



Sample image

## Datasheet

**Article number:** 70000042  
**Designation:** CA10.A291.PN1  
**Description:** Switch

|                                                                                                                                                                                                                                                                                                                                                                                                          |  |                          |                         |                                                                  |                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------|-------------------------|------------------------------------------------------------------|---------------------|
| IEC 60947-3 EN 60947-3, VDE 0660 Teil 107                                                                                                                                                                                                                                                                                                                                                                |  |                          |                         |                                                                  |                     |
| Rated insulation voltage Ui                                                                                                                                                                                                                                                                                                                                                                              |  |                          |                         |                                                                  |                     |
| Voltage (V) AC / DC                                                                                                                                                                                                                                                                                                                                                                                      |  |                          |                         |                                                                  |                     |
| 690 AC / DC                                                                                                                                                                                                                                                                                                                                                                                              |  |                          |                         |                                                                  |                     |
| Rated impulse withstand voltage Uimp                                                                                                                                                                                                                                                                                                                                                                     |  |                          |                         |                                                                  |                     |
| Voltage (kV)                                                                                                                                                                                                                                                                                                                                                                                             |  | Overvoltage category     | Pollution degree        | Supply system                                                    | Function            |
| 4 III                                                                                                                                                                                                                                                                                                                                                                                                    |  |                          | 3                       | Valid for lines with grounded common neutral termination         | Switch disconnecter |
| Rated uninterrupted current Iu/Ith                                                                                                                                                                                                                                                                                                                                                                       |  |                          |                         |                                                                  |                     |
| Current (A)                                                                                                                                                                                                                                                                                                                                                                                              |  | Ambient temperature (°C) | Peak temperature (°C)   | additional requirements                                          |                     |
| 20                                                                                                                                                                                                                                                                                                                                                                                                       |  | 55                       | 60                      | Ambient temperature +55°C during 24 hours with peaks up to +60°C |                     |
| Rated operational current Ie                                                                                                                                                                                                                                                                                                                                                                             |  |                          |                         |                                                                  |                     |
| Utilization category                                                                                                                                                                                                                                                                                                                                                                                     |  |                          |                         | Voltage (V)                                                      | Current (A)         |
| AC-15                                                                                                                                                                                                                                                                                                                                                                                                    |  |                          |                         | 220 - 240                                                        | 6                   |
| AC-15                                                                                                                                                                                                                                                                                                                                                                                                    |  |                          |                         | 380 - 440                                                        | 4                   |
| Rated operational power                                                                                                                                                                                                                                                                                                                                                                                  |  |                          |                         |                                                                  |                     |
| Utilization category                                                                                                                                                                                                                                                                                                                                                                                     |  | Voltage (V)              | No. of phases           | No. of poles                                                     | Power (kW)          |
| AC-3                                                                                                                                                                                                                                                                                                                                                                                                     |  | 220 - 240                | 3                       | 3                                                                | 3                   |
| AC-3                                                                                                                                                                                                                                                                                                                                                                                                     |  | 380 - 440                | 3                       | 3                                                                | 5,50                |
| AC-3                                                                                                                                                                                                                                                                                                                                                                                                     |  | 660 - 690                | 3                       | 3                                                                | 5,50                |
| AC-3                                                                                                                                                                                                                                                                                                                                                                                                     |  | 220 - 240                | 1                       | 2                                                                | 2,20                |
| AC-3                                                                                                                                                                                                                                                                                                                                                                                                     |  | 380 - 440                | 1                       | 2                                                                | 3                   |
| AC-23A                                                                                                                                                                                                                                                                                                                                                                                                   |  | 220 - 240                | 3                       | 3                                                                | 3,70                |
| AC-23A                                                                                                                                                                                                                                                                                                                                                                                                   |  | 380 - 440                | 3                       | 3                                                                | 7,50                |
| AC-23A                                                                                                                                                                                                                                                                                                                                                                                                   |  | 660 - 690                | 3                       | 3                                                                | 7,50                |
| AC-23A                                                                                                                                                                                                                                                                                                                                                                                                   |  | 220 - 240                | 1                       | 2                                                                | 2,50                |
| AC-23A                                                                                                                                                                                                                                                                                                                                                                                                   |  | 380 - 440                | 1                       | 2                                                                | 3,70                |
| Max Fuse Rating IEC                                                                                                                                                                                                                                                                                                                                                                                      |  |                          |                         |                                                                  |                     |
| Fuse characteristic                                                                                                                                                                                                                                                                                                                                                                                      |  |                          |                         | No. of Fuses                                                     | Current (A)         |
| gG                                                                                                                                                                                                                                                                                                                                                                                                       |  |                          |                         | 1                                                                | 25                  |
| UL60947-4-1 , UL508                                                                                                                                                                                                                                                                                                                                                                                      |  |                          |                         |                                                                  |                     |
| Nominal Voltage                                                                                                                                                                                                                                                                                                                                                                                          |  |                          |                         |                                                                  |                     |
| Voltage (V) AC / DC                                                                                                                                                                                                                                                                                                                                                                                      |  |                          |                         |                                                                  |                     |
| 300 AC / DC                                                                                                                                                                                                                                                                                                                                                                                              |  |                          |                         |                                                                  |                     |
| Rated insulation voltage Ui                                                                                                                                                                                                                                                                                                                                                                              |  |                          |                         |                                                                  |                     |
| Voltage (V) AC / DC                                                                                                                                                                                                                                                                                                                                                                                      |  |                          |                         |                                                                  |                     |
| 300 AC                                                                                                                                                                                                                                                                                                                                                                                                   |  |                          |                         |                                                                  |                     |
| Rated thermal current                                                                                                                                                                                                                                                                                                                                                                                    |  |                          |                         |                                                                  |                     |
| Current (A)                                                                                                                                                                                                                                                                                                                                                                                              |  | Ambient temperature (°C) |                         | Additional Text                                                  |                     |
| 20                                                                                                                                                                                                                                                                                                                                                                                                       |  | 0 - 40                   |                         | --                                                               |                     |
| Horsepower rating                                                                                                                                                                                                                                                                                                                                                                                        |  |                          |                         |                                                                  |                     |
| Across-the-Line Motor Starting                                                                                                                                                                                                                                                                                                                                                                           |  |                          | Voltage (V)             | No. of phases                                                    | No. of poles        |
| Reversing                                                                                                                                                                                                                                                                                                                                                                                                |  |                          | 110 - 120               | 1                                                                | 2                   |
| Reversing                                                                                                                                                                                                                                                                                                                                                                                                |  |                          | 220 - 240               | 1                                                                | 2                   |
| Reversing                                                                                                                                                                                                                                                                                                                                                                                                |  |                          | 277 - 277               | 1                                                                | 2                   |
| Reversing                                                                                                                                                                                                                                                                                                                                                                                                |  |                          | 110 - 120               | 3                                                                | 3                   |
| Reversing                                                                                                                                                                                                                                                                                                                                                                                                |  |                          | 220 - 240               | 3                                                                | 3                   |
| DOL                                                                                                                                                                                                                                                                                                                                                                                                      |  |                          | 110 - 120               | 1                                                                | 2                   |
| DOL                                                                                                                                                                                                                                                                                                                                                                                                      |  |                          | 220 - 240               | 1                                                                | 2                   |
| DOL                                                                                                                                                                                                                                                                                                                                                                                                      |  |                          | 277 - 277               | 1                                                                | 2                   |
| DOL                                                                                                                                                                                                                                                                                                                                                                                                      |  |                          | 110 - 120               | 3                                                                | 3                   |
| DOL                                                                                                                                                                                                                                                                                                                                                                                                      |  |                          | 220 - 240               | 3                                                                | 3                   |
| Pilot duty rating code                                                                                                                                                                                                                                                                                                                                                                                   |  |                          |                         |                                                                  |                     |
| Duty Code                                                                                                                                                                                                                                                                                                                                                                                                |  |                          |                         |                                                                  |                     |
| A300                                                                                                                                                                                                                                                                                                                                                                                                     |  |                          |                         |                                                                  |                     |
| SCCR / Max. fuse rating                                                                                                                                                                                                                                                                                                                                                                                  |  |                          |                         |                                                                  |                     |
| Conditions of acceptability                                                                                                                                                                                                                                                                                                                                                                              |  |                          |                         |                                                                  |                     |
| These devices are suitable for use on circuits capable of delivering not more than 5000 rms symmetrical amperes, 600V ac max. when protected by Class RK1 fuses. Manual Motor Controllers when intended for use as a motor disconnecter are suitable for use on a circuit capable of delivering not more than 5000 rms symmetrical amperes, 600V ac max. when protected by 30A Class J time delay fuses. |  |                          |                         |                                                                  |                     |
| Temp. rating of wire                                                                                                                                                                                                                                                                                                                                                                                     |  |                          |                         |                                                                  |                     |
| Temperature rating (°C)                                                                                                                                                                                                                                                                                                                                                                                  |  |                          | Current (A) Text        |                                                                  |                     |
| 60 - 75                                                                                                                                                                                                                                                                                                                                                                                                  |  |                          | -- Use copper wire only |                                                                  |                     |

|                                                                                                                                      |                   |                               |                          |                                    |                           |              |
|--------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------|--------------------------|------------------------------------|---------------------------|--------------|
| Connecting instructions                                                                                                              |                   |                               |                          |                                    |                           |              |
| Markings                                                                                                                             |                   |                               |                          |                                    |                           |              |
| When intended for use as a motor disconnecter the device shall be provided with a method of being locked in the OFF-position.        |                   |                               |                          |                                    |                           |              |
| General Use                                                                                                                          |                   |                               |                          |                                    |                           |              |
| AC / DC                                                                                                                              | Voltage (V)       | Current (A)                   | No. of phases            | No. of poles                       | No. of contacts in series |              |
| AC                                                                                                                                   | 300               | 20                            | 1                        | 2                                  | 1                         |              |
| AC                                                                                                                                   | 300               | 20                            | 3                        | 3                                  | 1                         |              |
| CSA                                                                                                                                  |                   |                               |                          |                                    |                           |              |
| Nominal Voltage                                                                                                                      |                   |                               |                          |                                    |                           |              |
|                                                                                                                                      |                   |                               |                          | Voltage (V) AC / DC                |                           |              |
|                                                                                                                                      |                   |                               |                          | 300 AC                             |                           |              |
| Rated insulation voltage Ui                                                                                                          |                   |                               |                          |                                    |                           |              |
|                                                                                                                                      |                   |                               |                          | Voltage (V) AC / DC                |                           |              |
|                                                                                                                                      |                   |                               |                          | 300 AC                             |                           |              |
| Rated thermal current                                                                                                                |                   |                               |                          |                                    |                           |              |
|                                                                                                                                      |                   | Current (A)                   | Ambient temperature (°C) |                                    | Additional Text           |              |
|                                                                                                                                      |                   | 20                            | 0 - 40 --                |                                    |                           |              |
| Horsepower rating                                                                                                                    |                   |                               |                          |                                    |                           |              |
| Across-the-Line Motor Starting                                                                                                       |                   |                               |                          | Voltage (V)                        | No. of phases             | No. of poles |
|                                                                                                                                      |                   |                               |                          | 110 - 120                          | 1                         | 2            |
| DOL                                                                                                                                  |                   |                               |                          | 220 - 240                          | 1                         | 2            |
| DOL                                                                                                                                  |                   |                               |                          | 277 - 277                          | 1                         | 2            |
| DOL                                                                                                                                  |                   |                               |                          | 110 - 120                          | 3                         | 3            |
| DOL                                                                                                                                  |                   |                               |                          | 220 - 240                          | 3                         | 3            |
|                                                                                                                                      |                   |                               |                          |                                    |                           |              |
| Pilot duty rating code                                                                                                               |                   |                               |                          |                                    |                           |              |
| Duty Code                                                                                                                            |                   |                               |                          |                                    |                           |              |
| A300                                                                                                                                 |                   |                               |                          |                                    |                           |              |
| Temp. rating of wire                                                                                                                 |                   |                               |                          |                                    |                           |              |
|                                                                                                                                      |                   | Temperature rating (°C)       | Current (A)              |                                    | Text                      |              |
|                                                                                                                                      |                   | 75                            | --                       |                                    | only                      |              |
| General Use                                                                                                                          |                   |                               |                          |                                    |                           |              |
| AC / DC                                                                                                                              | Voltage (V)       | Current (A)                   | No. of phases            | No. of poles                       | No. of contacts in series |              |
| AC                                                                                                                                   | 300               | 20                            | 1                        | 1                                  | 1                         |              |
| GENERAL TECHNICAL INFORMATION                                                                                                        |                   |                               |                          |                                    |                           |              |
| Tightening torque of screws                                                                                                          |                   |                               |                          |                                    |                           |              |
|                                                                                                                                      |                   |                               |                          | tightening torque (Nm)             | tightening torque (lb-in) |              |
|                                                                                                                                      |                   |                               |                          | 0,60                               | 5                         |              |
| Stripping length                                                                                                                     |                   |                               |                          |                                    |                           |              |
|                                                                                                                                      |                   |                               |                          | Length (mm) --                     |                           |              |
|                                                                                                                                      |                   |                               |                          | 8 STRIPPINGLENGTH                  |                           |              |
| Size of conductor                                                                                                                    |                   |                               |                          |                                    |                           |              |
| composition of conductor                                                                                                             | Min. / Max. value | No. of conductor per terminal |                          | Cross section (mm²) or (AWG/kcmil) | Material of the wire      |              |
| solid wire                                                                                                                           | Min.              | 1                             |                          | 0.5mm²                             | Copper                    |              |
| solid wire                                                                                                                           | Min.              | 2                             |                          | 0.5mm²                             | Copper                    |              |
| flexible wire                                                                                                                        | Min.              | 1                             |                          | 0.75mm²                            | Copper                    |              |
| flexible wire                                                                                                                        | Min.              | 2                             |                          | 0.75mm²                            | Copper                    |              |
| flexible wire                                                                                                                        | Max.              | 2                             |                          | 2.5mm²                             | Copper                    |              |
| flexible wire                                                                                                                        | Max.              | 2                             |                          | AWG 14                             | Copper                    |              |
| Single-core or stranded wire                                                                                                         | Max.              | 2                             |                          | AWG 12                             | Copper                    |              |
| Single-core or stranded wire                                                                                                         | Max.              | 2                             |                          | 2.5mm²                             | Copper                    |              |
| flexible wire with ferrule according to DIN 46228                                                                                    | Min.              | 1                             |                          | 0.5mm²                             | Copper                    |              |
| flexible wire with ferrule according to DIN 46228                                                                                    | Max.              | 2                             |                          | 2.5mm²                             | Copper                    |              |
| flexible wire with ferrule according to DIN 46228                                                                                    | Min.              | 2                             |                          | 0.5mm²                             | Copper                    |              |
| Approbations                                                                                                                         |                   |                               |                          |                                    |                           |              |
| Specification                                                                                                                        |                   |                               |                          |                                    |                           |              |
| Marking                                                                                                                              |                   |                               |                          |                                    |                           |              |
| EAC                                                                                                                                  |                   |                               |                          |                                    |                           |              |
| CE marking                                                                                                                           |                   |                               |                          |                                    |                           |              |
| UK Directives                                                                                                                        |                   |                               |                          |                                    |                           |              |
| CSA C.22.2 No.14                                                                                                                     |                   |                               |                          |                                    |                           |              |
| GB/T14048.3                                                                                                                          |                   |                               |                          |                                    |                           |              |
| Recommended screw driver                                                                                                             |                   |                               |                          |                                    |                           |              |
| Type of screw driver                                                                                                                 |                   |                               |                          | Value                              |                           |              |
| Cross Screwdriver                                                                                                                    |                   |                               |                          | PH1                                |                           |              |
| Slot screwdriver according to DIN 5264                                                                                               |                   |                               |                          | 0,8x4                              |                           |              |
| General Information                                                                                                                  |                   |                               |                          |                                    |                           |              |
| Text                                                                                                                                 |                   |                               |                          |                                    |                           |              |
| - Do not lubricate or treat contacts.                                                                                                |                   |                               |                          |                                    |                           |              |
| - Switches may only be mounted, connected and set into operation by qualified persons according to the accepted rules of technology. |                   |                               |                          |                                    |                           |              |

## General Information

### Text

- Use copper wire only. Do not coat the wire end with tin.
- Terminals with factory fitted jumper links are tightened during production. Take care during installation to ensure factory fitted links are not lost by undoing both sides of linked terminals. After wiring, all terminal screws must be tightened to recommended torque specifications.
- After installation of the switches the spacings between the terminals must be sufficient to fulfill the requirement of the applicable standards.

## Waste Electrical & Electronic Equipment (WEEE)

### Picture name Description



Do not throw in the trash as care must be taken to ensure environmentally sound disposal and recycling. Please either use an environmentally friendly waste disposal company; return to the supplier for disposal; or return direct to the manufacturer, Kraus & Naimer. You can find local Kraus & Naimer offices at [www.krausnaimer.com](http://www.krausnaimer.com)

## Proposition 65

### Picture name Description



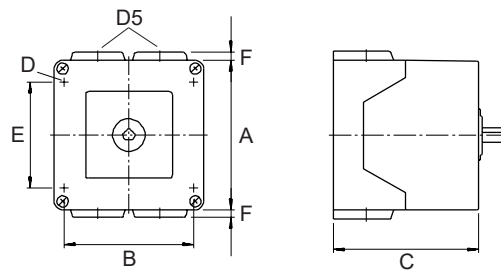
WARNING: This product can expose you to chemicals including nickel and lead, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Classification Contact: Rigid contact bridge

Classification Contact Mat: Silver

Classification Terminal: Screw terminal

## Mounting-PN1

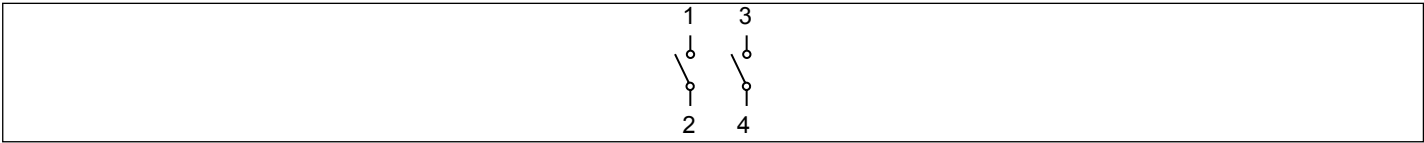


|                      |              |
|----------------------|--------------|
| IP - Code front side | IP42         |
| Stages               | 1,00 - 1,00  |
| A                    | □ 64,00 mm   |
| B                    | H 50,00 mm   |
| C                    | H 36,60 mm   |
| D                    | Ø 4,40 mm    |
| D5                   | Ø 4,00 x M20 |
| E                    | H 36,00 mm   |
| F                    | H 4,00 mm    |



Wiring diagram

CA10.A291.PN1



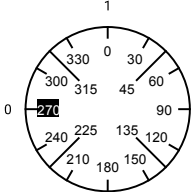
## Switch program

CA10.A291.PN1



Kraus & Naimer

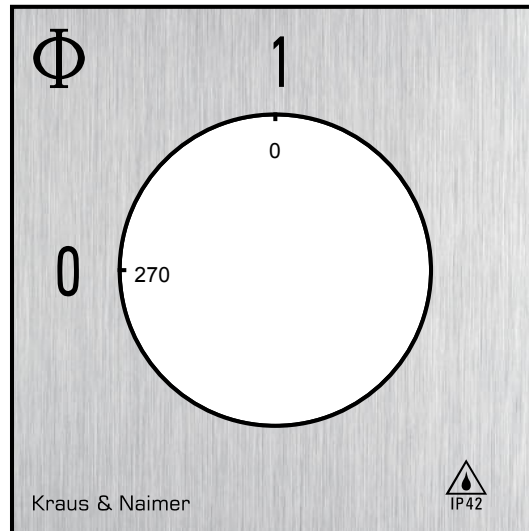
CA10
A291
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| Face Plate                                                                                               |  |                                                                                                                                                                     |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|----------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|--|---|--|---|--|----|--|----|--|----|--|----|--|----|--|----|--|----|--|----|--|
|                         |  | 1                                                                                                                                                                   |  | 3 |  | 5 |  | 7 |  | 9  |  | 11 |  | 13 |  | 15 |  | 17 |  | 19 |  | 21 |  | 23 |  |
|                                                                                                          |  |   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| Switching Angle <input type="text" value="90"/><br>Total switching Angle <input type="text" value="90"/> |  | 2                                                                                                                                                                   |  | 4 |  | 6 |  | 8 |  | 10 |  | 12 |  | 14 |  | 16 |  | 18 |  | 20 |  | 22 |  | 24 |  |
| 0                                                                                                        |  | 270                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 285                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 300                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 315                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 330                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 345                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 1                                                                                                        |  | 0                                                                                                                                                                   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 15                                                                                                                                                                  |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 30                                                                                                                                                                  |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 45                                                                                                                                                                  |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 60                                                                                                                                                                  |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 75                                                                                                                                                                  |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 90                                                                                                                                                                  |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 105                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 120                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 135                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 150                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 165                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 180                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 195                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 210                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 225                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 240                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                          |  | 255                                                                                                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |

Version: 96

## Face plate

S0.F056/A10.PNL



## HANDLES

**Designation:** S0C.G257

**Handle colour:** "7" electro grey

