



## Calculation of the Standard Uncertainty according to the EN 14181:2004 QAL3 based on Performance Specifications of the prEN 15267-3:2005

### Description of Gas Monitoring AMS

Automated Measuring System (AMS) based on	ACF-NT NO
ABB order number	
Intended for monitoring of	Waste incineration plant
Applicable EU directive	2000/76/EC
Name of plant	Colacem Rassina
Identification of measuring point	
Gas to be measured	NO
Smallest measurement range	1500 mg/m <sup>3</sup>
Largest measurement range (includes reference point)	1500 mg/m <sup>3</sup>

### Field conditions of operation used in the uncertainty assessment

	Min. value	Max. value	
Ambient temperature range	25	35	°C
Ambient pressure range	970	1030	hPa
Flow range	30	100	l/h
Voltage range	190	250	V
Period of unattended operation, Zero point		1	day(s)
Period of unattended operation, Reference point		181	day(s)

### Zero point performance specifications and resulting partial standard uncertainties

Drift	$u_{inst,0}$	3%	of smallest range
		25,98	mg/m <sup>3</sup>
Shift due to ambient temperature change	$u_{temp,0}$	5%	of smallest range
		43,30	mg/m <sup>3</sup>
Repeatability	$u_{others,0}$	2%	of smallest range
		17,32	mg/m <sup>3</sup>

$$\text{Zero point } s_{AMS} = (u_{inst,0}^2 + u_{temp,0}^2 + u_{others,0}^2)^{1/2}$$

<b>Zero point <math>s_{AMS}</math> =</b>	<b>53,39</b>	<b>mg/m<sup>3</sup></b>
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### Reference point performance specifications and resulting partial standard uncertainties

Drift	$u_{inst}$	3%	of largest range
		25,98	mg/m <sup>3</sup>
Shift due to ambient temperature change	$u_{temp}$	5%	of largest range
		43,30	mg/m <sup>3</sup>
Effect of sample gas pressure	$u_{pres}$	2%	of largest range for 3 kPa change
		17,32	mg/m <sup>3</sup>
Effect of sample gas flow	$u_{flow}$	1%	of largest range
		8,66	mg/m <sup>3</sup>
Voltage effect	$u_{volt}$	2%	of largest range
		17,32	mg/m <sup>3</sup>
Repeatability	$u_{others}$	2%	of largest range
		17,32	mg/m <sup>3</sup>
Converter efficiency for NOx	$u_{ce}$	0%	of largest range
		0,00	mg/m <sup>3</sup>

$$\text{Reference point } s_{AMS} = (u_{inst}^2 + u_{temp}^2 + u_{pres}^2 + u_{volt}^2 + u_{flow}^2 + u_{others}^2 + u_{ce}^2)^{1/2}$$

<b>Reference point <math>s_{AMS}</math> =</b>	<b>61,85</b>	<b>mg/m<sup>3</sup></b>
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