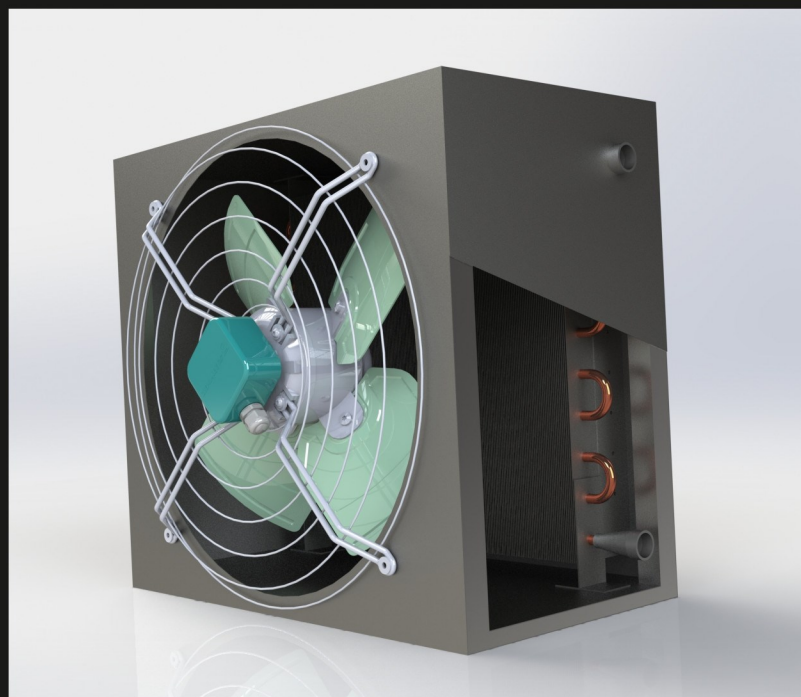




FCTS INDUSTRIAL CONVECTORS



FCTS are designed for environmentally friendly heating of rooms and halls by heated air. Heating medium is hot water.

Description

FCTS units are designed for environmentally friendly heating of rooms and halls by heated air, the heating medium is hot water. Designed in three sizes with single-row to four-row exchangers and axial ventilators. Designed for wall mounting and produced in the power range from approx. 9.6 kW to 88.7 kW (with air flow from 1500 to 7500 m³ .h-1).

FCTS - C units are designed for heating or cooling of rooms and halls by heated or cooled air according to the temperature of the supplied medium. Heating, respectively, the cooling medium is water. It is available in three sizes with three or four row heat exchangers and axial ventilators. Designed exclusively for wall mounting and produced with flow rates from 1500 to 4100 m³ .h-1.

The units can be equipped with optional accessories. In an assembly with a mixing chamber they can be used for ventilation (fresh air supply). FCTS and FCTS - C units are designed for environments protected against weather conditions with classification of climatic conditions class 3K5, without condensation, icing, ice formation and without water from sources other than rain according to EN 60 721-3-3 zm.A2., with temperature range 0 ° C to + 40 ° C and premises BNV.

The air passing through the unit must not contain solid, fibrous, sticky or aggressive particles.

Maximum water temperature at the heater inlet is 100 C and the maximum pressure is 1.4MPa. IP 54 unit covering.

Ventilator used in FCTS and FCTS - C units comply with ErP 2015

Design FCTS

Design of hot-air units of hot-water FCTS.

- FCTS units are produced in three dimensional series
- The units are manufactured with a single-row to four-row heat exchanger
- The units are supplied with the following discharge ports
 - Basic outlet
 - Basic and side outlet
 - Vertical angular outlet
 - Vertical cross outlet
- Units can be connected to the heating water distribution
 - left connection (standard)
 - right connection (must be specified in the order)

FCTS-C Design

Design of hot-air units of hot-water FCTS-C

- FCTS-C are produced in three dimensional series (1, 2, 3)
- FCS-C are produced with two-row and four-row heat exchangers.
- FCS-C are produced with two-row and four-row heat exchangers.
- FCS-C is equipped with a condensate drain with G1 / 2 thread.
- The units are supplied with the following discharge ports
 - Basic outlet
 - Basic and side outlet
- The units can be connected to the heating or cooling water system
 - left connection (standard)
 - right connection (must be specified in the order)

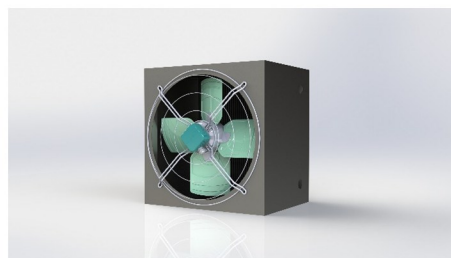
Material

FCTS and FCTS-C units are made of galvanized sheet, aluminum sheet or conex glass and powder coated

The exchanger body of the FCTS unit is made of galvanized sheet, the heating pipes are copper, the aluminum slats, the collector is with steel connecting pipes

The condensate drain pan of the FCTS-C unit is made of aluminum sheet and powder coated, the condensate drain is fitted with a G1 / 2 thread

Industrial radiator size 1



	Height	Width	Depth
Dimensional series 1	502	502	402

Technical parameters FCTS1 – 1F (Single-phase ventilator)

Exchanger	Single-row			Double-row			Triple – row		Four-row	
	Heating performance (kW)	9,6	10	11	17,1	19,5	21,5	22	24,2	26
Electrical connection (V/Hz)	230/50									
Input power (W)	90	85	120	85	120	150	120	150	120	150
Protection (A)	6									

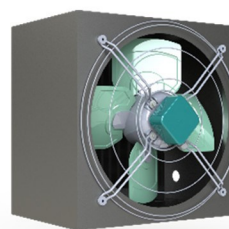
Number of lamellas for row - 84
 Type of ventilator - FB040-4ED.2F.A4L

Technical parameters FCTS1 – 3F (Triple-phase ventilator)

Exchanger	Single-row			Double-row			Triple – row		Four-row	
	Heating performance (kW)		10,5	11,7	17,5	20,6	23,7	22,4	25,8	24,8
Electrical connection (V/Hz)	3x 400/50									
Input power (W)		180	180	180	180	190	180	190	180	190
Protection (A)	6									

Number of lamellas for row - 84

Industrial radiator size 2



Dimensional series 2	Height	Width	Depth
	532	532	422

Technical parameters FCTS2 – 1F (Single-phase ventilator)

Exchanger	Single-row				Double-row			Triple – row		Four-row		
Heating performance (kW)	13,1	14,8	17,2	25,5	30,4	35	31,8	36,5	44,3	36,4	42,2	48,1
Electrical connection (V/Hz)	230/50											
Input power (W)	120	150	260	150	260	480	150	260	480	150	260	480
Protection (A)	6											

Number of lamellas for row - 114
 Type of ventilator - FB045-4ED.4F.A4P

Technical parameters FCTS2 – 3F (Triple-phase ventilator)

Exchanger	Single-row				Double-row			Triple – row		Four-row		
Heating performance (kW)	12,4	13,9	18,5	26	29,3	35,5	31,3	35	44,8	35,1	39,4	49,1
Electrical connection (V/Hz)	3x 400/50											
Input power (W)	180	180	430	140	190	450	140	190	450	140	190	450
Protection (A)	6											

Number of lamellas for row - 114

Industrial radiator size 3



Dimensional series 3	Height	Width	Depth
	600	662	422

Technical parameters FCTS3 – 1F (Single-phase ventilator)

Exchanger	Single-row				Double-row				Triple - row			Four-row	
Heating performance (kW)	25,8	29,7	32,2	45	54,5	60	51,5	61,5	68	61,1	73,5	80,3	
Electrical connection (V/Hz)	230/50												
Input power (W)	260	480	570	260	480	570	260	480	570	260	480	570	
Protection (A)	6												

Number of lamellas for row - 180
 Type of ventilator - FB050-4ED.4F.A4L

Technical parameters FCTS3 – 3F (Triple-phase ventilator)

Exchanger	Single-row				Double-row				Triple - row			Four-row	
Heating performance (kW)	28,8	29,5	36	50,5	56	66	57	64,5	74,5	68,8	74,7	88,7	
Electrical connection (V/Hz)	3x 400/50												
Input power (W)	430	450	840	430	450	840	430	450	840	430	450	840	
Protection (A)	6												

Number of lamellas for row - 180

Industrial radiator heating/cooling



Technical parameters FCTS – C - 1F (Single-phase ventilator)

Exchanger	26	31,8	36,4	51,5	61,6
Heating performance (kW)	6,5	9,7	11,4	18	20,5
Electrical connection (V/Hz)	230/50				
Input power (W)	120	150	150	260	260
Protection (A)	6				

Number of lamellas for row - 180
 Type of ventilator - FB050-4ED.4F.A4L

Technical parameters FCTS - C – 3F (Triple-phase ventilator)

Exchanger	24,8	31,3	35,1	57	68,8
Heating performance (kW)	6,2	9,4	10,8	18,8	22,4
Electrical connection (V/Hz)	3x 400/50				
Input power (W)	180	140	140	430	430
Protection (A)	6				

Installation

The unit must be installed in accordance with applicable standards and regulations. Operation safety must comply with EN ISO 12 100-2. For FCTS and FCTS-C units intended for outside air supply, the exchanger must be protected against freezing of the heating medium by an anti-icing thermostat. The manufacturer recommends installing this thermostat on all heaters.

Conditions for commissioning of FCTS and FCTS - C units:

- FCTS and FCTS-C units and their accessories must be installed in accordance with the applicable mounting instructions issued by the equipment manufacturer
- Units and their accessories must be connected only to mains voltage 230V / 50Hz or 3x400V / 50Hz
- The electrical wiring to which the units are connected must comply with the applicable regulations
- Access to the sub-cabinet to which the units are connected must be allowed

During installation, it is necessary to respect in particular valid standards concerning:

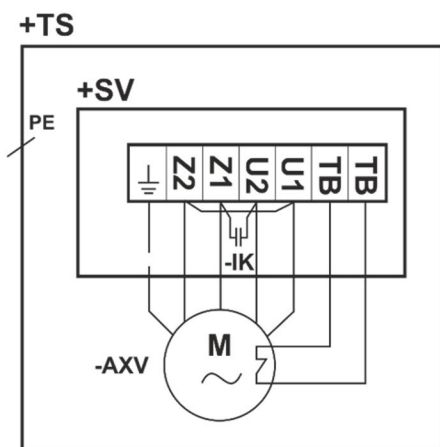
- Fire protection
- Electrical installations

The use of units in a corrosive environment is prohibited!

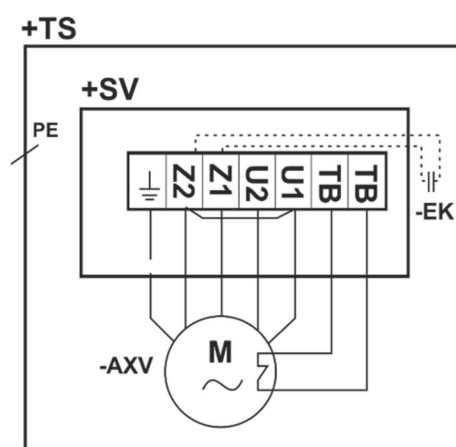
Wiring the unit with single-phase ventilator

1. Wiring diagram of single-phase motor without extended wiring

Design with internal capacitor



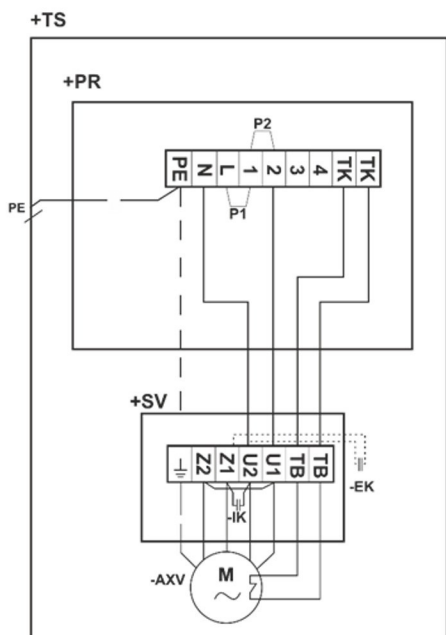
Design with external capacitor



Legend:

- EK External capacitor
- IK Internal capacitor
- TS Heating system
- SV Ventilator terminal blocks
- AXV Axial ventilator

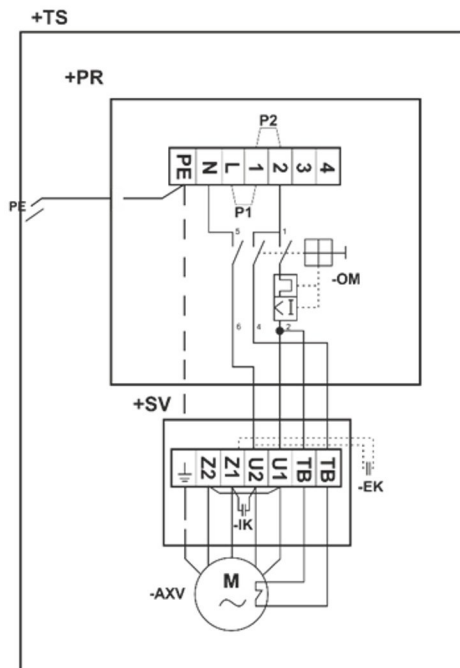
2. Wiring enabling connection of thermostat with single-phase motor



Legend:

- EK External capacitor
- IK Internal capacitor
- P1 Jumper - room thermostat
- P2 Jumper - anti-freezing thermostat
- TS Heating system
- SV Ventilator terminal blocks
- AXV Axial ventilator

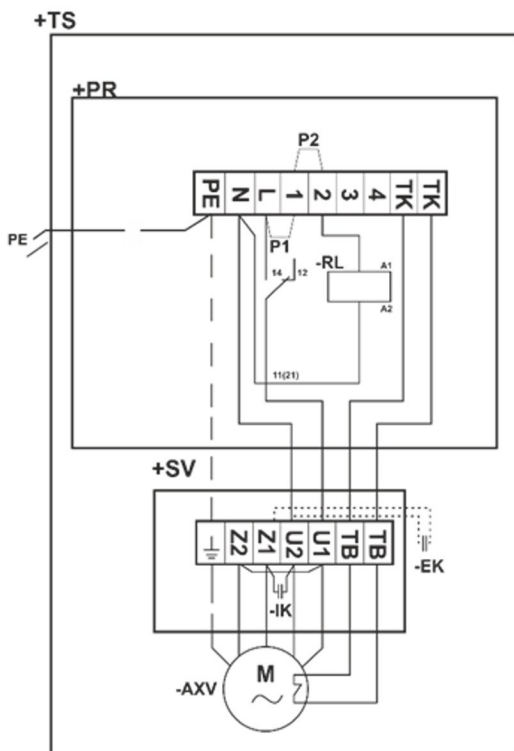
3. Wiring enabling thermostat connection and containing thermal protection of single-phase ventilator



Legend:

- EK External capacitor
- IK Internal capacitor
- OM Motor protection
- P1 Jumper - room thermostat
- P2 Jumper - anti-freezing thermostat
- PR Connection box
- TS Heating system
- SV Ventilator terminal blocks
- AXV Axial ventilator

4. Wiring enabling switching of several units with single-phase motors at the same time by one thermostat

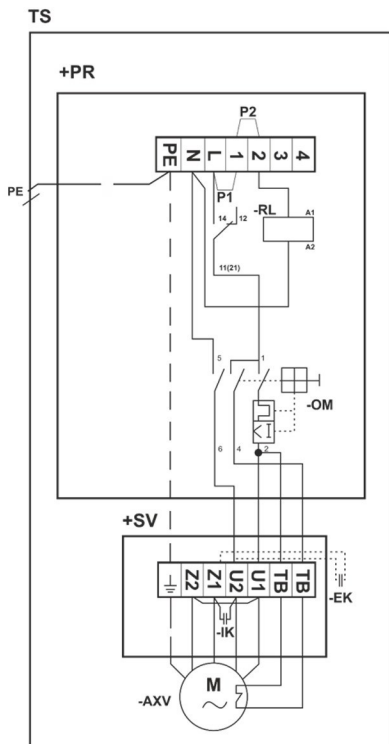


Legende:

- EK Externer Kondensator
- IK Interner Kondensator
- P1 Anschluss - Raumthermostat
- P2 Anschluss - Frostschutzthermostat
- PR Anschluss Verteilerdose
- RL Relais
- TS Klima Lüfter
- SV Klemmleiste am Lüfter
- AXV Axial Lüfter

Note:
Not suitable for voltage regulation of ventilator speed

5. Electrical installation enabling switching of several units simultaneously with one thermostat and containing thermal protection of single-phase ventilator



Legend:

- EK External capacitor
- IK Internal capacitor
- OM Motor protection
- P1 Jumper - room thermostat
- P2 Jumper - anti-freezing thermostat
- PR Connection box
- RL Relay
- TS Heating system
- SV Ventilator terminal blocks
- AXV Axial ventilator

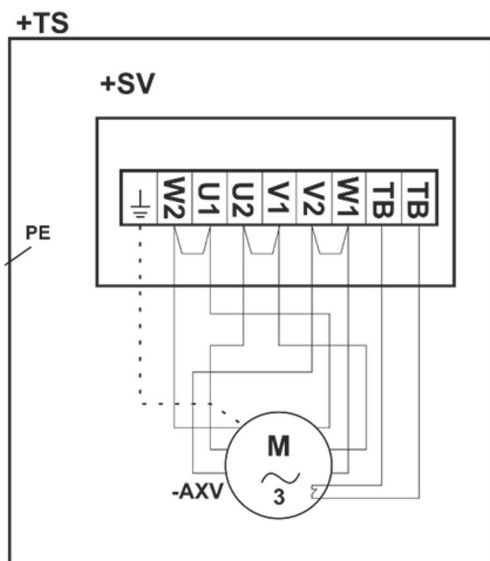
Note:

Not suitable for voltage regulation of ventilator speed

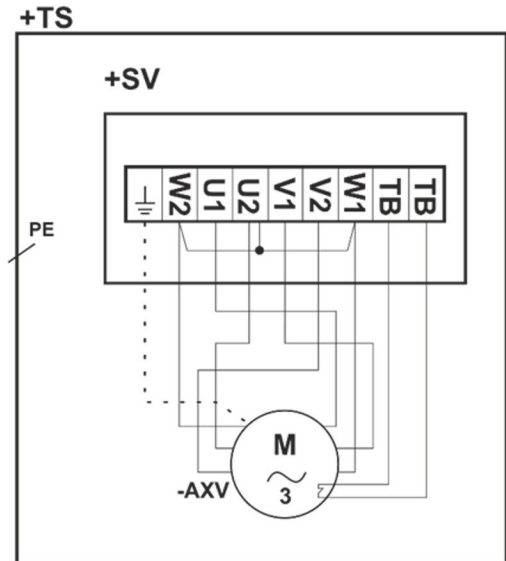
Wiring the unit with three-phase ventilator

Wiring diagram of three-phase motor without extended wiring

Connecting the ventilator to a triangle



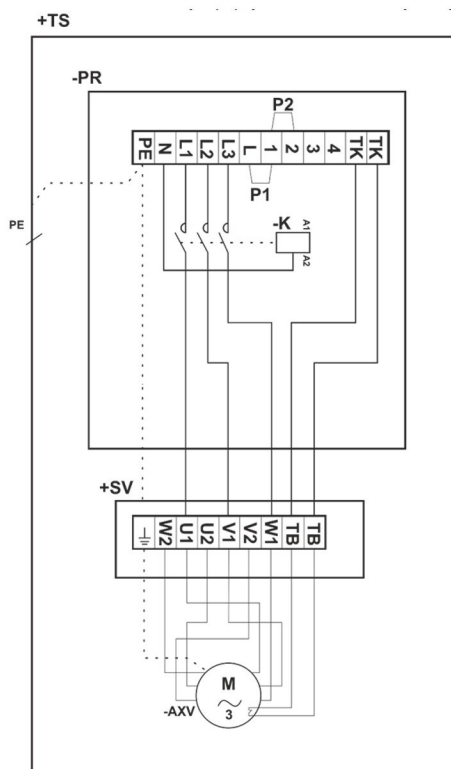
Connecting the ventilator to a star



Legend:

- TS Heating system
- SV Ventilator terminal blocks
- AXV Axial ventilator

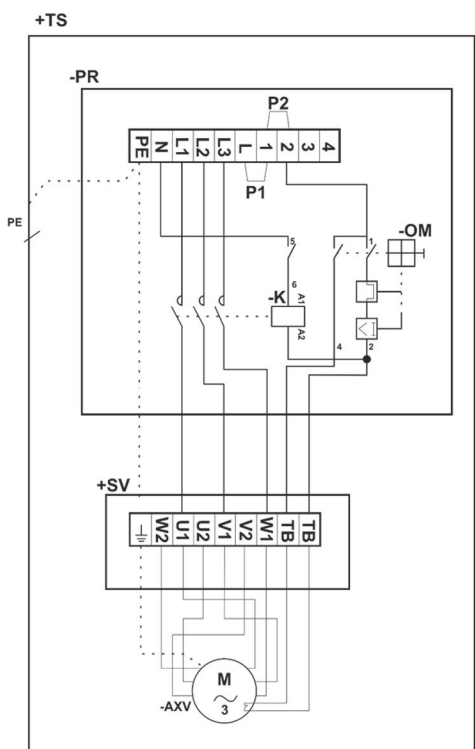
Wiring allow connection of thermostat, with three-phase motor



Legend:

- P1 Jumper - room thermostat
- P2 Jumper - anti-freezing thermostat
- PR Connection box
- TS Heating system
- SV Ventilator terminal blocks
- AXV Axial ventilator

Wiring enabling thermostat connection and containing thermal protection of three-phase ventilator



Legende:

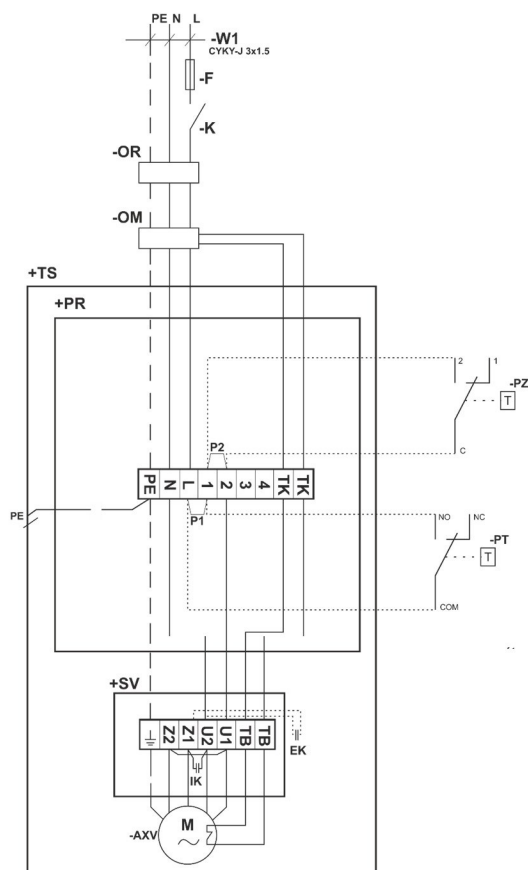
- OM Motor protection
- P1 Jumper - room thermostat
- P2 Jumper - anti-freezing thermostat
- PR Connection box
- TS Heating system
- SV Ventilator terminal blocks
- AXV Axial ventilator

Electrical connection

FCTS and FCTS-C units must be connected according to the applicable standards. The power supply must have the prescribed protection according to ČSN 33 2000-5-54 A 4sn 34 1610

The FCTS and FCTS -C units are a class I electrical appliance according to EN 61140 and are equipped with a terminal for the connection of a protective conductor. This terminal must be connected according to the above standard. A main switch must be installed in the electrical connection, which opens all working conductors. The power supply is connected to the terminals located in the unit's wiring box or to the ventilator terminals.

Installation of the electrical connection must be carried out by a worker with the appropriate authorization according to the Decree. ČÚBP No. 50/78 Coll. 98/82

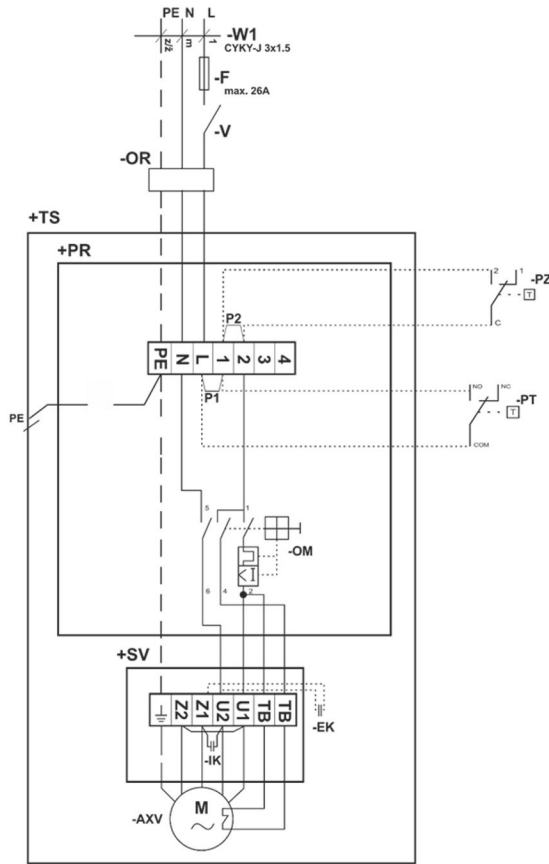


Legend:

- EK External capacitor
- IK Internal capacitor
- OM Motor protection
- P1 Jumper - room thermostat
- P2 Jumper - anti-freezing thermostat
- PR Connection box
- OR Speed controller
- TS Heating system
- SV Ventilator terminal blocks
- PZ Anti-freeze thermostat
- PT Room thermostat
- AXV Axial ventilator

Note:

- When using a room thermostat or an anti-freeze thermostat, remove the corresponding jumper
- The OM motor protection must ensure that the fan does not start running after the thermostat reacts
- The use of controls V, OR, PT and PZ is optional

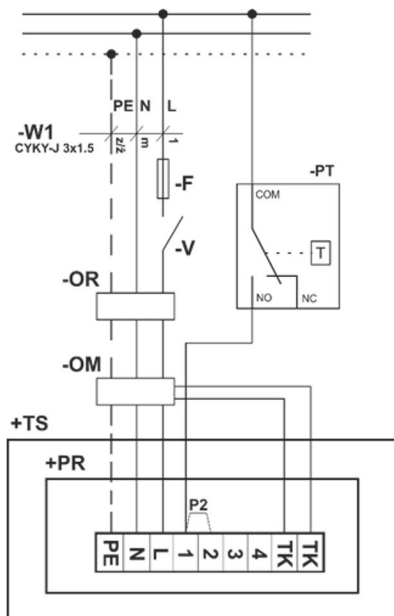


Legend:

- EK External capacitor
- IK Internal capacitor
- OM Motor protection
- P1 Jumper - room thermostat
- P2 Jumper - anti-freezing thermostat
- PR Connection box
- OR Speed controller
- TS Heating system
- SV Ventilator terminal blocks
- PZ Anti-freeze thermostat
- PT Room thermostat
- AXV Axial ventilator

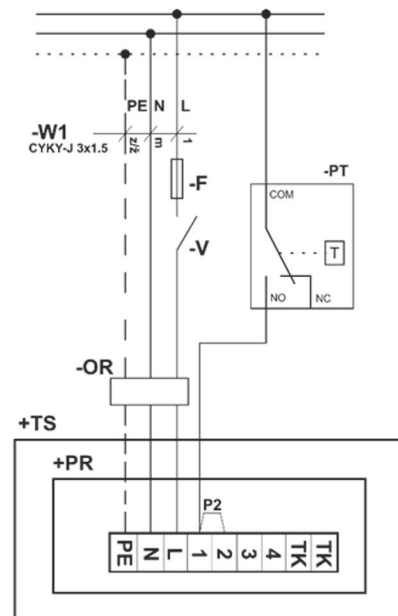
Note:

- When using a room thermostat or an anti-freeze thermostat, remove the corresponding jumper
- The OM motor protection must ensure that the fan does not start running after the thermostat reacts
- The use of controls V, OR, PT and PZ is optional



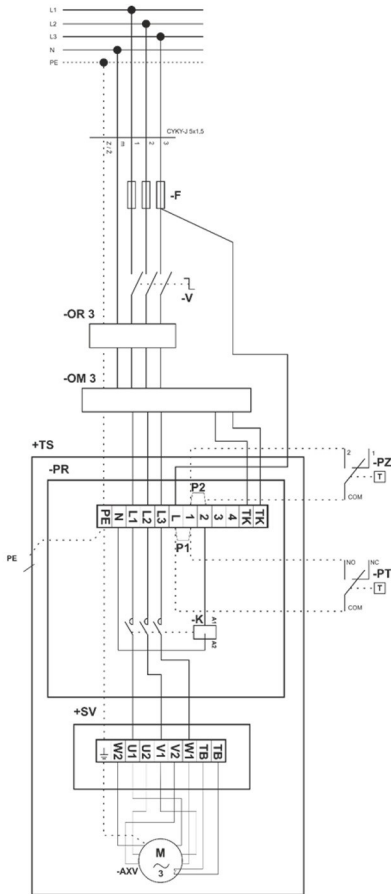
Legend:

- V Switch
- OM Motor protection
- P1 Jumper - room thermostat
- P2 Jumper - anti-freezing thermostat
- PR Connection box
- OR Speed controller
- TS Heating system
- SV Ventilator terminal blocks
- PT Room thermostat



Note:

- When using a room thermostat or an anti-freeze thermostat, remove the corresponding jumper
- The OM motor protection must ensure that the fan does not start running after the thermostat reacts
- The use of controls V, OR, PT and PZ is optional

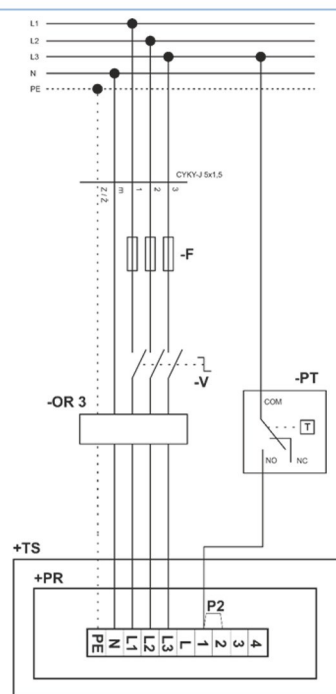
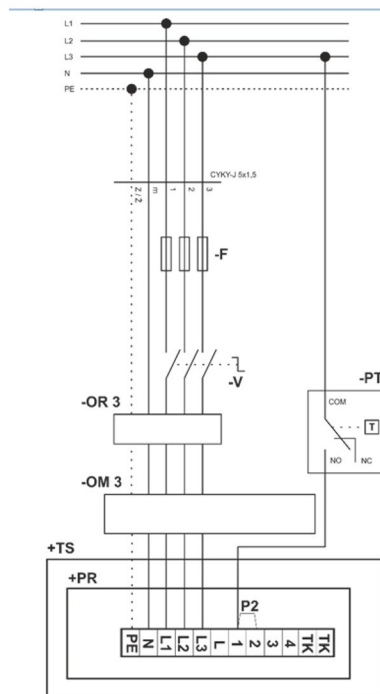


Legend:

- K Contactor
- V Switch
- OM 3 Motor protection
- OR 3 Speed controller
- P1 Jumper - room thermostat
- P2 Jumper - anti-freezing thermostat
- PR Connection box
- TS Heating system
- PT Room thermostat
- AXV Axial ventilator

Note:

- When using a room thermostat or an anti-freeze thermostat, remove the corresponding jumper
- The OM motor protection must ensure that the fan does not start running after the thermostat reacts
- The use of controls V, OR, PT and PZ is optional



Legend:

- V Switch
- OM 3 Motor protection
- OR 3 Speed controller
- P1 Jumper - room thermostat
- P2 Jumper - anti-freezing thermostat

- PR Connection box
- TS Heating system
- PT Room thermostat