

# GAS SAFETY SYSTEM

Working with hydrogen, carbon monoxide, chlorine and many more

The safety system works automatically and supports you when working with hydrogen and other flammable or toxic gases. The sensors of the system detect leaks and can automatically purge the instrument.

## System operation

- **completely automated preparation** of gas atmosphere including evacuation
- **purge gas inlet pressure is monitored** if gas runs low - chamber will be fully purged before the gas runs out
- system comes with a UPS for automatically purging the system **in case of a power outage**
- integrated burn-off unit with two independent igniters (only for flammable gases) and electrical current monitoring
- flashback arrestor valve integrated into outlet path
- vacuum level is monitored through two independent sensors during pumping to ensure low remaining oxygen levels
- chamber can be filled with programmable inert and sample-gas mixtures within a short time
- integrated 3-channel MFC with monitored set / is flow deviation for issuing an emergency purge if sample /auxilliary gas runs out
- system locks / unlocks lift / lower supply etc. independently from the main system
- **system works independently from PC** - in case of PC communication issues the safety system can react autonomously
- **high precision safety valve maintains overpressure in the chamber** - in case of a pressure drop an emergency purge is issued
- all parameters monitored for plausibility during operation
- gas outlet blockage detection

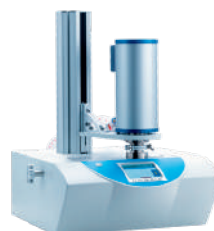


## Compatible devices

The safety system is mainly used by our customers in **thermobalances** and **dilatimeters**.

The system can be adjusted to different gases. We take these into account in the production of our system.

On request it is also possible to use the system for other Linseis measuring instruments. Please contact us!

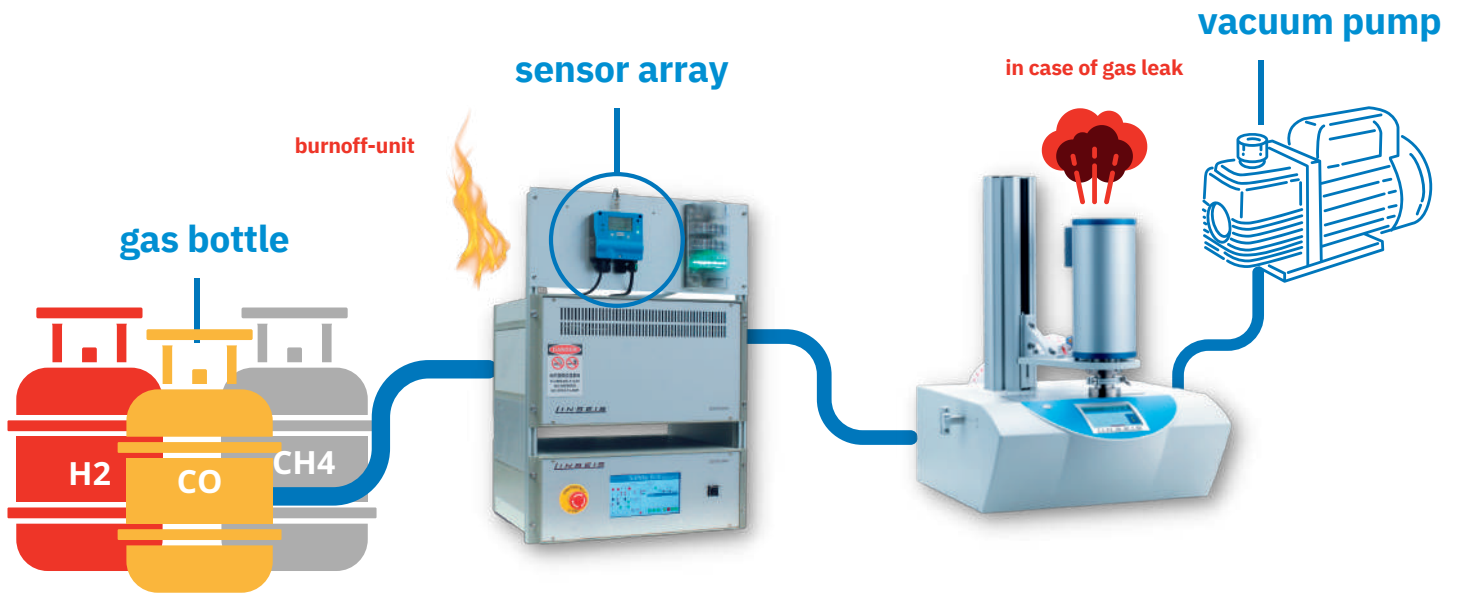


**STA PT 1600**



**DIL L 75 Horizontal**

# How the system works



- Sensors are also placed around and above the device to detect possible leaks
- Sensors can be prepared for different gases (H2, CH4, CO, CL2 and others)



When switching on the safety system, first it will check whether the communication to the AD converter is working.

All analog values are additionally checked via comparators. The burn off unit is turned on in case the gas room monitor reports a safe condition.



The safety device is now in standby mode. The furnace lift is now released for opening.

When the sample is inserted the gas cycle can be started. The chamber will be purged.

The operating pressure switch and relative pressure sensor are checked again. The vacuum pump is now vented. The chamber is first evacuated via the vacuum bypass with the backing pump.



**System will be automatically purged in the event of:**

- an empty gas cylinder
- an empty N2 cylinder (if the pressure drops below 4 bar threshold)
- one burner failing
- power outage
- furnace cooled down too quickly and there was no longer sufficient overpressure in the chamber

**The chamber is then purged with inert gas for 3 minutes (this corresponds to approximately 10 times the chamber volume).**