

AXE-200AX

Part - No.: 349036

Central setting unit for Ziehl-Abegg Controller



Manufacturer:
ZIEHL-ABEGG AG
Heinz-Ziehl-Straße
D-74653 Künzelsau
Telefon: +49 (0) 7940 16-0
Telefax: +49 (0) 7940 16-504
<http://www.ziehl-abegg.de>
e-mail: info@ziehl-abegg.de

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1. General

Before installation and start-up, read this manual carefully to ensure a correct use.

Attention! Hazardous area!



Danger owing to electric current or voltage!!



Important information!



- The copyright for these operating instructions remains to ZIEHL-ABEGG AG, Künzelsau.
- The device is constructed in accordance with the current state of technology and the recognised safety regulations. Nevertheless, use of the device is associated with dangers which may cause death or injury to users or third parties as well as damage to the system and other objects.
- The device is intended exclusively for the tasks listed in the order confirmation. Any other or extraordinary uses of the device (unless previously agreed by contract) are considered contrary to regulations. The manufacturer is not liable for damages resulting from incorrect use. The operating company alone bears the risk.
- To allow for future developments, construction methods and technical data given are subject to alteration. We do not accept any liability for possible errors or omissions in the information contained in data, illustrations or drawings provided.
- The controllers are packed ex factory to suit the transport method previously agreed. Always use the original packaging materials when transporting the controller. When transporting by hand, ensure that personnel possess the strength required to lift and carry the device. Avoid shocks and impacts to the device. Check the packaging and controller for damage.
- Store the controller in its original packaging in a dry and weather-proof room. The device must not be exposed to extreme heat and low temperatures.

2. Safety measures

In the case of a malfunction or a failure of the equipment check all functions with alarms in order to prevent injury to persons or property. Note possibility of back-up operation.

If used in intensive animal environments, any malfunctions in the air supply must be detected as soon as possible to prevent the development of a life-threatening situation for the animals. The design and installation of the system must comply with local regulations and directives. In Germany these include DIN VDE 0100, the animal protection and the keeping of working animals ordinance and the pig-keeping ordinance etc.

Also note the instructions of AEL, DLG, VdS.

- Apart from the operating instructions and the obligatory regulations to be followed by users relating to accident prevention, the recognised technical regulations must also be observed (safety and branch-related work as per UVV, VBG, VDE, etc.).
- These devices are potentially dangerous if they are used incorrectly by untrained personnel or are not implemented according to their specified use.

• Work on electric components/modules may only be carried out by trained electricians in accordance with electro-technical regulations (e.g. EN 60204, DIN VDE 0100/0113/0160).

- The contractor or owner must also ensure that the electric systems and equipment are operated and maintained in accordance with electro-technical regulations. The owner is obliged to ensure that the device are operated in perfect working order only.
- **It is forbidden to carry out work on electrically live parts. The rating given in the enclosure for the device when open is IP00! It is possible to inadvertently touch components carrying hazardous voltages!**
- During operation, the device must be closed or installed in a control cabinet.
- Fuses may only be replaced by new ones and must not be repaired or bypassed. The data for the maximum line fuse are to be considered absolutely (☞ Technical data). Use only fuses specified in schematic diagrams.
- The safe isolation from the supply must be checked using a two-pole voltage detector.
- Any faults detected in the electric system/modules/operating equipment must be corrected immediately. If these faults are not corrected, the device/system is potentially very dangerous. The device/system must therefore not be operated when it is faulty.

3. General description

3.1 Range of application

Terminal for central initial operation and setting of compatible Ziehl-Abegg units
Selection of up to 30 devices over turning knob

3.2 Technical data

- Line voltage 1~230 V (-15% bis +10%), 50/60 Hz
- Max. permissible ambient temperature 40° C
- Max. line fuse 10 A
- Permissible rel. humidity 85 % no condensation
- Max. contact rating relay 250 V / 5 A AC
- Interference emission EN 61000-6-3
- Interference immunity EN 61000-6-2
- Housing protection IP54
- fire protection class housing V0
- Weight 1.25 kg

Spare parts accessories: temperature sensor type TFR

Part-No. 00089846

4. Installation

4.1 Mounting

- Assemble the device on a clean and stable base. Do not distort during assembly! Use the appropriate mounting devices for proper installation of the unit!
- Do not mount equipment on vibrating base!
- Use the appropriate fixing equipment. The plastic washers must be installed between the screw heads and the housing for models with mounting holes on the inside of the housing!
- Install the device away from transport routes. However, ensure however that the device is still easily accessible!
- The device is designed for vertical installation (cable inlet down). A horizontal or reclined installation is only permissible after consultation with the manufacturer.
- Any cable ducts openings not used must be sealed!
- Protect the device from direct exposure to sunlight!

4.3 Outdoor installation

Outdoor installation is possible up to -20°C when the controller supply is not switched off.

Installation must be protected from the effects of weather as much as possible, including protection from direct sunlight!

4.4 Installation location for agriculture

In order to avoid damage caused by ammoniac vapours (NH₃), the controller shall not be installed in the stable, but rather in an outhouse wherever possible.

4.5 Temperature influences during commissioning

Avoid condensation in the controller and hence functional faults attributable to condensation by storing the controller at room temperature!

5. Electrical connection

5.1 Mains connection

Power from the mains is connected to terminals: PE, L1 and N. Here, it must be strictly observed that the mains voltage lies within the allowable tolerance specifications (☞ Connection diagram and nameplate affixed to the side). Connection using a connector plug is also possible, “L1” and “N” are not interchangeable. A connection between two phase conductors is possible for 3 ~ 230 V supply networks.

5.2 Sensor connection

Pay attention to sufficient distance from powerlines and motor wires to prevent interferences.

The control cables may not be longer than 30 m.

Screened control cables must be used when the cable length is longer than 20 m.

When using a screened cable, the screen must be connected to the protective conductor at one end, i.e. only at the control unit (as short and of as low an inductance as possible!)

Pay attention to sufficient distance from powerlines and motor wires to prevent interferences 5.3 Fault relay.

According to standard the external fault signal should be used over the floating contacts of the inserted relay “49/50” (contact rating 5 A, 250 V AC). The failure report is assigned to this relay by the factory

For operation the relay is energized i.e. terminals “49” and “50” are bridged. If there is a fault the relay is de-energized, i.e. terminals “49” and “50” are open.

The relay is energized if the controller is on mains supply, i.e. terminals “49” and “50” are bridged. If there is a fault the relay is de-energized, i.e. terminals “49” and “50” are open.

5.4 Relay time-switch

Relay for time-switch (terminals 51/52) max. contact rating 5 A, 250 V AC

5.5 RS-485 interface for modbus

The device comes equipped via a RS-485 interface for networking via a MODBUS. The data connection lead is connected to D+, D- and GND.

You must ensure correct connection; i.e. „D+“ must also be connected on the following devices to „D+“. The same applies to „D-“. In addition, a GND connection must be established, as dissimilar potential (over 10 V!) will lead to the destruction of the RS-485 interface (e.g. by lightning).

Do not use wire shield, pay attention to sufficient distance from power lines and motor wires. Max. allowed wire length 1000 m.

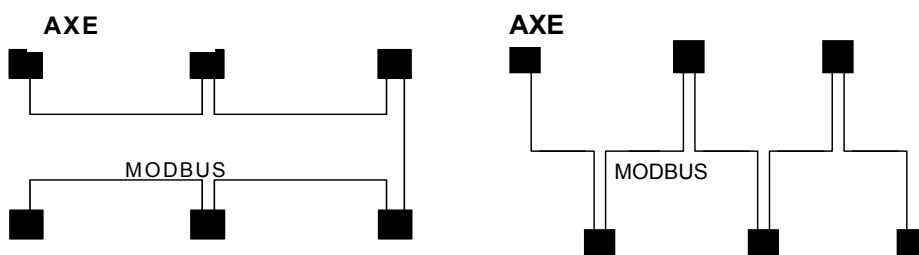
Recommended wire types:

1. CAT5 / CAT7 cables
2. J-Y (St) 2x2x0,6 (Telephone wire)
3. AWG22 (2x2 twisted pair)

When using telephone flex with four cable cores, we recommend the following allocation:

“D+“ = red “D-“ = black “GND“ = white

The data line must be conducted from one device into the next. No other type of wiring is allowed. Always use only two wires of one lead for the data connection.

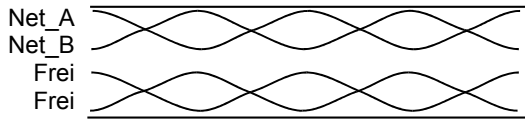


5.6 Connecting the network LON®

Connect the LON®-bus two-wire lead to terminals "A" and "B". The proper selection of the type of cable is decisive for ensuring a correct functioning of the network. For example, cable type AWG22 (twisted 2-wire cable, unshielded).

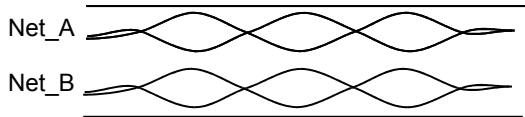
You do not need to pay attention to the polarity when connecting the LON®-bus

permissible



But when using cables with more than two strands, please make sure that only two twisted strands connected with each other are used for the network lines. Laying several strands **in parallel** is **not permissible!**

Not permissible



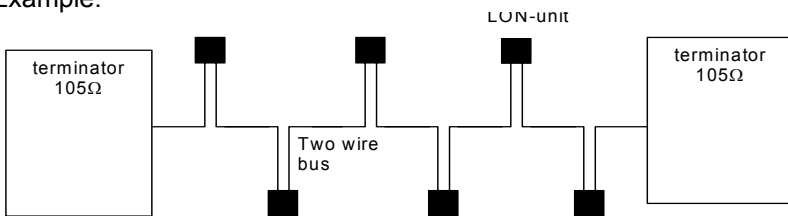
The maximum line-length for free-design (irregular) wiring is 500 m and the maximum distance between two devices 400 m.

When using bus topology wiring, the maximum line length amounts to 1.400 m. (☞ 5.4)

5.7 Bus wiring and terminator in LON®-Network

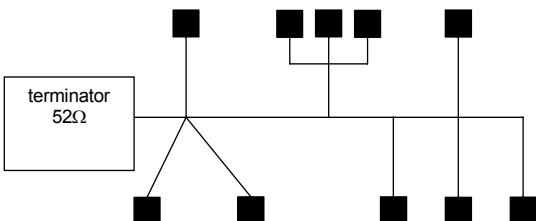
For bus wiring, one terminator of 105 Ω each must be attached to the beginning and end of the line. A commercially available wire-style 0.25W resistor can be used (tolerance 5%).

Example:



If, due to the wiring design, this type of wire laying is not possible, you can revert to the "free" wiring design. When doing so, pay attention to the restricted line lengths.

In case of irregular (free) wiring, i.e., without compliance to a wiring standard, one terminating resistor of 52 Ω must be attached in one of the network neutral (star) points or at the end of the line.



6. Programming and Display

6.1 Programming



The operation of the connected CONTROLLERS takes place exactly the same as at the AXE 200.

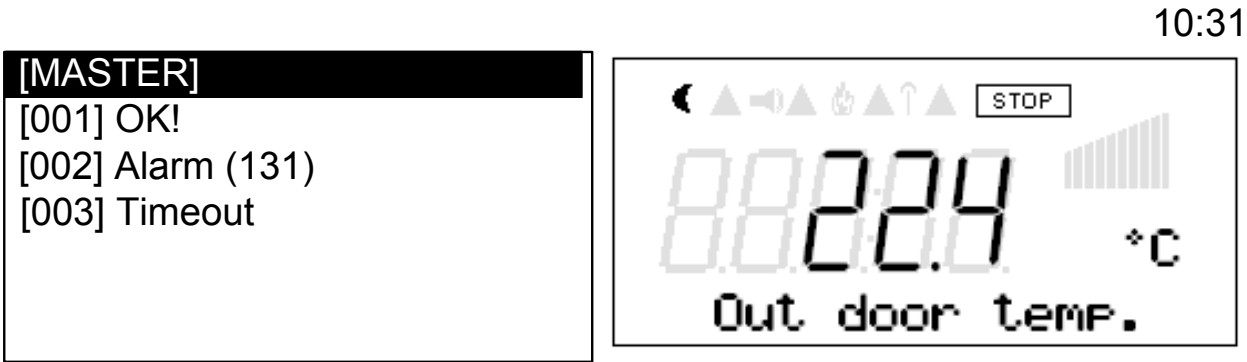
More exact operation information for the CONTROLLER concerned take please from the manual belonging to it.

keys assignment:

- key **Enter** corresponds P key at Ziehl-Abegg Controller
- key **↑** corresponds a **↑** key at a Ziehl-Abegg Controller
- key **↓** corresponds a **↓** key at a Ziehl-Abegg Controller
- key **ESC** corresponds the **ESC** key combination (**↓** + **↑**) at a Ziehl-Abegg Controller
- key **F1** = fault reset

The F1 key undertakes to be pressed the function as if P, arrow down and arrow above key together e.g. for the function error to delete in the info menu.

6.2 Display



The time is displayed in the top right. You can set it under „Timer“ in the master menu.

The left side of the display lists the controllers available in the system. The number matches the controller address. The device currently selected has a black background. Choose using the rotary knob or the left/right arrow key.

The current status of the controller is displayed behind the controller number. These status displays are available:

- OK!** The device is functioning correctly.
- Alarm (error code)** The device is in a state of alert. You can get detailed information about the device alarm condition by calling the device (see the device operating instructions).
- Timeout** There is no connection to the device (address false or line interruption)

The status displays for Timeout are only regularly refreshed if the Master or affected device has been called. The others, only if the Master is selected.

The right side of the display shows the device menu. With external controllers, this is a direct copy of the controller menu. That means language, etc. also have to be set in the controller concerned. Operate exactly the same as the display on the controller.

If the Master has been called, the symbols (moon etc.) are triggered by the Master. The mood indicates the state of D2 (nominal value ½), alarm indicates the Master alarm condition, STOP the state of D1 (enable). D1 and D2 as well as E1 are transmitted via the bus system to the connected devices where these can be used for control.

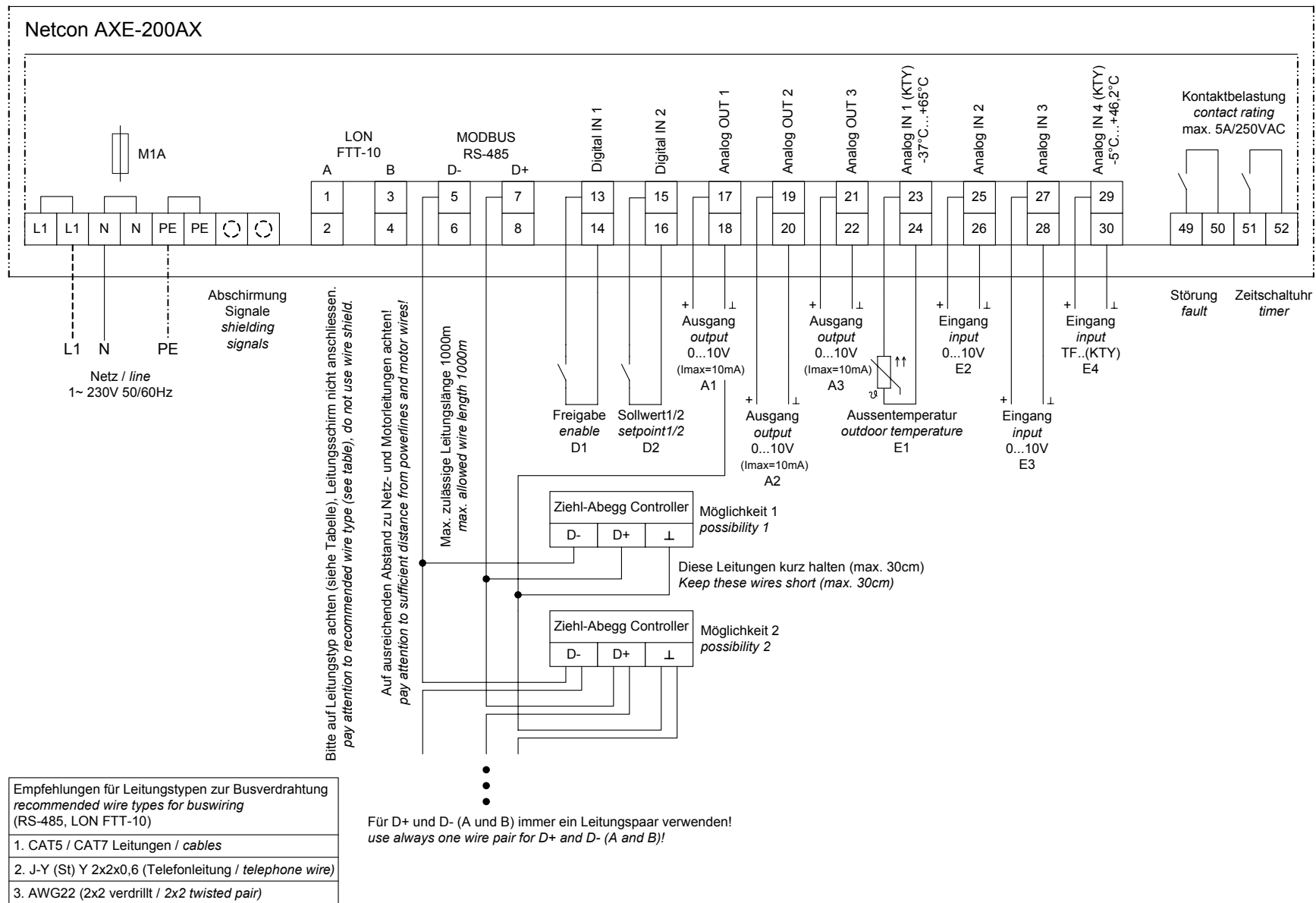
7. Start up

- Connect the device according to the connection diagram and according to the instructions at the beginning.
- Select the operating mode **4.03**. Set the addresses for the connected devices. Start with address 1. Do not allow any gaps.
- Select the Master, open the menu group „Modbus“ in the Master menu and in bus master mode enter the number of devices as 1 for one connected device, etc..

If required, the behavior of the IO can be modified in the „IO s Setup“ menu group, e.g. temperature compensation E1 (Offset E1).

8. Enclosure

8.1 Connection Diagram



8.2 Dimension sheet [mm]

