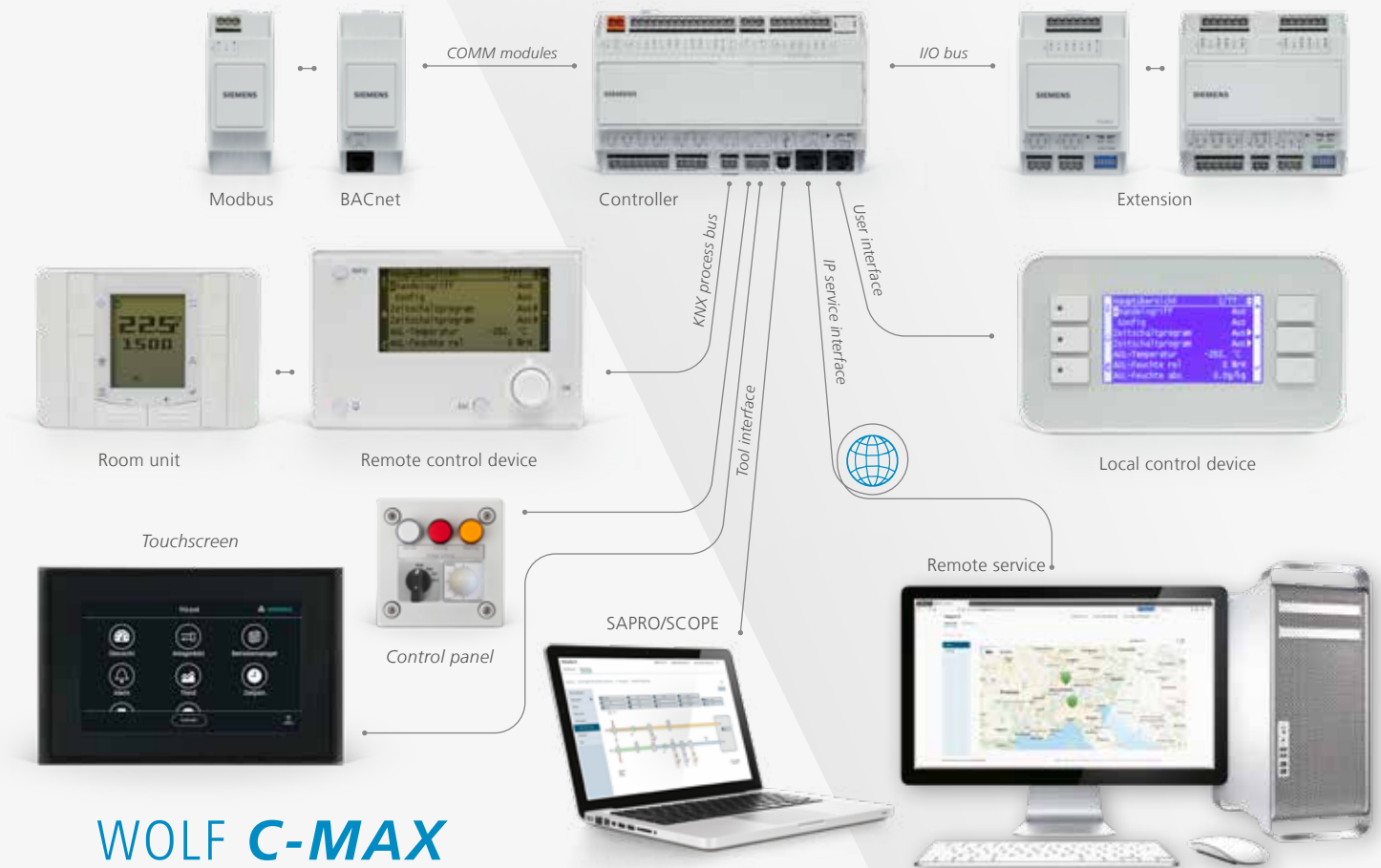


- ▶ Fulfils all requirements of the ErP Directive 1253/2014
- ▶ High hygiene standard thanks to pre-filtering of outdoor air with project-specific filter class
- ▶ Individual configuration and control of the overall system through a state of the art WOLF **C-MAX** DDC control unit with various communication options and remote servicing
- ▶ Individual and demand optimised temperature control of and outdoor air supply to individual areas and room sections
- ▶ High energy recovery efficiency through a heat recovery system optimised for the energy requirements of the specific project
  - › Optional as a counter-current plate heat exchanger with high recovery efficiency and fully separated outdoor air and extract air flows
  - › Optional as a thermal wheel heat exchanger with high efficiency for energy and moisture recovery from the extract air and transfer to the supply air

# FB-A flex - EC control units







## WOLF C-MAX

### Pre-configured for your system

For straightforward commissioning by the customer, the WOLF **C-MAX** is factory-configured specifically for every customer system. All that remains for the customer to do when commissioning the heat recovery unit is to set the specific data.

### At a glance

- ▶ Room unit on-site control (optional)
- ▶ Programming unit (HMI) for commissioning and function extension
- ▶ Control unit ready programmed and factory-configured
- ▶ User friendly menu system
- ▶ Extension modules for BACnet, Modbus interface (already programmed, integration of the module into existing BMS on site)
- ▶ Remote servicing via TCP/IP
- ▶ CO<sub>2</sub>, pressure, flow rate control or humidity control are possible
- ▶ Software updates via SD card

### Operating mode

- ▶ Stepless 0–100 % with three adjustable set values
- ▶ Constant flow rate
- ▶ Constant pressure
- ▶ CO<sub>2</sub> control
- ▶ Humidity control

### Summer/winter bypass

- ▶ Internal sensor with adjustable limit values for heat recovery
- ▶ Free cooling

### Filter monitoring

- ▶ Barometric cell
- ▶ Pressure sensor

### FACP shutdown

- ▶ Supply and extract air "OFF"
- ▶ Extract air "OFF"

### Anti-icing protection of the heat recovery unit

- ▶ Temperature sensor

### Control type

- ▶ Constant supply air
- ▶ Extract air/supply air cascade
- ▶ Room/supply air cascade

### Reheater bank

- ▶ Pumped warm water coil (PWW)
- ▶ Electric heating coil
- ▶ Heat pump

### Cooling

- ▶ Free cooling
- ▶ PCW cooling coil
- ▶ DX cooling coil (heat pump)

### Communication

- ▶ SD card and internal memory
- ▶ Remote servicing via TCP/IP
- ▶ BACnet
- ▶ Modbus

### Fire dampers

- ▶ Central fault
- ▶ Individual display

## WOLF EC MULTICONTROLLER E

The WOLF EC MultiController E is a multifunctional controller with integral display and easy to use interface. The EC controller is equipped with multiple inputs and outputs and a serial RS485 interface with Modbus protocol. This ensures easy integration into ventilation systems.

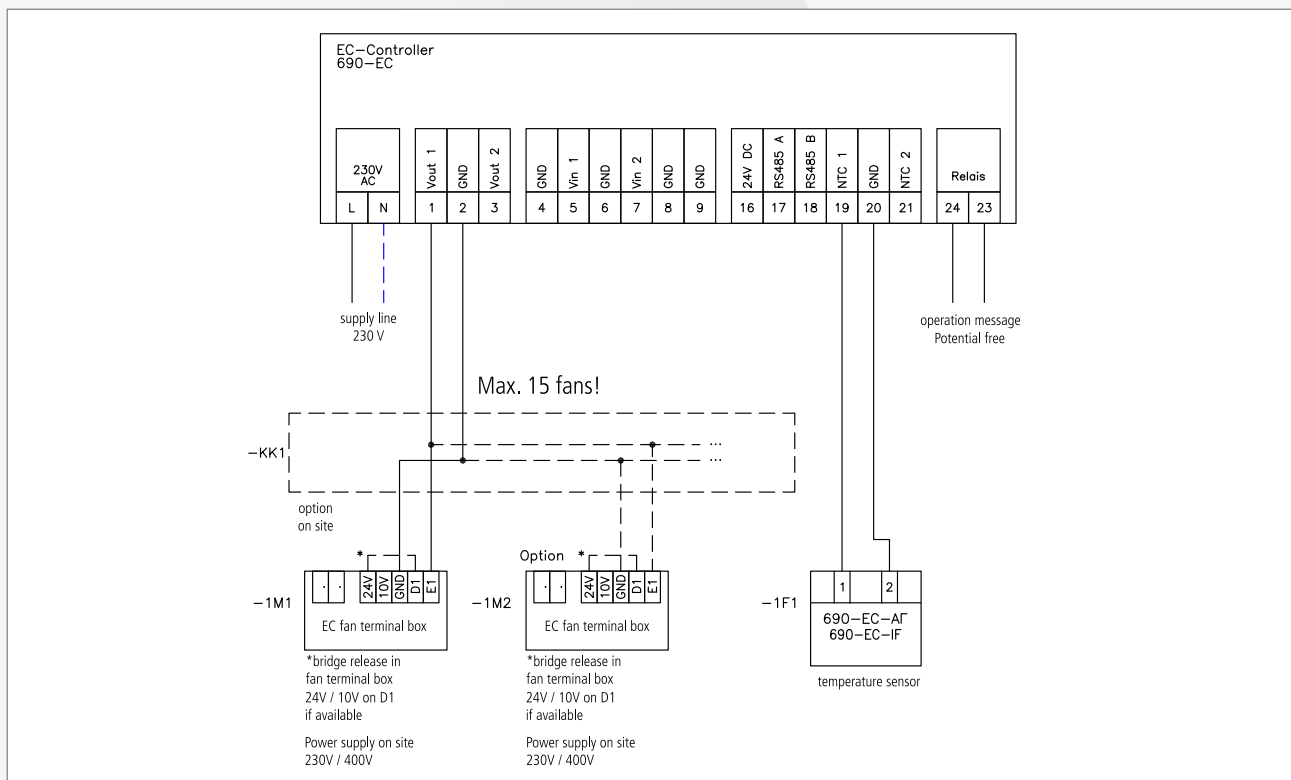
The EC controller comprises an integral controller with 0–10 V DC output for regulating air temperature. Control via external sensors in the room. The display language is selected when the EC controller is started. German, English, Danish and Swedish are available to choose from.

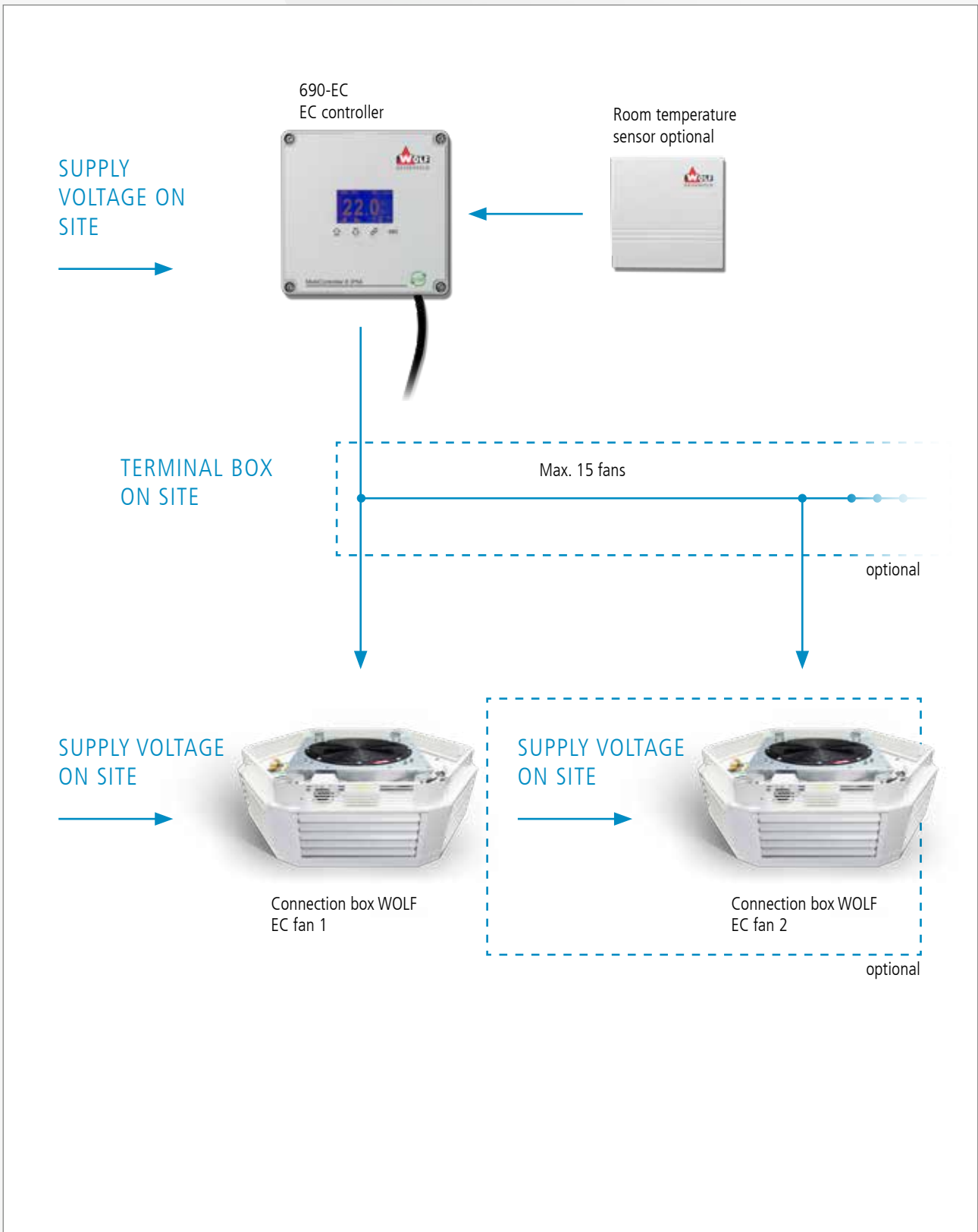
The inbuilt weekly scheduler with digital timer enables the output signal to be customised automatically with up to ten changeovers per day every seven days. It is possible to toggle between three operating modes (day/night/off). In the event of a power failure, a backup battery ensures that the data is retained for up to 72 hours.

The EC controller also includes a micro SD card reader, which can be used for software updates or to "clone" settings from one EC controller to another. By entering a password, the settings can be protected against unauthorized access.

Alarms may also be triggered via Modbus. This ensures that the unit can be maintained according to schedule for optimum operation with minimum energy consumption. The EC controller also has a visual alarm function, which is required in many ventilation solutions.

Thanks to its compact dimensions of 120 x 122 x 60 mm, a protection rating of IP 54 and an ambient temperature of 0–50 °C during operation, the EC controller can be used for numerous applications. The 230 V AC supply voltage enables it to be incorporated easily into the sub-supply. The relay output has a switching capacity of 5 A AC (230 V), while the output current of the 0–10 V output is max. 10 mA.





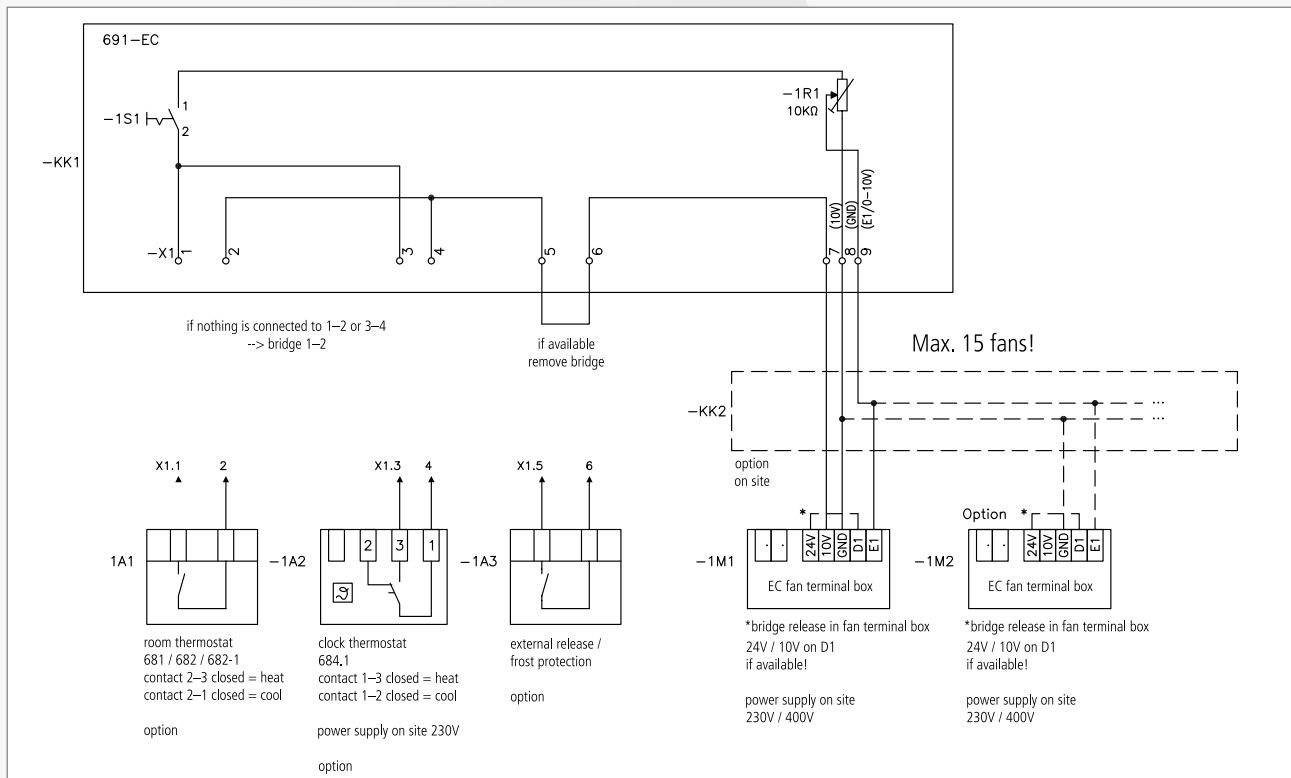
## WOLF EC CONTROL, STEPLESS

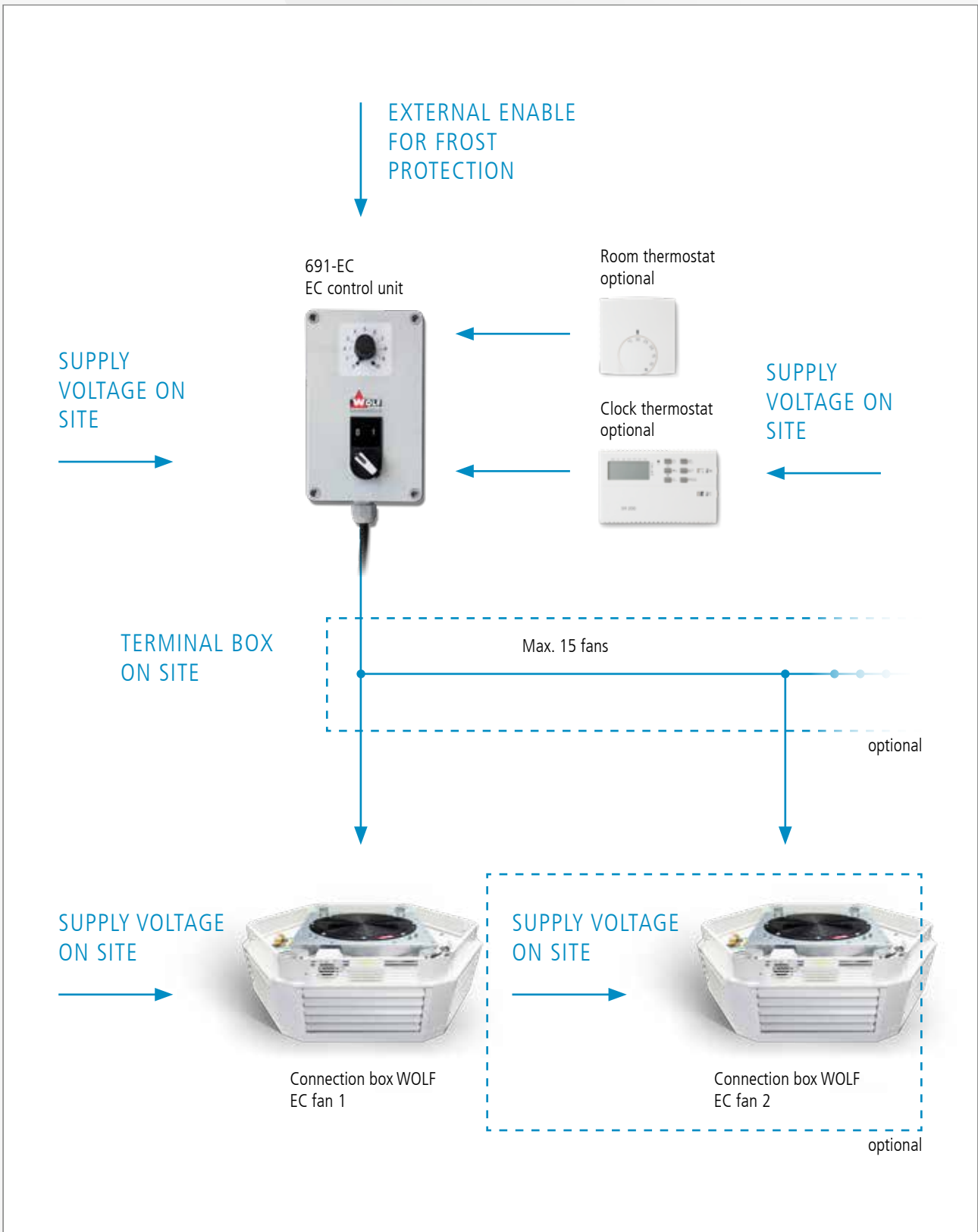
Central control for actuating the fan via a stepless speed regulator. The control has an ON/OFF switch and an integral speed regulator 0–10 V DC with a controllable output range of 0–100 %. This enables the fan to be adequately and steplessly controlled over the entire speed range. When connecting multiple fans to an EC control, all fans are controlled in parallel.

The connection option for a room thermostat and an additional switching contact provide the option to adequately control the fan according to the preferred temperature.



- ▶ Digital inputs: 2 inputs for floating switching contacts (thermostat, external on/off contact, door contact, etc.)
- ▶ Speed signal: 0–10 V DC, max. 5 mA
- ▶ Maximum cable cross-section:  
Voltage supply: 2.5 mm<sup>2</sup>  
Switching contact and adjusting signal: 2.5 mm<sup>2</sup>
- ▶ Housing: plastic
- ▶ Installation: on finished walls
- ▶ Colour: white similar to RAL 9010
- ▶ Protection rating of housing: IP 54
- ▶ Dimensions W x H x D: 110 x 180 x 111 mm





## WOLF EC CONTROL STEPLESS WITH DAMPER CONTROL

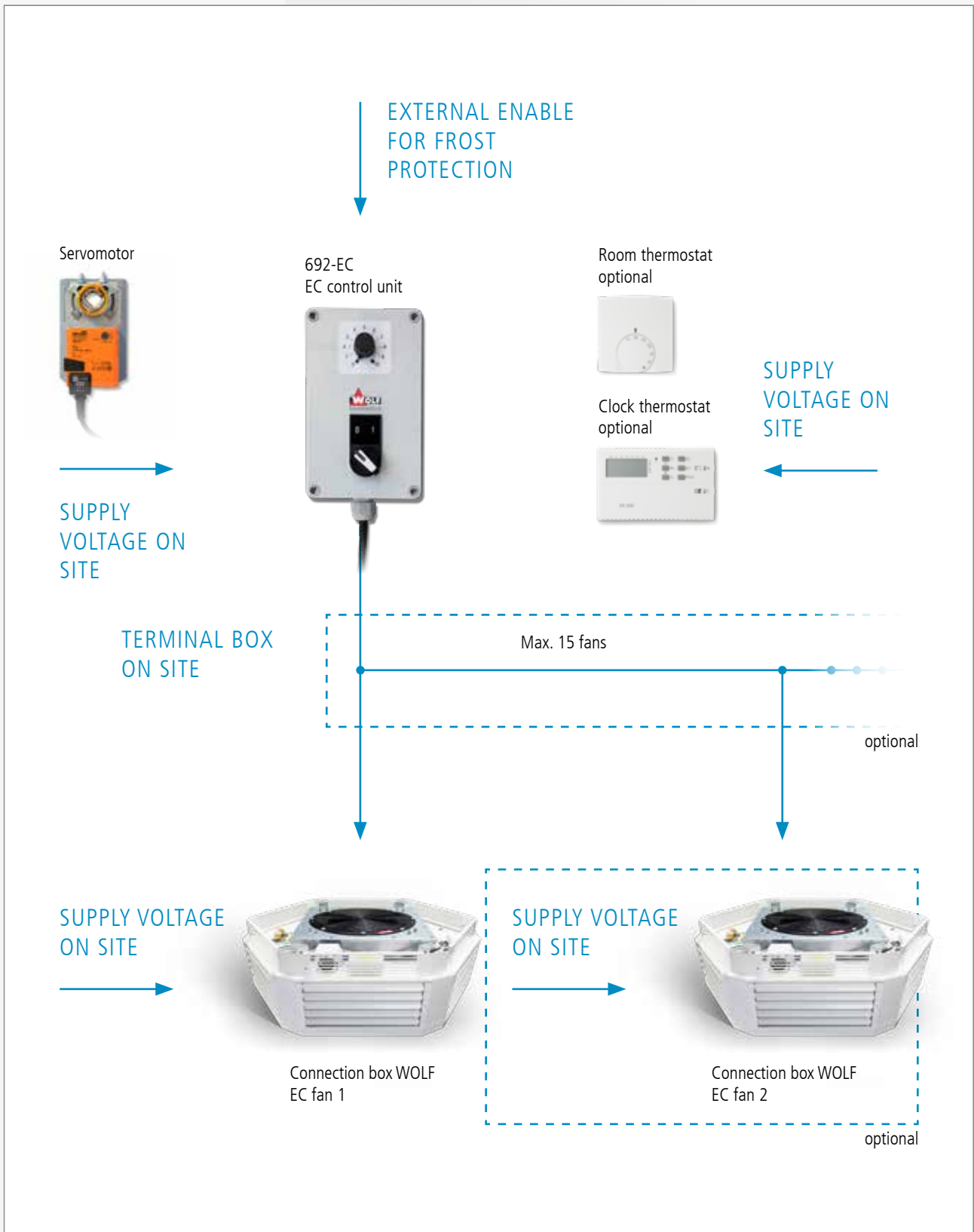
Central control for actuating the fan via a stepless speed regulator. The control has an ON/OFF switch and an integral speed regulator 0–10 V DC with a controllable output range of 0–100 %. This enables the fan to be adequately and steplessly controlled over the entire speed range.

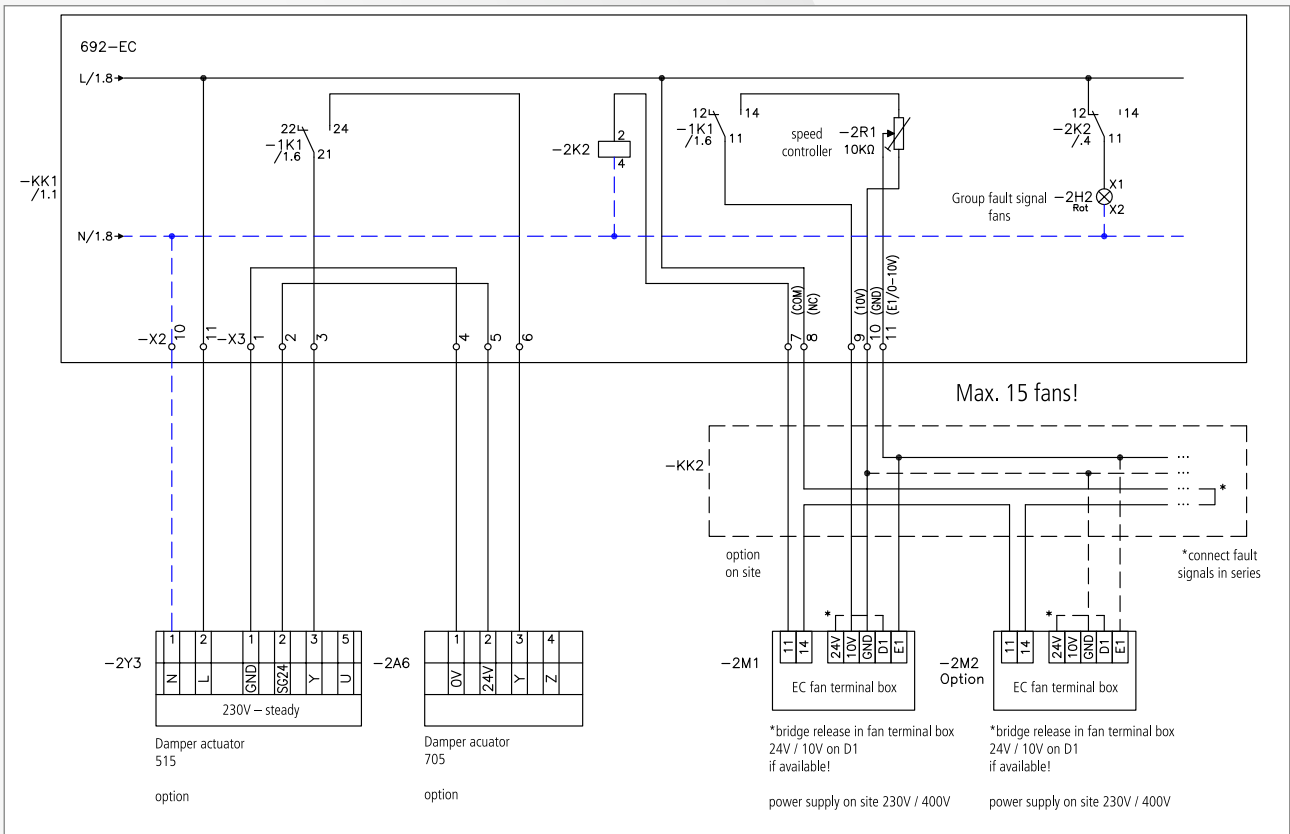
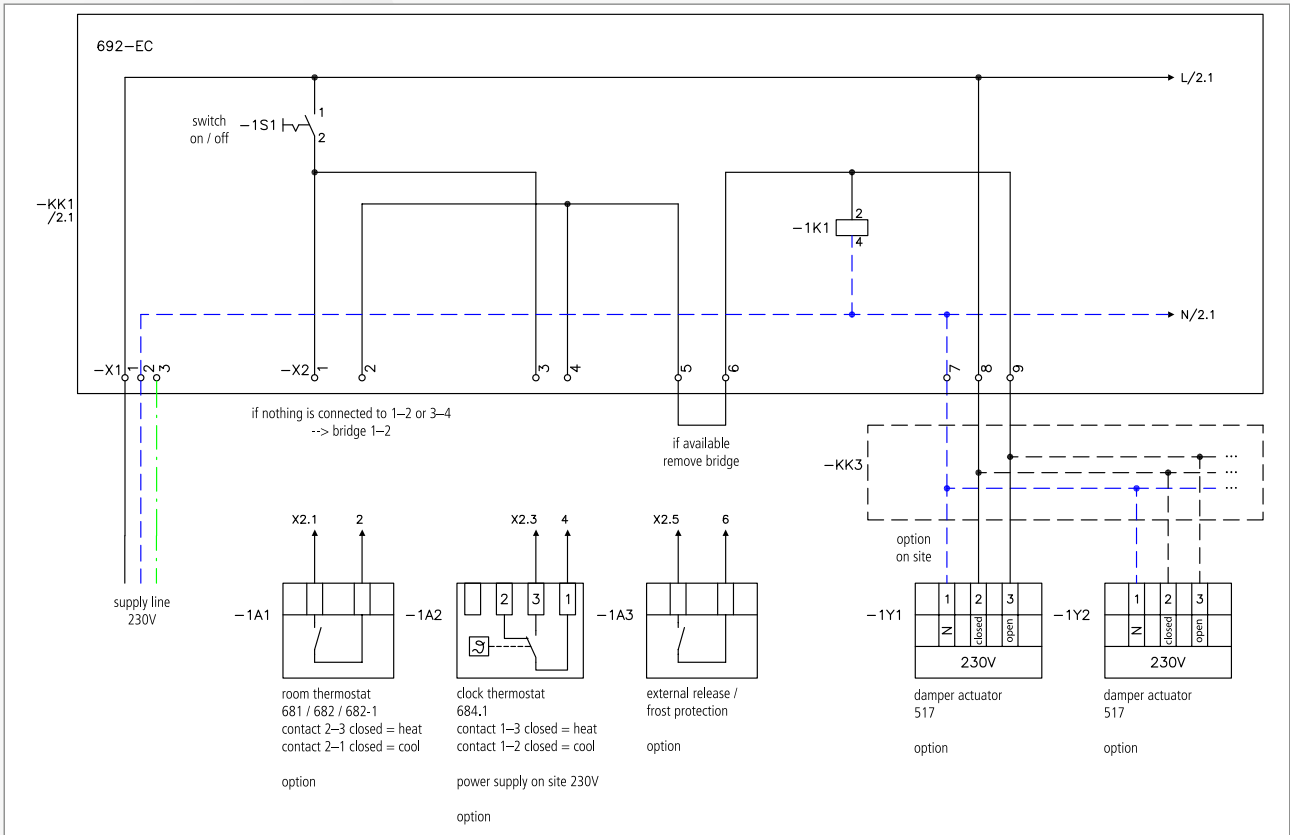
When connecting multiple fans to an EC control, all fans are controlled in parallel. The connection option for a room thermostat and an additional switching contact provide the option to adequately control the fan according to the preferred temperature.

The 692-EC version also features either control of 230 V open/close dampers or, via a separate position indicator, control of continuous 230 V dampers to adequately control the mixed air ratio. The dampers are supplied with voltage directly from the 692-EC via a 230 V AC supply voltage. This enables the EC control to be incorporated easily into the sub-supply. Using a collective message by means of a red LED, faults can be localised and rectified quickly and easily.



- ▶ Input for damper setpoint generator 0–10 V
- ▶ Speed signal: DC 0–10 V, max. 5 mA
- ▶ Switching contact for open/close flaps
- ▶ Voltage supply 230 V for damper actuators
- ▶ Maximum cable cross-section:
  - › Voltage supply: 2.5 mm<sup>2</sup>
  - › Switching contact and adjusting signal: 2.5 mm<sup>2</sup>
- ▶ Housing: plastic
- ▶ Installation: on finished walls
- ▶ Colour: white similar to RAL 9010
- ▶ Protection rating of housing: IP 54
- ▶ Dimensions W x H x D: 110 x 180 x 111 mm







To consistently ensure optimum and energy efficient operation, it is important not only to calculate the flow rate and the heating outputs and cooling capacities, but also to take into consideration the spatial and structural conditions that may significantly influence acoustics, flows and air distribution, for example.

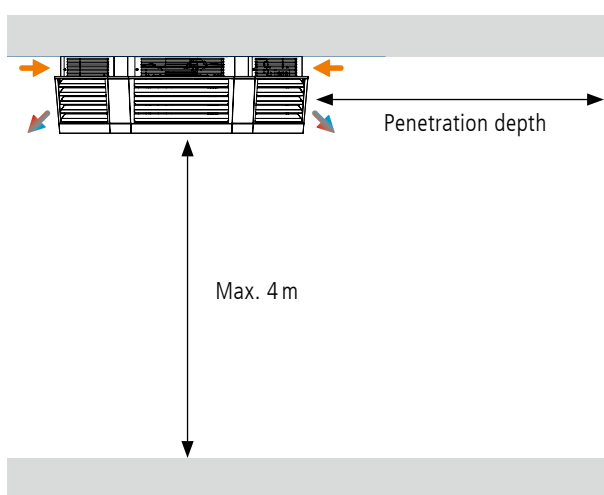
## Penetration depths in heating mode

When sizing the units, ensure that the discharge temperature in heating mode is max. 20 K above the preferred room temperature. It should be possible to adjust the flow temperatures (return addition) at the central heating plant. The steepness of the control curve can then be used to achieve optimum discharge temperatures over the entire heating period.

Low discharge temperatures result in lower temperature differentials between the primary air stream and the room temperature, which prevents drifting (thermal lift) of the primary air stream.

This, in turn, means low energy consumption costs. During positioning, ensure that the air flow can be discharged without any obstructions. If structural elements (shelving, tall manufacturing machinery, etc.) are in the way, the penetration depth of the primary air stream and therefore temperature distribution in the room is reduced.

The arrangement of ceiling mounted ventilation units facing opposite one another and spaced close together will also have a negative effect if both air streams meet.



Penetration depth of the horizontal, non-isothermal air stream without mounting accessories on the suction side in relation to a temperature differential between the room air and supply air of  $\Delta t$  20 K. The penetration depth is the furthest distance that can be achieved by an air stream in a room. Obstacles (transverse flows, obstructions to flow) are not taken into consideration. The fins for guiding the primary air stream are oriented parallel to the air flow (horizontal =  $0^\circ$ ). Adjusting the fins reduces the penetration depth (see table 2).

The technical data relates to a jet end velocity of 0.3 m/s, a temperature differential of ( $\Delta t$  20 K) between the air discharge temperature  $t_{LA}$  and room temperature  $t_R$  (20 °C). For correction value for other temperature differentials, see table 3.

## PENETRATION DEPTH

Type	V10	V8	V6	V4
FB-A flex 62	5.9 m	5.1 m	4.6 m	3.9 m
FB-A flex 72	6.3 m	5.6 m	5.0 m	3.9 m
FB-A flex 82	7.6 m	6.5 m	5.3 m	4.1 m
FB-A flex 82 R	9.9 m	8.7 m	5.8 m	4.2 m

Table 1

## CORRECTION FACTOR FOR FIN POSITIONING

$< 0^\circ$	0 K = 0	See table 3
$< 30^\circ$	30 K = 0.7	See table 3
$< 40^\circ$	40 K = 0.5	See table 3
$< 45^\circ$	45 K = 0.4	See table 3

Table 2

## CORRECTION VALUE K FOR PENETRATION DEPTH FOR A TEMPERATURE DIFFERENTIAL BETWEEN THE AMBIENT ROOM AIR AND SUPPLY AIR

$\Delta t$	20	30	40	50
K	1.0	0.97	0.94	0.91

Table 3



## FB-A *flex* – HEATING WITH EC SICKLE-BLADED AXIAL FAN

### Type: FB-A ...-EC-E (D)

WOLF design air heater for ceiling mounting in a stylish sheet steel housing with powder coating RAL 9010 (other RAL colours optional) for challenging heating applications.

Exclusive 12-cornered inherently stable housing made of sheet steel with powder coating in RAL 9010 (other RAL colours optional) with a downward 5° housing angle for optimum air routing into the living space.

Air is distributed via six discharge fins, which are arranged all around the circumference and can be removed without any tools. They are each equipped with four aerodynamically shaped and individually adjustable flow optimised air guide fins, ensuring user defined air current distribution and control.

Even and consistent output transfer is ensured by the resistance optimised CuAl round pipe heat exchanger for DHW operation. Area of application max. 90 °C medium temperature at 16 bar operating pressure.

Designs with two to four pipe rows ensure optimum output transfer and a high supply temperature even at extremely low flow temperatures. The pipes are made of corrosion-resistant copper. The formed continuous aluminium fins ensure loss-free heat transfer and low air resistance.

Distributors and manifolds are designed to be permanently corrosion-resistant.

The flow and return for the medium connection with threaded connector are routed upwards for ease of installation and accessibility.

Straightforward unit installation via four attached stable mounting brackets. Optional easy-fit intake collar and mounting option for an optional filter.

Highly efficient fan/motor unit as an electronically commuted EC sickle-bladed fan unit 230/400 V / 50/60 Hz with integral control electronics and stepless output control via 0–10 V control input.

The highly efficient fan/motor unit with statically and dynamically balanced impeller is fitted to the back of the housing with fine-mesh contact protection. All electrical cables are wired to a mounted terminal box or optionally to a repair switch with integral terminal strip.

Extremely quiet operation thanks to sickle-bladed axial fan made of high grade special polycarbonate. Insulation class B, protection rating IP 54, electrical design acc. to EN 60335-1.

Motor protection thanks to integral, interactive temperature management.

All ErP requirements and specifications are fulfilled.

## FB-A *flex* – HEATING & COOLING WITH EC SICKLE-BLADED AXIAL FAN

### Type: FB-A -K ...-EC-E (D)

WOLF design air heater and cooling unit for ceiling mounting in a stylish sheet steel housing with powder coating RAL 9010 (other RAL colours optional) for challenging heating applications.

Exclusive 12-cornered inherently stable housing made of sheet steel with powder coating in RAL 9010 (other RAL colours optional) with a downward 5° housing angle for optimum air routing into the living space.

Air is distributed via six discharge fins, which are arranged all around the circumference and can be removed without any tools. They are each equipped with four aerodynamically shaped and individually adjustable flow optimised air guide fins, ensuring user defined air current distribution and control.

Even and consistent output transfer is ensured by the resistance optimised CuAl round pipe heat exchanger for hot and cold water operation. Area of application max. 90 °C medium temperature at 16 bar operating pressure.

Designs with two to four pipe rows ensure optimum output transfer and a maximum supply temperature even at extremely low flow temperatures. The pipes are made of corrosion-resistant copper. The formed continuous aluminium fins ensure loss-free heat and cold transfer and low air resistance.

Distributors and manifolds are designed to be permanently corrosion-resistant.

The flow and return for the medium connection with threaded connector are routed upwards for ease of installation and accessibility.

Integral condensate pan sloping down on all sides towards the pump reservoir with a float unit that is easily accessible for maintenance purposes. This is connected with a hose to the powerful condensate pump with an alarm contact and 5 m delivery head.

Straightforward unit installation via four attached stable mounting brackets. Optional easy-fit intake collar and mounting option for an optional filter.

Highly efficient fan/motor unit as an electronically commuted EC sickle-bladed fan unit 230/400 V / 50/60 Hz with integral control electronics and stepless output control via 0–10 V control input.

The highly efficient fan/motor unit with statically and dynamically balanced impeller is fitted to the back of the housing with fine-mesh contact protection. All electrical cables are wired to a mounted terminal box or optionally to a repair switch with integral terminal strip.

Extremely quiet operation thanks to sickle-bladed axial fan made of high grade special polycarbonate. Insulation class B, protection rating IP 54, electrical design acc. to EN 60335-1.

Motor protection thanks to integral, interactive temperature management.

All ErP requirements and specifications are fulfilled.



## FB-A *flex* – HEATING WITH EC HIGH PERFORMANCE RADIAL FAN

### Type: FB-A-...-EC-R

WOLF design air heater for ceiling mounting in a stylish sheet steel housing with powder coating RAL 9010 (other RAL colours optional) for challenging heating applications.

Design protected system with integral high performance radial fan as a freewheeling impeller in EC design, energy efficiency class IE5.

The radial fan delivers the flow rate with optimal energy efficiency and without deflection or any additional pressure loss horizontally via the heat exchanger in the direction of the discharge fins.

The system offers consistently high efficiency, even when external resistance is high, and outstanding acoustic values.

Exclusive 12-cornered inherently stable housing made of sheet steel with powder coating in RAL 9010 (other RAL colours optional) with a downward 5° housing angle for optimum air routing into the living space.

Air is distributed via six discharge fins, which are arranged all around the circumference and can be removed without any tools. They are each equipped with four aerodynamically shaped and individually adjustable flow optimised air guide fins, ensuring user defined air current distribution and control.

Even and consistent output transfer is ensured by the resistance optimised CuAl round pipe heat exchanger for DHW operation. Area of application max. 90 °C medium temperature at 16 bar operating pressure.

Designs with two to four pipe rows ensure a high supply temperature even at extremely low flow temperatures. The pipes are made of corrosion-resistant copper. The formed continuous aluminium fins ensure loss-free heat transfer and low air resistance. Distributors and manifolds are designed to be permanently corrosion-resistant.

The flow and return for the medium connection with threaded connector are routed upwards for ease of installation and accessibility.

Straightforward unit installation via four attached stable mounting brackets. Optional easy-fit intake collar and mounting option for an optional filter.

High performance radial fan with freewheeling impeller made of special polycarbonate and EC motor, energy efficiency class IE5. The fan has its intake on one side without spiral housing, has an electronically commuted motor and is equipped with advanced EC technology. Highly efficient unit, with stepless 0–10 V control over the entire permissible speed range. High efficiency levels and excellent acoustic behaviour. Performance data corresponds to accuracy class 1 according to DIN 24166.

The electronics comply with EMC guidelines and meet all requirements relating to perturbation. Overtemperature protection of the unit electronics through active temperature management. Protection rating IP 54.

The complete unit with statically and dynamically balanced impeller is fitted to the back of the housing with fine-mesh contact protection.

All electrical cables are wired to a mounted terminal box.

All ErP requirements and specifications are fulfilled.

## FB-A *flex* – HEATING & COOLING WITH EC HIGH PERFORMANCE RADIAL FAN

### Type: FB-A -K ...-EC/R

WOLF design air heater and cooling unit for ceiling mounting in a stylish sheet steel housing with powder coating RAL 9010 (other RAL colours optional) for challenging heating applications.

Design protected system with integral high performance radial fan as a freewheeling impeller in EC design, energy efficiency class IE5. The radial fan delivers the flow rate with optimal energy efficiency and without deflection or any additional pressure loss horizontally via the heat exchanger in the direction of the discharge fins.

The system offers consistently high efficiency, even when external resistance is high, and outstanding acoustic values.

Exclusive 12-cornered inherently stable housing made of sheet steel with powder coating in RAL 9010 (other RAL colours optional) with a downward 5° housing angle for optimum air routing into the living space.

Air is distributed via six discharge fins, which are arranged all around the circumference and can be removed without any tools. They are each equipped with four aerodynamically shaped and individually adjustable flow optimised air guide fins, ensuring user defined air current distribution and control.

Even and consistent output transfer is ensured by the resistance optimised CuAl round pipe heat exchanger for hot and cold water operation. Area of application max. 90 °C medium temperature at 16 bar operating pressure.

Designs with two to four pipe rows ensure optimum output transfer and a maximum supply temperature even at extremely low flow temperatures. The pipes are made of corrosion-resistant copper. The formed continuous aluminium fins ensure loss-free heat and cold transfer and low air resistance.

Distributors and manifolds are designed to be permanently corrosion-resistant. The flow and return for the medium connection with threaded connector are routed upwards for ease of installation and accessibility.

Integral condensate pan sloping down on all sides towards the pump reservoir with a float unit that is easily accessible for maintenance purposes. This is connected with a hose to the powerful condensate pump with an alarm contact and 5 m delivery head.

Straightforward unit installation via four attached stable mounting brackets. Optional easy-fit intake collar and mounting option for an optional filter.

High performance radial fan with freewheeling impeller made of special polycarbonate and EC motor.

Energy efficiency class IE5. The fan has its intake on one side, without spiral housing and is equipped with an electronically commuted motor with advanced EC technology. Highly efficient unit, with stepless 0–10 V control over the entire permissible speed range. High efficiency levels and excellent acoustic behaviour. Performance data corresponds to accuracy class 1 according to DIN 24166.

The electronics comply with EMC guidelines and meet all requirements relating to perturbation. Overtemperature protection of the unit electronics through active temperature management. Protection rating IP 54.

The complete unit with statically and dynamically balanced impeller is fitted to the back of the housing with fine-mesh contact protection.

All electrical cables are wired to a mounted terminal box.

All ErP requirements and specifications are fulfilled.

# FB-A *flex* - Areas of application







# HEATING VENTILATION AIR CONDITIONING

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