

GAM 300

converter gas analysis

The converter gas analysis is a special application of the **GAM 300** process control mass spectrometer system which is provided by InProcess Instruments. By continuous monitoring of the waste gases the current process status can be observed at any time. Corrections of the conditions can be undertaken immediately. The exact time for the ending of the blow can be inferred. By using the waste gas control system the blowing time can be reduced and disturbances of the process are avoided. Apart from technical data the **GAM 300** system is good value.

H₂ CO CO₂ O₂ Ar N₂ - fast analysis

The standard measuring mode of converter gas analysis with the GAM 300 is 1 cycle per second:

conditions:

- 6 components, 7 masses (ion currents)
- AO-output of data
- InProcess Software
- PC
- RS 232/9600 Baud

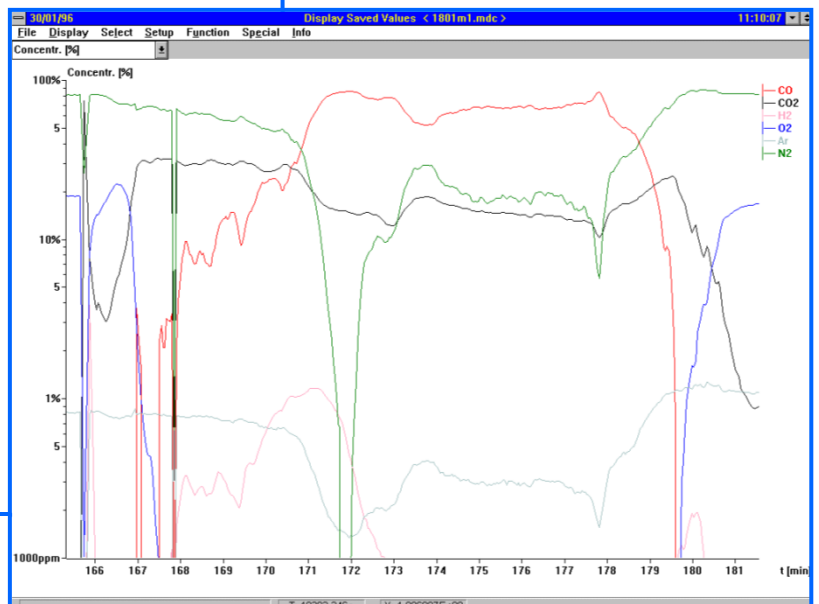
3 cycles per second are possible with a GAM 300 :

conditions:

- mass range: 100%...1%
- 6 components, 7 masses (ion currents)
- optimal setting of parameters
- AO-output of data
- Display OFF/Save OFF
- InProcess Software
- PC
- RS 232/9600 Baud

with an optical ARCNET-interface:

- transfer of data 3 x faster



specifications for the converter gas analysis

detection limits: (base sensitivity of the analyser) *typ. < 1 ppm with the faraday detector (without peak interferences)*
typ. < 1 ppb with SEM (without peak interferences)

mass range: *1..300 amu*

ion source: *open crossbeam ion source with 2 cathodes (Filaments)*

number of components: *up to 64 components per analysis*

measurement speed: *for 6 components in the %-range up to 5 measurement cycles per second are possible (N₂, CO₂, CO, O₂, Ar, H₂)*

calibration intervals: *automatic or free operator selectable*

calibration time: *typ. < 5 minutes*

reproducibility: *air (N₂, O₂, Ar) < 0.1 % relative for measurements with a cycle time of 6 seconds and a duration of 8 hours*

test gas with peak interferences *achievable: <0.01% (relative) after calibration of the components over approx. 15 minutes*

accuracy: *dependent on application and calibration gases, typ. < 1% referred to the mass range (percent components)*



Gas mixture (physical data):

pressure	mbar	ca. 1'200 mbar absolute
temperature	°C	20
condensing point	°C	no comment
humidity	%	0
dust	g/m ³	0
particle size	µm	<5

Gas matrix: converter gas, fully automated analysis
The following components are detected:

main component	concentration range (%)	typ. (%)
H ₂	0-10	0-1
N ₂	0-100	40-80
CO	0-100	0-30
O ₂	0-30	0-21
Ar	0-2	0-2
CO ₂	0-100	0-40

The following gases are needed for the fully automated calibration and the test of the GAM 300:

Cal. gas bottle #	content (balance gas: Ar)	comment
1	10% H ₂ , 40% N ₂	
2	20% CO	
3	10% CO ₂	
4	10% O ₂	
5	30% N ₂ , 25% CO, 2% O ₂ , 30% CO ₂	gas mixture for the quick test of the GAM 300



subject to alteration