

Sample image

## Datasheet

**Article number:** 70014745

**Designation:** CH10.A231.EF

**Description:** Switch

| IEC 60947-3 EN 60947-3, VDE 0660 Teil 107                                                                                                                       |                          |                          |                                                                |                         |                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|----------------------------------------------------------------|-------------------------|---------------------------|
| Tension assignée d'isolement Ui                                                                                                                                 |                          |                          |                                                                |                         |                           |
| Tension (V) AC / DC                                                                                                                                             |                          |                          |                                                                |                         |                           |
| 690 AC / DC                                                                                                                                                     |                          |                          |                                                                |                         |                           |
| Courant Ininterrompu et thermique conventionnel Iu/Ith                                                                                                          |                          |                          |                                                                |                         |                           |
| Intensité (A)                                                                                                                                                   | Température Ambiante (*) | Température Maxi (*)     | Spécification complémentaire                                   |                         |                           |
| 20                                                                                                                                                              | 55                       | 60                       | Température ambiante +55°C durant 24 heures avec point à +60°C |                         |                           |
| Courant assigné d'emploi Ie                                                                                                                                     |                          |                          |                                                                |                         |                           |
| Catégorie d'emploi                                                                                                                                              |                          | Tension (V)              |                                                                | Intensité (A)           |                           |
| AC-15                                                                                                                                                           |                          | 220 - 240                |                                                                | 6                       |                           |
| AC-15                                                                                                                                                           |                          | 380 - 440                |                                                                | 4                       |                           |
| Puissance assignée d'emploi                                                                                                                                     |                          |                          |                                                                |                         |                           |
| Catégorie d'emploi                                                                                                                                              | Tension (V)              | Nb de phases             | Nb de pôles                                                    | Puissance (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                    |                           |
| Protection par fusible (IEC)                                                                                                                                    |                          |                          |                                                                |                         |                           |
| Caractéri                                                                                                                                                       |                          |                          | Nombre de fusible                                              |                         | Intensité (A)             |
| gG                                                                                                                                                              |                          |                          | 1                                                              |                         | 25                        |
| UL60947-4-1 , UL508                                                                                                                                             |                          |                          |                                                                |                         |                           |
| Nominal Voltage                                                                                                                                                 |                          |                          |                                                                |                         |                           |
| Tension (V) AC / DC                                                                                                                                             |                          |                          |                                                                |                         |                           |
| 600 AC                                                                                                                                                          |                          |                          |                                                                |                         |                           |
| Tension assignée d'isolement Ui                                                                                                                                 |                          |                          |                                                                |                         |                           |
| Tension (V) AC / DC                                                                                                                                             |                          |                          |                                                                |                         |                           |
| 600 AC                                                                                                                                                          |                          |                          |                                                                |                         |                           |
| Rated thermal current                                                                                                                                           |                          |                          |                                                                |                         |                           |
| Intensité (A)                                                                                                                                                   |                          | Température Ambiante (*) |                                                                | Additional Text         |                           |
| 20                                                                                                                                                              |                          | 0 - 40                   |                                                                | --                      |                           |
| Horsepower rating                                                                                                                                               |                          |                          |                                                                |                         |                           |
| Across-the-Line Motor Starting                                                                                                                                  | Tension (V)              | Nb de phases             | Nb de pôles                                                    | Power (HP)              | Ambient temperature [°C]  |
| DOL                                                                                                                                                             | 110 - 120                | 1                        | 2                                                              | 0,50                    | 40                        |
| DOL                                                                                                                                                             | 220 - 240                | 1                        | 2                                                              | 1                       | 40                        |
| DOL                                                                                                                                                             | 277 - 277                | 1                        | 2                                                              | 2                       | 40                        |
| DOL                                                                                                                                                             | 440 - 480                | 1                        | 2                                                              | 2                       | 40                        |
| DOL                                                                                                                                                             | 550 - 600                | 1                        | 2                                                              | 2                       | 40                        |
| DOL                                                                                                                                                             | 110 - 120                | 3                        | 3                                                              | 1,50                    | 40                        |
| DOL                                                                                                                                                             | 220 - 240                | 3                        | 3                                                              | 3                       | 40                        |
| DOL                                                                                                                                                             | 440 - 480                | 3                        | 3                                                              | 5                       | 40                        |
| DOL                                                                                                                                                             | 550 - 600                | 3                        | 3                                                              | 5                       | 40                        |
| Pilot duty rating code                                                                                                                                          |                          |                          |                                                                |                         |                           |
| Duty Code                                                                                                                                                       |                          |                          |                                                                |                         |                           |
| A600                                                                                                                                                            |                          |                          |                                                                |                         |                           |
| SCCR / Max. fuse rating                                                                                                                                         |                          |                          |                                                                |                         |                           |
| Conditions of acceptability                                                                                                                                     |                          |                          |                                                                |                         |                           |
| These devices are suitable for use on circuits capable of delivering not more than 5kA rms symmetrical amperes, 600V ac max. when protected by Class RK1 fuses. |                          |                          |                                                                |                         |                           |
| Temp. rating of wire                                                                                                                                            |                          |                          |                                                                |                         |                           |
| Temperature rating (°C)                                                                                                                                         |                          | Intensité (A)            |                                                                | Text                    |                           |
| 60 - 75                                                                                                                                                         |                          |                          |                                                                | -- Use copper wire only |                           |
| General Use                                                                                                                                                     |                          |                          |                                                                |                         |                           |
| AC / DC                                                                                                                                                         | Tension (V)              | Intensité (A)            | Nb de phases                                                   | Nb de pôles             | No. of contacts in series |
| AC                                                                                                                                                              | 277                      | 20                       | 1                                                              | 1                       | 1                         |
| AC                                                                                                                                                              | 600                      | 20                       | 1                                                              | 2                       | 1                         |

| General Use                                       |             |                   |                               |                                                                                       |                                    |             |                      |                          |
|---------------------------------------------------|-------------|-------------------|-------------------------------|---------------------------------------------------------------------------------------|------------------------------------|-------------|----------------------|--------------------------|
| AC / DC                                           | Tension (V) | Intensité (A)     | Nb de phases                  | Nb de pôles                                                                           | No. of contacts in series          |             |                      |                          |
| AC                                                | 600         | 20                | 3                             | 3                                                                                     | 1                                  |             |                      |                          |
| CSA                                               |             |                   |                               |                                                                                       |                                    |             |                      |                          |
| Nominal Voltage                                   |             |                   |                               |                                                                                       |                                    |             |                      |                          |
|                                                   |             |                   |                               | Tension (V)                                                                           | AC / DC                            |             |                      |                          |
|                                                   |             |                   |                               | 600 AC                                                                                |                                    |             |                      |                          |
| Tension assignée d'isolement Ui                   |             |                   |                               |                                                                                       |                                    |             |                      |                          |
|                                                   |             |                   |                               | Tension (V)                                                                           | AC / DC                            |             |                      |                          |
|                                                   |             |                   |                               | 600 AC                                                                                |                                    |             |                      |                          |
| Rated thermal current                             |             |                   |                               |                                                                                       |                                    |             |                      |                          |
|                                                   |             | Intensité (A)     | Température Ambiante (°)      |                                                                                       | Additional Text                    |             |                      |                          |
|                                                   |             | 20                | 0 - 40                        |                                                                                       | --                                 |             |                      |                          |
| Horsepower rating                                 |             |                   |                               |                                                                                       |                                    |             |                      |                          |
| Across-the-Line Motor Starting                    |             |                   |                               | Tension (V)                                                                           | Nb de phases                       | Nb de pôles | Power (HP)           | Ambient temperature [°C] |
| DOL                                               |             |                   |                               | 110 - 120                                                                             | 1                                  | 2           | 0,50                 | 40                       |
| DOL                                               |             |                   |                               | 220 - 240                                                                             | 1                                  | 2           | 1                    | 40                       |
| DOL                                               |             |                   |                               | 277 - 277                                                                             | 1                                  | 2           | 2                    | 40                       |
| DOL                                               |             |                   |                               | 440 - 480                                                                             | 1                                  | 2           | 2                    | 40                       |
| DOL                                               |             |                   |                               | 550 - 600                                                                             | 1                                  | 2           | 2                    | 40                       |
| DOL                                               |             |                   |                               | 110 - 120                                                                             | 3                                  | 3           | 1,50                 | 40                       |
| DOL                                               |             |                   |                               | 220 - 240                                                                             | 3                                  | 3           | 3                    | 40                       |
| DOL                                               |             |                   |                               | 440 - 480                                                                             | 3                                  | 3           | 5                    | 40                       |
| DOL                                               |             |                   |                               | 550 - 600                                                                             | 3                                  | 3           | 5                    | 40                       |
| Pilot duty rating code                            |             |                   |                               |                                                                                       |                                    |             |                      |                          |
| Duty Code                                         |             |                   |                               |                                                                                       |                                    |             |                      |                          |
| A600                                              |             |                   |                               |                                                                                       |                                    |             |                      |                          |
| Temp. rating of wire                              |             |                   |                               |                                                                                       |                                    |             |                      |                          |
|                                                   |             |                   | Temperature rating (°C)       | Intensité (A)                                                                         |                                    | Text        |                      |                          |
|                                                   |             |                   | 75                            |                                                                                       |                                    | -- --       |                      |                          |
| General Use                                       |             |                   |                               |                                                                                       |                                    |             |                      |                          |
| AC / DC                                           | Tension (V) | Intensité (A)     | Nb de phases                  | Nb de pôles                                                                           | No. of contacts in series          |             |                      |                          |
| AC                                                | 277         | 20                | 1                             | 1                                                                                     | 1                                  |             |                      |                          |
| AC                                                | 600         | 20                | 1                             | 2                                                                                     | 1                                  |             |                      |                          |
| AC                                                | 600         | 20                | 3                             | 3                                                                                     | 1                                  |             |                      |                          |
| GENERAL TECHNICAL INFORMATION                     |             |                   |                               |                                                                                       |                                    |             |                      |                          |
| Tightening torque of screws                       |             |                   |                               |                                                                                       |                                    |             |                      |                          |
|                                                   |             |                   | tightening torque (Nm)        |                                                                                       | tightening torque (lb-in)          |             |                      |                          |
|                                                   |             |                   | 1                             |                                                                                       | 9                                  |             |                      |                          |
| Stripping length                                  |             |                   |                               |                                                                                       |                                    |             |                      |                          |
|                                                   |             |                   | Length (mm) --                |                                                                                       |                                    |             |                      |                          |
|                                                   |             |                   | 9 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                             |                                                                                       | 0,75mm²                            |             | Copper               |                          |
| solid wire                                        |             | Min.              | 2                             |                                                                                       | 0,75mm²                            |             | Copper               |                          |
| flexible wire                                     |             | Min.              | 1                             |                                                                                       | 0,75mm²                            |             | Copper               |                          |
| flexible wire                                     |             | Min.              | 2                             |                                                                                       | 0,75mm²                            |             | Copper               |                          |
| flexible wire                                     |             | Max.              | 2                             |                                                                                       | AWG 12                             |             | Copper               |                          |
| flexible wire                                     |             | Max.              | 2                             |                                                                                       | 2,5mm²                             |             | Copper               |                          |
| Single-core or stranded wire                      |             | Max.              | 2                             |                                                                                       | AWG 10                             |             | Copper               |                          |
| Single-core or stranded wire                      |             | Max.              | 2                             |                                                                                       | 4mm²                               |             | Copper               |                          |
| flexible wire with ferrule according to DIN 46228 |             | Min.              | 1                             |                                                                                       | 0,75mm²                            |             | Copper               |                          |
| flexible wire with ferrule according to DIN 46228 |             | Min.              | 2                             |                                                                                       | 0,75mm²                            |             | Copper               |                          |
| flexible wire with ferrule according to DIN 46228 |             | Max.              | 2                             |                                                                                       | 2,5mm²                             |             | Copper               |                          |
| Approbations                                      |             |                   |                               |                                                                                       |                                    |             |                      |                          |
| Specification                                     |             |                   |                               | Marking                                                                               |                                    |             |                      |                          |
| EAC                                               |             |                   |                               |  |                                    |             |                      |                          |
| CE marking                                        |             |                   |                               |  |                                    |             |                      |                          |
| UK Directives                                     |             |                   |                               |  |                                    |             |                      |                          |
| CSA C.22.2 No.14                                  |             |                   |                               |  |                                    |             |                      |                          |
| GB/T14048.3                                       |             |                   |                               |  |                                    |             |                      |                          |
| Recommandations concernant le tournevis           |             |                   |                               |                                                                                       |                                    |             |                      |                          |
| Type                                              |             | Value             |                               |                                                                                       |                                    |             |                      |                          |
| Tournevis cruciforme                              |             | PH1               |                               |                                                                                       |                                    |             |                      |                          |
| Slot screwdriver according to DIN 5264            |             | 0,8x4             |                               |                                                                                       |                                    |             |                      |                          |
| General Information                               |             |                   |                               |                                                                                       |                                    |             |                      |                          |
| Text                                              |             |                   |                               |                                                                                       |                                    |             |                      |                          |
| - Ne jamais lubrifier ou traiter les contacts.    |             |                   |                               |                                                                                       |                                    |             |                      |                          |

## General Information

### Text

- Les commutateurs ne peuvent être montés, branchés et mis en service que par une personne qualifiée selon les règles techniques en vigueur.
- Use copper wire only. Do not coat the wire end with tin.
- Les bornes qui ne sont pas supposées être utilisées pour le raccordement de l'appareil sont livrées serrées et ne doivent pas être desserrées. Si toutefois ces bornes sont malgré tout ouvertes accidentellement, vérifier qu'aucun shunt n'est manquant. Le câblage terminé, s'assurer que toutes les bornes sont serrées.
- Après mise en place des les commutateurs l'espace entre bornes doit être suffisant pour répondre aux exigences des normes en vigueur.

## 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 <a href="http://www.krausnaimer.com">www.krausnaimer.com</a> |

## Proposition 65

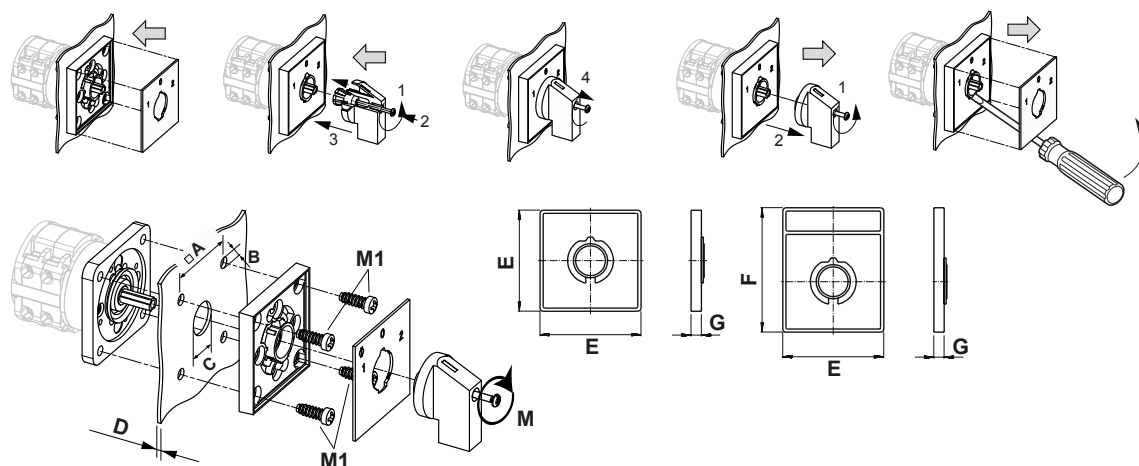
| Picture name                                                                     | Description                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 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 <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> . |

Type de contacts: Rigid contact bridge

Revêtement des Contacts: Silver

Types de raccordement: Screw terminal

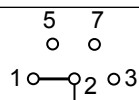
## Fixation-EF



|                      |    |                   |
|----------------------|----|-------------------|
| IP - Code front side |    | IP66, IP67, IP69k |
| Stages               |    | 1,00 - 12,00      |
| A                    | □  | 36,00 mm          |
| B                    | ∅  | 5,00 mm           |
| C                    | ∅  | 15,00 - 19,00 mm  |
| D                    | H  | <= 4,00 mm        |
| E                    | H  | 48,00 mm          |
| F                    | H  | 59,00 mm          |
| G                    | H  | 6,70 mm           |
| M                    | M̂ | 0,50 Nm           |
| M1                   | M̂ | 0,90 Nm           |

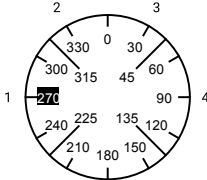
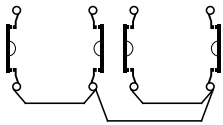
## Wiring diagram

CH10.A231.EF



## Switch program

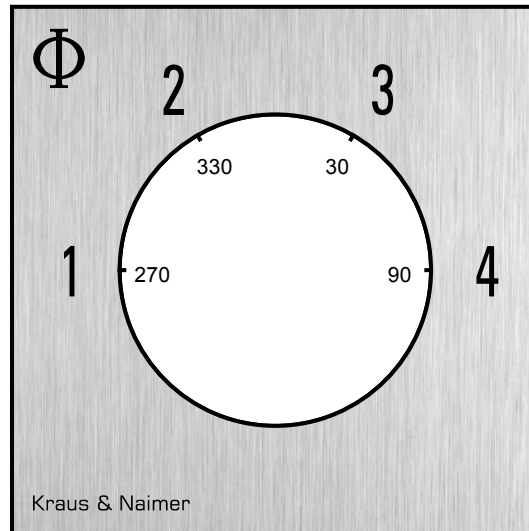
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|  Kraus & Naimer          |  | CH10                                                                              |  | A231 |  | Page 1 of 1 |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|-----------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------|--|------|--|-------------|--|---|--|----|--|----|--|----|--|----|--|----|--|----|--|----|--|----|--|
|                                                                                                           |  |                                                                                   |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| <b>Face Plate</b><br>    |  | 1                                                                                 |  | 3    |  | 5           |  | 7 |  | 9  |  | 11 |  | 13 |  | 15 |  | 17 |  | 19 |  | 21 |  | 23 |  |
|                                                                                                           |  |  |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| Switching Angle <input type="text" value="60"/><br>Total switching Angle <input type="text" value="180"/> |  | 2                                                                                 |  | 4    |  | 6           |  | 8 |  | 10 |  | 12 |  | 14 |  | 16 |  | 18 |  | 20 |  | 22 |  | 24 |  |
| 1                                                                                                         |  | 270                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 285                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 300                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 315                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 2                                                                                                         |  | 330                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 345                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 0                                                                                 |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 15                                                                                |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 3                                                                                                         |  | 30                                                                                |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 45                                                                                |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 60                                                                                |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 75                                                                                |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 4                                                                                                         |  | 90                                                                                |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 105                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 120                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 135                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 150                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 165                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 180                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 195                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 210                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 225                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 240                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                           |  | 255                                                                               |  |      |  |             |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |

Version: 92

## Face plate

S0.F077/A1B.PEL



## HANDLES

**Designation:** S0C.G251

**Handle colour:** "1" black

