

**Verification Kit for  
AMI Codes-II O3**

A-85.151.300

*swan*  
*Analytical Instruments*

SWAN ANALYTISCHE INSTRUMENTE AG, CH-8340 Hinwil  
TEL. +41 44 943 63 00, FAX +41 44 943 63 01 e-mail swan@swan.ch

## Overview

The verification kit contains two optical filters (labeled “low” and “high”) with certified reference absorbances of ca. 0.09 A and 0.18 A, which correspond to approximately 250 ppb and 500 ppb ozone. The exact values are specified in the enclosed calibration certificate. The filters’ absorbances were chosen to lie in the center and at the upper limit of the measurement range of AMI Codes-II O<sub>3</sub>. The verification procedure confirms the photometric accuracy and linearity of the core components of AMI Codes-II O<sub>3</sub>, photometer and converter electronics, over the entire measurement range by comparison of the absorbances measured by AMI Codes-II O<sub>3</sub> with the certified reference values.

A maximum deviation of  $\pm 0.010$  A is required for a successful photometer verification.



## Instrument performance verification

### Set reference values

Prior to performing the first verification and after each recertification, the reference values for the filters “low” and “high” must be set in menu 4.1.1 <Operation><Sensors>\<Verification kits>. The reference values are specified on the current calibration certificate.

### Verification interval

The recommended verification interval is 6 months.

### Verification procedure

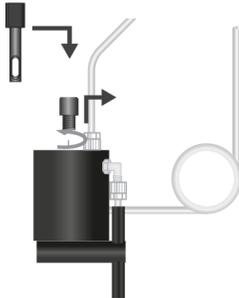
Before each use, check the expiration date on the calibration certificate. If the expiration date has expired, send the verification kit to Swan for recertification.

Carefully inspect both verification filters for visible contaminations (dust or stains) as these can prevent a successful verification. If necessary, apply the cleaning procedure described in [Cleaning, p. 4](#).

To start the verification, follow the dialog in menu 3.2.1 <Maintenance>\<Service>\<Verification>.

**NOTICE:** Start any time, if a measuring cycle is in progress wait for next prompt.

1. Select verification filter “low”. Press [Enter] to continue.
2. Stop sample flow by closing the regulating valve. Wait for next prompt.  
⇒ The constant head is drained and an automatic zero measurement is performed.
3. Rinse the verification filter “low” with deionized water to remove any dust particles.
4. Open the photometer and insert the verification filter “low”. Press [Enter] to continue.



5. Rotate the wedge, so that it points away from the instrument’s back panel. Adjust the angle for minimum absorbance (see AMI display): The verification filter is exactly perpendicular to the measurement beam inside the photometer at minimum absorbance .
6. Press [Enter] to confirm the absorption measurement.
7. Remove the verification filter “low” from the photometer and shake off large water droplets. Let the filter dry before putting it back into the storage box.
8. Close the photometer with the screw plug. Press [Enter].  
⇒ A final zero measurement is performed and the results are saved.
9. The results of the verification are displayed. Press [Exit].
10. Repeat steps 1–9 with the verification filter “high”.

If the verification ends with an error message, refer to the troubleshooting chapter in the Operator’s Manual.

## Verification history

Can be reviewed in menu 2.2.1.5

<Diagnostics>\<Sensors>\<Photometer>\<Ver. History>.

## Cleaning

Use the provided wipes or other lint-free, non-abrasive optical grade wipes. If you choose dry wipes, use analytical grade isopropanol or ethanol to moisturize the wipes before application. Do not use any other cleaning agents or wipes, as they can damage the optical surfaces.

Wear powder-free laboratory gloves during cleaning to keep grease/salt from your skin away from the verification filters.

1. Prior to mechanical cleaning, rinse the verification filters with deionized water or blow off loose dust/particles. Shake off excess water.
2. If particles or stains remain on the filter after step 1, carefully wipe the optical surfaces. Allow residues of the cleaning agent to evaporate.
3. Check the optical surfaces. Repeat the cleaning procedure if there is any residual dirt.

## Storage and handling

Observe the following points:

- ◆ When not in use, the verification filters should always be kept in the provided box.
- ◆ Avoid soiling of the optical surfaces as far as possible.
- ◆ The optical surfaces must not come into contact with hard objects as these can scratch the optical surfaces.
- ◆ Dirt or scratches on the optical surfaces change the optical properties of the verification filters and may make recertification or even replacement of the verification filters necessary.

## Recertification

The calibration certificate is valid for two years from the date of issue. Please contact your local SWAN dealer if recertification or inspection of your verification filters is required. When returned for recertification, the verification filters are measured as received before cleaning and recertification. The data of this measurement are available on request.