

# Circular duct fan prio 150-250, prio silent® XP 150-315

Installation and Operating Instructions

GB

Document in original language | · 003



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## 1 EU Declaration of conformity

|                                   |  |
|-----------------------------------|--|
| <b>The manufacturer:</b>          | Systemair GmbH<br>Seehöfer Straße 45<br>97944 Boxberg<br>Germany |
| <b>Product designation:</b>       | Circular duct fans   |
| <b>Type designation:</b>          | prio 150–250, prio silent® XP 150–315                            |
| <b>Since year of manufacture:</b> | 2020   |

The manufacturer declares that the above mentioned products in their design and construction and the version marketed by us complies with the harmonization legislation listed below:

|                       |             |  |
|-----------------------|-------------|--|
| <b>EU directives:</b> | 2006/42/EC  | Machinery directive  |
|                       | 2014/30/EU  | Directive electromagnetic compatibility (EMC)  |
|                       | 2011/65/EU  | RoHS directive   |
|                       | 2009/125/EC | ErP guidelines   |
| <b>Regulations:</b>   | 327/2011    | only for fans above 125W, CE marked fans used as components are CE marked by other manufacturer. |

## 2 Warnings

The following admonitions will be presented in the different sections of the document:



### Danger

- Indicates a potentially or imminently hazardous situation which, if not avoided, could result in death or serious injury.



### Warning

- Indicates a potentially hazardous situation that may result in minor or moderate injuries.



### Caution

- Indicates a risk of damaging the product or prevent optimal operation.

### Important

- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

### 3 Product information

#### 3.1 Key for item name

prio silent® XP = Revolution silenced V2

#### 3.2 Intended use

- The fans are intended for installation in ventilation systems. They can be installed both in duct systems and also with free suction via a suction-side contact protection grille. Free discharge via a contact protection grille is also possible.
- The fan is suitable for conveying clean air.

#### Incorrect use

Incorrect use refers mainly to using the fan in another way to that described. The following examples are incorrect and hazardous:

- Conveying of explosive and combustible media
- Conveying of aggressive media
- Operation in an explosive atmosphere
- Operation without duct system or protection grille
- Operation with the air connections closed
- Installation outside without weather protection

#### 3.3 General

This manual concerns prio 150–250 and prio silent® XP 150–315 (manufactured by Systemair GmbH).

This manual consists of basic information and recommendations concerning the design, installation, start-up and operation, to ensure a proper fail-free operation of the unit. The key to proper and safe operating of the unit is to read this manual thoroughly, use the unit according to given guidelines and follow all safety requirements.

#### Valid for fans without connection cables

The **EC-fans** are delivered with potentiometer, 0–10 V. The integrated potentiometer is factory preset to 10 V. This value can be changed manually to obtain a different motor rpm/fan performance. An external potentiometer or other controller can be connected if necessary, see 3.4.2 *Wiring diagram*, page 4.



#### Danger

- The fans are not to be used in hazardous environments or connected to flue ducts.
- The appliance must be connected to a mains circuit breaker in the fixed installation.
- Switch power off (all-pole circuit breaker) before servicing or maintenance, and make sure the impeller has come to standstill.
- Make sure protection grid has been installed (EN ISO 13857), no moving parts shall be accessible after installation.
- Do not remove, short-circuit or disconnect safety accessories (i.e. motor protection, safety grille).



#### Warning

- The fans can have sharp edges and corners which may cause injuries. Be careful when opening the fans, the motor assembled on the motor bracket is relatively heavy.



#### Caution

- Take precautions to prevent the back flow of exhaust gases from flues from other appliances installed in the same room, which are fired by gas or other fuels.

### 3.4 Technical data

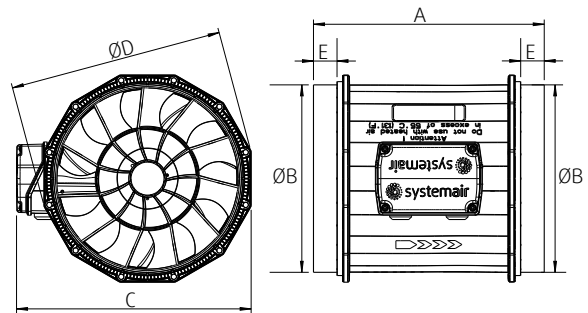
|  |  |
|--|--|
| Max. ambient temperature [°C]                        | see data sheet, available in our online catalogue. |
| Max. temperature of transported air [°C]             | see data sheet, available in our online catalogue. |
| Sound pressure [dB]                                  | see data sheet, available in our online catalogue. |
| Voltage, current, frequency, enclosure class, weight | see name plate of the fan                          |

The data on the name plate of the fan apply to "standard air" according to ISO 5801.

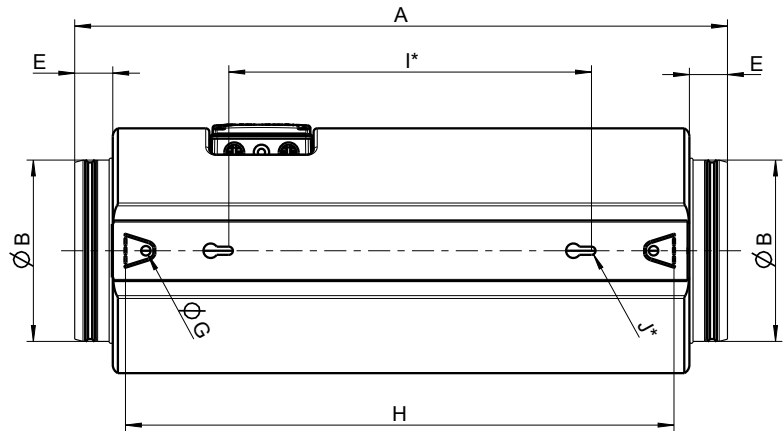
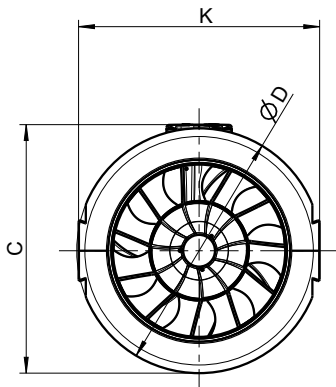
#### 3.4.1 Dimension

**Table 1 Dimensions prio 150-250**

| [mm]                         | A   | B   | C   | D   | E  |
|------------------------------|-----|-----|-----|-----|----|
| prio 150E2<br>prio 150EC     | 412 | 149 | 211 | 187 | 40 |
| prio 160E2<br>prio 160EC     | 220 | 159 | 211 | 187 | 25 |
| prio 200E2<br>prio 200EC     | 245 | 199 | 249 | 227 | 25 |
| prio 250E2<br>prio 250EC     | 300 | 249 | 303 | 284 | 30 |
| prio 250E2-L<br>prio 250EC-L | 300 | 249 | 303 | 284 | 30 |



**Table 2 Dimensions prio silent® XP 150-315**



\* Optional key hole

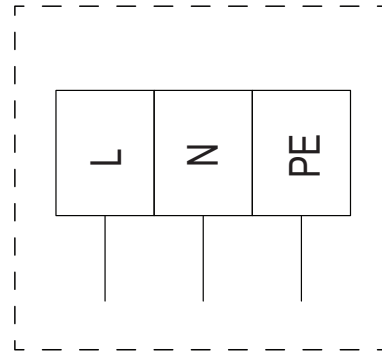
| [mm]   | A   | ØB  | C   | ØD  | E   | ØG   | H   | I*  | J* | K   |
|--|-----|-----|-----|-----|-----|------|-----|-----|----|-----|
| prio silent® XP 150E2<br>prio silent® XP 150EC   | 720 | 150 | 235 | 230 | 59  | 10.5 | 570 | 400 | 9  | 224 |
| prio silent® XP 160E2<br>prio silent® XP 160EC   | 686 | 160 | 235 | 230 | 42  | 10.5 | 570 | 400 | 9  | 224 |
| prio silent® XP 200E2<br>prio silent® XP 200EC   | 720 | 200 | 274 | 270 | 42  | 10.5 | 604 | 400 | 9  | 266 |
| prio silent® XP 250E2<br>prio Silent® XP 250EC<br>prio Silent® XP 250E2-L<br>prio Silent® XP 250EC-L | 760 | 250 | 325 | 320 | 62  | 10.5 | 604 | 400 | 9  | 317 |
| prio Silent® XP 315E2-L<br>prio Silent® XP 315EC-L   | 848 | 315 | 325 | 320 | 106 | 10.5 | 604 | 400 | 9  | 317 |

### 3.4.2 Wiring diagram

#### E2

prio silent® XP 150E2, prio silent® XP 160E2, prio silent® XP 200E2, prio silent® XP 250E2, prio Silent® XP 250E2-L, prio Silent® XP 315E2-L

| Function/assignment |  |
|---------------------|--|
| L                   | Power supply 230 V AC, 50...60 Hz                              |
| N                   | Neutral conductor  |
| PE                  | Protective conductor   |
| Speed control:      | Voltage controllable (See accessories in our online catalogue) |
| Motor protection:   | By integrated thermal contacts                                 |

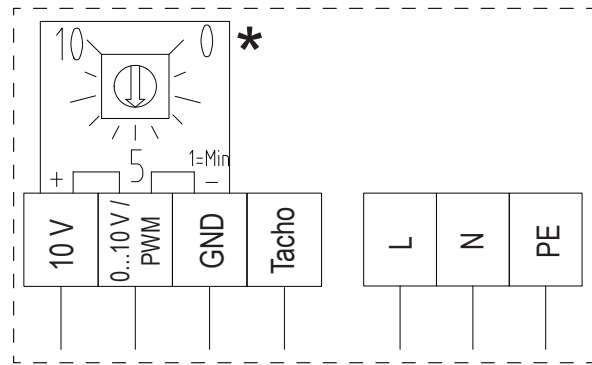


#### EC

prio 150EC, prio 160EC, prio 200EC, prio 250EC, prio 250EC-L, prio silent® XP 150EC, prio silent® XP 160EC, prio silent® XP 200EC, prio Silent® XP 250EC, prio Silent® XP 250EC-L

**Table 3 Terminals Description**

| Function/assignment |  |
|---------------------|--|
| L                   | Power supply 230 V AC, 50...60 Hz, see name plate for voltage range  |
| N                   | Neutral conductor  |
| PE                  | Protective conductor   |
| 0...10 V / PWM      | Controller input 0...10 V or PWM   |
| 10 V                | Voltage output 10 V / Short-circuit-proof power supply for external devices (e.g. poti)<br>prio 150EC, prio 160EC -> I max=1.1mA<br>prio 200ECprio 250EC -> I max=10mA |
| GND                 | GND-connection of the controller interface   |
| Tacho               | Speed output: Open Collector, 1 impulse per revolution, electrically isolated, I <sub>sink_max</sub> = 10 mA   |



\* Valid for fans without connection cables

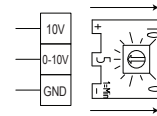


### Electrical connection accessories for EC version

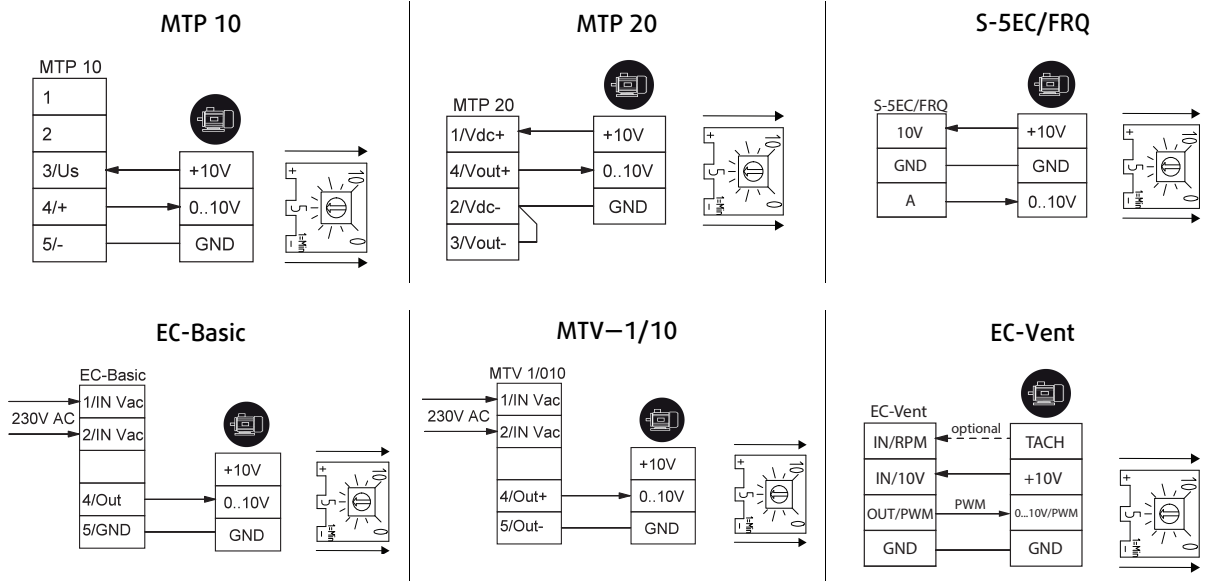
Symbol fan



- ◆ The potentiometer must be disconnected if the fan should be controlled by other accessories via 0–10V (e.g. accessories below).



#### Control via 0–10V signal



### 3.5 Transportation and storage

All fans are packaged at the factory to withstand normal transport handling. When handling the goods use suitable lifting equipment in order to avoid damage to fans and personnel. Avoid blows and shock loads. Store the fans in a dry place protected from weather and dirt until final installation.



#### Warning

- The unit is heavy. Be careful during transport and installation. Risk of injury through pinching. Use protective clothing.
- Do not lift the fans by the connecting cable, connection box, motor bracket, impeller or inlet cone.

## 4 Installation



### Danger

- Make sure that the mains power supply to the unit is disconnected before performing any maintenance or electrical work!
- All electrical connections must be carried out by an authorized installer and in accordance with local rules and regulations.



### Warning

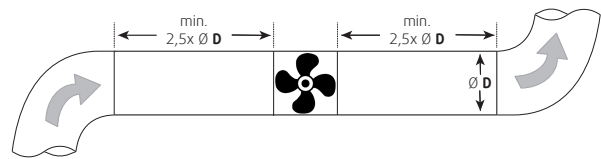
- The units electrical connection to the mains power supply must be preceded by an all pole circuit breaker with a minimum 3 mm gap.
- Do not lift the fans by the connecting cable, connection box, motor bracket, impeller or inlet cone.

Make sure the assembly of the fan is firmly fixed and stable. The fans must be installed to ensure that service and maintenance can be performed easily and safely.

### Important

**Damage to the bearings or other parts of the fan can occur.**

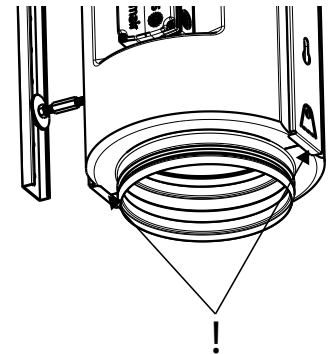
- ◆ Do not place a duct bend directly before or after the fan!
- ◆ Ensure a smooth and constant air flow to the device.



- Round duct system: **D** = Nominal diameter
- Rectangular duct system: **D** = Hydraulic diameter

### Installation positions

- The installation is possible in any mounting position.
- Arrow on the fan casing indicates the direction of the airflow.
- In case of vertical installation of the prio silent, the folded edge must be at the bottom, see adjacent picture.



### Installation options prio 150-250

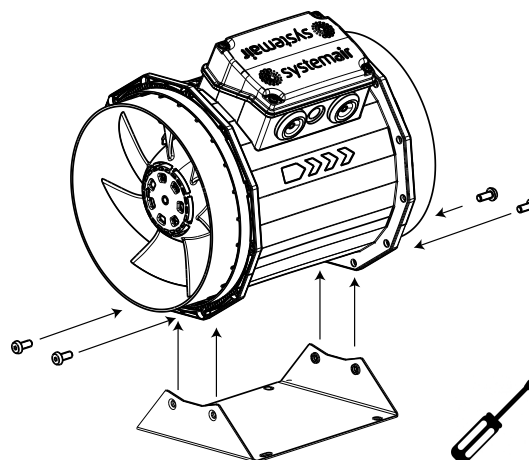
#### Installation with mounting bracket



#### Note:

The mounting bracket is available in our accessory range.

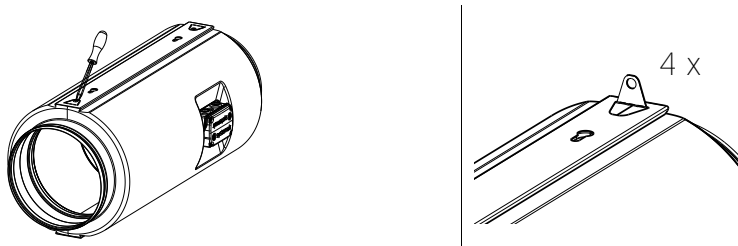
- ◆ Mount the mounting bracket on the fan, see adjacent image.



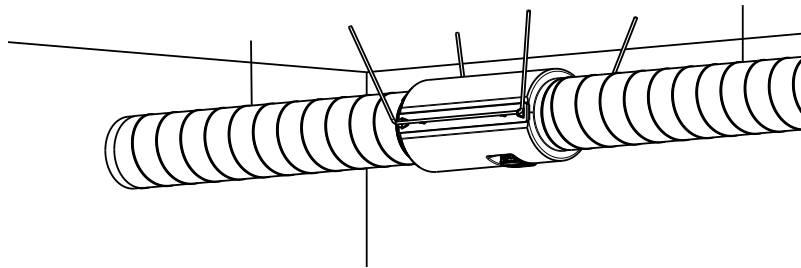
Installation options prio silent® XP 150-315

A

Flap



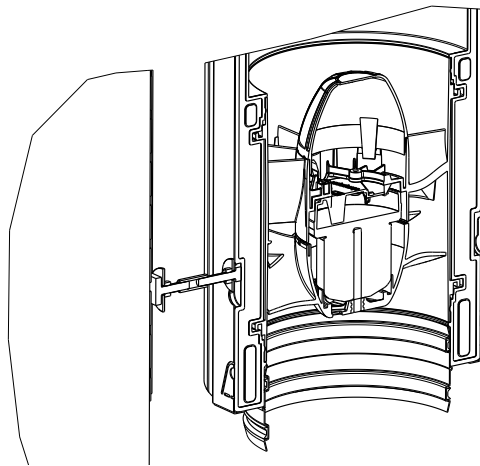
Example – Rope installation



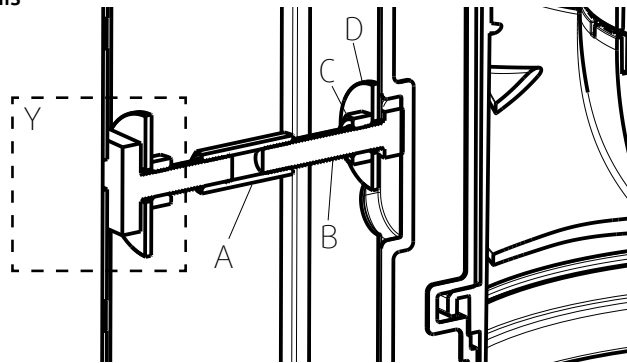
B

Optional key hole.

Overview



Details



A Sleeve with female thread M8

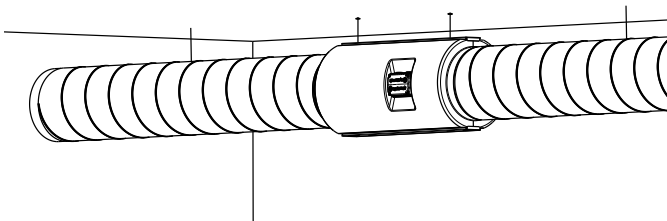
B Screw M8 (e.g. DIN 933)

C Nut M8

D Washer

Y- Installation example

“Rail” or “screws and dowels” installation on a wall or ceiling.



## 4.1 Commissioning



### Danger

- All electrical connections must be carried out by an authorized installer and in accordance with local rules and regulations.

#### Before initial operation, check the following:

- Electrical connection has been properly completed.
- Protective earth has been connected.
- Safety devices in place (protection grid).
- Leftover installation materials and foreign materials have been removed from the casing.

#### Testing the installation:

- Adjustment may be required in the electrical compartment during test (i.e. changing of the potentiometer), however during operation the lid must be closed.

#### When putting into operation, check the following:

- Smoothness of motor operation, (no abnormal noises).

## 5 Maintenance

### 5.1 Important



### Danger

- Make sure that the mains power supply to the unit is disconnected before performing any maintenance or electrical work!
- Fan impeller has come to a complete standstill.
- The unit is heavy. Be careful during transport and installation. Risk of injury through pinching. Use protective clothing.
- Do not lift the fans by the connecting cable, connection box, motor bracket, impeller or inlet cone.

### 5.2 Cleaning the fan



### Warning

- Make sure that the mains power supply to the unit is disconnected before performing any maintenance or electrical work!
- Fan impeller has come to a complete standstill.



### Caution

- Beware of sharp edges during maintenance, use protective gloves. Risk of injury through pinching.

The fan should be cleaned when necessary, at least once a year to avoid imbalance and unnecessary damage to the bearings. The fan bearings are maintenance free and should only be replaced if damaged. Do not use a high-pressure cleaner (steam jet) when cleaning the fan. Ensure that the fan impeller's balance weights are not moved or the fan impeller distorted. Listen for abnormal operating noise.

## 6 Troubleshooting

The following applies in case the fan has stopped:

- Try to restart the fan by cutting the power a couple of minutes.
- Ensure that the impeller is not locked. Disconnect the power supply, remove any obstacles. Check that the fan starts after reconnecting the current. Should the fan not start please contact your place of purchase.

## 7 Deinstallation/dismantling

Deinstall and dismantle the fan in reverse order of installation and electrical connection

## 8 Disposal

- ◆ Ensure material is recycled. Observe national regulations.
- ◆ The device and the transport packaging are predominantly made from recyclable raw materials.
- ◆ Disassemble the fan into its components.
- ◆ Separate the parts according to:
  - reusable material
  - material groups to be disposed of (metal, plastics, electrical parts, etc.)



Systemair GmbH  
Seehöfer Str. 45  
97944 Boxberg  
Germany

Tel.: +49 (0)7930/9272-0  
Fax: +49 (0)7930/9273-92

[info@systemair.de](mailto:info@systemair.de)  
[www.systemair.de](http://www.systemair.de)