

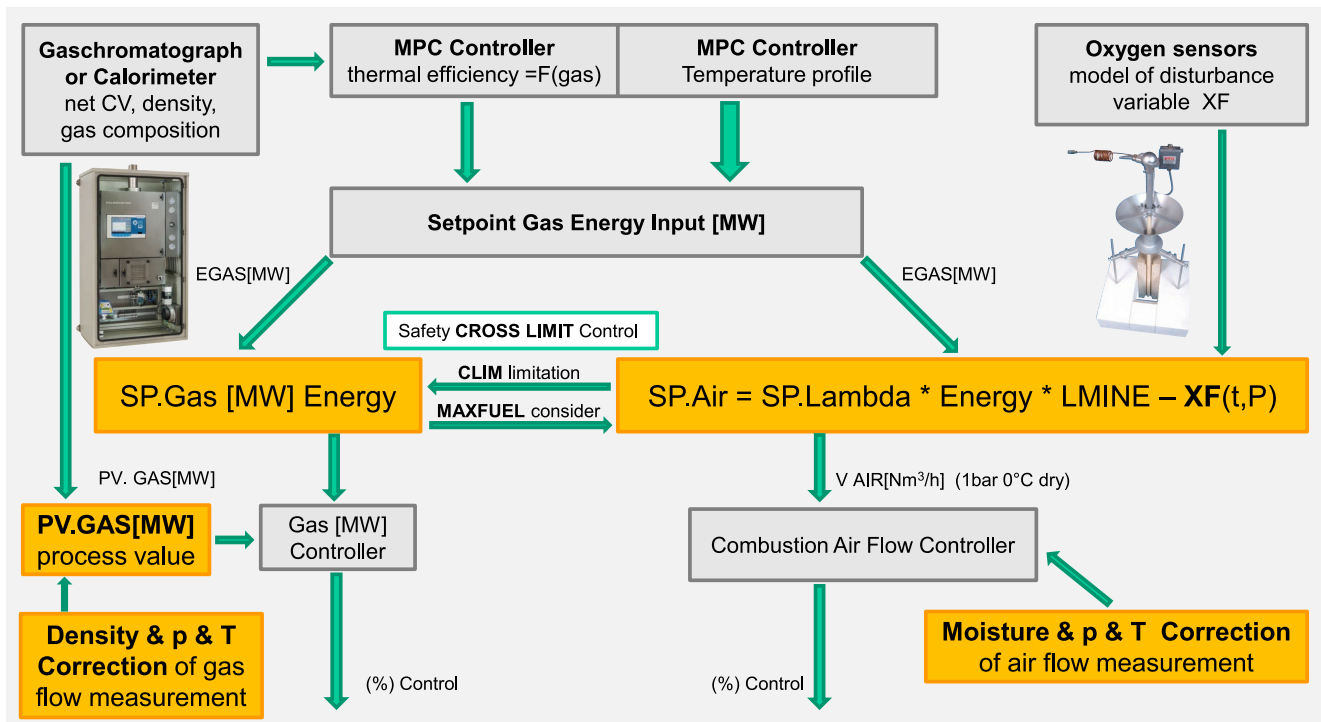
FURNACE 4 Parameter Window Ratio und Lambda		
	FIRE LEFT	FIRE RIGHT
Lambda SP	1.050	1.050
Lambda PV	1.068	1.053
O2	1.18 %	0.94 %
RATIO_MAX	12.50 [1]	12.00 [1]
SP RATIO GAS	9.59	10.03
PV RATIO GAS	9.50 [1]	10.03 [1]
RATIO_MIN	8.00 [1]	8.00 [1]
RATIO_MAX	12.00 [1]	12.00 [1]
SP RATIO OIL	10.54	11.03
PV RATIO OIL	10.44 [1]	11.03 [1]
RATIO_MIN	9.00 [1]	9.00 [1]
XF_MAX	+4000 Nm <sup>3</sup> /h	+4000 Nm <sup>3</sup> /h
XF	+1178 Nm <sup>3</sup> /h	+124 Nm <sup>3</sup> /h
XF_MIN	-2500 Nm <sup>3</sup> /h	-2500 Nm <sup>3</sup> /h
AXF	0.150	0.150
Tracking	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CrossLimitTol	20.0 %	20.0 %
GAS-OIL Limit	1.000	1.000
	RESET	RESET

Faceplate STG Lambda Control for combined gas / oil fuel firing

## Concept & Benefit

- Providing of calorific value measuring device (Precision Calorimeter or GC) and STG Oxygen sensors and using their data for patented automatic control:
  - Online detection of gas quality changes and air ingress
  - Automatic control of gas and air flow for compensation of changing gas quality and air ingress
  - For a constant MW energy input into the melting process
  - Saving energy (fuel and air)
  - Ensuring process stability
  - Ensuring glass quality
- Patent WO2012/038488 A1
  - Patent PCT/EP2016/054715

**!** Demand for combustion air follows  
**!** energy input (MW), but not Wobbe!



Method of patented STG Energy based Lambda Control & Optimal Control Strategy