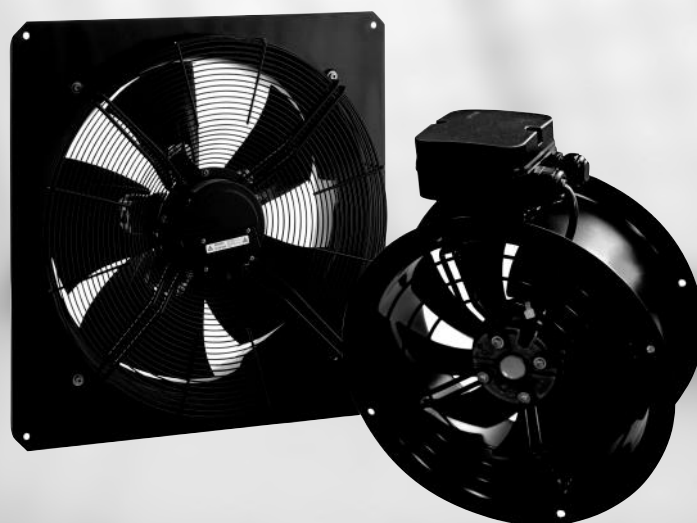


# Axial Fans AW, AR

Installation and Operating Instructions

GB

Document in original language | · 004



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## 1 General information

### 1.1 Warning symbols



#### Danger

##### Direct hazard

Failure to comply with this warning will lead directly to death or to serious injury.



#### Caution

##### Hazard with a low risk

Failure to comply with this warning may lead to moderate injuries.



#### Warning

##### Potential hazard

Failure to comply with this warning may lead to death or serious injury.

#### 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

##### Instruction

- ◆ Carry out this action
- ◆ (if applicable, further actions)

##### Instruction with fixed sequence

1. Carry out this action
2. Carry out this action
3. (if applicable, further actions)

## 2 Important safety information

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

- ◆ Read the operating instructions completely and carefully.
- ◆ Keep the operating instructions and other valid documents, such as the circuit diagram or motor instructions, with the fan. They must always be available at the place of use.
- ◆ 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.
- ◆ Only use the fan in a flawless condition.
- ◆ Provide generally prescribed electrical and mechanical protective devices.
- ◆ During installation, electrical connection, commissioning, troubleshooting, and maintenance, secure the location and premises against unauthorised access.
- ◆ Do not circumvent any safety components or put them out of action.
- ◆ Before any work on the fan, test absence of voltage.  
Even when the motor is stopped, dangerous voltages may be present on terminals.
- ◆ Keep all the warning signs on the fan complete and in a legible condition.
- ◆ 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.
- ◆ When lifting the device, use suitable lifting gear.
- ◆ Do not allow children to play with the device.

### 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 recognise and to avoid risks. The individual activities and qualifications can be found in Table 1 *Qualifications*, page 2.

**Table 1 Qualifications**

Activities	Qualifications	
Storage, operation, transport, cleaning, disposal	Trained personnel (see following note)	
Electrical connection, commissioning, electrical disconnection	Electrical expert or matching qualification	
Installation, disassembly	Fitter or matching qualification	
Maintenance	Electrical expert or matching qualification	Fitter or matching qualification
Repair	Electrical expert or matching qualification	Fitter or matching qualification
	Smoke extraction fans and EX fans only by agreement with Systemair.	

**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.

## 2.2 Personal protective equipment

◆ Wear protective equipment during all work in the vicinity of the fan.

- protective working clothes
- protective working gloves
- goggles
- protective working shoes
- helmet
- hearing protection

## 2.3 5 rules of electrical safety

1. Disconnect (disconnection of the electrical system from live components at all terminals)
2. Prevent reactivation
3. Test absence of voltage
4. Ground and short-circuit
5. 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 data sheets. 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 of this document. The maintenance plan must be created by the operator, see section Maintenance.

## 4 Delivery, transport, storage

### Safety information

#### **Warning: Risk from rotating fan blades**

◆ Prevent access by unauthorised persons by safety personnel or access protection.

#### **Warning: Suspended loads**

- ◆ Do not walk under suspended loads.
- ◆ Make sure that there is nobody under a suspended load.

### Delivery

Each fan leaves our plant in an electrically and mechanically proper condition. We recommend transporting the fan to the installation site in the original packaging.

#### **Checking delivery**

- ◆ Check the packaging and the fan for transport damage. Any findings should be noted on the cargo manifest.
- ◆ Check completeness of the delivery.

## Unpacking

**When opening the transport packaging, there is a risk of damage from sharp edges, nails, staples, splinters etc.**

- ◆ Unpack the fan carefully.
- ◆ Check the fan for obvious transport damage.
- ◆ Only remove the packaging shortly before assembly.

## Transport

### Safety information

**Warning: Electrical or mechanical hazards due to fire, moisture, short circuit or malfunction.**

- ◆ Never transport the fan by the connecting wire, terminal box, impeller, protection grille, inlet cone or silencer.
- ◆ In open transport, please make sure that no water can penetrate into the motor or other sensitive parts.
- ◆ We recommend transporting the fan to the installation site in the original packaging.

**Caution: If transported without care during loading and unloading, the fan may be damaged.**

- ◆ Load and unload the fan carefully.
- ◆ Use hoisting equipment that is suitable for the weight to be hoisted.
- ◆ Observe the transportation arrows on the packaging.
- ◆ Use the fan packaging exclusively as transport protection and not as a lifting aid.

## Storage

- ◆ Store the fan in the original packaging in a dry, dust-free location protected against weather.
- ◆ Avoid the effects of extreme heat or cold.

### Hazard due to loss of function of the motor bearing

- ◆ Avoid storing for too long (recommendation: max. 1 year).
- ◆ Check that the motor bearing functions properly before installation.

## 5 Description

### 5.1 Intended use

- Systemair axial fans of the series AR and AW are exclusively designed as a built-in device for conveying air according to its technical data.

### 5.2 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 abrasive, explosive, combustible air or air with solid particles.
- Operation in an explosive atmosphere
- Installation outside without weather protection
- Operation without duct system or protection grille
- Operation with the air connections closed

### 5.3 Technical data

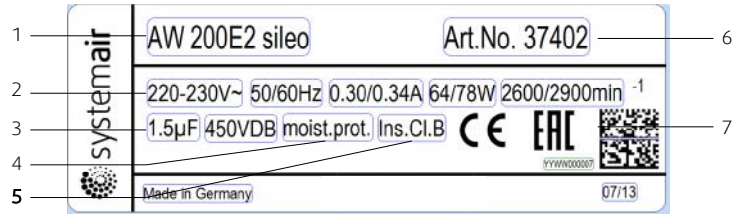
Max. ambient temperature [°C]	see data sheet, available in our online catalogue.
Max. temperature of transported air [°C]	see data sheet, available in our online catalogue.
Sound pressure [dB]	see data sheet, available in our online catalogue.
Voltage, current, frequency, enclosure class, weight	see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

The motor data can be found on the name plate of the motor, or in the technical documents of the motor manufacturer.

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

## 6 Name plate and type key

- 1 Type designation
- 2 Voltage/frequency/current/  
power/fan impeller speed
- 3 Capacity/capacitor voltage\*
- 4 Moisture protection\*
- 5 Insulation class



- 6 Article no.
- 7 Certifications

\* Not available with every device

**Table 2 Type key**

AW	200	DV	L	
				-L
				-
				<b>Motor type</b>
				EC
				E2
				E4
				E6
				DV
				DS
				EZ
				EV
				ES
				D4
				D6
				<b>Size</b>
				<b>Fan type</b>
				AW
				AR



## 7 Installation

### Safety information

#### General safety information

#### General safety information

- ◆ Observe 2 *Important safety information*, page 1
- ◆ Use installation material with fire resistance classes that meet temperature requirements.
- ◆ Provide contact and intake protection and ensure safety distances according to DIN EN ISO13857 and DIN 24167-1.
- ◆ To reduce transmission of vibration to the duct system, we recommend flexible connections from our accessory range, see chapter Accessories.

#### Preconditions

- ◆ Ensure that the fan and all its components are undamaged.
- ◆ Fit the fans in such a way that there is sufficient access for installation, troubleshooting, maintenance and repair.
- ◆ Protect against dust and moisture when installing.
- ◆ Ensure that the information on the name plates (fan and motor) matches up with the operating conditions.

### 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. Ensure a free exhaust. See Fig. 1 *Straight ducts*, page 5.

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

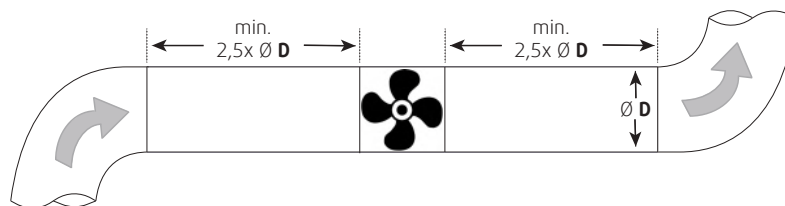


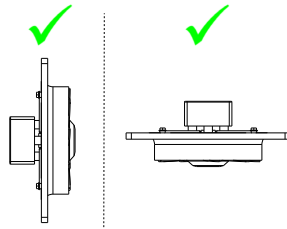
Fig. 1 Straight ducts

### 7.1 Installation positions

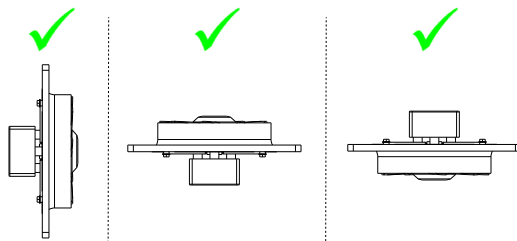
The installation is possible in any mounting position.

AW 200 EC sileo (#35854)	AW 250 EC sileo (#35855)	AW 300 EC sileo (#35857)	AW 350 EC sileo (#35859)	AW 400 EC sileo (#35860)
--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------

AW 300E2 Axial fan (#5801)	AR 300E2 Axial fan (#34461)	AR 200E2 sileo Axial fan (#37374)	AR 200E4 sileo Axial fan (#37375)	AR 250E2 sileo Axial fan (#37376)	AR 250E4 sileo Axial fan (#37377)	AR 300E4 sileo Axial fan (#37378)
AR 315E4 sileo Axial fan (#37379)	AR 315DV sileo Axial fan (#37380)	AR 350DV sileo Axial fan (#37382)	AW 200E2 sileo Axial fan (#37402)	AW 200E4 sileo Axial fan (#37403)	AW 250E2 sileo Axial fan (#37404)	AW 250E4 sileo Axial fan (#37405)
AW 300E4 sileo Axial fan (#37406)	AW 315E4 sileo Axial fan (#37407)	AW 315DV sileo Axial fan (#37408)	AW 350E4 sileo Axial fan (#37409)	AW 350DV sileo Axial fan (#37410)	AW 450 EC sileo (#35863)	AW 500 EC sileo (#35865)
AW 500D EC (#35866)	AW 560D EC sileo (#35867)	AW 630D EC sileo (#35872)	AW 710D-L EC sileo (#35876)	AW 800D EC sileo (#35879)	AW 1000D EC sileo (#35899)	



AW 400DV sileo Axial fan (#34124)	AW 400E4 sileo Axial fan (#34125)	AW 450DV sileo Axial fan (#34126)	AW 500DV sileo Axial fan (#34131)	AW 560DV sileo Axial fan (#34134)	AW 630DS sileo Axial fan (#34138)	AW 710DV sileo Axial fan (#34140)
AW 910DS sileo Axial fan (#34157)	AR 710E6 sileo Axial fan (#34482)	AR 710DV sileo Axial fan (#34483)	AR 710DS sileo Axial fan (#34484)	AR 910DS sileo Axial fan (#34486)	AR 1000DS sileo Axial fan (#34487)	AR 400E4 sileo Axial fan (#37383)
AR 450E4 sileo Axial fan (#37385)	AR 450DV sileo Axial fan (#37386)	AR 500E4 sileo Axial fan (#37387)	AR 500DV sileo Axial fan (#37388)	AR 560E4 sileo Axial fan (#37389)	AR 560DV sileo Axial fan (#37390)	AR 630E6 sileo Axial fan (#37391)
AR 630DS sileo Axial fan (#37393)	AW 450E4 sileo Axial fan (#37411)	AW 500E4 sileo Axial fan (#37412)	AW 560E4 sileo Axial fan (#37413)	AW 630E6 sileo Axial fan (#37414)	AW 630DV sileo Axial fan (#37415)	AW 800DS sileo Axial fan (#37416)
AR 630DV sileo Axial fan (#37392)	AR 800DS sileo Axial fan (#37418)	AR 400DV sileo Axial fan (#37384)	AW 710DS sileo Axial fan (#34141)	AW 1000DS sileo Axial fan (#34144)	AW 710E6 sileo Axial fan (#34142)	



## 8 Electrical connection

### Safety information

- ◆ Observe 2 *Important safety information*, page 1
- ◆ Prevent the ingress of water into the connection box.

### Connection

- ◆ Check if the data on the nameplate matches the connection data.
- ◆ Complete the electrical connection according to the circuit diagram.
- ◆ Fans with EC- motors must be switched on/off via the control input.
- ◆ Connect the cable end in a dry environment.
- ◆ Install a circuit breaker in the permanent electrical installation, with a contact opening of at least 3 mm at each pole.

### Protective grounding wire

The protective grounding must have a cross-section equal to or greater than that of the phase conductor.

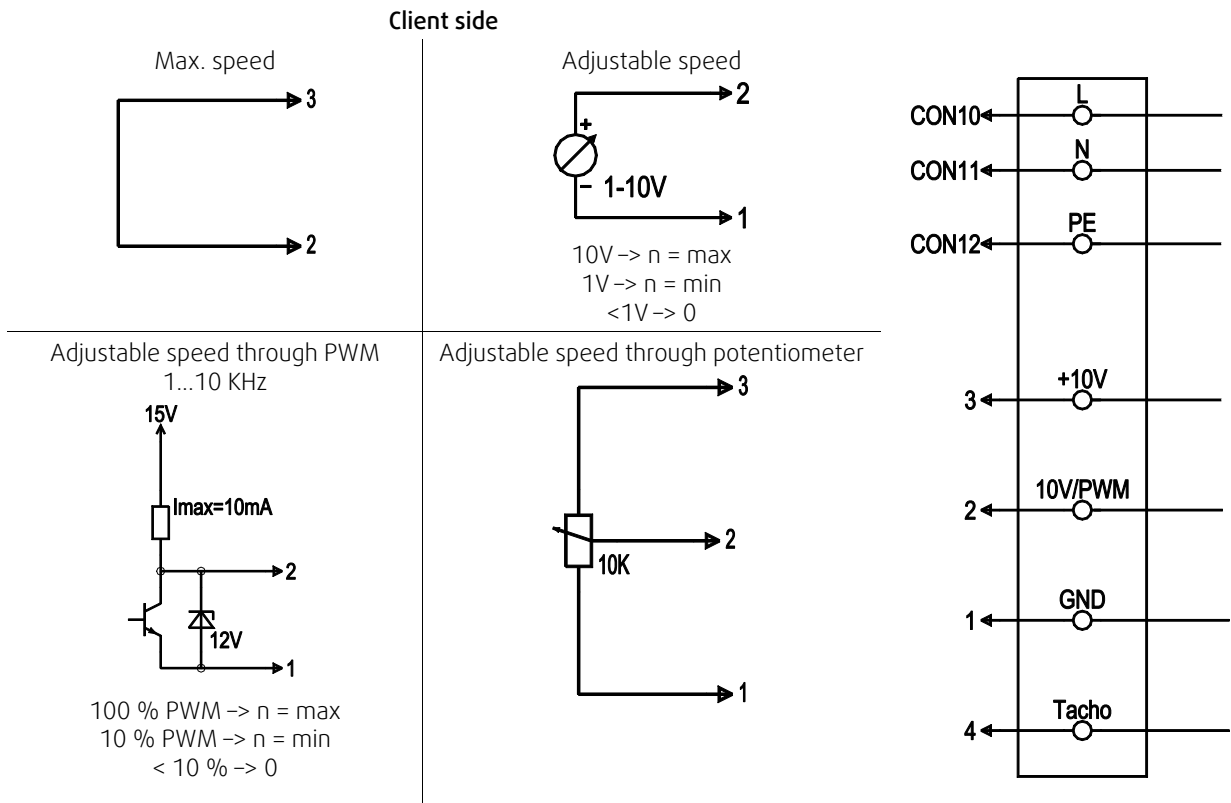
### Residual current circuit breaker

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).

**Table 3 Description of electrical connections of the following fans: AW 200 EC sileo (#35854), AW 250 EC sileo (#35855), AW 300 EC sileo (#35857), AW 350 EC sileo (#35859)AW 400 EC sileo (#35860), AW 450 EC sileo (#35863)**

Wire no.	Connection	Color	Function/assignment
CON10	L	black or brown	Power supply, see name plate for voltage range
CON11	N	blue	Neutral conductor
CON12	PE	green/yellow	Protective conductor
1	GND	blue	GND-connection of the controller interface
2	0...10 V PWM	yellow	Controller input 0...10 V or PWM
3	10 V	red	Voltage output 10 V / Short-circuit-proof power supply for external devices (e.g. poti) <b>I max=1.1mA:</b> AW 200 EC sileo (#35854)AW 250 EC sileo (#35855), AW 300 EC sileo (#35857), AW 450 EC sileo (#35863) <b>I max=10mA:</b> AW 350 EC sileo (#35859)AW 400 EC sileo (#35860)
4	Tacho*	white	Speed output: Open Collector, 1 impulse per revolution, electrically isolated, Isink_max = 10 mA
	NC*	white 1	Status relais, open for failure
	COM*	white 2	

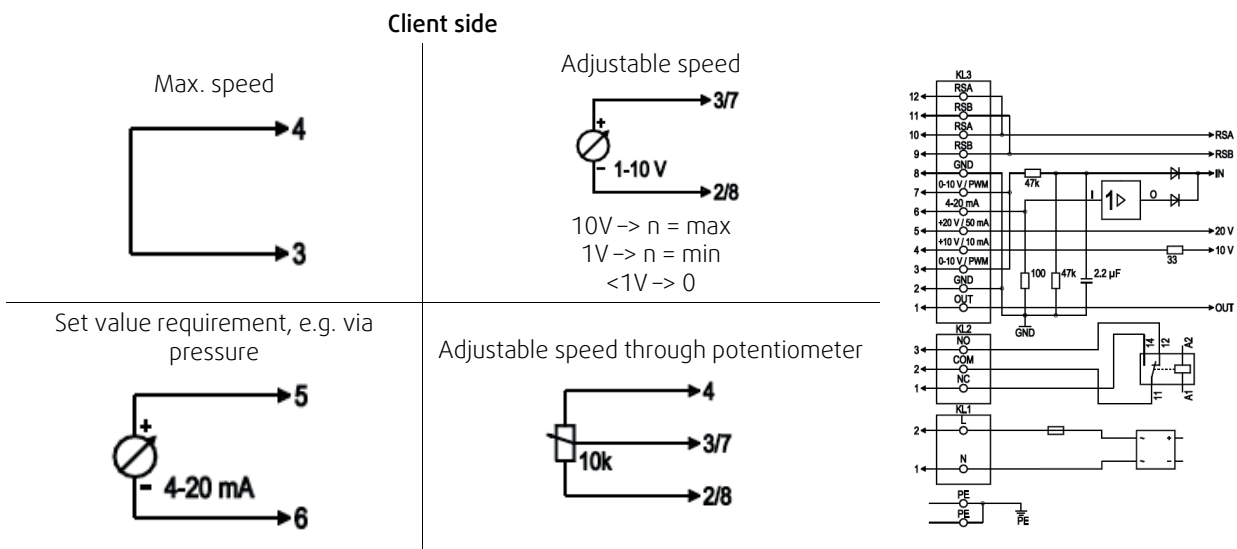
\* Not available with every device



**Table 4 Description of electrical connections of the following fans: AW 500 EC sileo (#35865), AW 500D EC (#35866), AW 560D EC sileo (#35867)**

Wire no.	Connection	Function/assignment
PE	PE	Protective conductor
1	L1	KL1 Power supply, see name plate for voltage range
2	L2	
3	L3	
1, 2*	N, L*	KL1 Power supply, see name plate for voltage range
1	NC	Status relais, open for failure
2	COM	KL2 Status relais, changeover contact, common connection (2 A, max. 250 VAC, min. 10 mA, AC1)
3	NO	
1	OUT	Analog output, 0-10 VDC, max. 3 mA, SELV output of current motor modulation level: 1 V corresponds to 10% modulation level. 10 V corresponds to 100% modulation level.
2, 8	GND	GND-connection of the controller interface
3, 7	0...10 V PWM	Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to 4-20 mA input, SELV
4	+10 V	KL3 Voltage output 10 VDC (+/- 3%), max. 10 mA, power supply for ext. devices (e.g. potentiometer), SELV
5	+20 V	
6	4-20 mA	Control/current sensor value input 4-20 mA, impedance 100 Ω, use only as alternative to 0-10 V input, SELV
9, 11	RSB	RS485 interface for MODBUS
10, 12	RSA	RS485 interface for MODBUS

\* AW 500 EC sileo (#35865) has a 1~ 230V Motor.



**Table 5 Description of electrical connections of the following fans: AW 630D EC sileo (#35872), AW 710D-L EC sileo (#35876), AW 800D EC sileo (#35879), AW 1000D EC sileo (#35899)**

Wire no.	Connection		Function/assignment
PE	PE		Protective conductor
1	L1		
2	L2	KL1	Power supply, see name plate for voltage range
3	L3		
3	NC		Status relais, open for failure
2	COM	KL2	Status relais, changeover contact, common connection (2 A, max. 250 VAC, min. 10 mA, AC1)
1	NO		Status relais, close for failure
1	RSB		RS485 interface for MODBUS
2	RSA		RS485 interface for MODBUS
3/10	GND		GND-connection of the controller interface
4	Ain1 U		Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain1 I; SELV
5	+10 V		Fixed voltage output 10 VDC, +10 V ±3%, max. 10 mA, short-circuit-proof power supply for external devices (e.g. pot); SELV
6	Ain1 I		Analog input 1, set value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain1U; SELV
7	Din1		Digital input 1: enable electronics enable: pin open or applied voltage 5-50 VDC disable: bridge to GND or applied voltage < 1 VDC reset function: triggers software reset after a level change to < 1 VDC; SELV
8	DIN2	KL3	Digital input 2: Switching parameter sets 1/2, according to EEPROM setting, the valid or used parameter set can be selected via bus or via digital input DIN2. Parameter set 1: pin open or applied voltage 5-50 VDC Parameter set 2: bridge to GND or applied voltage < 1 VDC; SELV
9	DIN3		Digital input 3: according to EEPROM setting, the integrated controller's direction of action can be selected as normal/inverse via bus or digital Input normal: pin open or applied voltage 5-50 VDC Input inverse: bridge to GND or applied voltage < 1 VDC; SELV
11	Ain2 U		Analog input 2, measured value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain2I; SELV
12	+20 V		Fixed voltage output 20 VDC, +20 V +25/-10%, max. 50 mA, short-circuit-proof power supply for external devices (e.g. sensors); SELV
13	Ain2 I		Analog input 2, measured value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain2U; SELV
14	Aout		Analog output, 0-10 VDC, max. 5 mA, SELV output of current motor modulation level: 1 V corresponds to 10% modulation level. 10 V corresponds to 100% modulation level.

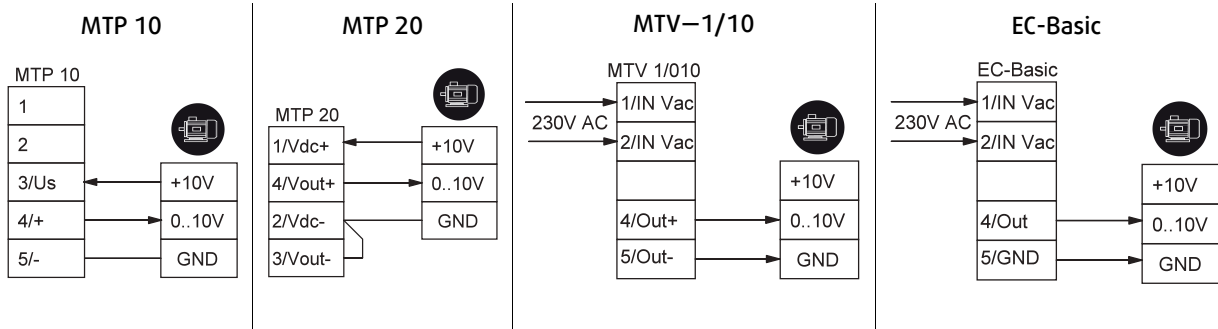
## 8.1 Electrical connection accessories

The following wiring diagrams show the electrical connections between accessories and fans (with EC motor) or frequency converters (e.g. FRQ, FRQS, FXDM) which can be controlled with a 0–10V signal. If you are not sure if your fan is equipped with an EC- motor please see chapter 6 *Name plate and type key*, page 4.

motor/frequency  
converter



Wire- colours of motors with carried out cables: +10V = red 0..10V = yellow GND = blue



## 8.2 Protecting the motor



### Note:

In fans equipped with an EC motor, there is no additional motor protection needed. The motor protection is integrated in the electronics of the motor.

### Important

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

- ◆ Lead-out temperature monitors must be integrated in the control circuit in such a way that, if a fault occurs, the motor cannot switch on again automatically after it has cooled down.
- ◆ Motor lines and temperature monitor lines should be laid separately on principle.
- ◆ Without thermal protection: Use a motor protection switch!



### Note:

Internally connected thermocontact: no external connection feasible or necessary.



### Warning

#### Risk of injury because of sudden start up of the fan.

Thermost switches switch after triggering by excess temperature and closed independently after cooling off. The fan can start up during this time.

- ◆ Consider that the impeller can start up suddenly without resetting the fault.
- ◆ Observe the 5 rules of electrical safety, see 2.3 *5 rules of electrical safety*, page 2.

## 8.3 Variable-speed fans



### Warning

Resonant frequencies may result in increased vibration in certain speed ranges. These vibrations may destroy components.

- ◆ Only operate the fan outside these speed ranges.
- ◆ Skip over these speed ranges.
- ◆ Pass through these speed ranges so quickly that any vibration cannot exceed the admissible resonant frequency values.
- ◆ Observe the operating instructions of the frequency converter.



### Caution

#### Damage as a result of incorrect commissioning of the frequency converter.

- ◆ Install the fan and frequency converter as near as possible to one another.
- ◆ Use shielded cables.
- ◆ All components (fan, frequency converter and motor) must be grounded.
- ◆ We recommend using all-pole sinus filters.
- ◆ Avoid running the fan via the frequency converter below 10 Hz.
- ◆ Heating of the motor due to use of a variable frequency drive must be checked in the application by the customer.
- ◆ Never exceed the maximum impeller rotation speed indicated on the name plate of the fan.

## 9 Commissioning

Warranty claims can only be made if commissioning work is carried out correctly and written evidence thereof is provided.

### Safety information

- ◆ Observe 2 *Important safety information*, page 1

### Preconditions

- ◆ Installation and electrical connection have been correctly performed.
- ◆ Before switching the fan on, check for externally visible damage and ensure that the protective equipment functions properly.
- ◆ Inlet and outlet are free.
- ◆ Cable glands are tight.
- ◆ Safety devices have been fitted.

### Commissioning of speed-controlled fans

Check the fan for vibrations at all normal operation speeds during commissioning. Determine and evaluate vibrations on the housing and bearing areas in accordance with DIN ISO 14694 depending on motor power and positioning.

#### Measurable vibration velocities depend e.g. on following factors:

- positioning
- bottom section/foundation state
- flow conditions

The working point of the fan, as well as used external devices and accessories, also influence the running characteristics.

### Tests

Do the tests requested in the commissioning report (15 *Commissioning Report*, page 15)

## 10 Operation

### Safety information

- ◆ Observe 2 *Important safety information*, page 1

## 11 Troubleshooting/maintenance/repair

### Safety information

- ◆ Observe 2 *Important safety information*, page 1



## 11.1 Troubleshooting

**Table 6 Troubleshooting**

Problem	Possible causes	Remedy
Fan does not run smoothly	Impeller imbalance	Rebalancing by a specialist company if possible, otherwise contact Systemair.
	Soiling on the impeller	Clean carefully, rebalance
	Material decomposition on the impeller due to aggressive material conveyed.	Contact Systemair
	Impeller rotates in wrong direction.	Change direction of rotation (swap two phases in case of a 3-phase motor). Contact Systemair
	Deformation of impeller due to excessive temperature.	Ensure that the temperature does not exceed the certified value/Install new impeller.
	Vibrations, oscillations	Check the installation of the fan/check the duct system, see 7 <i>Installation</i> , page 5.
Air output of fan too low	Fan operation in resonant frequency range	Consider chapter 8.3 <i>Variable-speed fans</i> , page 11
	Impeller rotates in wrong direction.	Change direction of rotation (swap two phases in case of a 3-phase motor).
	Wrong wiring configuration (e.g. Y instead of Delta).	Check and possibly correct the wiring configuration.
	Pressure losses too high.	Optimize the line routing.
	Flow regulators not or only partly open.	Check opening position on site.
Grinding sounds when starting or operating the fan	Intake or pressure ducts are blocked.	Remove the blockage.
	Check if the duct connections of the fan are strained.	Loosen the duct connections and realign it.
Thermal contacts/resistors have triggered	Impeller rotates in wrong direction.	Change direction of rotation (swap two phases in case of a 3-phase motor). Contact Systemair
	Missing phase	In case of a 3 phase standard motor (not EC), check if all 3 phase are present.
	Motor overheated	Check the cooling impeller (if used), measure the motor winding (if possible) / contact Systemair.
	Capacitor (if used) not or not correctly connected.	Connect the capacitor correctly.
	Motor blocked	Contact Systemair
Fan does not reach nominal speed	Defective motor winding	Contact Systemair
	Control units (if used) such as frequency converter or transformer are set incorrectly.	Correct the settings of the control units.
	Mechanical blockage	Remove the blockage.
Motor does not rotate	Faulty supply voltage	Check the supply voltage, re-establish the voltage supply.
	Faulty connection	Disconnect from the power supply, correct the connection, see circuit diagram.
	Temperature monitor has responded.	Allow the motor to cool down, find and resolve the cause of the fault.

**Troubleshooting cont'd**

Electronics/motor overheated	Insufficient cooling	Improve cooling.
	Overloaded motor	Check if the correct fan is used for your application.
	Ambient temperature too high	Check if the correct fan is used for your application.

**Note:**

For all other damage/defects, please contact Systemair.

**11.2 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:

- Kitchen exhaust fans
- Fans for stables

**Table 7 Activities**

Activity	Normal operating conditions		Extreme operating conditions	
	Every six months	Annually	Quarterly	Every six months
Check the fan and its components for visible damage, corrosion and contamination.		X		X
Check the impeller for damage and imbalance.		X		X
Check the condensate drain is working correctly.		X	X	
Clean the fan/ventilation system (see 12 <i>Cleaning</i> , page 15).	X		X	
Check the screwed connections for damages/defects and check that they are firmly seated.		X	See normal operating conditions	
Check the fan intake is free from contamination.		X		X
Check that the fan and its components are being used correctly.	X		See normal operating conditions	
Check the current consumption and compare this with the rated data.		X		X
Check the vibration dampers (if used) are working correctly and check for visible damage and corrosion.		X	See normal operating conditions	
Check the electrical and mechanical protective equipment is working correctly.		X	See normal operating conditions	
Check the fan's rating plate is legible.		X		X
Check the connection clamps and screwed cable connections for damage/defects, and check that they are firmly seated.		X	See normal operating conditions	
Check the flexible connectors for damage.	X		See normal operating conditions	

**Spare parts**

- ◆ Use original spare parts from Systemair only.
- ◆ When ordering spare parts, please specify the serial number of the fan. This can be found on the name plate.

## 12 Cleaning

### Safety information

- ◆ Observe 2 *Important safety information*, page 1

### Procedure

**Keeping the fan clean extends its service life.**

- Install a filter monitor.
- Change the filters of the ventilation system.
- 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.
- 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 brush.

## 13 Deinstallation/dismantling

Deinstall and dismantle the fan in reverse order of installation and 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:
  - reusable material
  - material groups to be disposed of (metal, plastics, electrical parts, etc.)

## 15 Commissioning Report

**Warranty claims can only be made if commissioning work is carried out correctly and written evidence thereof is provided.**

### Fan

Description: \_\_\_\_\_

Article no.: \_\_\_\_\_ Manufacturing order no.: \_\_\_\_\_

### Installer

Company: \_\_\_\_\_ Contact person: \_\_\_\_\_

Company address: \_\_\_\_\_

Tel. no.: \_\_\_\_\_ Email: \_\_\_\_\_

### Operator (Place of installation)

Company: \_\_\_\_\_ Contact person: \_\_\_\_\_

Company address: \_\_\_\_\_

Tel. no.: \_\_\_\_\_ Email: \_\_\_\_\_

Type of connection	Yes	No
Directly to mains	<input type="checkbox"/>	<input type="checkbox"/>
0-10 V signal (EC motor)	<input type="checkbox"/>	<input type="checkbox"/>
via contactor control	<input type="checkbox"/>	<input type="checkbox"/>
Transformer	<input type="checkbox"/>	<input type="checkbox"/>

Frequency converter	<input type="checkbox"/>	<input type="checkbox"/>
Sinus filter	<input type="checkbox"/>	<input type="checkbox"/>
Shielded cables	<input type="checkbox"/>	<input type="checkbox"/>

<b>Motor protection</b>	Yes	No
Motor protection switch or motor protection relay	<input type="checkbox"/>	<input type="checkbox"/>
PTC resistor	<input type="checkbox"/>	<input type="checkbox"/>
Resistance value [ $\Omega$ ]:		
Thermal contact	<input type="checkbox"/>	<input type="checkbox"/>
Electrical motor protection	<input type="checkbox"/>	<input type="checkbox"/>
Others:		

<b>Functional check</b>	Yes	No
Impeller easily rotatable (by hand)	<input type="checkbox"/>	<input type="checkbox"/>
Rotation direction acc. to directional arrow	<input type="checkbox"/>	<input type="checkbox"/>
Smooth running without unusual noise/ vibrations	<input type="checkbox"/>	<input type="checkbox"/>

<b>Nominal data - Fan (name plate on fan housing)</b>	
Voltage [V]:	Current [A]:
Frequency [Hz]:	Power [kW]:
Fan impeller speed [rpm]:	

<b>Measured data at commissioning</b>	
Voltage [V]:	Temp. of transported air [ $^{\circ}\text{C}$ ]:
Current L1 [A]*:	Fan impeller speed [rpm]:
Current L2 [A]:	<i>"Air volume", "Differential pressure" not necessary for jet fans</i>
	Air volume [ $\text{m}^3/\text{s}$ ]:
Current L3 [A]:	Differential pressure [ $\text{Pa}$ ]*:
<small>*For single-phase fans, fill in line "Current L1 [A]"</small>	<small>*<math>\Delta</math>- Pressure between suction-side and discharge of the fan</small>

If an air flow measurement is not possible, this value can be calculated using the following formula:

$$\frac{\text{Duct cross-section [m}^2\text{]}}{\text{X}} = \frac{\text{Flow speed [m/s]}}{\text{Grille measurement acc. to VDI 2044}} = \text{Air volume [m}^3/\text{s]:}$$

	Yes	No
Commissioning of the fan successful?	<input type="checkbox"/>	<input type="checkbox"/>

Date, installer's signature

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Date, operator's signature

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