

## TECHNICAL NOTE

PROCESS & EMISSIONS MONITORING SYSTEMS

### Reminders and warnings

This note is a recap of the various gases measurement ranges and of the parameters & configurations allowed for the MIR 9000H.

#### Reminders: CEMS and Process ranges

- Standard and QAL 1 (\*) ranges and parameters for CEMS applications

Gas	Range
NO	0-200 (*)/ 0-2000 mg/Nm <sup>3</sup>
NO <sub>2</sub>	0-200 (*)/ 0-2000 mg/Nm <sup>3</sup>
SO <sub>2</sub>	0-500 (*)/ 0-2000 mg/Nm <sup>3</sup>
HCl	0-100 / 0-1000 mg/Nm <sup>3</sup>
HF	0-40/ 0-200 mg/Nm <sup>3</sup>
NH <sub>3</sub>	0-15 (*)/ 0-100 mg/Nm <sup>3</sup>
CO	0-75 (*)/ 0-1000 mg/Nm <sup>3</sup>
N <sub>2</sub> O	0-20/ 0-100 mg/Nm <sup>3</sup>
CO <sub>2</sub>	0-20 %
O <sub>2</sub>	0-30 (*)/ 0-25 %
H <sub>2</sub> O	0-30 (*)/ 0-40 %



- Available parameters and maximum ranges for Process (RGM) applications:

Gas	Max Range
NO	0-5000 mg/Nm <sup>3</sup>
NO <sub>2</sub>	0-5000 mg/Nm <sup>3</sup>
SO <sub>2</sub>	0-5000 mg/Nm <sup>3</sup>
HCl	0-1000 mg/Nm <sup>3</sup>
HF	0-300 mg/Nm <sup>3</sup>
NH <sub>3</sub>	0-500 mg/Nm <sup>3</sup>
CO	0-5000 mg/Nm <sup>3</sup>
N <sub>2</sub> O	0-200 mg/Nm <sup>3</sup>
CO <sub>2</sub>	0-30 %
O <sub>2</sub>	0-25 %
H <sub>2</sub> O	0-40 %

## Warnings: Parameters / Forbidden configuration / Limitations with NO<sub>2</sub>

### 1.Parameters, configuration and analog outputs

- 8 parameters maximum (excluding DTP) can be implemented in the MIR 9000H configuration analog outputs.
- 8 analog outputs maximum can be programmed (embedded in the standard configuration of the analyzer).
- 3 parameters maximum can be selected from these 4 (SO<sub>2</sub>/ NO<sub>2</sub>/ HCl and NH<sub>3</sub>) in a the MIR 9000H configuration.

### 2.Forbidden configuration

- The **forbidden** configuration is: SO<sub>2</sub> + NO<sub>2</sub> + NH<sub>3</sub> + HCl. It is not possible to measure these 4 compounds all together (with or without other compounds).

### 3.Limitations with NO<sub>2</sub>

- NO<sub>2</sub> measurement requires the use of a CO/HC air purifier module on the zero air inlet.
- NO<sub>2</sub> measurement is not compatible with Medium to High HCnM content in flue gas. In such a situation, the use of the external NOx converter dedicated for MIR 9000H is necessary to perform an accurate NOx measurement (REF: F05-0425-A/230 V; F05-0426-A/110 V).

