

SIEMENS

In-situ Laser Gas Analyzers

LDS 6

Calibration Verification Kit

Product Information

Introduction

General

For several gases a calibration check of LDS 6 analyzer can be done using a reference cell arrangement containing a mixture of the measurement gas and nitrogen. The unit should be used in conjunction with the 2 meter hybrid cable that is delivered with each calibration verification kit. The calibration check is preferably carried out at normal room temperature (23 °C/73 °F).

Note: This product information does not apply to the TÜV/MCERT calibration verification kit.

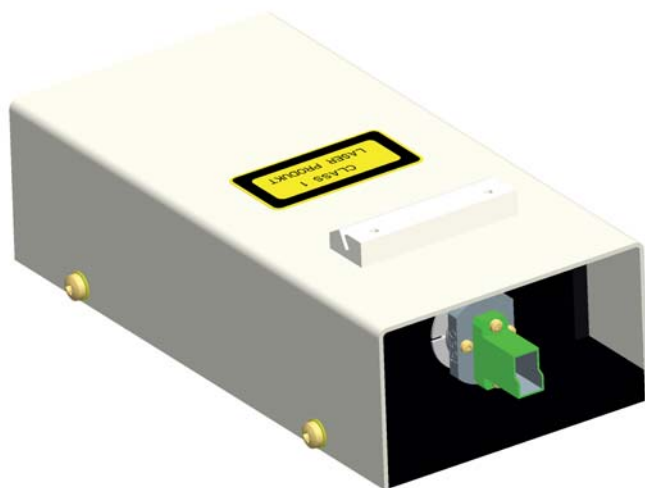


Figure Calibration verification kit

Safety notes

Intended Usage

The device may only be set up and used in conjunction with this documentation. Commissioning and operation of a device/system may only be performed by qualified personnel which is defined as persons who are authorized to commission, ground and label devices, systems and circuits in accordance with established safety practices and standards.

This device may only be used for the applications described in the catalog or this document. Correct, reliable operation of the product also requires proper transport, storage, positioning, and assembly as well as careful operation and maintenance.

The hybrid cables should be installed so that they are protected from mechanical wear such as arising from sharp edges or moving parts. During installation always keep the protective tube in such a position that the single-mode fiber connector is protected from dust. The operating temperature for the cables is -40 to +80°C (-40 to 176 °F) and the installation temperature is -20 to +80°C (-4 to 176 °F). The bending radius of the cables may never be smaller than 100 mm (4 ").

Note

Throughout the entire installation keep the fiber ends protected by the protective tubes!
Make sure that these are only be removed by authorized personnel!

Calibration Verification Kit

Preparation

At the reference cell

Slide the sensor card into its holder on the reference cell module. Insert the detector module into the hole on the reference cell and twist 90° to lock. Connect the multi-mode fiber and the power cable of the 2 meter hybrid cable to the sensor card. Connect the single-mode fiber to the E2000 connector of the launcher.

At the central unit site

For the channel to be checked replace the multi-mode fiber and the power cable at the back of the central unit with the multi mode fiber and the power cable of the other end of the 2 meter hybrid cable. Connect the single-mode fiber of the 2 meter hybrid cable to the E2000 connector of the corresponding measuring channel. Protect the fiber end from any dust or dirt. The performance of the analyzer may decrease substantially if the fiber ends become contaminated.

Calibration verification on LDS 6

On the LCD display, go to the Diagnostic Values Screen (2) and check the transmission of the specific channel. Adjust the potentiometer of the detector such that the value of the current transmission reads approximately 200 units. If there is no transmission at all, check the cable connections.

1. Go to the Pressure Correction screen (82).
 - Note all the original settings so that you can continue your measurements afterwards.
 - Set the mode to 'Manual'.
 - Enter 1013 mbar as manual value.
2. Go to the Temperature Correction screen (83).
 - Set the mode to 'Manual'.
 - Enter as manual value the present room temperature.
 - If applicable, go to the Interference Correction screen (84).
 - Deactivate all interference corrections.
3. Go to the Path Length screen (85).
 - Set the path length to 1 meter.
4. Go to the Unit screen (86).
 - Set the unit to the unit marked on top of the verification cell.

To get a reading as accurate as possible, the measurement value should be corrected for pressure changes in the calibration cell. The pressure inside the calibration cell increases with increasing temperature, and a correction factor for a compensation of this effect can be obtained from the following temperature correction curve. Measure the room temperature and read off the corresponding correction factor in the graph. Read the measurement value on the LDS 6 and divide the value with the correction factor. If the corrected measurement value is within two percent of the printed value of the calibration cell, the calibration is OK, otherwise check the instrument for faults.

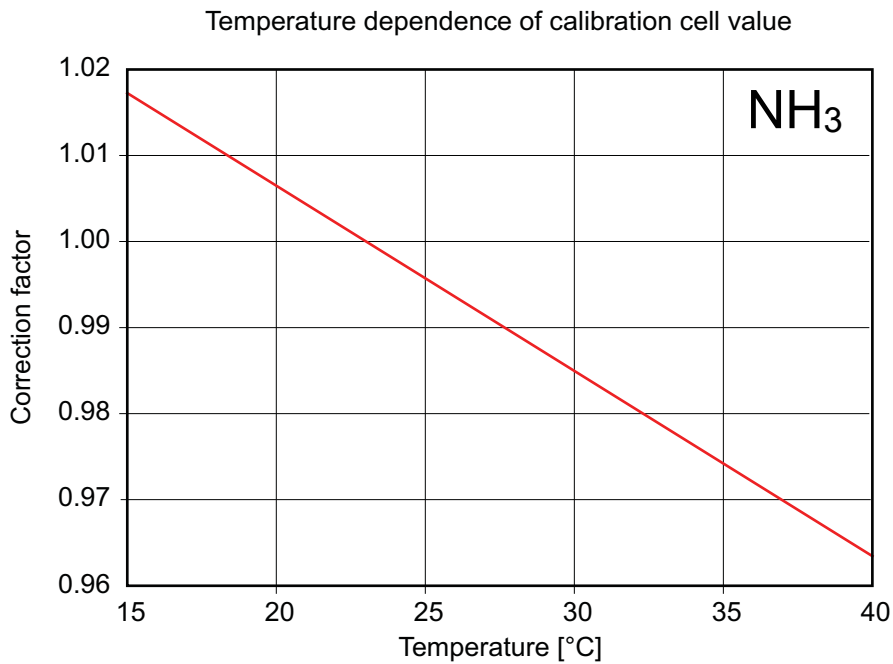


Figure Temperature correction curve (NH₃)

After having checked the calibration of all channels, the settings of the LDS 6 must be returned to its original values. Also the fiber connections must be restored into their original positions.

Re-calibration

CAUTION
Unauthorized personnel
Calibration of the unit by non-authorized staff will void warranty and might cause malfunction of the system. Always make sure that the calibration is carried out by authorized personnel. In case of doubt contact Siemens support.

The calibration verification equipment is only intended for checking the calibration of the LDS 6. It is highly recommended that Siemens support is consulted if re-calibration is needed. Siemens does not take the responsibility for any re-calibration performed by untrained personnel on site.

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