

## Wiper W55 V2

02A100XX8



The TriOS Wiper W55 V2 provides an additional cleaning option for all TriOS photometers with path lengths up to 10 mm. The wiper housing can be mounted on the sensor in just a few steps and provides reliable cleaning of the measurement windows. The new magnetic axis lock allows quick and easy wiper blade replacement, without any tools.

The new version of the wiper now features blockage detection and removal, and a service mode that increases the life of the wiper through regular use. The accessory can also be used in seawater up to a depth of 10m.

### Technical Specifications

<b>Path lengths</b>	2 mm, 5 mm, 10 mm
<b>Control port</b>	4-pin M8-plug A suitable M8 connection cable with open end is included in the scope of delivery.
<b>Trigger input</b>	5-24 VDC ( $\pm 10\%$ )
<b>Power consumption trigger input</b>	2...15 mA
<b>Operating time (max.)</b>	3 Seconds
<b>Dimensions L x Ø</b>	175 mm x 80 mm
<b>Weight</b>	0.52 kg
<b>Material</b>	NBR, POM, TPE (PP, EPDM), Titanium or V4A
<b>Power supply</b>	12-24 VDC ( $\pm 10\%$ )
<b>Power consumption</b>	approx. 2-6 W in operation; max. 0.75 W in standby
<b>Maintenance effort</b>	$\leq 0.5$ h/month typical
<b>Maintenance interval</b>	depending on application
<b>Warranty</b>	1 year (EU & USA : 2 years)
<b>Max. Pressure</b>	1 bar
<b>Protection Type</b>	IP68
<b>Inflow velocity</b>	up to 10 m/s
<b>Operating temperature</b>	+2...+40 °C
<b>Storage temperature</b>	-10 °C...+70 °C

## Quick Guide

### 1 Scope of Delivery

02A100008



- 1x Wiper
- 1x M8 open end cable
- 1x adjustment screw with o-ring
- 1x compressed air fitting incl. sealing plug
- 1x magnet

02A100X18



- 5x wiper blades 2, 5 or 10 mm path
- 1x axis for 2, 5 or 10 mm path
- 1x grease

Optional (recommended)

00P100010



- 1x protective cage
- 1x hexagonal offset screwdriver 5 mm

**NOTICE** If there are larger particles or objects in the sample water, you should always use a protective cage to avoid damaging the wiper gear (see p. 9 for installation).

### 2 Inserting / changing the wiper blade

The wiper blades and the axis are not included in the scope of delivery of the wiper housing, as these must be selected depending on the path length of the sensor. A set of wiper blades contains five wiper blades and an axis of the appropriate size incl. grease.

**NOTICE** We recommend replacing the wiper blades every 4-5 weeks. The axis should be changed every 5-6 months (new box).

#### Item number

02A100008 Wiper W55 V2

02A100218 Set with wiper blades for 2 mm path

02A100518 Set with wiper blades for 5 mm path

02A100618 Set with wiper blades for 10 mm path



# Wiper W55 V2 // Quick Guide

**NOTICE** Wiper blades and axis must always be selected to match the path length of the sensor, otherwise the measuring windows may be damaged.

1. First place the wiper blade on the axis. To do this, push the wiper blade onto the axis until you hear a click.



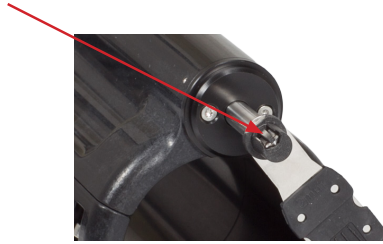
2. Slightly grease the O-ring on the axis and insert the axis into the spring in the wiper housing. The axis groove is magnetically tightened and must be inserted as far as it will go and, if necessary, turned slightly until the correct position engages.



**NOTICE** The wiper axis is not seated correctly until the O-ring is no longer visible and the axis can no longer rotate.

**NOTICE** Never immerse the wiper in water without the axis installed! Since no other seal is installed, unreparable damage will occur which is not covered by the warranty.

3. To change the wiper blade, it can be easily removed by lifting the upper part of the cover slightly and pulling off the blade.



**NOTICE** External mechanical loads, such as turning the wiper or the axis by hand, can damage the gear unit!

If the wiper gets stuck in the light path or is jammed by an object, we recommend removing the wiper completely from the sensor to prevent damage to the transmission. To do this, loosen the four screws on the wiper housing and remove the wiper from the sensor.

Alternatively, only the axis can be pulled out. It is held magnetically and can simply be pulled out in the direction of the axis. Please remember to remove the wiper blade beforehand.

### 3 Change housing seal (O-ring) and axis

It is recommended to replace the O-ring and axis every 5-6 months.

1. Remove the axis with the wiper and the sealing ring.

**NOTICE** Attention, the axis is held magnetically and must be pulled out in the direction of the axis. Do not attempt to unscrew the axis under any circumstances.

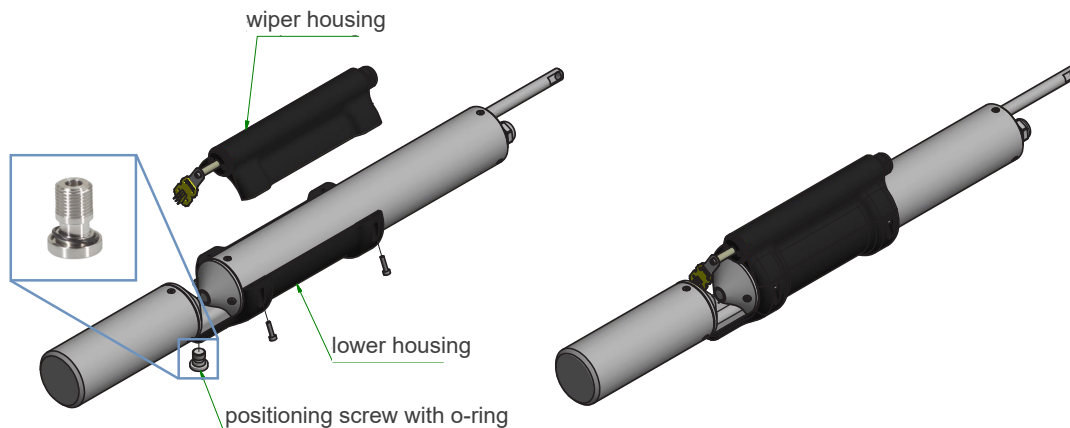
2. Slightly grease the O-ring of the new axis and attach the new wiper blade.
3. Insert the new axis with wiper blade and O-ring into the spring in the wiper housing. The axis groove is magnetically tightened and must be inserted as far as it will go and, if necessary, turned slightly until the correct position engages.

### 4 Installation on the sensor

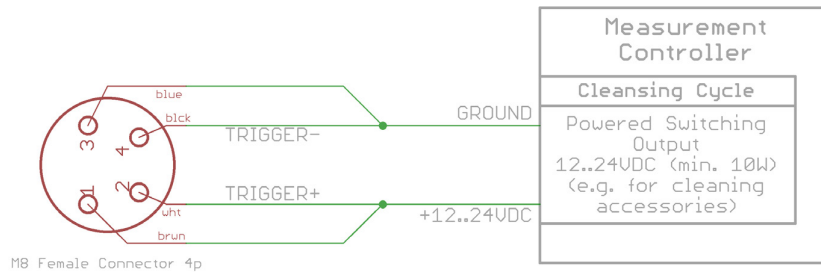
1. Place the lower housing of the wiper against the sensor and align it with the screw hole. Now tighten the positioning screw.

**NOTICE** Please make absolutely sure that there is an O-ring on the adjustment screw.

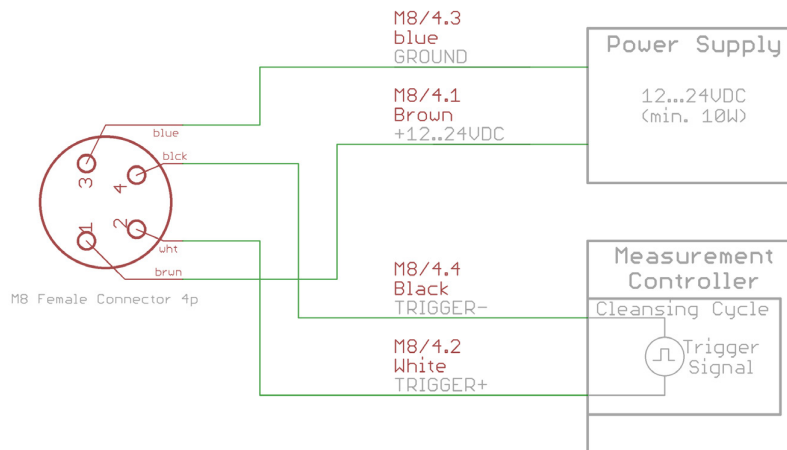
2. Place the upper part of the wiper housing on top and fasten with the four screws. At first only screw the screws in very slightly and then tighten them one by one in a symmetrical order.



## 5 Commissioning



**Option 1:** M8 connection cable with open end, trigger is connected parallel to the supply voltage (included in delivery).



**Option 2:** M8 connection cable with open end, trigger and power supply are separate.

If the wiper is connected using the supplied M8 connection cable (see option 1), the cleaning process is automatically started after the supply voltage of 12 – 24 VDC has been applied. This lasts approx. 2-3 seconds (two wiping cycles) – then the wiper stops in the parking position. For further wiping operations, the power supply must be interrupted for at least one second and then reconnected.

**IMPORTANT:** The supply voltage must remain switched on until the end of the wiping process (reaching the parking position), otherwise the wiper may stop at an undefined point. In the worst case, it then covers the light path and faulty measurements occur!

For an alternative connection where power supply and cleaning control (triggering) are separate, the open end of the M8 line can be disconnected (see option 2). Remove the twin ferrules and equip the individual cores with single ferrules. Now the wiper can be connected to a suitable DC voltage source according to the connection diagram shown in the *Option 2* figure. The trigger line in turn can be connected to a controller which controls the cleaning cycle. The wiping process is started by a voltage signal (5 – 24 V; min. duration: 100 ms) on the trigger line. Here, too, two wiping cycles are carried out, which require approx. 2-3 seconds. A new wiping process can then be started by re-triggering (pause between the intervals  $\geq 1$  second).

**IMPORTANT:** Even with this circuit option, it must be ensured that the supply voltage remains switched on during the wiping process!

# Wiper W55 V2 // Quick Guide

## 6 Connecting the wiper to the TriBox mini

### Necessary components



TriBox mini



Wiper



Open End Cable

### Connection

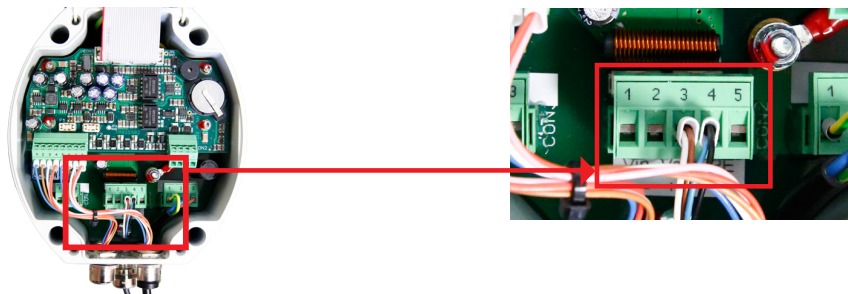
1. Open the lid of the TriBox mini by removing the dark grey covers and unscrewing the four screws underneath.



2. Place the wiper cable through the cable guide of the TriBox mini and tighten the cable guide.



3. Connect the blue-black wire of the wiper cable to the CON2 connector, pin 4 (VOUT-) and the brown-white wire to the CON2 connector, pin 3 (VOUT+). Make sure that the screws are tightened.



4. Close the TriBox mini lid, tighten the four screws and place the grey covers on the TriBox mini.
5. The wiper settings can now be adjusted in the TriBox mini menu under “Measurement & Cleaning”. Under “Cleaning Settings”, the cleaning duration should be at least 10 seconds and set to “active”.

# Wiper W55 V2 // Quick Guide

## 7 Connecting the wiper to the TriBox 3

### Necessary components



TriBox3



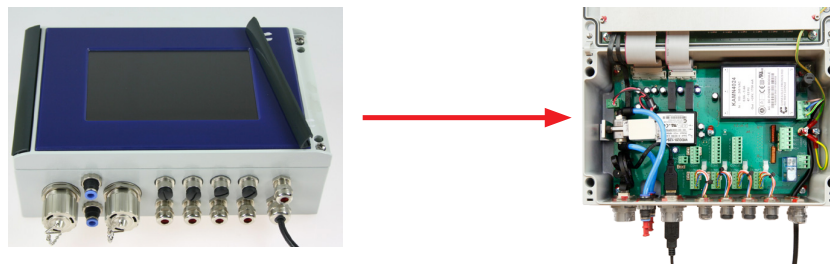
Wiper



Open End Cable

### Connection

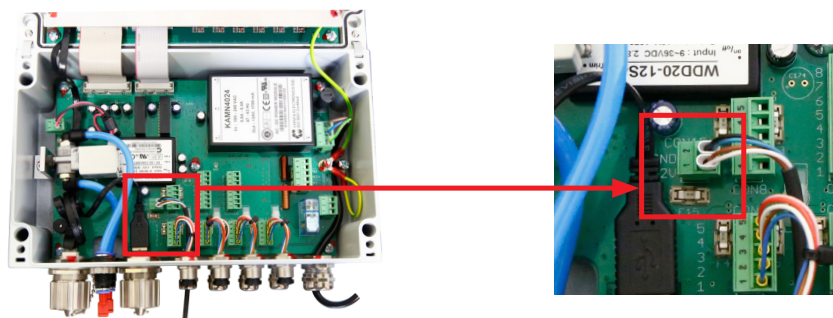
1. Open the lid of the TriBox3 by removing the dark grey covers and unscrewing the screws underneath.



2. Place the wiper cable through the TriBox3 cable guide and tighten the cable guide on the wider part of the cable.



3. Connect the blue-black wire of the wiper cable to the CON15 connector, pin 2 and the brown-white wire to the CON15 connector, pin 1. Make sure the screws are tightened.



4. Close the TriBox3 lid, tighten the screws and place the grey covers on the TriBox3.
5. The wiper settings can now be adjusted in the TriBox3 menu under "Cleaning". Cleaning time should be at least 10 seconds and the valve must be activated.

## 8 Blocking detection



After three wiping processes, the wiper blade always returns to the starting position. At the beginning of each process, the position is briefly checked. If the optical path is blocked, this is detected by the wiper and it attempts to loosen the interfering component with very short wiping movements. If this is unsuccessful, the wiper blade can also be removed when dry and the axle can be pulled out individually to manually unblock it.

**NOTICE** Attention, the axis is held magnetically and must be pulled out in the direction of the axis. Do not attempt to unscrew the axis under any circumstances!

## 9 Service Mode

The service mode is the new feature of the W55 V2 wiper. The service mode is activated by the supplied magnet and five full rotations in both directions are performed. This adjusts the home position and lubricates the planetary gear in all directions. It is recommended to remove the upper wiper housing from the sensor first before activating the service mode to avoid damage to the measuring windows and to ensure free rotation.

To increase the life of the wiper, it is recommended to perform this function 1x per month.



To activate the service mode, hold the supplied magnet against the housing in the area of the „S“ mark. Move the magnet slightly around the mark to hit the activation point. Once Service Mode is activated, the axis with the wiper blade will begin full rotations.

**NOTICE** The Service Mode should never be activated with the wiper protection cage mounted, otherwise damage to the wiper will occur.



## Wiper protective cage

00P100010



The sturdy plastic (POM) protective cage has been designed to keep coarse dirt and larger objects away from the wiper, thus protecting it from damage. However, the recesses allow the measuring medium to reach the optical path of the sensor unhindered. The measured values are therefore not influenced by unwanted contamination.

### Technical Specifications

<b>Size L x Ø</b>	220 mm x 88 mm
<b>Weight</b>	~ 0.5 kg
<b>Material</b>	POM



## 8 Installation of the protective cage on the sensor



1. The wiper must be correctly installed before mounting the cage on the sensor (see page 2 to 4).
2. Push the protective cage with the opening in the direction of the wiper and align it with the wiper shaft.



The sensor must be inserted in the middle of the holder provided inside the protective cage.

3. If the protective cage is correctly fitted, it must be finally fixed to the sensor with an Allen key (5 mm).



## 9 Mounting the compressed air purge on the wiper

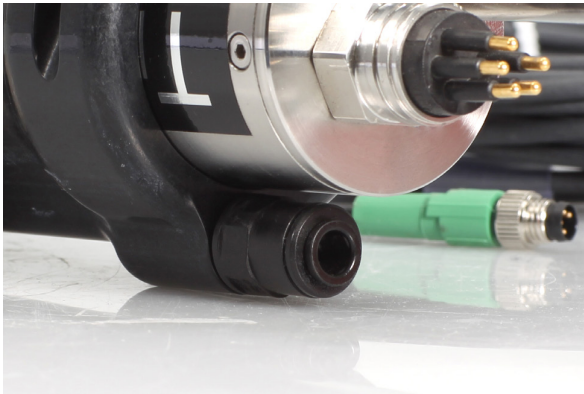
1. The adjustment screw needs to be fixed to the lower housing for mounting the compressed air purge.

**NOTICE** Please make absolutely sure that there is an O-ring on the adjustment screw.



Spare part no.: 10P000000

2. Moreover, the compressed air fitting needs to be inserted into the rear housing to connect a compressed air tube.



3. The compressed air purge system is now operational and the compressed air is lead to the optical path via the wiper.