ABB

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	AO 2000 Magnos106 O2	
ABB order number	3-242482-3	
Intended for monitoring of	Large combustion plant	
Applicable EU directive	2001/80/EC	
Name of plant	Enipower Ravenna	
Identification of measuring point	CC2	
Gas to be measured	O2	
Smallest measurement range	25	Vol.-%
Largest measurement range (includes reference point)	25	Vol.-%

Field conditions of operation used in the uncertainty assessment

	Min. value	Max. value	
Ambient temperature range	5	30	°C
Ambient pressure range	980	1010	hPa
Flow range	50	90	l/h
Voltage range	190	250	V
Period of unattended operation, Zero point		7	day(s)
Period of unattended operation, Reference point		7	day(s)

Zero point performance specifications and resulting partial standard uncertainties

Drift		0.20	Vol.-%
	$u_{inst,0}$ =	0.12	Vol.-%
Shift due to ambient temperature change		0.50	Vol.-%
	$u_{temp,0}$ =	0.29	Vol.-%
Repeatability		0.20	Vol.-%
	$u_{others,0}$ =	0.12	Vol.-%

Zero point $s_{AMS} = (u_{inst,0}^2 + u_{temp,0}^2 + u_{others,0}^2)^{½}$

Zero point s_{AMS} =	**0.33**	**Vol.-%**

Reference point performance specifications and resulting partial standard uncertainties

Drift		0.20	Vol.-%
	u_{inst} =	0.12	Vol.-%
Shift due to ambient temperature change		0.50	Vol.-%
	u_{temp} =	0.29	Vol.-%
Effect of sample gas pressure		0.20	Vol.-% for 3 kPa change
	u_{pres} =	0.06	Vol.-%
Effect of sample gas flow		0.20	Vol.-%
	u_{flow} =	0.12	Vol.-%
Voltage effect		0.20	Vol.-%
	u_{volt} =	0.12	Vol.-%
Repeatability		0.20	Vol.-%
	u_{others} =	0.12	Vol.-%

Reference point $s_{AMS} = (u_{inst}^2 + u_{temp}^2 + u_{pres}^2 + u_{volt}^2 + u_{flow}^2 + u_{others}^2)^{½}$

Reference point s_{AMS} =	**0.37**	**Vol.-%**

- ABB Automation GmbH assumes no warranty and no liability for the correctness of the above results -