



INLINE RECTANGULAR FANS



Box

EN

USER'S MANUAL



BLAUBERG
Ventilatoren

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This user's manual is a main operating document intended for technical, maintenance, and operating staff.

The manual contains information about purpose, technical details, operating principle, design, and installation of the Box unit and all its modifications.

Technical and maintenance staff must have theoretical and practical training in the field of ventilation systems and should be able to work in accordance with workplace safety rules as well as construction norms and standards applicable in the territory of the country.

The information in this user's manual is correct at the time of the document's preparation.

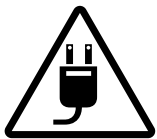
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SAFETY REQUIREMENTS

- Please read the user's manual carefully prior to installing and operating the unit.
- All user's manual requirements as well as the provisions of all the applicable local and national construction, electrical, and technical norms and standards must be observed when installing and operating the unit.
- The warnings contained in the user's manual must be considered most seriously since they contain vital personal safety information.
- Failure to follow the rules and safety precautions noted in this user's manual may result in an injury or unit damage.
- After a careful reading of the manual, keep it for the entire service life of the unit.
- While transferring the unit control, the user's manual must be turned over to the receiving operator.

UNIT INSTALLATION AND OPERATION SAFETY PRECAUTIONS



- Disconnect the unit from power mains prior to any installation operations.



- Unpack the unit with care.



- The unit must be grounded!



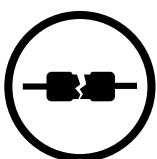
- While installing the unit, follow the safety regulations specific to the use of electric tools.



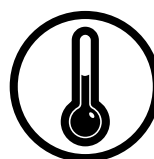
- Do not change the power cable length at your own discretion.
- Do not bend the power cable.
- Avoid damaging the power cable.
- Do not put any foreign objects on the power cable.



- Do not lay the power cable of the unit in close proximity to heating equipment.



- Do not use damaged equipment or cables when connecting the unit to power mains.



- Do not operate the unit outside the temperature range stated in the user's manual.
- Do not operate the unit in aggressive or explosive environments.



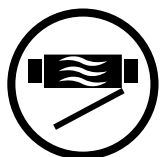
- Do not touch the unit controls with wet hands.
- Do not carry out the installation and maintenance operations with wet hands.



- Do not allow children to operate the unit.



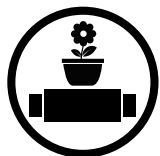
- Do not store any explosive or highly flammable substances in close proximity to the unit.



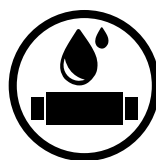
- Do not open the unit during operation.



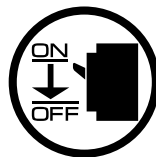
- Do not block the air duct when the unit is switched on.



- Do not sit on the unit and avoid placing foreign objects on it.



- Do not wash the unit with water.
- Protect the electric parts of the unit against ingress of water.



- Disconnect the unit from power mains prior to any technical maintenance.



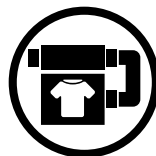
- When the unit generates unusual sounds, odour, or emits smoke, disconnect it from power supply and contact the Seller.



- Do not direct the air flow produced by the unit towards open flame or ignition sources.



- In case of continuous operation of the unit, periodically check the security of mounting.



- Use the unit only for its intended purpose.



**THE PRODUCT MUST BE DISPOSED SEPARATELY AT THE END OF ITS SERVICE LIFE.
DO NOT DISPOSE THE UNIT AS UNSORTED DOMESTIC WASTE.**

PURPOSE

Inline rectangular fans are intended for supply and exhaust ventilation of residential, public and industrial premises (production and storage facilities, sport halls, water pools, large auditoriums, conference halls, etc.). The fans are designed for mounting into rectangular ducts.



THE UNIT SHOULD NOT BE OPERATED BY CHILDREN OR PERSONS WITH REDUCED PHYSICAL, MENTAL, OR SENSORY CAPACITIES, OR THOSE WITHOUT THE APPROPRIATE TRAINING.

THE UNIT MUST BE INSTALLED AND CONNECTED ONLY BY PROPERLY QUALIFIED PERSONNEL AFTER THE APPROPRIATE BRIEFING.

THE CHOICE OF UNIT INSTALLATION LOCATION MUST PREVENT UNAUTHORIZED ACCESS BY UNATTENDED CHILDREN.



THE UNIT MUST NOT BE OPERATED IN KITCHEN PREMISES.

The fans are rated for continuous operation always connected to power mains.

Ingress protection rating is IPX4.

The transporting medium must not contain dust, solid impurities, sticky substances or fibrous materials.

Due to constant improvements the design of some models may slightly differ from those described in this manual.

DELIVERY SET

Name	Quantity
Fan	1 pc.
User's manual	1 pc.
Packing box	1 pc.

DESIGNATION KEY

Box - I EC 40 x 20 4 E

Phase

E: single-phase

D: three-phase

Number of the motor poles

2, 4, 6, 8

Rectangular duct size [cm]

40x20, 50x25, 50x30, 60x30, 60x35, 70x40, 80x50, 90x50, 100x50

Motor type

_ : asynchronous motor

EC: electronically commutated motor

Fan design

_ : backward curved blades

F : forward curved blades

I: sound-insulated casing

Fan name

Box: rectangular inline fans

TECHNICAL DATA

BOX-F / BOX-FI

	Box-F / Box-FI 40x20 4E	Box-F / Box- FI 40x20 4D	Box-F / Box-FI 50x25 4E	Box-F / Box-FI 50x25 4D	Box-F / Box-FI 50x25 6E
Voltage [V/50 Hz]	1~230	3~400	1~230	3~400	1~230
Power [W]	295	282	535	570	244
Current [A]	1.32	0.60	2.49	0.94	1.22
Max. air capacity [m ³ /h]	1440	1470	1750	1850	1460
RPM [min ⁻¹]	1350	1300	1250	1270	910
Noise level at 3 m [dBA]	50/42*	52/43*	53/44*	54/44*	45/37*
Transported air temperature [°C]	-25...+40	-25...+45	-20...+40	-20...+40	-20...+50
Protection rating	IPX4	IPX4	IPX4	IPX4	IPX4

	Box-F / Box-FI 50x25 6D	Box-F / Box-FI 50x30 4E	Box-F / Box-FI 50x30 4D	Box-F / Box-FI 50x30 6E	Box-F / Box-FI 50x30 6D
Voltage [V/50 Hz]	3~400	1~230	3~400	1~230	3~400
Power [W]	274	710	855	283	303
Current [A]	0.67	3.10	1.70	1.59	0.8
Max. air capacity [m ³ /h]	1490	2350	2350	1550	1620
RPM [min ⁻¹]	930	1230	1300	890	910
Noise level at 3 m [dBA]	45/38*	57/47*	56/47*	47/39*	51/41*
Transported air temperature [°C]	-20...+60	-25...+70	-20...+50	-20...+70	-20...+60
Protection rating	IPX4	IPX4	IPX4	IPX4	IPX4

	Box-F / Box-FI 60x30 4E	Box-F / Box-FI 60x30 4D	Box-F / Box-FI 60x30 6E	Box-F / Box-FI 60x30 6D	Box-F / Box-FI 60x35 4E
Voltage [V/50 Hz]	1~230	3~400	1~230	3~400	1~230
Power [W]	1240	1560	419	397	2840
Current [A]	6.45	2.73	2.05	0.78	13.90
Max. air capacity [m ³ /h]	2950	3740	2260	2320	4260
RPM [min ⁻¹]	1210	1310	870	920	1260
Noise level at 3 m [dBA]	59/51*	57/50*	50/42*	49/41*	59/51*
Transported air temperature [°C]	-25...+50	-25...+65	-20...+70	-20...+70	-20...+40
Protection rating	IPX4	IPX4	IPX4	IPX4	IPX4

* parameter applicable for Box-FI fan

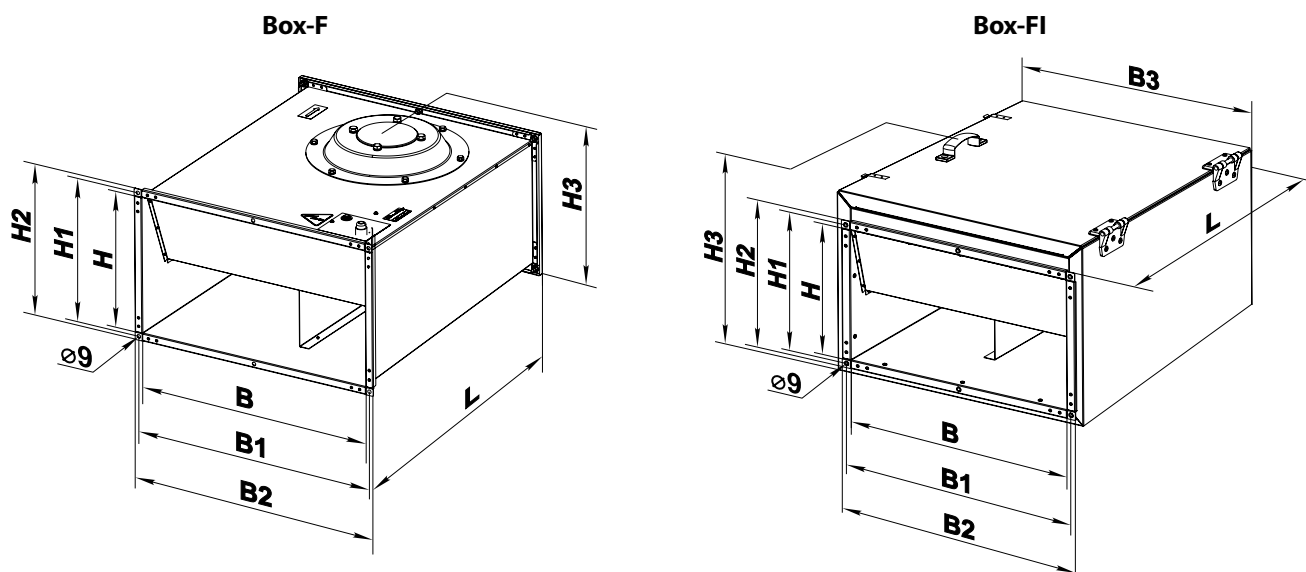
	Box-F / Box-FI 60x35 4D	Box-F / Box-FI 60x35 6E	Box-F / Box-FI 60x35 6D	Box-F / Box-FI 70x40 4D
Voltage [V/50 Hz]	3~400	1~230	3~400	3~400
Power [W]	2460	720	743	3630
Current [A]	3.93	3.6	1.47	6.00
Max. air capacity [m ³ /h]	5020	2755	3310	6450
RPM [min ⁻¹]	1300	820	940	1320
Noise level at 3 m [dBA]	60/52*	51/43*	55/46*	65/56*
Transported air temperature [°C]	-20...+40	-20...+60	-20...+70	-25...+40
Protection rating	IPX4	IPX4	IPX4	IPX4

	Box-F / Box-FI 70x40 6D	Box-F / Box-FI 80x50 4D	Box-F / Box-FI 80x50 6D	Box-F / Box-FI 80x50 8D
Voltage [V/50 Hz]	3~400	3~400	3~400	3~400
Power [W]	1150	5850	2790	1377
Current [A]	2.3	9.35	5.18	3.40
Max. air capacity [m ³ /h]	4050	8120	7610	5620
RPM [min ⁻¹]	890	1140	830	710
Noise level at 3 m [dBA]	58/49*	67/61*	59/53*	58/49
Transported air temperature [°C]	-20...+70	-25...+40	-20...+50	-20...+40
Protection rating	IPX4	IPX4	IPX4	IPX4

	Box-F / Box-FI 90x50 6D	Box-F / Box-FI 90x50 8D	Box-F / Box-FI 100x50 6D	Box-F / Box-FI 100x50 8D
Voltage [V/50 Hz]	3~400	3~400	3~400	3~400
Power [W]	3870	2000	3870	2000
Current [A]	7.0	4.1	7.0	4.1
Max. air capacity [m ³ /h]	9540	7175	9540	7175
RPM [min ⁻¹]	930	680	930	680
Noise level at 3 m [dBA]	61/55*	59/50*	61/55*	59/51*
Transported air temperature [°C]	-20...+55	-20...+40	-20...+55	-20...+40
Protection rating	IPX4	IPX4	IPX4	IPX4

* parameter applicable for Box-FI fan

FAN OVERALL DIMENSIONS:



Type	Dimensions [mm]								Weight [kg]
	B	B1	B2	H	H1	H2	H3	L	
Box-F 40x20 4E	400	420	440	200	220	240	255	500	17.5
Box-F 40x20 4D	400	420	440	200	220	240	255	500	17.5
Box-F 50x25 4E	500	520	540	250	270	290	335	640	24
Box-F 50x25 4D	500	520	540	250	270	290	335	640	24
Box-F 50x25 6E	500	520	540	250	270	290	335	640	24
Box-F 50x25 6D	500	520	540	250	270	290	335	640	24
Box-F 50x30 4E	500	520	540	300	320	340	365	680	33
Box-F 50x30 4D	500	520	540	300	320	340	365	680	33
Box-F 50x30 6E	500	520	540	300	320	340	365	680	33
Box-F 50x30 6D	500	520	540	300	320	340	365	680	33
Box-F 60x30 4E	600	620	640	300	320	340	375	680	35
Box-F 60x30 4D	600	620	640	300	320	340	375	680	35
Box-F 60x30 6E	600	620	640	300	320	340	375	680	35
Box-F 60x30 6D	600	620	640	300	320	340	375	680	35
Box-F 60x35 4E	600	620	640	350	370	390	425	735	49.5
Box-F 60x35 4D	600	620	640	350	370	390	425	735	49.5
Box-F 60x35 6E	600	620	640	350	370	390	425	735	49.5
Box-F 60x35 6D	600	620	640	350	370	390	425	735	49.5
Box-F 70x40 4D	700	720	740	400	420	440	480	780	60
Box-F 70x40 6D	700	720	740	400	420	440	480	780	56
Box-F 80x50 4D	800	820	840	500	520	540	580	820	74
Box-F 80x50 6D	800	820	840	500	520	540	580	820	70
Box-F 80x50 8D	800	820	840	500	520	540	580	820	70
Box-F 90x50 6D	900	920	940	500	520	540	580	954	90
Box-F 90x50 8D	900	920	940	500	520	540	580	954	90
Box-F 100x50 6D	1000	1020	1040	500	520	540	580	954	95
Box-F 100x50 8D	1000	1020	1040	500	520	540	580	954	95

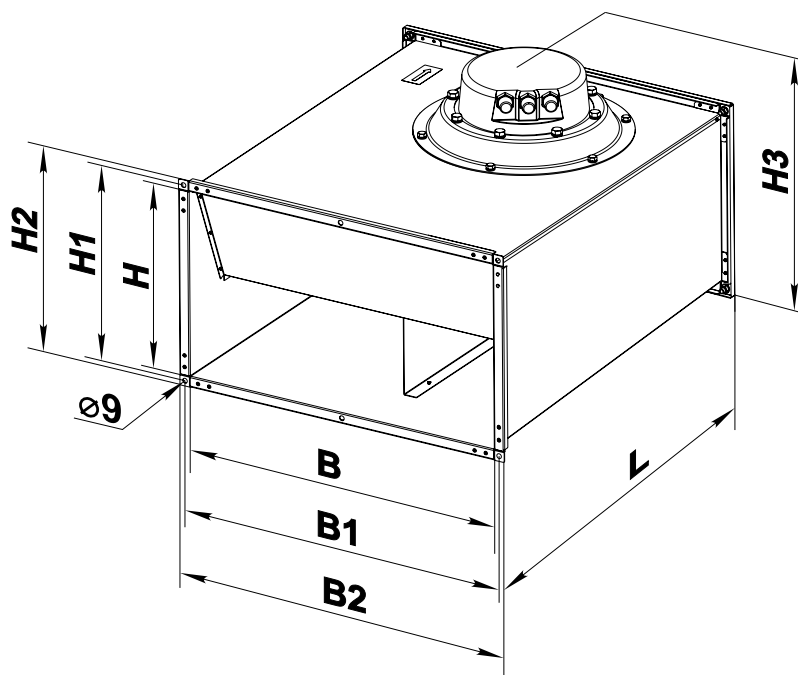
Type	Dimensions [mm]									Weight [kg]
	B	B1	B2	B3	H	H1	H2	H3	L	
Box-FI 40x20 4E	400	420	440	470	200	220	240	360	500	29
Box-FI 40x20 4D	400	420	440	470	200	220	240	360	500	29
Box-FI 50x25 4E	500	520	540	570	250	270	290	410	640	40.5
Box-FI 50x25 4D	500	520	540	570	250	270	290	410	640	40.5
Box-FI 50x25 6E	500	520	540	570	250	270	290	410	640	40.5
Box-FI 50x25 6D	500	520	540	570	250	270	290	410	640	40.5
Box-FI 50x30 4E	500	520	540	570	300	320	340	460	680	52.5
Box-FI 50x30 4D	500	520	540	570	300	320	340	460	680	52.5
Box-FI 50x30 6E	500	520	540	570	300	320	340	460	680	52.5
Box-FI 50x30 6D	500	520	540	570	300	320	340	460	680	52.5
Box-FI 60x30 4E	600	620	640	670	300	320	340	480	680	56
Box-FI 60x30 4D	600	620	640	670	300	320	340	480	680	56
Box-FI 60x30 6E	600	620	640	670	300	320	340	480	680	56
Box-FI 60x30 6D	600	620	640	670	300	320	340	480	680	56
Box-FI 60x35 4E	600	620	640	670	350	370	390	530	735	72
Box-FI 60x35 4D	600	620	640	670	350	370	390	530	735	72
Box-FI 60x35 6E	600	620	640	670	350	370	390	530	735	72
Box-FI 60x35 6D	600	620	640	670	350	370	390	530	735	72
Box-FI 70x40 4D	700	720	–	800	400	420	–	620	880	103
Box-FI 70x40 6D	700	720	–	800	400	420	–	620	880	99
Box-FI 80x50 6D	800	820	–	900	500	520	–	720	935	120
Box-FI 80x50 4D	800	820	–	900	500	520	–	720	935	127
Box-FI 80x50 8D	800	820	–	900	500	520	–	720	935	120
Box-FI 90x50 6D	900	920	–	1000	500	520	–	720	1000	142
Box-FI 90x50 8D	900	920	–	1000	500	520	–	720	1000	142
Box-FI 100x50 6D	1000	1020	–	1100	500	520	–	720	1000	150
Box-FI 100x50 8D	1000	1020	–	1100	500	520	–	720	1000	150

BOX EC

	Box EC 60x30	Box EC 60x35	Box EC 70x40	Box EC 80x50	Box EC 90x50	Box EC 100x50
Voltage [V/50/60 Hz]	1~200-277	3~380-480	3~380-480	3~380-480	3~380-480	3~380-480
Power [kW]	0.48	0.99	1.70	2.95	2.98	2.98
Current [A]	3.10	1.70	2.60	4.60	4.60	4.60
Max. air capacity [m ³ /h]	3350	4550	6300	8900	10850	10850
RPM [min ⁻¹]	2300	2580	2600	2500	2040	2040
Noise level at 3 m [dBA]	58	60	63	65	69	69
Transported air temperature [°C]	-25...+60	-25...+50	-25...+40	-25...+40	-25...+40	-25...+40
Protection rating	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4

FAN OVERALL DIMENSIONS:

Box EC



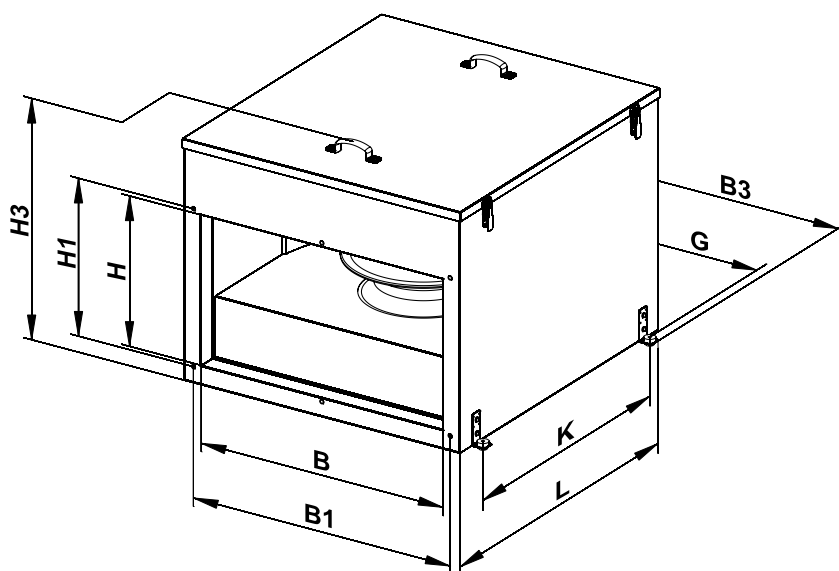
Type	Dimensions [mm]								Weight [kg]
	B	B1	B2	H	H1	H2	H3	L	
Box EC 60x30	600	620	640	300	320	340	430	680	35.0
Box EC 60x35	600	620	640	350	370	390	480	735	49.5
Box EC 70x40	700	720	740	400	420	440	540	780	60.0
Box EC 80x50	800	820	840	500	520	540	640	880	68.8
Box EC 90x50	900	920	940	500	520	540	640	954	90.0
Box EC 100x50	1000	1020	1040	500	520	540	640	954	95.0

BOX-I EC

	Box-I EC 60x30	Box-I EC 60x35	Box-I EC 70x40	Box-I EC 80x50	Box-I EC 90x50	Box-I EC 100x50
Voltage [V/50/60 Hz]	1~200-277	3~380-480	3~380-480	3~380-480	3~380-480	3~380-480
Power [kW]	0.48	0.99	1.70	2.95	2.98	2.98
Current [A]	3.10	1.70	2.60	4.60	4.60	4.60
Max. air capacity [m ³ /h]	3350	4550	6300	8900	10850	10850
RPM [min ⁻¹]	2300	2580	2600	2500	2040	2040
Noise level at 3 m [dBA]	49	51	54	57	60	60
Transported air temperature [°C]	-25...+60	-25...+50	-25...+40	-25...+40	-25...+40	-25...+40
Protection rating	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4

FAN OVERALL DIMENSIONS:

Box-I EC



Type	Dimensions [mm]									Weight [kg]
	B	H	B1	H1	B3	H3	L	G	K	
Box-I EC 60x30	600	300	620	320	775	530	752	745	500	55.0
Box-I EC 60x35	600	350	620	370	775	630	802	745	500	65.0
Box-I EC 70x40	700	400	720	420	875	690	880	845	742	90.0
Box-I EC 80x50	800	500	820	520	975	810	935	945	800	124.1
Box-I EC 90x50	900	500	920	520	1075	810	1000	1045	800	128.0
Box-I EC 100x50	1000	500	1020	520	1175	810	1000	1145	800	129.0

BOX / BOX-I

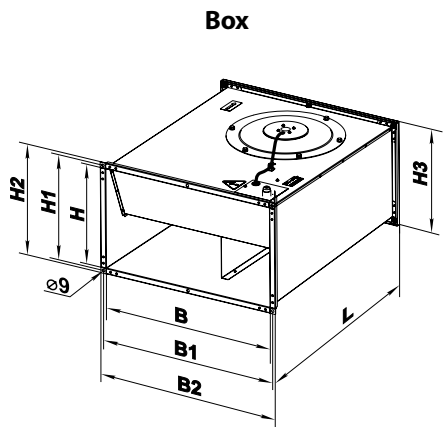
	Box / Box-I 40x20 2E		Box / Box-I 50x25 2E		Box / Box-I 50x30 4E		Box / Box-I 50x30 4D	
Voltage [V]	1~220-240		1~220-240		1~220-240		3~400	
Frequency [Hz]	50	60	50	60	50	60	50	60
Power [W]	138	200	305	380	140	165	136	165
Current [A]	0.60	0.88	1.32	1.65	0.57	0.53	0.34	0.53
Max. air capacity [m ³ /h]	930	1070	1720	1850	1700	1620	1380	1620
RPM [min ⁻¹]	2600	2850	2550	2830	1390	1530	1360	1600
Noise level at 3 m [dBA]	59/51*	71/63*	61/53*	78/67*	53/45*	55/46*	53/45*	55/46*
Transported air temperature [°C]	-25...+45		-25...+45		-25...+45	-25...+50	-25...+65	-25...+55
Protection rating	IPX4		IPX4		IPX4		IPX4	

	Box / Box-I 60x30 4E		Box / Box-I 60x30 4D		Box / Box-I 60x35 4E	
Voltage [V]	1~220-240		3~400		1~220-240	
Frequency [Hz]	50	60	50	60	50	60
Power [W]	220	310	230	235	470	700
Current [A]	0.9	1.38	0.52	0.53	2.37	3.15
Max. air capacity [m ³ /h]	2470	2510	2530	2630	2950	3515
RPM [min ⁻¹]	1400	1450	1360	1600	1370	1460
Noise level at 3 m [dBA]	55/47*	55/57*	53/46*	53/46*	67/59*	68/59*
Transported air temperature [°C]	-25...+45		-25...+70	-25...+65	-40...+80	-40...+55
Protection rating	IPX4		IPX4		IPX4	

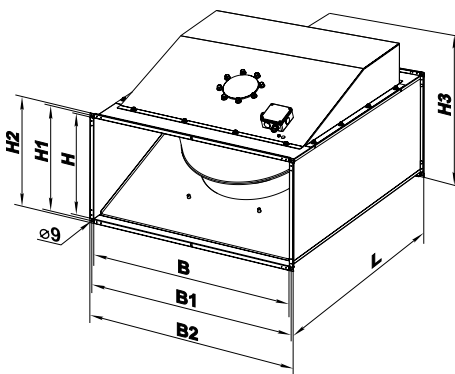
	Box / Box-I 60x35 4D				Box 100x50 4D
Voltage [V]	3~400 Δ		3~400 Y		3~400
Frequency [Hz]	50	60	50	60	50
Power [W]	510	750	380	515	3800
Current [A]	1.41	1.44	0.7	0.93	6.6
Max. air capacity [m ³ /h]	2970	3410	2660	2730	15000
RPM [min ⁻¹]	1415	1610	1235	1220	1360
Noise level at 3 m [dBA]	64/55*	64/55*	63/55*	63/55*	70
Transported air temperature [°C]	-40...+60	-40...+60	-40...+80	-40...+40	-20...+40
Protection rating	IPX4		IPX4		IPX4

* parameter applicable for Box-I fan

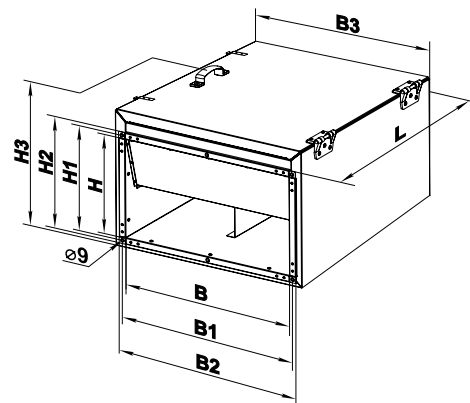
FAN OVERALL DIMENSIONS:



Box 100x50 4D



Box-I



Type	Dimensions [mm]								Weight [kg]
	B	B1	B2	H	H1	H2	H3	L	
Box 40x20 2E	400	420	440	200	220	240	240	500	11.25
Box 50x25 2E	500	520	540	250	270	290	290	640	17.88
Box 50x30 4E	500	520	540	300	320	340	340	680	19.80
Box 50x30 4D	500	520	540	300	320	340	340	680	19.80
Box 60x30 4E	600	620	640	300	320	340	342	680	27.77
Box 60x30 4D	600	620	640	300	320	340	342	680	27.77
Box 60x35 4E	600	620	640	350	370	390	390	735	36.38
Box 60x35 4D	600	620	640	350	370	390	390	735	36.38

Type	Dimensions [mm]								Weight [kg]
	B	B1	B2	H	H1	H2	H3	L	
Box 100x50 4D	1000	1020	1040	500	520	540	720	1150	126.0

Type	Dimensions [mm]									Weight [kg]
	B	B1	B2	B3	H	H1	H2	H3	L	
Box-I 40x20 2E	400	420	440	500	200	220	240	360	500	24.5
Box-I 50x25 2E	500	520	540	600	250	270	290	410	640	27.6
Box-I 50x30 4E	500	520	540	600	300	320	340	460	680	37.2
Box-I 50x30 4D	500	520	540	600	300	320	340	460	680	37.2
Box-I 60x30 4E	600	620	640	700	300	320	340	460	680	43.5
Box-I 60x30 4D	600	620	640	700	300	320	340	460	680	43.5
Box-I 60x35 4E	600	620	640	700	350	370	390	530	735	56.2
Box-I 60x35 4D	600	620	640	700	350	370	390	530	735	56.2

MOUNTING AND SET-UP



READ THE USER'S MANUAL BEFORE INSTALLING THE UNIT.

The fan is designed for mounting and operation in any position. In case of ceiling mounting the fan is recommended to be mounted with the motor cover downwards to facilitate access to the terminal box.

Check the fan power cables for integrity and make sure the impeller has smooth rotation prior to mounting.

Install flexible connectors on both sides of the fan. Air flow direction in the system must match the direction of the arrow on the fan casing.

Remember to mount the fan on the additional internal brackets to avoid load transfer to the flexible connectors. The most suitable mounting option is fixation of the fan to the ceiling with anchor bolts or suspension of the fan to the perforated metal plates. Apply self-adhesive sealer on the fan end surfaces prior to mounting. Connect the fan to air ducts with M8 bolts and nuts.

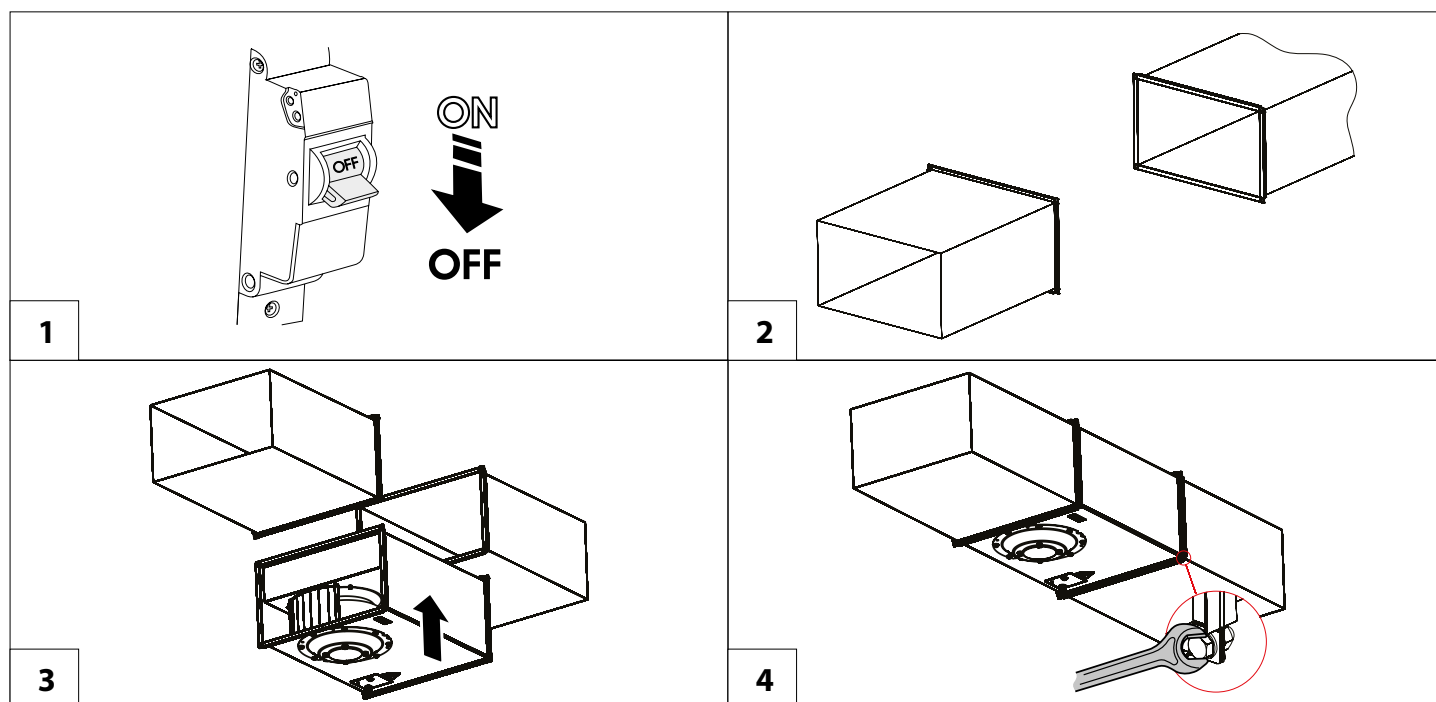
Provide reliable mounting of the fan!



Connect the terminal PE to the ground circuit.

Due to constant improvements the design of some models may slightly differ from those described in this manual.

MOUNTING SEQUENCE



CONNECTION TO POWER MAINS

**POWER OFF THE POWER SUPPLY PRIOR TO ANY OPERATIONS WITH THE UNIT.
THE UNIT MUST BE CONNECTED TO POWER SUPPLY BY A QUALIFIED ELECTRICIAN.
THE RATED ELECTRICAL PARAMETERS OF THE UNIT ARE GIVEN ON THE
MANUFACTURER'S LABEL.**



**ANY TAMPERING WITH THE INTERNAL CONNECTIONS IS PROHIBITED
AND WILL VOID THE WARRANTY.**

Depending on the fan type it is rated either for single-phase ac 230 V/50/60 Hz or three-phase ac 380-400 V/50/60 Hz power mains.

Connect the fan to power mains through insulated, durable and thermal resistant conductors (cables, wires).

The automatic circuit breaker incorporated into the fixed network that breaks all the phases must be installed at the external electric input 230 V/50/60 Hz or 380-400 V/50/60 Hz. The external circuit breaker QF location must provide free and unhampered access to the fan for quick switching off in case of need.

The overcurrent protection must match the rated current consumption of the fan. The recommended rated current of the automatic circuit breaker and wire cross section of various fan types are stated in the table stated on page 16. The stated wire cross sections are for reference only. The actually required wire cross section depends on the cable type, insulation, length and its layout way - open, channel or wall mounting.

Connect EC-fans to power mains on the terminal block located in the external or integrated terminal box following the wiring diagram and terminal designation. The sticker with the terminal designation is inside the terminal box.

The terminals TW1, TW2 (TK1,TK2) are the lead-out terminals of the overheating thermostat normally closed contact. Connect this terminal in series to the power circuit of the magnetic starter KM1 that starts the motor after pressing the button S1. In case of the motor overheating the motor contact breaks and switches the starter coil off to de-energize and stop the motor.

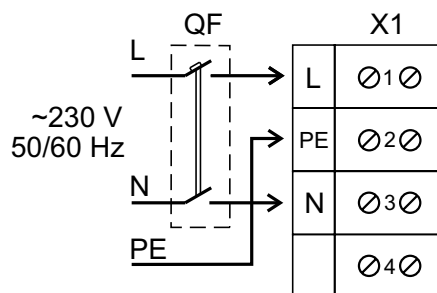
The automatic circuit breaker QF, the magnetic starter KM1, the control buttons S1 and S2 are not included into the delivery set and are to be mounted by the customer.

**THE RECOMMENDED RATED CURRENT OF THE AUTOMATIC CIRCUIT BREAKER
AND THE WIRE CROSS SECTION**

Fan type	Automatic circuit breaker current [A]	Recommended cable, n x S, where n means number of wires, S means cross section [mm²]
Box, Box-I 40x20 2E	1	3x0.75
Box, Box-I 50x25 2E	2	3x0.75
Box, Box-I 50x30 4E	1	3x0.75
Box, Box-I 50x30 4D	1	5x0.75
Box, Box-I 60x30 4E	1.6	5x0.75
Box, Box-I 60x30 4D	1	5x0.5
Box, Box-I 60x35 4E	4	3x0.75
Box, Box-I 60x35 4D	2	5x0.75
Box 100x50 4D	8	5x1.0
Box EC, Box-I EC 60x30	4	3x0.75
Box EC, Box-I EC 60x35	2	5x0.75
Box EC, Box-I EC 70x40	4	5x0.5
Box EC, Box-I EC 80x50	6	5x1.0
Box EC, Box-I EC 90x50	6	5x1.0
Box EC, Box-I EC 100x50	6	5x1.0
Box-F, Box-FI 40x20 4E	2	3x0.75
Box-F, Box-FI 40x20 4D	1	5x0.75
Box-F, Box-FI 50x25 4E	4	3x0.75
Box-F, Box-FI 50x25 4D	1.6	5x0.75
Box-F, Box-FI 50x30 4E	4	3x0.75
Box-F, Box-FI 50x30 4D	2	5x0.75
Box-F, Box-FI 60x30 4E	8	3x1.5
Box-F, Box-FI 60x30 4D	5	5x0.75
Box-F, Box-FI 60x35 4E	16	3x2.5
Box-F, Box-FI 60x35 4D	5	5x1.0
Box-F, Box-FI 70x40 4D	8	5x1.5
Box-F, Box-FI 80x50 4D	10	5x1.5
Box-F, Box-FI 80x50 6D	6	5x1.0
Box-F, Box-FI 90x50 6D	8	5x1.5
Box-F, Box-FI 100x50 6D	8	5x1.5

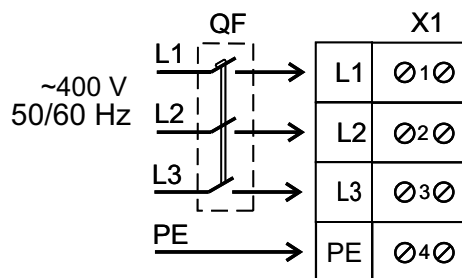
Wiring diagram of the fan

Box / Box-I 40x20 2E; Box / Box-I 50x25 2E;
 Box / Box-I 50x30 4E; Box / Box-I 60x30 4E;
 Box / Box-I 60x35 4E with a single-phase motor to the alternating current power supply



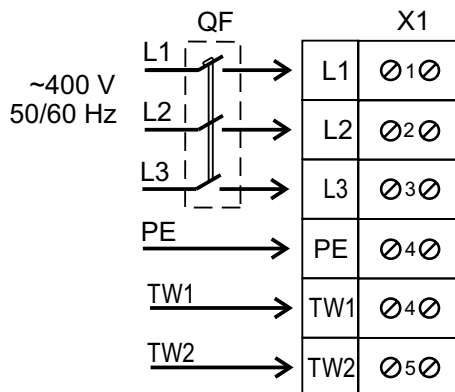
Wiring diagram of the fan

Box / Box-I 50x30 4D (first option) with a three-phase motor to the alternating current power supply



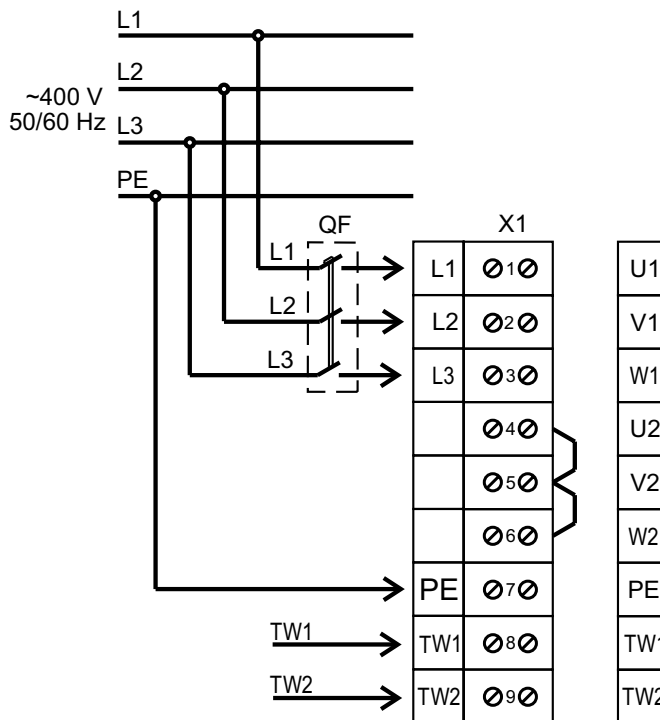
Wiring diagram of the fan

Box / Box-I 50x30 4D (second option),
 Box / Box-I 60x30 4D with a three-phase motor to the alternating current power supply



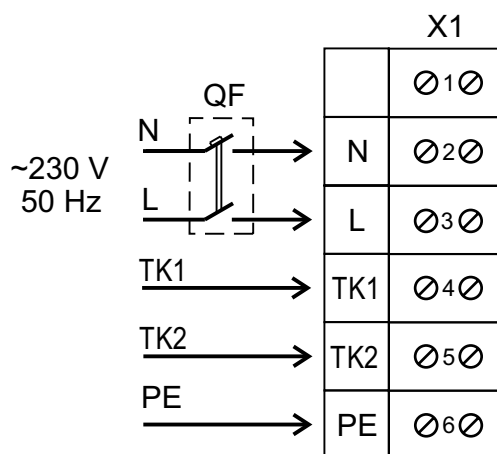
Wiring diagram of the fan

Box / Box-I 60x35 4D with a three-phase motor to alternating current power supply

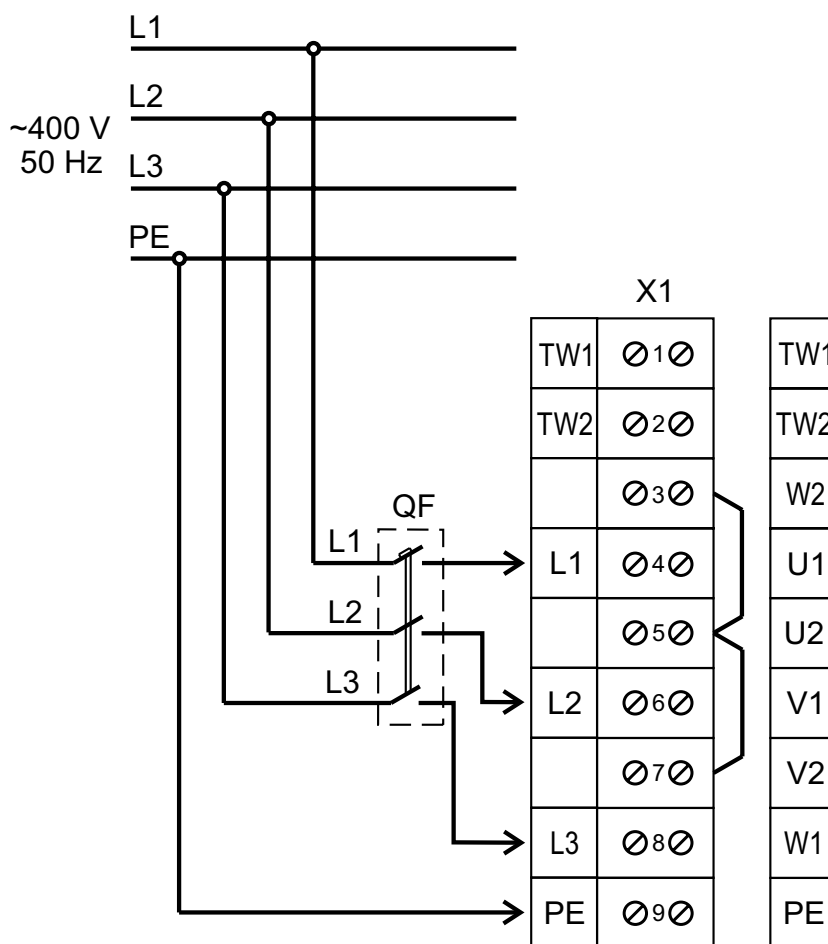


where X1 is a terminal block, QF is an automatic circuit breaker (not included into the delivery set).

WIRING DIAGRAM OF THE FANS BOX-F, BOX-FI WITH A SINGLE-PHASE MOTOR TO THE ALTERNATING CURRENT POWER SUPPLY

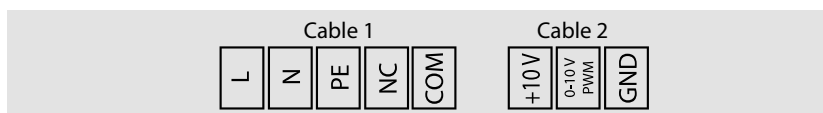


WIRING DIAGRAM OF THE FANS BOX-F, BOX-FI WITH A THREE-PHASE MOTOR TO THE ALTERNATING CURRENT POWER SUPPLY



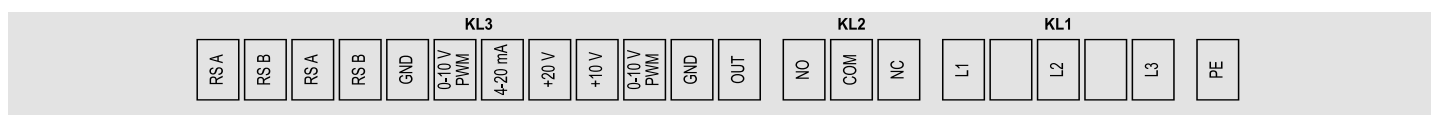
where X1 is a terminal block, QF is an automatic circuit breaker (not included into the delivery set).

WIRING DIAGRAM OF THE FANS BOX EC 60X30, BOX-I EC 60X30



Contact	Connection	Colour	Purpose / Function
1	L	Black	Power supply 50/60 Hz, phase
	N	Blue	Power supply 50/60 Hz, zero
	PE	Green/Yellow	Ground cable
	NC	White 1	Fault relay, normally closed contact
	COM	White 2	Fault relay, COMMON
2	+ 10 V	Red	Voltage efficiency +10 V (no more 1.1 mA)
	0-10 V/PWM	Yellow	Control input 0-10 V / PWM (total resistance 100 kohm)
	GND	Blue	Ground

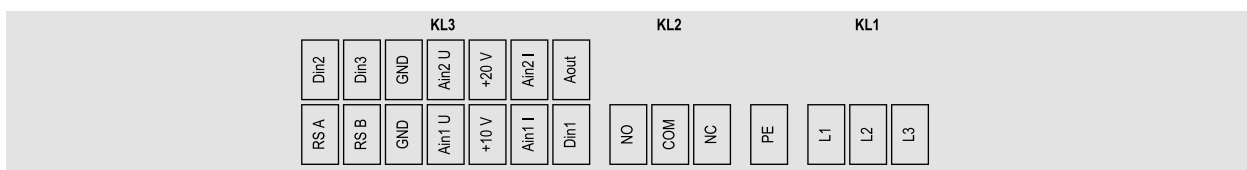
WIRING DIAGRAM FOR THE FANS BOX EC 60X35, BOX-I EC 60X35



Terminal	Connection	Purpose / Function
PE	PE	Ground cable
KL1	L3	Net, L3
	L2	Net, L2
	L1	Net, L1
KL2	NC	Alarm relay, normally-closed contact
	COM	Alarm relay, COMMON (2A, 250V, AC1)
	NO	Alarm relay, normally-open contact

Terminal	Connection	Purpose / Function
KL3	OUT	Master output 0-10V, max. 3 mA
	GND	GND (Ground)
	0-10 V / PWM	Actual value input / control input (total resistance 100 kohm)
	+10 V	External potentiometer supply, 10 V (+10 %) max. 10 mA
	+20 V	External sensor supply, 20 V (+20 %) max. 50 mA
	4-20 mA	Actual value input / control input
	0-10 V / PWM	Actual value input / control input
	GND	GND (Ground)
	RSB	interface RS485 for ebmBUS; RS B
	RSA	interface RS485 for ebmBUS; RS A
	RSB	interface RS485 for ebmBUS; RS B

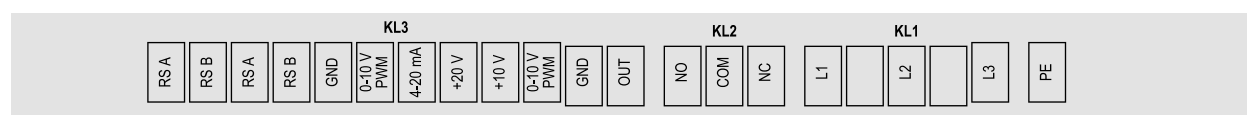
WIRING DIAGRAM FOR THE FANS BOX EC 70X40, BOX-I EC 70X40



Terminal	Connection	Purpose / Function
KL1	L3	Net, L3
	L2	Net, L2
	L1	Net, L1
PE	PE	Ground cable
KL2	NC	Alarm relay , normally-closed contact
	COM	Alarm relay , COMMON (2A, 250V, Ac1)
	NO	Alarm relay , normally-open contact

Terminal	Connection	Purpose / Function
KL3	Din1	Digital input 1 (electronics unblocking/blocking) Unblocking: Pin is opened or set voltage 5...50 V GND or set voltage block < 1 V
	Ain1 I	Analogue input of set values, 4-20 mA (resistance 100 kohm), exclusively optionally Ain1 I is used for connection
	+10 V	External potentiometer supply , 10 V (±3 %) max. 10 mA
	Ain1U	Analog input of set 0-10V (resistance 10 kOm) use Ain1 only as alternate input
	GND	GND (Ground)
	RSB	interface RS485 for ebmBUS; RS B
	RSA	interface RS485 for ebmBUS; RS A
	Aout	Analogue output 0-10 V max. 5mA, output of actual rpm / actual motor speed control factor
	Ain2 I	Analogue input of actual values, 4-20 mA (resistance 100 kohm), exclusively optionally Ain2 U is used for connection
	+20 V	External sensor voltage, 20 V (+25% / - 10%) max. 40 mA
	Ain2 U	Analogue input of actual values, 0-10 mA (resistance 100 kohm), exclusively optionally Ain2 I is used for connection
	GND	GND (Ground)
	Din3	Digital input 3 (normal / reverse changeover). The pre-set parameters of the integrated controller may be selected through interface or digital input normal / reverse normal: Pin is open or set voltage is 5...50 V reverse: jumper to GND or set voltage < 1 V
	Din2	Digital input 2 (changeover day/night) Pre-set parameters may be selected through interface or digital input normal / reverse Day: Pin is open or set voltage 5...50 V Night: jumper to GND or set voltage < 1 V

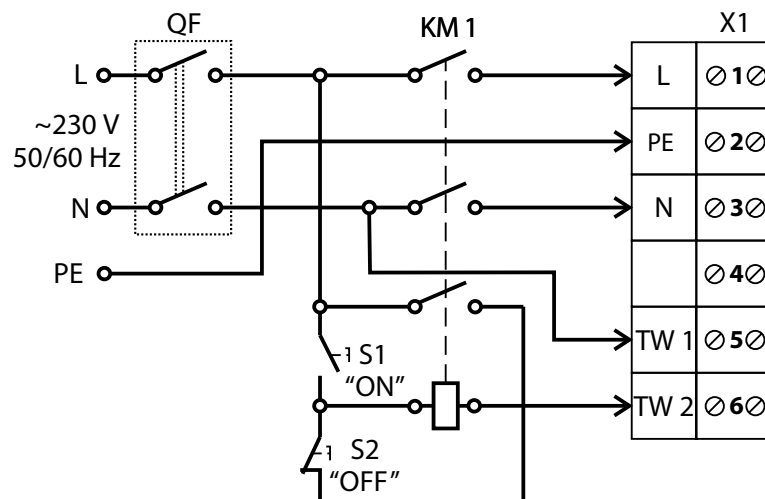
WIRING DIAGRAM FOR THE FANS BOX EC 80X50, BOX EC 90X50, BOX EC 100X50, BOX-I EC 80X50, BOX-I EC 90X50, BOX-I EC 100X50



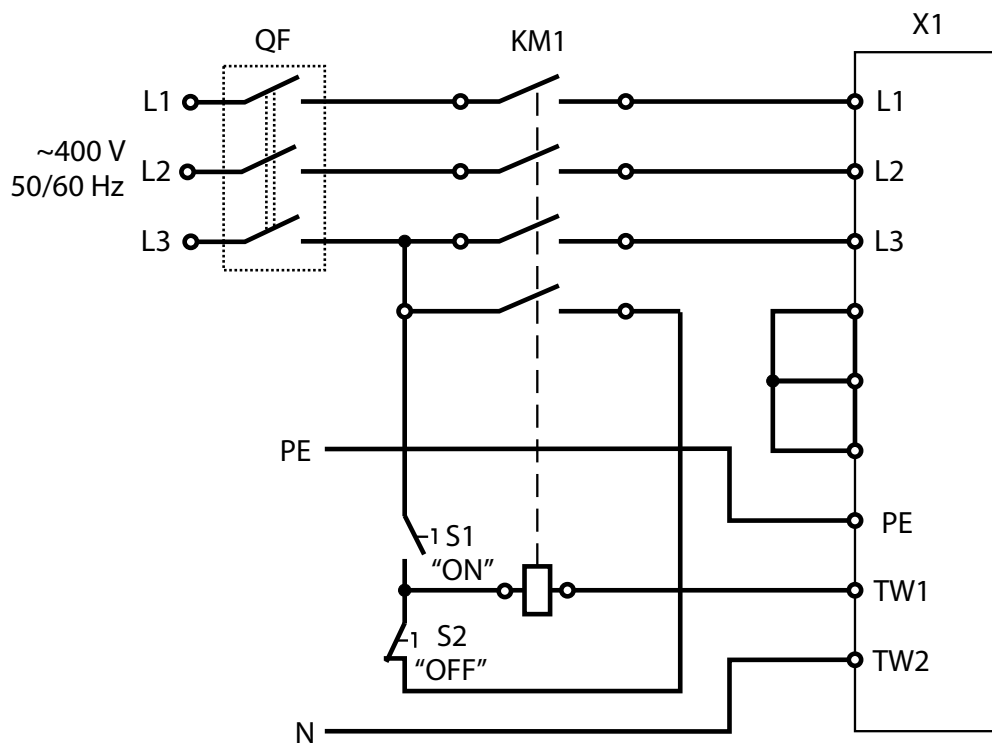
Terminal	Connection	Purpose / Function
PE	PE	Ground cable
KL1	L3	Net, L3
	L2	Net, L2
	L1	Net, L1
KL2	NC	Alarm relay, normally-closed contact
	COM	Alarm relay, COMMON (2A, 250V, Ac1)
	NO	Alarm relay, normally-open contact

Terminal	Connection	Purpose / Function
KL3	OUT	Master output 0-10V, max. 3 mA
	GND	GND (Ground)
	0-10 V / PWM	Actual value input / control input (total resistance 100 kohm)
	+10 V	External potentiometer supply, 10 V (+10 %) max. 10 mA
	+20 V	External sensor supply, 20 V (+20%) max. 50 mA
	4-20 mA	Actual value input / control input
	0-10 V / PWM	Actual value input / control input
	GND	GND (Ground)
	RSB	interface RS485 for ebmBUS; RS B
	RSA	interface RS485 for ebmBUS; RS A
	RSB	interface RS485 for ebmBUS; RS B
	RSA	interface RS485 for ebmBUS; RS A

RECOMMENDED WIRING DIAGRAM FOR CONNECTION OF THE SINGLE-PHASE MOTOR WITH OVERHEATING PROTECTION

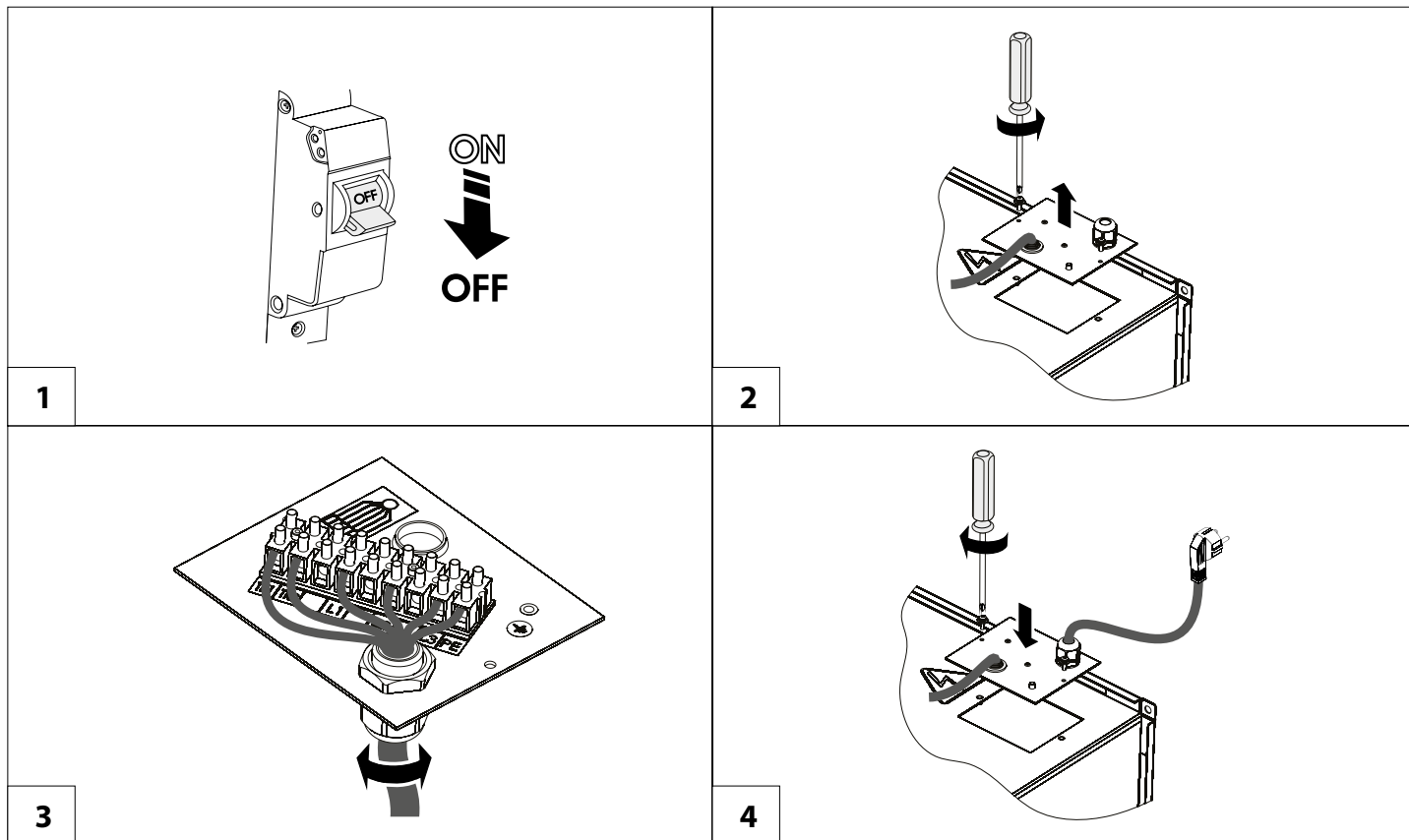


RECOMMENDED WIRING DIAGRAM FOR CONNECTION OF THE THREE-PHASE MOTOR WITH OVERHEATING PROTECTION

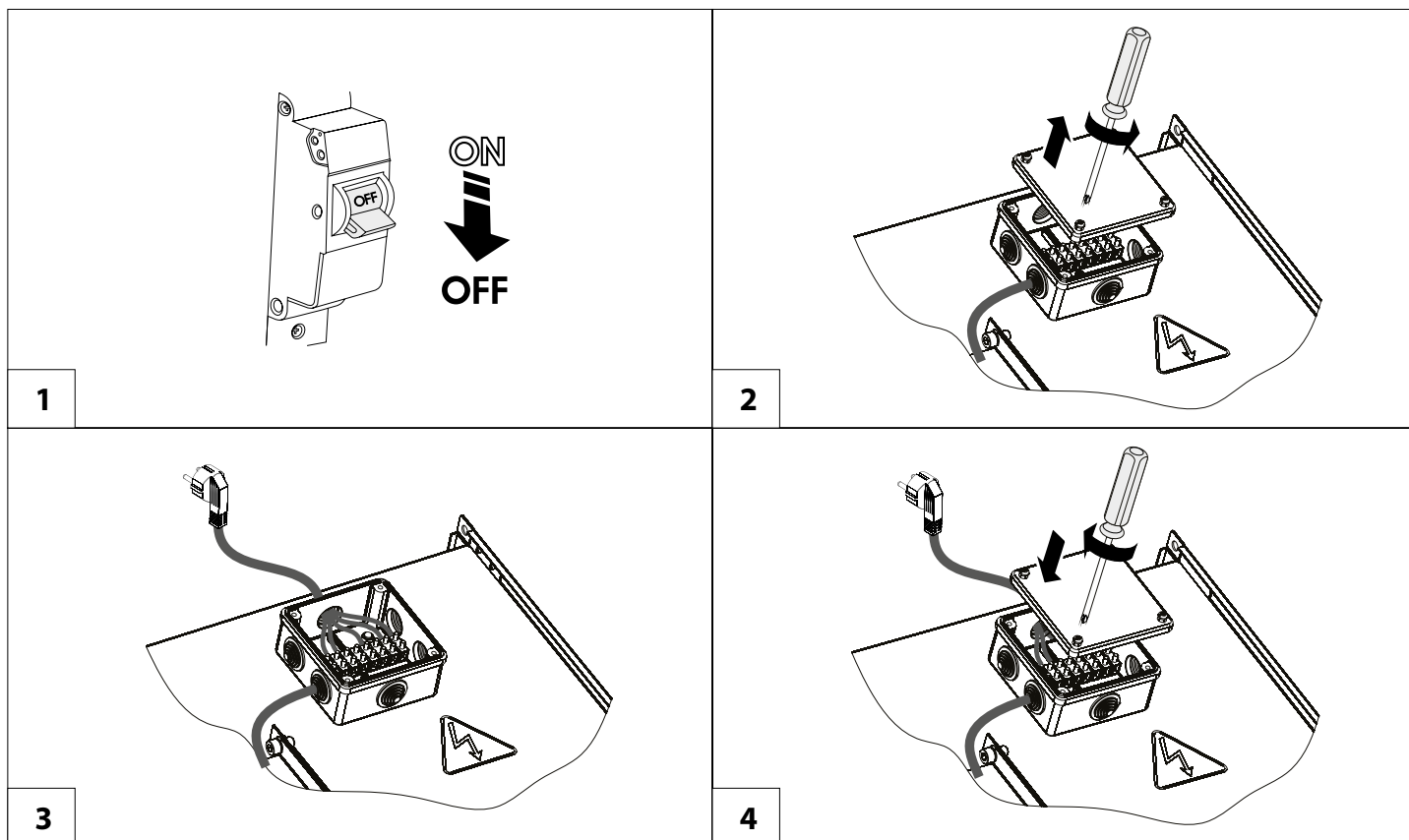


where X1 is a terminal block, QF is an automatic circuit breaker, Km1 is a magnetic starter, S1, S2 are control buttons (QF, KM1, S1, S2 are not included in the delivery set).

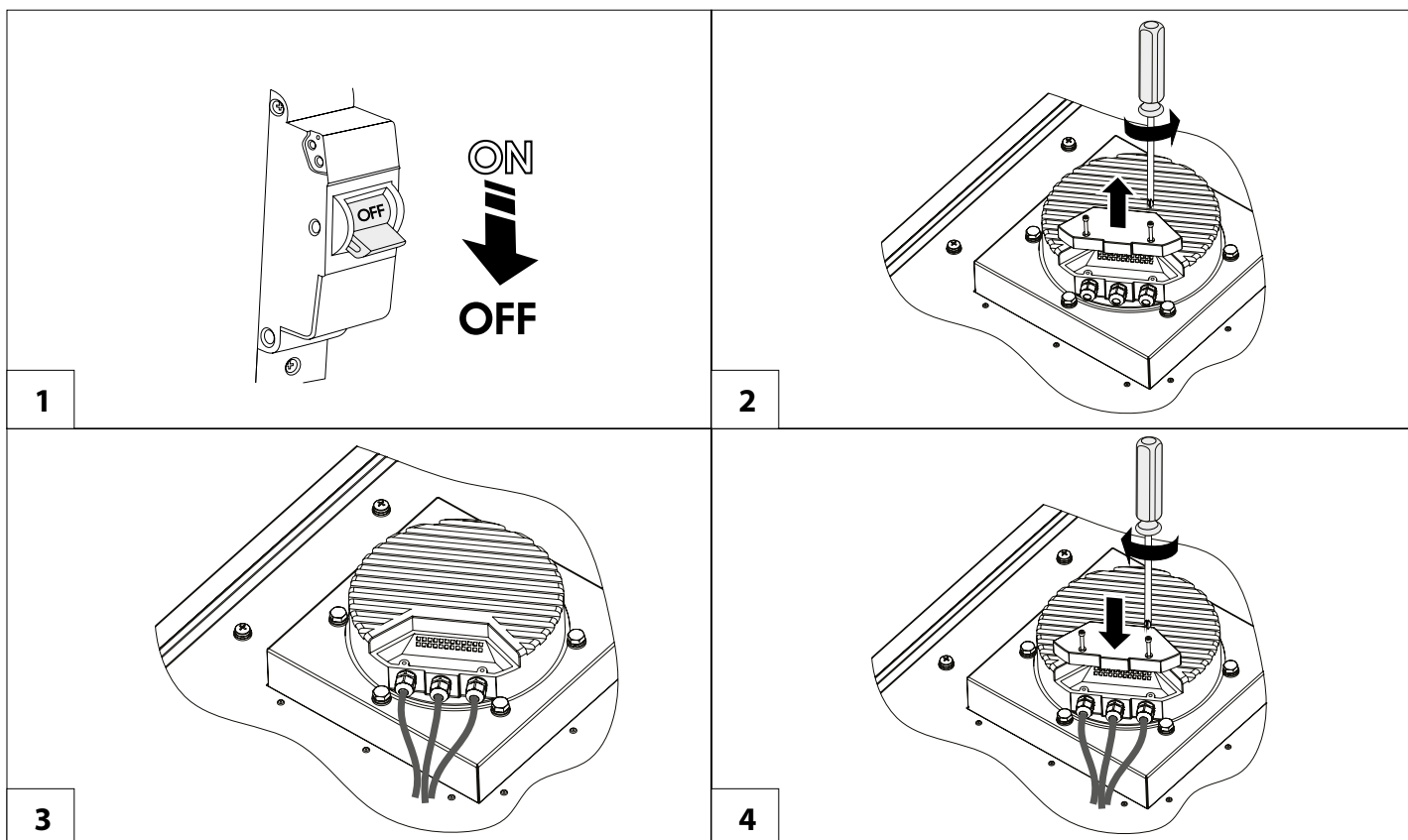
BOX, BOX-I, BOX-F, BOX-FI 40X20, 50X25, 50X30, 60X30, 60X35



BOX-F, BOX-FI 70X40, 80X50, 90X50, 100X50, BOX EC 60X30, BOX-I EC 60X30, BOX 100X50



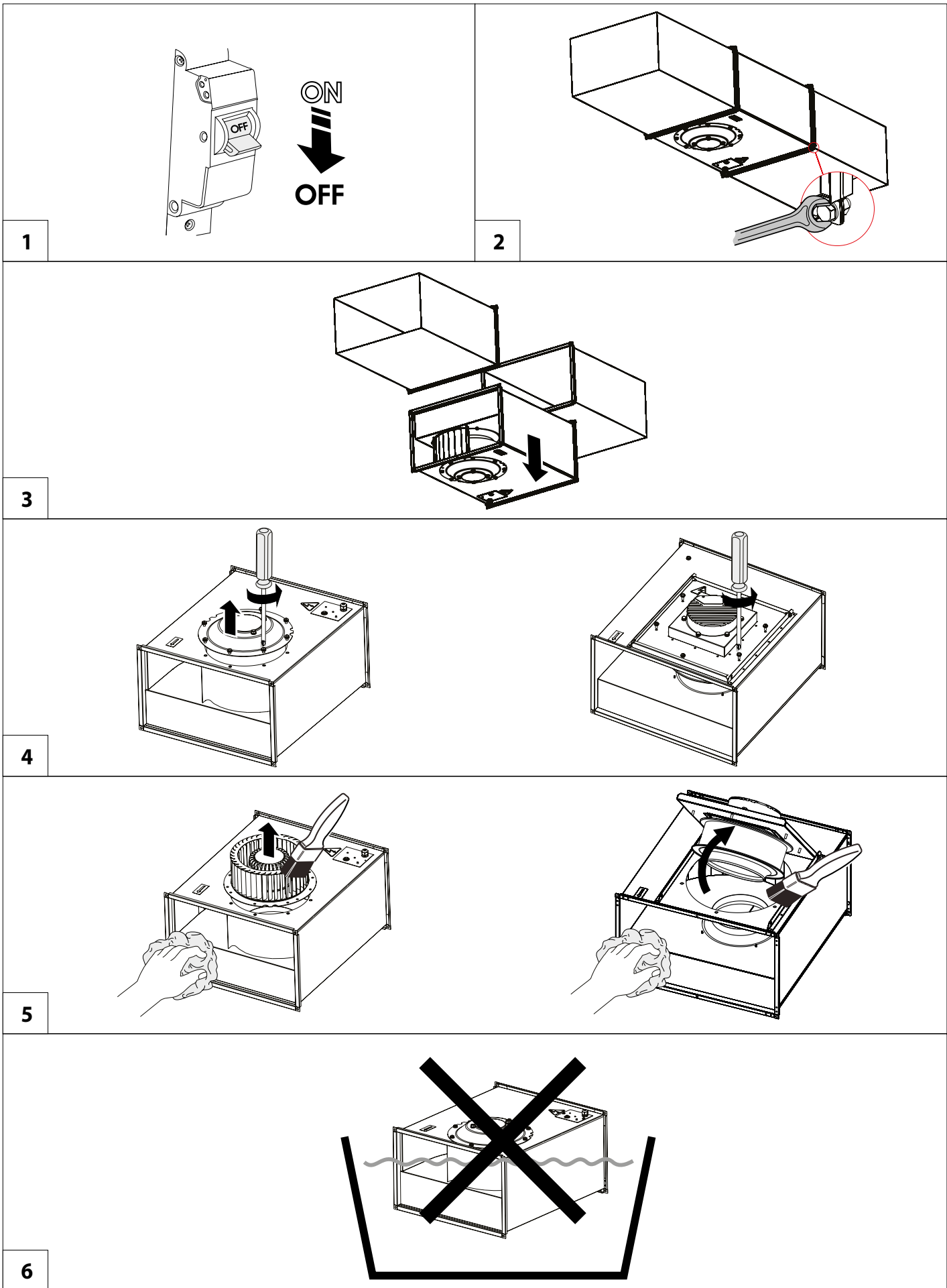
**BOX EC 60X35, BOX EC 70X40, BOX EC 80X50, BOX EC 90X50, BOX EC 100X50, BOX-I EC 60X35, BOX-I EC 70X40,
BOX-I EC 80X50, BOX-I EC 90X50, BOX-I EC 100X50**



TECHNICAL MAINTENANCE

**DISCONNECT THE UNIT FROM POWER SUPPLY BEFORE
ANY MAINTENANCE OPERATIONS!**

Disconnect the fan from power mains and make sure the rotating parts do not move prior to any maintenance and repair operations. Maintenance means regular cleaning of the fan surfaces from dust and dirt. Use a soft brush or compressed air to remove dust from metal surfaces of the fan; use a vacuum cleaner to remove dust from the sound insulating surface. The impeller blades require thorough cleaning once in 6 months. Detach air ducts from the fan before starting maintenance works. Clean the fan impeller blades with water and mild detergent solution. Avoid water dripping on the motor! Wipe the fan surfaces dry after cleaning. While cleaning the fan make sure the balance counterweights are not shifted and the impeller is not misaligned.



TROUBLESHOOTING

TROUBLE	POSSIBLE REASONS	TROUBLESHOOTING
The fan does not get started.	No power supply.	Check the electric connections and the operation status of the circuit breaker.
	Motor jam.	Turn the fan off. Troubleshoot clogging of the impeller. Restart the fan.
Automatic circuit breaker tripping during the unit turning on.	Over current as a result of short circuit in the electric circuit leads to tripping of the circuit breaker.	Disconnect the fan from power supply and contact the product Seller. Do not turn the fan on again!
Low air flow.	Air ducts or other components of the ventilation system are clogged. The impeller is clogged. The air ducts are damaged. The air dampers are closed.	Clean the air ducts, the impeller and other components of the ventilation system. Make sure that the air ducts are not damaged. Make sure that the air dampers and louvre shutters are open.

STORAGE AND TRANSPORTATION REGULATIONS

- Store the unit in the manufacturer's original packaging box in a dry closed ventilated premise with temperature range from +5 °C to +40 °C and relative humidity up to 70 %.
- Storage environment must not contain aggressive vapors and chemical mixtures provoking corrosion, insulation, and sealing deformation.
- Use suitable hoist machinery for handling and storage operations to prevent possible damage to the unit.
- Follow the handling requirements applicable for the particular type of cargo.
- The unit can be carried in the original packaging by any mode of transport provided proper protection against precipitation and mechanical damage. The unit must be transported only in the working position.
- Avoid sharp blows, scratches, or rough handling during loading and unloading.
- Prior to the initial power-up after transportation at low temperatures, allow the unit to warm up at operating temperature for at least 3-4 hours.

MANUFACTURER'S WARRANTY

The product is in compliance with EU norms and standards on low voltage guidelines and electromagnetic compatibility. We hereby declare that the product complies with the provisions of Electromagnetic Compatibility (EMC) Directive 2014/30/EU of the European Parliament and of the Council, Low Voltage Directive (LVD) 2014/35/EU of the European Parliament and of the Council and CE-marking Council Directive 93/68/EEC. This certificate is issued following test carried out on samples of the product referred to above.

The manufacturer hereby warrants normal operation of the unit for 24 months after the retail sale date provided the user's observance of the transportation, storage, installation, and operation regulations. Should any malfunctions occur in the course of the unit operation through the Manufacturer's fault during the guaranteed period of operation, the user is entitled to get all the faults eliminated by the manufacturer by means of warranty repair at the factory free of charge. The warranty repair includes work specific to elimination of faults in the unit operation to ensure its intended use by the user within the guaranteed period of operation. The faults are eliminated by means of replacement or repair of the unit components or a specific part of such unit component.

The warranty repair does not include:

- routine technical maintenance
- unit installation/dismantling
- unit setup

To benefit from warranty repair, the user must provide the unit, the user's manual with the purchase date stamp, and the payment paperwork certifying the purchase. The unit model must comply with the one stated in the user's manual. Contact the Seller for warranty service.

The manufacturer's warranty does not apply to the following cases:

- User's failure to submit the unit with the entire delivery package as stated in the user's manual including submission with missing component parts previously dismantled by the user.
- Mismatch of the unit model and the brand name with the information stated on the unit packaging and in the user's manual.
- User's failure to ensure timely technical maintenance of the unit.
- External damage to the unit casing (excluding external modifications as required for installation) and internal components caused by the user.
- Redesign or engineering changes to the unit.
- Replacement and use of any assemblies, parts and components not approved by the manufacturer.
- Unit misuse.
- Violation of the unit installation regulations by the user.
- Violation of the unit control regulations by the user.
- Unit connection to power mains with a voltage different from the one stated in the user's manual.
- Unit breakdown due to voltage surges in power mains.
- Discretionary repair of the unit by the user.
- Unit repair by any persons without the manufacturer's authorization.
- Expiration of the unit warranty period.
- Violation of the unit transportation regulations by the user.
- Violation of the unit storage regulations by the user.
- Wrongful actions against the unit committed by third parties.
- Unit breakdown due to circumstances of insuperable force (fire, flood, earthquake, war, hostilities of any kind, blockades).
- Missing seals if provided by the user's manual.
- Failure to submit the user's manual with the unit purchase date stamp.
- Missing payment paperwork certifying the unit purchase.



FOLLOWING THE REGULATIONS STIPULATED HEREIN WILL ENSURE A LONG AND TROUBLE-FREE OPERATION OF THE UNIT.



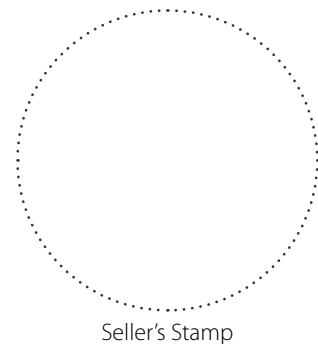
USER'S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP.

CERTIFICATE OF ACCEPTANCE

Unit Type	Inline rectangular fans
Model	Box_____
Serial Number	
Manufacture Date	
Quality Inspector's Stamp	

SELLER INFORMATION

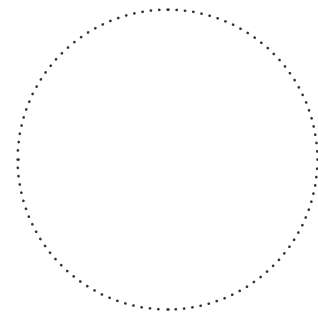
Seller	
Address	
Phone Number	
E-mail	
Purchase Date	
This is to certify acceptance of the complete unit delivery with the user's manual. The warranty terms are acknowledged and accepted.	
Customer's Signature	



Seller's Stamp

INSTALLATION CERTIFICATE

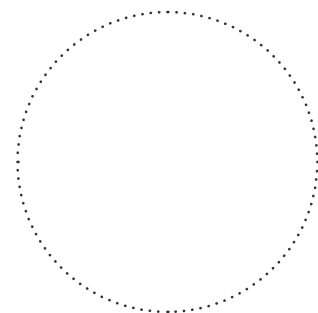
The Box_____ unit is installed pursuant to the requirements stated in the present user's manual.	
Company name	
Address	
Phone Number	
Installation Technician's Full Name	
Installation Date:	Signature:
The unit has been installed in accordance with the provisions of all the applicable local and national construction, electrical and technical codes and standards. The unit operates normally as intended by the manufacturer.	
Signature:	



Installation Stamp

WARRANTY CARD

Unit Type	Inline rectangular fans
Model	Box_____
Serial Number	
Manufacture Date	
Purchase Date	
Warranty Period	
Seller	



Seller's Stamp



BLAUBERG
Ventilatoren

