



Sample image

## Datasheet

**Article number:** 70014665  
**Designation:** CH10.A222.EF  
**Description:** Switch

|                                                                                                                                                                 |                          |                          |                                                                  |                 |                           |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|------------------------------------------------------------------|-----------------|---------------------------|--|
| IEC 60947-3 EN 60947-3, VDE 0660 Teil 107                                                                                                                       |                          |                          |                                                                  |                 |                           |  |
| Rated insulation voltage Ui                                                                                                                                     |                          |                          |                                                                  |                 |                           |  |
| Voltage (V) AC / DC                                                                                                                                             |                          |                          |                                                                  |                 |                           |  |
| 690 AC / DC                                                                                                                                                     |                          |                          |                                                                  |                 |                           |  |
| 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                                                                                                                                             |                          |                          |                                                                  |                 |                           |  |
| 600 AC                                                                                                                                                          |                          |                          |                                                                  |                 |                           |  |
| Rated insulation voltage Ui                                                                                                                                     |                          |                          |                                                                  |                 |                           |  |
| Voltage (V) AC / DC                                                                                                                                             |                          |                          |                                                                  |                 |                           |  |
| 600 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                                                     | 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)                                                                                                                                         |                          | Current (A) Text         |                                                                  |                 |                           |  |
| 60 - 75                                                                                                                                                         |                          | -- Use copper wire only  |                                                                  |                 |                           |  |
| General Use                                                                                                                                                     |                          |                          |                                                                  |                 |                           |  |
| AC / DC                                                                                                                                                         | Voltage (V)              | Current (A)              | No. of phases                                                    | No. of poles    | No. of contacts in series |  |
| AC                                                                                                                                                              | 277                      | 20                       | 1                                                                | 1               | 1                         |  |
| AC                                                                                                                                                              | 600                      | 20                       | 1                                                                | 2               | 1                         |  |

| General Use                                       |             |                   |                               |              |                                    |                                                                                       |                      |                          |
|---------------------------------------------------|-------------|-------------------|-------------------------------|--------------|------------------------------------|---------------------------------------------------------------------------------------|----------------------|--------------------------|
| AC / DC                                           | Voltage (V) | Current (A)       | No. of phases                 | No. of poles | No. of contacts in series          |                                                                                       |                      |                          |
| AC                                                | 600         | 20                | 3                             | 3            | 1                                  |                                                                                       |                      |                          |
| CSA                                               |             |                   |                               |              |                                    |                                                                                       |                      |                          |
| Nominal Voltage                                   |             |                   |                               |              |                                    |                                                                                       |                      |                          |
|                                                   |             |                   |                               | Voltage (V)  | AC / DC                            |                                                                                       |                      |                          |
|                                                   |             |                   |                               | 600 AC       |                                    |                                                                                       |                      |                          |
| Rated insulation voltage Ui                       |             |                   |                               |              |                                    |                                                                                       |                      |                          |
|                                                   |             |                   |                               | Voltage (V)  | AC / DC                            |                                                                                       |                      |                          |
|                                                   |             |                   |                               | 600 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                                                                          | 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)       |              | Current (A) Text                   |                                                                                       |                      |                          |
|                                                   |             |                   | 75                            |              | -- --                              |                                                                                       |                      |                          |
| General Use                                       |             |                   |                               |              |                                    |                                                                                       |                      |                          |
| AC / DC                                           | Voltage (V) | Current (A)       | No. of phases                 | No. of poles | 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                                       |             |                   |                               |              |                                    |  |                      |                          |
| 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.             |             |                   |                               |              |                                    |                                                                                       |                      |                          |

## General Information

### Text

- Switches may only be mounted, connected and set into operation by qualified persons according to the accepted rules of technology.
- 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 <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> . |

Classification Contact: Rigid contact bridge

Classification Contact Mat: Silver

Classification Terminal: Screw terminal

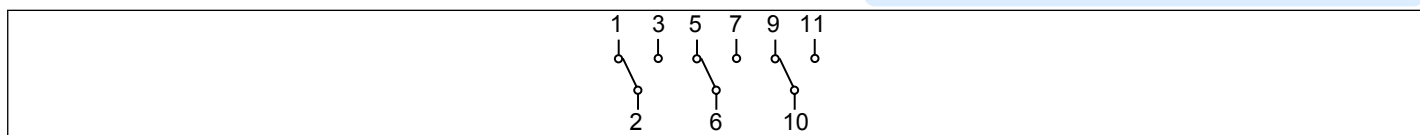
## Mounting-EF



|                      |   |                   |
|----------------------|---|-------------------|
| 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                    | ⌘ | 0,50 Nm           |
| M1                   | ⌘ | 0,90 Nm           |

## Wiring diagram

CH10.A222.EF



## Switch program

CH10.A222.EF



Kraus & Naimer

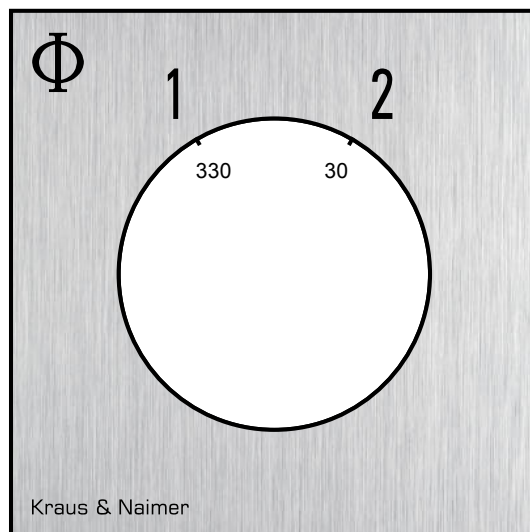
CH10
A222
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| Face Plate                                                                                                                                                             |  |                                                                                   |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------|--|---|--|---|--|---|--|----|--|----|--|----|--|----|--|----|--|----|--|----|--|----|--|
|                                                                                       |  | 1                                                                                 |  | 3 |  | 5 |  | 7 |  | 9  |  | 11 |  | 13 |  | 15 |  | 17 |  | 19 |  | 21 |  | 23 |  |
|                                                                                                                                                                        |  |  |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| Switching Angle <span style="border: 1px solid black; padding: 2px;">60</span><br>Total switching Angle <span style="border: 1px solid black; padding: 2px;">60</span> |  | 2                                                                                 |  | 4 |  | 6 |  | 8 |  | 10 |  | 12 |  | 14 |  | 16 |  | 18 |  | 20 |  | 22 |  | 24 |  |
| 1                                                                                                                                                                      |  | 330                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 345                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 0                                                                                 |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 15                                                                                |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 2                                                                                                                                                                      |  | 30                                                                                |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 45                                                                                |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 60                                                                                |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 75                                                                                |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 90                                                                                |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 105                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 120                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 135                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 150                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 165                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 180                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 195                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 210                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 225                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 240                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 255                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 270                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 285                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 300                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
|                                                                                                                                                                        |  | 315                                                                               |  |   |  |   |  |   |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |

Version: 114

## Face plate

S0.F072/A1B.PEL



## HANDLES

**Designation:** S0C.G251

**Handle colour:** "1" black

