



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 H2O
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	H2O
Smallest measurement range	40 Vol.-%
Largest measurement range (includes reference point)	40 Vol.-%

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	$u_{\text{inst},0}$	3%	of smallest range
		0,69	Vol.-%
Shift due to ambient temperature change	$u_{\text{temp},0}$	5%	of smallest range
		1,15	Vol.-%
Repeatability	$u_{\text{others},0}$	2%	of smallest range
		0,46	Vol.-%

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

Zero point s_{AMS} =	1,42	Vol.-%
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Reference point performance specifications and resulting partial standard uncertainties

Drift	u_{inst}	3%	of largest range
		0,69	Vol.-%
Shift due to ambient temperature change	u_{temp}	5%	of largest range
		1,15	Vol.-%
Effect of sample gas pressure	u_{pres}	2%	of largest range for 3 kPa change
		0,46	Vol.-%
Effect of sample gas flow	u_{flow}	1%	of largest range
		0,23	Vol.-%
Voltage effect	u_{volt}	2%	of largest range
		0,46	Vol.-%
Repeatability	u_{others}	2%	of largest range
		0,46	Vol.-%
Converter efficiency for NOx	u_{ce}	0%	of largest range
		0,00	Vol.-%

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

Reference point s_{AMS} =	1,65	Vol.-%
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