Systemair reserves the rights to alter their products without notice.
This also applies to products already ordered, as long as it does not affect the previously agreed specifications.
1 General information

1.1 Notice Symbols

**Danger**
- Direct hazard
  - Failure to comply with this warning will lead directly to death or serious injury.

**Warning**
- Potential hazard
  - Failure to comply with this warning may lead to death or serious injury.

**Caution**
- Hazard with a low risk
  - Failure to comply with this warning may lead to moderate injuries.

**Important**
- Hazard with risk of damage to objects
  - Failure to comply with this warning will lead to damage to objects.

**Note:**
Useful information and instructions.

1.1.1 Instruction symbols

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Instruction with fixed sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>◇ Carry out this action</td>
<td>1. Carry out this action</td>
</tr>
<tr>
<td>◇ (if applicable, further actions)</td>
<td>2. Carry out this action</td>
</tr>
<tr>
<td>◇ (if applicable, further actions)</td>
<td>3. (if applicable, further actions)</td>
</tr>
</tbody>
</table>

2 Safety notes

**Note:**
Planners, plant builders and operators are responsible for the proper assembly and intended use.

◊ Please read and save these instructions for future reference.
◊ Thoroughly read the manual before attempting to assemble, install, operate, or maintain the product described.
◊ Observe all state and local building codes.
◊ Use product in its intended application; general ventilation only.
◊ Provide generally prescribed electrical and mechanical protective devices.
◊ During installation, electrical connection, commissioning, troubleshooting, and maintenance, secure the location and premises against unauthorized access.
◊ Do not circumvent or disable safety components.
◊ Observe all the warnings and markings shown on the product.
◊ The device is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge unless they have been given supervision or instruction.
◊ Do not allow children to play with the device.
Note:
The operator is responsible for ensuring that personnel are instructed and have understood the contents of the operating instructions. If something is unclear, please contact Systemair or its representative.

2.1 Personnel

The fan may only be used by qualified, instructed and trained personnel. The persons must know the relevant safety directives in order to recognize and to avoid risks. The individual activities and qualifications can be found in Table 1 Qualifications, below.

Table 1 Qualifications

<table>
<thead>
<tr>
<th>Activities</th>
<th>Qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage, operation, transport, cleaning, disposal</td>
<td>Trained personnel</td>
</tr>
<tr>
<td>Electrical connection, commissioning, electrical disconnection</td>
<td>Licensed Electrician</td>
</tr>
<tr>
<td>Installation, disassembly</td>
<td>Licensed Riggers or a Certified Contractor</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Licensed Electrician</td>
</tr>
<tr>
<td>Repair</td>
<td>Licensed Electrician</td>
</tr>
</tbody>
</table>

2.2 Personal protective equipment

Warning

Wear appropriate protective equipment during all work in the vicinity of the fan, as dictated by local and national code.

◊ All personnel working with the fan must abide by the USA Code of Federal Regulations, Title 29: Labor, Part 1910—OCCUPATIONAL SAFETY AND HEALTH STANDARDS - Subpart I—Personal Protective Equipment.

2.3 5 rules of electrical safety

◊ Disconnect (disconnection of the electrical system from live components at all terminals)
◊ Prevent reactivation
◊ Test absence of voltage
◊ Ground and short-circuit
◊ Cover or restrict adjacent live parts

3 Warranty

For the assertion of warranty claims, the products must be correctly connected and operated and used in accordance with the datasheets. Further prerequisites are a completed maintenance plan with no gaps and a commissioning report. Systemair will require these in the case of a warranty claim. The commissioning report is a component at the end of this manual. The maintenance plan must be implemented by the installer or building operations team. See section 11.3 Maintenance for the maintenance plan.

4 Delivery, transport, storage

4.1 Safety information

Warning

Risk from rotating blades.

◊ Prevent access by unauthorized persons by safety personnel or access protection.
4.2 Delivery
Each fan leaves Systemair in proper mechanical and electrical condition. The fan should remain in the original packaging until the final delivery to the installation site.

4.2.1 Checking delivery
◊ Unpack the fan carefully.
◊ Only remove the packaging shortly before assembly.
◊ Wear protective equipment during all work in the vicinity of the fan, see 2.2 Personal protective equipment.
◊ Check the packaging and the fan for transport damage. Any findings should be noted on the cargo manifest.
◊ Check completeness of the delivery.

4.3 Transport
4.3.1 Safety information
◊ Never transport the fan by the connecting cables, terminal box, impeller, protection grill, or inlet cone.
◊ During open transport, please make sure that water cannot penetrate the fan housing.
◊ We recommend transporting the fan to the installation site in the original packaging.
◊ On the job site, you may remove the diagonal wood bracing to separate the single crates, keeping them protected to deliver to each installation location.

◊ Load and unload the fan carefully.
◊ Use hoisting or lifting equipment that is suitable for the weight to be hoisted.
  ◦ Each crated IV50 EC unit is 260 Lbs. (118kg)
  ◦ Each IV50 EC unit out of the crate is 162 Lbs. (75 kg)
◊ Use the fan packaging exclusively as transport protection and not as a lifting aid.

4.4 Storage

Warning
Risk of injury to personnel and damage to the fan.
Do not stack the fans on top of one another after uncrating.
Use hoisting and/or lifting equipment that is suitable for the weight to be vertically moved.

Preconditions:
Store the devices in a clean, dry and vibration-free environment.
Storage temperature should be between -20°C and 60°C.

Storage for more than 3 months:
Turn the impeller at least 10 revolutions, once per month.
   Please ensure that the impeller is at a different position afterward.

Storage for more than 12 months:
Contact Systemair. We recommend an inspection by Systemair or its representative before commissioning.

5 Description

5.1 General
Centrifugal design: As installed, the fan conveys air in an upward direction from the intake side, via the electric motor, to the horizontal outlet where the air is forced downward at an angle.
Jet fans – also known as impulse or induction fans – support the natural flow between the supply-air and extract-air zones. They provide motion in regions with low airspeeds.

5.2 Intended Use
The IV50-EC is an induction jet fan intended to operate in an enclosed vehicular facility where occupants may be exposed to elevated levels of harmful pollutants.
Rated for continuous duty.
The temperature of the air transported through the fan must not exceed the maximum ambient temperature stated on the nameplate.
For optimum operation, the jet fan must be suspended from the ceiling in such a position that the intake and outlet are unobstructed.

5.3 Incorrect Use
Incorrect use refers to using the fan in ways other than that described above (section 5.2). The following examples illustrate incorrect and hazardous applications:
Not suitable for Hazardous location environments (Class 1, Class 2, or Class 3).
Not suitable for use in environments containing grease-laden air.
Not rated for fire or smoke extraction.

5.4 Type key
The following table shows the model name breakdown for the Jet Fan products in this manual:

<table>
<thead>
<tr>
<th>IV</th>
<th>50</th>
<th>EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Induction Fan</td>
<td>Thrust (Newtons)</td>
<td>Motor Type (EC - electronically commutated)</td>
</tr>
<tr>
<td></td>
<td>See catalog for exact data</td>
<td></td>
</tr>
</tbody>
</table>
5.5 **Dimensions**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>øE</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.8 (276)</td>
<td>32.8 (834)</td>
<td>7.3 (185)</td>
<td>14.5 (370)</td>
<td>.5 (14)</td>
<td>10.2 (259)</td>
<td>50.5 (1284)</td>
</tr>
</tbody>
</table>

Dimensions are in inches (mm)

6 **Nameplate and type key**

6.1 **Nameplate**

The following nameplate is shown as an example of formatting. The shown image is for the IV-50 EC model specifically.

**Note:**
Variation in the current draw of an Electronically Commutated Motor can be expected, which is dependent on the line impedance.
- Current variation can be caused by the distance of the fan unit from the voltage source, which has an impact on total line impedance.
- For example, a long distance from the transformer/supply results in increased line impedance, which reduces the motor current draw. In other words, the closer the unit is to the voltage source, the lower the impedance, and the higher the current draw.
7 Installation

7.1 Safety information

Warning
Danger from falling fan or fan parts.

◊ Check the surface before installation for load-bearing capacity.
◊ Consider all static and dynamic loads when selecting hoisting equipment and fastening components.
◊ Installation may only be carried out by adequately qualified persons, see Table 1: Qualifications
◊ Wear protective equipment during all work in the vicinity of the fan, see 2.2 Personal protective equipment.
◊ Abide by the system-related conditions and requirements of the system manufacturer or plant constructor.

General safety information
◊ Safety elements may not be dismantled, circumvented or deactivated.
◊ Move the impeller of the fan by hand before installation to ensure freedom of motion.
◊ Prevent the possibility of foreign bodies being drawn into the impeller during operation.
◊ Remove all foreign material from inside the housing, if applicable.
◊ Due to the potential for debris falling or collecting inside the unit during shipping or uncrating, personnel should avoid being downstream of the airflow (near the exhaust point) during initial start-up.

Warning
Risk of electric shock and damage to fan.

◊ DO NOT DRILL into the fan housing due to the internally mounted controller and fan internal wiring.

7.2 Preconditions
◊ Ensure that the fan and all its components are undamaged.
◊ Ensure that there is enough space to install the fan.
◊ Protect against dust and moisture when installing.
◊ Ensure that the information on the nameplate matches up with the operating conditions.
◊ Install the fans in such a way that there is sufficient access for troubleshooting, maintenance, and repair.

7.3 Lifting and positioning

Caution
Risk of parts falling down.

◊ Lift the fan unit slowly and carefully.
◊ Use hoisting gear permitted for the weight of the fan, which can be found on the product website.
◊ Use transport equipment if available.

7.4 Mounting options

Caution
Risk of parts falling down.

◊ When installing the fan, pay attention to its weight (see section 4.3.1 for unit net weight).
◊ Mounting to concrete:
  o If using Post-Installed Mechanical Anchors (expansion or undercut), anchors must be tested and evaluated to ACI 355.2 requirements.
If using Post-Installed Mechanical Anchors (Adhesive), anchors must be tested and evaluated to ACI 355.4 requirements.

If you are mounting to steel or wood frames, you must use vibration isolators.

**Anchoring:**
- Contractor to anchor suspended unit to concrete with (1) 3/8-inch diameter concrete anchor capable of resisting 40 lbs (Safety Factor of 4 equals 160 lbs) of tension load with minimum embedment of 2-inch at each of the (4) support points.
- Refer to the anchor manufacturer's installation instructions for proper installation torque and embedment depth.

**Positioning:**
- Position the fan unit so that the outlet is pointing in the planned direction of flow.
- Provide enough free space for inspection and maintenance work on the fan unit.
- Always install in a horizontal position, parallel to the ground.

### 7.4.1 Vibration dampers

<table>
<thead>
<tr>
<th>Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk of damage to the fan due to incorrect vibration dampers.</td>
</tr>
</tbody>
</table>

- Use vibration isolators suitable for the respective product weight, as needed.
- A supplemental restraint shall be used to accomplish the support and restraint.

### 7.4.2 Resonance frequencies

<table>
<thead>
<tr>
<th>Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk of damage to the fan due to resonance frequencies.</td>
</tr>
</tbody>
</table>

- Avoid resonant frequencies.
- The minimum fan speed should be double the resonance frequency of the anti-vibration system (vibration isolators).

### 7.5 Deflectors

- Position the deflector fins so that after fastening the jet fan to the ceiling, the airflow is directed downwards at a 10° angle or as specified by the schedule.
8 Electrical connection

8.1 Safety information

Warning
Danger from electrical voltage.

◊ Observe the 5 rules of electrical safety, see 2.3 Five rules of electrical safety.
◊ Prevent the ingress of water into the connection box.
◊ The electrical connection must be carried out by qualified persons, see Table 1: Qualifications.
◊ Wear protective equipment during all work in the vicinity of the fan, see 2.2 Personal protective equipment.

Danger
Motor components and wiring may remain charged with high voltage and may cause injuries to people, even after the AC power supply has been disconnected or turned off. Wait at least 10 minutes to guarantee the full discharge of capacitors.

8.2 Preconditions

◊ Observe and respect local conditions, regulations, and laws.
◊ Abide by the system-related conditions and requirements of the system manufacturer or plant constructor.
◊ Safety elements may not be dismantled, circumvented or deactivated.
◊ Install a circuit breaker in the permanent electrical installation with the appropriate contact opening.

8.3 Protecting the motor

Important
Damage to motor due to overcurrent, overload or short circuit.

◊ Motor lines and temperature monitor lines should be laid separately on principle.
◊ Line voltage and controls wiring should be run in separate conduit.

Note: The minimum interval between consecutive starts is 5 minutes.

8.3.1 Internal motor protections

◊ The motor has the following inherent electronic protections:
◊ Input under-voltage protection
◊ Locked rotor protection
◊ Overload protection
◊ Over-temperature protection
◊ Output overcurrent / short-circuit protection
8.4 **Motor Controls**

◊ The product fan speed can be either:
◊ Option 1: On / off, set to run at maximum speed when powered
   OR
◊ Option 2: Variable speed, adjusted by an external control signal
◊ See 8.5.1 Connection Diagram - Control voltage for external speed adjust options

◊ Option 1 is the factory setting
◊ Contact Systemair if you wish to use a lower maximum fan speed than factory default without variable speed control.
◊ To activate Option 2, variable speed control, do the following three steps:
  1. Observe all safety information and preconditions.
  2. Remove the red jumper in the electrical terminal between ‘Control Voltage’ 5 (yellow) & 6 (blue) and place it in the terminal end cap.
  3. Connect the desired control signal.
     a. See 8.5.1 Connection Diagram for control options and wiring details.
◊ DO NOT use any buttons or switches located in the motor drive access cap.
   o Contact Systemair for further information.

8.5 **Field Connections**

◊ Check that the data on the nameplate matches the connection data.
◊ Complete the electrical connection according to the connection diagram.
◊ Lay the connection cables in the terminal box in such a way that allows the cover of the terminal box to be closed without resistance.
◊ Screw the lid of the terminal box to 18 Inch-Lbs.
◊ Connect the cable end in a dry environment.

8.5.1 **Connection Diagram**

◊ All connections shall be made using the supplied quick connect lever-action terminals.

**Line voltage (L1, L2, ):**
- Field power connections are to be made in the electrical box
- The grounding terminal is electrically connected to the unit through the DIN rail.

**Control voltage (1-6):**
The speed can be adjusted by the input signals labeled 'control voltage', see Section 8.4 for set up:
- DC voltage (blue, black): 2 to 10V DC [tolerance: +10%]
- DC current (red, black): 4 to 20mA DC [tolerance: +10%]
- Frequency duty-cycle, PWM (brown, black): 10 to 95%
- Voltage: 10 to 24Vpk [tolerance: -5%/+10%]
- Frequency: 80Hz [tolerance: +/-2.5%]
- The motor will turn off if imposed signals are lower than 2V DC, 4mA DC or 10%.

**Speed reference connection:**
- The fan RPM may be monitored through the speed reference signal explained below.
8.6 Residual current circuit breaker

◊ All-current-sensitive residual current circuit breakers are required for use in alternating-current systems with 50/60 Hz, in combination with electronic devices such as EC motors, frequency converters or uninterruptible power supplies (UPS).

9 Commissioning

9.1 Safety information

◊ Commissioning may only be carried out by adequately qualified persons, see Table 1: Qualifications.
◊ Wear protective equipment during all work in the vicinity of the fan, see 2.2 Personal protective equipment.

9.2 Preconditions

◊ Installation and electrical connections have been correctly performed.
◊ Residual material from installation and foreign objects have been removed from the fan housing.
◊ Inlet and outlet are free of obstruction.
◊ Safety devices have been fitted.
◊ Ground cable is connected.
◊ Cable glands are tight.
◊ Nominal current (from the nameplate) is not exceeded.
◊ Data on the nameplate corresponds with the connection data.

9.3 Tests

1. Before switching the fan on, check for externally visible damage and ensure that the protective equipment functions properly.
2. Switch the fan on.
3. Checks:
   a. Direction of rotation. The direction of rotation always applies while looking at the impeller through the inlet of the fan.
      i. The direction of rotation is best observed just before the fan stops.
   b. Vibration levels
   c. Current consumption
      i. Compare the current consumption with the nominal consumption on the nameplate.
   d. Tightness of all connections
   e. Ensure correct speed control operations, if applicable
4. Switch the fan off.

10 Operation

10.1 Safety information

Warning

Hazard from electrical voltage or moving components.
10.2 Preconditions

◊ Operation may only be carried out by adequately qualified persons, see Table 1: Qualifications.
◊ The device may only be operated by people who understand the function and risks and can act accordingly.
◊ Abide by the system-related conditions and requirements of the system manufacturer or plant constructor.

11 Troubleshooting, Maintenance, & Repair

11.1 Safety information

◊ Troubleshooting/maintenance/repair may only be carried out by adequately qualified persons, see Table 1: Qualifications.
◊ Wear protective equipment during all work in the vicinity of the fan, see 2.2 Personal protective equipment.
◊ Observe the 5 rules of electrical safety, see 2.3 Five rules of electrical safety.
◊ Observe and respect local conditions, regulations, and laws.
◊ Abide by the system-related conditions and requirements of the system manufacturer or plant constructor.

11.2 Troubleshooting

Table 4: Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fan does not run smoothly</td>
<td>Impeller imbalance</td>
<td>Rebalancing by a specialist, otherwise contact Systemair</td>
</tr>
<tr>
<td></td>
<td>Soiling on the rotor</td>
<td>Clean carefully, rebalance</td>
</tr>
<tr>
<td></td>
<td>Material decomposition on the rotor due to aggressive material conveyed</td>
<td>Contact Systemair</td>
</tr>
<tr>
<td></td>
<td>Impeller rotates in wrong direction</td>
<td>Contact Systemair</td>
</tr>
<tr>
<td>Air output of fan too low</td>
<td>Impeller rotates in wrong direction</td>
<td>Contact Systemair</td>
</tr>
<tr>
<td></td>
<td>Incorrect wiring or control settings</td>
<td>Contact Systemair</td>
</tr>
<tr>
<td></td>
<td>Intake/pressure paths blocked</td>
<td>Remove blockage</td>
</tr>
<tr>
<td>Thermal protections have triggered</td>
<td>Motor overheated</td>
<td>Contact Systemair</td>
</tr>
<tr>
<td></td>
<td>Impeller rotates in wrong direction</td>
<td>Contact Systemair</td>
</tr>
<tr>
<td>Fan does not reach nominal speed</td>
<td>Building control settings</td>
<td>Correct the settings of building controls</td>
</tr>
<tr>
<td></td>
<td>Defective motor wiring</td>
<td>Contact Systemair</td>
</tr>
<tr>
<td></td>
<td>Improperly aligned drive motor</td>
<td>Contact Systemair</td>
</tr>
<tr>
<td></td>
<td>Faulty control signals</td>
<td>Check control signal wiring and verify signal value at the fan</td>
</tr>
<tr>
<td></td>
<td>Mechanical blockage</td>
<td>Remove the blockage</td>
</tr>
<tr>
<td>Motor does not rotate</td>
<td>Incorrect supply voltage</td>
<td>Check the supply voltage, re-establish the voltage supply</td>
</tr>
<tr>
<td></td>
<td>Faulty connection</td>
<td>Disconnect from the power supply, correct the connection, see circuit diagram</td>
</tr>
<tr>
<td></td>
<td>Ambient temperature too high</td>
<td>Check if the correct fan is used for your application</td>
</tr>
<tr>
<td></td>
<td>Faulty control signals</td>
<td>Check control signal wiring and verify signal value at the fan</td>
</tr>
<tr>
<td></td>
<td>Temperature monitor has responded</td>
<td>Allow the motor to cool down, find and resolve the cause of the fault</td>
</tr>
</tbody>
</table>
◊ WECM / Emerald eZA products have an LED that indicates the motor status and aids in troubleshooting. The opening is located on the rear of the IV fan unit next to the electrical box, under the gasketed screw cap. The following notes and table describe the LED operation:
◊ The LED will stay ON while the motor is running (speed bigger than zero);
◊ The LED will stay OFF while the motor is stopped (speed equals to zero);

Table 5: Motor Faults & Troubleshooting

<table>
<thead>
<tr>
<th>Blinking Periods</th>
<th>Fault</th>
<th>On Time</th>
<th>Off Time</th>
<th>Interval Time (off)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Under voltage</td>
<td>0.1 sec</td>
<td>0.1 sec</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Overload / Over current</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Overvoltage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Communication timeout</td>
<td>0.25 sec</td>
<td>0.25 sec</td>
<td>2 sec</td>
</tr>
<tr>
<td>10</td>
<td>Watchdog timeout</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Locked rotor</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note:
For all other damage/defects, please contact Systemair.
11.3 Maintenance

Warranty claims can only be made if maintenance work is carried out correctly and written evidence thereof is provided. We recommend regular maintenance intervals to ensure continuous fan operation. These maintenance intervals are specified in the “Activities” table below. In addition, the operator must carry out follow-up activities such as cleaning, replacing defective components or other corrective measures. For traceability reasons, a maintenance plan must be created which documents the work carried out. This must be created by the operator. If the operating conditions are "extreme", the maintenance intervals must be reduced so that maintenance is carried out more frequently. Examples of extreme operating conditions:

- Fan unit in rare use (less than once a month)
- Fan used for emergency operation
- Ambient temperature > 45 °C (113 °F) or < -20 °C (-4 °F)

The following checklist provides points of reference for the tasks to be carried out:

Table 6 Activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Normal Operating Conditions</th>
<th>Extreme Operating Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Every 6 mos</td>
<td>Annually</td>
</tr>
<tr>
<td>Check the fan and its components for visible damage, corrosion, and contamination.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Check the impeller for damage and imbalance.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Clean the fan/ventilation system</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Check the screwed connections for damages/defects and check that they are firmly seated.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Check the fan intake is free from contamination.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Check that the fan and its components are being used correctly.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Check the current consumption and compare this with the rated data.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Check the vibration dampers (if used) are working correctly and check for visible damage and corrosion.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Check the electrical and mechanical protective equipment is working correctly.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Check the fan’s rating plate is legible.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Check the connection clamps and screwed cable connections for damage/defects, and check that they are firmly seated.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Check the flexible connectors for damage.</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
11.4 Variable speed fans

Important
Varying speeds may lead to increased vibrations dependent on the support structure.

◊ Pay particular attention to damage from vibrations.
◊ After commissioning, start with shorter maintenance intervals.
◊ If no damage occurs, adjust the maintenance intervals up to those stated in the operating instructions.
◊ Responsibility for gradual adaptation is with the system operator/installer.

11.5 Overhaul / Further maintenance
◊ Pay attention to the safety references and preconditions as in normal maintenance.

For the following activities and functions, contact Systemair:
  o complete overhaul of motors
  o monitoring of conditions
  o vibration analysis

After 20,000 hours of operation or 5 years of normal operation:
◊ Check the condition of the shaft sealing rings and shaft bearings and take action if necessary.

11.6 Replacement parts
◊ Replacement parts must be installed by a Systemair representative and a UL witness in order to maintain the UL Safety Listing.

12 Cleaning
12.1 Safety information
◊ Cleaning may only be carried out by adequately qualified persons, see Table 1: Qualifications.
◊ Wear protective equipment during all work in the vicinity of the fan, see 2.2 Personal protective equipment.
◊ Observe the 5 rules of electrical safety, see 2.3 Five rules of electrical safety.

12.2 Preconditions
◊ The power supply has been switched off (all-pole circuit breaker).
◊ The impeller must be at a standstill.

12.3 Cleaning guidelines
◊ Do not use steel brushes or sharp-edged objects.
◊ Do not use a high-pressure cleaner (steam jet cleaner) under any circumstances.
◊ Do not bend the fan blades when cleaning.
◊ Use nylon brushes and fabric cleaning cloths.
◊ When cleaning the impeller, pay attention to balance weights that have been positioned.
◊ Keep the airways of the fan clear and clean them if necessary with a nylon brush.

13 De-installation / Dismantling
◊ De-install and dismantle the fan in reverse order of installation (7 Installation) and electrical connection (8 Electrical connection).

14 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:
  o Reusable material
  o Material groups to be disposed of (metal, plastics, electrical parts, etc.)
# Commissioning Report

## Fan

**Description:**

<table>
<thead>
<tr>
<th>Article no.:</th>
<th>Manufacturing order no.:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

**Installer**

<table>
<thead>
<tr>
<th>Company:</th>
<th>Contact person:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Company address:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tel. no.:</th>
<th>Email:</th>
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<tbody>
<tr>
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</table>

**Operator (Place of installation)**

<table>
<thead>
<tr>
<th>Company:</th>
<th>Contact person:</th>
</tr>
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<tbody>
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</table>

<table>
<thead>
<tr>
<th>Company address:</th>
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</table>

<table>
<thead>
<tr>
<th>Tel. no.:</th>
<th>Email:</th>
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</table>

### Type of connection

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Directly on line</th>
<th></th>
<th></th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Control signal (circle one):</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10V</td>
</tr>
<tr>
<td>Other:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contactor control</th>
<th></th>
<th></th>
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<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Transformer</th>
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<th></th>
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<tbody>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Frequency converter</th>
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<th></th>
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<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Sinus filter</th>
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<th></th>
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<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Shielded cables</th>
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<td></td>
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</table>

### Motor protection

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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<table>
<thead>
<tr>
<th>Motor protection switch or motor protection relay</th>
<th></th>
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<tr>
<td></td>
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<table>
<thead>
<tr>
<th>PTC resistor</th>
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<td></td>
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<td></td>
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<table>
<thead>
<tr>
<th>Resistance value [Ω]:</th>
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<table>
<thead>
<tr>
<th>Thermal contact</th>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>Electrical motor protection</th>
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<td></td>
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<table>
<thead>
<tr>
<th>Others:</th>
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<tbody>
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</table>

### Functional check

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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<table>
<thead>
<tr>
<th>Impeller easily rotatable (by hand)</th>
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<th></th>
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<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Rotation direction acc. to directional arrow</th>
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<th></th>
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<td></td>
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</table>

### Nominal data - Fan (nameplate on fan housing)

<table>
<thead>
<tr>
<th>Voltage [V]:</th>
<th>Current [A]:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Please keep the completed commissioning report in a safe place. In the case of a warranty claim, this report can be requested by Systemair.

For technical questions, please contact the technical support division of Systemair.

16 USA Declaration of Conformity

Manufacturer: Systemair Mfg.
10048 Industrial Blvd.
Lenexa KS, 66215
U.S.A.

Product Designation: Jet fans
Type Designation: IV50 EC
Manufactured since year: 2020

The manufacturer declares that the above-mentioned products in their design and construction version marketed by us comply with the safety standards listed below:

Regulations: UL705, CSA 22.2-113
Systemair reserves the rights to alter their products without notice. This also applies to products already ordered, as long as it does not affect the previously agreed specifications.