



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 |
|---------------------|---------------|

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)

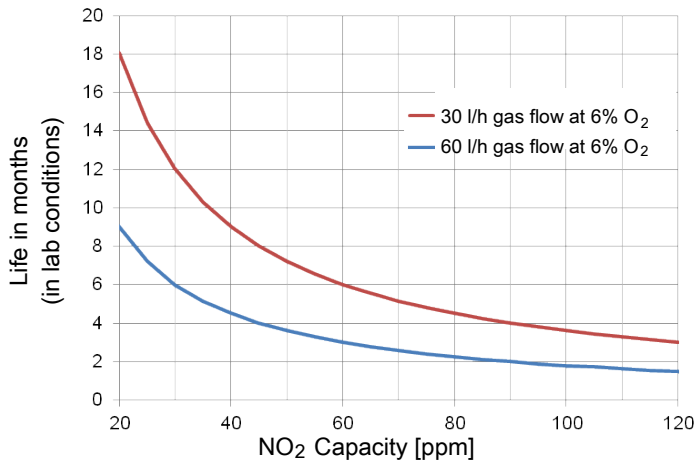


Fig. 1: Diagram converter cartridge life in lab conditions

Life of standard cartridges MC or CC shown.

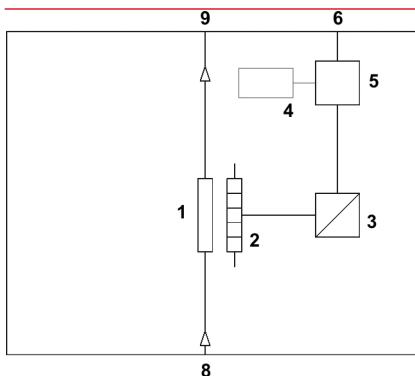
When using the long-life cartridge the life increases significantly.

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

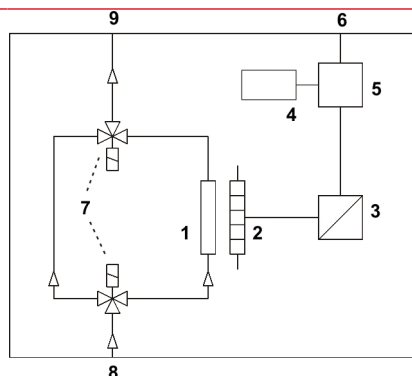
Flow chart

19" housing, unheated

Converter without solenoid valves



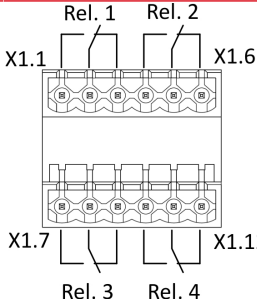
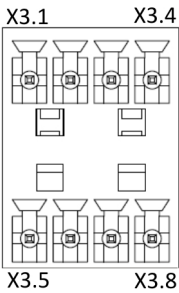
Converter with Solenoid valves



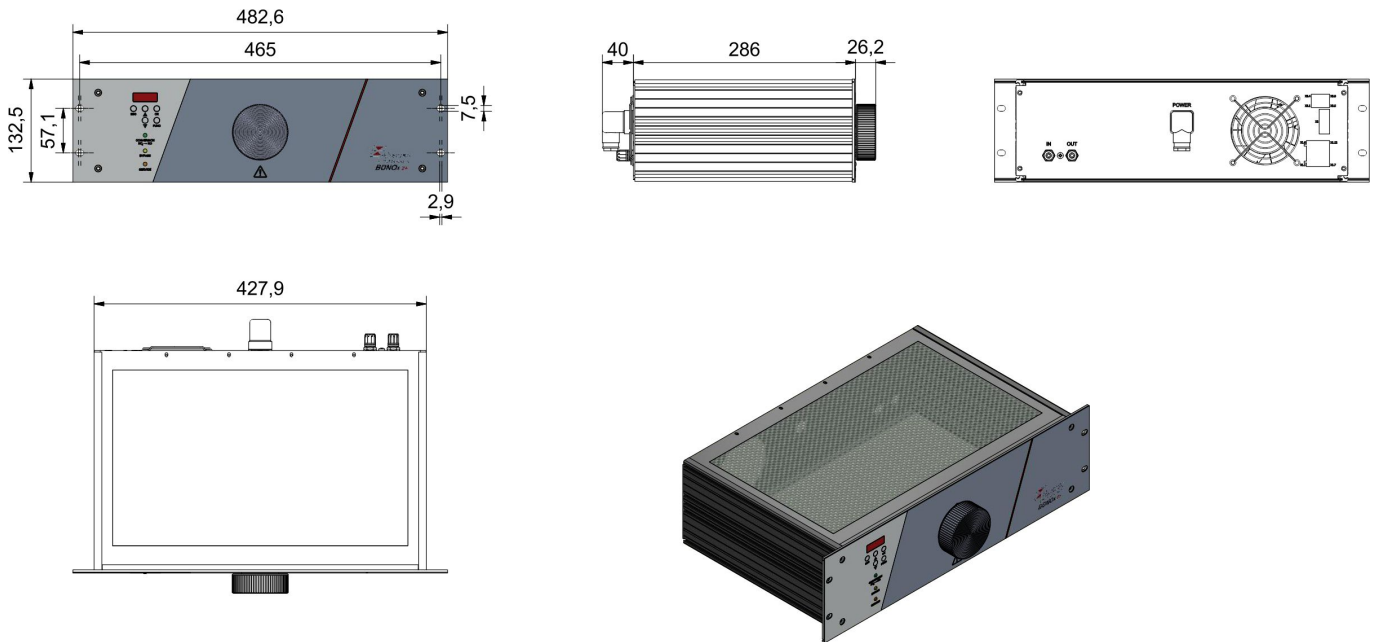
Legend

- 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

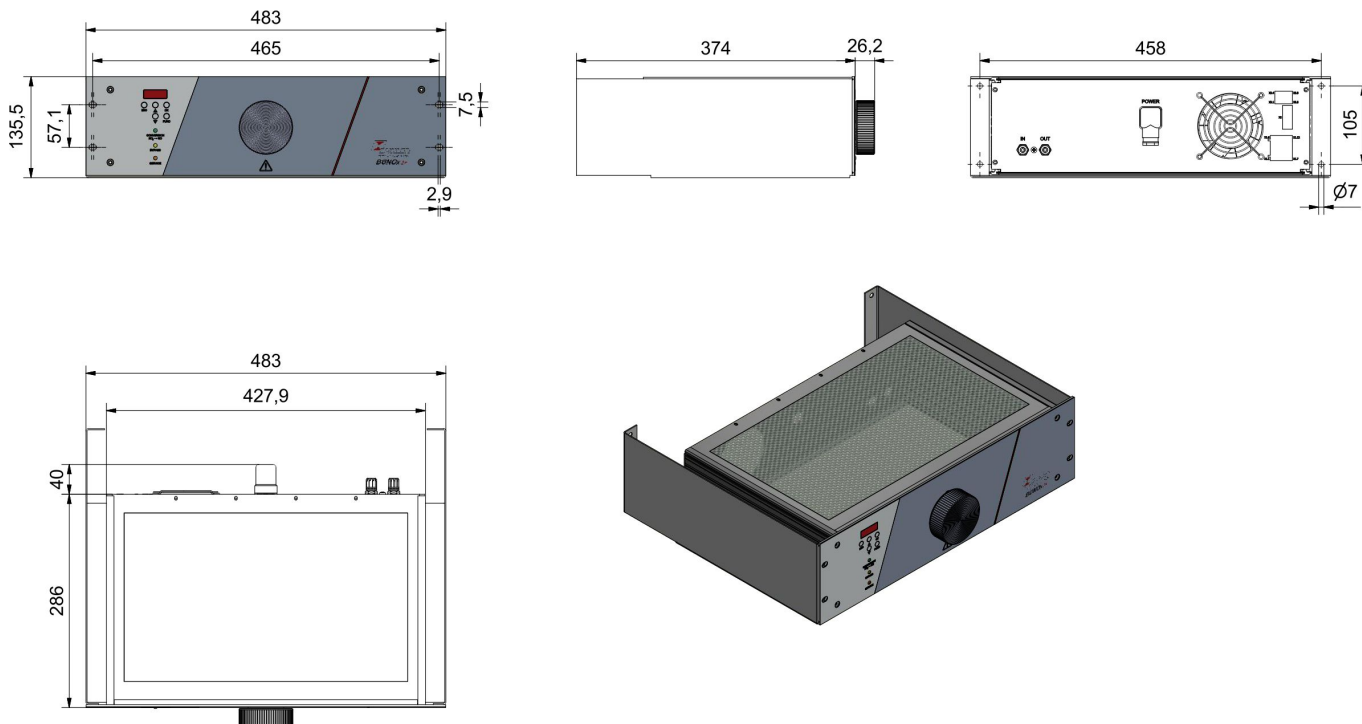
Connection terminals

| 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



Option wall bracket



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 |
| 553 000 01 | Wall bracket for Bünox 2+ and Bünox |