CG-2

Gas Converter Series CG®

Version CG-2 and CG-2M, gas inlet and outlet non heated, in a 19"-rack-housing
Version CG-2H-W and CG-2MH-W, gas inlet and outlet heated, in a wall mounting housing

Special Features

- **High flow capacity, long operating time, high conversion efficiency**
- **Catalyst cartridge easy to change without any tools**
- **Operating temperature up to 680 °C (1256 °F)**
- **Version with non heated gas inlet and outlet built in a compact 19"-rack housing**
- **Version with heated gas inlet and outlet built in a compact wall mounting housing**
- **Safe handling and easy servicing**
- **Bypass solenoid valves**

Application

In many countries, clean-air regulations require a continuous measurement of nitrogen oxides NO_X, as the sum of nitrogen dioxide NO_2 and nitrogen monoxide NO, for combustion processes as soon as the part of NO_2 exceeds 5% of the total NO_X emission.

Due to the conversion to NO the use of a standard NO-analyser is possible.

Description

The conversion of NO_2 into NO depends on a catalytic reaction. Therefore, the sample gas passes the M&C gas converter type CG ... via a catalyst cartridge type C, filled up with molybdenum-coated carbon. This conversion allows an indirect nitrogen oxide measurement with all NO selctive usual commercial measuring instruments. For a ratio of NO_2/NO >50 % or a NO_2 concentration >200 ppm a filling of metal type SS is available.

The compact 19"-design of the M&C gas converters CG-2 and CG-2M guarantees compatible and safe handling as well as easy servicing. The 19"-rack can optional be equipped with a wall mounting bracket.

The M&C gas converters CG-2H-W and CG-2MH-W are built in a wall mounting housing.

The cylindric, ready for use prepared cartridge is built into a heat-insulated tube furnace easily accessible at the front or top panel of the converter. By turning the special adapter handle the cartridge can be changed without any tools.

The temperature of the cartridge can be adjusted between +50 °C (122 °F) and 680 °C (1256 °F) at a PID temperature controller on the front panel of the converter. A status alarm contact for high and low temperature alarm is available.

Using different catalysts at specific process temperatures, the M&C gas converter CG ... is suitable for various applications.

The converter is available in four versions: CG-2 and CG-2M for 'cold gas' conversion and CG-2H-W respectively CG-2MH-W with heated gas inlet, outlet and a second heating circuit for 'hot gas' conversion.

For test purposes the converter cartridge can be bypassed via 3/2-way solenoid valves out of PVDF in version CG-2M and out of stainless steel in version CG-2MH-W. Version CG-2M is equipped with two and the version CG-2MH-W with one solenoid valve. An external control is possible.

The versions CG-2 and CG-2H are working without bypass valves.

We like to inform you about a suitable gas conditioning system to be connected up- or downstream the converter !

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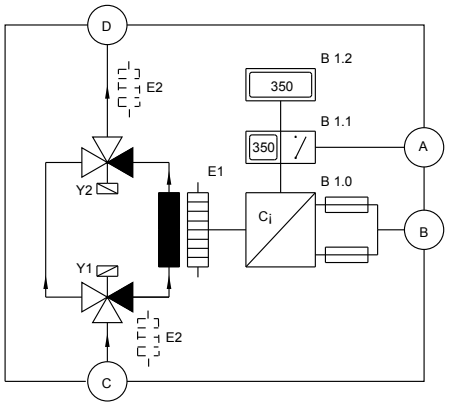
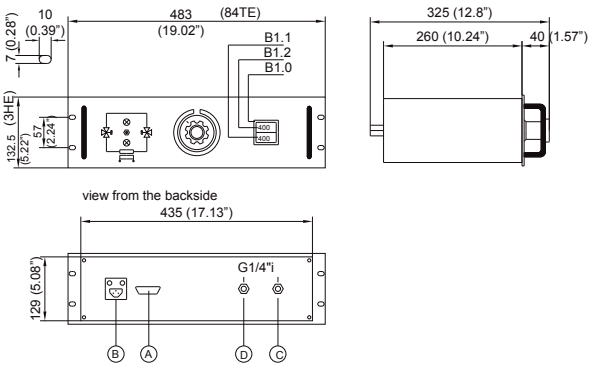
Functional diagram type CG-2M



Versions CG-2, CG-2H-W without Y1/2, Version CG-2MH-W without Y2

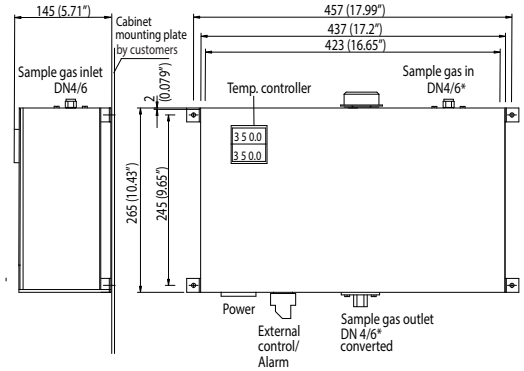
A Status alarm temperature
B Power supply
B 1.0 Temperature control
B 1.1 Temperature alarm
B 1.2 Temperature display
C Sample gas inlet in
D Sample gas outlet
E 1 Tube furnace
Y 1 3/2-way solenoid valve (only in version CG-2M, CG-2MH-W)
Y 2 3/2-way solenoid valve (only in version CG-2M)
E 2 Heating sample gas inlet, outlet and Y1 (only in version CG-2MH-W) or heating sample gas inlet and outlet (only in version CG-2H-W)

Dimensions CG-2, CG-2M, 19"-rack housing unheated gas inlet and outlet



Dimensions in mm (Inches)

Dimensions CG-2H-W, CG-2MH-W, wall mounting housing, heated gas inlet and outlet



Technical Data

Gas Converter Series CG®	Version CG-2	Version CG-2M	Version CG-2H-W	Version CG-2MH-W
Part No. without catalyst cartridge	50 A 1600 (a)	50 A 1500 (a)	50 A 1900 (a)	50 A 1920 (a)
Part No. catalyst cartridge type C, carbon-molybdenum	95 A 9003			
Part No. catalyst cartridge type SS, metal filling	95 A 9004			
Gas inlet and outlet non heated (cold) or heated (hot)	non heated		heated	
Housing	19" rack mounting 3U depth 350 mm		wall mounting housing	
Bypass solenoid valves	no	2x	no	1x
Temperature of sample gas	max. +80 °C (176 °F), dew point "dry"		max. +250 °C (482°F), dew point<160 °C (320 °F)	
Temperature range, adjustable	max. 680 °C (1256 °F)			
Gas flow rate	max. 90 Nl/h			
Operating pressure	max. 2 bar abs.			
Warm-up time	approx. 30 min.			
Operating temperature at NO_2 / NO converter with type C	350 °C (662 °F)			
Operating temperature at NO_2 / NO converter with type SS	660 °C (1220 °F)			
Conversion NO_2 / NO	Efficiency >95 % with new catalyst			
Live of catalyst NO_2 / NO	to renew approx. every 6 months as preventive measure			
Differential pressure	<20 mbar			
Ambient temperature	+10 °C (50 °F) to +50 °C (122 °F)			
Storage temperature	-25 °C to +65 °C (~-13 to 149 °F)			
Relative humidity	<80 %			
Sample gas connections	PVDF fitting G1/4" i DIN 228/1		ø6 mm tube connector, SS316Ti*	
Power supply	230 V 48-62 Hz or (a) 115 V 48-62 Hz			
Power consumption	520 W		620 W	940 W
Electrical connection	Main power plug connector incl. two fine fuse 5 x 20 mm, 230 V: 6.3 A, 115 V: 10 A, 2 m (6.56 ft) cable and shock-proof plug. Alarm-/control signals 9-pin sub D connector			
Status signals for temperature	NO contact-potential free, contact rating max. 24 V, 1 A			
Materials of sample contacting parts	Stainless steel SS 316Ti, PTFE, FPM		Stainless steel SS 316Ti, alu hardcoated, FPM	
Degree of protection	IP 20 EN60529			
Weight	approx. 6 kg (13.23 lbs)			
Electrical equipment standard	EN 61010, EN 60519-1			
Option for 19"-rack housing	Wall mounting bracket, 3U-84HP, Part No.: 50 A 3000			

* Standard ø 6 mm, for ø 1/4" – please indicate with order. Other executions on request

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