

USER'S MANUAL

TT-M

TT-MD

TT-MD EC

TT Silent-M

TT Silent-MD

TT Silent-MD EC



Inline mixed-flow fan

CONTENTS

Safety requirements.....	2
Purpose.....	4
Delivery set.....	4
Designation key.....	4
Technical data.....	5
Unit design and operating logic.....	7
Mounting and set-up.....	7
Connection to power mains and control.....	10
Technical maintenance.....	12
Troubleshooting.....	12
Storage and transportation regulations.....	13
Manufacturer's warranty.....	13
Acceptance certificate.....	14
Seller information.....	14
Installation certificate.....	14
Warranty card.....	14

This user's manual consisting of the technical details, operating instructions and technical specification covers the installation and mounting of the TT (Silent) M(D) inline mixed-flow fan (hereinafter referred to as «the fan» or «the unit» as mentioned in the «Safety requirements» and «Manufacturer's warranty» sections as well as in warnings and information blocks).

SAFETY REQUIREMENTS

Read the user's manual carefully prior to installing and operating the unit.

Fulfil the user's manual requirements as well as the provisions of all the applicable local and national construction, electrical and technical norms and standards.



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.

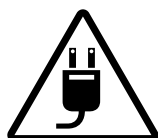
After a careful reading of the manual, keep it for the entire service life of the unit.

While transferring the unit control the user's manual must be turned over to the receiving operator.

Symbol legend:

	WARNING!
	DO NOT!

UNIT MOUNTING AND OPERATION SAFETY PRECAUTIONS



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



- The unit must be grounded!



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



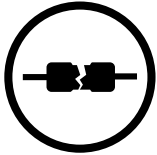
- While installing the unit follow the safety regulations specific to the use of electric tools.



- 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.



- Unpack the unit with care.



- 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 wash the unit with water.
- Protect the electric parts of the unit against ingress of water.

UNIT MOUNTING AND OPERATION SAFETY PRECAUTIONS



- Do not allow children to operate the unit.



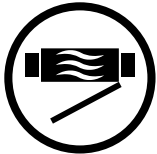
- Disconnect the unit from power mains prior to any technical maintenance.



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



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



- Do not open the unit during operation.



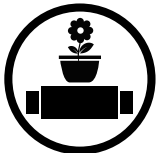
- Do not direct the air flow produced by the unit towards open flame or ignition sources.



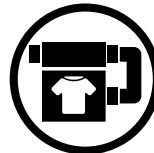
- Do not block the air duct when the unit is switched on.



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



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



- Use the unit only for its intended purpose.

PURPOSE

The fan is designed for ventilation of various industrial premises, swimming pools, apartment houses, offices, hospitals, restaurants and other premises. The Silent models are intended for supply and exhaust ventilation systems of different commercial and industrial premises with high demands on noise level (libraries, conference halls, educational institutions, kindergartens etc.)

The unit is a component part and is not designed for independent operation.



THE UNIT MAY NOT BE OPERATED BY CHILDREN OR PERSONS WITH REDUCED PHYSICAL, MENTAL OR SENSORY CAPACITIES, OR LACKING 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 fan is designed for floor, suspended or ceiling mounting.

The unit is rated for continuous operation.

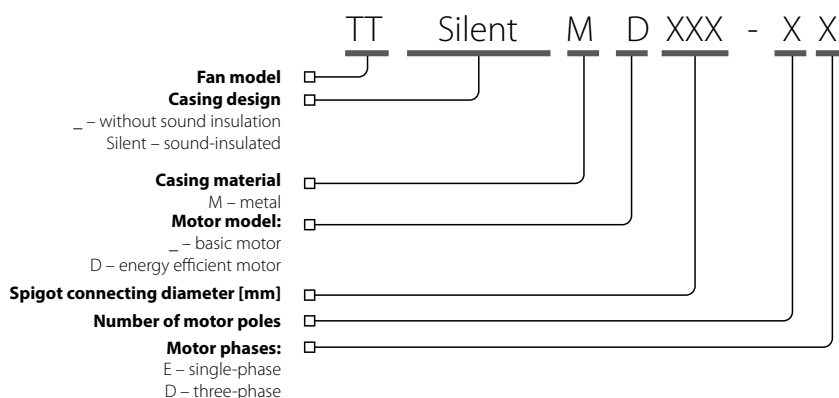
Transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, sticky substances, fibrous materials, coarse dust, soot and oil particles or environments favourable for the formation of hazardous substances (toxic substances, dust, pathogenic germs).

DELIVERY SET

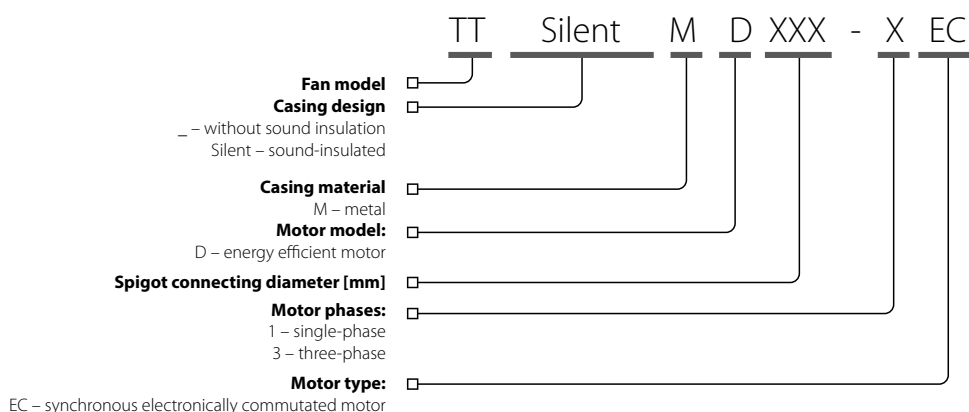
Name	Number
Fan	1 item
User's manual	1 item
Packing box	1 item

DESIGNATION KEY

Fans with AC-motors



Fans with EC-motors



TECHNICAL DATA

The fan is designed for indoor application with the ambient temperature ranging from +1 °C up to +40 °C and relative humidity up to 80 %.

The transported air temperature depends on the fan model (see the table with technical data).

Ingress Protection (IP) rating from solid objects and liquids IPX4.

The fan design is constantly being improved, so some models can slightly differ from those ones described in this manual.

OVERALL DIMENSIONS OF THE FAN, MM

TT M(D)											
TT Silent M(D)											
Model	B	B1	D	DK	H	K	L	L1	L2	L3	Weight [kg]
TT Silent-M 355-4E	1320	80	353	510	540	460	540	60	60	-	33
TT Silent-M 355-4D	1320	80	353	510	540	460	540	60	60	-	33
TT Silent-M 400-4E	1320	80	397	510	540	460	540	60	60	-	35
TT Silent-M 400-4D	1320	80	397	510	540	460	540	60	60	-	35
TT Silent-M 450-4E	1425	80	447	610	640	460	640	60	60	-	51
TT Silent-M 450-4D	1425	80	447	610	640	460	640	60	60	-	51
TT - M 355-4E	825	80	353	605	515	575	-	-	-	60	22
TT - M 355-4D	825	80	353	605	515	575	-	-	-	60	22
TT - M 400-4E	825	80	397	605	515	575	-	-	-	60	24
TT - M 400-4D	825	80	397	605	515	575	-	-	-	60	24
TT - M 450-4E	975	80	447	705	610	675	-	-	-	60	35
TT - M 450-4D	975	80	447	705	610	675	-	-	-	60	35
TT - M 500-4D	1120	100	497	805	710	775	-	-	-	90	44
Model	B	B1	D	DK	H	K	L	L1	L2	L3	Weight [kg]
TT Silent-MD 355-4E	1070	60	353	510	540	360	338	60	60	-	35
TT Silent-MD 400-4E	1350	60	397	565	595	450	485	60	60	-	45
TT Silent-MD 450-4E	1300	60	447	705	730	540	442	70	90	-	59
TT - MD 355-4E	685	60	353	605	515	576	-	-	-	60	25
TT - MD 400-4E	740	60	397	665	570	633	-	-	-	60	30
TT - MD 450-4E	900	60	447	800	705	770	-	-	-	90	45
TT - MD 500-4E	900	60	497	815	720	785	-	-	-	90	55
TT - MD 500-4D	900	60	497	815	720	785	-	-	-	90	51
TT Silent-MD 355-1 EC	1070	60	353	510	540	360	338	60	60	-	35
TT Silent-MD 400-1 EC	1350	60	397	565	595	450	485	60	60	-	45
TT Silent-MD 450-1 EC	1300	60	447	705	730	540	442	70	90	-	54
TT Silent-MD 450-3 EC	1300	60	447	705	730	540	442	70	90	-	55
TT - MD 355-1 EC	685	60	353	605	515	576	-	-	-	60	25
TT - MD 400-1 EC	740	60	397	665	570	633	-	-	-	60	27
TT - MD 450-1 EC	900	60	447	800	705	770	-	-	-	90	40
TT - MD 450-3 EC	900	60	447	800	705	770	-	-	-	90	42
TT - MD 500-1 EC	900	60	497	815	720	785	-	-	-	90	43
TT - MD 500-3 EC	900	60	497	815	720	785	-	-	-	90	43

TECHNICAL DATA OF TT (SILENT) M FANS

	TT Silent-M 355-4E	TT Silent-M 355-4D	TT Silent-M 400-4E	TT Silent-M 400-4D	TT Silent-M 450-4E	TT Silent-M 450-4D	TT-M 355-4E	TT-M 355-4D	TT-M 400-4E	TT-M 400-4D	TT-M 450-4E	TT-M 450-4D	TT-M 500-4D
Unit voltage [V /50-60 Hz]	1~ 230	3~ 400	1~ 230	3~ 400	1~ 230	3~ 400	1~ 230	3~ 400	1~ 230	3~ 400	1~ 230	3~ 400	3~ 400
Power [W]	578	585	580	590	1200	1230	578	585	580	590	1200	1230	2125
Current [A]	3.42	1.77	3.43	1.78	7.72	3.43	3.42	1.77	3.43	1.78	7.72	3.43	4.68
Maximum air capacity [m³/h]	3310	3430	3545	3670	6260	6510	3340	3480	3610	3740	6385	6635	11900
RPM	1480	1490	1480	1490	1475	1490	1480	1490	1480	1490	1475	1490	1455
Sound pressure level at 3 m distance [dB(A)]	49	49	50	50	59	59	57	57	58	58	65	65	73
Maximum transported air temperature [°C]	from -25 up to +60												
Ingress protection rating	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4

TECHNICAL DATA OF TT (SILENT) MD FANS

	TT Silent-MD 355-4E	TT Silent-MD 400-4E	TT Silent-MD 450-4E	TT - MD 355-4E	TT - MD 400-4E	TT - MD 450-4E	TT - MD 500-4E	TT - MD 500-4D
Unit voltage [V /50 Hz]	1~ 230	1~ 230	1~ 230	1~ 230	1~ 230	1~ 230	1~ 230	3~ 400
Power [W]	310	460	910	310	460	910	1450	1350
Current [A]	1.35	2	4.4	1.35	2	4.4	6.1	2.3
Maximum air capacity [m³/h]	3200	4310	6050	3250	4400	6200	8750	9450
RPM	1390	1340	1330	1390	1340	1330	1310	1320
Sound pressure level at 3 m distance [dB(A)]	47	51	59	55	57	64	67	68
Maximum transported air temperature [°C]	from -25 up to +60							
Ingress protection rating	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4

Technical data at maximum efficiency:

Overall efficiency (η) [%]	29.7	31.9	34.7	30.6	33.2	35.8	36.3	39.4
Measurement category	A	A	A	A	A	A	A	A
Efficiency category	Static	Static	Static	Static	Static	Static	Static	Static
Efficiency grade	46.8	46.8	47	47.7	48	47.9	46	49.3
Variable speed drive	No	No	No	No	No	No	No	No
Power [kW]	0.235	0.385	0.684	0.239	0.389	0.693	1.185	1.15
Current [A]	1.13	1.7	3.44	1.13	1.7	3.45	5.1	2.2
Air capacity [m³/h]	1748	2054	3116	1782	2091	3157	4710	4805
Static pressure [Pa]	141	211	269	145	218	277	322	333
RPM	1405	1350	1365	1410	1360	1380	1350	1380
Specific ratio	1	1	1	1	1	1	1	1

TECHNICAL DATA OF TT (SILENT) MD EC FANS

	TT Silent-MD 355-1 EC	TT Silent-MD 400-1 EC	TT Silent-MD 450-1 EC	TT Silent-MD 450-3 EC	TT - MD 355-1 EC	TT - MD 400-1 EC	TT - MD 450-1 EC	TT - MD 450-3 EC	TT - MD 500-1 EC	TT - MD 500-3 EC
Unit voltage [V /50-60 Hz]	1~ 200-277	1~ 200-277	1~ 200-277	3~ 380-480	1~ 200-277	1~ 200-277	1~ 200-277	3~ 380-480	1~ 200-277	3~ 380-480
Power [W]	460	380	1250	2100	460	380	1250	2100	1050	2050
Current [A]	2.5	2.1	6.3	3.5	2.5	2.1	6.3	3.5	5.4	3.3
Maximum air capacity [m³/h]	4000	4370	7650	8920	4080	4480	7830	9160	8600	11100
RPM	1700	1290	1530	1900	1700	1290	1530	1900	1290	1600
Sound pressure level at 3 m distance [dB(A)]	52	55	54	57	61	63	63	69	65	71
Maximum transported air temperature [°C]	from -25 up to +40									
Ingress protection rating	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4

Technical data at maximum efficiency:

Overall efficiency (η) [%]	43.1	40.4	40.9	44.1	43.3	41.8	41.5	44.9	42.8	41.0
Measurement category	A	A	A	A	A	A	A	A	A	A
Efficiency category	Static	Static	Static	Static	Static	Static	Static	Static	Static	Static
Efficiency grade	58.7	55.8	50.7	51.6	58.7	57.1	51.2	52.2	53.2	48.4
Variable speed drive	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Power [kW]	0.325	0.341	1.158	1.948	0.339	0.352	1.195	2.016	1.005	1.994
Current [A]	1.45	1.51	5.84	3.45	1.46	1.52	5.85	3.47	5.2	3.29
Air capacity [m³/h]	1756	2054	3844	5514	1785	2120	3936	5663	4630	5495
Static pressure [Pa]	251	211	401	515	259	219	411	529	301	492
RPM	1700	1420	1530	1900	1700	1430	1530	1900	1290	1610
Specific ratio	1	1	1	1	1	1	1	1	1	1

UNIT DESIGN AND OPERATING LOGIC

The unit is an inline mixed-flow fan.

The fan casing is made of sheet steel (using heat- and sound-insulation material for the Silent models).

Connection spigots are round.

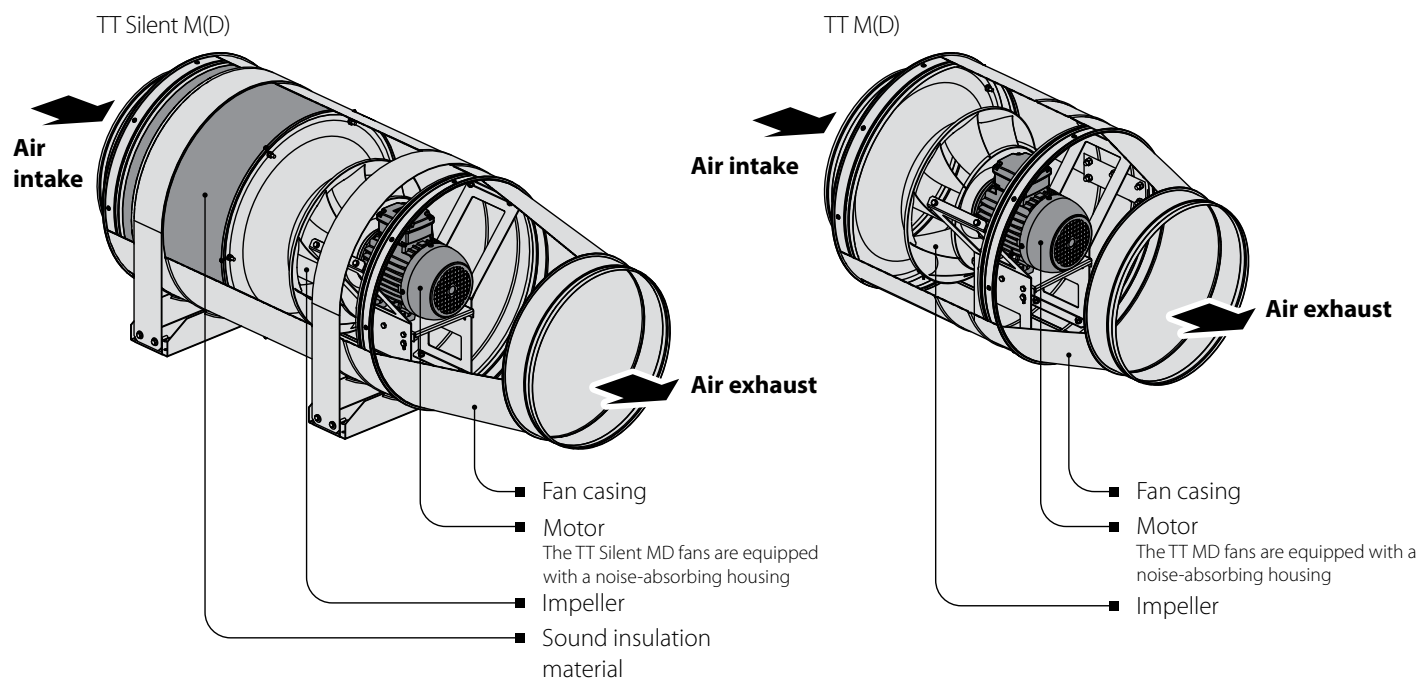
The fan is equipped with a motor which has an impeller with diagonal blades.

The motor has thermal relays built into the motor winding for overheating protection (TW). The relays must always be connected.

Use of the motor with ball bearings with specially selected grease ensures low-noise, maintenance-free operation of the fan.

The air flow direction is indicated by the arrow on the fan casing.

UNIT DESIGN AND OPERATING LOGIC



MOUNTING AND SET-UP



READ THE USER'S MANUAL PRIOR TO MOUNTING THE UNIT.



THE UNIT MUST BE MOUNTED BY A QUALIFIED EXPERT ONLY, PROPERLY TRAINED AND HAVING THE REQUIRED TOOLS AND MATERIALS.

The TT M(D) fan is suspended to the mounting surface through the threaded rod fixed inside the expansion anchor.

The TT Silent M(D) is suitable both for horizontal and vertical installation using a fixing bracket.

The fan is intended for mounting to round air ducts.

The fans are installed between the air ducts.

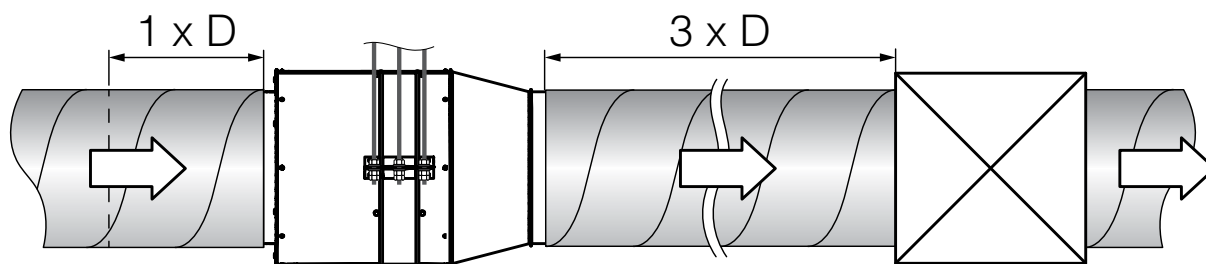
The casing is equipped with fixing brackets for easier installation of the fan.

While installing the unit ensure convenient access for subsequent maintenance and repair.

Fasteners for fan mounting are not included in the delivery set and should be ordered separately.

While choosing fasteners consider the material of the mounting surface as well as the weight of the unit, refer to the Technical Data section.

Fasteners for unit mounting should be selected by the service technician.



To attain the best performance of the fan and to minimise turbulence-induced air pressure losses connect the straight air duct section to the spigots on both sides of the unit while mounting.

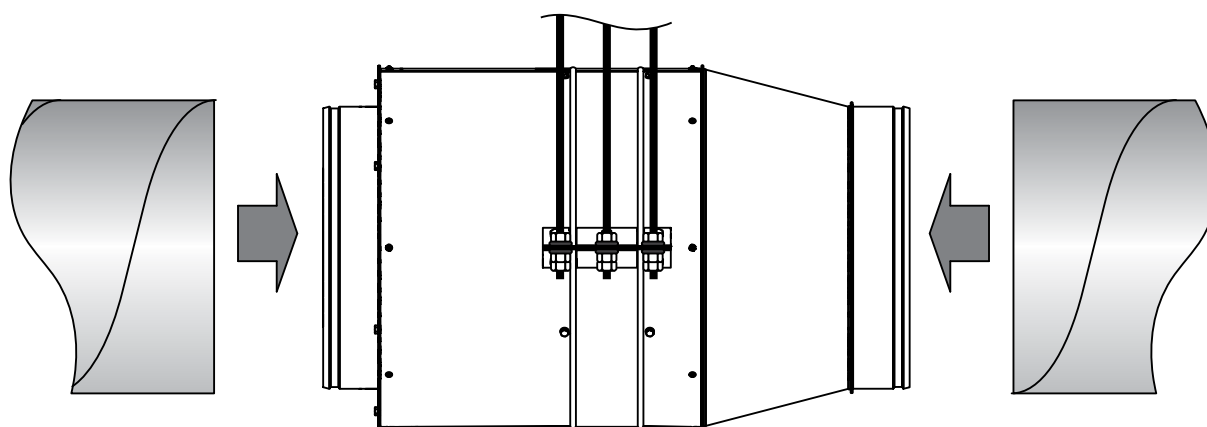
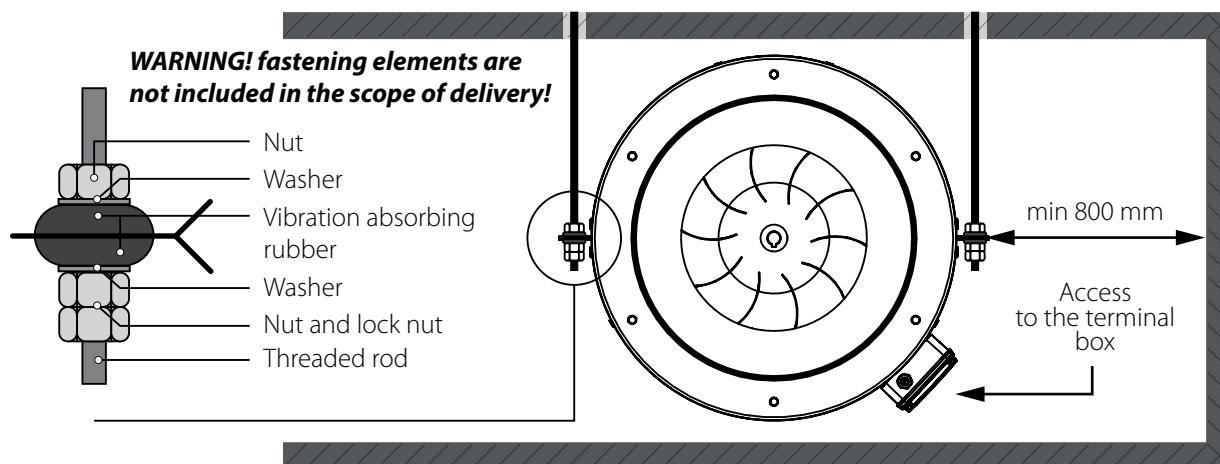
Minimum straight air duct length:

- equal to 1 air duct diameter on intake side
- equal to 3 air duct diameters on outlet side

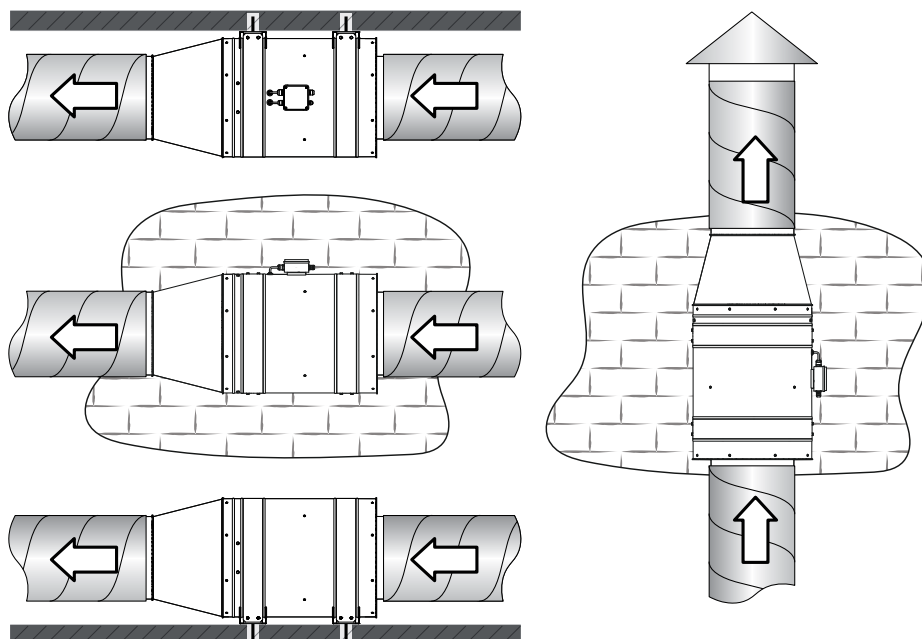
If the air ducts are too short or not connected, protect the unit parts from ingress of foreign objects.

To prevent uncontrollable access to the fan the spigots may be covered with a protecting grille or other protecting device with mesh width not more than 12.5 mm.

MOUNTING OF THE TT-M(D) FAN



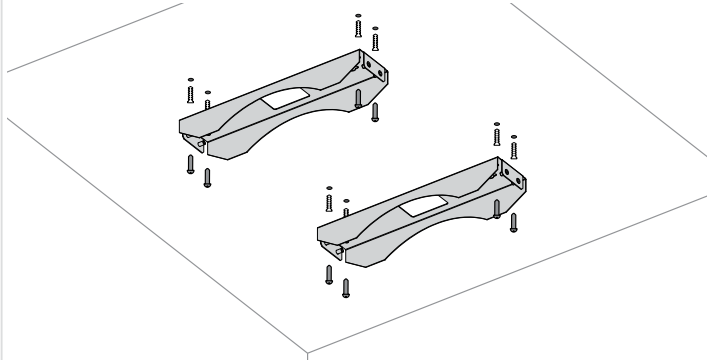
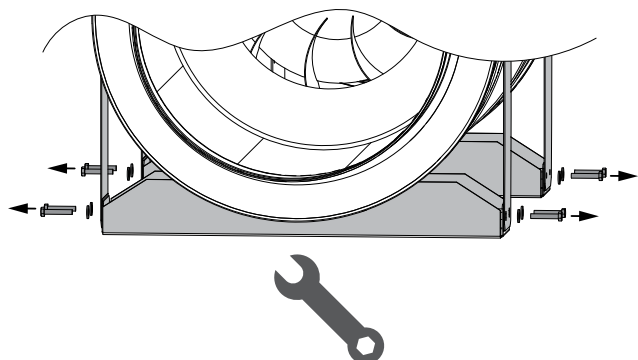
TT SILENT M(D) INSTALLATION METHODS



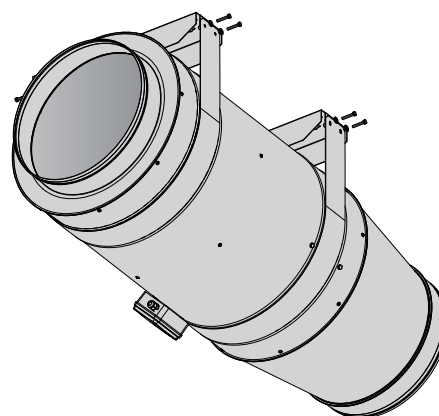
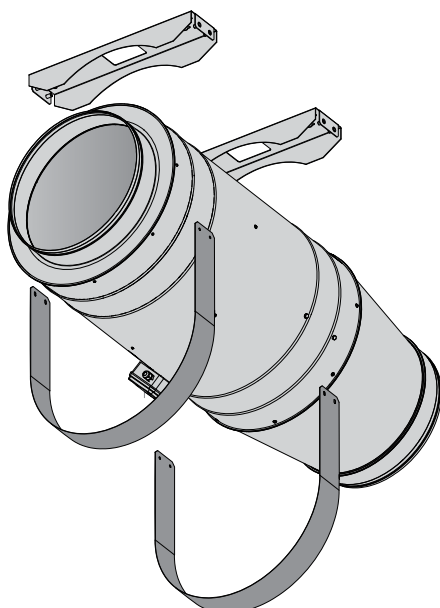
TT SILENT M(D) INSTALLATION

1. Unscrew the bolts that connect the clamp to the fixing bracket using the wrench of the appropriate size.

2. Secure the brackets to the surface using screws with dowels of the appropriate size (not included in the scope of delivery).



3. Secure the fan on the bracket with clamps and bolts removed earlier. Suspend the fan carefully. Make sure the fan is fastened securely prior to operation.



CONNECTION TO POWER MAINS AND CONTROL



DISCONNECT THE UNIT FROM POWER MAINS PRIOR TO ANY OPERATIONS. THE FAN MUST BE CONNECTED TO POWER MAINS BY A QUALIFIED ELECTRICIAN. THE RATED ELECTRICAL PARAMETERS OF THE UNIT ARE GIVEN ON THE MANUFACTURER'S LABEL.



ANY INTERNAL CONNECTION MODIFICATIONS ARE NOT ALLOWED AND RESULT IN WARRANTY LOSS.

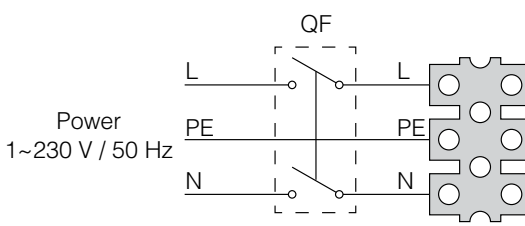
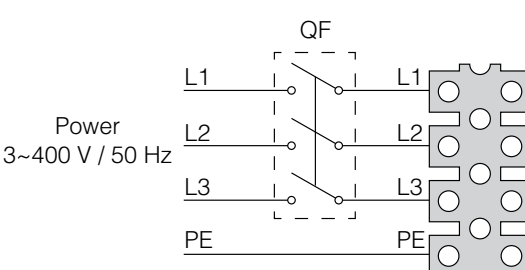
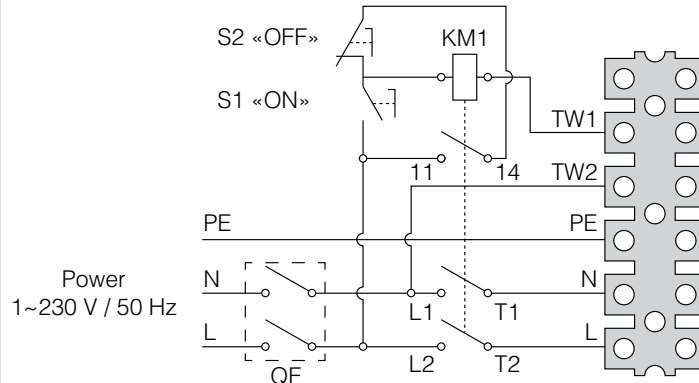
The fan is rated for connection to single-phase or three-phase AC power mains with a voltage of 230 V or 400 V according to the wiring diagrams below. The terminal designation is placed inside of the terminal box.

The terminal clamp marking corresponds to the marking on the wiring diagram.

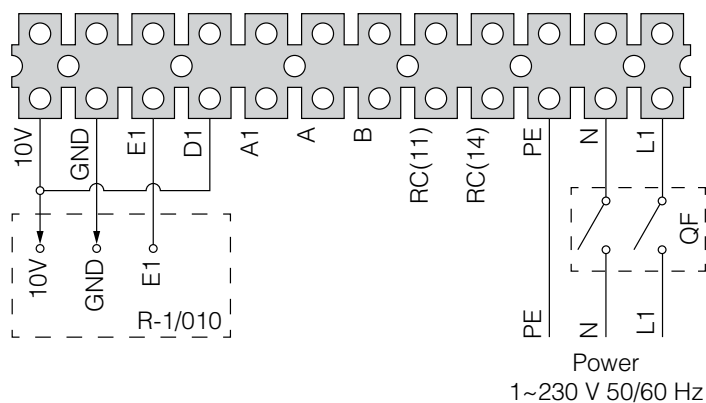
Connect the fan to power mains by means of insulated, durable and thermal-resistant cords (cables, wires) with appropriate cross section.

The cables are routed into the terminal box through a sealed lead-in for electrical hazard class compliance.

The fan shall be connected to power supply through the external circuit breaker with a thermal-magnetic trip. The rated current of the circuit breaker must be not below the rated current consumption.

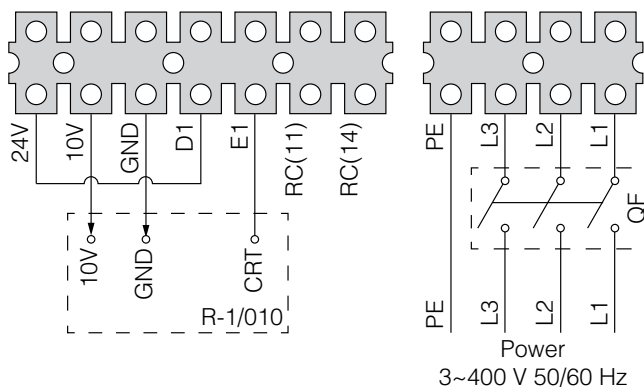
FAN MODEL	EXTERNAL CONNECTIONS DIAGRAM
TT Silent-M 355-4E TT Silent-M 400-4E TT Silent-M 450-4E TT - M 355-4E TT - M 400-4E TT - M 450-4E	 <p>Power 1~230 V / 50 Hz</p> <p>PE – protective grounding. N – power supply neutral. L – power supply phase. QF – circuit breaker.</p>
TT Silent-M 355-4D TT Silent-M 400-4D TT Silent-M 450-4D TT - M 355-4D TT - M 400-4D TT - M 450-4D TT - M 500-4D	 <p>Power 3~400 V / 50 Hz</p> <p>PE – protective grounding. N – power supply neutral. L1, L2, L3 – power supply phase. QF – circuit breaker.</p>
TT Silent-MD 355-4E TT Silent-MD 400-4E TT Silent-MD 450-4E TT - MD 355-4E TT - MD 400-4E TT - MD 450-4E TT - MD 500-4E	 <p>Power 1~230 V / 50 Hz</p> <p>PE – protective grounding. N – power supply neutral. L – power supply phase. QF – circuit breaker. TW1, TW2 – thermal contacts of the motor. KM1 – motor starter. S1 – «Start» button. S2 – «Stop» button.</p>

TT Silent-MD 355-1 EC
TT Silent-MD 400-1 EC
TT - MD 355-1 EC
TT - MD 400-1 EC



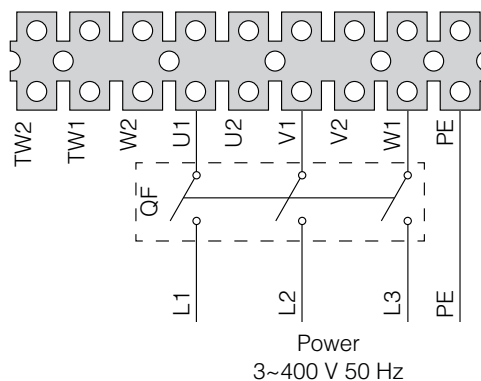
10V – 10 V DC power supply for a speed control potentiometer.
GND – DC power supply grounding.
E1 – 0-10 V input direct current signal for speed setting.
D1 – digital enable signal.
A1 – status / tachometer output.
A – MODBUS communication interface (RS-485).
B – MODBUS communication interface (RS-485).
RC – NO-contact is closed in case of alarm (switching parameters: 250 V AC, 2 A).
PE – protective grounding.
N – power supply neutral.
L1 – power supply phase.
QF – circuit breaker.
R1/010 – speed controller.

TT Silent MD 450-3 EC
TT - MD 450-3 EC
TT - MD 500-3 EC



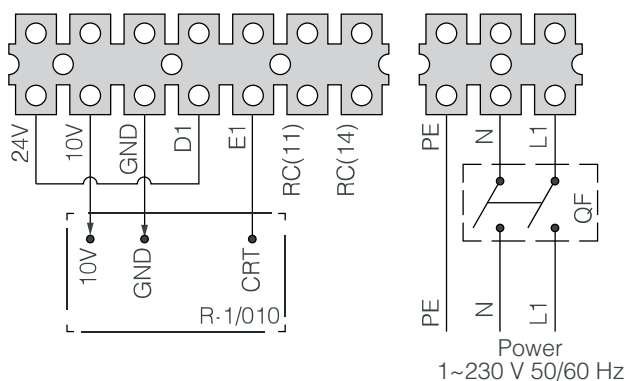
24V – 24 V DC power supply.
10V – 10 V DC power supply for a speed control potentiometer.
GND – DC power supply grounding.
D1 – analogue input for speed setting compatible with 0-10 V signal or external potentiometer.
E1 – 0-10 V input direct current signal for speed setting.
RC – NO-contact closes in case of alarm (switching parameters: 250 V AC, 2 A).
PE – protective grounding.
L1, L2, L3 – power supply phase.
QF – circuit breaker.
R1/010 – speed controller.

TT - MD 500-4D



W1, W2, U1, U2, V1, V2 – contacts for motor connection.
TW1, TW2 – motor thermal contacts.
PE – protective grounding.
L1, L2, L3 – power supply phase.
QF – circuit breaker.

TT - MD 450-1 EC
TT - MD 500-1 EC
TT Silent-MD 450-1 EC



24V – 24 V DC power supply.
10V – 10 V DC power supply for a speed control potentiometer.
GND – DC power supply grounding.
D1 – analogue input for speed setting compatible with 0-10 V signal or external potentiometer.
E1 – 0-10 V input direct current signal for speed setting.
RC – NO-contact closes in case of alarm (switching parameters: 250 V AC, 2 A).
PE – protective grounding.
L1 – power supply phase.
QF – circuit breaker.
R1/010 – the speed controller.

TECHNICAL MAINTENANCE



DISCONNECT THE UNIT FROM POWER SUPPLY BEFORE ANY MAINTENANCE OPERATIONS.

The unit must undergo technical maintenance once a year. Technical maintenance includes regular cleaning of the unit.

1. Fan maintenance (once a year).

Some dust may accumulate on the impeller blades or on the fan motor which reduces the unit capacity.

Clean the fans with a soft brush, cloth, vacuum cleaner or compressed air.

Do not use water, aggressive solvents or sharp objects as they may damage the impeller.

2. Supply air flow control (twice per year).

The supply duct grille may get clogged with leaves and other objects reducing the unit performance and supply air delivery. Check the supply grille twice per year and clean it as required.

3. Technical maintenance of air duct system (every 5 years).

Some dust may accumulate inside the air ducts which reduces the unit capacity.

Duct maintenance means regular cleaning or replacement.

TROUBLESHOOTING

Problem	Possible reasons	Troubleshooting
The fan(s) do(es) not get started.	No power supply.	Make sure the power supply line is connected correctly, otherwise troubleshoot a connection error.
	Jammed motor.	Turn off the fan. Troubleshoot the motor jamming. Restart the fan.
Automatic circuit breaker tripping following the fan turning on	High current consumption due to short circuit in power line.	Turn off the fan. Contact the Seller.
Noise, vibration	The fan impeller is soiled.	Clean the impellers.
	The fan or casing screw connection is loose.	Tighten the screw connection of the fan or the casing against stop.
	The ventilation system components (air ducts, diffusers, louvre shutters, grilles) are clogged or damaged.	Clean or replace the ventilation system components (air ducts, diffusers, louvre shutters, grilles).

STORAGE AND TRANSPORTATION REGULATIONS

Store the unit in the manufacturer's original packing box in a dry closed ventilated premise with temperature range from +5 °C to + 40 °C.

Storage environment must not contain aggressive vapours 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 transported in the original packing by any mode of transport without limitation provided proper protection against precipitation and mechanical damage.

Avoid sharp blows, scratches or rough handling during transportation, loading and unloading.

MANUFACTURER'S WARRANTY

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, mounting 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 elimination of faults by the manufacturer by means of warranty repair at the factory free of charge.

The warranty repair shall include 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 document 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 dismounted by the user.
- Mismatch of the unit model and the brand name with the information stated on the unit packing 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.
- User's violation of the unit installation regulations.
- User's violation of the unit control regulations.
- Unit connection to the power mains with a voltage different from the one stated in the user's manual.
- Unit breakdown due to voltage surges in the 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.
- User's violation of the unit transportation regulations.
- User's violation of the unit storage regulations.
- 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 document certifying the unit purchase.



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



USERS' 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.

ACCEPTANCE CERTIFICATE

Unit type	Inline mixed-flow fan
Model	TT _____
Serial Number	
Manufacture Date	
<p>Is compliant with the technical specifications and is recognized as serviceable. We hereby declare that the product complies with the essential protection requirements of Electromagnetic Council Directive 2004/108/EC, 89/336/EEC and Low Voltage Directive 2006/95/EC, 73/23/EEC and CE-marking Directive 93/68/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. This certificate is issued following test carried out on samples of the product referred to above.</p>	
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

<p>TT _____ Inline mixed-flow fan</p> <p>has been connected to power mains pursuant to the requirements stated in the present user's manual.</p>	
Company Name	
Address	
Phone Number	
Installation Technician's Full Name	
Installation Date:	Signature:

Installation Company Stamp

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:

WARRANTY CARD

Unit type	Inline mixed-flow fan
Model	TT _____
Serial Number	
Manufacture Date	
Purchase Date	
Warranty Period	
Seller	

Seller's Stamp

