



# Gas-Converter BÜNOx 2+

In order to protect humans and the environment, the emission of nitric oxides must be reduced as much as possible. In order to use cost-effective gas analysis methods, e.g. infrared technology the  $NO_2$  rate in the emitted gasses must be catalytically converted to NO.

The conversion takes place in small reactors with electric heating which are filled with various catalyst materials developed specifically for this process.

The BÜNOx 2+ converter series offers high energy efficiency, high conversion rates and a long life with a service computer for predictable maintenance.

The NOx computer uses specific user data input by the customer to calculate the remaining life of the converter cartridge based on a configured standard curve and if desired alerts the customer to service requirements. NOxCal service computer for predictable service alerts

19" rack mount housing

Optional bypass solenoid valves

Optional long-life cartridges (extended service life)

Low temperatures for high efficiency

Optimised menu navigation

Easy cartridge replacement without tools

High conversion rate > 97%

High NO<sub>2</sub> capacity



# **Technical Data**

#### General

	19" Rack mount
Operating temperature	752 °F *
Ready for operation	after approx. 30 min (max. 45 min) heat up time
* varies by converter material	
Gas inlet conditions	
Sample gas pressure	up to 21.8 PSI absolute
Sample gas flow rate	up to 120 L/h (2 lpm)
Sample gas temperature	41 °F to 122 °F
Dew point after cooler	< 50 °F
Ambient conditions	
during operation	
Ambient temperature	41 °F to 122 °F
in storage	
Ambient temperature	-4 °F to 158 °F
Humidity	< 80 % rel. humidity
Electrical specifications	
Power supply	115 V AC or 230 V AC; 50/60 Hz
Power input	< 500 W
Thermal load	85 W at an oven temperature of 752 °F
Signal inputs and outputs	
Status outputs:	
<ul> <li>Service / NOXCal</li> </ul>	Changeover contact max. 230 V AC / DC, 1 A
<ul> <li>Operating mode</li> </ul>	Changeover contact max. 230 V AC / DC, 1 A
– Temperature	Changeover contact max. 230 V AC / DC, 1 A
Analogue output	Temperature 4-20 mA
Signal input	Solenoid valve control, 24 V DC, 1 mA via external switch
Structural specifications	
Dimensions	
(w x h x d)	19 x 5.2 x 11.2 in
Weight	approx. 22.5 lb
Protection class per EN 60529	IP20

# **Reactor cartridge**

	Model MC
Filling material	metal-based
Life	see diagram
Conversion factor $NO_2 \rightarrow NO$	≧ 97 % when cartridge new
Max. NO2 capacity at 1.17 lpm	300 ppm
Max. conversion temperature *	797 °F

\* The converter temperature should only be increased if the conversion level drops below 95 % with the cartridge almost depleted.

#### Service life (laboratory operation)



Fig. 1: Diagram converter cartridge life in lab conditions

Life of standard cartridges MC shown.

When using the long-life cartridge the life increases significantly.

Values determined in lab conditions. Actual life during operation may differ.

# Flow chart

#### 19" housing, unheated



BÜNOx 2+

# **Connection terminals**

Plug		Terminal	Relay	Description
X1	Rel. 1 Rel. 2	X1.1X1.3	Rel. 1	Operating mode status conversion / bypass
	X1.1 / X1.6	X1.4X1.6	Rel. 2	Status: Excess/low temperature alarm
	8 8 8 8 8	X1.7X1.9	Rel. 3	Status: Service alert
		X1.10X1.12	Rel. 4	Option
	X1./ X1.1	2		
	Rel. 3 Rel. 4			
X2	$\left(\begin{array}{cccc} \overset{\circ}{\circ} & \overset{\circ}{\circ} & \overset{\circ}{\circ} & \overset{\circ}{\circ} \\ & \overset{\circ}{\circ} & \overset{\circ}{\circ} & \overset{\circ}{\circ} & \overset{\circ}{\circ} \\ & \overset{\circ}{\circ} & \overset{\circ}{\circ} & \overset{\circ}{\circ} & \overset{\circ}{\circ} \\ \end{array}\right)$			reserved
Х3	X3.1 X3.4	X3.1		PE / cable shield
		X3.2		External solenoid valve switchover $\checkmark$
		X3.3		(potential-free)
		X3.4		N/C
		X3.5		PE / cable shield
		X3.6		+; analogue output
		X3.7		-; analogue output
	X3.5 X3.8	X3.8		N/C

# Dimensions













# **Ordering instructions**

# BÜNOx 2+

The item number is a code for the configuration of your unit. Please use the following model key:

553	1	XX	XX	Х	Product characteristic
					Solenoid valves option
		00			without solenoid valves
		10			with solenoid valves
					Power supply
			99		230 V AC, 50-60 Hz
			98		115 V AC, 50-60 Hz
					Gas connections
					Standard 6 mm
				I	1/4"

#### Accessories

ltem no.	Description			
metal-based material				
553 199 70	Long-Life cartridge MC			
553 199 90	Cartridge MC			
Accessories				
553 199 992	Set of Gaskets			
553 000 01	Wall bracket for Bünox 2+ and Bünox			