



Ready-To-Use Combustion Safeguard

HIMatrix CSG (combustion safeguard) is a preconfigured, cost-effective safety controller for burner management. The controller is closed and non-modifiable, which means you can install it immediately at reduced cost. The simple technical setup requires less maintenance than conventional controllers. It provides a high level of flexibility and offers around 65,000 configurations, as well as being compatible with 99 % of burner management applications. HIMatrix CSG is not dependent on a single vendor and fully complies with all relevant safety standards up to SIL 3.

For individual burner types, we are able to offer the flame guard system, which perfectly suits the requirements of a safe and reliable operation. The following CSG components can be used:

- HIMatrix CSG 01, gas burner with gas igniter incl. purging timer
- HIMatrix CSG 02, CSG 01 including fuel-air ratio monitoring
- HIMatrix CSG 03, gas burner with igniter lance incl. purging timer
- HIMatrix CSG 04, CSG 03 including fuel-air ratio monitoring
- HIMatrix CSG 11, load and combustion control system

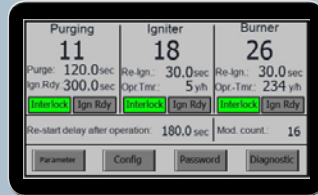
Certification

HIMatrix CSG is certified to fulfil the requirements of standards up to SIL 3. This includes:

- Type approval (TÜV Rheinland), in accordance with:
 - EN 298
 - EN 12067-2
 - EN 1643
- EU type approval according to the Gas Appliances Regulation 2016/426/EU (DVGW)
- Certified by NRTL (TÜV Rheinland North America Co.), in accordance with:
 - ANSI/ISA TR 84.00.05
 - NFPA 85, 86, 87
 - UL 508

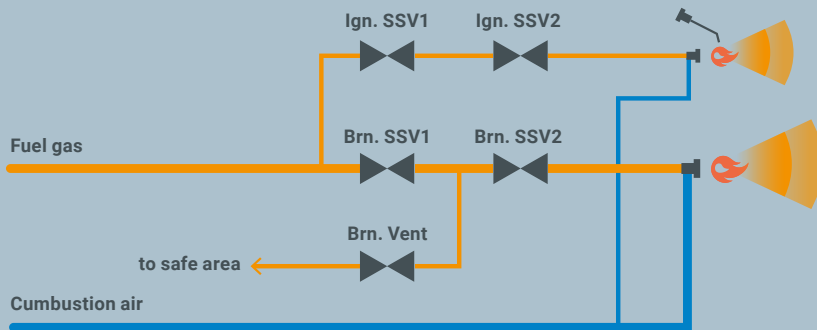
LCD screen for smart handling:

- Monitoring of burner operation
- Monitoring of burner start and stop sequence
- Set safety and process parameters
- Configure instrumentation
- Set user password
- Analyze comprehensive diagnostics
- Receive alerts for reduced downtime after shutdown
- Show operation time for scheduled maintenance



On-board functions:

- Combustion chamber purging sequence including timer
- Gas igniter start, operation and stop sequence
- Gas burner start, operation and stop sequence
- Safety interlocks (BPS, BMS)
- Flame monitoring via a compact sensor (dry contact)
- Leak test of gas burner safety shut-off valves
- Fuel-air ratio monitoring and shutdown
- Load and combustion control (control valves and/or motor dampers)
- Including O₂/λ control



Pilot burner and gas burner: An example of instrumentation for CSG 01 and CSG 02

Smart Facts and figures

- No vendor lock-in for instrumentation as industrial standard signals are processed (binary = 0/24VDC, analogue = 4–20mA)
- High flexibility supports all standard instrumentation
- Short periods of downtime in the event of a malfunction due to complete diagnostics, including initial value error messaging
- Easy-to-adapt dynamic process parameters via a separate panel (CSG-P01)
- Connection to high-level systems via MODBUS TCP, such as the distributed control system (DCS).
- Leak testing of safety shut-off valves in accordance with EN 1643/EN 13611
- Built-in monitoring and shutdown of air-fuel ratio (Lambda) in accordance with EN 12067-2
- Integrated pressure and temperature adjustment for analogue flow measurement
- EU type approval in accordance with the Gas Appliances Regulation 2016/426/EU (2009/142/EU) in compliance with the product standard EN 298/EN 13611
- SIL 3 assessment possible for the entire safety lifecycle

Multi fuel/Multi burner configurations

CSG 01 + CSG 11

- boiler/oven safety interlocks
- burner safety interlocks
- start/stop of air fan
- start/stop fuel oil pump
- start/stop sequence burner
- single (SIL 2) fuel air ratio limits
- air pressure control
- air factor control
- fuel-air ratio control
- load control
- O₂ correction control

CSG 02 + CSG 11

- boiler/oven safety interlocks
- burner safety interlocks
- start/stop of air fan
- start/stop fuel oil pump
- start/stop sequence burner
- red. (SIL 3) fuel air ratio limits
- air pressure control
- air factor control
- fuel-air ratio control
- load control
- O₂ correction control

CSG 01 + CSG 11 for multi fuel burner

- boiler/oven safety interlocks
- dual fuel safety interlocks
- start/stop of air fan
- start/stop of fuel oil pump
- start/stop sequence burner
- single (SIL 2) dual fuel air ratio limits
- single or multi fuel operation
- air pressure control
- dual fuel-air factor control
- dual fuel-air ratio control
- load control
- O₂ correction control