

Teststation TS400

for MicrotectorII series G450 and G460



- The on-site solution for daily Bump Test
- Maximum protection and high availability due to the daily tested gas detection devices
- Documentation of the daily check
- Optimisation of total cost of ownership of 0.49 Euro per day
- Mobile - simple and fast operation

Function tests of gas detection devices protects lives - cost-effective

The safe observation of dangerous concentrations of gas through the use of portable gas detection devices can lead to short term damages to the measuring properties or failure of the measurement functions due to changing operating locations and conditions.

Even reliable gas detection devices can be damaged by knocks, falls or environmental influences such as dirt, dust or water.

Moreover, sensor poisons such as silicon compounds, halogenated hydrocarbons or hydrogen sulphide have further great importance for the damage or for the unnoticed failure of the measurement function of sensors.



Requirements for the use and operation of portable gas detection devices

Requirements for the operation and use of gas detection devices are described in the **DIN EN 60079-29-2**^{*1}. The aforementioned standard strongly recommends the daily carrying out of a bump test with test gas. The leaflets of the **BG RCI [Statutory Accident Insurance Body for the Raw Material and Chemical Industries] T023/BGI 518** -gas detection facilities for explosion prevention- and **T021/ BGI 836** -gas detection facilities for toxic gases/vapours and oxygen, also call for the carrying out of **visual inspections** and the **daily bump test on the basis of this standard**.

Gas detection devices are **work equipment** for the purpose of **the Ordinance on Industrial Safety and Health (BetrSichV)**. The aforementioned **controls** are described in the technical regulations of **the Ordinance on Industrial Safety and Health (TRBS [Technical Regulations for Operational Safety] 1201)** and are implemented through the T021 and T023.

Worldwide strong growing advance towards the daily bump test

The daily function test (bump test) is becoming increasingly accepted and even demanded worldwide. National and also even more international authorities and associations from the area of work safety regard the daily execution as a proven procedure for the reliable use and safe operation of mobile gas detection devices.

Our innovative solution

For the implementation of growing requirements in daily use of gas detection devices, the **Teststation TS400** was developed for the carrying out of daily bump test with test gas. The station enables cost-effective, as well as flexible and mobile usage at the same time.

Bump test

The following functions are tested and are stored in the device as well as the TS400 within the bump test:

- Response behaviour of the sensors
- Functionality of the optical and acoustic alarm

Additional test options for:

- Reaction time for alarm 1
- Reaction time for alarm 2
- Response time T_{50} or T_{90}

The saved data can be transferred at any time to a PC and be presented in a spreadsheet application (e.g Excel).

Data storage

Due to the easy and convenient recording of all necessary data on to a **SD memory card**, the requirements

are fully met according to the set of rules T023/T021 of the BG RCI for the carrying out of the recording of display tests

Complete documentation

The results and data are stored after every test, not just in the gas detection device, but also in the Teststation. Due to the integrated SD memory card, there is the option to quickly and easily log the daily bump tests **on-site**. By saving the test results in the TS400 and the subsequent readout of the data via the **USB port**, data management is possible on a PC. All measurement data is permanently recorded - for the lifetime use of the device.

So the data is always safe even in the event of loss or damage to the gas detection device!

Quick and uncomplicated tests

During the display test, the measurement functions of the sensors and the triggering of the alarm for the gas detection device are automatically tested. Due to the fast checking, the gas detection devices are ready for use again in no time. The display test is carried out within just **20 seconds**.

Fast, easy and good value for money

In comparison to manual controls or with a calibration station, the expense for the test is extremely decreased. The time saving due to the automatic documentation of the test results and the later data evidence is a further advantage. In addition, weakening sensitivity of the sensors and the response characteristic of the sensors can be identified in good time with the Teststation.

Considerable reduction of total cost of ownership

By using the TS400, the running total cost of ownership - gas consumption, creation of documentation, time for the display test - is considerably reduced. As an example for such, the **costs of 0.49 Euro per gas detection device** were determined for the display test of a multi-gas measurement device.

Carry out daily Bump Tests and document completely

Practical transport case

A robust case was developed for the safe transport of test gas canisters, extraction valve, Teststation, power supply, vehicle charger adapter and gas measurement device. All parts have their established place - no slippage, no rattling, no cable clutter. The foam insert is tailored exactly to the GfG products and ensures the smooth transport of devices.

Flexible application

The Teststation TS400, in connection with an attached test gas canister, enables the carrying out of the necessary display tests for the multi-gas measurement devices Microtector II G450 and G460, when mobile or at decentralised operation sites. The supply of the station can also take place in a car or mobile workshop via a 12V or 24V power supply.

Comprehensive test gases

Different test gases are required according to the sensor placement of the gas detection device. For this purpose, test gas canisters are available as single or multi-gas canisters. With a mixed gas



canister for the testing of e.g. CO, CO₂, O₂, CH₄ and H₂S, **up to 464 tests*** can be carried out. The non-returnable canisters are handy and can be easily and environmentally friendly used for scrap metal after use. For this purpose the only thing that's needed is an easily

furnishable proof of disposal. There are no further waste disposal costs.

* Calculation of the test:	
Mixed gas canister	= 58 litre
Gas consumption/test	≅ 0.125 litre
Number of tests	≈ 464

Teststation TS400 in comparison to the calibration station DS400

	TS400	DS400
Display test with gas	✓	✓
Documentation of the daily check	✓	✓
12V / 24V power supply	✓	✓
Operating using 3 buttons on the gas measurement device	✓	✓
Display and documentation in the event of zero and test gas before and after a calibration/adjustment	-	✓
Integrated data logger (2 GB SD memory card)	✓	✓
Removable SD card	✓	✓
Time for the bump test	approx. 20 sec	approx. 45 sec
Bump test	semi-automatic	completely automatic
zero offset adjustment	-	✓
Sensitivity adjustment	-	✓
Purging with fresh air	-	✓
Gas measurement device insertable without / with pump (DIC1 / DIC2)	✓	✓
Charging function	optional	✓
Gas supply	manual	automatic
Meets the requirements of r BG RCI (T021 BGI 836 / T023 BGI 518)	✓	✓
Meets the requirements of DIN EN 60079-29-2	✓	✓

The right equipment for every requirement



Teststation TS400 for different gases

Technical data

Teststation TS 400

Dimensions:

143 x 90 x 160 mm (H x W x D)

Weight:

260 g

Power supply:

USB / in-car charger (12V or 24V)
230 volts power supply

Display:

Status display on the illuminated LCD
graphic display of the G450/G460,
alarm LEDs, real-time display

Operation:

Using the three buttons of the G450/
G460

Connections:

- 1x test gas input (via tube connector)
- 1x gas outlet (via tube connector)
- 1x USB port

Gas supply:

Manual via gas outlet device

Data storage:

Integrated Micro SD memory card for up to 2 GB memory for the permanent logging of data for the lifelong use of the device

Data transfer:

Via USB port

Accessories:

Transport case with insert pockets
Gas container with extraction valve tube adapter
Vehicle charger adapter
Power supply

Option:

Charging method for G450/G460

Conclusion:

- Display test and recording on-site
- Up to 464 tests per mixed gas canister (58 litre)
- Documentation of all occurrences
- Easy operation
- Fast, uncomplicated tests
- No PC necessary
- Reasonable to purchase
- Reduction of test gas and working hours reduce the operational costs
- Maximum protection due to carefully examined devices
- Meets the guidelines of the German BG RCI and the standards
 - EN 60079-29-1
 - EN 60079-29-2
- Handy and mobile
- Optimisation of operational costs, reducing down to less than 50 Cent per day
- Comprehensive range of test gas



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