User manual

TX 3100A

Rev. 2024.11.28

Turbovex A/S
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1.0 General information

1.1 Foreword

This user´s manual contains technical information regarding daily operation and maintenance of a **TX 3100A** decentralized ventilation unit**.**

1.2 Field of application

Turbovex TX 3100A is designed for providing decentralized comfort ventilation in larger rooms such as industrial premises, auto workshops and indoor sports arenas and similar environments.

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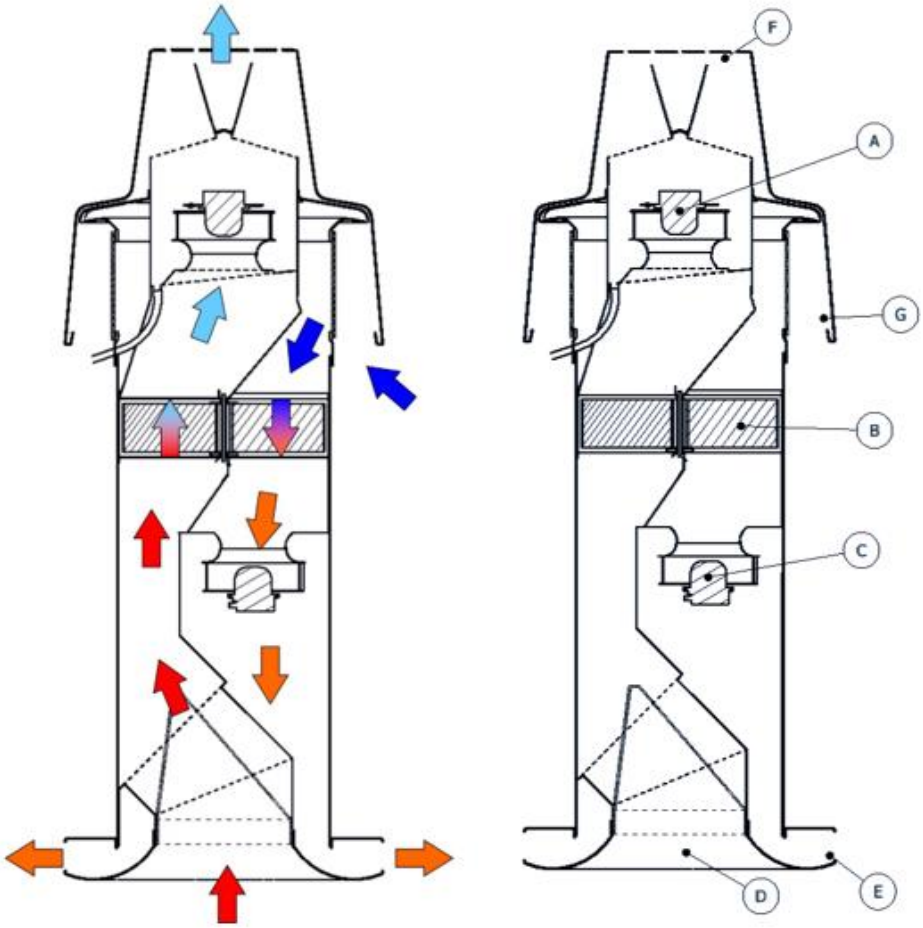
1.3 Function of the unit

The principle of heat recovery in the TX3100A is based on the rotating heat exchanger (B). The exhaust fan (A) draws the warm room air through the funnel of the inlet ring(D), through half of the heat exchanger (B), and send it through the exhaust cap (F). Simultaneously the inlet fan will (C) draws air through the inlet cap(G), sending it through the other half of the heat exchanger. The heated fresh air is sent through the inlet ring (E) and distributed evenly in the room.
One half of the rotating heat exchanger will always be in the hot airflow from the exhaust air. When the heated material in the heat exchanger is in the cool flow of the inlet air, it will transfer heat from the material to the fresh supply air.
The process is regenerative as the heat exchanger rotates at a constant low speed.



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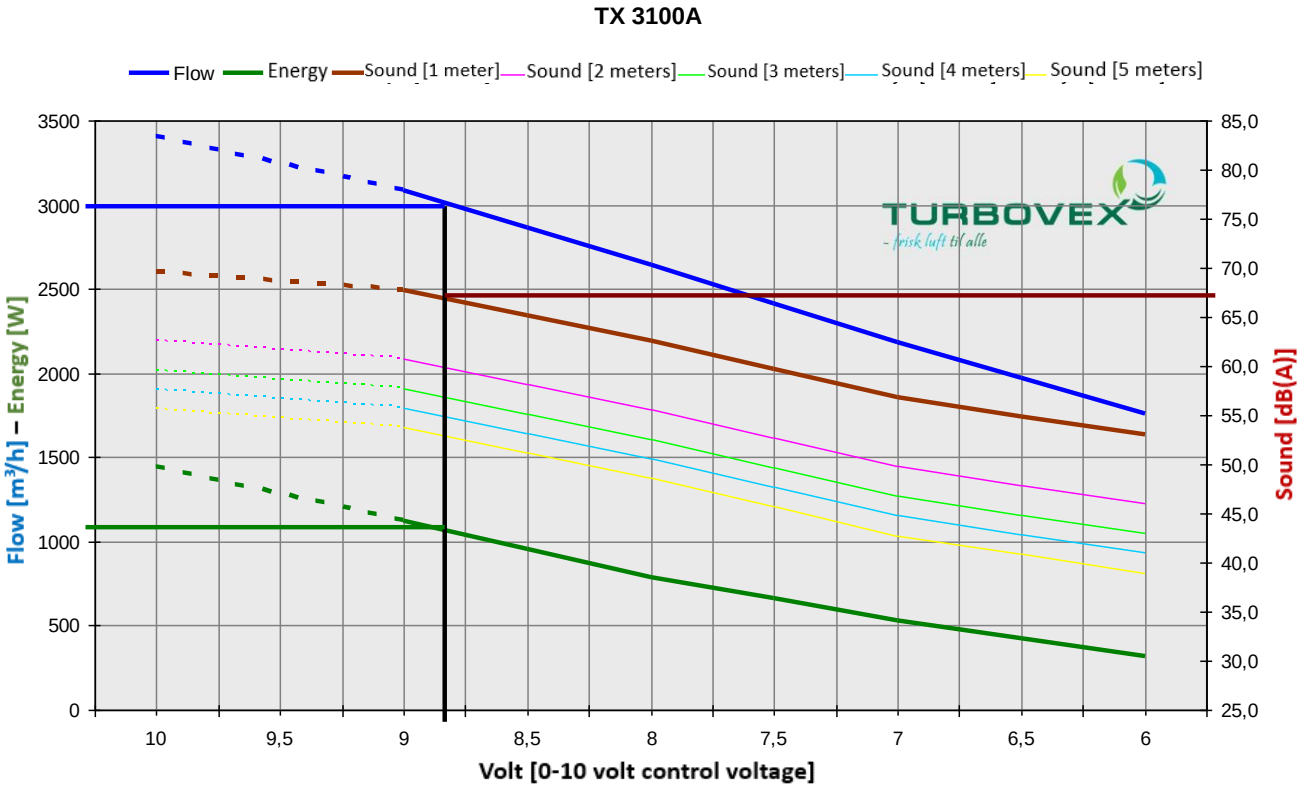
2.0 Technical specifications

2.1 Unit

type:	**Turbovex TX 3100A**
Capacity:	1400 – 3000 m³/h
Forced operation	3400 m³/h
Power:	1 x 230V / 50 Hz
Output (Motor):	Max. 2x750 Watt
Energy consumption (3000 m³/h):	1044 W - 1,25 KJ/m³
Heat recovery (3000 m³/h):	75 %



The airflow indicates the balanced air exchange in relation to the control voltage. (0-10 volt) and is shown in m³/h. The unit can be adjusted manually to suit your required air exchange.
The sound level is shown in decibel – dB (A) in relation to air exchange.
The sound is measured in 1 to 5 meters from the unit under normal conditions.

Turbovex TX 3100A is tested in cooperation with Ziehl-abegg – www.ziehl-abegg.com

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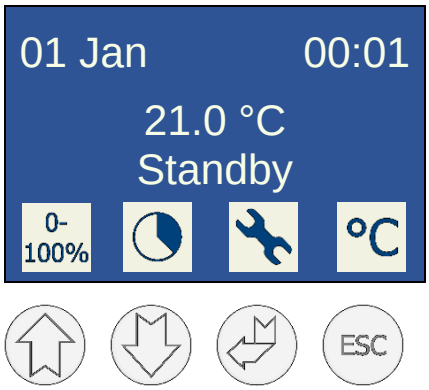
3.0 Daily operations of TX3100A

This section describes the most commonly used functions of the controller for a TX3100A unit.

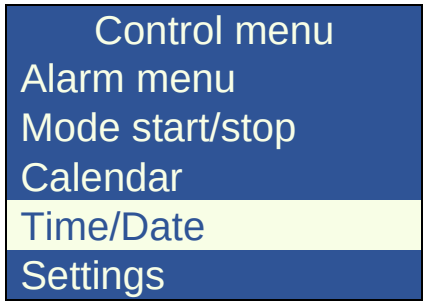
3.1 Setting the time

The time is set in the submenu Time/Date of the Control menu.

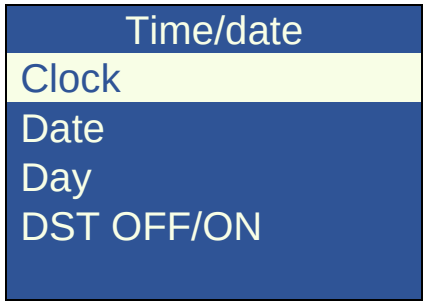
'Time/Date' is found by pressing  to enter the Control menu  .



Use  and  to select 'Time/Date' and press 



Use  and  to select 'clock' and press 



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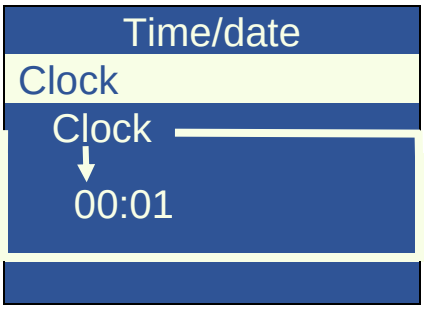
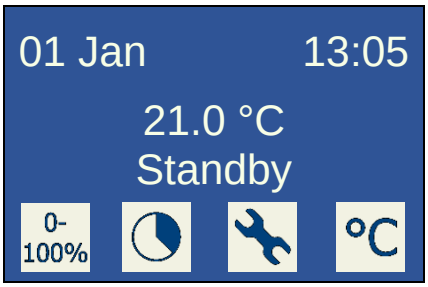
Time is set using and hours first followed by .
Then minutes is set using and followed by .



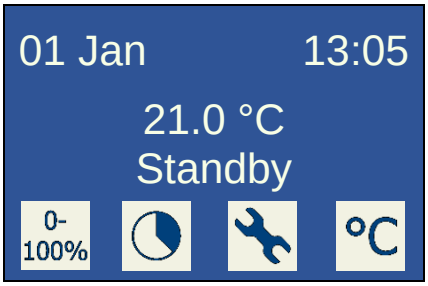
When time is set press ESC to return to previous menu, until display returns to showing the Home screen.

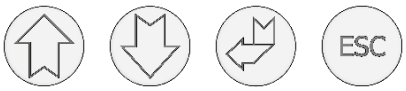


3.2 Setting the date

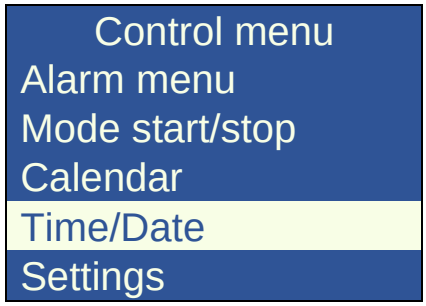
The date is set in the submenu Time/Date of the Control menu.

'Time/Date' is found by pressing to enter the Control menu .





Use and to select 'Time/Date' and press



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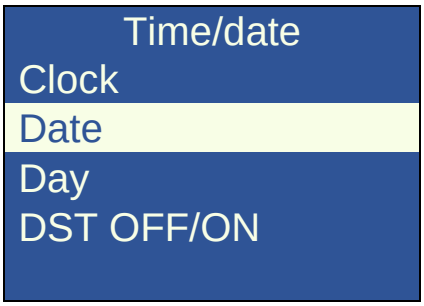
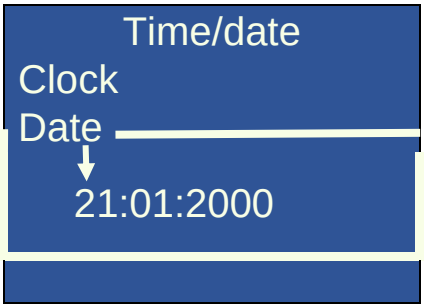
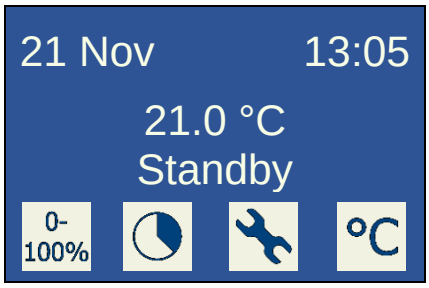
Use and to select ‘Date’ and press



The date is set using and date first followed by . Then month is set using and followed by and finally year is set using and followed by



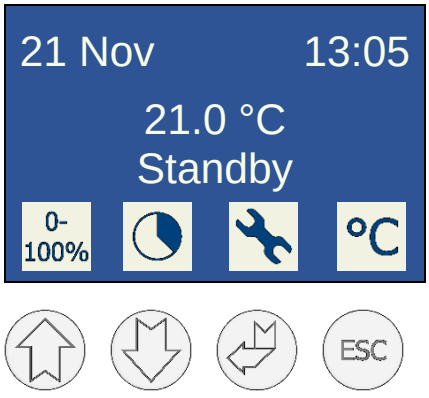
When date is set press ESC to return to previous menu, until display returns to showing the Home screen.



3.3 Setting the weekday

The weekday is set in the submenu Time/Date of the Control menu.

’Time/Date’ is found by pressing to enter the Control menu .



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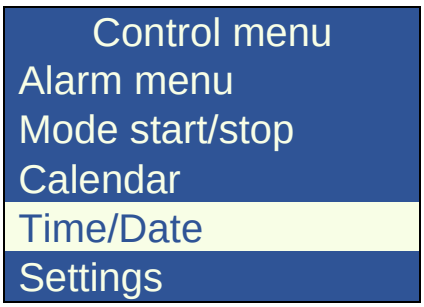
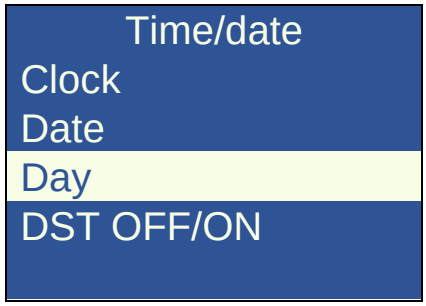
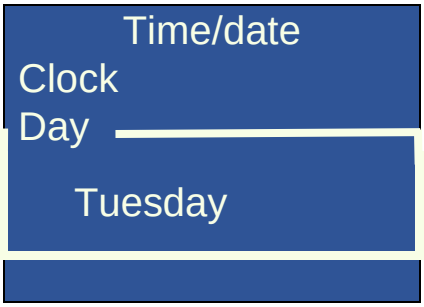
Use and to select 'Time/Date' and press



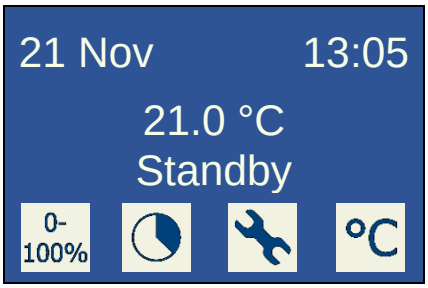
Use and to select 'Day' and press



The weekday is set using and date first followed by .



When weekday is set press ESC to return to previous menu, until display returns to showing the Home screen.



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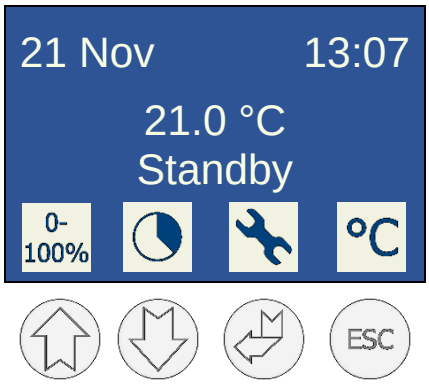
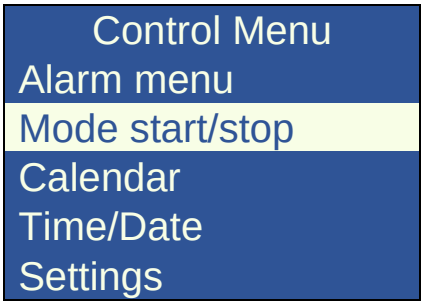
3.4 *Starting up the unit*

TX3100A is started using the ‘Day mode’ function. In Day mode, the unit runs in a default setting producing the nominal airflow.

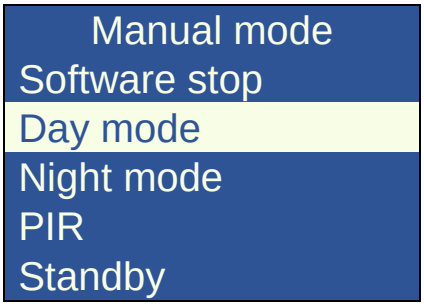
’Day mode’ is found by pressing to enter the Control menu .



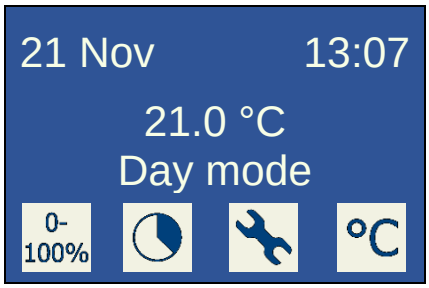
Use and to select ’Mode start/stop’ and press



Use and to select ’Day mode’ and press



The unit is now started and running with nominal airflow.
The display in the home screen shows ‘Day mode’



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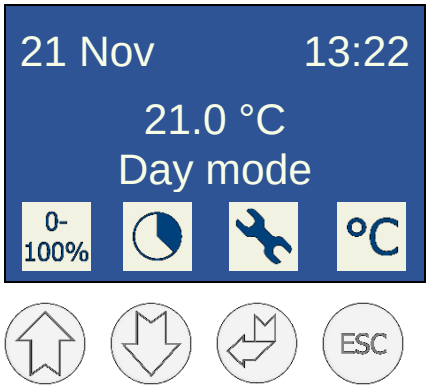
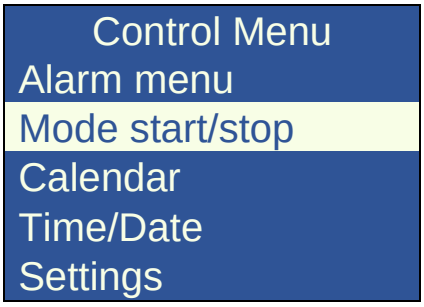
3.5 *Stopping the unit*

TX3100A is stopped by using the ‘Standby’ function.

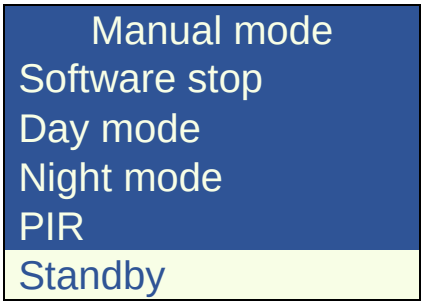
’Standby’ is found by pressing to enter the Control menu .



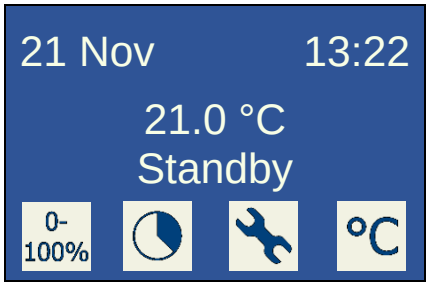
Use and to select ’Mode start/stop’ and press



Use and to select ’Standby’ and press



The is now stopped and the display in the home screen shows ‘Standby’



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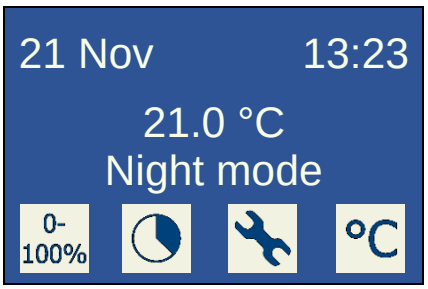
If the unit has an electric heater installed, there will be an after blowing time of 80 seconds, during which the home screen display will show ‘Night mode’ followed by ‘Standby’(shown above)



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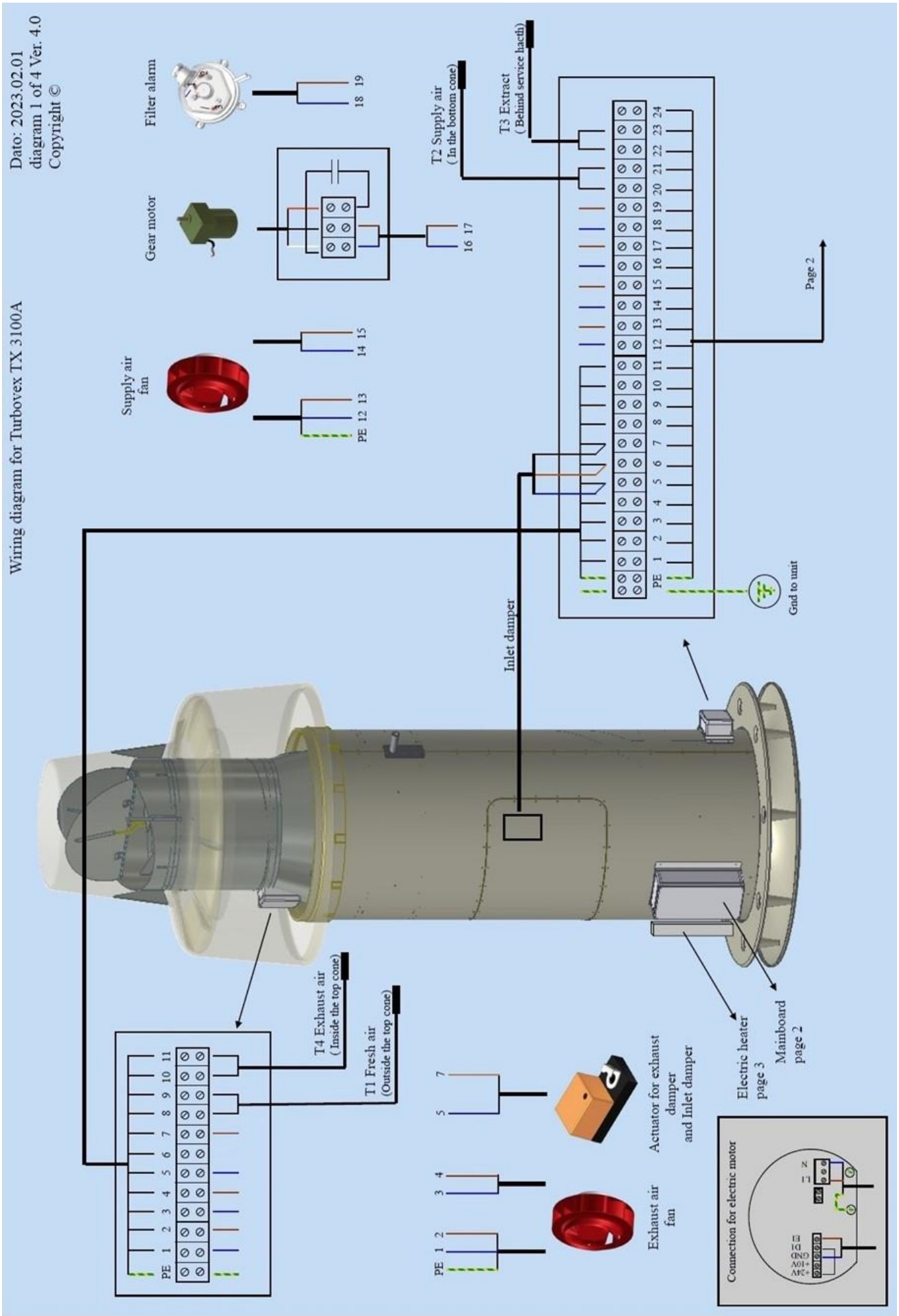
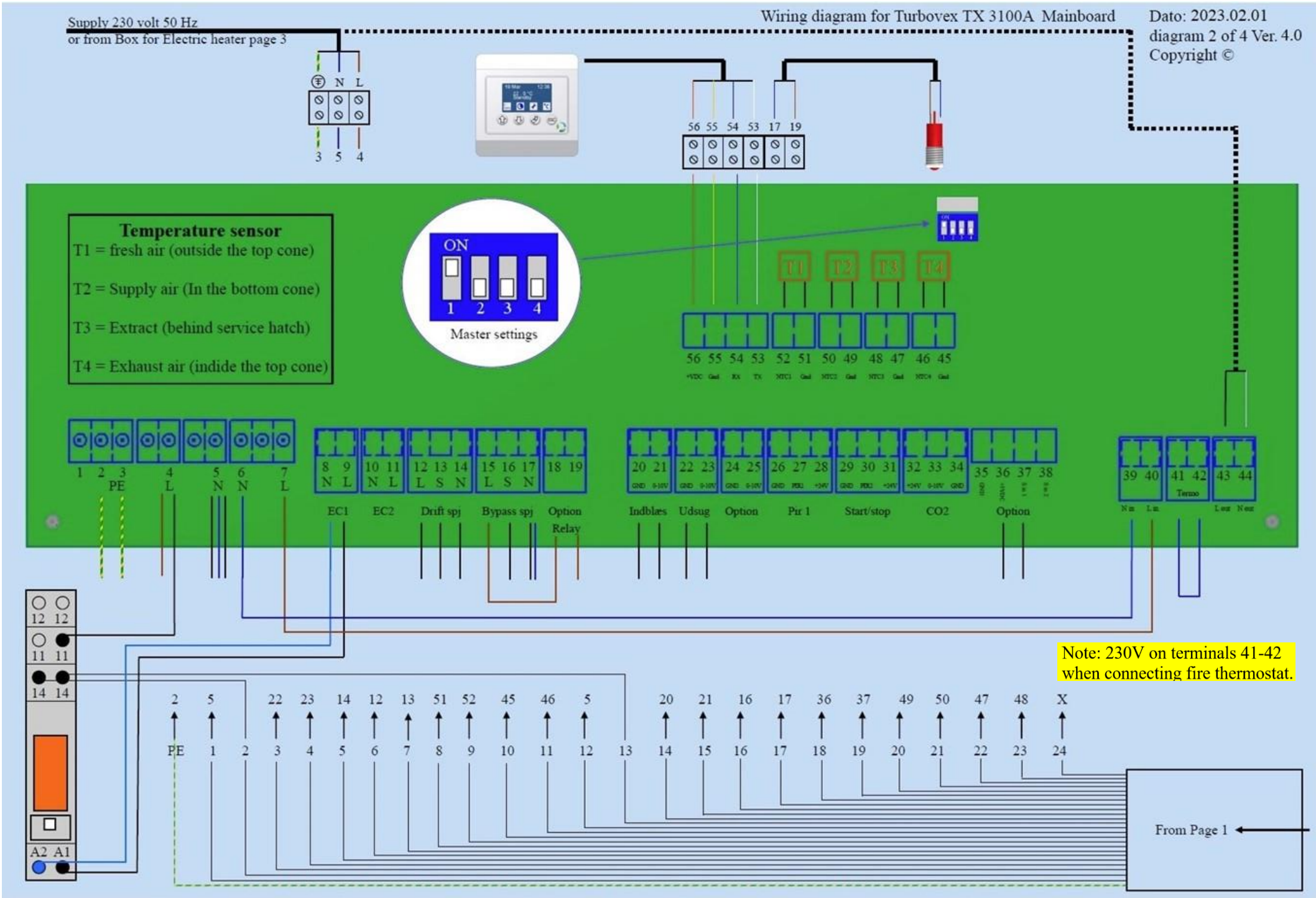
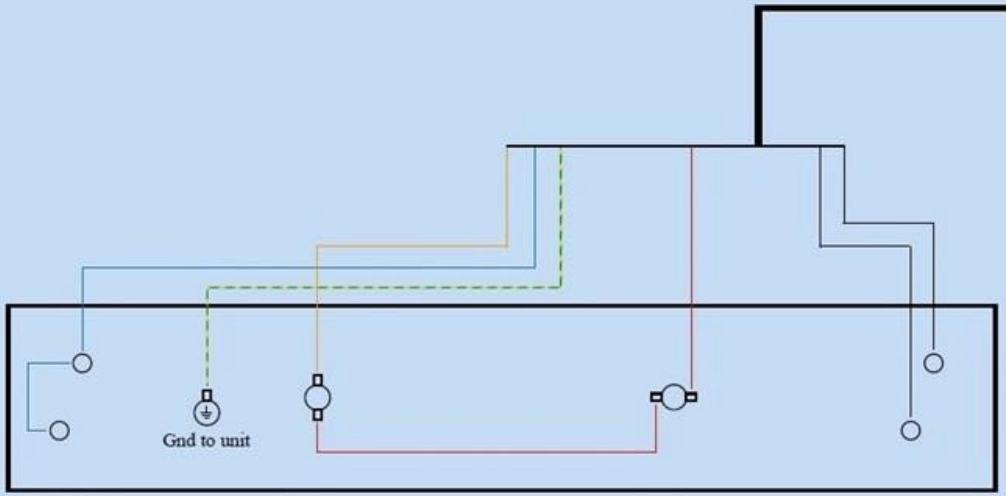
4.0 Electrical wiring diagrams




Supply 230 volt 50 Hz
or from Box for Electric heater page 3
Wiring diagram for Turbovex TX 3100A Mainboard
Dato: 2023.02.01
diagram 2 of 4 Ver. 4.0
Copyright ©
N L
3 5 4
56 55 54 53 17 19
Temperature sensor
T1 = fresh air (outside the top cone)
T2 = Supply air (In the bottom cone)
T3 = Extract (behind service hatch)
T4 = Exhaust air (indide the top cone)
ON
1 2 3 4
Master settings
T1 T2 T3 T4
56 55 54 53 52 51 50 49 48 47 46 45
1 2 3 4 5 6 7
PE L N N L
8 9 10 11 12 13 14 15 16 17 18 19
N L N L L S N L S N
EC1 EC2 Drift spj Bypass spj Option Relay
20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38
Indblæs Udsug Option Pir 1 Start/stop CO2 Option
39 40 41 42 43 44
Termo
12 12
11 11
14 14
A2 A1
Note: 230V on terminals 41-42
when connecting fire thermostat.
2 5 22 23 14 12 13 51 52 45 46 5 20 21 16 17 36 37 49 50 47 48 X
PE 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
From Page 1

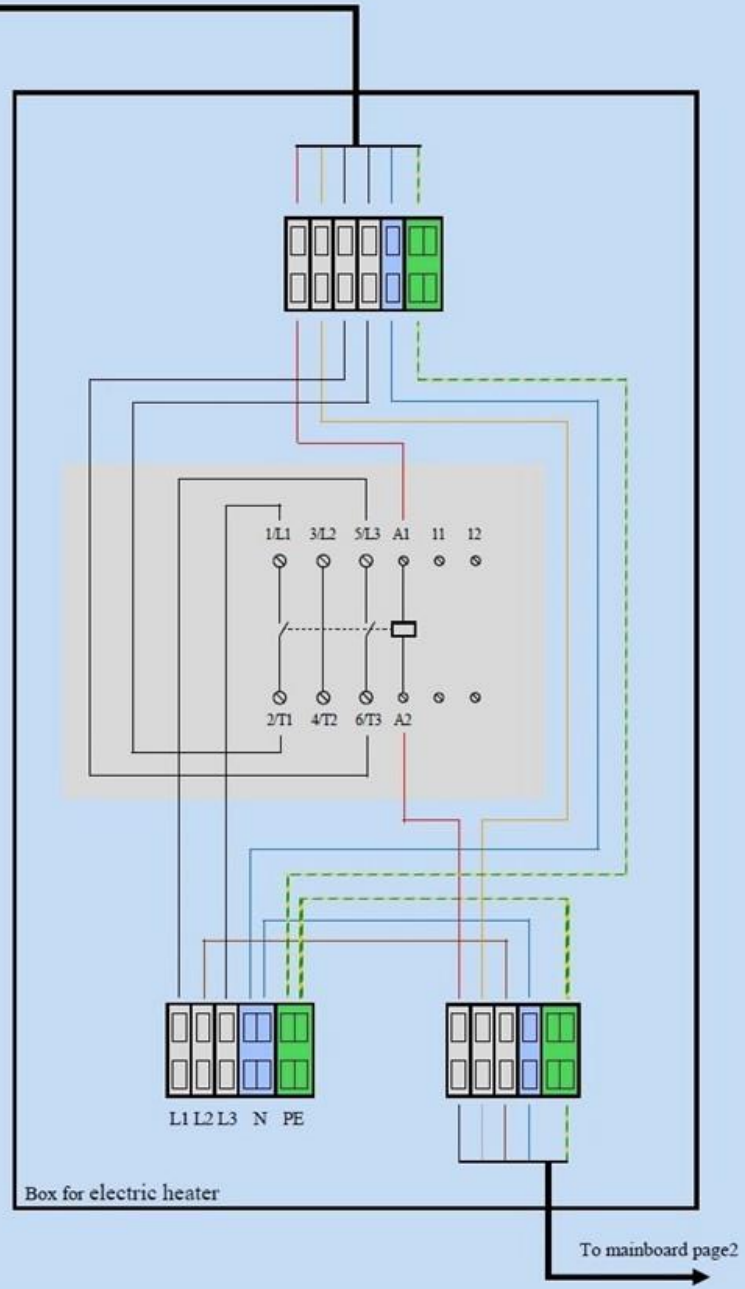
Wiring diagram for Turbovex TX 3100A Electric heater

Dato: 2023.02.01
diagram 3 of 4 Ver. 4.0



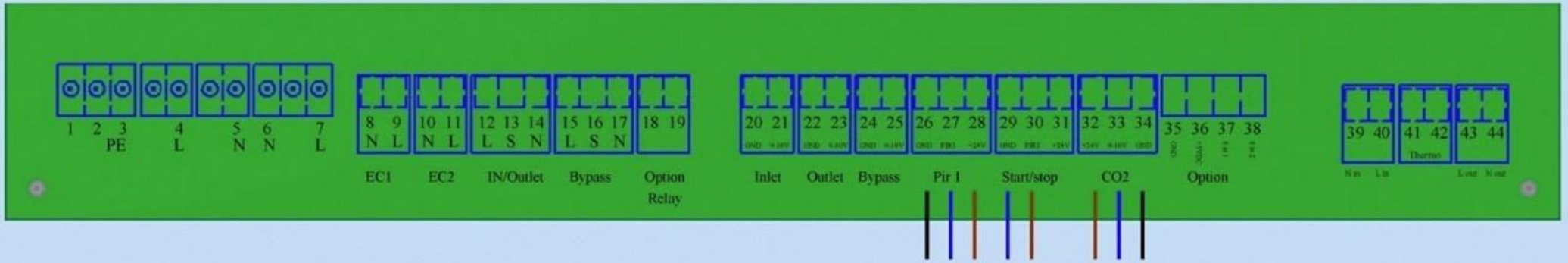
Electric heater

Electric heater foto



Circuit diagram / Schaltplan
TX Electronic Accessories / Zubehör

Dato: 2023.02.01
diagram 4 of 4 Ver. 4.0



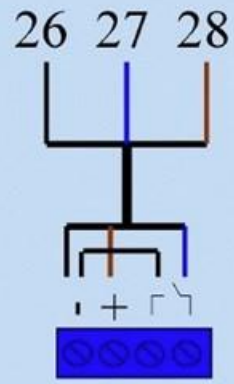
PIR / Hygrostat

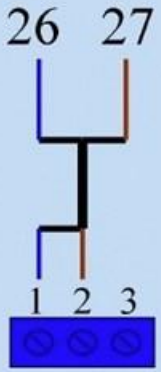
Setup and operation of sensor

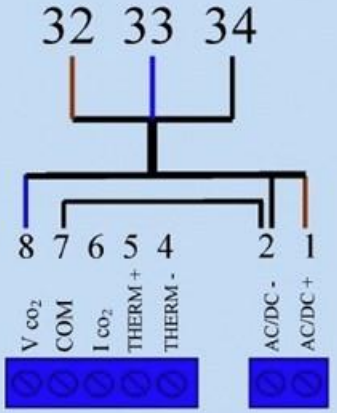
To operate with the sensor, system must be started as a PIR-operation

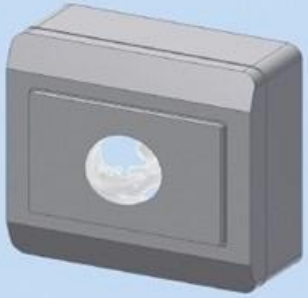
Setup und Betrieb des Sensors

Um mit dem Sensor-System ausgeführt werden muss als PIR-Operation gestartet werden.









PIR

Hygrostat

CO2

5.0 Service

5.1 Maintenance inspections

It is adviced to have regular maintenance inspections performed on TX3100A units. The intervals between inspections depend on the specific unit's operation, but typically, there should not be more than 1 year between regular inspections.

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5.2 Service checklist

Maintenance report for TX3100A

TURBOVEX

Unit batch No. _____

Costumer _____

Adress of installation _____

Phone _____

Contact person _____

Phone _____

Task	completed	Changed	Comments
Visual inspection of unit			
Inspection of supply fan			
Inspection of exhaust fan			
Inspection of supply damper motor			
Inspection of exhaust damper motor			
Inspection of wiring and cable passages			
Inspection of Temperature sensor T1			
Inspection of Temperature sensor T2			
Inspection of Temperature sensor T3			
Inspection of Temperature sensor T4			
Inspection of bearings, heat exchanger			
Inspection of brushes, heat exchanger			
Inspection of Drive motor, heat exchanger			
Control panel function motorspeed			
Motorsuspension /rubber suspension			
Inspection of CO2 sensor			
Inspection of PIRsensor			
Inspection of adjustment of Pressure guard			
Adjusment of time and calendar function			
Supply filter change			
Exhaust filter change			
Cleaning of unit internally			
Cleaning of heat exchanger			
Other			
Date of maintenance:	Maintenance performed by:		_____

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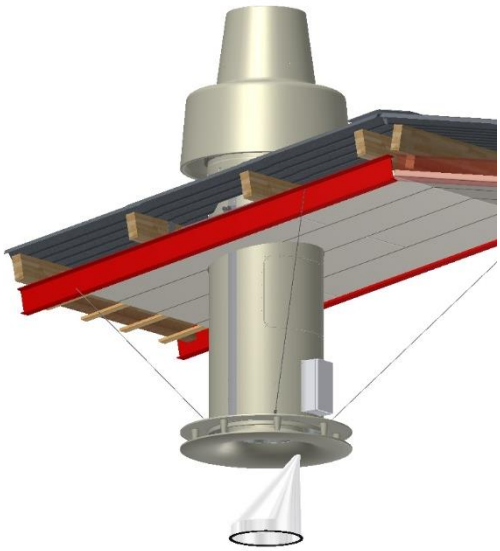
5.3 Filter change

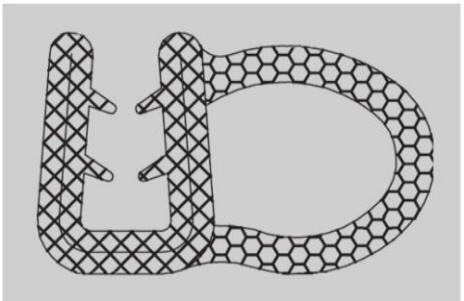
ATTENTION: The filter alarm is automatically reset after filter change

There are 2 filters in the TX 3100A which need to be changed.
It is recommended that the filters are changed 2 to4 times a year or when the alarm B is shown in the display and alarm menu of the controller.
If maintenance of the filters is not done properly and timely it can lead to damaging the heat exchanger and the unit will not function properly.

The exhaust air filter is placed in the bottom of the unit and is changed by pulling the old vertically downwards to remove and replaced with a new filter.



The filter is kept in place by the rubber profile situated around the edge of the filter's collar.
The rubber seal must be placed so the circular part is facing outwards. Otherwise air leakage will occur and there will be a fall hazard of the filter



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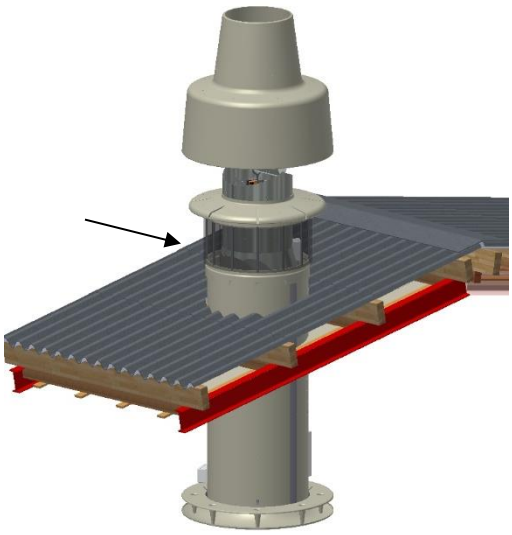
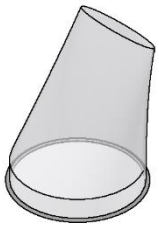
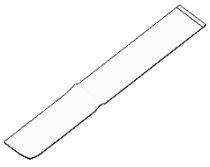
The supply air filter is placed under the top cone which shields the filter from the weather.
The filter is changed by pulling the filter from the Velcro sitting on the unit and replacing it with a new filter.
Ensure that the filter fits tightly around the unit and that the ends of the filter reach each other.
If the placement of the unit makes it difficult to reach the filter it is possible to remove the top cone for filter change by removing the 4 bolts on the top of the top cone.



5.4 Parts list

Descrioption	Turbovex Item number	Picture
Exhaust filter/ Bottom filter	S102-037K	
Supply filter/ Top filter	S102-036K	

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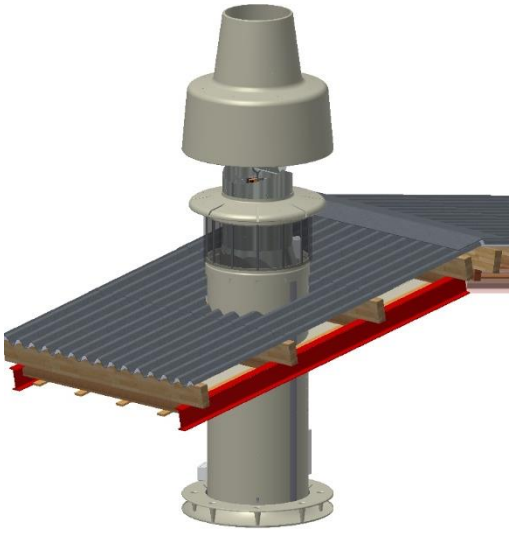
6.0 Manual operation of exhaust damper

The TX3100A is equipped with a spring-return motor for operation of the exhaust damper. This means that the damper will always close if there is no power to the system.
If there is a need to open the exhaust damper manually, this can be done by removing the top cone. Unscrew the screws at the top and lift it free from the unit.



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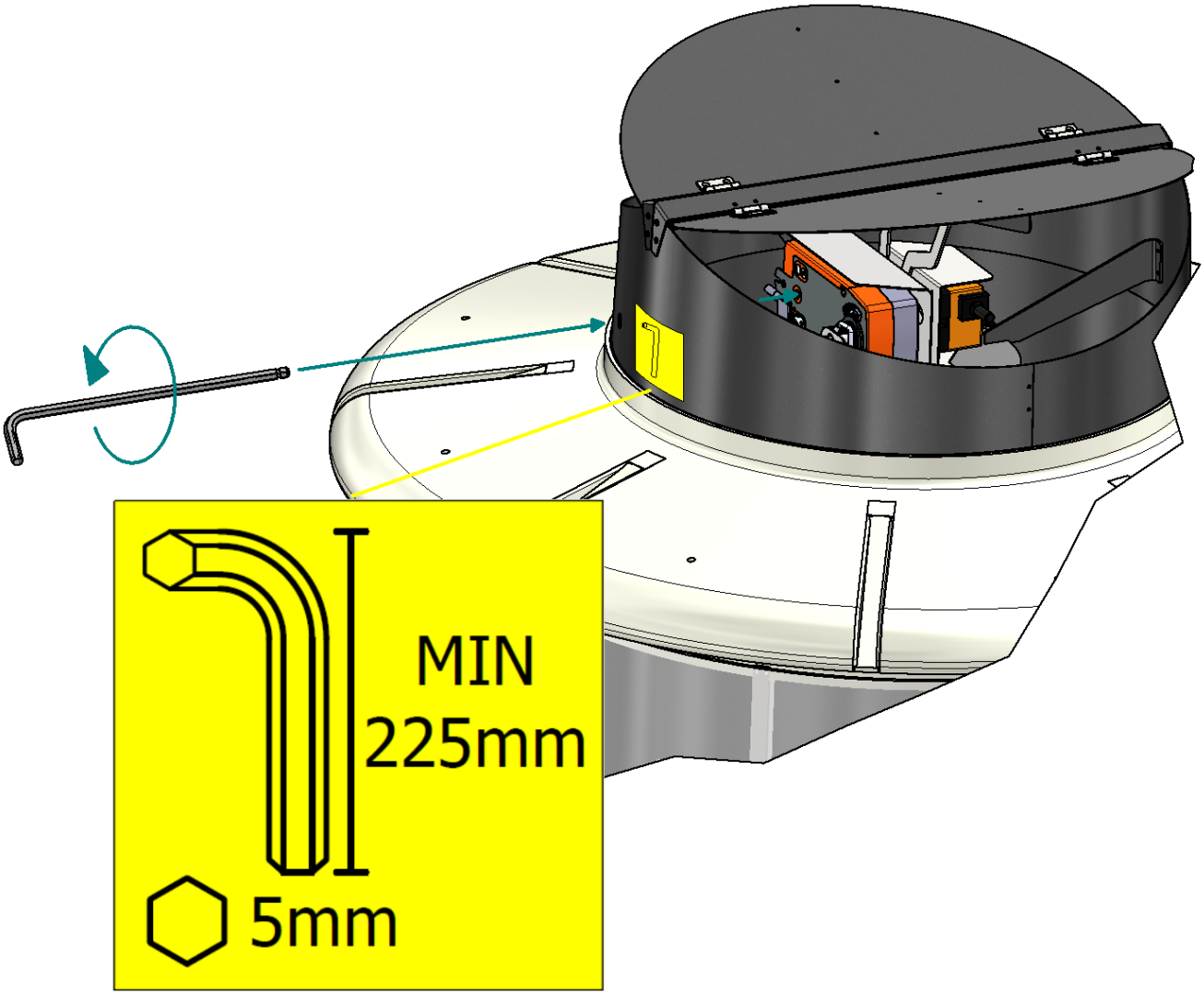
The damper is opened using a size 5 Allen key with a length of at least 225 mm turned counterclockwise.



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7.0 Declaration of conformity

The Declaration of conformity can be found on our webpage:

https://www.turbovex.dk/fileadmin/filer/Downloads_GB/overensstemmelseserklaering_UK.pdf

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