

**JUMO GmbH & Co. KG**  
 Delivery address: Mackenrodtstraße 14  
 36039 Fulda, Germany  
 Postal address: 36035 Fulda, Germany  
 Phone: +49 661 6003-0  
 Fax: +49 661 6003-607  
 E-mail: mail@jumo.net  
 Internet: www.jumo.net

**JUMO Instrument Co. Ltd.**  
 JUMO House  
 Temple Bank, Riverway  
 Harlow, Essex CM20 2DY, UK  
 Phone: +44 1279 635533  
 Fax: +44 1279 635262  
 E-mail: sales@jumo.co.uk  
 Internet: www.jumo.co.uk

**JUMO Process Control, Inc.**  
 8 Technology Boulevard  
 Canastota, NY 13032, USA  
 Phone: 315-697-5866  
 1-800-554-JUMO  
 Fax: 315-697-5867  
 E-mail: info.us@jumo.net  
 Internet: www.jumousa.com



# JUMO TYA 202

## SCR Power Controller in a three-phase economy circuit

### For the continuous control of ohmic-inductive loads

The JUMO TYA 202 represents a consistent further development of the JUMO power controller technology and switches ohmic-inductive loads in a rotary current economic circuit. The micro-processor controlled power controller displays all parameters in a back-lighted LCD display and is operated using the 4 keys on the front.

SCR power controllers are employed where larger resistive and ohmic-inductive loads have to be switched, e.g. in industrial kiln construction and in plastics processing.

The SCR power controller comprises two SCRs connected in anti-parallel, the insulated cooling body and the control electronics.

SCR power controllers up to a load current of 32 A can either be clipped onto a 35 mm mounting rail or fitted to the wall with a mounting plate.

Units with a load current greater than 32A have to be fitted to the wall.

The TYA 202 works in burst-firing mode.

In burst-firing mode, the phase angle can be cut back for the first half-cycle, for driving transformer loads.

Available subordinate controls are U,  $U^2$ , I,  $I^2$  and P control.

Use of a subordinate control ensures that fluctuations in the supply voltage do not affect the control loop during the control process.

It is possible to preset a base load.

To avoid high starting or inrush currents, a soft start function is available.

The SCR power controllers comply with the operating conditions according to DIN EN 50178.

Grounding is required in conformity with the regulations of the responsible electrical utility company.



Typ 709062/ ...

## Block diagram

### Setpoint, analog inputs

Standard signals:  
0(2) – 10V, 0(1) – 5V or SSR

Standard signal:  
0(4) – 20mA

### Binary inputs

Firing pulse inhibit  
via floating inhibit

Binary input 1  
freely configurable

Binary input 2  
Power supply

Power supply

70.9062

TYA 202

### Interfaces

PROFIBUS DP or  
serial RS422/485

USB interface  
for setup program

Master-slave communication

LC-Display with  
white backlighting

Load output

Actual value output  
- standard signals

Binary output  
for centralized fault signals  
via relay or optocoupler

Extra code

## Special features

- LCD display with info line
- Simple configuration of the device via clear text display in the operator's language
- Setup program for configuration via USB interface
- Transmission of the setup data is also possible without voltage supply to the unit (supply via USB port)
- Close installation is possible
- Mains load optimization through dual energy management
- RS422/485 interface or
- PROFIBUS DP for connection to process control systems
- Softstart function with Burst-firing
- Burst-firing mode
- Resistance monitoring and limitation for MoSi<sub>2</sub> heating elements
- All versions in protection rating IP20
- Load monitoring for the detection of partial load failure or load short circuit "teach-in"
- Integrated diagnosis systems such as rotary-field detection
- UL Approval submitted

## Approvals/approval marks (see "Technical data")



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## Technical data

### Voltage supply, load current

| Code                              | Voltage supply for control electronics = max. load voltage | Fan specifications<br>Type 709061/X-0X-250... |
|-----------------------------------|------------------------------------------------------------|-----------------------------------------------|
| 024                               | AC 24V -20%...+15%, 45 ...63 Hz                            | AC 24V/30VA                                   |
| 042                               | AC 42V -20%...+15%, 45 ...63 Hz                            | AC 24V/30VA                                   |
| 115                               | AC 115V -20%...+15%, 45 ...63 Hz                           | AC 115V/30VA                                  |
| 230                               | AC 230V -20%...+15%, 45 ...63 Hz                           | AC 230V/30VA                                  |
| 265                               | AC 265V -20%...+15%, 45 ...63 Hz                           | AC 230V/30VA                                  |
| 400                               | AC 400V -20%...+15%, 45 ...63 Hz                           | AC 230V/30VA                                  |
| 460                               | AC 460V -20%...+15%, 45 ...63 Hz                           | AC 230V/30VA                                  |
| 500                               | AC 500V -20%...+15%, 45 ...63 Hz                           | AC 230V/30VA                                  |
| Load current $I_{L\text{ rms}}$   | AC 20, 32, 50, 100, 150, 200, 250A                         |                                               |
| Load type                         | Resistive and resistive/inductive loads                    |                                               |
| Control section power consumption | max. 40 VA                                                 |                                               |

### Analog inputs

|                         |                                                      |                                 |
|-------------------------|------------------------------------------------------|---------------------------------|
| Control signal          | 0(4) ... 20mA                                        | $R_i = 50\ \Omega$              |
|                         | 0(2) ... 10V                                         | $R_i = 25\text{ k}\Omega$       |
|                         | 0(1) ... 5V                                          | $R_i = 25\text{ k}\Omega$       |
| Default set point value | Via standard signals (current, voltage) or interface |                                 |
|                         | Base load:                                           | Output as minimum control value |
|                         | Maximum control value:                               | Output as maximum control value |
| Example<br>P control:   |                                                      |                                 |

### Binary inputs

|                   |                                                                                     |
|-------------------|-------------------------------------------------------------------------------------|
| Binary input 1, 2 | For connection to potential-free contact or optocoupler, voltage proof up to DC 12V |
|-------------------|-------------------------------------------------------------------------------------|

### Binary outputs, actual value output

|                                                        |                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Relay (changeover contact) without contact suppression | 150000 switching actions at a contact rating of 3A/230V 50Hz (resistive load)                                                                                                                                                                                                                                                |
| Optocoupler output                                     | $I_{Cmax} = 2\text{ mA}$ , $U_{CE0max} = 32\text{ V}$                                                                                                                                                                                                                                                                        |
| Actual value output                                    | Switched off as standard.<br>For standard signal, voltage: 0 ... 10V, 2 ... 10V, 0 ... 5V to 1 ... 5V<br>For standard signal, current: 0 ... 20mA to 4 ... 20mA (burden max. 500Ω)<br>Depending on the device type, the output of various internal measuring values such as load current, load voltage or power is possible. |

| Thyristor firing request:         | setpoint specification<br>Current input<br>(current proof up to 25mA)                                                                                                                                                    | setpoint specification<br>Voltage input<br>(voltage proof up to DC 32V) | setpoint specification<br>Binary input1, 2<br>(voltage proof up to DC 32V) | via Interface |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------|
| continuous                        | The power controller provides the power for the load continuously depending on the default setpoint value.                                                                                                               |                                                                         | -                                                                          | possible      |
| logic<br>(Solid State Relays SSR) | The power controller acts like a switch and provides the power by either switching ON or OFF. The switching level is always in the middle of the selected input range.<br>At 4 to 20mA it is 12mA, at 0 to 10V it is 5V. |                                                                         | OFF logic level „0“ = 0 to +0,8V;<br>ON logic level 1 = +2 to 3,3V         | possible      |

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## General characteristic data

|                                         |                                                                                                                                                                                                                                                                             |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Circuit options                         | - Three-phase economy circuit in master/slave operation                                                                                                                                                                                                                     |
| Operating modes                         | - Impulsgruppenbetrieb für ohmsche Last oder Trafolast mit Softstart                                                                                                                                                                                                        |
| Special features                        | - Dual energy management<br>- Burst-firing mode with softstart                                                                                                                                                                                                              |
| Subordinate control loop                | U <sup>2</sup> control as standard<br>Can be switched over to U, I, I <sup>2</sup> , P control depending on device type                                                                                                                                                     |
| Electrical connection                   | For type 709062/X -0X-020...<br>Control and load leads are connected via screw terminals.<br>For type 709062/X -0X-032...<br>Control leads are connected via screw terminals and load leads via cable lugs DIN 46235 and DIN46234 or tubular cable lugs.                    |
| Operating conditions                    | The controller is designed as a panel-mounting device according to: EN 50 178, pollution degree 2, overvoltage category Ü III                                                                                                                                               |
| Electromagnetic compatibility           | According to DIN 61326-1<br>Emitted interference: Class B<br>Interference resistance: Industrial requirements                                                                                                                                                               |
| Protection rating                       | All device types IP20 according to EN 60 529                                                                                                                                                                                                                                |
| Protection rating                       | Protection rating I, with isolated control circuitry for connection to SELV circuits                                                                                                                                                                                        |
| Permissible ambient temperature range   | 35°C with forced air cooling (250A controller)<br>0 ... 45°C with natural air cooling (extended temperature range class 3K3 according to EN 60 721-3-3)<br>At higher temperatures, operation with reduced type current is possible.<br>(from 45°C with type current -2%/°C) |
| Permissible storage temperature range   | -30 ... +70°C (1K5 according to EN 60 721-3-1)                                                                                                                                                                                                                              |
| Cooling                                 | - Natural convection up to a load current of 200A<br>- For a load current of 250A, forced convection with built-in ventilator                                                                                                                                               |
| Environmental performance               | Rel. humidity ≤ 85 % annual average, no condensation 3K3 according to EN 60 721                                                                                                                                                                                             |
| Installation position                   | Vertical                                                                                                                                                                                                                                                                    |
| Test voltage                            | According to EN 50178                                                                                                                                                                                                                                                       |
| Creepage distances                      | 8 mm between supply current circuit and SELV circuits for type 709062/X -0X-020...<br>12.7 mm between supply current circuit and SELV circuits from type 709062/X -0X-032...<br>SELV = Separate Extra Low Voltage (safe low voltage)                                        |
| Case                                    | Plastic, flammability class UL94 V0, color: Cobalt blue RAL 5013                                                                                                                                                                                                            |
| Power dissipation                       | The power dissipation can be calculated using the following empirical formula:<br>$P_v = 2 \times (20W + 1.3V \times I_{Load} A)$                                                                                                                                           |
| Maximum temperature of the cooling body | 110°C                                                                                                                                                                                                                                                                       |

| Type (Load current) | 20A            | 32A            | 50A            | 100A           | 150A          | 200A          | 250A            |
|---------------------|----------------|----------------|----------------|----------------|---------------|---------------|-----------------|
| Weight              | approx. 2.2 kg | approx. 4.2 kg | approx. 5.4 kg | approx. 7.6 kg | approx. 17 kg | approx. 19 kg | approx. 20.4 kg |

## Approvals/approval marks

| Approval mark | Testing agency            | Certificates / certification numbers | Inspection basis | Valid for           |
|---------------|---------------------------|--------------------------------------|------------------|---------------------|
| c UL us       | Underwriters Laboratories | submitted                            | UL 508           | All device Versions |

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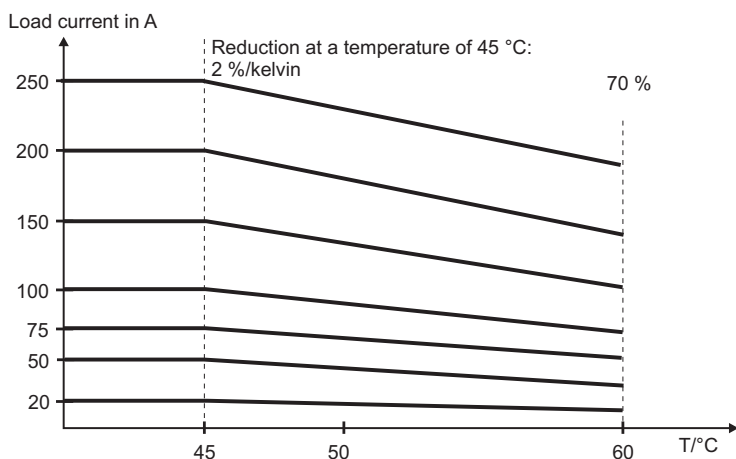


## Display and measuring accuracy

All specifications refer to the controller nominal data.

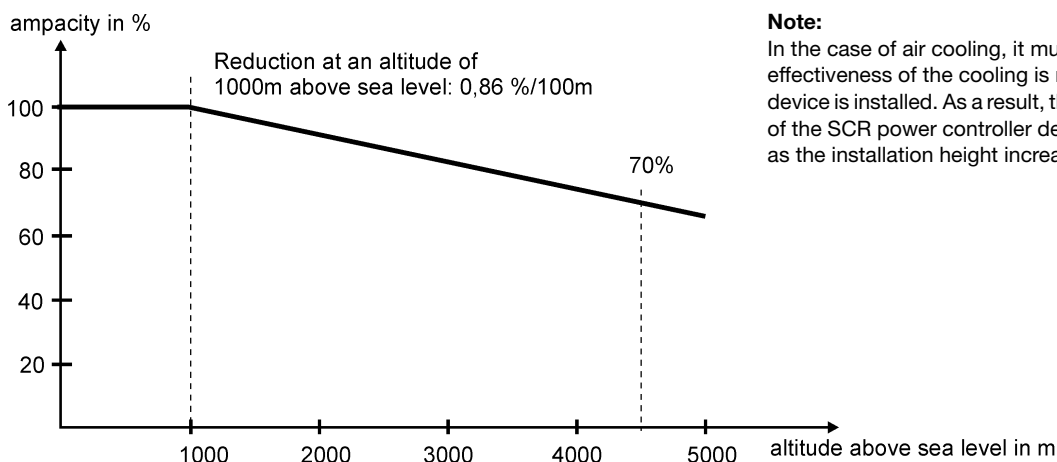
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|-------------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------|--|
| <b>Supply voltage: <math>\pm 2,5\%</math></b><br>                 | <b>Load current: <math>\pm 1\%</math></b><br>                      | <b>Load voltage: <math>\pm 1\%</math></b><br>                             | <b>Power: <math>\pm 2\%</math></b><br> |  |
| <b>Analog input<br/>Voltage/current: <math>\pm 1\%</math></b><br> | <b>Analog output<br/>Voltage/current: <math>\pm 1\%</math></b><br> | <b>Load resistance: <math>\pm 2\%</math><br/>(for resistive load)</b><br> |                                        |  |

## Permissible load current depending on the ambient temperature and installation height



### Note:

At a device temperature of 105°C, the load current is reduced for each degree of temperature increase. The power controller current is switched off completely at a device temperature of >115°C.



### Note:

In the case of air cooling, it must be noted that the effectiveness of the cooling is reduced the higher up the device is installed. As a result, the current carrying capacity of the SCR power controller decreases with such a cooler as the installation height increases as shown in the image.

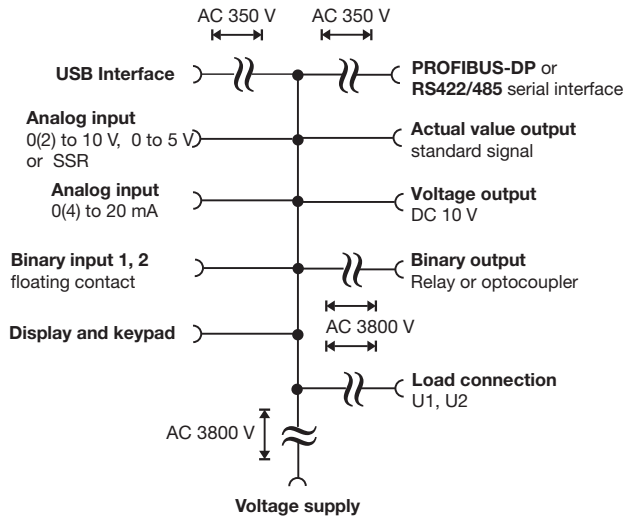
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## Electrical isolation



## Display, operation and connection elements

| Legend | Remark                                                                                                                                                                                        | Fig. |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 1      | LED Power (green) is lit when the voltage supply is connected                                                                                                                                 |      |
| 2      | LCD display with white background lighting (96 x 64 pixels).<br>(no LCD display on Slave device)<br>The info line at the bottom of the display indicates current settings and error messages. |      |
| 3      | The LED Fuse (red) is lit when the semi-conductor fuse is blown                                                                                                                               |      |
| 4      | LED K1 (yellow) fault signal output                                                                                                                                                           |      |
| 5      | <b>Keys:</b><br>Increase value / parameter up<br>Decrease value / parameter down<br>Abort / one level back<br>Programming / one level lower<br>(no Keys on Slave device)                      |      |
| 6      | USB setup interface<br>Konfiguration data is set on the left device and will be transmitted automatically via 1:1 Patch cable to the right device.                                            |      |
| 7      | Release clip for removing the plastic case (push to the right)                                                                                                                                |      |

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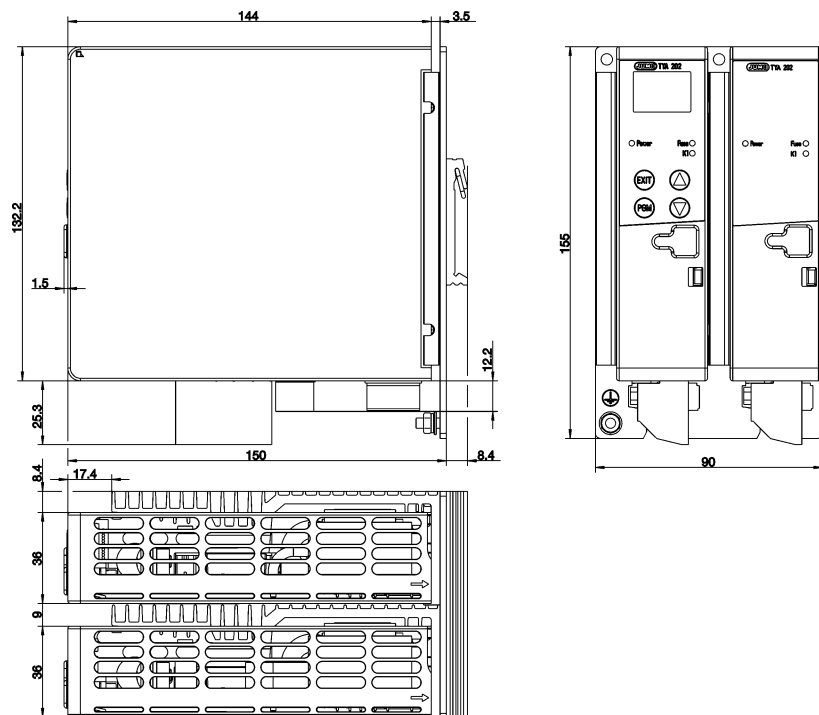
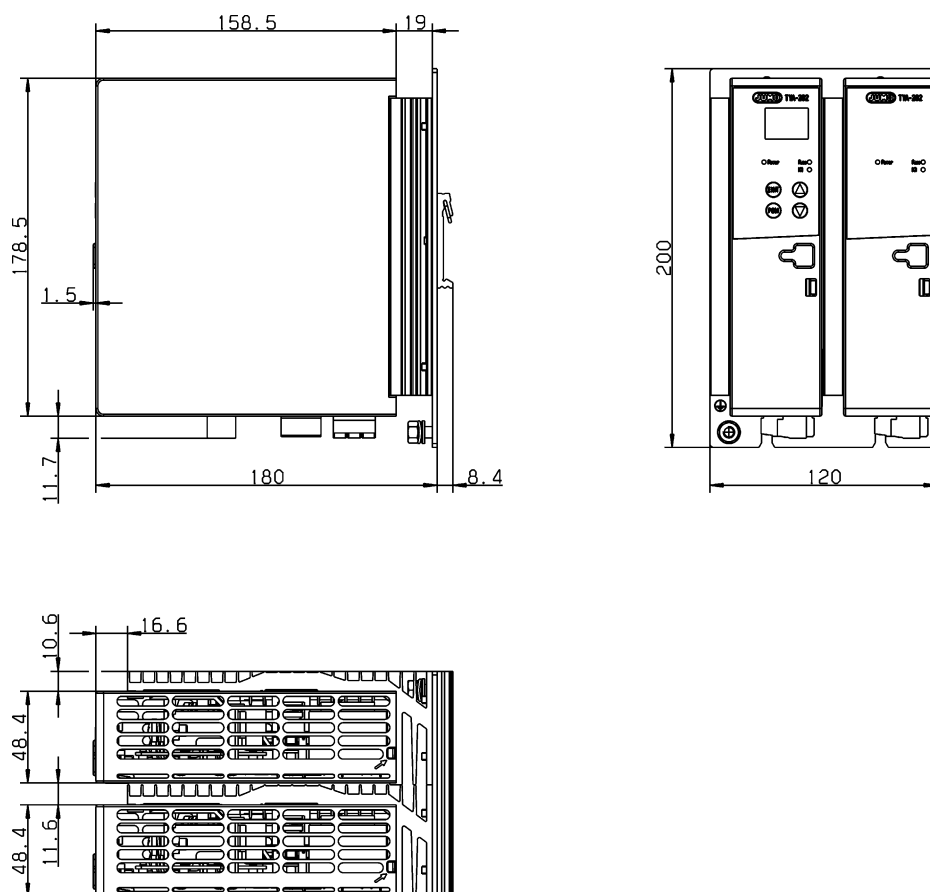
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**Dimensions****Type 709062/X-0X-20A-XXX-XXX-XX-25X****Type 709062/X-0X-032-XXX-XXX-XX-25X**

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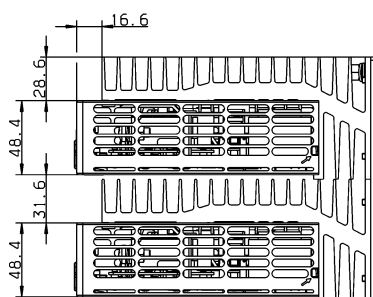
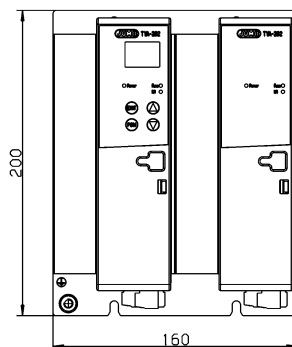
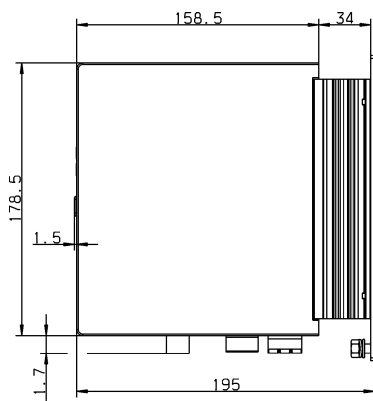
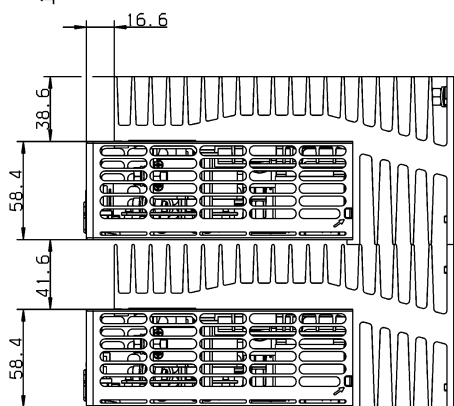
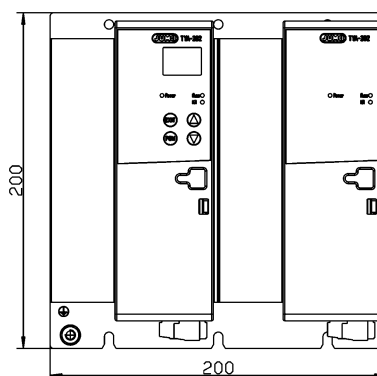
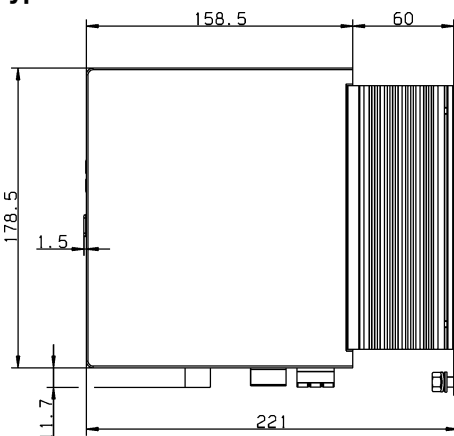
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**Type 709062/X-0X-050-XXX-XX-25X****Type 709062/X-0X-100-XXX-XX-25X**

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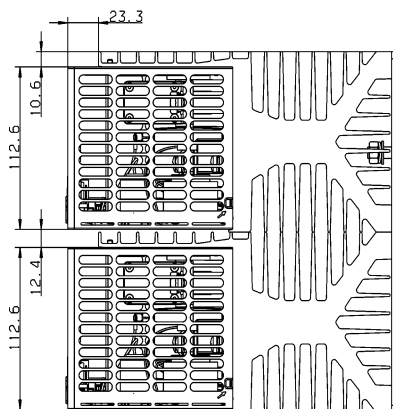
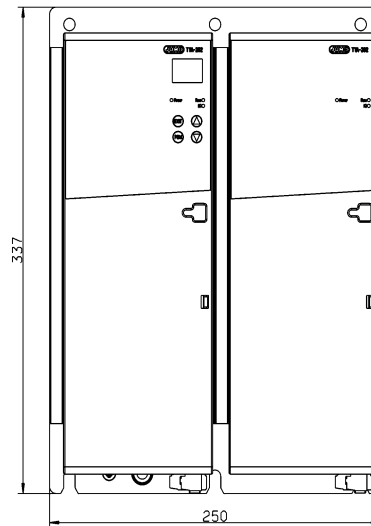
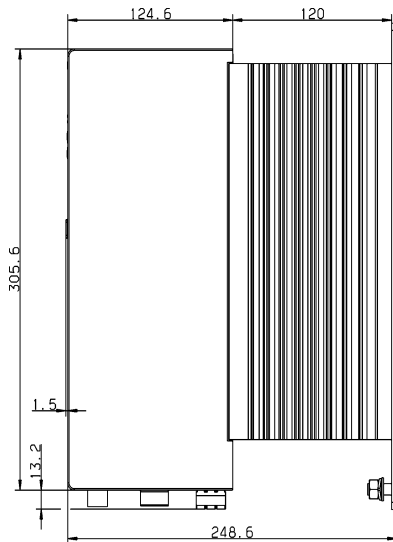
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**Type 709062/X-0X-150-XXX-XXX-XX-25X****Type 709062/X-0X-200-XXX-XXX-XX-25X,****Clearances (all types)**

- Allow a clearance of 10 cm from the floor.
- Allow a clearance of 15 cm from the ceiling.
- When fitted next to each other, no spacing between the devices is required.



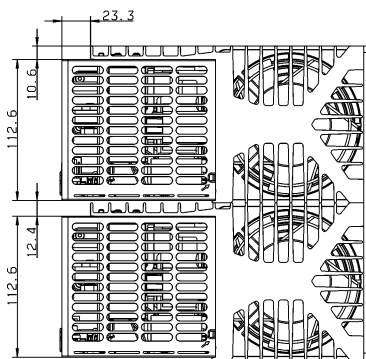
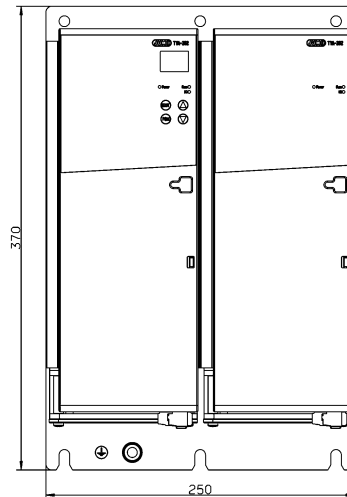
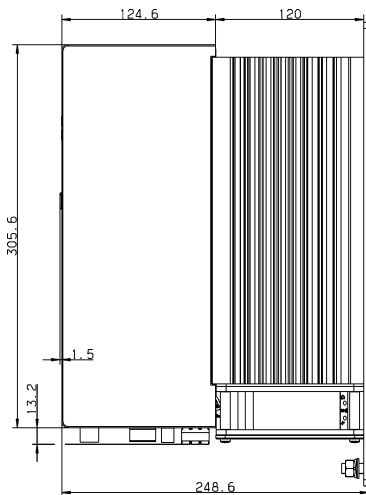
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## Type 709062/X-0X-250-XXX-XXX-XX-25X



### Maximum tightening torques for screw connections

| Terminals                                                                                                                                       | Version                                                                                                                 | Tightening torque       |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <b>For all types</b><br>X2_1 numbers 1...6, X2_2 numbers 7...12 and<br>modbus RS422/485 (Terminals 16, 17, 18, 19)                              | Plug-in screw terminals (slotted screws)                                                                                | 0.25 Nm                 |
| X3 numbers 13, 14, 15                                                                                                                           | Plug-in screw terminals (slotted screws)                                                                                | 0.5 Nm                  |
| <b>Type 709062/X-0X-020...</b><br>Clamping block U1, U2, N/L2, V, L1<br>Ground terminal PE:                                                     | Plug-in screw terminals (recessed head screws)<br>M4 headless setscrew with nut                                         | 0.6 Nm<br>3 Nm          |
| <b>Type 709062/X-0X-032 and type 709062/X-0X-050...</b><br>U1, U2:<br>Clamping block N/L2, V, L1<br>Ground terminal PE:                         | M6 recessed head screws<br>Plug-in screw terminals (slotted screws)<br>M6 headless setscrew with nut                    | 5Nm<br>0.5Nm<br>5Nm     |
| <b>Type 709062/X-0X-100...</b><br>U1, U2:<br>Clamping block N/L2, V, L1<br>Ground terminal PE:                                                  | M6 hexagon screw, width across flats 10 mm<br>Plug-in screw terminals (slotted screws)<br>M6 headless setscrew with nut | 5Nm<br>0.5Nm<br>5Nm     |
| <b>Type 709062/X-0X-150..., 709062/X-0X-200 and<br/>Type 709062/X-0X-250...</b><br>U1, U2:<br>Clamping block N/L2, V, L1<br>Ground terminal PE: | M8 hexagon screw, width across flats 13 mm<br>Plug-in screw terminals (slotted screws)<br>M8 headless setscrew with nut | 12 Nm<br>0.5Nm<br>12 Nm |
| <b>Typ 709061/X-0X-250...</b><br>X14 numbers 20, 21                                                                                             | Plug-in screw terminals (slotted screws)                                                                                | 0,5Nm                   |

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 Delivery address: Mackenrodtstraße 14  
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 Postal address: 36035 Fulda, Germany  
 Phone: +49 661 6003-0  
 Fax: +49 661 6003-607  
 E-mail: mail@jumo.net  
 Internet: www.jumo.net

**JUMO Instrument Co. Ltd.**  
 JUMO House  
 Temple Bank, Riverway  
 Harlow, Essex CM20 2DY, UK  
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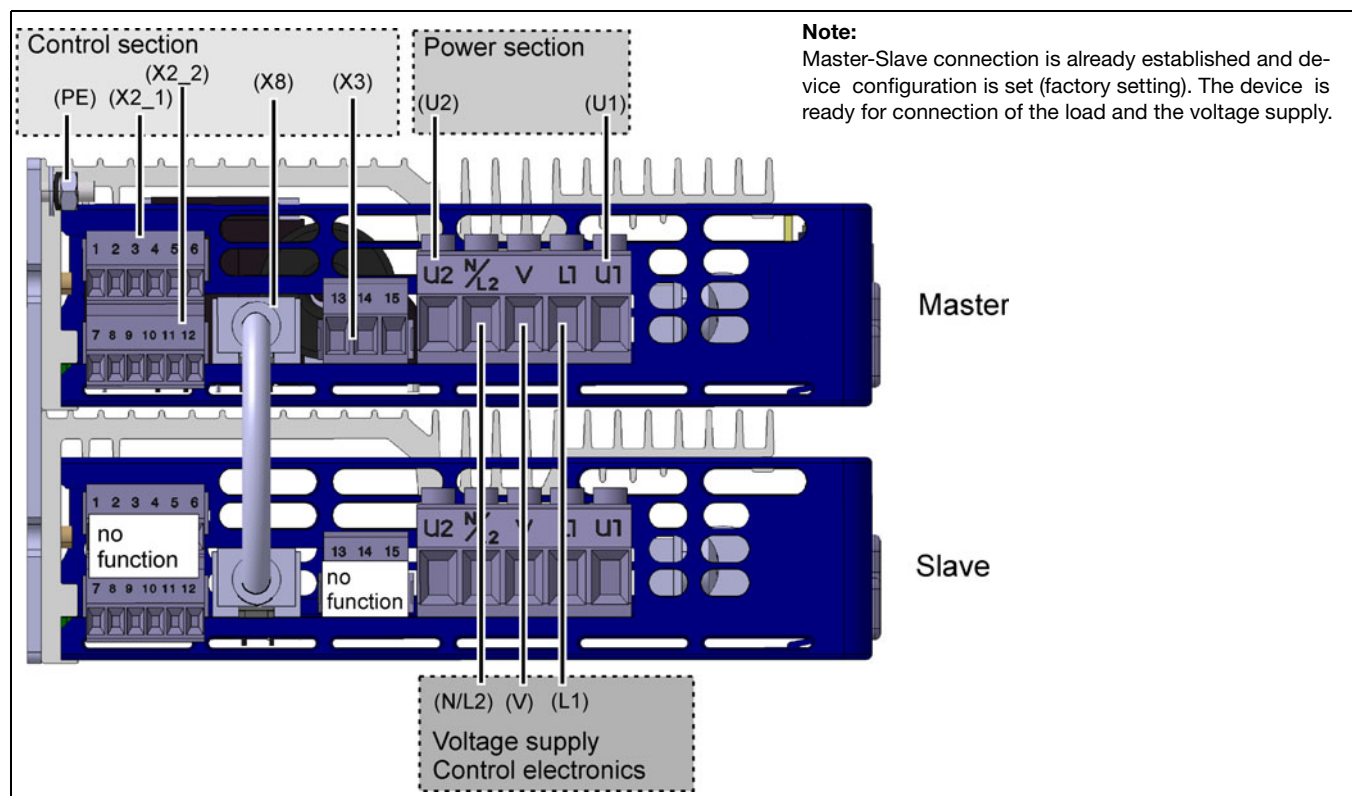
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## Connection diagram

The connection diagram contained in the data sheet provides a first information about the connection possibilities. Only use the installation instructions or the operating manual for the electrical connection. The knowledge and the correct technical execution of the safety information/instructions contained in these documents are prerequisite for installation, electrical connection and commissioning/start-up as well as for safety during operation.

### Typ 709062/X-0X-20-XXX-XXX-XX-25X



| Power section                                                                                                         |                                                   |                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connection for                                                                                                        | screw terminals control section/<br>power section | Detail                                                                                                                                                             |
| Voltage supply Control electronics<br>(is the same as the max. Load voltage of the<br>ordered Type, see order matrix) | L1<br>N/L2<br>V                                   | $\begin{array}{l} \text{L1} \text{---} \text{ } \text{L1} \\ \text{N (L2)} \text{---} \text{ } \text{N (L2)} \\ \text{V} \text{---} \text{ } \text{V} \end{array}$ |
| Protective earth                                                                                                      | PE                                                | $\text{PE} \text{---} \text{ } \text{PE}$                                                                                                                          |
| Load connection                                                                                                       | U1<br>U2                                          | $\begin{array}{l} \text{L1} \text{---} \text{ } \text{U1} \\ \text{N/L2} \text{---} \text{ } \text{U2} \end{array}$                                                |
| Fan X14                                                                                                               | 20, 21 (only types with load current 250A)        |                                                                                                                                                                    |

| Control section              |                     |                                                                                                                                                                |
|------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connection for               | Screw terminal X2_1 | Detail                                                                                                                                                         |
| Setpoint value input current | 1<br>2              | $\begin{array}{l} \text{---} \text{ } 1 \\ \text{I}_x \text{---} \text{ } 2 \\ \text{+} \end{array}$                                                           |
| Setpoint value input voltage | 3 (GND)<br>4        | $\begin{array}{l} \text{---} \text{ } 3 \\ \text{U}_x \text{---} \text{ } 4 \\ \text{+} \end{array}$ <p>Example for external manual mode via potentiometer</p> |
| Output DC 10V fixed voltage  | 5                   |                                                                                                                                                                |
| Ground potential             | 6 (GND)             |                                                                                                                                                                |

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 Delivery address: Mackenrodtstraße 14  
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| Connection for                                                                                                             | Screw terminal X2_2 | Detail |
|----------------------------------------------------------------------------------------------------------------------------|---------------------|--------|
| Firing-pulse inhibit<br>(voltage proof up to DC 32V)<br>OFF logic level „0“ = 0 to +0,8V;<br>ON logic level 1 = +2 to 3,3V | 8                   |        |
| Binary input1<br>(voltage proof up to DC 32V)<br>OFF logic level „0“ = 0 to +0,8V;<br>ON logic level 1 = +2 to 3,3V        | 9                   |        |
| Binary input2<br>(voltage proof up to DC 32V)<br>OFF logic level „0“ = 0 to +0,8V;<br>ON logic level 1 = +2 to 3,3V        | 10                  |        |
| GND                                                                                                                        | 7, 11               | Ground |
| Analog output<br>for different internal power controller variables                                                         | 12                  |        |

#### Master-slave connection

| Connection                 | RJ45 connector X8                                                                                  |
|----------------------------|----------------------------------------------------------------------------------------------------|
| for Master-Slave-operation | The 1:1 Patch cable (included in the scope of delivery) has to be connected for correct operation. |

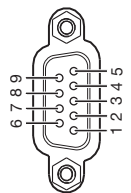
#### Fault signal output

| Connection for                                    | Screw terminal X3                | Detail |
|---------------------------------------------------|----------------------------------|--------|
| Relay SPDT (changeover contact)<br>or optocoupler | 13 n.o.make contact or collector |        |
|                                                   | 14 n.c. break contact            |        |
|                                                   | 15 pole or emitter               |        |

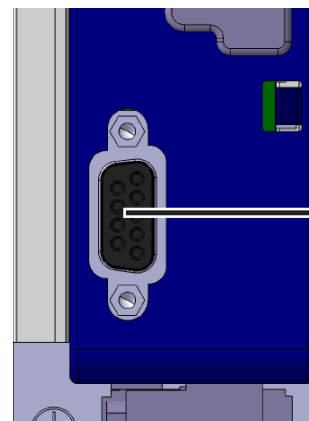
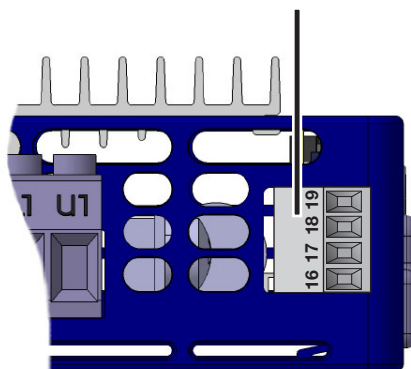
#### Interfaces (Option)

| Connection                                           | Modbus |  | RS422   | RS485        |
|------------------------------------------------------|--------|--|---------|--------------|
| Plug-in screw terminals on the underside of the case | 19     |  | TxD (-) | RxD/TxD B(-) |
|                                                      | 18     |  | TxD (+) | RxD/TxD A(+) |
|                                                      | 17     |  | RxD (-) | -            |
|                                                      | 16     |  | RxD (+) | -            |

| Connection                                           | PROFIBUS-DP |
|------------------------------------------------------|-------------|
| SUB-D 9-pin socket connector<br>(on the front panel) | 3 A(+)      |
|                                                      | 8 B(-)      |
|                                                      | 6 VCC       |
|                                                      | 5 GND       |
|                                                      | Shielding   |



(RS422/485 Modbus)



Profibus DP

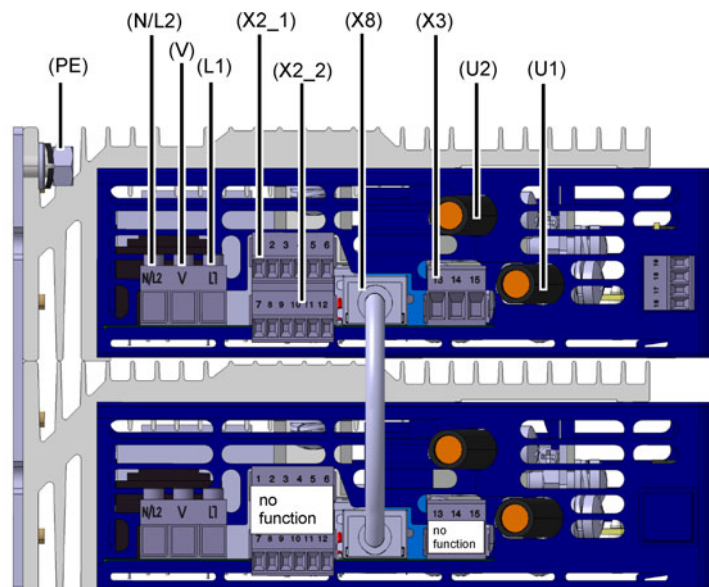
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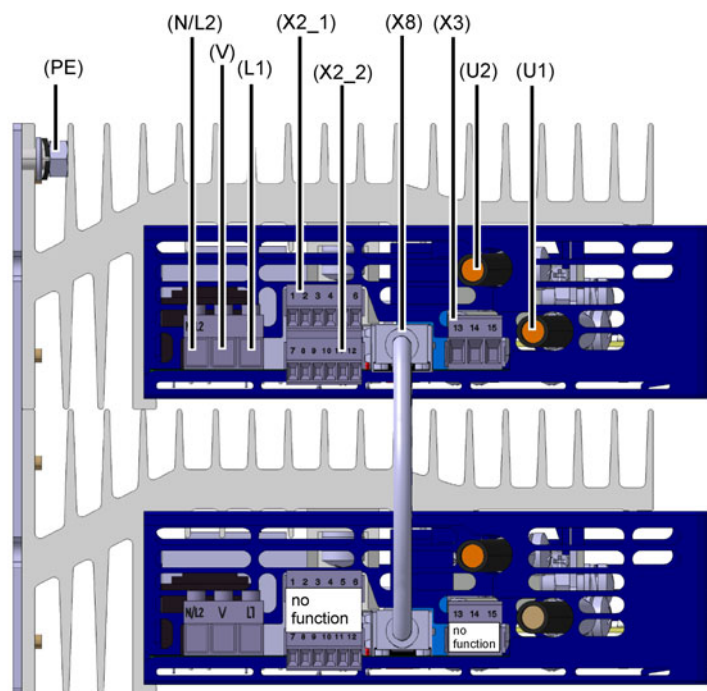
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# Typ 709062/X-0X-032-XXX-XXX-XX-25X



# Typ 709062/X-0X-050-XXX-XXX-XX-25X



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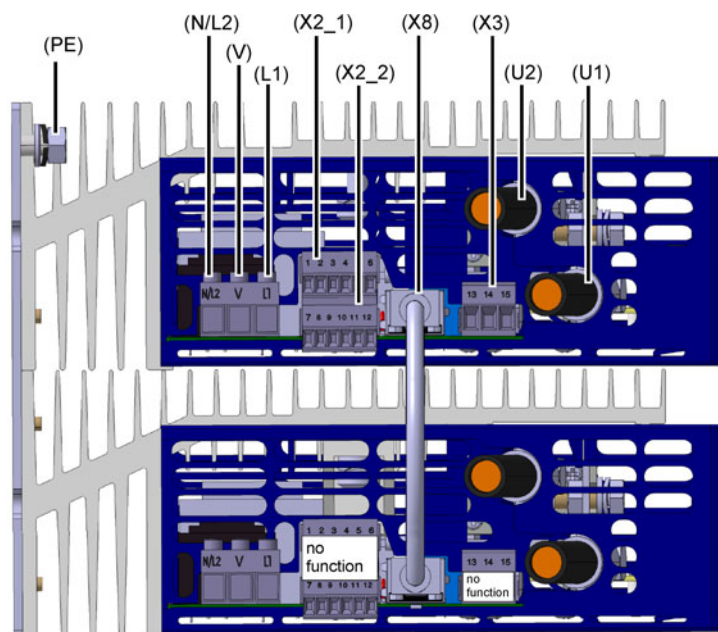
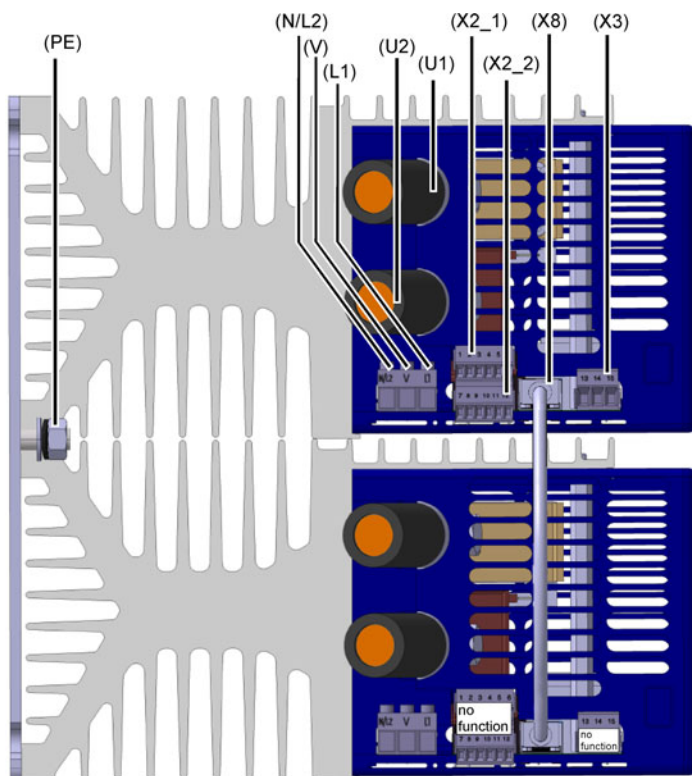
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**Typ 709062/X-0X-100-XXX-XXX-XX-25X****Typ 709062/X-0X-150-XXX-XXX-XX-25X,****Typ 709062/X-0X-200-XXX-XXX-XX-25X**



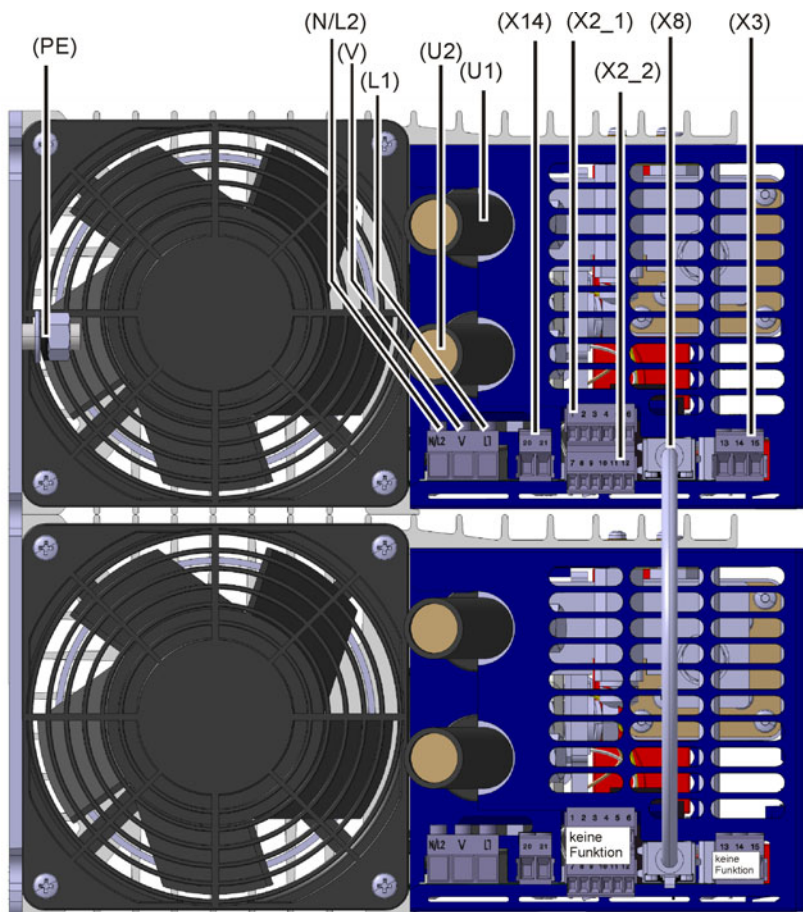
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## Typ 709062/X-0X-250-XXX-XXX-XX-25X



### Example:

#### Voltage supply of the fan in case of type 709062/X-0X-250-XXX-400-XX-25X

Depending on the load voltage, the fan terminal X14 must be supplied with the voltage specified below.

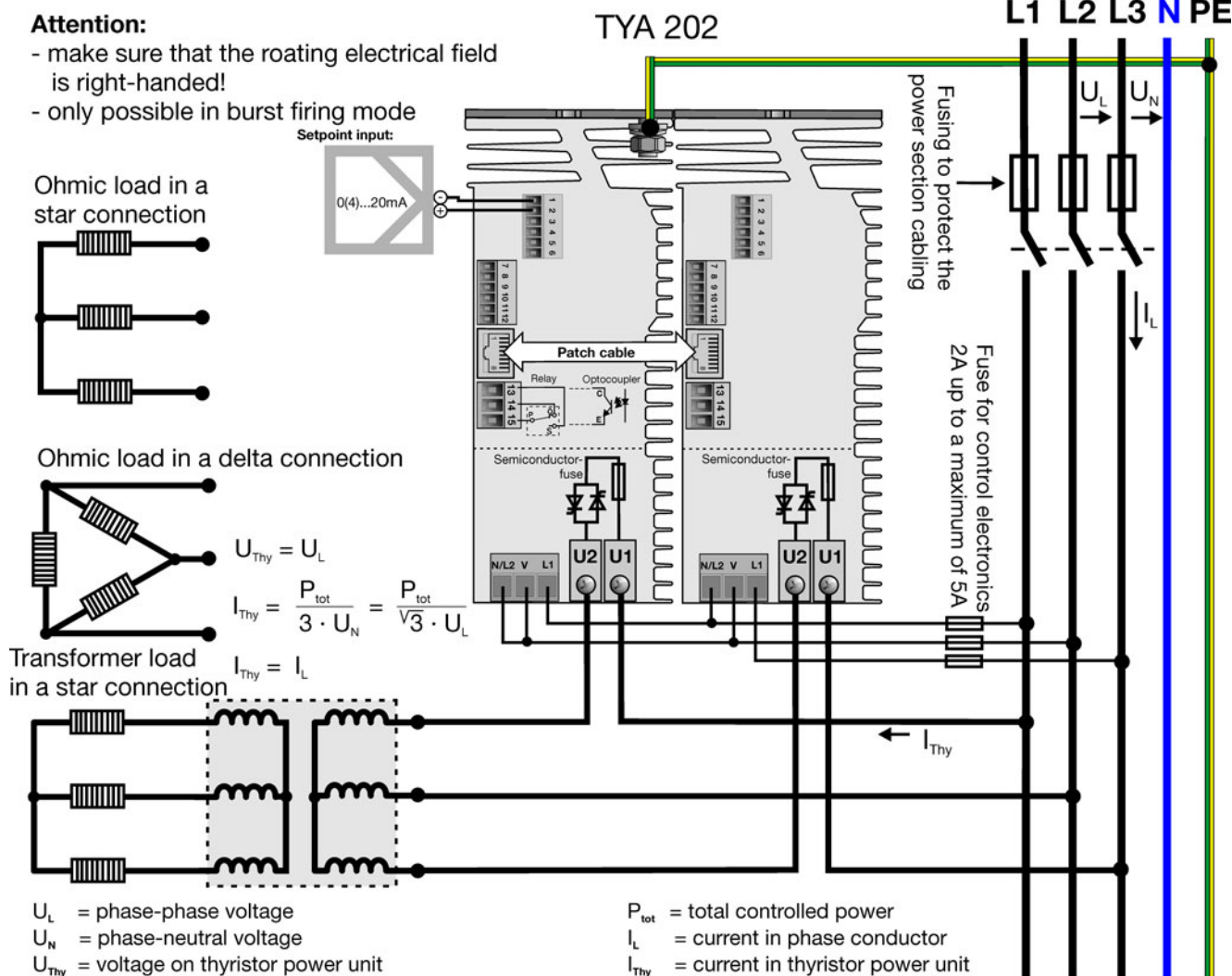
The lead protection must be between 2 A and a maximum of 5 A.

The fan is temperature-controlled, switches on automatically when the device temperature reaches 85 °C, and remains in operation until the device temperature falls below 70 °C.

| Load voltage on the power controller | Tolerances                | Fan specifications |
|--------------------------------------|---------------------------|--------------------|
| Load voltage AC 24V                  | -20 to +15 %, 45 to 63 Hz | AC24V / 30VA       |
| Load voltage AC 42V                  | -20 to +15 %, 45 to 63 Hz |                    |
| Load voltage AC115V                  | -15 to + 6 %, 45 to 63 Hz | AC 115V / 30VA     |
| Load voltage AC230V                  | -15 to + 6 %, 45 to 63 Hz | AC 230V / 30VA     |
| Load voltage AC265V                  |                           |                    |
| Load voltage AC400V                  |                           |                    |
| Load voltage AC460V                  |                           |                    |
| Load voltage AC500V                  |                           |                    |

## Wiring

### Three-phase economy circuit Master-Slave for resistive loads in star-, delta connection or transformer loads (resistive-inductive)



**Note:** In the case of power controllers with a load current of 250 A, the fan terminal X14 must also be supplied with the specified voltage!

⇒ Siehe "Example: Voltage supply of the fan in case of type 709062/X-0X-250-XXX-400-XX-25X" see page 14..





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Delivery address: Mackenrodtstraße 14  
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Postal address: 36035 Fulda, Germany  
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## Scope of delivery

|                                               |
|-----------------------------------------------|
| 1 Operating Manual B70.9062.0                 |
| 1 SCR power controller in the version ordered |
| 1:1 Patch cable                               |

## Accessories

| Part                                                  | Part no.    |
|-------------------------------------------------------|-------------|
| Setup program 70.9061 (TYA 201) and 70.9062 (TYA 202) | 70/00544869 |
| USB cable A-plug B-plug 3m                            | 70/00506252 |
| <b>Mounting set for DIN rail installation:</b>        |             |
| Type 70.9062/X-01-20...                               | 70/00555172 |
| Type 70.9062/X-01-32 and 70.9062/X-01-50              | 70/00555527 |

## General accessories

| Part                                        | Load current $I_{nom.} = I_N$ | Part no.    |
|---------------------------------------------|-------------------------------|-------------|
| Super fast semi-conductor fuse 40A-AC690V   | $I_N = 20A$                   | 70/00513108 |
| Super fast semi-conductor fuse 80A-AC690V   | $I_N = 32A$                   | 70/00068011 |
| Super fast semi-conductor fuse 80A -AC690V  | $I_N = 50A$                   | 70/00068011 |
| Super fast semi-conductor fuse 160A-AC690V  | $I_N = 100A$                  | 70/00081801 |
| Super fast semi-conductor fuse 350A -AC690V | $I_N = 150A$                  | 70/00083318 |
| Super fast semi-conductor fuse 550A-AC690V  | $I_N = 200A$                  | 70/00083318 |
| Super fast semi-conductor fuse 550A -AC690V | $I_N = 250A$                  | 70/00083318 |