ANALYT MESSTECHNIK



INSTRUCTIONS FOR USE

SKC HAZ-DUST IV Calibration Span Reference

Checking the factory calibration of the SKC HAZ-DUST IV particulate monitor with the Calibration Span Reference (calibration standard): when to check, establishing the K value, the check itself and what to do with the result.

AMTC-IN-0018

About this document

These instructions cover the SKC Calibration Span Reference, the calibration standard for the SKC HAZ-DUST IV particulate monitor. It explains when to check the monitor's calibration, how to establish the K value of the reference, how to run the check, and what to do with the result.

Read Product and supplied items (p. 4) first, then follow Calibration check (p. 5), Procedure (p. 7) and After use and sample handling (p. 9) step by step. For operating the monitor itself, cleaning the sensor optics and charging the battery, see the *SKC HAZ-DUST IV operating manual*.

Keep these instructions for the lifetime of the product. The current revision is on the product page at analyt-mtc.com.

How these instructions mark information

Note
Information that helps understanding; never a hazard.

Document information

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Revision history

Rev.	Date	Change
2	October 2026	Quality programme: new document type, number and identity pages.
1	October 2026	First issue.

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CHAPTER 1

Product and supplied items

The Calibration Span Reference is a light-scattering device that plugs into the sensor head of the HAZ-DUST IV in place of the sampling inlet. It presents the optical sensor with a constant signal, so the monitor should always show the same concentration with it fitted. That value is the reference's K value, also called the K factor.

Comparing the reading with the K value tells you whether the factory calibration of the monitor still holds. The check passes when the two agree within **±10 %**.

When to check

- the first time you use the monitor;
- once a month in normal use;
- after the monitor has been dropped or damaged.

The check does not replace recalibration. Send the HAZ-DUST IV to Analyt-MTC once a year for recalibration (see Service and contacts (p. 11)).

CHAPTER 2

Before use

What you need

- the HAZ-DUST IV, with clean sensor optics and a fully charged battery;
- its thoracic sampling inlet, filter cassette and air intake tubing;
- the zeroing filter;
- the Calibration Span Reference;
- a clean environment to work in;
- a pen, to write the K value and the monitor's serial number on the reference.

> **Note**
> The K value is established on one particular monitor, and that monitor's serial number is written on the reference next to it. Before a check, make sure the serial number on the reference matches your monitor.

Calibration check

The check has four parts: prepare and zero the monitor, fit the reference and read the display, compare the reading with the K value, and set the monitor up for sampling again. A reference needs a K value before the first check: if none is written on it for your monitor, establish it first (see Establish the K value (p. 8)).

Prepare and zero the monitor

> **Note**
> **Work clean, with a full battery.** The check needs clean sensor optics, a fully charged battery and a clean environment. Clean the optics and charge the battery fully as the HAZ-DUST IV operating manual describes.

1. Check that the sensor optics are clean and the battery is fully charged.
2. Switch the display on with **ON/OFF**.
3. Push the thoracic sampling inlet into the sensor head.
4. Connect the filter cassette to the sensor head.
5. Connect the air intake tubing to the filter cassette.
6. Run the internal pump to stabilise the monitor:
   a. In the Main Menu, select **Run**.
   b. Select **Run - Continue**.
   c. Select **Yes**. The pump starts; let it run for two minutes.
   d. When at least two minutes have passed, press **Enter**. The pump stops.
7. Zero the monitor:
   a. Fit the zeroing filter into the thoracic sampling inlet.
   b. In the Main Menu, select **Auto-Zero**. A confirmation screen shows for a moment.
   c. Select **Auto-Zero**. The Auto-Zero screen stays on while the monitor zeros; when the Main Menu comes back, zeroing is complete.

8. Pull the thoracic sampling inlet out of the sensor head and detach the air intake tubing.

CHAPTER 3

Procedure

Fit the reference and read the display

9. Push the Calibration Span Reference into the sensor head, as Figure 3-1 (p. 7) shows.
10. Start the internal pump again as in step 6 a to c, and let it run for two minutes before you read the display.

> **Note**
> If no K value is written on the reference yet, do not compare: note the reading and go to Establish the K value (p. 8).

11. Read the concentration shown on the display while the pump is still running.
12. Press **Enter** to stop the pump.



Figure 3-1. Pushing the Calibration Span Reference into the sensor head, in place of the sampling inlet.

Compare the reading with the K value

> **Note**
> Without a K value there is nothing to compare with. Establish it first (Establish the K value (p. 8)).

13. Compare the reading from step 11 with the K value written on the reference, and act on the result.

Reading vs. K value	Result and action
Within ±10 %	The monitor has passed the calibration check. Go on to Return to sampling (p. 9).
Outside ±10 %	Repeat the whole check from step 1 to rule out a handling error. If the reading is still outside ±10 %, contact Analyt-MTC and return the monitor for recalibration.

Example: with a K value of 150, readings from 135 to 165 pass.

Establish the K value

Do this once for a reference that has no K value recorded for your monitor. The K value is the average of three readings.

1. Prepare and zero the monitor (steps 1 to 8).
2. Fit the reference and read the display (steps 9 to 12).
3. Write down the reading.
4. Repeat steps 9 to 12 twice more, so that you have three readings.
5. Average the three readings. The result is the K value.
6. Write the K value and the serial number of the monitor on the Calibration Span Reference.
7. Use this K value for every later check.
8. Set the monitor up for sampling again (steps 14 to 18).

CHAPTER 4

After use and sample handling

Return to sampling

14. Take the Calibration Span Reference out of the sensor head.
15. Reconnect the air intake tubing and put the sampling inlet back.
16. With the zeroing filter fitted, start the pump as in step 6 a to c and run it for two minutes.
17. Press **Enter** to stop the pump.
18. Perform an auto-zero as in step 7 b and c.

> **Note**
> Keep the reference with the monitor. The K value and serial number written on it are needed for every monthly check.

Disposal

Dispose of the span reference under local regulations; separate metal, glass and plastic parts for recycling where possible.

CHAPTER 5

Ordering information

Order from Analyt-MTC with the order code.

Ask Analyt-MTC for the order code of a replacement Calibration Span Reference.

CHAPTER 6

Service and contacts

Contact and support

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Before you call

Have the following at hand so Analyt-MTC can help you quickly:

- the serial number of the HAZ-DUST IV;
- the K value written on the Calibration Span Reference;
- the concentration readings you took during the check.

Send the HAZ-DUST IV to Analyt-MTC once a year for recalibration, and also if it still fails the calibration check after you have repeated it. Warranty matters follow Analyt-MTC's terms of sale. The Analyt-MTC contact details are above and on the back cover.

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