

# WALPOL

Assembly and operating instructions

Potentiometer speed control units



Version 6.1  
B14

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# 1. General information

## 1.1. Note symbols



### Danger

#### Immediate hazard

Failure to observe the warning will result in immediate death or serious injury.



### Caution

#### Low-risk hazard

Failure to observe the warning may result in moderate injury.



### Warning

#### Potential hazard

Failure to observe the warning may result in death or serious injury.

### Important

#### Danger with risk of property damage

Failure to observe the warning may result in property damage.



### Note

Useful information and instructions

## 2. Important safety instructions

Planners, system builders and operators are responsible for proper installation and operation in accordance with the intended use.

- Read the operating instructions completely and carefully.
- Operating instructions and applicable documents, such as electrical connection diagrams or operating instructions for the motor, must be kept with the speed controller. They must always be available at the place of use.
- Local and national laws and regulations must be observed and complied with.
- Take into account the system-relevant conditions and requirements of the system manufacturer or system builder.
- Safety devices must not be dismantled, bypassed or rendered inoperative.
- The speed controller may only be used if it is in perfect condition.
- The generally prescribed electrical and mechanical protective devices must be provided.
- Secure the installation site and the premises against access by unauthorised persons during installation, electrical connection, commissioning, troubleshooting and maintenance.
- Safety devices must not be dismantled, bypassed or rendered inoperative.
- Ensure that all warning labels on the speed controller are complete and legible.
- This appliance is not intended for use by persons (including children) with reduced physical or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children must not play with the appliance.

### 2.1. Personnel

The speed governor may only be operated by qualified, instructed and trained personnel. These persons must know the relevant safety regulations in order to recognise and avoid possible dangers. The individual actions and qualifications can be found in Table 1 Qualification.

**Table 1 Qualification**

Actions	Qualification	
Storage, operation, transport, cleaning, disposal	Trained personnel (s. following instructions)	
Electrical connection, commissioning, electrical disconnection, installation, Dismantling	Qualified electricians or persons with appropriate qualifications	
Maintenance	Qualified electricians or persons with appropriate qualifications	Qualified fitters or persons with appropriate qualifications
Repairs	Qualified electricians or persons with appropriate qualifications Qualified fitters or persons with appropriate qualifications	Assembly specialist or persons with appropriate qualifications



**Note**

The operator must ensure that the personnel have been instructed in the operation and have understood the operating instructions. If anything is unclear, please contact Walpol or our representatives.

**2.2. Safety rules for working in and on electrical installations**

- |   |  |   |
|---|--|---|
| 1. disconnect (disconnect all poles of an electrical system from live parts | 2. Secure against being switched on again<br>3. Check that no voltage is present | 4. Earth and short-circuit<br>5. Cover or isolate adjacent live parts |
|---|--|---|

- Disconnect the device from the power supply and secure it against being switched on again.
- Check that there is no voltage using a two-pole voltage tester.
- It is strictly forbidden to carry out work on parts that are live.
- Electrical connection only in accordance with the enclosed wiring diagrams
- Connect the unit only to a suitable base and only to firmly laid cables.
- The unit must be closed during operation.

**3. Warranty**

For warranty claims to be valid, the products must be properly connected and operated and used in accordance with the data sheets.

**4. Delivery, transport, storage**

**Delivery**

Each speed controller leaves our factory in perfect electrical and mechanical condition. It is recommended that the speed controller be transported to the installation site in its original packaging.

**Check delivery**

- Check the packaging for transport damage. Any damage must be noted in the cargo manifest.
- Check that the delivery is complete.

**Unpacking**



**Warning**

**When removing the transport packaging, there is a risk of damage due to sharp edges, nails, staples, splinters, etc.**

- Unpack the speed controller carefully.
- Check the speed controller for obvious transport damage.
- Do not remove the packaging until shortly before assembly.

## Transport

### Safety instructions

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

- In the case of open transport, ensure that no water can enter the speed controller.
- It is recommended that the speed controller be transported to the installation site in its original packaging.

### Storage

- Store the speed controller in its original packaging in a dry, dust-free place protected from the weather.
- Avoid exposure to extreme heat or cold.
- Storage in the temperature range -5°C to +50°C

## 5. Description

### 5.1. Speed controller type WPO 55

- The potentiometer is designed to control devices that require a control signal (e.g. EC motors with 10V input)
- The individual stages can be set individually on the circuit board by means of a screwdriver on the adjusting screws.
- The desired speed can be set in 5 stages by means of a rotary knob.
- It has a switch (dry contact) for remote ON/OFF switching of external devices.
- The potentiometer is suitable for surface mounting (IP55).



Type	Dimensions (height x width x depth)	Weight kg
WPO55	128x108x73 mm	0.37

- Power supply: 10 Vdc (+ 10%).
- Max. Voltage output 0 ... 10 V: 0.1mA
- IP protection: IP55
- Ambient temperature range: -20 ... .50 ° C
- Operating temperature range for storage: -20 ... .50 ° C
- Relative humidity: 85% Non-condensation
- Connector max. conductor cross-section: 1.5mm<sup>2</sup>

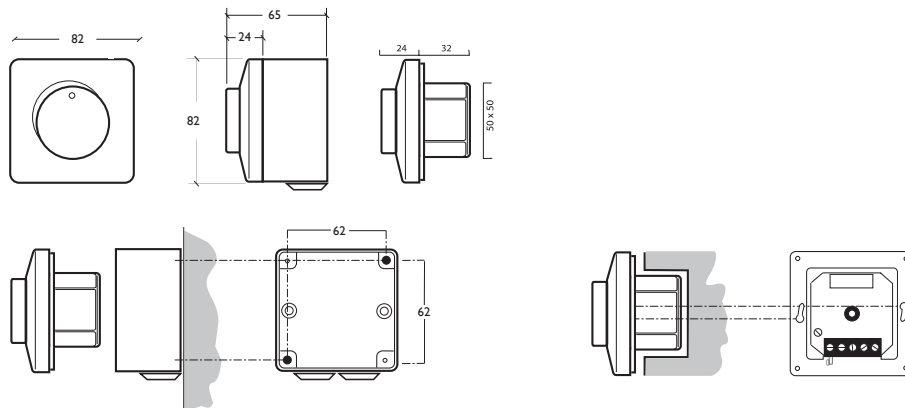
### 5.2. Speed controller type WPO

- The potentiometer is designed to control devices that require a stepless control signal.
- The supply voltage is freely selectable in the range of 0-10 VDC.
- The desired output voltage is continuously adjustable between 0 and the supply voltage (Us) by means of a rotary knob.
- It has a switch (dry contact) for remote ON/OFF switching of external devices.
- The potentiometer is suitable for flush mounting (IP44) as well as surface mounting (IP54).



Type	Dimensions (height x width x depth)	Weight kg
WPO	82 x 82 x 65 mm	0.2

- Power supply: 10 Vdc (+ 10%).
- Max. Voltage output 0 ... 10 V: 0.1mA
- IP protection: IP40/54
- Ambient temperature range: -20 ... .50 ° C
- Operating temperature range for storage: -20 ... .50 ° C
- Relative humidity: 85% Non-condensation
- Connector max. conductor cross-section: 1.5mm<sup>2</sup>



## 6. Installation



### Note

**This is not a ready-to-plug-in unit.**

After installation as intended, this is a component in a system. The system as a whole must be installed in accordance with the relevant regulations. The VDE and EVU regulations must be observed. If necessary, the installer must coordinate the effect of this unit on the function of a ventilation and heating system with the system planner and the system operator.

- **The manufacturer reserves the right to make changes to the unit or documentation without prior notice, e.g. to improve performance.**
- **The manufacturer is not liable for damage caused by misuse, improper use, incorrect use or as a result of unauthorised repairs/changes.**
- Check the surface for load-bearing capacity before installation.
- Take all static and dynamic loads into account.
- Connect the unit only to permanently laid cables.
- Electrical connection only in accordance with the currently valid VDE and EN guidelines as well as TAB's (Technical Connection Conditions) of the regional power supply companies
- The controller is to be screwed to a flat surface (wall etc.) using threaded screws.
- Open the controller housing by loosening the screws of the cover incl. grommets.
- Pull the cables through the grommets.
- The connection must be carried out according to the wiring diagram.
- Before closing the cover, position the internal cables correctly.

### General safety instructions

- The installation may only be carried out by appropriately qualified persons, for details, see Table 1 Qualification.
- Take into account the system-relevant conditions and requirements of the system manufacturer or system builder.
- Safety devices must not be dismantled, bypassed or rendered inoperative.
- There is a risk of electric shock when installing a live controller.

### Prerequisites

- Make sure that the speed controller and all its components are undamaged.
- Make sure that the data on the type plate (speed controller and motor) correspond to the operating conditions.
- Make sure that there is sufficient space for mounting the speed controller.
- Mount the speed controller so that there is sufficient access for troubleshooting, maintenance and repair work.
- When mounting, protect the unit from dust and moisture.

## 7. Electrical connection

### Warnings:

- Before installing and plugging the controller into the mains, check that the technical characteristics explained in these instructions also correspond to those of the electrical mains and voltage.
- Always use good quality and appropriate electrical cables to connect the controller to the mains and voltage.
- The electrical equipment must be checked regularly: Damaged wires and cables must be replaced immediately.
- Install the controller in ventilated places and away from heat sources, especially if the current load is near the maximum power.
- After removing the cover to fix it to the bracket, connect the cables to the terminal strip on the circuit board according to the connection diagram.
- Then carefully close the cover again.



### Warning

**Danger from electrical voltage!**

- The safety rules must be observed, see Safety rules for working in and on electrical installations
- Prevent water from entering the terminal box.
- The electrical connection may only be carried out by suitably qualified persons, for details see table Qualification

### Regulations:

- Accident prevention regulations VGB, BGV A3, TRBS
- DIN VDE 0100, DIN VDE 0105
- EN 60730 (Part 1)
- Regulations (TAB's) of the local VNB
- As well as generally recognised rules of technology.

## 8. Connection diagram and function

### 8.1. Speed controller WPO 55 5-stage

Select output voltage via front knob:

Position 0 = 0 V

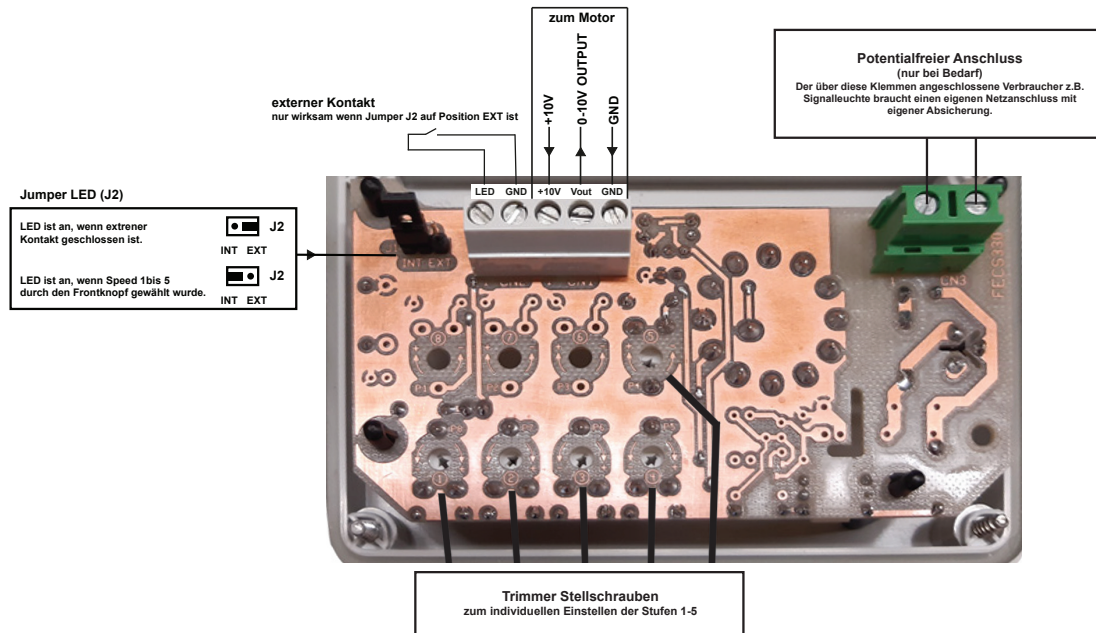
Position 1-5 = individual speeds

Jumper "LED" (J2)

With the jumper "LED" (J2) you can select whether the illumination of the LED is to be controlled via the front knob or via an external contact.

- Jumper J2 in position "INT": front knob in position "0", LED = OFF; front knob in position "1-5", LED = ON.
- Jumper J2 on position "EXT": If the external contact with the terminals "LED" and "GND" (terminal CN2) is closed, LED = ON. If the external contact is connected to the terminals "LED" and "GND" (connector CN ") and is open, LED = OFF.

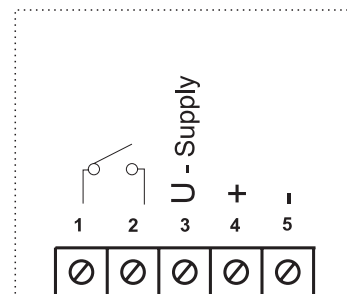
The LED can be controlled externally by a mechanical contact or also by an open collector



## 8.2. Speed controller WPO infinitely variable

### Wiring diagram

- 3 = Us supply voltage (0-12 VDC)
- 4 = + output voltage (0)
- 5 = - ground
- 1,2 = Dry contact for remote ON/OFF connections
- Cable cross-section: max. 2.5 mm<sup>2</sup>



## 9. Commissioning

Only if commissioning has been carried out correctly and written proof of this is provided, is the warranty valid.

### Safety instructions

Commissioning may only be carried out by appropriately qualified persons, for details, see table Qualification Requirements



- Installation and electrical connection have been completed properly.
- Residual material from the installation and foreign bodies have been removed from the speed governor and the ducts.
- Before switching on, check the speed governor for visible damage and ensure that the protective devices are functioning properly.
- The cable glands have been tightened.
- The data on the type plate corresponds to the connection data.

## 10. Disposal

- Ensure that the material is recycled. Observe the national regulations.
- The unit and the transport packaging consist mainly of recyclable raw materials.

## 11. Spare parts

- Only use original spare parts from Walpol!
- When ordering spare parts, state the serial number of the speed controller. This is indicated on the type plate.

## 12. EU Declaration of Conformity

<b>The manufacturer:</b>	Walpol GmbH Benzstr. 13 45891 Gelsenkirchen
<b>Product designation:</b>	Speed controller
<b>Type designation:</b>	WPO
<b>Serial number</b>	All Manufactured
<b>From year of manufacture:</b>	2005

The manufacturer declares that the above-mentioned products in their design and construction as well as the version marketed by us comply with the harmonisation regulations listed below:

Electronic speed controllers for voltage controllable single phase electric motors,  
Types: MTP, MTX, MTY, STL and ERV

Installed in accordance with the installation standards, manufacturer's instructions and professional rules, duly maintained and used for the applications as intended,

Comply with:

Low voltage  
Directive 2006/95/EC on low voltage

EN 60335-1:2002  
Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1:2001 (Modified))  
Amendment A11:2004 to EN 60335-1:2002  
Amendment A1:2004 to EN 60335-1:2002 (IEC 60335-1:2001/A1:2004)  
Amendment A12:2006 to EN 60335-1:2002

EN 60669-1:1999  
Switches for household and similar fixed-electrical installations — Part 1: General requirements (IEC 60669-1:1998 (Modified))  
Amendment A1:2002 to EN 60669-1:1999 (IEC 60669-1:1998/A1:1999 (Modified))

EN 60669-2-1:2004  
Switches for household and similar fixed electrical installations — Part 2- 1: Particular requirements — Electronic switches (IEC 60669-2-1:2002 (Modified))

EMC:  
Directive 2004/108/EC relating to electromagnetic compatibility

Immunity:  
EN 61000-6-2:2005  
Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments (IEC 61000-6-2:2005)

Radiation:  
EN 61000-6-3:2007  
Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments (IEC 61000-6-3:2006)

Harmonics:  
EN 61000-3-2:2006  
Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current  $\leq 16$  A per phase) (IEC 61000-3-2:2005)

The products are to be installed and maintained by skilled personnel.  
The CE mark is affixed.

Place: Gelsenkirchen  
Date: 01.012.2021



Maximilian Girnus  
Managing Director WALPOL GmbH

FASAR ELETTRONICA s.r.l.  
Strada della Marina, 9/6 – 60019 Senigallia (AN) – Italia

### SELF-DECLARES

That the product:

#### Five speed motor regulator p/n DS-X-H52-PO-5S

conforms to the following standards:


- Electrical Safety: CEI EN 60335-1/A13/A14
- Power measurement of noise: CEI EN 55014-1
- Measurement of conducted emissions: CEI EN 55014-1
- Measurement of harmonic current emissions: CEI EN 61000-3-2
- Detections of voltage fluctuations (FLICKER): CEI EN 61000-3-3
- Application of electrostatic discharge (EDS): CEI EN 55014-2  
CEI EN 61000-4-2
- Immunity to fast transients (BURST): CEI EN 55014-2  
CEI EN 61000-4-4
- Immunity to impulses (SURGE): CEI EN 55014-2  
CEI EN 61000-4-5  
CEI EN 61000-4-5/A2
- Immunity to conducted noise induced by RF fields: CEI EN 55014-2  
CEI EN 61000-4-6
- Immunity to power failures and brief interruptions: CEI EN 61000-4-11.

The conformity tests have been carried out at our internal laboratory for the purpose of verifying the correct design criteria of the appliances.

The Fasar Elettronica Srl laboratory is not a LAT accredited laboratory.

Senigallia, 12.2019  
Direzione Generale

Flavio Falcinelli



[www.WALPOL.eu](http://www.WALPOL.eu)