
Operating instructions and spare parts list

OptiAir CA07

Powder hose rinsing unit



Translation of the original operating instructions

Documentation OptiAir CA07 Powder hose rinsing unit

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Printed in Switzerland

Gema Switzerland GmbH
Mövenstrasse 17
9015 St.Gallen
Switzerland

Phone: +41-71-313 83 00

Fax.: +41-71-313 83 83

E-Mail: info@gema.eu.com

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General safety regulations

This chapter sets out the fundamental safety regulations that must be followed by the user and any third parties using the OptiAir CA07.

These safety regulations must be read and understood before the OptiAir CA07 is put into operation.

Safety symbols (pictograms)

The following warnings with their meanings can be found in the Gema operating instructions. The general safety precautions must also be followed as well as the regulations in the operating instructions.

**DANGER!**

Danger due to electrically live or moving parts. Possible consequences: death or serious injury

**WARNING!**

Improper use of the equipment could damage the machine or cause it to malfunction. Possible consequences: minor injuries or damage to equipment

**INFORMATION!**

Useful tips and other information

Conformity of use

1. The OptiAir CA07 is built to the latest specification and conforms to the recognized technical safety regulations and is designed for the normal application of powder coating.
2. Any other use is considered non-compliant. The manufacturer shall not be liable for damage resulting from such use; the user bears sole responsibility for such actions. Gema Switzerland GmbH must be consulted prior to any use of the OptiAir CA07 for any purposes or substances other than those indicated in our guidelines.
3. Observance of the operating, service and maintenance instructions specified by the manufacturer is also part of conformity of use. The OptiAir CA07 should only be used,

maintained and started up by trained personnel informed about and familiar with the possible hazards involved.

4. Start-up (i.e. the execution of a particular operation) is forbidden until it has been established that the OptiAir CA07 powder hose rinsing unit has been set up and wired according to the guidelines for machinery (2006/42 EG). EN 60204-1 (machine safety) must also be observed.
5. Unauthorized modifications to the OptiAir CA07 exempt the manufacturer from any liability from resulting damage.
6. The relevant accident prevention regulations, as well as other generally recognized safety regulations, occupational health and structural regulations are to be observed.
7. Furthermore, the country-specific safety regulations also must be observed.

Product-specific safety measures

The OptiAir CA07 is a constituent part of the system and is thus integrated into the safety system of the plant.

If it is to be used in a manner outside the scope of the safety concept, then corresponding measures must be taken.



NOTE:

For further information, see the more detailed Gema safety regulations!

About this manual

General information

This operating manual contains all the important information you require for the working with the OptiAir CA07 powder hose rinsing unit. It will safely guide you through the start-up process and give you references and tips for the optimal use of your new powder coating system.

Information about the function mode of the individual system components - booth, gun control unit, manual gun or powder injector - should be referenced to their corresponding documents.

Function description

OptiAir CA07 Powder hose rinsing unit

The OptiAir CA07 Powder hose rinsing unit is used exclusively for the automatic and individual rinsing of the powder hoses of up to 12 powder guns.

Conformity of use

The OptiAir CA07 Powder hose rinsing unit is to be used for its specified purpose and in original condition. All unauthorized conversions and modifications are forbidden. The limit values of pressure, temperature and electrical data are to be observed. The manufacturer is not responsible for any incorrect use, the risk for this is assumed by the user alone!

This documentation refers exclusively to trained specialists of control and automation engineering, which have experience in installation, start-up and programming of user administration in a CANopen field bus.



NOTE:

For a better understanding of the interrelationships in powder coating, it is recommended to read completely the operating instructions of the other components, so as to be familiar with their functions too!

Typical characteristics

The OptiAir CA07 Powder hose rinsing unit is embedded in the Gema control cabinet by the CANopen field bus. The operation takes place easily by touch panel (e.g. OptiControl CM-10 or CM-20).

The rinsing unit will be installed near the injectors. Thereby, the operating effort to connect the injectors will be reduced.

Technical data

OptiAir CA07 Powder hose rinsing unit

Electrical data

OptiAir CA07	
Nominal input voltage	24 VDC
Tolerance	± 10 %
Input power value	7.2 W (0.6 W for each valve)
Temperature range	0 °C - 40 °C (+32 °F - +104 °F)
Protection type	IP54
Approval	ATEX zone 22

Pneumatic data

OptiAir CA07	
Max. number of connectable injectors	12
Compressed air connection	1/2" a
Air consumption of each valve	23 Nm ³ /h with 6 bar (380 l/min)
Min. input pressure	5.5 bar
Max. input pressure	8 bar
Max. water vapor content	1.3 g/m ³
Max. oil vapor content	0.1 mg/m ³

Dimensions

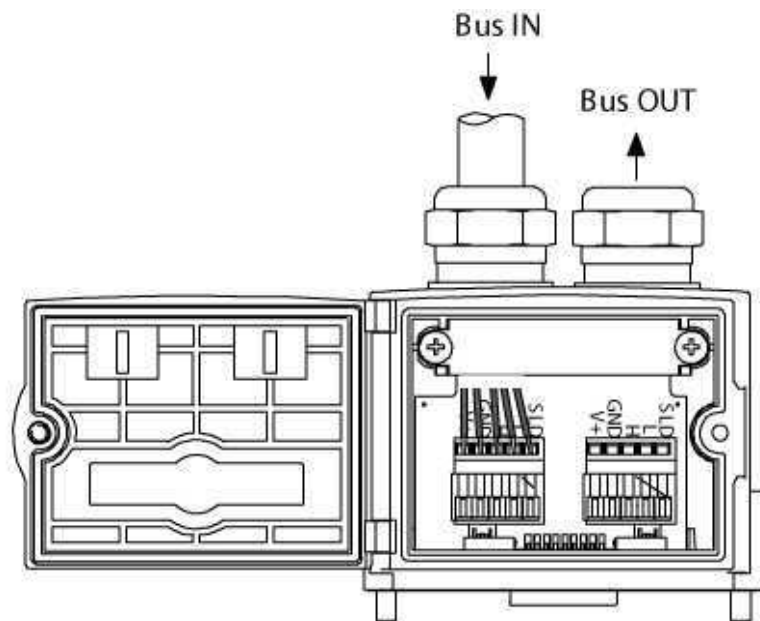
OptiAir CA07	
Width	425 mm
Height	650 mm
Depth	200 mm
Weight	19 kg

Start-up and operation

OptiAir CA07 Powder hose rinsing unit

Connection to CAN bus

The valve pool is connected to the CANopen field bus with the field bus plug. In this way, the plug can be disconnected from the valve pool without interrupting the bus connection.



OptiAir CA07 Powder hose rinsing unit - connection to CAN bus

Pin assignment

Terminal	Signal	Pin on D-Sub plug	Color
V+	24 VDC	9	brown
GND	GND	6	white
H	CAN_H	7	green
L	CAN_L	2	yellow
SLD*			

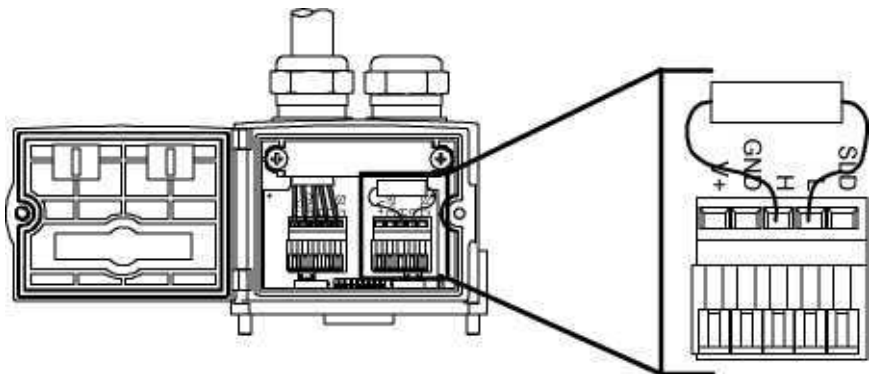
* not used



NOTE:

The CAN cable shield is always to be fixed under the clamp strap in the plug!

Bus termination with terminal resistor

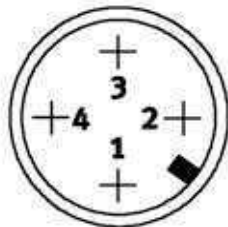


Bus termination with terminal resistor

At the end of the CAN bus, always use a terminal resistor. Connect the terminal resistor (120 Ω , 0.6 W) to the unused adaptor terminals **H** and **L** (see illustration).

Power supply connection

The 4 pin power supply connection plug has the following plug allocation:



Power supply - plug allocation

Pin	Designation	Function
1	24 VDC	Power supply for the electronic system
2	24 VDC	Power supply for the valves
3	GND	
4	Ground	

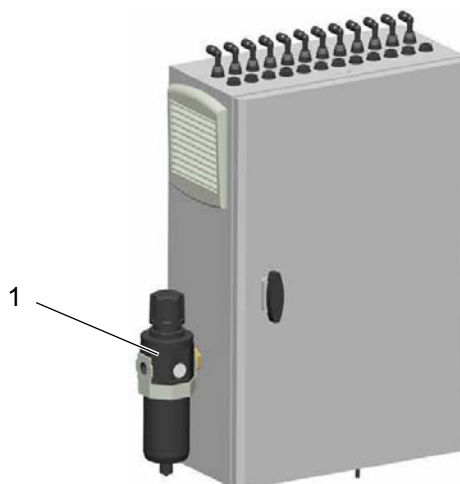
**WARNING:**

Before starting installation and maintenance work, switch off the supply voltage and the compressed air supply!

Setting the rinsing pressure

The rinsing pressure depends on the powder quality and the hose length and will be adjusted with the pressure regulator (1).

Adjust the pressure in such a way that the powder hose is rinsed, without the powder injector aspirates powder or blows back air into the powder container.



OptiAir CA07 Powder hose rinsing unit - pressure regulator

**WARNING:**

The max. pressure on the valve pool may not exceed 8 bar!

Spare parts list

Ordering spare parts

When ordering spare parts for powder coating equipment, please indicate the following specifications:

- Type and serial number of your powder coating equipment
- Order number, quantity and description of each spare part

Example:

- **Type** Powder hose rinsing unit OptiAir CA07
Serial number 1234 5678
- Order no. 203 386, 1 piece, Clamp - Ø 18/15 mm

When ordering cable or hose material, the required length must also be given. The spare part numbers of this bulk stock is always marked with an *.

Wearing parts are always marked with a #.

All dimensions of plastic hoses are specified with the external and internal diameter:

Example:

Ø 8/6 mm, 8 mm outside diameter (o/d) / 6 mm inside diameter (i/d)



WARNING!

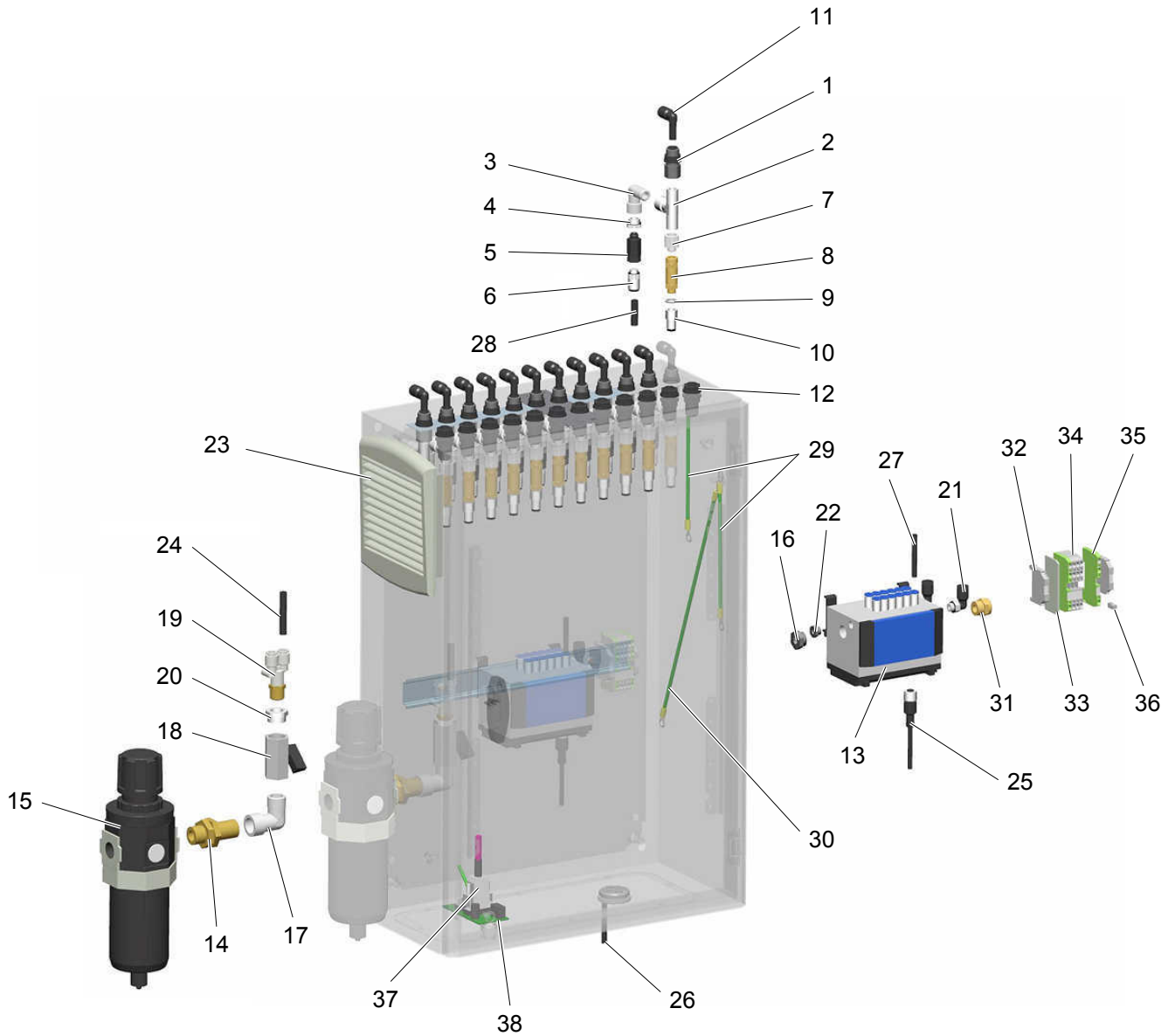
Only original Gema spare parts should be used, because the explosion protection will also be preserved that way. The use of spare parts from other manufacturers will invalidate the Gema guarantee conditions!

OptiAir CA07 Powder hose rinsing unit - spare parts list

	OptiAir CA07 Powder hose rinsing unit - complete	1004 510
A	Rinsing air input (incl. pos. 1-10)	1004 511
1	Lead-through connection - Ø 8 mm, 1/4"i	253 901
2	T-piece - 1/4"i-1/4"a-1/4"a	227 269
3	Elbow joint - 1/4"a-1/4"i	222 674
4	Adapter nipple - 1/8"i-1/4"a	265 454
5	Nozzle - 1.4 mm	405 264
6	Screw-in nipple - 1/8"a, Ø 8 mm	240 087
7	Adapter nipple - 1/8"a-1/4"i	260 843
8	Check valve - 1/8"a-1/8"i	202 240
9	Sealing ring - Ø 9.8/14x1.8 mm	241 911
10	Connection sleeve - 1/8"i, Ø 6 mm	233 412
11	Adjusting elbow - Ø 8-8 mm	1001 031
12	Lead-through connection - Ø 8-8 mm	253 880
13	Valve pool - CPV-VI	1004 513
14	Connection fitting - 1/2"a-1/2"a	202 967
15	R/F unit - 1/2"i, 0.5-8.5 bar	1005 841
16	Plug cap - 3/8"a	1005 080
17	Elbow joint - 1/2"a-1/2"i	223 166
18	Ball valve - 1/2"i-1/2"i	260 320
19	Y-connection fitting - 3/8"a, Ø 8 mm	235 873
20	Adapter nipple - 3/8"i-1/2"a	1002 329
21	Elbow joint - 1/8"a-Ø 8 mm	251 372
22	Plug cap - 1/8"a	263 826
23	Exit filter - 150x150x36 mm	1004 515
24	Plastic tube - Ø 8/6 mm, black	103 756*
25	Cable socket - M12x1 mm, 4 pins	1004 514
26	CAN data cable - L=20 m, complete	389 560
27	Plastic tube - Ø 6/4 mm, black	1001 973*
28	Plastic tube - Ø 8/6 mm, black	103 756*
29	Grounding cable - L=180 mm, complete	366 650
30	Grounding cable - L=340 mm, complete	366 641
31	Silencer - 3/8"a	1005 016
32	Triple conductor end clamp - 6 mm	251 151
33	Triple terminal end plate - 2.5 mm	241 660
34	Triple terminal - 2.5 mm ² , P	241 636

35	Triple terminal - 2.5 mm ² , PE	241 652
36	Bridge - 1 on 2	264 024
37	CANBUS cable - 0.55 m, complete	386995
38	CAN-D-SUB distribution box - complete	1004 099

* Please indicate length



OptiAir CA07 Powder hose rinsing unit - spare parts