



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 NO₂ 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 NO₂ capacity



Technical Data
General
19" Rack mount

Operating temperature	200 °C / 400 °C *
Ready for operation	after approx. 30 min heat up time

* varies by converter material

Gas inlet conditions

Sample gas pressure	up to 1.5 bar absolute
Sample gas flow rate	up to 120 L/h (2 L/min)
Sample gas temperature	5 °C to 80 °C
Dew point after cooler	< 10 °C

Ambient conditions
during operation

Ambient temperature	5 °C to 50 °C
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in storage

Ambient temperature	-20 °C to 70 °C
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 400 °C

Signal inputs and outputs

Status outputs:

– Service / NOXcal	Changeover contact max. 230 V AC / DC, 1 A
– Operating mode	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)	483 x 133 x 285 mm
Weight	approx. 10.2 kg
Protection class per EN 60529	IP20

Reactor cartridge

	Model MC	Model CC
Filling material	metal-based	carbon-based
Life	see diagram	see diagram
Conversion factor NO ₂ → NO	≥ 97 % when cartridge new	≥ 95 % when cartridge new
Max. NO ₂ capacity at 70 l/h	300 ppm	120 ppm
Max. conversion temperature *	425 °C	225 °C

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

Service life (laboratory operation)

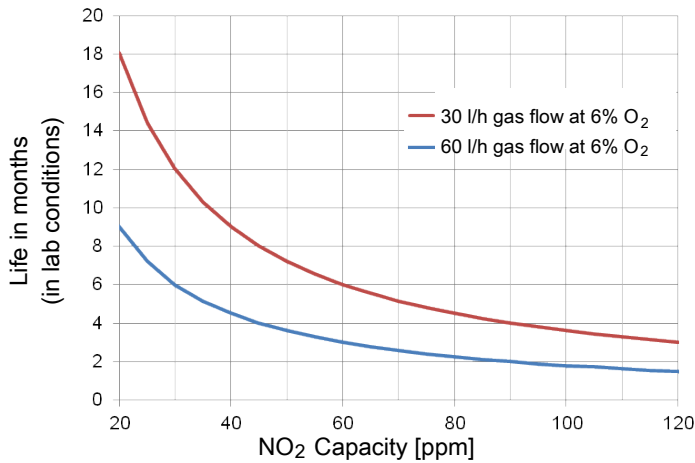


Fig. 1: Diagram converter cartridge life in lab conditions

Life of standard cartridges MC or CC shown.

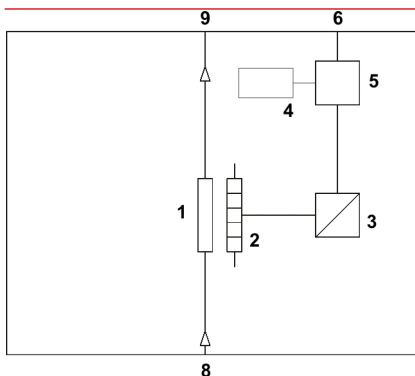
When using the long-life cartridge the life increases significantly.

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

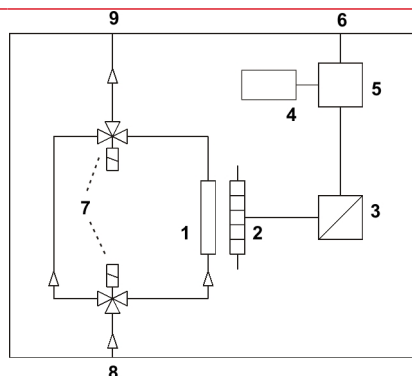
Flow chart

19" housing, unheated

Converter without solenoid valves



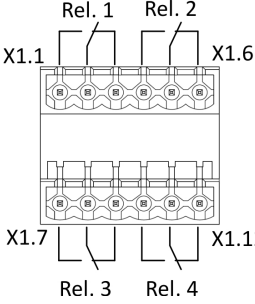
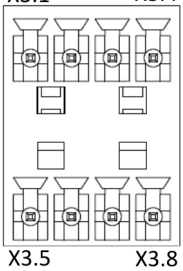
Converter with Solenoid valves



Legend

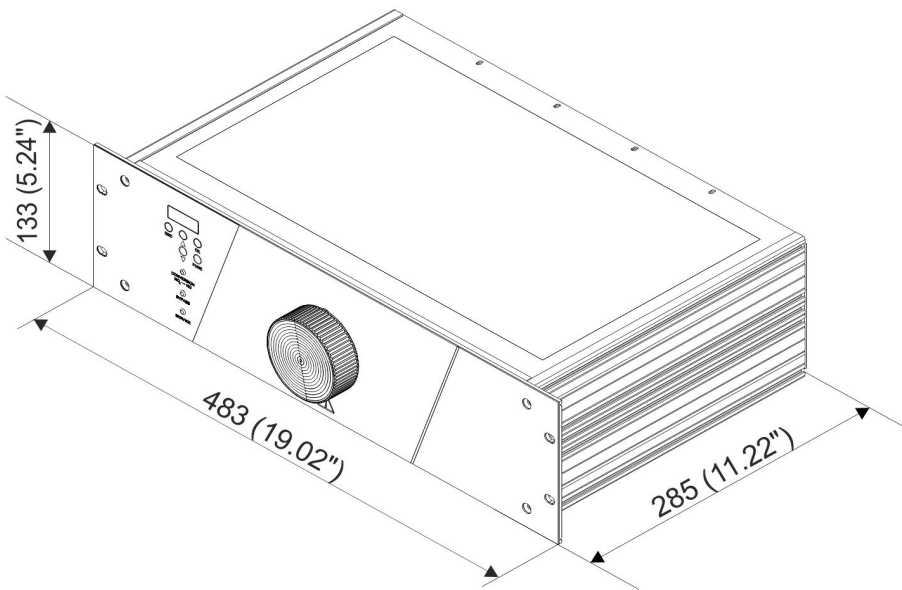
- 1: Reactor cartridge
- 2: Tubular furnace
- 3: Temperature controller
- 4: Temperature display
- 5: BÜNOx 2+ control unit
- 6: Signal inputs and outputs
- 7: 3/2 directional solenoid valves
- 8: Gas inlet
- 9: Gas outlet

Connection terminals

Plug	Terminal	Relay	Description
	X1.1 ...X1.3	Rel. 1	Operating mode status conversion / bypass
	X1.4...X1.6	Rel. 2	Status: Excess/low temperature alarm
	X1.7...X1.9	Rel. 3	Status: Service alert
	X1.10...X1.12	Rel. 4	Option
X2			reserved
	X3.1		PE / cable shield
	X3.2		External solenoid valve switchover (potential-free)
	X3.3		N/C
	X3.4		PE / cable shield
	X3.5		+; analogue output
	X3.6		-; analogue output
	X3.7		N/C
	X3.8		N/C

Dimensions

All dimensions in mm (inch)



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	X	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

Item no.	Description
metal-based material	
553 199 70	Long-Life cartridge MC
553 199 90	Cartridge MC
carbon-based material	
553 199 60	Long-Life cartridge CC
553 199 80	Cartridge CC
Accessories	
553 199 992	Set of Gaskets