Operating instructions and spare parts list

OptiControl CM04
Control unit

Translation of the original operating instructions
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General safety regulations

This chapter sets out the fundamental safety regulations that must be followed by the user and third parties using the OptiControl CM04 Control unit.

These safety regulations must be read and understood before the OptiControl CM04 Control unit is used.

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 live electricity 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 OptiControl CM04 Control unit is built to the latest specification and conforms to the recognized technical safety regulations. It is designed for the normal application of powder coating.

2. Any other use is considered as non-conform. The manufacturer is not responsible for damage resulting from improper use of this equipment; the end-user alone is responsible. If the OptiControl CM04 Control unit is to be used for other purposes or other substances outside of our guidelines then Gema Switzerland GmbH should be consulted.

3. Observance of the operating, service and maintenance instructions specified by the manufacturer is also part of conformity of
4. Start-up (i.e. the execution of a particular operation) is forbidden until it has been established that the OptiControl CM04 Control 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 OptiControl CM04 Control unit 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 must be observed.

Product specific security measures

OptiControl CM04 Control unit

The OptiControl CM04 Control unit is constituent part of the system and is thus integrated into the safety system of the plant.

For the use outside of the safety concept, 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 which you require for the working with the OptiControl CM04 Control 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 - reciprocators, booths, powder gun control units, powder guns etc. - should be referenced to their corresponding documents.

WARNING:
Working without instructions
Working without instructions or with individual pages from the instructions may result in damage to property and personal injury if relevant safety information is not observed.

► Before working with the device, organize the required documents and read the section "Safety regulations".
► Work should only be carried out in accordance with the instructions of the relevant documents.
► Always work with the complete original document.
Function description

Field of application

The OptiControl CM04 Control unit is integrated in the control cabinet of the OptiFlex A1/OptiFlex A2 Control system and assumes the function of the gap control.

The OptiControl CM04 Control unit starts and stops the powder guns and the reciprocators, depending on the objects on the chain conveyor.

The OptiControl CM04 Control unit is intended exclusively for controlling functions in electrostatic powder coating equipments. Any other use is considered as non-conform. The manufacturer is not responsible for any damage resulting from this - the risk for this is assumed by the user alone!

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.
OptiControl CM04 Control unit

Overview

1 Power pack
2 Time relay K5
3 Time relay K7
4 Relay
## Technical data

### OptiControl CM04 Control unit

#### Electrical data

<table>
<thead>
<tr>
<th>OptiControl CM04</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal input voltage</td>
<td>100-240 VAC</td>
</tr>
<tr>
<td>Frequency</td>
<td>50/60 Hz</td>
</tr>
<tr>
<td>Control current circuit</td>
<td>24 VDC</td>
</tr>
<tr>
<td>Temperature range</td>
<td>0 °C - +40 °C</td>
</tr>
<tr>
<td></td>
<td>(+32 °F - +104 °F)</td>
</tr>
<tr>
<td>Protection type</td>
<td>IP54</td>
</tr>
<tr>
<td>Approval</td>
<td><img src="image" alt="CE Ex II 3 D ATEX zone 22" /></td>
</tr>
</tbody>
</table>
Start-up

OptiControl CM04 Control unit

Switching on

The control cabinet is switched on by the main switch (red on yellow base). The control units in the cabinet are switched on, if the external interlocking device signals a ready operational condition.

Function

If a workpiece/object passes through the light barrier, the powder guns and the reciprocators are started after a short delay. This duration is plant-specific and can be adjusted locally on the K7 relay.

Start of the powder guns and reciprocators
When the last object passes through the light barrier, the powder guns and the reciprocators are stopped after a short delay. This duration is plant-specific and can be adjusted locally on the K5 relay.

*Powder guns and reciprocators are stopped*

If the test mode is started with the key switch on the control cabinet, the powder guns and reciprocators are switched on immediately.

**Attention:**

If the plant is switched on manually, no persons may stand near the reciprocators or in the booth!

**Attention:**

The powder coating equipment must be switched off for maintenance purposes with the main switch on the OptiFlex control cabinet (red on a yellow base), which should normally be locked with a small padlock!
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 OptiControl CM04,
  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 yard/meter ware is always marked with an *.

The wear 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 hazardous location approval will be preserved that way! The use of spare parts from other manufacturers will invalidate the Gema guarantee conditions!
OptiControl CM04 Control unit - spare parts list

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power pack - Logo Power, 24 VDC, 2.5 A</td>
<td>257 257</td>
</tr>
<tr>
<td>2</td>
<td>Start light barrier, transmitter and receiver (option, not shown)</td>
<td>252 166</td>
</tr>
<tr>
<td>3</td>
<td>Connection cable, for transmitter and receiver – 5 m (option, not shown)</td>
<td>252 158</td>
</tr>
<tr>
<td>4</td>
<td>Time relay without socket</td>
<td>257 338</td>
</tr>
<tr>
<td>4.1</td>
<td>Socket for pos. 4</td>
<td>227 552</td>
</tr>
<tr>
<td>5</td>
<td>Relay without socket</td>
<td>257 885</td>
</tr>
<tr>
<td>5.1</td>
<td>Socket for pos. 5</td>
<td>251 135</td>
</tr>
<tr>
<td>6</td>
<td>Key switch - 2 levels (not shown)</td>
<td>264 440</td>
</tr>
<tr>
<td>7</td>
<td>Main switch – 25 A (not shown)</td>
<td>245 690</td>
</tr>
</tbody>
</table>

OptiControl CM04 Control unit - overview

Note:
Further information will be found in the plant-specific wiring diagram and in the corresponding parts list!