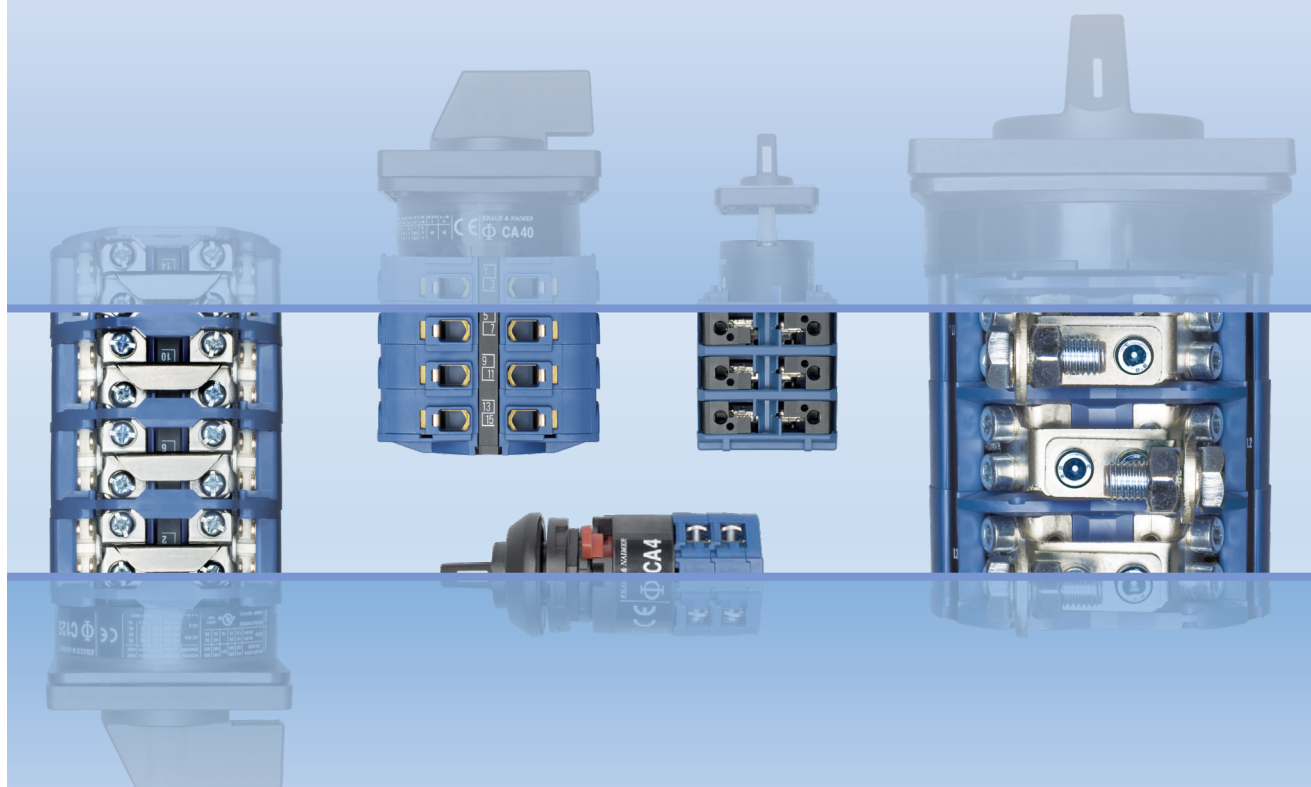


## Control and Load Switches for higher Capacities

CAD, CA and C type up to 315 A

L type up to 2400 A



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# Kraus & Naimer

The development of the Blue Line rotary switch and motor starter product ranges is based on more than hundred years experience by Kraus & Naimer in the design and manufacture of electrical switchgear. Kraus & Naimer pioneered the introduction of the cam operated rotary switch and continues to be recognized as the world leader in that product field.

## BLUE LINE

Blue Line products are protected by numerous patents through-out the industrial world. They are built to national and international standards and designed to withstand adverse temperatures and climates.

Blue Line products are accepted and universally recognized for their quality and workmanship. They are supported by a worldwide sales and service organization.

The Kraus & Naimer Registered Trademark



WORLDWIDE SYMBOL  
FOR QUALITY SWITCHGEAR

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Disconnectors and Main Switches acc. to IEC 60947-3 see Catalog 500

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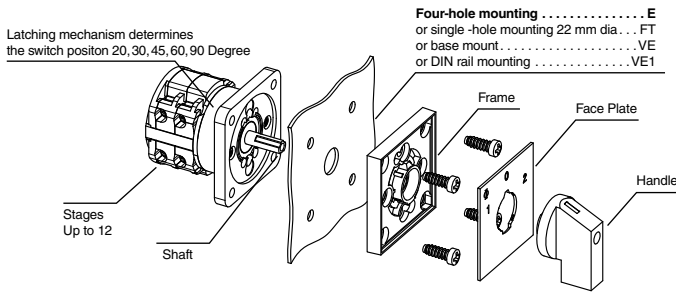
## Construction Data

The load switches of the C, CA and CAD-series offer a solution for most cam switch applications. Different contact designs, contact materials and terminals allow for their use as control switches, instrumentation switches and motor control switches, as well as in electronic circuitry and in aggressive environments according to IEC 60947-3 and VDE 0660 part 107.

The stage is the basis for all switches and can be supplied with a maximum of 2 contacts. The terminals are accessible from the side. CA and CAD switches are supplied with open terminals to facilitate wiring and are protected against accidental finger contact according to EN 50274, VDE 0660 part 514 and DGUV V3. Switches up to type CA25B are supplied with captive screws with clamping plates. The switch types CA40-CA63 are supplied with box terminals. Captive plus-minus terminal screws and integrated screwdriver guides facilitate wiring.

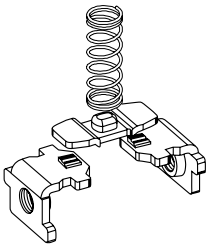
If a positive manual operation or a higher DC rating is required, many of these switches can be fitted with a snap action latching mechanism - suffix „S“ - to the switch type.

The cam-operated switches of the L-series are continuous current rated for off-load switching. They may be used to switch resistive or low inductive loads.



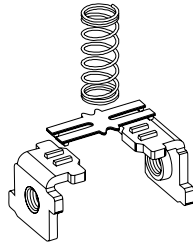
### Special Contact Systems

#### CA4/CA4-1



High contact reliability by multiple cross-point contacts, electronic compatible, CA4 with 1  $\mu$  and CA4-1 with 35  $\mu$  gold plating.

#### CAD4-1/CAD11/CAD12



High contact reliability by H-bridge design with "cross-wire" contacts. The contact system with gold-plated contacts (CAD12 with silver contact) allows for low voltages, electronic compatible.

| Type                                  | Size | Possible Switching Angles | Max. No. of Stages |
|---------------------------------------|------|---------------------------|--------------------|
| CA4, CA4-1, CAD4-1                    | S00  | 30°, 45°, 60°, 90°        | 9                  |
| CA10-CA25                             | S0   | 30°, 45°, 60°, 90°        | 12                 |
| CA10S-CA25S                           | S0   | 60°, 90°                  | on request         |
| CAD11, CAD12                          | S0   | 30°, 45°, 60°, 90°        | 12                 |
| CA10B-CA25B                           | S1   | 30°, 45°, 60°, 90°        | 12                 |
| C26, C32, C42                         | S1   | 20°, 30°, 45°, 60°, 90°   | 12                 |
| C26S, C32S, C42S                      | S1   | 60°                       | on request         |
| CA40, CA50, CA63                      | S1   | 30°, 45°, 60°, 90°        | 12                 |
| C43, C80, C125, C200-4                | S2   | 20°, 30°, 45°, 60°, 90°   | 12                 |
| C315                                  | S3   | 30°, 45°, 60°, 90°        | 12                 |
| L350, L351, L630, L631                | S2   | 30°, 45°, 60°, 90°        | 12                 |
| L1000                                 |      |                           |                    |
| L400, L600, L800, L1200, L1600, L2000 | S3   | 30°, 45°, 60°, 90°        | 12                 |

### CA and CAD Switches (CA4-CA25B)



### CA Switches (CA40-CA63)



### C Switches

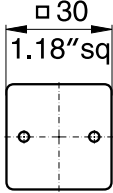
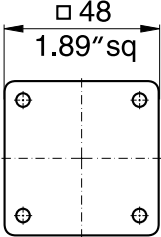
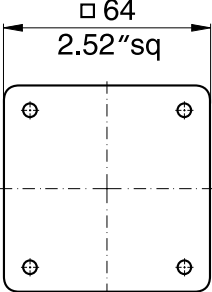
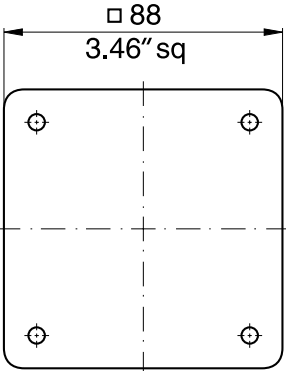
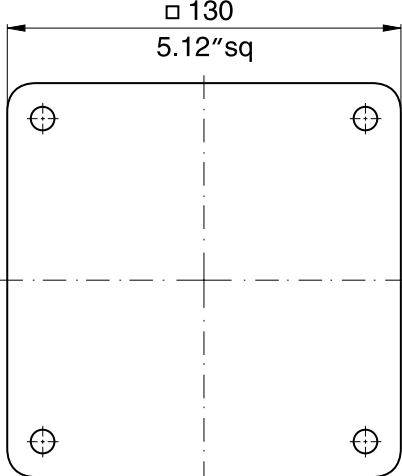


### L Switches



Above illustrates the standard terminal positions.

## Nominal Ratings

| Switch Size                                                                                      | Type                    | According to IEC 60947-3/VDE 0660 part 107    |                                      |                                                        |      |
|--------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------------------|--------------------------------------|--------------------------------------------------------|------|
|                                                                                                  |                         | Insulation Voltage <sup>1</sup><br>$U_i$<br>V | Thermal Current<br>$I_u/I_{th}$<br>A | Motor Rating<br>3 x 380 V-440 V<br>AC-23 AC-3<br>kW kW |      |
| <b>S00</b><br>  | <b>CA4</b>              | 440                                           | 10                                   | 3                                                      | 2,2  |
|                                                                                                  | <b>CA4-1</b>            | 440                                           | 10                                   | 3                                                      | 2,2  |
|                                                                                                  | <b>CAD4-1</b>           | 440                                           | 5                                    | -                                                      | -    |
| <b>S0</b><br>   | <b>CA10</b>             | 690                                           | 20                                   | 7,5                                                    | 5,5  |
|                                                                                                  | <b>CA11</b>             | 690                                           | 20                                   | 7,5                                                    | 5,5  |
|                                                                                                  | <b>CA20</b>             | 690                                           | 25                                   | 11                                                     | 7,5  |
|                                                                                                  | <b>CA25</b>             | 690                                           | 32                                   | 15                                                     | 11   |
|                                                                                                  | <b>CAD11</b>            | 600                                           | 6                                    | -                                                      | -    |
|                                                                                                  | <b>CAD12</b>            | 600                                           | 6                                    | -                                                      | -    |
| <b>S1</b><br>  | <b>CA10B</b>            | 690                                           | 20                                   | 7,5                                                    | 5,5  |
|                                                                                                  | <b>CA11B</b>            | 690                                           | 20                                   | 7,5                                                    | 5,5  |
|                                                                                                  | <b>CA20B</b>            | 690                                           | 25                                   | 11                                                     | 7,5  |
|                                                                                                  | <b>CA25B</b>            | 690                                           | 32                                   | 15                                                     | 11   |
|                                                                                                  | <b>C26</b>              | 690                                           | 32                                   | 15                                                     | 11   |
|                                                                                                  | <b>C32</b>              | 690                                           | 50                                   | 22                                                     | 15   |
|                                                                                                  | <b>C42</b>              | 690                                           | 63                                   | 30                                                     | 18,5 |
|                                                                                                  | <b>CA40</b>             | 690                                           | 40                                   | 18,5                                                   | 15   |
|                                                                                                  | <b>CA50</b>             | 690                                           | 50                                   | 22                                                     | 18,5 |
|                                                                                                  | <b>CA63</b>             | 690                                           | 63                                   | 30                                                     | 18,5 |
| <b>S2</b><br> | <b>C43</b>              | 690                                           | 63                                   | 30                                                     | 18,5 |
|                                                                                                  | <b>C80</b>              | 690                                           | 115                                  | 45                                                     | 30   |
|                                                                                                  | <b>C125</b>             | 690                                           | 150                                  | 75                                                     | 37   |
|                                                                                                  | <b>C200-4</b>           | 690                                           | 200                                  | 75                                                     | 37   |
|                                                                                                  | <b>L350</b>             | 690                                           | 350                                  | 90                                                     | 37   |
|                                                                                                  | <b>L351</b>             | 690                                           | 350                                  | 90                                                     | 37   |
|                                                                                                  | <b>L630</b>             | 690                                           | 630 <sup>2</sup>                     | 90                                                     | 37   |
|                                                                                                  | <b>L631</b>             | 690                                           | 630 <sup>2</sup>                     | 90                                                     | 37   |
|                                                                                                  | <b>L1000</b>            | 690                                           | 1000 <sup>2</sup>                    | 90                                                     | 37   |
| <b>S3</b><br> | <b>C315</b>             | 690                                           | 315                                  | 132                                                    | 55   |
|                                                                                                  | <b>C316<sup>3</sup></b> | 1000                                          | 315                                  | 132                                                    | 55   |
|                                                                                                  | <b>L400</b>             | 690                                           | 500                                  | 132                                                    | 55   |
|                                                                                                  | <b>L600</b>             | 690                                           | 800 <sup>2</sup>                     | 132                                                    | 55   |
|                                                                                                  | <b>L800</b>             | 690                                           | 1100 <sup>2</sup>                    | 132                                                    | 55   |
|                                                                                                  | <b>L1200</b>            | 690                                           | 1450 <sup>2</sup>                    | 132                                                    | 55   |
|                                                                                                  | <b>L1600</b>            | 690                                           | 1900 <sup>2</sup>                    | 132                                                    | 55   |
| <b>L2000</b>                                                                                     | 690                     | 2400 <sup>2</sup>                             | 132                                  | 55                                                     |      |

For further technical details, refer to pages 44-47.  
To furnish with gold contacts and quick connects see page 6.

<sup>1</sup>Valid for lines with grounded common neutral termination, overvoltage category III, pollution degree 3. Values for other supply systems on request. <sup>2</sup>Ambient temperature 35 °C max. <sup>3</sup>Additional switch functions on request.

## How to order

Disconnectors and Main Switches according to IEC 60947-3 see Catalog 500

Three types of data (shown below) are required for ordering Blue Line cam-operated switches. Code numbers for ordering are shown in this catalog.

### 1. Type of Switch

The type of switch required may be easily selected by referring to the table on page 5 which shows the thermal current, power rating and dimensions of each switch. For further technical details, refer to pages 44-47. Variations of contacts and terminals are shown below.

### 2. Switch Function

The code numbers for standard switches shown on pages 8-32 indicate the switch function, face plate, handle and any optional extras.

Additional coding to modify type and color of handle and face plate is explained below.

### 3. Type of Mounting

Types of mounting are shown on pages 33-39. Catalog 101 describes enclosures and optional extras.

Specify the mounting code to indicate required mounting.

**CA10**

**A202**

**VE**

## Type of Switch

Extending the switch type coding the following combinations will define:

| Amendment      | Definition                                          | For switch types                                                                                                |
|----------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| -1             | with gold contacts <sup>1</sup>                     | CA4-1, CA4N-1, CA10-1, CA11-1, CA10B-1, CA11B-1, CAD4-1                                                         |
| -4             | with quick connects                                 | CA4-4                                                                                                           |
| B <sup>2</sup> | S0 switches with latching mechanism size S1         | CA10B, CA11B, CA25B, CAD11B, CAD12B                                                                             |
| C <sup>2</sup> | S1 switches with latching mechanism size S2         | CA40C, CA50C, CA63C                                                                                             |
| L              | with lockout-relay w/o manual release for std. sw.  | CA10L, C25L, C26L, CA40L, CA50L, CA63L                                                                          |
| M              | with lockout-relay with manual release for std. sw. | CA10M, C25M, C26M, C42M, CA40M, CA50M, CA63M                                                                    |
| X              | with power failure release                          | CA10X, CA20X, CA25X, C26X, C32X, C42X, CA40X, CA50X, CA63X                                                      |
| Y              | with power failure release and trip-free release    | CA10Y, CA20Y, CA25Y                                                                                             |
| S <sup>2</sup> | with snap action                                    | CA10S, CA20S, CA25S<br>with 60° or 90° switching<br>C26S, C32S, C42S, CA40S, CA50S, CA63S<br>with 60° switching |
| R              | with spring return latching mechanism               | CA10R, CA25R, CAD11R, CAD12R                                                                                    |

**Example:** Coding for switch type **CA10** with gold contacts is **CA10-1**.

## Handles, Face Plates and Optional Extras

The handles for standard switches shown on pages 8-32 are suitable for mounting units with four hole mounting. Alternative types of handles available are illustrated on page 42, and mounting units on pages 31-37.

When a handle, face plate or optional extra is required but not covered by the dash number, the code number for the selected component should be entered separately. A comprehensive range of available standard face plates is illustrated on pages 40 and 41. Non-standard or special face plate engravings are available at extra cost.

The large number of optional extras and enclosures is covered in Catalog 101.

## Switch Size

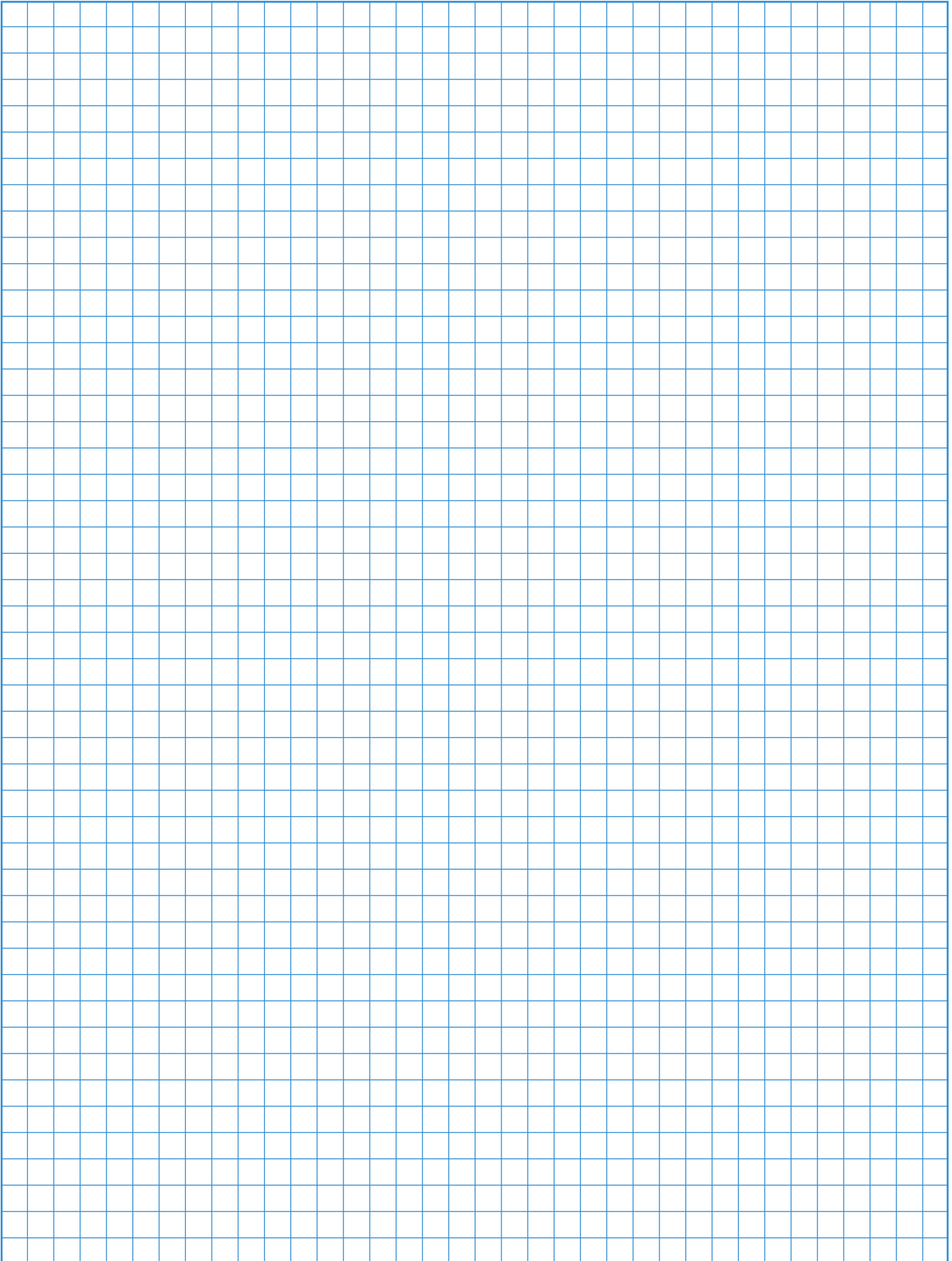
Blue Line switches are available in sizes S00, S0, S1, S2 and S3. These size codes indicate the dimensions of the mounting, the face plate and the handle, as well as the size of optional devices and enclosures.

Page 5 lists these sizes and the various switch types they include.

<sup>1</sup>Technical data on request. <sup>2</sup>Additional length for switches with B, C, S, amendments refer page 54.



**Notes:**








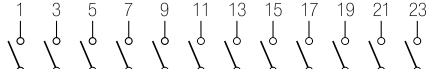




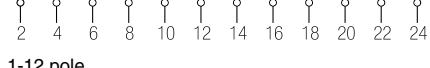











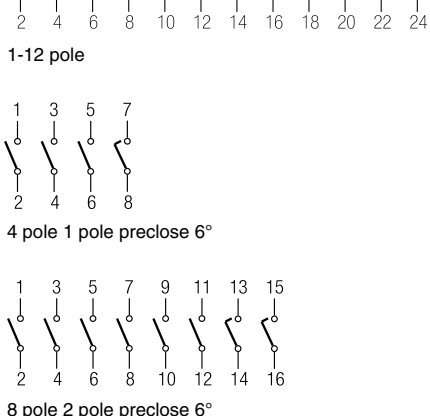





















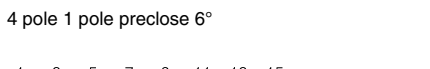
















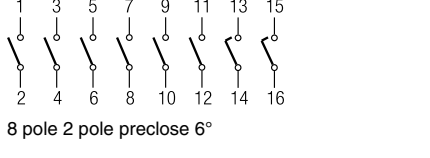
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| Function | Escutch. Plate | Type/Handle            |                        |                 |                      | Code | Stages | Connection Diagram |
|----------|----------------|------------------------|------------------------|-----------------|----------------------|------|--------|--------------------|
|          |                | CA4<br>CA4-1<br>CAD4-1 | CAD..<br>CA10-<br>CA25 | CA10B-<br>CA25B | CA40<br>C26-<br>C315 |      |        |                    |






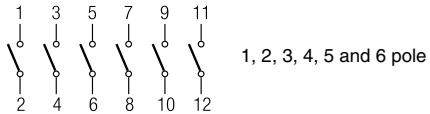
















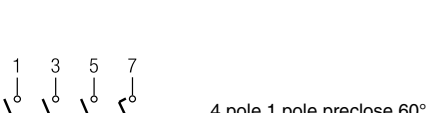








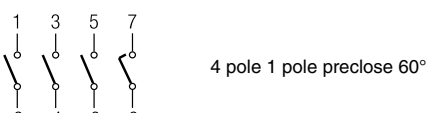



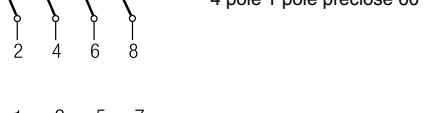






## ON/OFF Switches with 60° Switching

[Dimensions p.56](#)





































|                                        |                                                                                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |        |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|----------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 1 pole                                 |  F070 |  |  |  |  | A200   | 1                                                                                   |  |                                                                                     |                                                                                     |                                                                                     |
| 2 pole                                 |                                                                                        |  |  |  |  | A201   | 1                                                                                   |                                                                                     |  |                                                                                     |                                                                                     |
| 3 pole                                 |                                                                                        |  |  |  |  | A202   | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 4 pole                                 |                                                                                        |  |  |  |  | A203   | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 4 pole 1 pole preclose 6° <sup>1</sup> |                                                                                        |  |  |  |  | WAA653 | 2                                                                                   |                                                                                     |                                                                                     |  |                                                                                     |
| 5 pole                                 |                                                                                        |  |  |  |  | WAA341 | 3                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 6 pole                                 |                                                                                        |  |  |  |  | A342   | 3                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 7 pole                                 |                                                                                        |  |  |  |  | A343   | 4                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 8 pole                                 |                                                                                        |  |  |  |  | A344   | 4                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 8 pole 2 pole preclose 6° <sup>1</sup> |                                                                                        |  |  |  |  | WAA654 | 4                                                                                   |                                                                                     |                                                                                     |                                                                                     |  |
| 9 pole                                 |                                                                                        |  |  |  |  | WAA345 | 5                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 10 pole                                |                                                                                        |  |  |  |  | A346   | 5                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 11 pole                                |       |  |  |  | WAA347                                                                            | 6      |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 12 pole                                |       |  |  |  | A348                                                                              | 6      |  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## ON/OFF Switches with 90° Switching

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|                                         |                                                                                          |                                                                                     |                                                                                     |                                                                                     |                                                                                     |        |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|-----------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1 pole contacts                         |  F056 |  |  |  |  | A290   | 1                                                                                     |  |                                                                                       |                                                                                       |
| 2 pole preclose 30°                     |                                                                                          |  |  |  |  | A291   | 1                                                                                     |                                                                                       |                                                                                       |                                                                                       |
| 3 pole                                  |                                                                                          |  |  |  |  | A292   | 2                                                                                     |                                                                                       |                                                                                       |                                                                                       |
| 4 pole                                  |                                                                                          |  |  |  |  | A324   | 2                                                                                     |                                                                                       |                                                                                       |                                                                                       |
| 4 pole 1 pole preclose 60° <sup>1</sup> |                                                                                          |  |  |  |  | A293   | 2                                                                                     |                                                                                       |  |                                                                                       |
| 4 pole 3 pole preclose 30°              |                                                                                          |  |  |  |  | WAA327 | 2                                                                                     |                                                                                       |                                                                                       |                                                                                       |
| 5 pole contacts                         |       |  |  |  | WAA325                                                                              | 3      |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
| 6 pole preclose 30°                     |       |  |  |  | A326                                                                                | 3      |  |                                                                                       |                                                                                       |                                                                                       |
| 3 pole 360° rotation                    |  F062 |  |  |  |  | WAA208 |                                                                                       | 2                                                                                     |                                                                                       |  |

## ON/OFF Switches with 30° Switching








































































|                           |                                                                                          |                                                                                     |                                                                                     |                                                                                     |                                                                                     |        |   |                                                                                       |
|---------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|---|---------------------------------------------------------------------------------------|
| 1 pole                    |  F169 |  |  |  |  | WAA100 | 1 |  |
| 2 pole                    |                                                                                          |  |  |  |  | WAA101 | 1 |                                                                                       |
| 3 pole                    |                                                                                          |  |  |  |  | WAA102 | 2 |                                                                                       |
| 4 pole                    |                                                                                          |  |  |  |  | WAA103 | 2 |                                                                                       |
| 1 pole with spring return |  F153 |  |  |  |  | A204   | 1 |  |
| 2 pole with spring return |                                                                                          |  |  |  |  | A205   | 1 |                                                                                       |
| 3 pole with spring return |                                                                                          |  |  |  |  | WAA206 | 2 |                                                                                       |
| 4 pole with spring return |                                                                                          |  |  |  |  | WAA207 | 2 |                                                                                       |

<sup>1</sup>for use in a three phase four-wire system with switched neutral    <sup>2</sup>not available for switch type CA25    <sup>3</sup>not available for switch type C315

| Function | Escutch. Plate | Type/Handle            |                        |                 |                      | Code | Stages | Connection Diagram |
|----------|----------------|------------------------|------------------------|-----------------|----------------------|------|--------|--------------------|
|          |                | CA4<br>CA4-1<br>CAD4-1 | CAD..<br>CA10-<br>CA25 | CA10B-<br>CA25B | CA40<br>C26-<br>C315 |      |        |                    |





























Double-throw Switches without „OFF“ 60° Switching

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































|                                        |                                                                                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |        |                                                                                     |                                                                                     |
|----------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 1 pole                                 | <br>F072 |  |  |  |  | A220   | 1                                                                                   |  |
| 2 pole                                 |                                                                                           |  |  |  |  | A221   | 2                                                                                   |  |
| 3 pole                                 |                                                                                           |  |  |  |  | A222   | 3                                                                                   |  |
| 4 pole                                 |                                                                                           |  |  |  |  | A223   | 4                                                                                   |  |
| 4 pole 1 pole preclose 6° <sup>2</sup> |                                                                                           |  |  |  |  | WAA673 | 4                                                                                   |  |
| 5 pole                                 |                                                                                           |  |  |  |  | A369   | 5                                                                                   |  |
| 6 pole                                 |                                                                                           |  |  |  |  | A370   | 6                                                                                   |  |
| 7 pole                                 |                                                                                           |  |  |  |  | A371   | 7                                                                                   |  |
| 8 pole                                 |                                                                                           |  |  |  |  | A372   | 8                                                                                   |  |
| 8 pole 2 pole preclose 6° <sup>2</sup> |                                                                                           |  |  |  |  | WAA972 | 8                                                                                   |  |
| 9 pole                                 |                                                                                           |  |  |  |  | WAA373 | 9                                                                                   |  |
| 10 pole                                |                                                                                           |  |  |  |  | WAA374 | 10                                                                                  |  |
| 11 pole                                |          |  |  |  | WAA375                                                                            | 11     |  |                                                                                     |
| 12 pole                                |          |  |  |  | WAA376                                                                            | 12     |  |                                                                                     |

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Double-throw Switches without „OFF“ with electrically isolated contacts

|                                        |                                                                                             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |      |                                                                                                                    |                                                                                                             |
|----------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| 1 pole                                 | <br>F072 |  |  |  |  | A720 | 1                                                                                                                  | <br>1-4 pole           |
| 2 pole                                 |                                                                                             |  |  |  |  | A721 | 2                                                                                                                  |                                                                                                             |
| 3 pole                                 |                                                                                             |  |  |  |  | A722 | 3                                                                                                                  |                                                                                                             |
| 4 pole                                 |                                                                                             |  |  |  |  | A723 | 4                                                                                                                  |                                                                                                             |
| 4 pole 1 pole preclose 6° <sup>2</sup> |          |  |  |  | WAA973                                                                              | 4    | <br>4 pole 1 pole preclose 6° |                                                                                                             |
| 1 pole with spring return              | <br>F026 |  |  |  |                                                                                     | A795 | 1                                                                                                                  | <br>1 pole mit Rückzug |

Double-throw Switches without „OFF“ 30° Switching

|                           |                                                                                             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |        |   |                                                                                                   |
|---------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|---|---------------------------------------------------------------------------------------------------|
| 1 pole                    | <br>F026 |  |  |  |  | WAA120 | 1 | <br>1-4 pole |
| 2 pole                    |                                                                                             |  |  |  |  | WAA121 | 2 |                                                                                                   |
| 3 pole                    |                                                                                             |  |  |  |  | WAA122 | 3 |                                                                                                   |
| 4 pole                    |                                                                                             |  |  |  |  | WAA123 | 4 |                                                                                                   |
| 1 pole with spring return | <br>F026 |  |  |  |  | A295   | 1 | <br>1-3 pole |
| 2 pole with spring return |                                                                                             |  |  |  |  | A296   | 2 |                                                                                                   |
| 3 pole with spring return |                                                                                             |  |  |  |  | WAA297 | 3 |                                                                                                   |

<sup>1</sup>not available for switch type CA25    <sup>2</sup>for use in a three phase four-wire system with switched neutral

| Function | Escutch. Plate | Type/Handle                                                   | Code | Stages | Connection Diagram |
|----------|----------------|---------------------------------------------------------------|------|--------|--------------------|
|          |                | CA4 CAD..<br>CA4-1 CA10- CA10B- C80-<br>CAD4-1 CA25 CA63 C315 |      |        |                    |

Double-throw Switches with Center „OFF“ 60° Switching

[Dimensions p.56](#)

|                                        |             |  |  |  |        |              |                                  |                 |                                  |
|----------------------------------------|-------------|--|--|--|--------|--------------|----------------------------------|-----------------|----------------------------------|
| 1 pole                                 | <p>F071</p> |  |  |  |        | A210         | 1                                | <p>1-4 pole</p> |                                  |
| 2 pole                                 |             |  |  |  |        | A211         | 2                                |                 |                                  |
| 3 pole                                 |             |  |  |  |        | A212         | 3                                |                 |                                  |
| 4 pole                                 |             |  |  |  |        | A213         | 4                                |                 |                                  |
| 4 pole 1 pole preclose 6° <sup>3</sup> |             |  |  |  |        | WAA913       | 4                                |                 | <p>4 pole 1 pole preclose 6°</p> |
| 5 pole                                 |             |  |  |  |        | A361         | 5                                |                 |                                  |
| 6 pole                                 |             |  |  |  |        | A362         | 6                                |                 |                                  |
| 7 pole                                 |             |  |  |  |        | WAA363       | 7                                |                 |                                  |
| 8 pole                                 |             |  |  |  |        | WAA364       | 8                                |                 |                                  |
| 8 pole 2 pole preclose 6° <sup>3</sup> |             |  |  |  | WAA664 | 8            | <p>8 pole 2 pole preclose 6°</p> |                 |                                  |
|                                        |             |  |  |  |        | 5 pole       |                                  |                 |                                  |
|                                        |             |  |  |  |        | 6 and 7 pole |                                  |                 |                                  |
|                                        |             |  |  |  |        | 8 pole       |                                  |                 |                                  |
|                                        |             |  |  |  |        |              | 8 pole 2 pole preclose 6°        |                 |                                  |

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Double-throw Switches with Center „OFF“ 90° Switching

|                                         |             |  |  |  |  |        |   |                 |
|-----------------------------------------|-------------|--|--|--|--|--------|---|-----------------|
| 1 pole                                  | <p>F057</p> |  |  |  |  | A218   | 1 | <p>1-4 pole</p> |
| 2 pole                                  |             |  |  |  |  | A219   | 2 |                 |
| 3 pole                                  |             |  |  |  |  | WAA299 | 3 |                 |
| 4 pole 1 pole preclose 60° <sup>3</sup> |             |  |  |  |  | WAA294 | 4 |                 |

Double-throw Switches with Center „OFF“ and electrically isolated contacts

























|                                        |             |  |  |  |        |      |   |                     |
|----------------------------------------|-------------|--|--|--|--------|------|---|---------------------|
| 1 pole                                 | <p>F071</p> |  |  |  |        | A710 | 1 | <p>1-4 pole</p>     |
| 2 pole                                 |             |  |  |  |        | A711 | 2 |                     |
| 3 pole                                 |             |  |  |  |        | A712 | 3 |                     |
| 4 pole 1 pole preclose 6°              |             |  |  |  |        | A713 | 4 |                     |
| 4 pole 1 pole preclose 6° <sup>3</sup> |             |  |  |  | WAA963 | 4    |   |                     |
| 1 pole with spring return              | <p>F025</p> |  |  |  |        | A714 | 1 | <p>1 and 2 pole</p> |
| 2 pole to center                       |             |  |  |  |        | A715 | 2 |                     |

<sup>1</sup>switch type C315 with handle    <sup>2</sup>not available for switch type C315    <sup>3</sup>for use in a three phase four-wire system with switched neutral











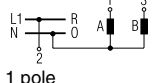
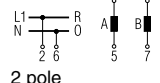
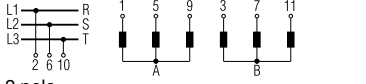










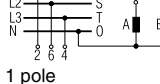
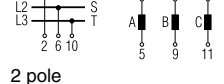
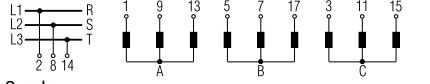










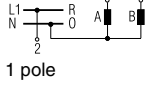
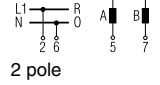
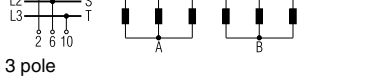










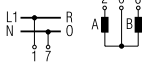
| Function | Escutch. Plate | Type/Handle                                                  | Code | Stages | Connection Diagram |
|----------|----------------|--------------------------------------------------------------|------|--------|--------------------|
|          |                | CA4 CAD.. CA40<br>CA4-1 CA10- C26-<br>CAD4-1 CA25 CA25B C315 |      |        |                    |

Double-throw Switches with Spring Return to Center

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|                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                             |                                                                                                                                                                                                  |                      |             |                                                                                                 |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------|-------------------------------------------------------------------------------------------------|
| 1 pole with spring return<br>2 pole to center<br>3 pole           |  | <br><br> | <br><br> | <br><br> |  <sup>2</sup><br> <sup>3</sup> | A214<br>A215<br>A216 | 1<br>2<br>3 | <br>1-3 pole |
| 1 pole with spring return<br>2 pole from left to center<br>3 pole |  | <br><br> | <br><br> | <br><br> |                                                                                                                                                                                                  | A320<br>A321<br>A322 | 1<br>2<br>3 | <br>1-3 pole |

General Application Switches

|                                                                                                           |                                                                                     |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                   |  |                            |             |                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 pole 2 Gang<br>2 pole Switching sequence:<br>3 pole 0, A, A+B                                           |    | <br><br>       | <br><br>       | <br><br>       |  | A310<br>A312<br>WAA314     | 1<br>2<br>3 | <br>1 pole<br><br>2 pole<br><br>3 pole   |
| 1 pole 3 Gang<br>2 pole Switching sequence:<br>3 pole 0, A, A+B, A+B+C                                    |  | <br><br> | <br><br> | <br><br> |  | A311<br>WAA313<br>WAA315   | 2<br>3<br>5 | <br>1 pole<br><br>2 pole<br><br>3 pole |
| 1 pole 2 Gang<br>2 pole Series switching<br>3 pole Switching sequence:<br>0, A, B, A+B                    |  | <br><br> | <br><br> | <br><br> |  | WAA330<br>WAA331<br>WAA332 | 1<br>2<br>3 | <br>1 pole<br><br>2 pole<br><br>3 pole |
| 2 pole 2 Gang<br>Series-parallel<br>Switching<br>Switching sequence:<br>0, A+B series, A,<br>A+B parallel |  | <br><br> | <br><br> | <br><br> |  | WAA339                     | 2           | <br>2 pole                                                                                                                                                                                                       |




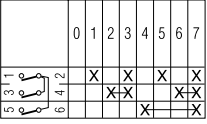



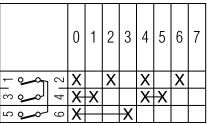



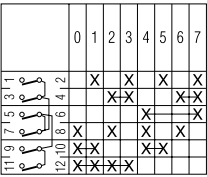



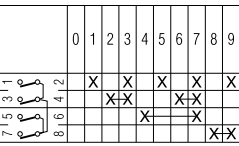



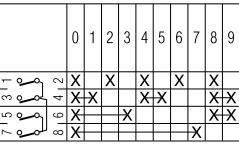



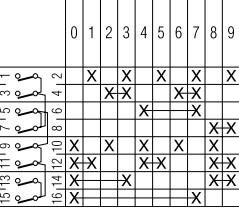



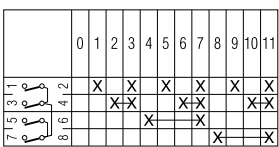



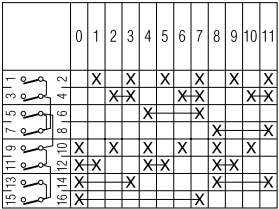
<sup>1</sup>not available for switch type CA25 <sup>2</sup>not available for switch type C315 <sup>3</sup>available only up to switch type CA63

| Function | Escutch. Plate | Type/Handle            |                      |                 |                      | Code | Stages | Connection Diagram |
|----------|----------------|------------------------|----------------------|-----------------|----------------------|------|--------|--------------------|
|          |                | CA4<br>CA4-1<br>CAD4-1 | CA10<br>CA11<br>CA12 | CA10B-<br>CA25B | CA40<br>C26-<br>C315 |      |        |                    |

Coding Switches/Binary Code

[Dimensions p.56](#)


























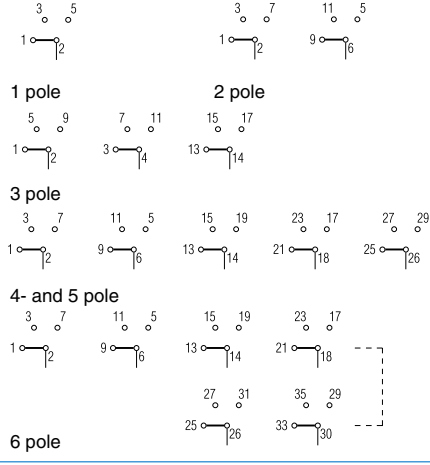

























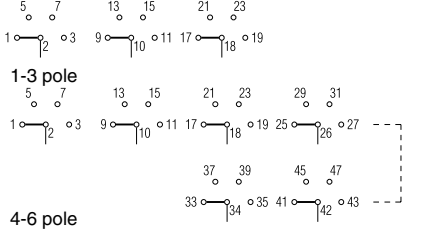

















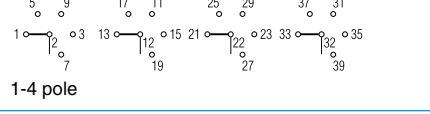













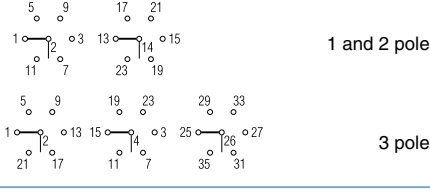













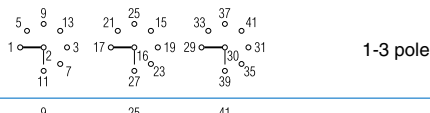













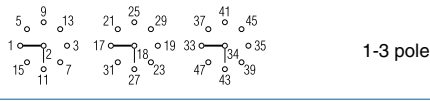







































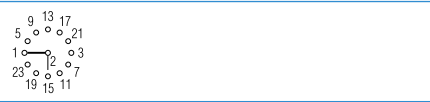
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|                                      |                                                                                             |                                                                                     |                                                                                     |  |        |   |                                                                                       |
|--------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|--------|---|---------------------------------------------------------------------------------------|
| 0 - 7<br>360° rotation               | <br>F322   |    |    |  | A540   | 2 |    |
| 0 - 7 complement<br>360° rotation    | <br>F322   |    |    |  | WAA541 | 2 |    |
| 0 - 7 + complement<br>360° rotation  | <br>F322   |    |    |  | WAA542 | 3 |    |
| 0 - 9                                | <br>F007  |   |   |  | A550   | 2 |  |
| 0 - 9 complement                     | <br>F007 |  |  |  | WAA551 | 2 |  |
| 0 - 9 + complement                   | <br>F007 |  |  |  | WAA552 | 4 |  |
| 0 - 11<br>360° rotation              | <br>F009 |  |  |  | A543   | 2 |  |
| 0 - 11 + complement<br>360° rotation | <br>F009 |  |  |  | WAA545 | 4 |  |


| Function | Escutch. Plate | Type/Handle            |                        |                |              | Code | Stages | Connection Diagram |
|----------|----------------|------------------------|------------------------|----------------|--------------|------|--------|--------------------|
|          |                | CA4<br>CA4-1<br>CAD4-1 | CAD..<br>CA10-<br>CA25 | CA10B-<br>CA63 | C80-<br>C315 |      |        |                    |

Multi-step Switches without „OFF“

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




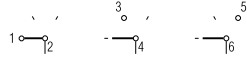
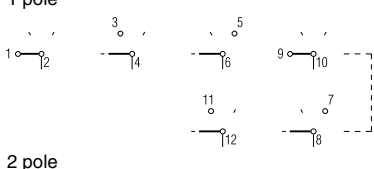









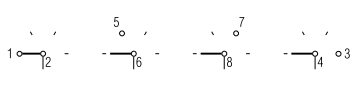
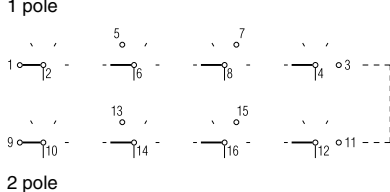




|                                                                 |                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                  |                              |                                                                                       |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------|
| 1 pole 3 Step<br>2 pole<br>3 pole<br>4 pole<br>5 pole<br>6 pole | <br>F076   | <br><br><br><br><br>        | <br><br><br><br><br>        | <br><br><br><br><br>        | <br><br><br><br><br>        | A230<br>A250<br>A270<br>A476<br>WAA484<br>WAA489 | 2<br>3<br>5<br>6<br>8<br>9   |    |
| 1 pole 4 Step<br>2 pole<br>3 pole<br>4 pole<br>5 pole<br>6 pole | <br>F077   | <br><br><br><br><br> | <br><br><br><br><br> | <br><br><br><br><br> | <br><br><br><br><br> | A231<br>A251<br>A271<br>A477<br>WAA485<br>WAA490 | 2<br>4<br>6<br>8<br>10<br>12 |   |
| 1 pole 5 Step<br>2 pole<br>3 pole<br>4 pole                     | <br>F078 | <br><br><br>                                                                                                                                                                          | <br><br><br>                                                                                                                                                                          | <br><br><br>                                                                                                                                                                          | <br><br><br>                                                                                                                                                                          | A232<br>A252<br>WAA272<br>WAA478                 | 3<br>5<br>8<br>10            |  |
| 1 pole 6 Step<br>2 pole<br>3 pole                               | <br>F079 | <br><br>                                                                                                                                                                                                                                                                 | <br><br>                                                                                                                                                                                                                                                                 | <br><br>                                                                                                                                                                                                                                                                 | <br><br>                                                                                                                                                                                                                                                                 | A233<br>WAA253<br>WAA273                         | 3<br>6<br>9                  |  |
| 1 pole 7 Step<br>2 pole<br>3 pole                               | <br>F110 | <br><br>                                                                                                                                                                                                                                                                 | <br><br>                                                                                                                                                                                                                                                                 | <br><br>                                                                                                                                                                                                                                                                 | <br><br>                                                                                                                                                                                                                                                                 | WAA234<br>WAA254<br>WAA274                       | 4<br>7<br>11                 |  |
| 1 pole 8 Step<br>2 pole<br>3 pole                               | <br>F111 | <br><br>                                                                                                                                                                                                                                                                 | <br><br>                                                                                                                                                                                                                                                                 | <br><br>                                                                                                                                                                                                                                                                 | <br><br>                                                                                                                                                                                                                                                                 | WAA235<br>WAA255<br>WAA275                       | 4<br>8<br>12                 |  |
| 1 pole 9 Step                                                   | <br>F010 | <br>                                                                                                                                                                                                                                                                                                                                                        | <br>                                                                                                                                                                                                                                                                                                                                                        | <br>                                                                                                                                                                                                                                                                                                                                                        | <br>                                                                                                                                                                                                                                                                                                                                                        | WAA236                                           | 5                            |  |
| 1 pole 10 Step                                                  | <br>F011 | <br>                                                                                                                                                                                                                                                                                                                                                        | <br>                                                                                                                                                                                                                                                                                                                                                        | <br>                                                                                                                                                                                                                                                                                                                                                        | <br>                                                                                                                                                                                                                                                                                                                                                        | WAA237                                           | 5                            |  |
| 1 pole 11 Step                                                  | <br>F012 | <br>                                                                                                                                                                                                                                                                                                                                                        | <br>                                                                                                                                                                                                                                                                                                                                                        | <br>                                                                                                                                                                                                                                                                                                                                                        | <br>                                                                                                                                                                                                                                                                                                                                                        | WAA238                                           | 6                            |  |
| 1 pole 12 Step<br>1 pole 360° rotation                          | <br>F013 | <br>                                                                                                                                                                                                                                                                                                                                                        | <br>                                                                                                                                                                                                                                                                                                                                                        | <br>                                                                                                                                                                                                                                                                                                                                                        | <br>                                                                                                                                                                                                                                                                                                                                                        | WAA239<br>WAA639                                 | 6<br>6                       |  |

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




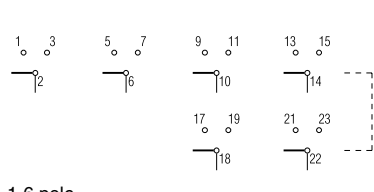





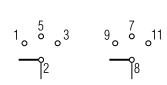
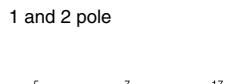
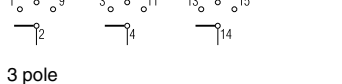
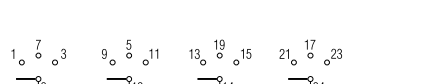
<sup>1</sup>switch type C315 with  handle <sup>2</sup>not available for switch type CA11B

| Function | Escutch. Plate | Type/Handle                                                   | Code | Stages | Connection Diagram |
|----------|----------------|---------------------------------------------------------------|------|--------|--------------------|
|          |                | CA4 CAD..<br>CA4-1 CA10- CA10B- C80-<br>CAD4-1 CA25 CA63 C315 |      |        |                    |

Multi-step Switches without „OFF“ with electrically isolated contacts [Dimensions p.56](#)

|               |                                                                                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |   |                                                                                                                                                                                                 |
|---------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 pole 3 Step | <br>F076 |  |  |  |  | A730 | 2 | <br>1 pole<br><br>2 pole  |
| 2 pole        |                                                                                           |  |  |  |  | A750 | 3 |                                                                                                                                                                                                 |
| 1 pole 4 Step | <br>F077 |  |  |  |  | A731 | 2 | <br>1 pole<br><br>2 pole |
| 2 pole        |                                                                                           |  |  |  |  | A751 | 4 |                                                                                                                                                                                                 |

Multi-step Switches with „OFF“






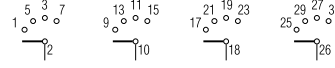





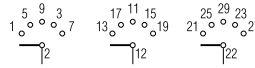





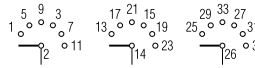





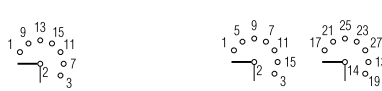
























|                                                                 |                                                                                             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                    |                            |                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 pole 2 Step<br>2 pole<br>3 pole<br>4 pole<br>5 pole<br>6 pole | <br>F075 |  |  |  |  | A240<br>A260<br>A280<br>WAA480<br>WAA486<br>WAA491 | 1<br>2<br>3<br>4<br>5<br>6 | <br>1-6 pole                                                                                                                                                                                                                                                                                                              |
| 1 pole 3 Step<br>2 pole<br>3 pole<br>4 pole<br>5 pole           | <br>F109 |  |  |  |  | A241<br>A261<br>A281<br>WAA481<br>WAA487           | 2<br>3<br>5<br>6<br>8      | <br>1 and 2 pole<br><br>3 pole<br><br>4 pole<br><br>5 pole |

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| Function | Escutch. Plate | Type/Handle            |                       |                |              | Code | Stages | Connection Diagram |
|----------|----------------|------------------------|-----------------------|----------------|--------------|------|--------|--------------------|
|          |                | CA4<br>CA4-1<br>CAD4-1 | CAD.<br>CA10-<br>CA25 | CA10B-<br>CA63 | C80-<br>C315 |      |        |                    |

Multi-step Switches with „OFF“

[Dimensions p. 56](#)

|                                             |                                                                                             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                    |                  |                                                                                                                                 |
|---------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 1 pole 4 Step<br>2 pole<br>3 pole<br>4 pole | <br>F002   |    |    |    |    | A242<br>WAA262<br>WAA282<br>WAA482 | 2<br>4<br>6<br>8 | <br><br>1-4 pole                             |
| 1 pole 5 Step<br>2 pole<br>3 pole           | <br>F003   |    |    |    |    | A243<br>WAA263<br>WAA283           | 3<br>5<br>8      | <br><br>1-3 pole                             |
| 1 pole 6 Step<br>2 pole<br>3 pole           | <br>F004   |    |    |    |    | A244<br>WAA264<br>WAA284           | 3<br>6<br>9      | <br><br>1-3 pole                             |
| 1 pole 7 Step<br>2 pole                     | <br>F005 |  |  |  |  | WAA245<br>WAA265                   | 4<br>7           | <br><br>1 pole                      2 pole |
| 1 pole 8 Step                               | <br>F006 |  |  |  |  | WAA246                             | 4                |                                            |
| 1 pole 9 Step                               | <br>F007 |  |  |  |  | WAA247                             | 5                |                                            |
| 1 pole 10 Step                              | <br>F008 |  |  |  |  | WAA248                             | 5                |                                            |
| 1 pole 11 Step<br>1 pole 360° rotation      | <br>F009 |  |  |  |  | WAA249<br>WAA649                   | 6<br>6           |                                            |

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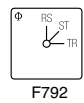





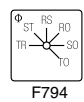




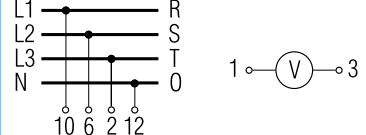
# Switch Function and Configuration

# C, CA, CAD Switches

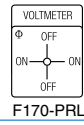




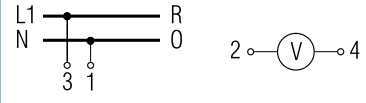
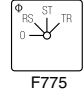




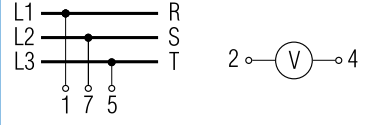
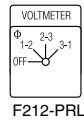




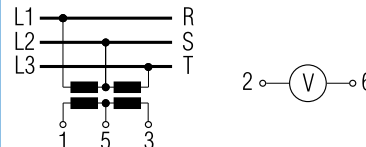
| Function | Escutch. Plate | Type/Handle                             | Code            | Stages | Connection Diagram |
|----------|----------------|-----------------------------------------|-----------------|--------|--------------------|
|          |                | CA4<br>CA4-1 CA10-<br>CAD4-1 CA25 CAD.. | CA10B-<br>CA25B |        |                    |

## Voltmeter Switches without „OFF“

[Dimensions p.56](#)

|                                                            |                                                                                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |   |                                                                                     |
|------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|---|-------------------------------------------------------------------------------------|
| 3 phase 3 wire                                             | <br>F792 |  |  |  |  | A023 | 2 |  |
| 3 phase 3 wire<br>3 phase to phase and<br>phase to neutral | <br>F794 |  |  |  |  | A025 | 3 |  |

## Voltmeter Switches with „OFF“






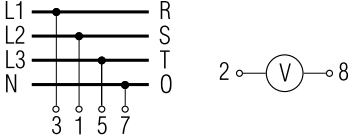





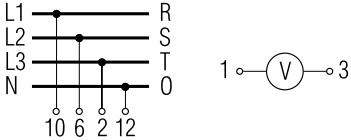





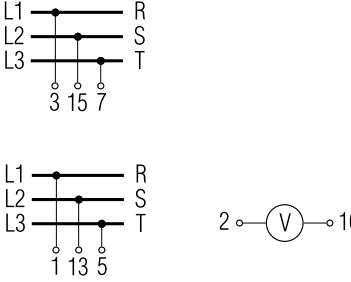





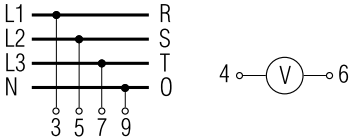
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|-------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|---|---------------------------------------------------------------------------------------|
| 2 pole<br>360° rotation | <br>F170-PRL  |    |    |    |    | WAA002 | 1 |   |
| 3 phase 3 wire          | <br>F775     |  |  |  |  | A004   | 2 |  |
|                         | <br>F212-PRL |  |  |  |  | WAA011 | 2 |  |

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| Function | Escutch. Plate | Type/Handle            |               |       |                 | Code | Stages | Connection Diagram |
|----------|----------------|------------------------|---------------|-------|-----------------|------|--------|--------------------|
|          |                | CA4<br>CA4-1<br>CAD4-1 | CA10-<br>CA25 | CAD.. | CA10B-<br>CA25B |      |        |                    |

Voltmeter Switches with „OFF“

[Dimensions p.56](#)

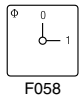




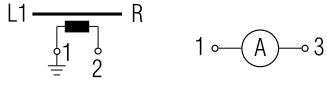
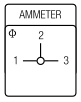



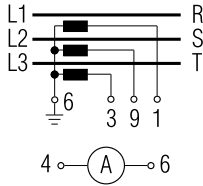




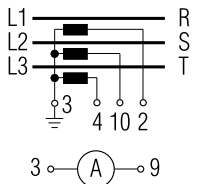
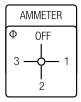




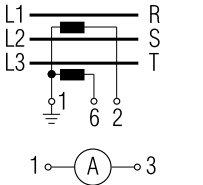
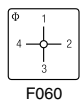




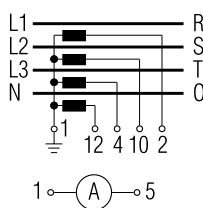





|                                         |                                                                                             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |        |   |                                                                                       |
|-----------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|---|---------------------------------------------------------------------------------------|
| 3 phase to neutral                      | <br>F779   |    |    |    |    | WAA005 | 2 |    |
| 3 phase to phase and 3 phase to neutral | <br>F782   |    |    |    |    | A007   | 3 |    |
| 2 separate 3 phase with center „OFF“    | <br>F786  |    |    |    |    | WAA008 | 4 |  |
| 3 phase and 1 phase to neutral          | <br>F789 |  |  |  |  | WAA010 | 3 |  |

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| Function | Escutch. Plate         | Type/Handle            | Code                  | Stages       | Connection Diagram |
|----------|------------------------|------------------------|-----------------------|--------------|--------------------|
|          | CA4<br>CA4-1<br>CAD4-1 | CAD..<br>CA10-<br>CA25 | CA10B-<br>CA63<br>C32 | C43-<br>C125 |                    |

**Ammeter Switches**

[Dimensions p.56](#)

|                                                                  |                                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |        |   |                                                                                       |
|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|---|---------------------------------------------------------------------------------------|
| Single pole with one current transformer                         | <br>F058       |    |    |    |    | WAA046 | 1 |    |
| Single pole with 3 current transformers without „OFF“            | <br>F181-PRL   |    |    |    |                                                                                     | WAA017 | 3 |    |
| Single pole with 3 current transformers with „OFF“ 360° rotation | <br>F059      |    |    |    |                                                                                     | A048   | 3 |   |
| Single pole with 2 current transformers (3 readings)             | <br>F172-PRL |  |  |  |  | WAA021 | 2 |  |
| Single pole with 4 current transformers                          | <br>F060     |  |  |  |  | WAA036 | 4 |  |
| 2 pole 2 current transformers                                    | <br>F057     |  |  |  |                                                                                     | WAA037 | 3 |  |

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<sup>1</sup>available only up to switch type CA25B

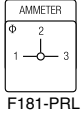



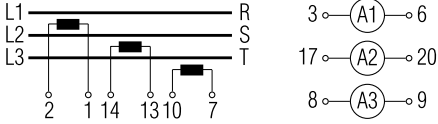
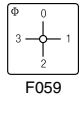









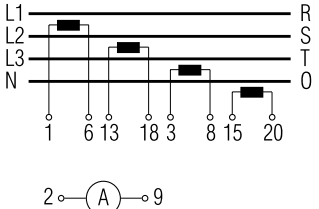
# Switch Function and Configuration

# C, CA, CAD Switches

| Function | Escutch. Plate | Type/Handle                                                  | Code | Stages | Connection Diagram |
|----------|----------------|--------------------------------------------------------------|------|--------|--------------------|
|          |                | CA4 CAD.. CA10B- CA4-1 CA10- CA63- CAD4-1 CA25 C42 C43- C125 |      |        |                    |

## Ammeter Switches

[Dimensions p. 56](#)

|                                  |                                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |               |             |                                                                                      |
|----------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------|-------------|--------------------------------------------------------------------------------------|
| 2 pole<br>3 current transformers |  <p>F181-PRL</p> |  |  |  |                                                                                   | <b>WAA019</b> | <b>5</b>    |   |
|                                  |  <p>F059</p>     |  |  |  |  |               | <b>A038</b> | <b>5</b>                                                                             |
| 2 pole<br>4 current transformers |  <p>F060</p>    |  |  |  |  | <b>WAA039</b> | <b>6</b>    |  |






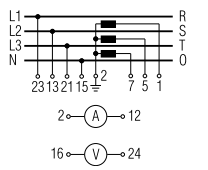





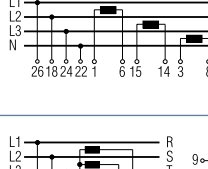





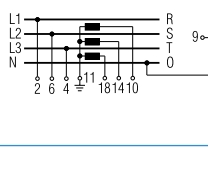





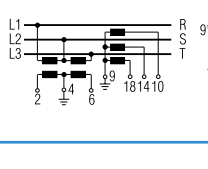
<sup>1</sup>available only up to switch type CA25B

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| Function | Switch<br>Symbol | Type/Griff<br>CA4 CAD..<br>CA4-1 CA10- CA10B-<br>CAD4-1 CA25 CA25B | C26-<br>C43<br>CA40-<br>CA63 | Code | Fluch-<br>Stages<br>ten | Common<br>Symbol |
|----------|------------------|--------------------------------------------------------------------|------------------------------|------|-------------------------|------------------|
|----------|------------------|--------------------------------------------------------------------|------------------------------|------|-------------------------|------------------|






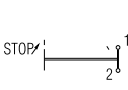





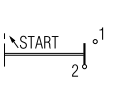





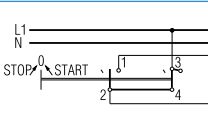





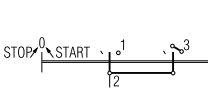





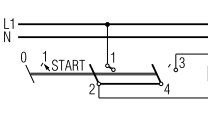





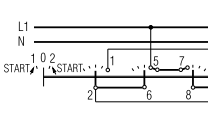
Volt-ammeter Switches

Dimensions p.56

|                                              |                                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |        |   |                                                                                      |
|----------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|---|--------------------------------------------------------------------------------------|
| 3 phase - phase to phase<br>3 current        | <br>F101     |  |  |  |  | WAA027 | 6 |   |
|                                              | <br>F077     |  |  |  |  | WAA028 | 7 |   |
| 3 phase voltage<br>3 phase current<br>4 wire | <br>F174-PRL |  |  |  |  | WAA033 | 5 |   |
| 3 phase voltage<br>3 phase current<br>3 wire | <br>F174-PRL |  |  |  |  | WAA035 | 5 |  |

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Control Switches






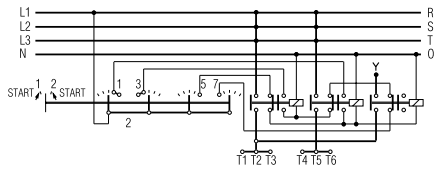




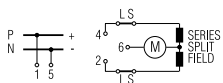
|                                                               |                                                                                             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |        |   |                                                                                       |
|---------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|---|---------------------------------------------------------------------------------------|
| Stop switch                                                   | <br>F022 |  |  |  |  | WAA174 | 1 |  |
| Start switch                                                  | <br>F023 |  |  |  |  | A175   | 1 |  |
| Stop start switch<br>single pole                              | <br>F024 |  |  |  |  | A176   | 1 |  |
| Stop start switch<br>2 pole                                   | <br>F024 |  |  |  |  | WAA183 | 2 |  |
| Stop start switch with<br>spring return from start<br>to run  | <br>F119 |  |  |  |  | A178   | 1 |  |
| Stop start switch with<br>spring return to run for<br>2 units | <br>F121 |  |  |  |  | WAA177 | 2 |  |

<sup>1</sup>available only up to switch type CA25B






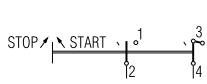





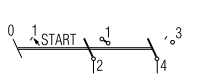





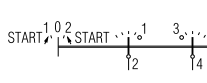





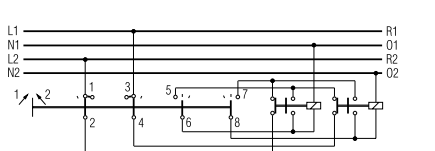




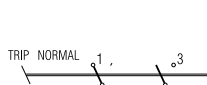
| Function | Escutch. Plate | Type/Handle                             | C26- C43 CA40- CA63 | Code | Stages | Connection Diagram |
|----------|----------------|-----------------------------------------|---------------------|------|--------|--------------------|
|          |                | CA4 CAD.. CA4-1 CA10- CAD4-1 CA25 CA25B |                     |      |        |                    |

Control Switches




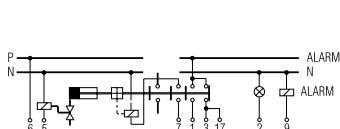


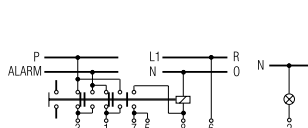
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|                                                                                             |                                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |        |   |                                                                                     |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|---|-------------------------------------------------------------------------------------|
| Stop start switch with spring return to run with contactor interlock contactors for 2 units | <br>F121     |  |  |  |  | WAA182 | 2 |  |
| Motor voltage control switch                                                                | <br>F144-PRL |  |  |  |                                                                                   | WAA150 | 2 |  |

Control Switches with electrically isolated contacts

|                                                         |                                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |        |   |                                                                                       |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|---|---------------------------------------------------------------------------------------|
| Stop start switch single pole                           | <br>F024       |    |    |    |    | A789   | 1 |    |
| Stop start switch with spring return to 1               | <br>F119      |   |   |   |   | A791   | 1 |   |
| Stop start switch with spring return to run for 2 units | <br>F121     |  |  |  |  | WAA790 | 2 |  |
| Contactor control with spring return to „OFF“           | <br>F025     |  |  |  |  | WAA179 | 2 |  |
| Circuit breaker control                                 | <br>F143-PRL |  |  |  |                                                                                     | WAA537 | 2 |  |

Control and Alarm Switches<sup>1</sup>

|                                               |                                                                                     |  |                                                                                     |                                                                                     |  |        |                |                                                                                       |
|-----------------------------------------------|-------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|--------|----------------|---------------------------------------------------------------------------------------|
| With slip clutch and without indicator device |  |  |  |  |  | WAA190 | 5 <sup>3</sup> |  |
| Without indicator device                      |  |  |  |                                                                                     |  | WAA192 | 2              |  |

<sup>1</sup>Advise the indicator device, described in Catalog 101, page 9. <sup>2</sup>not available for switch types CA25 and CA25B <sup>3</sup>incl. slip clutch <sup>4</sup>available only up to switch type CA40

| Function | Escutch. Plate | Type/Handle            |                       |                               |              | Code | Stages | Connection Diagram |
|----------|----------------|------------------------|-----------------------|-------------------------------|--------------|------|--------|--------------------|
|          |                | CA4<br>CA4-1<br>CAD4-1 | CAD.<br>CA10-<br>CA25 | CA..B<br>C26-C43<br>CA40-CA63 | C80-<br>C315 |      |        |                    |

## Motor Reversing Switches

[Dimensions p.56](#)

|                                          |  |  |  |  |  |        |   |  |
|------------------------------------------|--|--|--|--|--|--------|---|--|
| 2 pole                                   |  |  |  |  |  | A400   | 2 |  |
| 3 pole                                   |  |  |  |  |  | A401   | 3 |  |
| 3 pole with spring return to „OFF“       |  |  |  |  |  | A228   | 3 |  |
| 3 pole for use with reversing contactors |  |  |  |  |  | WAA402 | 4 |  |

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## Motor Control Switches

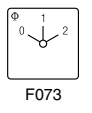




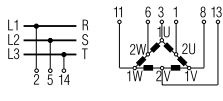
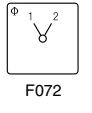




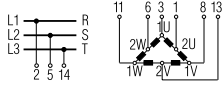
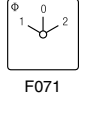




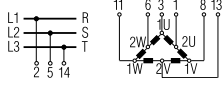
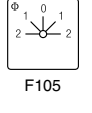




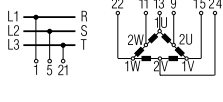
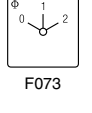




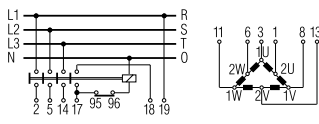
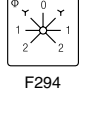




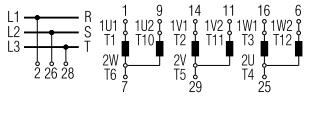
|                                                      |  |  |  |  |  |        |   |  |
|------------------------------------------------------|--|--|--|--|--|--------|---|--|
| 2 speed<br>2 winding<br>0-A-B $\Upsilon$ or $\Delta$ |  |  |  |  |  | WAA451 | 3 |  |
| 3 speed<br>2 winding<br>0-A-B $\Upsilon$ or $\Delta$ |  |  |  |  |  | WAA457 | 6 |  |

<sup>1</sup>not available for switch type CA25    <sup>2</sup>not available for switch types C26-C43, CA40-CA63    <sup>3</sup>available only up to switch type CA50

| Function | Escutch. Plate | Type/Handle                                                  | Code | Stages | Connection Diagram |
|----------|----------------|--------------------------------------------------------------|------|--------|--------------------|
|          |                | CA4 CAD.. CA40<br>CA4-1 CA10- C26-<br>CAD4-1 CA25 CA25B C315 |      |        |                    |

## Motor Control Switches

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|                                                                           |                                                                                             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |        |                 |                                                                                       |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|-----------------|---------------------------------------------------------------------------------------|
| 2 speed single winding                                                    | <br>F073   |    |    |    |    | A440   | 4               |    |
| 2 speed single winding without „OFF“                                      | <br>F072   |    |    |    |    | A466   | 4               |    |
| 2 speed single winding with center „OFF“                                  | <br>F071   |    |    |    |    | A441   | 4               |    |
| 2 speed single winding reversing                                          | <br>F105  |    |    |    |    | A442   | 6               |   |
| 2 speed single winding for use with contactors                            | <br>F073 |  |  |  |  | WAA444 | 5               |  |
| 2 speed reversing for 2 way operation with slip clutch for „OFF“ load use | <br>F294 |  |  |  |  | WAA468 | 10 <sup>1</sup> |  |

<sup>1</sup>incl. slip clutch



| Function | Escutch. Plate | Type/Handle            |                       |                               |              | Code | Stages | Connection Diagram |
|----------|----------------|------------------------|-----------------------|-------------------------------|--------------|------|--------|--------------------|
|          |                | CA4<br>CA4-1<br>CAD4-1 | CAD.<br>CA10-<br>CA25 | CA..B<br>C26-C43<br>CA40-CA63 | C80-<br>C315 |      |        |                    |

## Star-delta Switches

[Dimensions p.56](#)

|                                                 |  |  |  |  |  |        |   |  |
|-------------------------------------------------|--|--|--|--|--|--------|---|--|
| OFF-star-delta                                  |  |  |  |  |  | A410   | 4 |  |
| Reversing                                       |  |  |  |  |  | WAA413 | 5 |  |
| With auxiliary contact closed in „OFF“ position |  |  |  |  |  | WAA416 | 5 |  |
| For use with reversing contactors               |  |  |  |  |  | A419   | 4 |  |

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## Start and Run Switches

|                                                          |  |  |  |  |              |        |   |  |
|----------------------------------------------------------|--|--|--|--|--------------|--------|---|--|
| Split-phase start                                        |  |  |  |  |              | A425   | 2 |  |
| Split-phase start reversing                              |  |  |  |  | <sup>1</sup> | WAA426 | 3 |  |
| Split-phase reversing auto cutout of start field winding |  |  |  |  |              | WAA622 | 3 |  |

<sup>1</sup>not available for switch type CA25

| Function/Type | Escutch. Plate | Handle | Code | Stages | Double Latching | Connection Diagram | L350<br>L630<br>L1000 | L351<br>L631 |
|---------------|----------------|--------|------|--------|-----------------|--------------------|-----------------------|--------------|
|---------------|----------------|--------|------|--------|-----------------|--------------------|-----------------------|--------------|

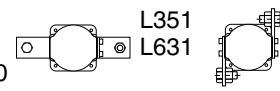
## ON/OFF Switches with 60° Switching

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|                                                      |       |  |  |                                      |                   |             |  |              |
|------------------------------------------------------|-------|--|--|--------------------------------------|-------------------|-------------|--|--------------|
| 1 pole<br>2 pole<br>3 pole<br>4 pole                 | L350  |  |  | WAA200<br>WAA201<br>WAA202<br>WAA203 | 1<br>2<br>3<br>4  |             |  | 1-4 pole     |
| 1 pole<br>2 pole<br>3 pole<br>4 pole                 | L351  |  |  | WAA200<br>WAA201<br>WAA202<br>WAA203 | 1<br>2<br>3<br>4  |             |  | 1-4 pole     |
| 1 pole<br>2 pole<br>3 pole<br>4 pole                 | L400  |  |  | WAA200<br>WAA201<br>WAA202<br>WAA203 | 2<br>2<br>4<br>4  |             |  | 1-4 pole     |
| 3 pole<br>with lugs suitable<br>for protective cover |       |  |  | WAA302                               | 3                 |             |  | WAA302       |
| 1 pole<br>2 pole<br>3 pole<br>4 pole                 | L600  |  |  | WAA200<br>WAA201<br>WAA202<br>WAA203 | 3<br>3<br>6<br>6  |             |  | 1-4 pole     |
| 1 pole<br>2 pole<br>3 pole<br>4 pole                 | L630  |  |  | WAA200<br>WAA201<br>WAA202<br>WAA203 | 2<br>4<br>6<br>8  | ●<br>●      |  | 1-4 pole     |
| 1 pole<br>2 pole<br>3 pole<br>4 pole                 | L631  |  |  | WAA200<br>WAA201<br>WAA202<br>WAA203 | 2<br>4<br>6<br>8  | ●<br>●      |  | 1-4 pole     |
| 1 pole<br>2 pole<br>3 pole<br>4 pole                 | L800  |  |  | WAA200<br>WAA201<br>WAA202<br>WAA203 | 2<br>4<br>6<br>8  |             |  | 1-4 pole     |
| 1 pole<br>2 pole<br>3 pole<br>4 pole                 | L1000 |  |  | WAA200<br>WAA201<br>WAA202<br>WAA203 | 3<br>6<br>9<br>12 | ●<br>●<br>● |  | 1-4 pole     |
| 1 pole<br>2 pole<br>3 pole                           | L1200 |  |  | WAA200<br>WAA201<br>WAA202           | 3<br>6<br>9       |             |  | 1-3 pole     |
| 1 pole<br>2 pole<br>3 pole                           | L1600 |  |  | WAA200<br>WAA201<br>WAA202           | 4<br>8<br>12      |             |  | 1-3 pole     |
| 1 pole<br>2 pole                                     | L2000 |  |  | WAA200<br>WAA201                     | 5<br>10           | ●           |  | 1 and 2 pole |

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| Function/Type | Escutch. Plate | Handle | Code | Stages | Double Latching | Connection Diagram | L350<br>L630<br>L1000 | L351<br>L631 |
|---------------|----------------|--------|------|--------|-----------------|--------------------|-----------------------|--------------|
|---------------|----------------|--------|------|--------|-----------------|--------------------|-----------------------|--------------|



## ON/OFF Switches with 90° Switching

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|                                      |                                                          |      |  |                                      |                   |             |  |                    |
|--------------------------------------|----------------------------------------------------------|------|--|--------------------------------------|-------------------|-------------|--|--------------------|
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L350<br>1 pole preclose 60°                              |      |  | WAA290<br>WAA291<br>WAA292<br>WAA293 | 1<br>2<br>3<br>4  |             |  | 1-4 pole           |
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L351<br>1 pole preclose 60°                              |      |  | WAA290<br>WAA291<br>WAA292<br>WAA293 | 1<br>2<br>3<br>4  |             |  | 1-4 pole           |
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L400<br>1 pole preclose 60°                              |      |  | WAA290<br>WAA291<br>WAA292<br>WAA293 | 2<br>2<br>4<br>4  |             |  | 1-4 pole           |
| 3 pole<br>3 pole                     | with lugs suitable for protective cover<br>360° rotation | <br> |  | WAA307<br>WAA208                     | 3<br>4            |             |  | WAA307             |
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L600<br>1 pole preclose 60°                              |      |  | WAA290<br>WAA291<br>WAA292<br>WAA293 | 3<br>3<br>6<br>6  |             |  | 1-3 pole<br>4 pole |
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L630<br>1 pole preclose 60°                              |      |  | WAA290<br>WAA291<br>WAA292<br>WAA293 | 2<br>4<br>6<br>8  |             |  | 1-3 pole<br>4 pole |
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L631<br>1 pole preclose 60°                              |      |  | WAA290<br>WAA291<br>WAA292<br>WAA293 | 2<br>4<br>6<br>8  |             |  | 1-3 pole<br>4 pole |
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L800<br>1 pole preclose 60°                              |      |  | WAA290<br>WAA291<br>WAA292<br>WAA293 | 2<br>4<br>6<br>8  | ●<br>●<br>● |  | 1-3 pole<br>4 pole |
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L1000<br>1 pole preclose 60°                             |      |  | WAA290<br>WAA291<br>WAA292<br>WAA293 | 3<br>6<br>9<br>12 | ●<br>●<br>● |  | 1-3 pole<br>4 pole |
| 1 pole<br>2 pole<br>3 pole           | L1200                                                    |      |  | WAA290<br>WAA291<br>WAA292           | 3<br>6<br>9       | ●<br>●<br>● |  | 1-3 pole           |
| 1 pole<br>2 pole<br>3 pole           | L1600                                                    |      |  | WAA290<br>WAA291<br>WAA292           | 4<br>8<br>12      | ●<br>●<br>● |  | 1-3 pole           |
| 1 pole<br>2 pole                     | L2000                                                    |      |  | WAA290<br>WAA291                     | 5<br>10           | ●<br>●      |  | 1- und 2 pole      |

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● Additional length for switches size S2 for mounting E/EF = 27 mm  
 ● Additional length for switches size S3 for mounting E/EF = 31,5 mm and mounting ER/VE = 20,1 mm

| Function/Type | Escutch. Plate | Handle | Code | Stages | Double Latching | Connection Diagram | L350<br>L630<br>L1000 | L351<br>L631 |
|---------------|----------------|--------|------|--------|-----------------|--------------------|-----------------------|--------------|
|---------------|----------------|--------|------|--------|-----------------|--------------------|-----------------------|--------------|

## Double-throw Switches without „OFF“ 60° Switching Dimensions p. 56

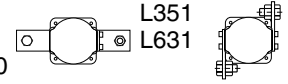
|                                      |       |  |  |                                      |                   |        |  |              |
|--------------------------------------|-------|--|--|--------------------------------------|-------------------|--------|--|--------------|
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L350  |  |  | WAA220<br>WAA221<br>WAA222<br>WAA223 | 2<br>4<br>6<br>8  |        |  | 1-4 pole     |
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L351  |  |  | WAA220<br>WAA221<br>WAA222<br>WAA223 | 2<br>4<br>6<br>8  |        |  | 1-4 pole     |
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L400  |  |  | WAA220<br>WAA221<br>WAA222<br>WAA223 | 2<br>4<br>6<br>8  |        |  | 1-4 pole     |
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L600  |  |  | WAA220<br>WAA221<br>WAA222<br>WAA223 | 3<br>6<br>9<br>12 | ●<br>● |  | 1-4 pole     |
| 1 pole<br>2 pole<br>3 pole           | L630  |  |  | WAA220<br>WAA221<br>WAA222           | 4<br>8<br>12      | ●      |  | 1-3 pole     |
| 1 pole<br>2 pole<br>3 pole           | L631  |  |  | WAA220<br>WAA221<br>WAA222           | 4<br>8<br>12      | ●      |  | 1-3 pole     |
| 1 pole<br>2 pole<br>3 pole           | L800  |  |  | WAA220<br>WAA221<br>WAA222           | 4<br>8<br>12      | ●      |  | 1-3 pole     |
| 1 pole<br>2 pole                     | L1000 |  |  | WAA220<br>WAA221                     | 6<br>12           | ●      |  | 1 and 2 pole |
| 1 pole                               | L1200 |  |  | WAA220                               | 6                 |        |  |              |
| 1 pole                               | L1600 |  |  | WAA220                               | 8                 |        |  |              |
| 1 pole                               | L2000 |  |  | WAA220                               | 10                |        |  |              |

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# Switch Function and Configuration

# L Switches

| Function/Type | Escutch. Plate | Handle | Code | Stages | Double Latching | Connection Diagram | L350<br>L630<br>L1000 | L351<br>L631 |
|---------------|----------------|--------|------|--------|-----------------|--------------------|-----------------------|--------------|
|---------------|----------------|--------|------|--------|-----------------|--------------------|-----------------------|--------------|



## Double-throw Switches with Center „OFF“ 60° Switching Dimensions p.56

|                                      |       |  |  |                                      |                   |        |  |              |
|--------------------------------------|-------|--|--|--------------------------------------|-------------------|--------|--|--------------|
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L350  |  |  | WAA210<br>WAA211<br>WAA212<br>WAA213 | 2<br>4<br>6<br>8  |        |  | 1-4 pole     |
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L351  |  |  | WAA210<br>WAA211<br>WAA212<br>WAA213 | 2<br>4<br>6<br>8  |        |  | 1-4 pole     |
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L400  |  |  | WAA210<br>WAA211<br>WAA212<br>WAA213 | 2<br>4<br>6<br>8  |        |  | 1-4 pole     |
| 1 pole<br>2 pole<br>3 pole<br>4 pole | L600  |  |  | WAA210<br>WAA211<br>WAA212<br>WAA213 | 3<br>6<br>9<br>12 | ●<br>● |  | 1-4 pole     |
| 1 pole<br>2 pole<br>3 pole           | L630  |  |  | WAA210<br>WAA211<br>WAA212           | 4<br>8<br>12      | ●      |  | 1-3 pole     |
| 1 pole<br>2 pole<br>3 pole           | L631  |  |  | WAA210<br>WAA211<br>WAA212           | 4<br>8<br>12      | ●      |  | 1-3 pole     |
| 1 pole<br>2 pole<br>3 pole           | L800  |  |  | WAA210<br>WAA211<br>WAA212           | 4<br>8<br>12      | ●      |  | 1-3 pole     |
| 1 pole<br>2 pole                     | L1000 |  |  | WAA210<br>WAA211                     | 6<br>12           | ●      |  | 1 and 2 pole |
| 1 pole                               | L1200 |  |  | WAA210                               | 6                 |        |  |              |
| 1 pole                               | L1600 |  |  | WAA210                               | 8                 |        |  |              |
| 1 pole                               | L2000 |  |  | WAA210                               | 10                |        |  |              |

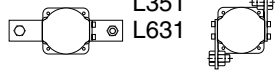
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● Additional length for switches size S2 for mounting E/EF = 27 mm  
 ● Additional length for switches size S3 for mounting E/EF = 31,5 mm and mounting ER/VE = 20,1 mm

# Switch Function and Configuration
















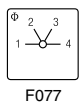








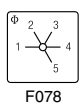




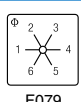


# L Switches

| Function/Type | Escutch. Plate | Handle | Code | Stages | Double Latching | Connection Diagram | L350<br>L630<br>L1000 | L351<br>L631 |
|---------------|----------------|--------|------|--------|-----------------|--------------------|-----------------------|--------------|
|---------------|----------------|--------|------|--------|-----------------|--------------------|-----------------------|--------------|



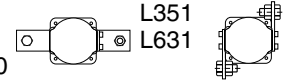
## Multi-step Switches single pole without „OFF“

[Dimensions p. 56](#)

|        |      |                                                                                     |                                                                                     |        |   |  |                                                                                      |
|--------|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|---|--|--------------------------------------------------------------------------------------|
| 3 Step | L350 |    |    | WAA230 | 4 |  |    |
| 3 Step | L351 |    |    | WAA230 | 4 |  |    |
| 3 Step | L400 |    |    | WAA230 | 4 |  |    |
| 4 Step | L350 |    |    | WAA231 | 4 |  |    |
| 4 Step | L351 |  |  | WAA231 | 4 |  |  |
| 4 Step | L400 |  |  | WAA231 | 4 |  |  |
| 5 Step | L350 |  |  | WAA232 | 6 |  |  |
| 5 Step | L351 |  |  | WAA232 | 6 |  |  |
| 5 Step | L400 |  |  | WAA232 | 6 |  |  |
| 6 Step | L350 |  |  | WAA233 | 6 |  |  |
| 6 Step | L351 |  |  | WAA233 | 6 |  |  |

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| Function/Type | Escutch. Plate | Handle | Code | Stages | Double Latching | Connection Diagram | L350<br>L630<br>L1000 | L351<br>L631 |
|---------------|----------------|--------|------|--------|-----------------|--------------------|-----------------------|--------------|
|---------------|----------------|--------|------|--------|-----------------|--------------------|-----------------------|--------------|



Multi-step Switches single pole without „OFF“

[Dimensions p.56](#)

|         |      |  |  |        |    |  |  |
|---------|------|--|--|--------|----|--|--|
| 6 Step  | L400 |  |  | WAA233 | 6  |  |  |
| 7 Step  | L350 |  |  | WAA234 | 8  |  |  |
| 7 Step  | L351 |  |  | WAA234 | 8  |  |  |
| 7 Step  | L400 |  |  | WAA234 | 8  |  |  |
| 8 Step  | L350 |  |  | WAA235 | 8  |  |  |
| 8 Step  | L351 |  |  | WAA235 | 8  |  |  |
| 8 Step  | L400 |  |  | WAA235 | 8  |  |  |
| 9 Step  | L350 |  |  | WAA236 | 10 |  |  |
| 9 Step  | L351 |  |  | WAA236 | 10 |  |  |
| 9 Step  | L400 |  |  | WAA236 | 10 |  |  |
| 10 Step | L350 |  |  | WAA237 | 10 |  |  |

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






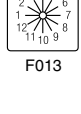





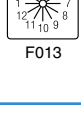


# Switch Function and Configuration

# L Switches

| Function/Type | Escutch. Plate | Handle | Code | Stages | Double Latching | Connection Diagram | L350<br>L630<br>L1000 | L351<br>L631 |
|---------------|----------------|--------|------|--------|-----------------|--------------------|-----------------------|--------------|
|---------------|----------------|--------|------|--------|-----------------|--------------------|-----------------------|--------------|

## Multi-step Switches single pole without „OFF“

[Dimensions p.56](#)

|         |      |                                                                                     |                                                                                     |        |    |  |                                                                                      |
|---------|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|----|--|--------------------------------------------------------------------------------------|
| 10 Step | L351 |    |    | WAA237 | 10 |  |    |
| 10 Step | L400 |    |    | WAA237 | 10 |  |    |
| 11 Step | L350 |    |    | WAA238 | 12 |  |    |
| 11 Step | L351 |    |    | WAA238 | 12 |  |    |
| 11 Step | L400 |  |  | WAA238 | 12 |  |  |
| 12 Step | L350 |  |  | WAA239 | 12 |  |  |
| 12 Step | L351 |  |  | WAA239 | 12 |  |  |
| 12 Step | L400 |  |  | WAA239 | 12 |  |  |

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|                                      |                       |             |                        |
|--------------------------------------|-----------------------|-------------|------------------------|
| Two Hole Panel Mount or Mosaic Mount | Terminals rotated 90° | <b>Code</b> | CA4<br>CA4-1<br>CAD4-1 |
|--------------------------------------|-----------------------|-------------|------------------------|

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| Panel Mount                                                                         |                                                                                                  |   |            |        |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---|------------|--------|
|    | Two hole, Protection IP 40                                                                       | ● | E<br>E-V   | ●<br>● |
|   | Two hole<br>Protection IP 66/67/69k                                                              | ● | EF<br>EF-V | ●<br>● |
|  | Two hole with shaft for radio knobs, Protection IP 40<br>Shaft diam. 6 mm/.24 inch               |   | E9         | ●      |
|                                                                                     | Shaft diam. 6.35 mm/.25 inch, Protection IP 40                                                   |   | E91        | ●      |
| Mosaic Mount                                                                        |                                                                                                  |   |            |        |
|  | For Siemens-Mosaic 30 mm grid depth, Protection IP 40                                            |   | E92        | ●      |
|  | For Subklew-, Kreutzenbeck-, Symo-Mosaic, Protection IP 40<br>28 mm    25 mm    25 mm grid depth |   | E93        | ●      |
|  | For Mauell-Mosaic 30 mm grid depth, Protection IP 40                                             |   | E94        | ●      |

| Two or Four Hole Panel Mount | Terminals rotated 90° | Code | CAD..<br>CA10-<br>CA25 | CA10B-<br>CA63<br>C42 | C43<br>C80-<br>C200-4<br>L350<br>Size S2 | C315<br>L400-<br>L2000<br>Size S3 |
|------------------------------|-----------------------|------|------------------------|-----------------------|------------------------------------------|-----------------------------------|
|------------------------------|-----------------------|------|------------------------|-----------------------|------------------------------------------|-----------------------------------|

| <p><b>Panel Mount</b></p>  <p>Four hole,<br/>Protection IP 40</p> <p>Four hole,<br/>Protection IP 66/67/69k</p> <p>Two hole,<br/>Protection IP 66/69k</p>             | <p>●</p> <p>●</p> <p>●</p> | <p>E<br/>E-V</p> <p>EF<br/>EF-V</p> <p>E22<br/>E22-V</p> | <p>●</p> <p>●</p> <p>●</p> | <p>●</p> <p>●</p> <p>●</p>                                      | <p>●</p> <p>●</p> <p>●</p>                    | <p>●</p> <p>●</p> <p>●</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------------------------------------|----------------------------|-----------------------------------------------------------------|-----------------------------------------------|----------------------------|
| <p><b>Panel mount using larger face plate, handle and heavy duty stop</b></p>  <p>Four hole,<br/>Protection IP 40</p> <p>Four hole,<br/>Protection IP 66/67/69k</p> |                            | <p>EG</p> <p>EGF</p>                                     | <p>●</p> <p>●</p>          | <p>CA40-<br/>CA63</p> <p>CA40-<br/>CA63</p>                     | <p>C80-<br/>C200-4</p> <p>C80-<br/>C200-4</p> |                            |
| <p><b>Double End Mount</b></p>  <p>Four hole,<br/>Protection IP 40</p> <p>Four hole,<br/>Protection IP 66/67/69k</p>                                                |                            | <p>ER</p> <p>ERF</p>                                     | <p>●</p> <p>●</p>          | <p>CAD..<br/>CA10-<br/>CA25</p> <p>CAD..<br/>CA10-<br/>CA25</p> | <p>●</p> <p>●</p>                             | <p>●</p> <p>●</p>          |

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|                                     |             |                        |                                  |                                    |     |
|-------------------------------------|-------------|------------------------|----------------------------------|------------------------------------|-----|
| <b>Two or Four Hole Panel Mount</b> | <b>Code</b> | CAD..<br>CA10-<br>CA25 | CA10B<br>CA11B<br>CA20B<br>CA25B | C32<br>C42<br>CA40<br>CA50<br>CA63 | C43 |
|-------------------------------------|-------------|------------------------|----------------------------------|------------------------------------|-----|

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|                                                                                     |                                                                                                                                                                                                                       |      |                        |   |   |  |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------------------|---|---|--|
|    | <p><b>Panel mount with heavy duty latching and metal shaft</b></p> <p>Four hole, Protection IP 40<br/>48 x 48 Plate – S0</p>                                                                                          | KN2  | ●                      |   |   |  |
|   | <p>Four hole, Protection IP 40<br/>64 x 64 Plate – S1</p>                                                                                                                                                             | KN1  | ●                      | ● | ● |  |
|  | <p>Four hole, Protection IP 40<br/>64 x 64 Plate – S1 complete with 6mm square metal shaft</p>                                                                                                                        | KD1  | ●                      | ● | ● |  |
| <p><b>Panel mount with protective cover</b></p>                                     |                                                                                                                                                                                                                       |      |                        |   |   |  |
|  | <p>Four hole<br/>Protection front IP 40<br/>rear IP 40</p>                                                                                                                                                            | EC   | CAD..<br>CA10-<br>CA25 | ● |   |  |
|  | <p>Four hole with additional shaft seal<br/>Protection front IP 66/67/69k<br/>rear IP 40</p>                                                                                                                          | ED   | CAD..<br>CA10-<br>CA25 | ● |   |  |
|  | <p>Four hole<br/>Protection front IP 40<br/>rear IP 42</p> <p>Four hole with additional shaft seal<br/>Protection front IP 66/67/69k<br/>rear IP 42</p> <p>Two hole<br/>Protection front IP 66/69k<br/>rear IP 42</p> | EC1  |                        | ● |   |  |
|                                                                                     |                                                                                                                                                                                                                       | ED1  |                        | ● |   |  |
|                                                                                     |                                                                                                                                                                                                                       | ED22 | CAD..<br>CA10-<br>CA25 |   |   |  |




|                   |                       |      |                        |                        |
|-------------------|-----------------------|------|------------------------|------------------------|
| Single Hole Mount | Terminals rotated 90° | Code | CA4<br>CA4-1<br>CAD4-1 | CAD..<br>CA10-<br>CA25 |
|-------------------|-----------------------|------|------------------------|------------------------|

|                                                                                                                                                                                                      |   | Code                                         | mm                                           | mm |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------|----------------------------------------------|----|
|  <p><b>Single Hole Mount complete with lock nut and shaft seal</b><br/>Bezel mount,<br/>Protection IP 66/67/69k</p> | ● | FS1<br>FS1-V                                 | 16/22<br>16/22                               | 22 |
|  <p>Square face plate, Protection IP 66/67/69k</p>                                                                 | ● | FT1<br>FT1-V<br>FT3<br>FT3-V                 | 22<br>22<br>22/30<br>22/30                   |    |
|  <p>S1 square face plate and heavy duty stop, Protection IP 66/67/69k</p>                                         | ● | FS2<br>FS2-V<br>FT2<br>FT2-V<br>FT4<br>FT4-V | 16/22<br>16/22<br>22<br>22<br>22/30<br>22/30 |    |
|  <p>Rectangular face plate, Protection IP 66/67/69k</p>                                                           | ● | FH3<br>FH3-V                                 | 22<br>22                                     |    |
|  <p>S1 rectangular face plate and heavy duty stop, Protection IP 66/67/69k</p>                                    | ● | FS4<br>FS4-V<br>FT6<br>FT6-V                 | 16/22<br>16/22<br>22<br>22                   |    |
|  <p>Lock nut spanner</p>                                                                                          |   | S00 T170 09                                  |                                              |    |

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| Base Mount | Terminals rotated 90° | Code | CAD..<br>CA10-<br>CA25 | CA10B-<br>CA63<br>C42 | C43<br>C80-<br>L2000 |
|------------|-----------------------|------|------------------------|-----------------------|----------------------|
|------------|-----------------------|------|------------------------|-----------------------|----------------------|

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| Base Mount                                                                          |                                                                                                              |                   |                                             |                                                                             |                   |          |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------|-----------------------------------------------------------------------------|-------------------|----------|
|    | <p>Four hole, Protection IP 40</p> <p>Four hole with integrated simplified door clutch, Protection IP 65</p> | <p>●</p> <p>●</p> | <p>VE<br/>VE-V</p> <p>VF<br/>VF-V</p>       | <p>CAD..<br/>CA10-<br/>CA25</p> <p>CAD..<br/>CA10-<br/>CA25</p>             | <p>●</p> <p>●</p> | <p>●</p> |
|   | <p>Two hole, Protection IP 40</p> <p>Two hole with integrated simplified door clutch, Protection IP 65</p>   | <p>●</p> <p>●</p> | <p>VE22<br/>VE22V</p> <p>VF22<br/>VF22V</p> | <p>●<br/>CAD..<br/>CA10-<br/>CA25</p> <p>●<br/>CAD..<br/>CA10-<br/>CA25</p> | <p>●</p> <p>●</p> |          |
|  | <p>Snap-on for DIN Rail EN 60715, Protection IP 40</p>                                                       |                   | <p>VE1</p>                                  | <p>●</p>                                                                    | <p>●</p>          |          |

|                   |             |                        |                        |
|-------------------|-------------|------------------------|------------------------|
| <b>Base Mount</b> | <b>Code</b> | CA4<br>CA4-1<br>CAD4-1 | CAD..<br>CA10-<br>CA25 |
|-------------------|-------------|------------------------|------------------------|

**DIN Rail Mount**



Snap-on for DIN Rail EN 60715 with face plate for 45 mm standard knock-out.

VE2



Snap-on for DIN Rail EN 60715. With face plate for 45 mm standard knock-out. The handle and plate are adjustable in height.

VE21






CAD..  
CA10-  
CA20

VE21V

CA25

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|                                                                                         |                    |                                 |
|-----------------------------------------------------------------------------------------|--------------------|---------------------------------|
| <p><b>Mounting Plates for Plaster Depth Boxes acc. to DIN 49073 and ÖNORM E8608</b></p> | <p><b>Code</b></p> | <p>CAD..<br/>CA10-<br/>CA25</p> |
|-----------------------------------------------------------------------------------------|--------------------|---------------------------------|

|                                                                                    |                                                           |            |          |
|------------------------------------------------------------------------------------|-----------------------------------------------------------|------------|----------|
|   | <p>Plaster depth trim, Protection IP 40</p>               | <p>UE1</p> | <p>●</p> |
|  | <p>With light, Protection IP 40</p>                       | <p>UE2</p> | <p>●</p> |
|  | <p>With facility for light addition, Protection IP 40</p> | <p>UE3</p> | <p>●</p> |

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# Face plates



Square and rectangular face plates are available for each size of switch. The face plate consists of a frame and a faceplate having the switch positions which is then embossed with hot-foil backing. The face plate frame is an essential part of the switch and serves as a bearing surface for the handle. If the switch is to be mounted without an face plate we would recommend for size S1, S2 and S3 the handle bearing plate T100-04.

## Standard Letterings Available

(Over 500 standard letterings, special letterings upon request.)

### 30° switching

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| F022 | F141 | F158 | F703 | F023 | F137 | F142 | F159 | F701 | F704 | F152 | F709 | F026 | F035 | F153 | F169 | F024 | F143 |
| F160 | F221 | F222 | F224 | F025 | F034 | F036 | F037 | F038 | F039 | F139 | F144 | F147 | F149 | F150 | F151 | F219 | F258 |
| F259 | F273 | F280 | F329 | F384 | F708 | F053 | F161 | F297 | F298 | F306 | F307 | F001 | F040 | F052 | F229 | F355 | F018 |
| F019 | F029 | F030 | F154 | F155 | F165 | F166 | F183 | F184 | F301 | F302 | F321 | F332 | F333 | F334 | F335 | F374 | F711 |
| F712 | F002 | F021 | F033 | F041 | F055 | F305 | F319 | F054 | F003 | F042 | F138 | F255 | F299 | F308 | F353 | F350 | F351 |
| F004 | F014 | F017 | F020 | F027 | F028 | F031 | F032 | F043 | F049 | F135 | F156 | F157 | F162 | F167 | F168 | F187 | F189 |
| F303 | F304 | F336 | F337 | F347 | F348 | F710 | F713 | F714 | F734 | F005 | F044 | F136 | F140 | F702 | F006 | F010 | F045 |
| F015 | F050 | F007 | F011 | F046 | F008 | F012 | F047 | F016 | F051 | F009 | F013 | F048 | F748 |      |      |      |      |

### 45° switching

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| F747 | F295 | F742 | F743 | F215 | F216 | F738 | F744 | F746 | F792 | F793 | F107 | F109 | F114 | F115 | F212 | F213 | F214 |
| F217 | F267 | F289 | F330 | F375 | F376 | F383 | F408 | F409 | F410 | F411 | F412 | F413 | F426 | F427 | F430 | F729 | F752 |
| F775 | F776 | F777 | F778 | F779 | F780 | F781 | F796 | F797 | F798 | F105 | F108 | F112 | F113 | F117 | F118 | F293 | F429 |
| F739 | F741 | F419 | F789 | F790 | F791 | F794 | F795 | F110 | F106 | F116 | F294 | F317 | F414 | F415 | F416 | F417 | F418 |
| F782 | F783 | F784 | F785 | F786 | F787 | F788 | F799 | F111 | F210 | F211 | F284 | F285 | F296 | F322 | F727 | F740 |      |

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# Face plates

## 60° switching

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| F070 | F087 | F088 | F089 | F133 | F197 | F198 | F232 | F243 | F247 | F263 | F268 | F310 | F311 | F323 | F328 | F352 | F367 |
| F379 | F380 | F470 | F754 | F072 | F163 | F164 | F192 | F193 | F196 | F230 | F231 | F234 | F244 | F257 | F262 | F264 | F282 |
| F288 | F291 | F313 | F382 | F441 | F705 | F721 | F722 | F750 | F757 | F758 | F075 | F076 | F098 | F220 | F223 | F356 | F357 |
| F377 | F723 | F071 | F073 | F080 | F081 | F085 | F086 | F090 | F091 | F092 | F093 | F094 | F104 | F194 | F235 | F237 | F239 |
| F240 | F241 | F249 | F260 | F269 | F274 | F281 | F290 | F292 | F312 | F314 | F315 | F316 | F324 | F331 | F344 | F354 | F358 |
| F359 | F364 | F370 | F371 | F373 | F381 | F385 | F442 | F444 | F469 | F732 | F735 | F759 | F077 | F100 | F101 | F102 | F309 |
| F342 | F343 | F361 | F362 | F363 | F365 | F366 | F078 | F191 | F325 | F326 | F720 | F074 | F082 | F096 | F097 | F195 | F724 |
| F256 | F079 | F083 | F084 | F095 | F099 | F185 | F190 | F199 | F233 | F236 | F238 | F242 | F283 | F725 | F730 | F731 | F736 |
| F737 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

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## 90° switching

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| F056 | F063 | F068 | F134 | F201 | F251 | F252 | F346 | F456 | F058 | F065 | F069 | F177 | F178 | F182 | F208 | F253 | F254 |
| F340 | F360 | F378 | F458 | F443 | F700 | F743 | F057 | F061 | F064 | F067 | F171 | F181 | F205 | F207 | F209 | F320 | F349 |
| F437 | F445 | F715 | F719 | F059 | F060 | F062 | F066 | F170 | F172 | F173 | F174 | F175 | F176 | F179 | F180 | F186 | F188 |
| F202 | F204 | F206 | F250 | F265 | F266 | F286 | F318 | F327 | F338 | F339 | F425 | F716 | F717 | F718 | F726 | F733 | F751 |
| F755 | F756 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

## Miscellaneous






|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| F119 | F130 | F122 | F126 | F125 | F129 | F225 | F248 | F261 | F341 | F345 | F287 | F123 | F127 | F145 | F146 | F148 | F706 |      |      |      |      |      |      |
| F707 | F245 | F120 | F124 | F128 | F131 | F121 | F132 | F749 |      |      |      |      |      |      |      |      |      | F990 | F991 | F801 | F802 | F803 | F804 |
| F805 | F806 | F807 | F808 | F809 | F810 | F811 | F812 | F813 | F814 | F815 | F816 | F817 | F818 | F819 | F820 | F821 | F822 |      |      |      |      |      |      |
| F823 | F824 | F825 | F826 | F827 | F828 | F829 | F830 | F831 | F832 | F833 | F834 | F835 | F837 | F838 | F839 | F840 | F841 |      |      |      |      |      |      |

<sup>1</sup>INTERRUPTEUR PRINCIPAL, OUVERTURE EN POSITION 0 <sup>2</sup>INTERRUPTORE GENERALE, APRIRE SOLO CON MANIGLIA SU 0 <sup>3</sup>INTERRUPTOR PRINCIPAL, ABRIR ARMARIO SOLO EN POS. "0"

# Handles

| Type | Color | Code | Size<br>S00 S0 S1 S2 S3 |
|------|-------|------|-------------------------|
|------|-------|------|-------------------------|

















| Type | Color | Code | Size<br>S00 S0 S1 S2 S3 |
|------|-------|------|-------------------------|
|------|-------|------|-------------------------|

|                                                                                                                     |              |              |                        |
|---------------------------------------------------------------------------------------------------------------------|--------------|--------------|------------------------|
| <p>R-Handle</p>                    | black<br>red | G001<br>G002 | — ● ● ● ●<br>— ● ● ● ● |
| <p>F-Handle</p>                   | black<br>red | G221<br>G222 | ● ● ● ● —<br>● ● ● ● — |
| <p>S-Handle</p>  <p>S0 S1</p>     | black<br>red | G301<br>G302 | — ● ● — —<br>— ● ● — — |
| <p>P-Handle</p>  <p>S0 S1-S3</p> | black<br>red | G211<br>G212 | — ● ● ● ●<br>— ● ● ● ● |
| <p>Handwheel</p>                 | black        | G971         | — — — — ●              |

|                                                                                                                     |              |              |                        |
|---------------------------------------------------------------------------------------------------------------------|--------------|--------------|------------------------|
| <p>I-Handle</p>  <p>S00 S0-S3</p> | black<br>red | G251<br>G252 | ● ● ● ● ●<br>● ● ● ● ● |
| <p>B-Handle</p>                    | black<br>red | G521<br>G522 | — ● ● — —<br>— ● ● — — |
| <p>L-Handle</p>                  | black<br>red | G501<br>G502 | — — ● — —<br>— — ● — — |
| <p>K-Handle</p>                  | black<br>red | G411<br>G412 | — — ● ● ●<br>— — ● ● ● |
| <p>O-Handle</p>                  | black<br>red | G321<br>G322 | — — ● — —<br>— — ● — — |

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## International Standards and Approvals

| Country                                                  | Authority                                    | Mark or Standard                                                                                                    | CAD11/12 | CA10 | CA10B |       | C26 | CA40 | C43  |      | L350/1 | L400 | L1200 |   |
|----------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------|------|-------|-------|-----|------|------|------|--------|------|-------|---|
|                                                          |                                              |                                                                                                                     | CA4      | CA11 | CA11B | CA25  | C32 | CA50 | C80  | C315 | L630/1 | L600 | L1600 |   |
|                                                          |                                              |                                                                                                                     | CA4-1    | CA20 | CA20B | CA25B | C42 | CA63 | C125 | C316 | L1000  | L800 | L2000 |   |
| USA                                                      | Underwriters Laboratories Inc.               |  <sup>1</sup>                      |          |      |       |       |     |      |      | ●    | ●      | ●    | ●     |   |
|                                                          |                                              |  <sup>2</sup><br><sup>3</sup>      | ●        | ●    | ●     | ●     | ●   | ●    | ●    | ●    |        | ●    |       |   |
| Canada                                                   | UL investigated acc. to CSA                  |  <sup>6</sup>                      | ●        | ●    | ●     | ●     | ●   | ●    | ●    | ●    | ●      | ●    | ●     |   |
|                                                          |                                              |  <sup>1</sup><br>c                 |          |      |       |       |     |      |      |      | ●      | ●    | ●     | ● |
|                                                          |                                              |  <sup>2</sup><br><sup>3</sup><br>c | ●        | ●    | ●     | ●     | ●   | ●    | ●    | ●    |        | ●    |       |   |
| Switzerland                                              | Schweizerischer Elektrotechnischer Verein    |                                    | +        | +    | +     |       | +   | +    | +    |      | +      | +    | +     |   |
| Denmark                                                  | Danmarks Elektriske Materielkontrol          |                                    | +        | +    | +     |       | +   | +    | +    |      | +      | +    | +     |   |
| Norway                                                   | Norges Elektriske Materielkontrol            |                                    | +        | +    | +     |       | +   | +    | +    |      | +      | +    | +     |   |
| Sweden                                                   | Svenska Elektriska Materielkontrollanstalten |                                   | +        | +    | +     |       | +   | +    | +    |      | +      | +    | +     |   |
| Finland                                                  | Sähkötar-kastuskeskus                        |                                  | +        | +    | +     |       | +   | +    | +    |      | +      | +    | +     |   |
| Austria                                                  | Österreichischer Verband für Elektrotechnik  |                                  | +        | +    | +     |       | +   | +    | +    |      | +      | +    | +     |   |
| Federal Republic of Germany                              | Verband Deutscher Elektrotechniker           | VDE 0660 <sup>4</sup>                                                                                               | +        | +    | +     |       | +   | +    | +    |      | +      | +    | +     |   |
| Great Britain                                            | British Standards Institution                | BS EN 60947 <sup>4</sup>                                                                                            | +        | +    | +     |       | +   | +    | +    |      | +      | +    | +     |   |
| International Electrical Commission (IEC) Recommendation |                                              | IEC 60947 <sup>5</sup>                                                                                              | +        | +    | +     |       | +   | +    | +    |      | +      | +    | +     |   |
| China                                                    | China Quality Certification Centre           | <br>GB/T14048.3                  | ●        | ●    | ●     |       | ●   | ●    | ●    |      | ●      | ●    | ●     |   |
| Russia Belarus Kazakhstan                                | Eurasian Conformity                          |                                  | ●        | ●    | ●     |       | ●   | ●    | ●    |      | ●      | ●    | ●     |   |
| Russian Federation                                       | Russian Maritime Register of Shipping        |                                  | ●        | ●    | ●     |       | ●   | ●    | ●    |      | ●      | ●    | ●     |   |
| Germanischer Lloyd                                       |                                              |                                  | +        | +    | +     |       | +   | +    | +    |      | +      | +    | +     |   |
| Lloyds Register EMEA                                     |                                              |                                  | +        | ●    | ●     |       | +   | +    | +    |      | +      | +    | +     |   |

● Switch approved

+ Switch conforms to requirements

+ No approval required

<sup>1</sup> Approved under the "Component Program" (UL-Recognized Industrial Component). File No. E35541, Category Control No. NLRV2 (U.S.) and NLRV8 (Canada) resp. File No. E60262, Category Control Number NRNT2 (U.S.) and NRNT8 (Canada).

<sup>2</sup> Approved under the "Listing Program". File No. E35541, Category Control No. NLRV (U.S.) resp. NLRV7 (Canada).

<sup>3</sup> Switch types CAD11/CAD12 approved under the "Listing Program". File No. E60262, Category Control No. NRNT (U.S.) resp. NRNT7 (Canada).

<sup>4</sup> It is not required for Industrial Switchgear to bear a symbol but must conform to requirements. By stating the specific standard no. on the product the manufacturer declares that all requirements of the product standard are met.

<sup>5</sup> IEC does not operate an approval scheme.

<sup>6</sup> File No. 13002ass No. 3211-05 resp. 4652-04.

|                       |                                                                               |
|-----------------------|-------------------------------------------------------------------------------|
| <b>Selection Data</b> | CA4 CA10 CA11 CA20 CA25 C42 C315                                              |
|                       | CA4-1 CA10B CA11B CA20B CA25B C26 C32 C43 CA40 CA50 CA63 C80 C125 C200-4 C316 |

|                                                                                                                    |                                                                             |                                              |                                                                  |      |      |       |      |            |       |      |      |                 |      |       |      |      |      |     |            |  |
|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------|------|------|-------|------|------------|-------|------|------|-----------------|------|-------|------|------|------|-----|------------|--|
| <b>Rated Insulation Voltage <math>U_i</math></b>                                                                   | IEC 60947-3, EN 60947-3 <sup>1</sup><br>VDE 0660 part 107 <sup>1</sup>      | V                                            | 440                                                              | 690  | 690  | 690   | 690  | 690        | 690   | 690  | 690  | 690             | 690  | 690   | 690  | 690  | 690  | 690 | 1000       |  |
|                                                                                                                    | SEV <sup>4</sup>                                                            | V                                            | 380                                                              | 660  | 660  | 660   | 690  | 660        | 660   | 660  | 690  | 690             | 690  | 660   | 660  | –    | 660  | –   | –          |  |
|                                                                                                                    | UL/Canada                                                                   | V                                            | 300                                                              | 300  | 600  | 600   | 300  | 600        | 600   | 600  | 600  | 600             | 600  | 600   | 600  | –    | 600  | –   | –          |  |
|                                                                                                                    | CEE/NEMKO                                                                   | V                                            | 400/380                                                          | 380  | 400  | 400   | –    | 400        | 400   | 400  | –    | –               | –    | 400   | –    | –    | –    | –   | –          |  |
|                                                                                                                    | min. voltage                                                                |                                              |                                                                  |      |      |       |      |            |       |      |      |                 |      |       |      |      |      |     | on request |  |
| <b>Rated Impulse Withstand Voltage <math>U_{imp}</math></b>                                                        |                                                                             | kV                                           | 4                                                                | 6    | 6    | 6     | 6    | 6          | 6     | 6    | 6    | 6               | 6    | 6     | 6    | 6    | 6    | 6   | 6/8        |  |
| <b>Rated Thermal Current <math>I_U/I_{th}</math></b>                                                               | IEC 60947-3, EN 60947-3<br>VDE 0660 part 107                                | A                                            | 10                                                               | 20   | 20   | 25    | 32   | 32         | 50    | 63   | 40   | 50              | 63   | 115   | 150  | 200  | 315  | –   | –          |  |
|                                                                                                                    | SEV <sup>3</sup> 380 V                                                      | A                                            | 10                                                               | 16   | 16   | 25    | 32   | 32         | 40    | 63   | 40   | 50              | 63   | 100   | 160  | –    | 315  | –   | –          |  |
|                                                                                                                    | 660 V                                                                       | A                                            | –                                                                | 12   | 12   | 25    | 32   | 32         | 40    | 63   | 40   | 50              | 63   | –     | –    | –    | 315  | –   | –          |  |
|                                                                                                                    | UL/Canada                                                                   | A                                            | 10                                                               | 20   | 20   | 30    | 30   | 40         | 50    | 65   | 45   | 55              | 65   | 100   | 150  | –    | 240  | –   | –          |  |
| <b>Rated Operational Current <math>I_e</math></b>                                                                  | AC-21A Switching of resistive loads, including moderate overloads           | IEC 60947-3, EN 60947-3<br>VDE 0660 part 107 | A                                                                | 10   | 20   | 20    | 25   | 32         | 32    | 40   | 63   | 40              | 50   | 63    | 100  | 150  | 200  | 315 | –          |  |
|                                                                                                                    | AC-1 Resistive or low inductive loads                                       | SEV <sup>4</sup> 380 V<br>660 V              | A                                                                | 10   | 16   | 16    | 25   | 32         | 32    | 40   | 63   | 40              | 50   | 63    | 100  | 160  | –    | 315 | –          |  |
| AC-22A Switching of combined resistive or low inductive loads including moderate overloads                         | IEC 60947-3, EN 60947-3<br>VDE 0660 220 V-500 V<br>part 107 660 V-690 V     | A                                            | 10                                                               | 20   | 20   | 25    | 32   | 32         | 40    | 63   | 40   | 50              | 63   | 100   | 150  | 150  | 315  | –   | –          |  |
|                                                                                                                    |                                                                             | A                                            | –                                                                | 20   | 20   | 25    | 32   | 32         | 40    | 63   | 40   | 50              | 63   | 100   | 125  | 125  | 125  | –   | –          |  |
| AC-15 Switching of control devices, contactors, valves etc.                                                        | IEC 60947-5-1, EN 60947-5-1<br>VDE 0660 220 V-240 V<br>part 200 380 V-440 V | A                                            | 2,5                                                              | 5    | 5    | 8     | 12   | 14         | 16    | –    | 14   | 16              | 16   | –     | –    | –    | –    | –   |            |  |
|                                                                                                                    |                                                                             | A                                            | 1,5                                                              | 4    | 4    | 5     | 6    | 6          | 7     | –    | 6    | 7               | 7    | –     | –    | –    | –    | –   |            |  |
| Pilot Duty                                                                                                         | UL/Canada <sup>3</sup> Heavy                                                | VAC                                          | A300                                                             | A300 | A600 | A600  | A300 | A600       | A600  | A600 | A600 | A600            | A600 | –     | –    | –    | A600 | –   | –          |  |
| Ampere Rating Resistive or low inductive loads                                                                     | UL/Canada <sup>3</sup>                                                      | A                                            | 10                                                               | 20   | 20   | 30    | 30   | 40         | 50    | 65   | 45   | 55              | 60   | 100   | 150  | –    | 240  | –   | –          |  |
| Resistive load/motor load                                                                                          | CEE                                                                         | A                                            | 4/2                                                              | 10/6 | 10/6 | 16/10 | –    | 25/1032/10 | 40/10 | –    | –    | –               | –    | 63/10 | –    | –    | –    | –   | –          |  |
|                                                                                                                    | NEMKO                                                                       | A                                            | 6/4 <sup>2</sup>                                                 | 10/6 | –    | 20/10 | –    | –          | –     | –    | –    | –               | –    | –     | –    | –    | –    | –   | –          |  |
| <b>Breaking capacity</b>                                                                                           | 220 V-240 V                                                                 | A                                            | 50                                                               | 150  | 150  | 200   | 280  | 280        | 380   | 550  | 290  | 330             | 440  | 860   | 1100 | 1100 | 2000 | –   | –          |  |
|                                                                                                                    | 380 V-440 V                                                                 | A                                            | 50                                                               | 150  | 150  | 200   | 250  | 250        | 360   | 550  | 290  | 330             | 440  | 860   | 1100 | 1100 | 2000 | –   | –          |  |
|                                                                                                                    | 660 V-690 V                                                                 | A                                            | –                                                                | 80   | 80   | 125   | 150  | 150        | 270   | 365  | 170  | 200             | 260  | 400   | 490  | 490  | 340  | –   | –          |  |
| Power loss per contact at $I_U$                                                                                    |                                                                             | W                                            | 0,4/0,9                                                          | 0,9  | 0,9  | 0,9   | 0,7  | 1,3        | 1,3   | 1,7  | 1    | 1,8             | 2,8  | 5,8   | 3,8  | 6,7  | 17   | –   |            |  |
| Resistance to vibration                                                                                            |                                                                             |                                              | min. 4 g, 2-100 Hz, 1,6 mm                                       |      |      |       |      |            |       |      |      | on request      |      |       |      |      |      |     |            |  |
| Resistance to shock                                                                                                |                                                                             |                                              | min. 5 g, 6 ms                                                   |      |      |       |      |            |       |      |      | min. 5 g, 30 ms |      |       |      |      |      |     |            |  |
| <b>Short Circuit Protection</b>                                                                                    | Max. fuse size (gG-characteristic)                                          | A                                            | 10                                                               | 25   | 25   | 35    | 35   | 50         | 63    | 80   | 50   | 63              | 63   | 125   | 200  | 200  | 315  | –   | –          |  |
|                                                                                                                    | Rated short-time withstand current (1s-current)                             | A                                            | 60                                                               | 140  | 140  | 280   | 480  | 350        | 800   | 1000 | 950  | 950             | 950  | 1300  | 2000 | 2000 | 4200 | –   | –          |  |
| <b>Min. Ambient Temperature of Stages</b>                                                                          |                                                                             |                                              | -25 °C (valid only without optional extra, C315/C316 on request) |      |      |       |      |            |       |      |      |                 |      |       |      |      |      |     |            |  |
| <b>Max. Ambient Temperature of Stages</b> <sup>5,7</sup> open at 100 % $I_U/I_{th}$<br>enclosed at 100 % $I_{the}$ |                                                                             |                                              | 55 °C during 24 hours with peaks up to 60 °C                     |      |      |       |      |            |       |      |      |                 |      |       |      |      |      |     |            |  |
|                                                                                                                    |                                                                             |                                              | 35 °C during 24 hours with peaks up to 40 °C                     |      |      |       |      |            |       |      |      |                 |      |       |      |      |      |     |            |  |

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44 <sup>1</sup>Valid for lines with grounded common neutral termination, overvoltage category III, pollution degree 3. Values for other supply systems on request. <sup>2</sup>Valid for CA4 only. <sup>3</sup>International Standards and Approvals, refer to page 43. <sup>4</sup>For electromagnetic optional extras see additional data in Catalog 101. <sup>5</sup>Storage temperature: -40 °C to 85 °C (in case of temperature below -5 °C no shock load permissible).

|                       |                                                                               |
|-----------------------|-------------------------------------------------------------------------------|
| <b>Selection Data</b> | CA4 CA10 CA11 CA20 CA25 C42 C315                                              |
|                       | CA4-1 CA10B CA11B CA20B CA25B C26 C32 C43 CA40 CA50 CA63 C80 C125 C200-4 C316 |

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| Rated Utilization Category |                                                                                   | IEC 60947-3, EN 60947-3<br>VDE 0660 part 107 |                                                    |      |      |      |      |      |      |     |      |      |      |      |      |     |      |      |     |     |
|----------------------------|-----------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------------|------|------|------|------|------|------|-----|------|------|------|------|------|-----|------|------|-----|-----|
| AC-2                       | Slip ring motor starting, reversing and plugging, star-delta starting<br>CA4-CA50 | 3 phase<br>3 pole                            | 220 V-240 V                                        | kW   | 2,5  | 4    | 4    | 5,5  | 7,5  | 8   | 10   | 18,5 | 10   | 11   | 18,5 | 30  | 37   | 37   | 55  |     |
|                            |                                                                                   |                                              | 380 V-440 V                                        |      | 4,5  | 7,5  | 7,5  | 11   | 15   | 15  | 18,5 | 30   | 18,5 | 22   | 30   | 40  | 55   | 75   | 75  | 110 |
|                            |                                                                                   |                                              | 500 V<br>660 V-690 V                               |      | -    | 10   | 10   | 10   | 13   | 15  | 15   | 22   | 37   | 22   | 30   | 37  | 55   | 55   | 55  | 55  |
| AC-3                       | Direct-on-line starting, star-delta starting<br>CA63-C315                         | 3 phase<br>3 pole                            | 220 V-240 V                                        | kW   | 1,5  | 3    | 3    | 4    | 5,5  | 5,5 | 7,5  | 11   | 7,5  | 11   | 11   | 15  | 22   | 22   | 37  |     |
|                            |                                                                                   |                                              | 380 V-440 V                                        |      | 2,2  | 5,5  | 5,5  | 7,5  | 11   | 11  | 15   | 18,5 | 15   | 18,5 | 18,5 | 30  | 37   | 37   | 55  |     |
|                            |                                                                                   |                                              | 500 V<br>660 V-690 V                               |      | -    | 5,5  | 5,5  | 7,5  | 11   | 11  | 15   | 18,5 | 15   | 18,5 | 18,5 | 30  | 37   | 37   | 55  |     |
|                            |                                                                                   | 1 phase<br>2 pole                            | 110 V-120 V                                        | 0,3  | 0,6  | 0,6  | 1,5  | 2,2  | 2,2  | 2,5 | 3    | 2,5  | 3    | 3    | 3,7  | 5,5 | 5,5  | 11   |     |     |
|                            |                                                                                   |                                              | 220 V-240 V<br>380 V-440 V                         | 0,55 | 2,2  | 2,2  | 3    | 4    | 4    | 5,5 | 6    | 5,5  | 6    | 6    | 7,5  | 11  | 11   | 22   |     |     |
|                            |                                                                                   |                                              |                                                    |      | 0,75 | 3    | 3    | 3,7  | 5,5  | 5,5 | 7,5  | 11   | 7,5  | 11   | 11   | 13  | 18,5 | 18,5 | 30  |     |
| AC-4                       | Direct-on-line starting, reversing, plugging and inching                          | 3 phase<br>3 pole                            | 220 V-240 V                                        | kW   | 0,37 | 0,55 | 0,55 | 1,5  | 2,5  | 2,7 | 3,7  | 5,5  | 3,7  | 4    | 5,5  | 6   | 10   | 10   | 15  |     |
|                            |                                                                                   |                                              | 380 V-440 V                                        |      | 0,55 | 1,5  | 1,5  | 3    | 5,5  | 5,5 | 6    | 7,5  | 6    | 7    | 7,5  | 11  | 15   | 15   | 25  |     |
|                            |                                                                                   |                                              | 500 V<br>660 V-690 V                               |      | -    | 1,5  | 1,5  | 3    | 5,5  | 5,5 | 6    | 7,5  | 6    | 7    | 7,5  | 11  | 15   | 15   | 25  |     |
|                            |                                                                                   | 1 phase<br>2 pole                            | 110 V-120 V                                        | 0,15 | 0,3  | 0,3  | 0,45 | 0,75 | 0,75 | 1,1 | 1,2  | 1,1  | 1,2  | 1,2  | 1,5  | 2,2 | 2,2  | 4    |     |     |
|                            |                                                                                   |                                              | 220 V-240 V<br>380 V-440 V                         | 0,25 | 0,75 | 0,75 | 1,1  | 1,5  | 1,5  | 2,2 | 2,4  | 2,2  | 2,4  | 2,4  | 3    | 4   | 4    | 7,5  |     |     |
|                            |                                                                                   |                                              |                                                    |      | 0,5  | 1,5  | 1,5  | 2,2  | 3    | 3   | 3,7  | 4    | 3,7  | 4    | 4    | 5,5 | 7,5  | 7,5  | 11  |     |
| AC-23A                     | Frequent switching of motors or other high inductive loads                        | 3 phase<br>3 pole                            | 220 V-240 V                                        | kW   | 1,8  | 3,7  | 3,7  | 5,5  | 7,5  | 7,5 | 11   | 15   | 7,5  | 11   | 15   | 30  | 37   | 37   | 75  |     |
|                            |                                                                                   |                                              | 380 V-440 V                                        |      | 3    | 7,5  | 7,5  | 11   | 15   | 15  | 22   | 30   | 18,5 | 22   | 30   | 45  | 75   | 75   | 132 |     |
|                            |                                                                                   |                                              | 500 V<br>660 V-690 V                               |      | -    | 7,5  | 7,5  | 11   | 15   | 15  | 22   | 40   | 18,5 | 22   | 30   | 45  | 55   | 55   | 37  |     |
|                            |                                                                                   | 1 phase<br>2 pole                            | 110 V-120 V                                        | 0,37 | 0,75 | 0,75 | 1,5  | 2,2  | 2,2  | 2,5 | 4    | 2,2  | 2,5  | 4    | 5,5  | 11  | 11   | 18,5 |     |     |
|                            |                                                                                   |                                              | 220 V-240 V<br>380 V-440 V                         | 0,75 | 2,5  | 2,5  | 3    | 4    | 4    | 5,5 | 10   | 4    | 5,5  | 10   | 15   | 22  | 22   | 37   |     |     |
|                            |                                                                                   |                                              |                                                    |      | 1,1  | 3,7  | 3,7  | 5,5  | 7,5  | 7,5 | 11   | 18,5 | 7,5  | 11   | 18,5 | 22  | 37   | 37   | 55  |     |
| <b>Ratings</b>             |                                                                                   | UL/Canada                                    |                                                    |      |      |      |      |      |      |     |      |      |      |      |      |     |      |      |     |     |
|                            | Standard motor load<br>DOL-Rating<br>(similar AC-3)                               | 3 phase<br>3 pole                            | 110 V-120 V                                        | HP   | 0,75 | 1,5  | 1,5  | 3    | 5    | 5   | 7,5  | 7,5  | 7,5  | 7,5  | 7,5  | 10  | 15   | -    | 30  |     |
|                            |                                                                                   |                                              | 220 V-240 V                                        |      | 1    | 3    | 3    | 7,5  | 10   | 10  | 15   | 15   | 15   | 15   | 20   | 25  | -    | 75   |     |     |
|                            |                                                                                   |                                              | 440 V-480 V<br>550 V-600 V                         |      | -    | -    | 5    | 10   | -    | 20  | 25   | 25   | 25   | 25   | 30   | 40  | -    | 75   |     |     |
|                            |                                                                                   | 1 phase<br>2 pole                            | 110 V-120 V                                        | 0,33 | 0,5  | 0,5  | 1,5  | 2    | 2    | 3   | 3    | 3    | 3    | 3    | 5    | 7,5 | -    | 15   |     |     |
|                            |                                                                                   |                                              | 220 V-240 V<br>277 V<br>440 V-480 V<br>550 V-600 V | 0,75 | 1    | 1    | 3    | 5    | 5    | 7,5 | 7,5  | 7,5  | 7,5  | 7,5  | 10   | 15  | -    | 40   |     |     |
|                            |                                                                                   |                                              |                                                    |      | 0,75 | 2    | 2    | 3    | 5    | 5   | 7,5  | 7,5  | 7,5  | 10   | 10   | 15  | -    | 40   |     |     |
|                            |                                                                                   |                                              |                                                    |      | -    | -    | 2    | 5    | -    | 10  | 15   | 15   | 15   | 15   | 20   | 25  | -    | 50   |     |     |
|                            |                                                                                   |                                              |                                                    |      | -    | -    | 2    | 5    | -    | 15  | 20   | 20   | 15   | 20   | 20   | 25  | 30   | -    | 50  |     |
|                            | Heavy motor load<br>Reversing-Rating<br>(similar AC-4)                            | 3 phase<br>3 pole                            | 110 V-120 V                                        | HP   | -    | 0,5  | 0,5  | 1    | 2    | 2   | 3    | 5    | -    | -    | -    | 7,5 | 10   | -    | 15  |     |
|                            |                                                                                   |                                              | 220 V-240 V                                        |      | -    | 1    | 1    | 2    | 3    | 3   | 5    | 7,5  | -    | -    | -    | 15  | 20   | -    | 30  |     |
|                            |                                                                                   |                                              | 440 V-600 V                                        |      | -    | -    | 3    | 5    | -    | 10  | 15   | 20   | -    | -    | -    | 25  | 30   | -    | 40  |     |
|                            |                                                                                   | 1 phase<br>2 pole                            | 110 V-120 V                                        | -    | 0,17 | 0,17 | 0,33 | 1,5  | 1,5  | 1,5 | 2    | -    | -    | -    | 3    | 5   | -    | 7,5  |     |     |
|                            |                                                                                   |                                              | 220 V-240 V<br>277 V                               | -    | 0,5  | 0,5  | 0,75 | 3    | 3    | 3   | 5    | -    | -    | -    | 7,5  | 10  | -    | 15   |     |     |
|                            |                                                                                   |                                              |                                                    |      | -    | 0,6  | 0,6  | 1    | 3    | 3   | 3    | 5    | -    | -    | -    | 7,5 | 10   | -    | 15  |     |

|                       |                                                                               |
|-----------------------|-------------------------------------------------------------------------------|
| <b>Selection Data</b> | CA4 CA10 CA11 CA20 CA25 C42 C315                                              |
|                       | CA4-1 CA10B CA11B CA20B CA25B C26 C32 C43 CA40 CA50 CA63 C80 C125 C200-4 C316 |

|                                                                                                 |                              |     |       |       |       |     |     |                                            |      |       |      |       |      |       |      |                 |                  |    |  |  |  |  |
|-------------------------------------------------------------------------------------------------|------------------------------|-----|-------|-------|-------|-----|-----|--------------------------------------------|------|-------|------|-------|------|-------|------|-----------------|------------------|----|--|--|--|--|
| <b>Max. Permissible Wire Gage - Use copper wire only</b>                                        |                              |     |       |       |       |     |     |                                            |      |       |      |       |      |       |      |                 |                  |    |  |  |  |  |
| Single-core or stranded wire                                                                    | mm <sup>2</sup>              | 2x  | 2x    | 2x    | 2x    | 2x  | 2x  | 2x                                         | 2x   | 16    | 16   | 16    | 16   | 35    | 70   | 95 <sup>1</sup> | 185 <sup>1</sup> |    |  |  |  |  |
|                                                                                                 | AWG                          | 1,5 | 2,5   | 2,5   | 4     | 6   | 6   | 8                                          | 8    | 6     | 6    | 6     | 6    | 2     | 2/0  | -               | MCM 350          |    |  |  |  |  |
| Flexible wire<br>(sleeving in accordance with DIN 46228)<br>Flexible AWG wires (without sleeve) | mm <sup>2</sup>              | 2x  | 2x    | 2x    | 2x    | 2x  | 2x  | 2x                                         | 2x   | 10    | 10   | 10    | 10   | 25    | 50   | 95 <sup>1</sup> | 150 <sup>1</sup> |    |  |  |  |  |
|                                                                                                 | AWG                          | (1) | (2,5) | (2,5) | (2,5) | (4) | (4) | (6)                                        | (10) | (10)  | (10) | (10)  | (10) | (25)  | (50) | -               | MCM 300          |    |  |  |  |  |
| <b>Tightening torque of screws</b>                                                              |                              |     |       |       |       |     |     |                                            |      |       |      |       |      |       |      |                 |                  |    |  |  |  |  |
|                                                                                                 | Nm                           | 0,4 | 0,6   | 0,6   | 1,3   | 1,3 | 1,3 | 2,2                                        | 3    | 1,8   | 1,8  | 1,8   | 4    | 4,5   | 8    | 14              |                  |    |  |  |  |  |
|                                                                                                 | lb-in                        | 3,5 | 5     | 5     | 12    | 12  | 12  | 19,5                                       | 26,4 | 16    | 16   | 16    | 35   | 39,8  | 70   | 125             |                  |    |  |  |  |  |
| <b>DC Switching Capacity<sup>2</sup></b>                                                        |                              |     |       |       |       |     |     |                                            |      |       |      |       |      |       |      |                 |                  |    |  |  |  |  |
| contacts in series::                                                                            | 1                            | 2   | 3     | 4     | 5     | 6   | 8   | <b>Rated Thermal Current I<sub>e</sub></b> |      |       |      |       |      |       |      |                 |                  |    |  |  |  |  |
|                                                                                                 | Permissible voltage in volts |     |       |       |       |     |     | CA4                                        | CA10 | CA10S | CA20 | CA20S | CA25 | CA25S | CA40 | CA40S           | CA63S            |    |  |  |  |  |
| <b>Utilization category DC-21A</b>                                                              | 24                           | 48  | 72    | 96    | 120   | 144 | 192 | A                                          | 10   | 16    | 16   | 21    | 24   | 26    | 32   | 35              | 40               | 63 |  |  |  |  |
| Switching of resistive load                                                                     | 48                           | 96  | 144   | 192   | 240   | 288 | 384 | A                                          | 6    | 14    | 15   | 18    | 24   | 25    | 32   | 32              | 40               | 63 |  |  |  |  |
| Time constant L/R≤1ms                                                                           | 60                           | 120 | 180   | 240   | 300   | 360 | 480 | A                                          | 5    | 13    | 15   | 17    | 21   | 24    | 28   | 28              | 40               | 50 |  |  |  |  |
|                                                                                                 | 110                          | 220 | 330   | 440   | 550   | 660 | -   | A                                          | 4    | 6     | 7    | 6     | 7    | 7     | 9,3  | -               | -                | -  |  |  |  |  |
|                                                                                                 | 220                          | 440 | 660   | -     | -     | -   | -   | A                                          | 0,8  | 0,9   | 1    | 1     | 1    | 1     | 1    | -               | -                | -  |  |  |  |  |
| <b>Utilization category DC-22A</b>                                                              | 24                           | 48  | 72    | 96    | 120   | 144 | 192 | A                                          | 8    | 14    | 15   | 18    | 24   | 25    | 32   | 35              | 40               | 63 |  |  |  |  |
| Switching of mixed resistive and inductive load                                                 | 48                           | 96  | 144   | 192   | 240   | 288 | 384 | A                                          | 5    | 13    | 15   | 17    | 24   | 25    | 32   | 32              | 40               | 63 |  |  |  |  |
| f.e. shunt motors                                                                               | 60                           | 120 | 180   | 240   | 300   | 360 | 480 | A                                          | 4    | 12    | 15   | 16    | 19   | 24    | 25   | -               | 20               | 25 |  |  |  |  |
| time constant L/R≤2,5ms                                                                         | 110                          | 220 | 330   | 440   | 550   | 660 | -   | A                                          | 1,5  | 1,9   | 2    | 2     | 2    | 2,25  | 3    | -               | -                | -  |  |  |  |  |
|                                                                                                 | 220                          | 440 | 660   | -     | -     | -   | -   | A                                          | 0,3  | 0,3   | 0,35 | 0,3   | 0,35 | 0,35  | 0,35 | -               | -                | -  |  |  |  |  |
| <b>Utilization category DC-23A</b>                                                              | 24                           | 48  | 72    | 96    | 120   | 144 | 192 | A                                          | 7    | 13    | 15   | 16    | 23   | 23    | 32   | 35              | 40               | 63 |  |  |  |  |
| Switching of highly inductive loads                                                             | 48                           | 96  | 144   | 192   | 240   | 288 | 384 | A                                          | 4    | 12    | 15   | 15    | 23   | 21    | 32   | 26              | 40               | 63 |  |  |  |  |
| f.e. series motors                                                                              | 60                           | 120 | 180   | 240   | 300   | 360 | 480 | A                                          | 3,5  | 10    | 13   | 14    | 16   | 18    | 25   | -               | -                | -  |  |  |  |  |
| Zeitkonstante L/R≤15ms                                                                          | 110                          | 220 | 330   | 440   | 550   | 660 | -   | A                                          | 1    | 1,5   | 1,75 | 1,7   | 1,75 | 2     | 2,5  | -               | -                | -  |  |  |  |  |
|                                                                                                 | 220                          | 440 | 660   | -     | -     | -   | -   | A                                          | 0,2  | 0,2   | 0,3  | 0,2   | 0,3  | 0,2   | 0,3  | -               | -                | -  |  |  |  |  |
| <b>Utilization category DC-13</b>                                                               | 24                           | 48  | -     | -     | -     | -   | -   | A                                          | 0,8  | 3     | -    | 4     | -    | 5     | -    | -               | -                | -  |  |  |  |  |
| Control of electromagnets                                                                       | 48                           | 96  | -     | -     | -     | -   | -   | A                                          | 0,5  | 1,7   | -    | 2,4   | -    | 3     | -    | -               | -                | -  |  |  |  |  |
| Time constant L/R≤100ms                                                                         | 60                           | 120 | -     | -     | -     | -   | -   | A                                          | 0,2  | 1,4   | -    | 1,8   | -    | 2,5   | -    | -               | -                | -  |  |  |  |  |
|                                                                                                 | 110                          | 220 | -     | -     | -     | -   | -   | A                                          | -    | 0,7   | -    | 1     | -    | 1,5   | -    | -               | -                | -  |  |  |  |  |
|                                                                                                 | 220                          | 440 | -     | -     | -     | -   | -   | A                                          | -    | 0,15  | -    | 0,35  | -    | 0,5   | -    | -               | -                | -  |  |  |  |  |

<sup>1</sup>Cable lug must accept M8 (C200-4) and M12 (C315/C316) screw. <sup>2</sup>Values for switches with spring return on request.

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|                       |        |       |       |
|-----------------------|--------|-------|-------|
| <b>Selection Data</b> | CAD4-1 | CAD11 | CAD12 |
|-----------------------|--------|-------|-------|

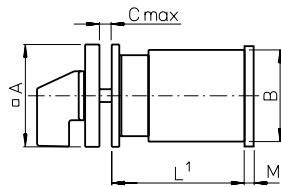
|                                                                                                      |                                                                                                                |                                                                                               |                                                                                                                                            |                                                       |                                                              |                                                     |
|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------|
| <b>Bemessungsisolationsspannung <math>U_i</math></b>                                                 | IEC 60947-3, EN 60947-3 <sup>1</sup><br>VDE 0660 part 107<br>SEV <sup>2</sup><br>North America<br>min. voltage | V<br>V<br>V<br>V                                                                              | 440<br>–<br>300<br>1 <sup>7</sup>                                                                                                          | 600<br>600<br>300<br>1                                | 600<br>600<br>300<br>6                                       |                                                     |
| <b>Rated Impulse Withstand Voltage <math>U_{imp}</math></b>                                          |                                                                                                                |                                                                                               |                                                                                                                                            | on request                                            |                                                              |                                                     |
| <b>Rated Thermal Current <math>I_U/I_{th}</math></b>                                                 | IEC 60947-3, EN 60947-3<br>VDE 0660 part 107<br>SEV <sup>2</sup><br>Nordamerika                                | A<br>A<br>A                                                                                   | 5<br>–<br>5                                                                                                                                | 6<br>5<br>6                                           | 6<br>5<br>6                                                  |                                                     |
| <b>Bemessungsbetriebsstrom <math>I_e</math></b>                                                      | IEC 60947-3, EN 60947-3<br>VDE 0660 part 107<br>North America <sup>3</sup>                                     |                                                                                               |                                                                                                                                            |                                                       |                                                              |                                                     |
| AC-21A                                                                                               | Switching of resistive loads, including moderate overloads                                                     | 1 V/6 V<br>12 V/24 V<br>48 V/110 V<br>220 V/400 V<br>440 V/500 V<br>600 V                     | A<br>A<br>A<br>A<br>A<br>A                                                                                                                 | 5/2<br>1,2/0,7<br>0,45/0,25<br>0,15/–<br>0,1/–<br>–   | 6/3<br>2/1<br>0,8/0,4<br>0,2/0,13<br>0,1/0,08<br>0,05        | –/6<br>5/5<br>4/3<br>2/1,3<br>1/0,8<br>0,5          |
| AC-1                                                                                                 | Resistive or low inductive loads                                                                               | SEV <sup>2</sup><br>1 V/6 V<br>12 V/24 V<br>48 V/110 V<br>220 V/380 V<br>440 V/500 V<br>600 V | A<br>A<br>A<br>A<br>A<br>A                                                                                                                 | –<br>–<br>–<br>–<br>–<br>–                            | 5/3<br>2/1<br>0,8/0,4<br>0,2/0,13<br>0,1/0,08<br>0,05        | –/5<br>5/5<br>4/3<br>2/1,3<br>1/0,8<br>0,5          |
| <b>Power loss per contact at <math>I_U</math></b>                                                    |                                                                                                                | W                                                                                             | 0,4                                                                                                                                        | 0,5                                                   | 0,2                                                          |                                                     |
| <b>Short Circuit Protection</b>                                                                      |                                                                                                                |                                                                                               |                                                                                                                                            |                                                       |                                                              |                                                     |
|                                                                                                      | Max. fuse size (gG-characteristic)                                                                             | A                                                                                             | 5                                                                                                                                          | 6                                                     | 6                                                            |                                                     |
|                                                                                                      | Rated short-time withstand current (1s-current)                                                                | A                                                                                             | 30                                                                                                                                         | 35                                                    | 50                                                           |                                                     |
| <b>DC Switching Capacity<sup>5</sup></b>                                                             | IEC 60947-3, EN 60947-3<br>VDE 0660 part 107<br>SEV <sup>2</sup><br>North America <sup>3</sup>                 |                                                                                               |                                                                                                                                            |                                                       |                                                              |                                                     |
| DC-1                                                                                                 | Resistive load<br>T = 1 ms                                                                                     | 1 V/6 V<br>12 V/24 V<br>48 V/60 V<br>110 V/220 V<br>240 V/500 V<br>600 V                      | A<br>A<br>A<br>A<br>A<br>A                                                                                                                 | 3/1,2<br>0,7/0,4<br>0,25/0,2<br>0,13/–<br>0,08/–<br>– | 4/2,5<br>1,5/0,8<br>0,3/0,27<br>0,2/0,1<br>0,08/0,03<br>0,02 | –/4<br>3/2,2<br>1,2/1<br>0,6/0,3<br>0,25/0,1<br>0,1 |
| <b>Max. Permissible Wire Gage</b> - Use copper wire only                                             |                                                                                                                |                                                                                               |                                                                                                                                            |                                                       |                                                              |                                                     |
|                                                                                                      | Single-core or stranded wire                                                                                   | mm <sup>2</sup><br>AWG                                                                        | 2x<br>1,5<br>14                                                                                                                            | 2x<br>2,5<br>12                                       | 2x<br>2,5<br>12                                              |                                                     |
|                                                                                                      | Flexible wire (sleeving in accordance with DIN 46228)<br>Flexible AWG wires (without sleeve)                   | mm <sup>2</sup><br>AWG                                                                        | 2x<br>1,5<br>(1)<br>16                                                                                                                     | 2x<br>2,5<br>(2,5)<br>14                              | 2x<br>2,5<br>(2,5)<br>14                                     |                                                     |
| <b>Tightening torque of screws</b>                                                                   |                                                                                                                | Nm<br>lb-in                                                                                   | 0,4<br>3,5                                                                                                                                 | 0,6<br>5                                              | 0,6<br>5                                                     |                                                     |
| <b>Min. Ambient Temperature of Stages</b><br><b>Max. Ambient Temperature of Stages<sup>4,6</sup></b> | open at 100 % $I_U/I_{th}$<br>enclosed at 100 % $I_{the}$                                                      |                                                                                               | -25 °C (valid only without optional extra)<br>55 °C during 24 hours with peaks up to 60 °C<br>35 °C during 24 hours with peaks up to 40 °C |                                                       |                                                              |                                                     |

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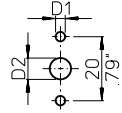
<sup>1</sup>Valid for lines with grounded common neutral termination, overvoltage category III, pollution degree 3. Values for other supply systems on request.  
<sup>2</sup>International Standards and Approvals, refer to page 43. <sup>3</sup>Max. 300 V. <sup>4</sup>For electromagnetic optional extras see additional data in Catalog 101.  
<sup>5</sup>Values for switches with spring return on request. <sup>6</sup>Storage temperature: -40 °C to 85 °C (in case of temperature below -5 °C no shock load permissible).  
<sup>7</sup>Values with lower voltages on request.



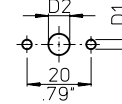
**Two or Four Hole Panel Mounting**



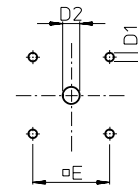
**E**  
for CA4, CA4-1,  
CAD4-1



**E-V**  
for CA4, CA4-1,  
CAD4-1



**E-V**  
**ER**

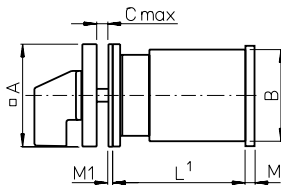


|                      | CA10    | CA4     | CA11    | CA20    | CA25 <sup>3</sup> | CA20B   | CA10B   | CA11B   | CA25B   | C26     | C32     | C42 <sup>3</sup> | C43      | CA40 <sup>3</sup> | CA50 <sup>3</sup> | CA63 <sup>3</sup> | C125     | C200-4   | L switches | L switches |
|----------------------|---------|---------|---------|---------|-------------------|---------|---------|---------|---------|---------|---------|------------------|----------|-------------------|-------------------|-------------------|----------|----------|------------|------------|
|                      |         | CAD4-1  | CAD12   |         |                   |         |         |         |         |         |         |                  |          |                   |                   |                   |          |          | Size S2    | Size S3    |
| <b>A</b>             | 0       | 48      | 48      | 48      | (64)              | 64      | 64      | 64      | 64      | 64      | 64      | (88)             | 88       | 64                | (88)              | 88                | 88       | 88       | 88         | 130        |
|                      | 1.18    | 1.89    | 1.89    | 1.89    | (2.52)            | 2.52    | 2.52    | 2.52    | 2.52    | 2.52    | 2.52    | (3.46)           | 3.46     | 2.52              | (3.46)            | 3.46              | 3.46     | 3.46     | 3.46       | 5.12       |
| <b>B</b>             | 29,5    | 43      | 45      | 46      |                   | 56      | 56      | 58      | 60      | 66      | 66      |                  | 84       | 55,5x64           | 84                | 88                | 88       | 88       | 88         | 126        |
|                      | 1.16    | 1.69    | 1.77    | 1.81    |                   | 2.20    | 2.20    | 2.28    | 2.36    | 2.60    | 2.60    |                  | 3.30     | 2.19x2.52         | 3.30              | 3.46              | 3.46     | 3.46     | 3.46       | 4.96       |
| <b>C</b>             | 4       | 4       | 4       | 4       |                   | 4       | 4       | 4       | 4       | 4       | 4       |                  | 5,5      | 4                 | 5,5               | 5,5               | 5,5      | 5,5      | 5,5        | 7          |
|                      | .16     | .16     | .16     | .16     |                   | .16     | .16     | .16     | .16     | .16     | .16     |                  | .22      | .16               | .22               | .22               | .22      | .22      | .22        | .28        |
| <b>D1</b>            | 3,2     | 5       | 5       | 5       |                   | 5       | 5       | 5       | 5       | 5       | 5       | (6)              | 6        | 5                 | (6)               | 6                 | 6        | 6        | 6          | 7          |
|                      | .13     | .20     | .20     | .20     |                   | .20     | .20     | .20     | .20     | .20     | .20     | (.24)            | .24      | .20               | (.24)             | .24               | .24      | .24      | .24        | .28        |
| <b>D2</b>            | 8-11    | 8-19    | 8-19    | 8-19    |                   | 10-22   | 10-22   | 10-22   | 10-22   | 10-22   | 10-22   |                  | 13-30    | 10-22             | 13-30             | 13-30             | 13-30    | 13-30    | 13-30      | 15,5-25    |
|                      | .31-.43 | .31-.75 | .31-.75 | .31-.75 |                   | .39-.87 | .39-.87 | .39-.87 | .39-.87 | .39-.87 | .39-.87 |                  | .51-1.18 | .39-.87           | .51-1.18          | .51-1.18          | .51-1.18 | .51-1.18 | .51-1.18   | .61-.98    |
| <b>E</b>             | -       | 36      | 36      | 36      | (48)              | 48      | 48      | 48      | 48      | 48      | 48      | (68)             | 68       | 48                | (68)              | 68                | 68       | 68       | 68         | 104        |
|                      | -       | 1.42    | 1.42    | 1.42    | (1.89)            | 1.89    | 1.89    | 1.89    | 1.89    | 1.89    | 1.89    | (2.68)           | 2.68     | 1.89              | (2.68)            | 2.68              | 2.68     | 2.68     | 2.68       | 4.09       |
| <b>M<sup>2</sup></b> | -       | 4,5     | 4,5     | 5,5     |                   | 5       | 5,5     | 7,5     | 7,5     | 7,5     | 7,5     |                  | 7,5      | 7,6               | 9,4               | 27,5              | 27,5     | 27,5     | 27,5       | 11,9 (32)  |
|                      | -       | .18     | .18     | .22     |                   | .20     | .22     | .30     | .30     | .30     | .30     |                  | .30      | .30               | .37               | 1.08              | 1.08     | 1.08     | 1.08       | .47 (1.26) |

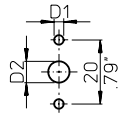
<sup>2</sup>M, additional length for mounting ER only  
<sup>3</sup>Dimensions in ( ) for ER mounting plate only

<sup>4</sup>Dimensions in ( ) for L800, L1200, L1600

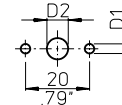
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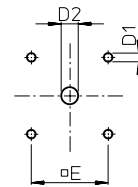
**EF**  
for CA4, CA4-1,  
CAD4-1



**EF-V**  
for CA4, CA4-1,  
CAD4-1



**EF**  
**EF-V**  
**ERF**



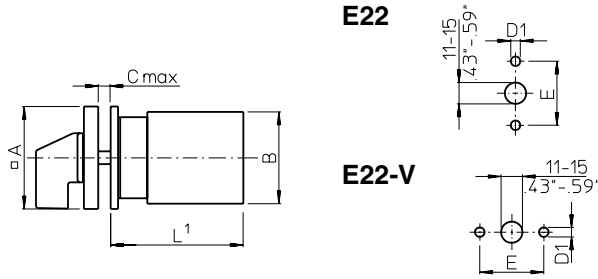
|                      | CA10    | CA4     | CA11    | CA20    | CA25 <sup>3</sup> | CA20B   | CA10B   | CA11B   | CA25B   | C26     | C32     | C42 <sup>3</sup> | C43       | CA40 <sup>3</sup> | CA50 <sup>3</sup> | CA63 <sup>3</sup> | C125      | C200-4    | L switches | L switches |
|----------------------|---------|---------|---------|---------|-------------------|---------|---------|---------|---------|---------|---------|------------------|-----------|-------------------|-------------------|-------------------|-----------|-----------|------------|------------|
|                      |         | CAD4-1  | CAD12   |         |                   |         |         |         |         |         |         |                  |           |                   |                   |                   |           |           | Size S2    | Size S3    |
| <b>A</b>             | 30      | 48      | 48      | 48      | (64)              | 64      | 64      | 64      | 64      | 64      | 64      | (88)             | 88        | 64                | (88)              | 88                | 88        | 88        | 88         | 130        |
|                      | 1.18    | 1.89    | 1.89    | 1.89    | (2.52)            | 2.52    | 2.52    | 2.52    | 2.52    | 2.52    | 2.52    | (3.46)           | 3.46      | 2.52              | (3.46)            | 3.46              | 3.46      | 3.46      | 3.46       | 5.12       |
| <b>B</b>             | 29,5    | 43      | 45      | 46      |                   | 56      | 56      | 58      | 60      | 66      | 66      |                  | 84        | 55,5x64           | 84                | 88                | 88        | 88        | 88         | 126        |
|                      | 1.16    | 1.69    | 1.77    | 1.81    |                   | 2.20    | 2.20    | 2.28    | 2.36    | 2.60    | 2.60    |                  | 3.30      | 2.19x2.52         | 3.30              | 3.46              | 3.46      | 3.46      | 3.46       | 4.96       |
| <b>C</b>             | 4       | 4       | 4       | 4       |                   | 4       | 4       | 4       | 4       | 4       | 4       |                  | 5,5       | 4                 | 5,5               | 5,5               | 5,5       | 5,5       | 5,5        | 7          |
|                      | .16     | .16     | .16     | .16     |                   | .16     | .16     | .16     | .16     | .16     | .16     |                  | .22       | .16               | .22               | .22               | .22       | .22       | .22        | .28        |
| <b>D1</b>            | 3,2     | 5       | 5       | 5       |                   | 5       | 5       | 5       | 5       | 5       | 5       | (6)              | 6         | 5                 | (6)               | 6                 | 6         | 6         | 6          | 7          |
|                      | .13     | .20     | .20     | .20     |                   | .20     | .20     | .20     | .20     | .20     | .20     | (.24)            | .24       | .20               | (.24)             | .24               | .24       | .24       | .24        | .28        |
| <b>D2</b>            | 8-11    | 15-19   | 15-19   | 15-19   |                   | 19-22   | 19-22   | 19-22   | 19-22   | 19-22   | 19-22   |                  | 26-30     | 19-22             | 26-30             | 26-30             | 26-30     | 26-30     | 26-30      | 22-25      |
|                      | .31-.43 | .59-.75 | .59-.75 | .59-.75 |                   | .75-.87 | .75-.87 | .75-.87 | .75-.87 | .75-.87 | .75-.87 |                  | 1.02-1.18 | .75-.87           | 1.02-1.18         | 1.02-1.18         | 1.02-1.18 | 1.02-1.18 | 1.02-1.18  | .87-.98    |
| <b>E</b>             | -       | 36      | 36      | 36      | (48)              | 48      | 48      | 48      | 48      | 48      | 48      | (68)             | 68        | 48                | (68)              | 68                | 68        | 68        | 68         | 104        |
|                      | -       | 1.42    | 1.42    | 1.42    | (1.89)            | 1.89    | 1.89    | 1.89    | 1.89    | 1.89    | 1.89    | (2.68)           | 2.68      | 1.89              | (2.68)            | 2.68              | 2.68      | 2.68      | 2.68       | 4.09       |
| <b>M<sup>2</sup></b> | -       | 4,5     | 4,5     | 5,5     |                   | 5       | 5,5     | 7,5     | 7,5     | 7,5     | 7,5     |                  | 7,5       | 7,6               | 9,4               | 27,5              | 27,5      | 27,5      | 27,5       | 11,9 (32)  |
|                      | -       | .18     | .18     | .22     |                   | .20     | .22     | .30     | .30     | .30     | .30     |                  | .30       | .30               | .37               | 1.08              | 1.08      | 1.08      | 1.08       | .47 (1.26) |
| <b>M1</b>            | 1       | -       | -       | -       |                   | -       | -       | -       | -       | -       | -       |                  | -         | -                 | -                 | -                 | -         | -         | -          | -          |
|                      | .04     | -       | -       | -       |                   | -       | -       | -       | -       | -       | -       |                  | -         | -                 | -                 | -                 | -         | -         | -          | -          |

<sup>2</sup>M, additional length for mounting ERF only  
<sup>3</sup>Dimensions in ( ) for ERF mounting plate only

<sup>4</sup>Dimensions in ( ) for L800, L1200, L1600

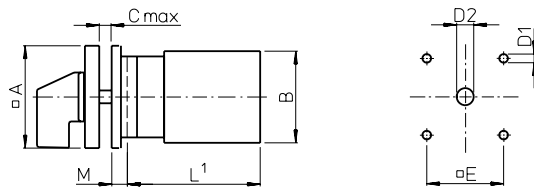
<sup>1</sup>see page 56

**Two or Four Hole Panel Mounting**



|           | CA10       | CA11       | CAD11 | CA20       | CA25       |
|-----------|------------|------------|-------|------------|------------|
| <b>A</b>  | 48<br>1.89 | 48<br>1.89 |       | 48<br>1.89 | 48<br>1.89 |
| <b>B</b>  | 43<br>1.69 | 45<br>1.77 |       | 46<br>1.81 | 46<br>1.81 |
| <b>C</b>  | 4<br>.16   | 4<br>.16   |       | 4<br>.16   | 4<br>.16   |
| <b>D1</b> | 5<br>.20   | 5<br>.20   |       | 5<br>.20   | 5<br>.20   |
| <b>E</b>  | 30<br>1.17 | 30<br>1.17 |       | 30<br>1.17 | 30<br>1.17 |

**EG  
EGF**

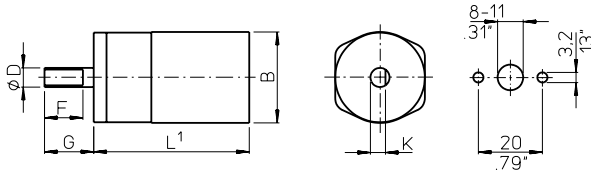


|               | CA10             | CA11             | CAD11 | CA20             | CA25             | C26                | C32                | C42                | CA40                 | CA50               | CA63               | C80                | C125               | C200-4  |
|---------------|------------------|------------------|-------|------------------|------------------|--------------------|--------------------|--------------------|----------------------|--------------------|--------------------|--------------------|--------------------|---------|
|               |                  |                  |       |                  |                  |                    |                    |                    |                      |                    |                    |                    | L switches         | Size S2 |
| <b>A</b>      | 64<br>2.52       | 64<br>2.52       |       | 64<br>2.52       | 64<br>2.52       | 88<br>3.46         | 88<br>3.46         | 88<br>3.46         | 88<br>3.46           | 88<br>3.46         | 88<br>3.46         | 130<br>5.12        | 130<br>5.12        |         |
| <b>B</b>      | 43<br>1.69       | 45<br>1.77       |       | 46<br>1.81       | 46<br>1.81       | 58<br>2.28         | 60<br>2.36         | 66<br>2.60         | 55,5x64<br>2.19x2.52 | 84<br>3.30         | 84<br>3.30         | 84<br>3.30         | 88<br>3.46         |         |
| <b>C</b>      | 4<br>.16         | 4<br>.16         |       | 4<br>.16         | 4<br>.16         | 5.5<br>.22         | 5.5<br>.22         | 5.5<br>.22         | 5.5<br>.22           | 5.5<br>.22         | 5.5<br>.22         | 7<br>.28           | 7<br>.28           |         |
| <b>D1</b>     | 5<br>.20         | 5<br>.20         |       | 5<br>.20         | 5<br>.20         | 6<br>.24           | 6<br>.24           | 6<br>.24           | 6<br>.24             | 6<br>.24           | 6<br>.24           | 7<br>.28           | 7<br>.28           |         |
| <b>EG D2</b>  | 10-22<br>.39-.87 | 10-22<br>.39-.87 |       | 10-22<br>.39-.87 | 10-22<br>.39-.87 | 13-30<br>.51-1.18  | 13-30<br>.51-1.18  | 13-30<br>.51-1.18  | 13-30<br>.51-1.18    | 13-30<br>.51-1.18  | 13-30<br>.51-1.18  | 15,5-25<br>.61-.98 | 15,5-25<br>.61-.98 |         |
| <b>EGF D2</b> | 19-22<br>.75-.87 | 19-22<br>.75-.87 |       | 19-22<br>.75-.87 | 19-22<br>.75-.87 | 26-30<br>1.02-1.18 | 26-30<br>1.02-1.18 | 26-30<br>1.02-1.18 | 26-30<br>1.02-1.18   | 26-30<br>1.02-1.18 | 26-30<br>1.02-1.18 | 22-25<br>.87-.98   | 22-25<br>.87-.98   |         |
| <b>E</b>      | 48<br>1.89       | 48<br>1.89       |       | 48<br>1.89       | 48<br>1.89       | 68<br>2.68         | 68<br>2.68         | 68<br>2.68         | 68<br>2.68           | 68<br>2.68         | 68<br>2.68         | 104<br>4.09        | 104<br>4.09        |         |
| <b>M</b>      | 6,7<br>.26       | 6,7<br>.26       |       | 6,7<br>.26       | 6,7<br>.26       | 0,5<br>.02         | 0,5<br>.02         | 0,5<br>.02         | 0,5<br>.02           | 0,5<br>.02         | 0,5<br>.02         | 2<br>.08           | 2<br>.08           |         |

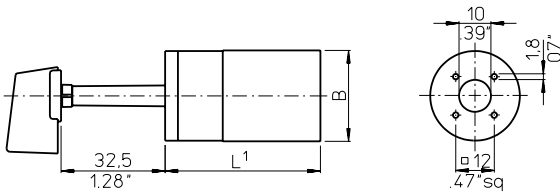
<sup>1</sup>see page 56

**Four Hole Panel Mounting or Mosaic Mounting**

**E9  
E91**



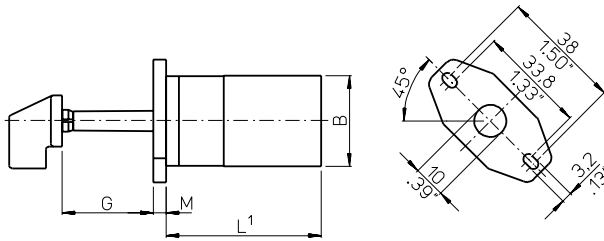
**E92**



CA4  
CA4  
CAD4-1  
29,5  
1.16

**B**

**E93  
E94**

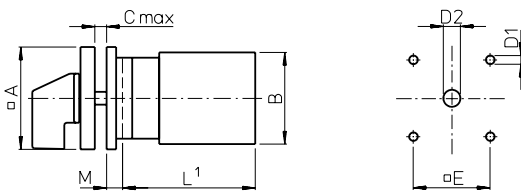


CA4  
CA4-1  
CAD4-1

|          | <b>E9</b>   | <b>E91</b>  | <b>E92</b>   | <b>E93</b>   | <b>E94</b>   |
|----------|-------------|-------------|--------------|--------------|--------------|
| <b>D</b> | 6<br>.24    | 6,35<br>.25 | -            | -            | -            |
| <b>F</b> | 12<br>.47   | 12,8<br>.50 | -            | -            | -            |
| <b>G</b> | 15,4<br>.61 | 17,4<br>.69 | 32,5<br>1.28 | 28,5<br>1.12 | 32,5<br>1.28 |
| <b>K</b> | 4,7<br>.19  | 5,5<br>.22  | -            | -            | -            |
| <b>M</b> | -           | -           | -            | 4<br>.16     | -            |

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**KN1  
KD1  
KN2**

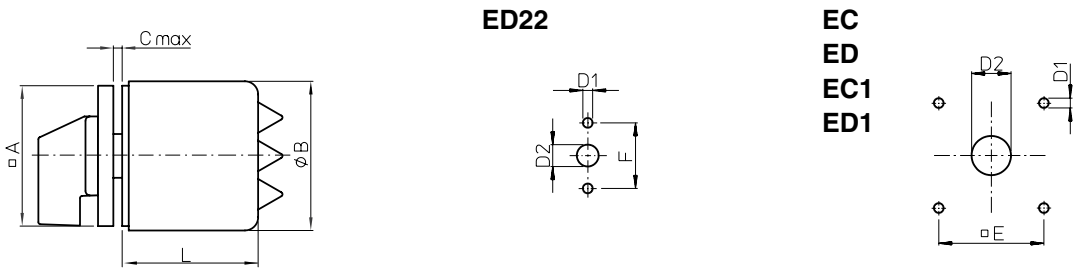


| <b>KN2</b> | CA10<br>CA11<br>CAD11<br>CAD12 | CA20            | CA25            |
|------------|--------------------------------|-----------------|-----------------|
| <b>A</b>   | 48<br>1.89                     | 48<br>1.89      | 48<br>1.89      |
| <b>B</b>   | 43<br>1.69                     | 45<br>1.77      | 46<br>1.81      |
| <b>C</b>   | 4<br>.16                       | 4<br>.16        | 4<br>.16        |
| <b>D1</b>  | 5<br>.20                       | 5<br>.20        | 5<br>.20        |
| <b>D2</b>  | 8-19<br>.31-.75                | 8-19<br>.31-.75 | 8-19<br>.31-.75 |
| <b>E</b>   | 36<br>1.42                     | 36<br>1.42      | 36<br>1.42      |
| <b>M</b>   | 5,2<br>.20                     | 5,2<br>.20      | 5,2<br>.20      |

| <b>KN1<br/>KD1</b> | CA10<br>CA11<br>CAD11<br>CAD12 | CA20             | CA25             | CA10B<br>CA11B<br>CA20B | CA25B            | C26              | C32              | C42              | CA40<br>CA50<br>CA63 |
|--------------------|--------------------------------|------------------|------------------|-------------------------|------------------|------------------|------------------|------------------|----------------------|
| <b>A</b>           | 64<br>2.52                     | 64<br>2.52       | 64<br>2.52       | 64<br>2.52              | 64<br>2.52       | 64<br>2.52       | 64<br>2.52       | 64<br>2.52       | 64<br>2.52           |
| <b>B</b>           | 43<br>1.69                     | 45<br>1.77       | 46<br>1.81       | 56<br>2.20              | 56<br>2.20       | 58<br>2.28       | 60<br>2.36       | 66<br>2.60       | 55,5x64<br>2.19x2.52 |
| <b>C</b>           | 4<br>.16                       | 4<br>.16         | 4<br>.16         | 4<br>.16                | 4<br>.16         | 4<br>.16         | 4<br>.16         | 4<br>.16         | 4<br>.16             |
| <b>D1</b>          | 5<br>.20                       | 5<br>.20         | 5<br>.20         | 5<br>.20                | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20             |
| <b>D2</b>          | 10-22<br>.39-.87               | 10-22<br>.39-.87 | 10-22<br>.39-.87 | 10-22<br>.39-.87        | 10-22<br>.39-.87 | 10-22<br>.39-.87 | 10-22<br>.39-.87 | 10-22<br>.39-.87 | 10-22<br>.39-.87     |
| <b>E</b>           | 48<br>1.89                     | 48<br>1.89       | 48<br>1.89       | 48<br>1.89              | 48<br>1.89       | 48<br>1.89       | 48<br>1.89       | 48<br>1.89       | 48<br>1.89           |
| <b>M</b>           | 4,7<br>.19                     | 4,7<br>.19       | 4,7<br>.19       | 7<br>.28                | 7<br>.28         | 7<br>.28         | 7<br>.28         | 7<br>.28         | 7<br>.28             |

<sup>1</sup>see page 56

**Two or Four Hole Panel Mounting**

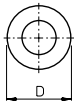


|          | CA10             | CAD11            | CA11             | CA20             | CA25             | CA10B            | CA20B            | CA11B            | CA25B            | C26              |                  |                  |                  |                  |                  |                  |                  |                  |
|----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|          | EC               | ED               | ED22             | EC               | ED               | ED22             | EC               | ED               | ED22             | EC               | ED               | ED22             | EC               | ED               | ED22             | EC               | ED               | ED22             |
| A        | 48<br>1.89       | 48<br>1.89       | 48<br>1.89       | 48<br>1.89       | 64<br>2.52       | 48<br>1.89       | 64<br>2.52       | 48<br>1.89       | 64<br>2.52       | 64<br>2.52       | 64<br>2.52       | 64<br>2.52       | 64<br>2.52       | 64<br>2.52       | 64<br>2.52       | 64<br>2.52       | 64<br>2.52       | 64<br>2.52       |
| B        | 50<br>1.97       | 74<br>2.91       | 50<br>1.97       | 74<br>2.91       | 68<br>2.68       | 74<br>2.91       | 68<br>2.68       | 74<br>2.91       | 88<br>3.46       | 74<br>2.91       | 88<br>3.46       | 74<br>2.91       | 88<br>3.46       | 74<br>2.91       | 88<br>3.46       | 74<br>2.91       | 88<br>3.46       | 74<br>2.91       |
| C        | 4<br>.16         | -                | 4<br>.16         | -                | 4<br>.16         | -                | 4<br>.16         | -                | 4<br>.16         | 4<br>.16         | 4<br>.16         | 4<br>.16         | 4<br>.16         | 4<br>.16         | 4<br>.16         | 4<br>.16         | 4<br>.16         | 4<br>.16         |
| D        | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         |
| D2       | 8-19<br>.31-.75  | -                | 8-19<br>.31-.75  | -                | 10-22<br>.39-.87 | -                | 10-22<br>.39-.87 | -                | 10-22<br>.39-.87 | 10-22<br>.39-.87 | 10-22<br>.39-.87 | 10-22<br>.39-.87 | 10-22<br>.39-.87 | 10-22<br>.39-.87 | 10-22<br>.39-.87 | 10-22<br>.39-.87 | 10-22<br>.39-.87 | 10-22<br>.39-.87 |
| D2       | 15-19<br>.43-.75 | 11-15<br>.43-.59 | 15-19<br>.43-.75 | 11-15<br>.43-.59 | 19-22<br>.75-.87 | 11-15<br>.43-.59 | 19-22<br>.75-.87 | 11-15<br>.43-.59 | 19-22<br>.75-.87 | 19-22<br>.75-.87 | 19-22<br>.75-.87 | 19-22<br>.75-.87 | 19-22<br>.75-.87 | 19-22<br>.75-.87 | 19-22<br>.75-.87 | 19-22<br>.75-.87 | 19-22<br>.75-.87 | 19-22<br>.75-.87 |
| E        | 36<br>1.42       | -                | 36<br>1.42       | -                | 48<br>1.89       | -                | 48<br>1.89       | -                | 48<br>1.89       | 48<br>1.89       | 48<br>1.89       | 48<br>1.89       | 48<br>1.89       | 48<br>1.89       | 48<br>1.89       | 48<br>1.89       | 48<br>1.89       | 48<br>1.89       |
| F        | -                | 30<br>1.17       | -                | 30<br>1.17       | -                | 30<br>1.17       | -                | 30<br>1.17       | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                |
| M        | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                |
| Stages L | 53,5<br>2.10     | 74,3<br>2.93     | 53,5<br>2.10     | 74,3<br>2.93     | -                | 74,3<br>2.93     | -                | 74,3<br>2.93     | -                | 73,7<br>2.90     | -                | 73,7<br>2.90     | -                | 73,7<br>2.90     | -                | 73,7<br>2.90     | -                | 73,7<br>2.90     |
| 2        | 53,5<br>2.10     | 74,3<br>2.93     | 53,5<br>2.10     | 74,3<br>2.93     | -                | 74,3<br>2.93     | -                | 74,3<br>2.93     | -                | 73,7<br>2.90     | -                | 73,7<br>2.90     | -                | 73,7<br>2.90     | -                | 73,7<br>2.90     | -                | 73,7<br>2.90     |
| 3        | 67,5<br>2.66     | 74,3<br>2.93     | 67,5<br>2.66     | 94,3<br>3.71     | -                | 74,3<br>2.93     | -                | 94,3<br>3.71     | -                | 73,7<br>2.90     | -                | 93,7<br>3.69     | -                | 93,7<br>3.69     | -                | 93,7<br>3.69     | -                | 93,7<br>3.69     |
| 4        | 67,5<br>2.66     | 74,3<br>2.93     | 81,5<br>3.21     | 94,3<br>3.71     | -                | 94,3<br>3.71     | -                | 94,3<br>3.71     | -                | 93,7<br>3.69     | -                | 93,7<br>3.69     | -                | 93,7<br>3.69     | -                | 93,7<br>3.69     | -                | 93,7<br>3.69     |
| 5        | 81,5<br>3.21     | 94,3<br>3.71     | -                | -                | 104<br>4.10      | -                | 104<br>4.10      | -                | -                | 93,7<br>3.69     | 104<br>4.10      | -                | 127<br>5         | -                | 114,5<br>4.50    | -                | -                | -                |
| 6        | 81,5<br>3.21     | 94,3<br>3.71     | -                | -                | -                | -                | -                | 104<br>4.10      | -                | 127<br>5         | -                | 139,5<br>5.47    | -                | 127<br>5         | -                | -                | -                | -                |
| 7        | -                | -                | -                | -                | -                | -                | -                | 127<br>5         | -                | 139,5<br>5.47    | -                | 152<br>5.98      | -                | 139,5<br>5.47    | -                | -                | -                | -                |
| 8        | -                | -                | -                | -                | -                | -                | -                | 127<br>5         | -                | 152<br>5.98      | -                | 164,5<br>6.48    | -                | 152<br>5.98      | -                | -                | -                | -                |
| 9        | -                | -                | -                | -                | -                | -                | -                | 139,5<br>5.47    | -                | 164,5<br>6.48    | -                | 177<br>6.97      | -                | 164,5<br>6.48    | -                | -                | -                | -                |
| 10       | -                | -                | -                | -                | -                | -                | -                | 152<br>5.98      | -                | 177<br>6.97      | -                | -                | -                | 177<br>6.97      | -                | -                | -                | -                |
| 11       | -                | -                | -                | -                | -                | -                | -                | 152<br>5.98      | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                |
| 12       | -                | -                | -                | -                | -                | -                | -                | 164,5<br>6.48    | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                |

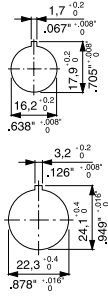
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Single Hole Mounting or Base Mounting

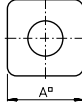
FS1...  
FT1...  
FT3...



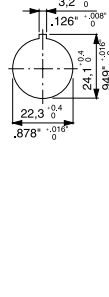
FS1...  
FS2...  
FS4...



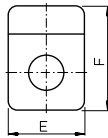
FH3...  
FS2...  
FT2...  
FT4...



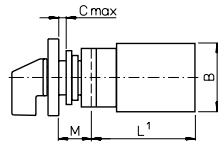
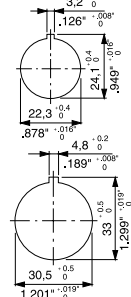
FH3...  
FH4...  
FT1...  
FT2...  
FT6...



FH4...  
FS4...  
FT6...



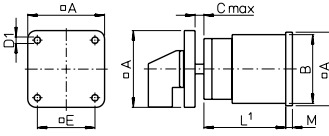
FT3...  
FT4...



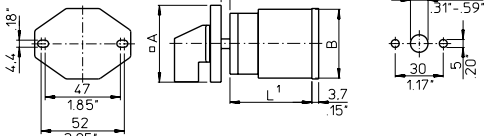
|        | CA4  | CA10 | CA11 | CA20 | CA25 |
|--------|------|------|------|------|------|
| A/E    | 30   | 48   | 48   | 48   | 48   |
| FH3... | 1.18 | 1.89 | 1.89 | 1.89 | 1.89 |
| FH4... | -    | 64   | 64   | 64   | 64   |
| B      | -    | 2.52 | 2.52 | 2.52 | 2.52 |
| C      | -    | 64   | 64   | 64   | 64   |
| D      | -    | 2.52 | 2.52 | 2.52 | 2.52 |
| F      | 28   | 43   | 45   | 46   | 46   |
| FH4... | 1.10 | 1.69 | 1.77 | 1.81 | 1.81 |
| M      | 5    | 6    | 6    | 6    | 6    |
| FH3... | .20  | .24  | .24  | .24  | .24  |
| FH4... | 29.5 | 39.4 | 39.4 | 39.4 | 39.4 |
|        | 1.16 | 1.55 | 1.55 | 1.55 | 1.55 |
|        | 39   | 59   | 59   | 59   | 59   |
|        | 1.54 | 2.32 | 2.32 | 2.32 | 2.32 |
|        | -    | 78.5 | 78.5 | 78.5 | 78.5 |
|        | -    | 3.09 | 3.09 | 3.09 | 3.09 |
|        | 12.5 | 18.2 | 18.2 | 18.2 | 18.2 |
|        | .49  | .72  | .72  | .72  | .72  |
|        | -    | 25.2 | 25.2 | 25.2 | 25.2 |
|        | -    | .99  | .99  | .99  | .99  |
|        | -    | 25.2 | 25.2 | 25.2 | 25.2 |
|        | -    | .99  | .99  | .99  | .99  |

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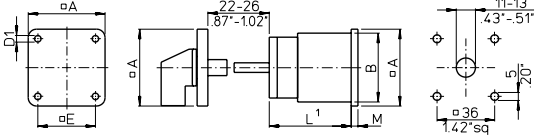
VE  
VE-V



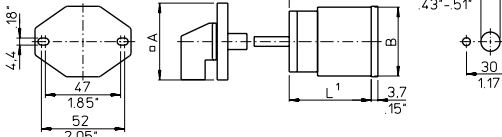
VE22  
VE22V



VF  
VF-V



VF22  
VF22V



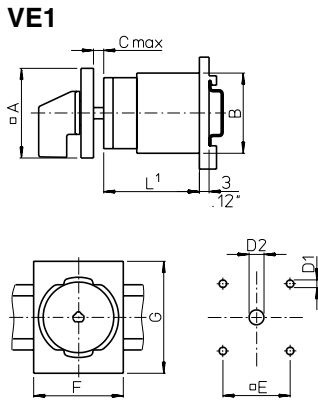
|   | CA10    | CA11    | CAD11       | CA20        | CA25 <sup>2</sup> | CA10B   | CA11B   | CA20B   | CA25B   | C26     | C32     | C42 <sup>2</sup> | C43      | CA40 <sup>2</sup> | CA50 <sup>2</sup> | CA63 <sup>2</sup> | C80      | C125     | C200-4   | L switches | L switches  |
|---|---------|---------|-------------|-------------|-------------------|---------|---------|---------|---------|---------|---------|------------------|----------|-------------------|-------------------|-------------------|----------|----------|----------|------------|-------------|
|   |         |         |             |             |                   |         |         |         |         |         |         |                  |          |                   |                   |                   |          |          |          | Size S2    | Size S3     |
| A | 48      | 48      | 48          | 48 (64)     | 64                | 64      | 64      | 64      | 64      | 64      | 64      | 64 (88)          | 88       | 64 (88)           | 88                | 88                | 88       | 88       | 88       | 88         | 128         |
| B | 1.89    | 1.89    | 1.89        | 1.89 (2.52) | 2.52              | 2.52    | 2.52    | 2.52    | 2.52    | 2.52    | 2.52    | 2.52 (3.46)      | 3.46     | 2.52 (3.46)       | 3.46              | 3.46              | 3.46     | 3.46     | 3.46     | 3.46       | 5.04        |
| C | 43      | 45      | 46          | 46          | 56                | 56      | 56      | 56      | 56      | 58      | 60      | 66               | 84       | 55,5x64           | 84                | 88                | 88       | 88       | 88       | 88         | 126         |
| D | 1.69    | 1.77    | 1.81        | 1.81        | 2.20              | 2.20    | 2.28    | 2.36    | 2.60    | 2.86    | 3.30    | 3.30             | 3.30     | 2.19x2.52         | 3.30              | 3.46              | 3.46     | 3.46     | 3.46     | 3.46       | 4.96        |
| E | 10.5    | 10.5    | 10.5        | 10.5        | 13.5              | 13.5    | 13.5    | 13.5    | 13.5    | 13.5    | 13.5    | 16               | 16       | 13.5              | 16                | 16                | 16       | 16       | 16       | 16         | 19.3        |
| F | .41     | .41     | .41         | .41         | .53               | .53     | .53     | .53     | .53     | .53     | .53     | .53              | .63      | .53               | .63               | .63               | .63      | .63      | .63      | .63        | .76         |
| M | 4.1     | 4.1     | 4.1         | 4.1         | 4.1               | 4.1     | 4.1     | 4.1     | 4.1     | 4.1     | 4.1     | 5.4              | 5.4      | 5.4               | 5.4               | 5.4               | 5.4      | 5.4      | 5.4      | 5.4        | 7           |
| N | .16     | .16     | .16         | .16         | .16               | .16     | .16     | .16     | .16     | .16     | .16     | .21              | .21      | .21               | .21               | .21               | .21      | .21      | .21      | .21        | .28         |
| O | 5       | 5       | 5           | 5           | 5                 | 5       | 5       | 5       | 5       | 5       | 5       | 5                | 6        | 5 (6)             | 6                 | 6                 | 6        | 6        | 6        | 6          | 7           |
| P | .20     | .20     | .20         | .20         | .20               | .20     | .20     | .20     | .20     | .20     | .20     | .20              | .24      | .20 (.24)         | .24               | .24               | .24      | .24      | .24      | .24        | .28         |
| Q | 8-19    | 8-19    | 8-19        | 8-19        | 10-22             | 10-22   | 10-22   | 10-22   | 10-22   | 10-22   | 10-22   | 10-22            | 13-30    | 10-22             | 13-30             | 13-30             | 13-30    | 13-30    | 13-30    | 13-30      | 15.5-25     |
| R | .31-.75 | .31-.75 | .31-.75     | .31-.75     | .39-.87           | .39-.87 | .39-.87 | .39-.87 | .39-.87 | .39-.87 | .39-.87 | .39-.87          | .51-1.18 | .39-.87           | .51-1.18          | .51-1.18          | .51-1.18 | .51-1.18 | .51-1.18 | .51-1.18   | .61-.98     |
| S | 36      | 36      | 36 (48)     | 48          | 48                | 48      | 48      | 48      | 48      | 48      | 48      | 48 (68)          | 68       | 48 (68)           | 68                | 68                | 68       | 68       | 68       | 68         | 104         |
| T | 1.42    | 1.42    | 1.42 (1.89) | 1.89        | 1.89              | 1.89    | 1.89    | 1.89    | 1.89    | 1.89    | 1.89    | 1.89 (2.68)      | 2.68     | 1.89 (2.68)       | 2.68              | 2.68              | 2.68     | 2.68     | 2.68     | 2.68       | 4.09        |
| U | 2.2     | 2.2     | 3.2         | 2.5         | 2.5               | 5       | 5       | 5       | 5       | 5       | 5       | 7                | 7        | 5.1               | 8.9               | 8.9               | 8.9      | 8.9      | 8.9      | 27         | 11.4 (31.9) |
| V | .09     | .09     | .13         | .10         | .10               | .20     | .20     | .20     | .20     | .20     | .20     | .20              | .28      | .21               | .35               | .35               | .35      | .35      | .35      | 1.06       | .45 (1.25)  |

<sup>2</sup>Dimensions in ( ) for revertive mounting plate

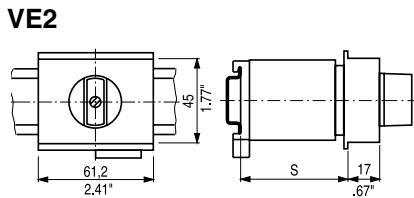
<sup>3</sup>Dimensions in ( ) for L800, L1200, L1600

<sup>1</sup>see page 56

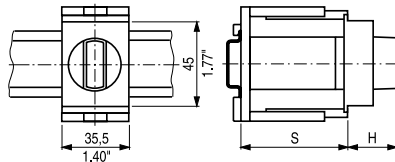
**Base Mounting**



|           | CA10<br>CA11<br>CAD12 | CA20            | CA25            | CA10B<br>CA11B<br>CA20B | CA25B            | C26              | C32              | C42              | CA40<br>CA50<br>CA63 |
|-----------|-----------------------|-----------------|-----------------|-------------------------|------------------|------------------|------------------|------------------|----------------------|
| <b>A</b>  | 48<br>1.89            | 48<br>1.89      | 48<br>1.89      | 64<br>2.52              | 64<br>2.52       | 64<br>2.52       | 64<br>2.52       | 64<br>2.52       | 64<br>2.52           |
| <b>B</b>  | 43<br>1.69            | 45<br>1.77      | 46<br>1.81      | 56<br>2.20              | 56<br>2.20       | 58<br>2.28       | 60<br>2.36       | 66<br>2.60       | 55,5x64<br>2.19x2.52 |
| <b>C</b>  | 10,5<br>.41           | 10,5<br>.41     | 10,5<br>.41     | 13,5<br>.53             | 13,5<br>.53      | 13,5<br>.53      | 13,5<br>.53      | 13,5<br>.53      | 13,5<br>.53          |
| <b>D1</b> | 5<br>.20              | 5<br>.20        | 5<br>.20        | 5<br>.20                | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20         | 5<br>.20             |
| <b>D2</b> | 8-15<br>.31-.59       | 8-15<br>.31-.59 | 8-15<br>.31-.59 | 10-15<br>.39-.59        | 10-15<br>.39-.59 | 10-15<br>.39-.59 | 10-15<br>.39-.59 | 10-15<br>.39-.59 | 10-15<br>.39-.59     |
| <b>E</b>  | 36<br>1.42            | 36<br>1.42      | 36<br>1.42      | 48<br>1.89              | 48<br>1.89       | 48<br>1.89       | 48<br>1.89       | 48<br>1.89       | 48<br>1.89           |
| <b>F</b>  | 48<br>1.89            | 48<br>1.89      | 48<br>1.89      | 70<br>2.76              | 70<br>2.76       | 70<br>2.76       | 70<br>2.76       | 70<br>2.76       | 70<br>2.76           |
| <b>G</b>  | 60<br>2.36            | 60<br>2.36      | 60<br>2.36      | 60<br>2.36              | 60<br>2.36       | 60<br>2.36       | 60<br>2.36       | 60<br>2.36       | 60<br>2.36           |

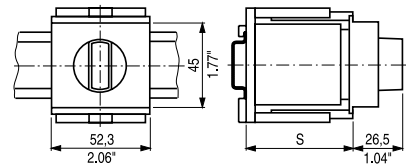


**VE21 (for CA4, CA4-1 and CAD4-1)**



**VE21 (for CA10-CA20)**

**VE21V (for CA25)**



|                       | <b>VE2</b>             |                |      |                    | <b>S<sub>min.</sub></b> | <b>H</b>     | <b>VE21, VE21V</b> |                       |      |      |               |
|-----------------------|------------------------|----------------|------|--------------------|-------------------------|--------------|--------------------|-----------------------|------|------|---------------|
|                       | CA10<br>CAD11<br>CAD12 | CA11<br>CA20   | CA25 | Max. no. of stages |                         |              | CA4<br>CAD4-1      | CA10<br>CAD11<br>CA11 | CA20 | CA25 | No. of stages |
| <b>S</b> = 46<br>1.81 | 3                      | 1              | -    |                    | 44<br>1.73              | 21<br>.83    | 1/2                | 1/2                   | 1/2  | 1/2  | 1             |
| <b>S</b> = 50<br>1.97 | -                      | -              | 1    |                    | 46<br>1.81              | 26,5<br>1.04 | 3                  | 3                     | -    | -    | 2             |
| <b>S</b> = 61<br>2.40 | 4                      | 2              | 2    |                    | 54<br>2.13              | 26,5<br>1.04 | 4                  | -                     | -    | -    | -             |
| <b>S</b> = 67<br>2.64 | 5                      | -              | -    |                    | 56<br>2.20              | -            | -                  | -                     | 3    | 3    | -             |
| <b>S</b> = 69<br>2.70 | -                      | 3 <sup>2</sup> | 3    |                    | 60<br>2.36              | -            | -                  | -                     | -    | -    | 3             |
|                       |                        |                |      |                    | 62<br>2.44              | 26,5<br>1.04 | 5                  | -                     | -    | -    | -             |
|                       |                        |                |      |                    | 66<br>2.60              | -            | -                  | 4/5                   | -    | -    | -             |
|                       |                        |                |      |                    | 68<br>2.68              | -            | -                  | -                     | 4    | -    | -             |
|                       |                        |                |      |                    | 70<br>2.76              | 26,5<br>1.04 | 6                  | -                     | -    | 4    | -             |
|                       |                        |                |      |                    | 74<br>2.91              | -            | -                  | 6                     | -    | -    | 4             |

<sup>1</sup>see page 56    <sup>2</sup>not available for switch type CA20

**Dimensions** mm  
inch

**Wall Mounting, Face plates and Additional Length**

**UE1  
UE2  
UE3**

**Lamp**

$L_{UE} = L^1 - 6,3$

|          | CA10 | CA11 | CAD11 | CAD12 | CA20 | CA25 |
|----------|------|------|-------|-------|------|------|
| <b>B</b> | 43   | 45   | 46    | 1.69  | 1.77 | 1.81 |

**Face plates for mounting E, EF, ER, ERF, EG, EGF, KN1, KD1, KN2, EC, EC1, ED, ED1, VE, VE1, VF**

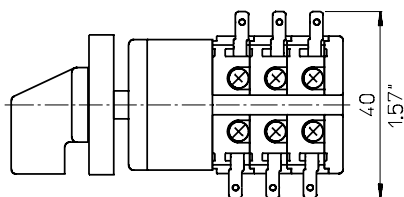
| Size       | A           | C           |
|------------|-------------|-------------|
| <b>S00</b> | 30<br>1.18  | 5,5<br>.22  |
| <b>S0</b>  | 48<br>1.89  | 6,7<br>.26  |
| <b>S1</b>  | 64<br>2.52  | 7,4<br>.29  |
| <b>S2</b>  | 88<br>3.46  | 8,5<br>.33  |
| <b>S3</b>  | 130<br>5.12 | 11,5<br>.45 |

| Size       | A          | B          | C          |
|------------|------------|------------|------------|
| <b>S00</b> | 30<br>1.18 | 39<br>1.54 | 5,5<br>.22 |
| <b>S0</b>  | 48<br>1.89 | 59<br>2.32 | 6,7<br>.26 |
| <b>S1</b>  | 64<br>2.52 | 78<br>3.07 | 7,4<br>.29 |

**Additional length for amendment (page 6)**

| Amendment |                                             | CA10       | CA11        | CA20        | CA25        | C26         | C32         | C42         | CA40        | CA50        | CA63 |
|-----------|---------------------------------------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|
|           |                                             | CAD11      | CAD12       | CAD12       | CAD12       |             |             |             |             |             |      |
| <b>B</b>  | S0 switches with latching mechanism size S1 | 5,4<br>.21 | -           | -           | -           | -           | -           | -           | -           | -           | -    |
| <b>C</b>  | S1 switches with latching mechanism size S2 | -          | -           | 9,2<br>.36  | 9,2<br>.36  | 9,2<br>.36  | 9,2<br>.36  | -           | 8,2<br>.32  | -           | -    |
| <b>S</b>  | with snap action                            | -          | 17,3<br>.68 | 12,2<br>.48 | 12,2<br>.48 | 12,2<br>.48 | 12,2<br>.48 | 12,2<br>.48 | 12,2<br>.48 | 12,2<br>.48 | -    |

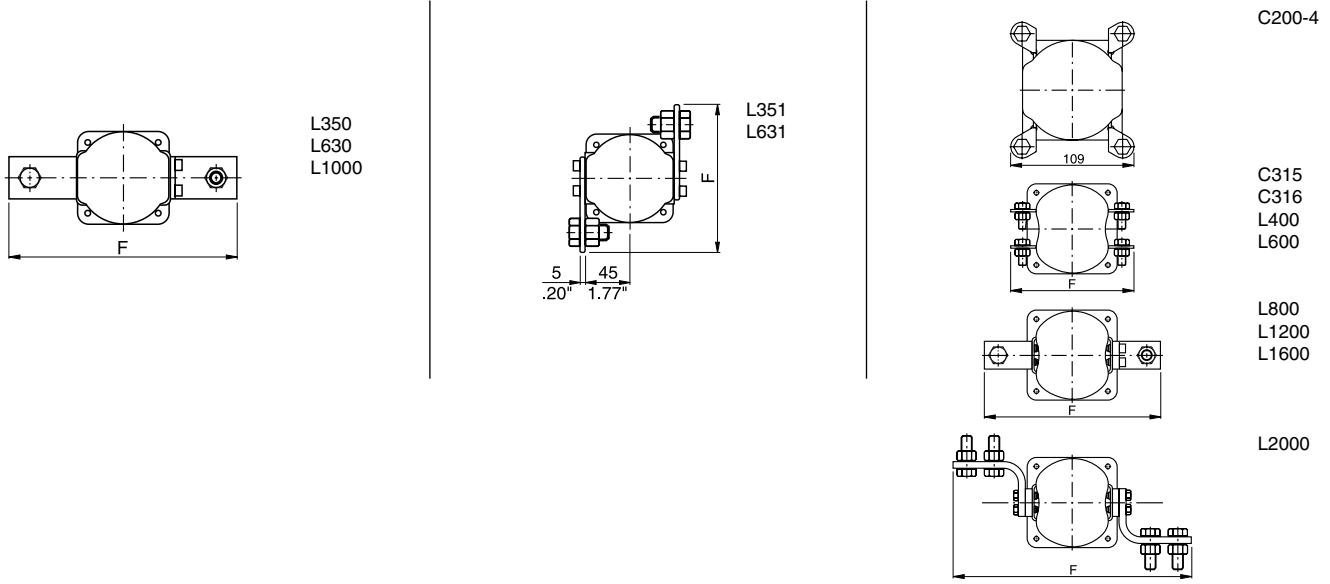
**Quick connects for switches CA4-4**



<sup>1</sup>see page 56

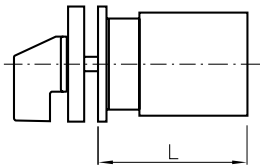
**Additional Length**

**Terminal lugs for switches C200-4-, C315, C316 and L switches**



| F    | L350 | L630 | L1000 | L351  | L631  | C315 |      |       | L800  | L1600 |
|------|------|------|-------|-------|-------|------|------|-------|-------|-------|
|      | C316 | L400 | L600  | L1200 | L2000 |      |      |       |       |       |
| 190  | 220  | 230  | 138   | 148   | 150   | 180  | 208  | 256   | 326   |       |
| 7.48 | 8.66 | 9.06 | 5.43  | 5.83  | 5.91  | 7.09 | 8.19 | 10.08 | 12.83 |       |

**Length L**

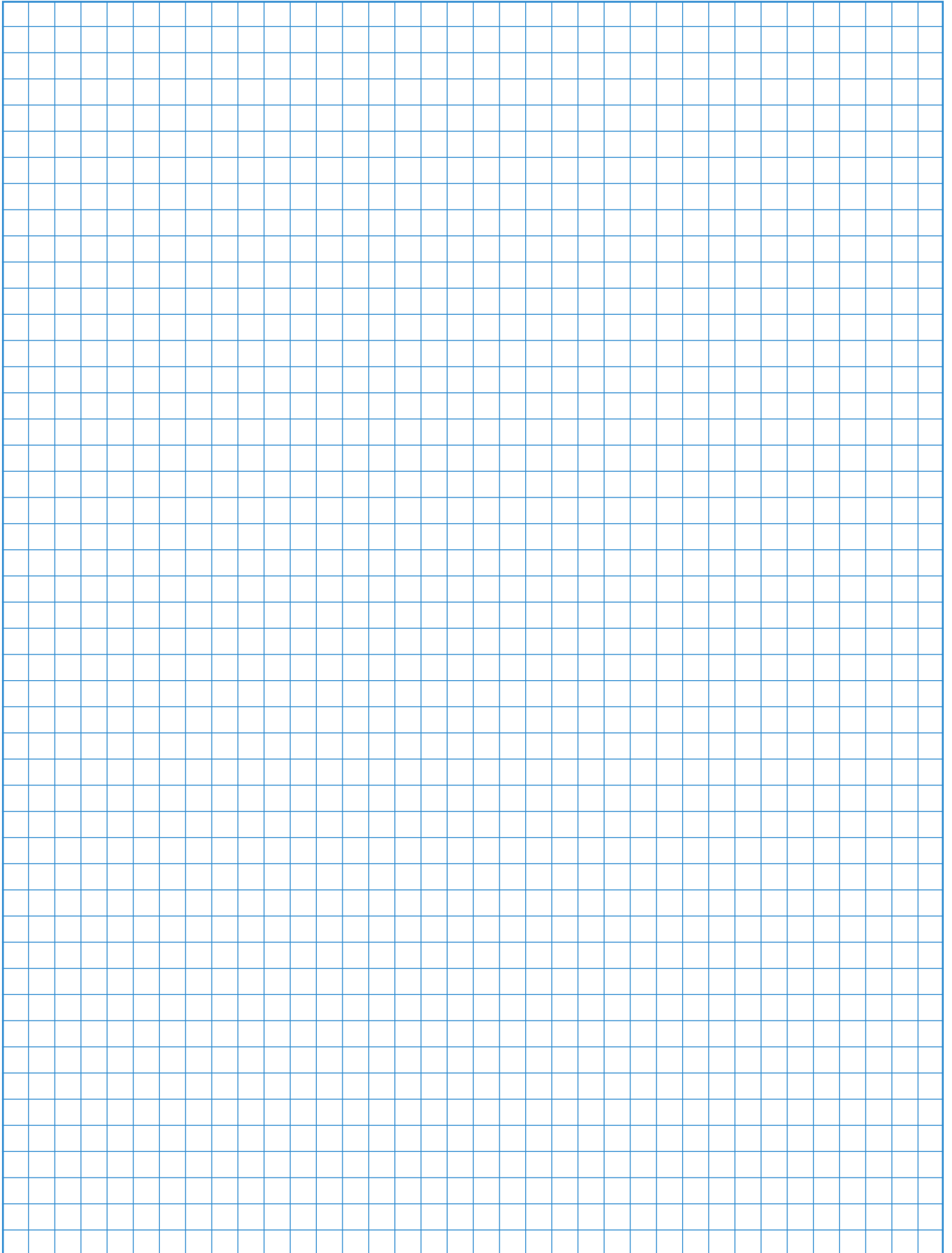


| Stages    | CA4        | CA10          |               |               |             |               |               |               |               |               |               |                | CA40           | C125          | C315           |                |                |
|-----------|------------|---------------|---------------|---------------|-------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|---------------|----------------|----------------|----------------|
|           | CA4-1      | CAD11         | CA11          | CA20          | CA25        | CA10B         | CA11B         | CA20B         | CA25B         | C26           | C32           | C42            | C43            | CA50          | C80            | L switches     | L switches     |
|           | CAD4-1     | CAD12         | CA11          | CA20          | CA25        | CA10B         | CA11B         | CA20B         | CA25B         | C26           | C32           | C42            | C43            | CA63          | C80            | Size S2        | Size S3        |
| <b>1</b>  | 30<br>1.18 | 33,5<br>1.32  | 36,7<br>1.44  | 37,7<br>1.48  | 39<br>1.51  | 38,9<br>1.53  | 42,1<br>1.66  | 43,1<br>1.70  | 44,4<br>1.75  | 42<br>1.65    | 46,8<br>1.84  | 50,8<br>2.00   | 59<br>2.32     | 42,5<br>1.67  | 61,5<br>2.42   | 67,5<br>2.66   | 78,6<br>3.09   |
| <b>2</b>  | 38<br>1.50 | 43<br>1.69    | 49,4<br>1.94  | 50,4<br>1.98  | 53<br>2.09  | 48,4<br>1.91  | 54,8<br>2.16  | 55,8<br>2.20  | 58,4<br>2.30  | 54,7<br>2.15  | 64,3<br>2.51  | 72,3<br>2.85   | 80,5<br>3.17   | 55,2<br>2.17  | 88,0<br>3.46   | 100<br>3.94    | 117,2<br>4.61  |
| <b>3</b>  | 46<br>1.81 | 52,5<br>2.07  | 62,1<br>2.44  | 63,1<br>2.48  | 67<br>2.64  | 57,9<br>2.28  | 67,5<br>2.66  | 68,5<br>2.70  | 72,4<br>2.85  | 67,4<br>2.65  | 81,8<br>3.22  | 93,8<br>3.69   | 102<br>4.02    | 67,9<br>2.67  | 114,5<br>4.51  | 132,5<br>5.22  | 155,8<br>6.13  |
| <b>4</b>  | 54<br>2.13 | 62<br>2.44    | 74,8<br>2.94  | 75,8<br>2.98  | 81<br>3.19  | 67,4<br>2.65  | 80,2<br>3.16  | 81,2<br>3.20  | 86,4<br>3.40  | 80,1<br>3.15  | 99,3<br>3.91  | 115,3<br>4.54  | 123,5<br>4.86  | 80,6<br>3.17  | 141<br>5.55    | 165<br>6.50    | 194,4<br>7.65  |
| <b>5</b>  | 62<br>2.44 | 71,5<br>2.81  | 87,5<br>3.44  | 88,5<br>3.48  | 95<br>3.74  | 76,9<br>3.03  | 92,9<br>3.66  | 93,9<br>3.70  | 100,4<br>3.95 | 92,8<br>3.65  | 116,8<br>4.60 | 136,8<br>5.39  | 145<br>5.71    | 93,3<br>3.67  | 167,5<br>6.59  | 197,5<br>7.78  | 233<br>9.17    |
| <b>6</b>  | 70<br>2.76 | 81<br>3.19    | 100,2<br>3.94 | 101,2<br>3.98 | 109<br>4.29 | 86,4<br>3.40  | 105,6<br>4.16 | 106,6<br>4.20 | 114,4<br>4.50 | 105,5<br>4.15 | 134,3<br>5.29 | 158,3<br>6.23  | 166,5<br>6.56  | 106<br>4.17   | 194<br>7.64    | 230<br>9.06    | 271,6<br>10.69 |
| <b>7</b>  | 78<br>3.07 | 90,5<br>3.56  | 112,9<br>4.44 | 113,9<br>4.48 | 123<br>4.84 | 95,9<br>3.78  | 118,3<br>4.66 | 119,3<br>4.70 | 128,4<br>5.05 | 118,2<br>4.65 | 151,8<br>5.98 | 179,8<br>7.08  | 188<br>7.40    | 118,7<br>4.67 | 220,5<br>8.68  | 262,5<br>10.33 | 310,2<br>12.21 |
| <b>8</b>  | 86<br>3.39 | 100<br>3.94   | 125,6<br>4.94 | 126,6<br>4.98 | 137<br>5.39 | 105,4<br>4.15 | 131<br>5.16   | 132<br>5.20   | 142,4<br>5.60 | 130,9<br>5.15 | 169,3<br>6.67 | 201,3<br>7.93  | 209,5<br>8.25  | 131,4<br>5.17 | 247<br>9.72    | 295<br>11.61   | 348,8<br>13.73 |
| <b>9</b>  | 94<br>3.70 | 109,5<br>4.31 | 138,3<br>5.44 | 139,3<br>5.48 | 151<br>5.94 | 114,9<br>4.52 | 143,7<br>5.66 | 144,7<br>5.70 | 156,4<br>6.15 | 143,6<br>5.65 | 186,8<br>7.36 | 222,8<br>8.77  | 231<br>9.09    | 144,1<br>5.67 | 273,5<br>10.77 | 327,5<br>12.89 | 387,4<br>15.25 |
| <b>10</b> | -          | 119<br>4.68   | 151<br>5.94   | 152<br>5.98   | 165<br>6.50 | 124,4<br>4.90 | 156,4<br>6.16 | 157,4<br>6.20 | 170,4<br>6.70 | 156,3<br>6.15 | 204,3<br>8.04 | 244,3<br>9.62  | 252,2<br>9.54  | 156,8<br>6.17 | 300<br>11.81   | 360<br>14.17   | 426<br>16.77   |
| <b>11</b> | -          | 128,5<br>5.06 | 163,7<br>6.44 | 164,7<br>6.48 | 179<br>7.05 | 133,9<br>5.27 | 169,1<br>6.66 | 170,1<br>6.70 | 184,4<br>7.25 | 169<br>6.65   | 221,8<br>8.73 | 265,8<br>10.46 | 274<br>10.79   | 169,5<br>6.67 | 326,5<br>12.85 | 392,5<br>15.45 | 464,6<br>18.29 |
| <b>12</b> | -          | 138<br>5.43   | 176,4<br>6.94 | 177,4<br>6.98 | 193<br>7.60 | 143,4<br>5.65 | 181,8<br>7.16 | 182,8<br>7.20 | 198,4<br>7.80 | 181,7<br>7.15 | 239,3<br>9.42 | 287,3<br>11.31 | 295,5<br>11.63 | 182,2<br>7.17 | 353<br>13.90   | 425<br>16.73   | 503,2<br>19.81 |

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**Notes:**



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# The Range of “Blue Line” Switchgear

Technical literature covering the following products is available on request.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Catalog<br>Number |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <b>Main Switches and Main Switches with Emergency Function 16 A-315 A<br/>Maintenance Switches 20 A-315 A<br/>Switch Disconnectors 20 A-315 A</b><br>According to IEC 60947-3, EN 60947-3, VDE 0660 part 107, IEC 60204, EN 60204 and VDE 0113                                                                                                                                                                                                                                                                                                                                                 | <b>500</b>        |
| <b>C, CA and CAD Switches 10 A-315 A and L Switches 350 A-2400 A</b><br>C, CA and CAD switches are designed for universal application. They are recommended for instrument, isolator, double-throw and motor control.<br>L switches are designed for load and off-load applications. They are used to switch resistive or low inductive loads.                                                                                                                                                                                                                                                 | <b>100</b>        |
| <b>Optional Extras and Enclosures</b><br>The complete product line, a large number of optional extras is available, including door interlocks, push-pull devices, cylinder and padlock attachments, control and indicator devices, AC motor drives, as well as enclosures, both insulated and metal.                                                                                                                                                                                                                                                                                           | <b>101</b>        |
| <b>A and AD Switches 6 A-25 A</b><br>A and AD switches have 4 contacts in each switching stage. These switches provide an extensive range of switch functions and require a minimum mounting depth. Up to 24 switching positions are possible, with availability of 48 contacts per 12 stage switch column.                                                                                                                                                                                                                                                                                    | <b>110</b>        |
| <b>CG, CH and CHR Switches 10 A-25 A</b><br>Ultra compact CG, CH and CHR switches are ideally suited for control and instrumentation applications. Switch terminals are “finger-proof” and conveniently accessible for wiring and are delivered open. All CG4 switches offer specially designed gold plated contacts or H-bridges with “cross-wire” contact systems, which facilitates their use in electronic circuitry and chemically aggressive environments.                                                                                                                               | <b>120</b>        |
| <b>DH, DHR, DK and DKR Switches 6 A-16 A</b><br>DH, DHR, DK and DKR switches incorporate unique corrosion resistant contacts that permit operation on system voltage as low as 1 V. They have fully enclosed and protected contacts which can be operated either by rotary and/or lateral handle movement. D switches are used in calibration and semiconductor circuits. They are also used for relay and contactor control.                                                                                                                                                                  | <b>130</b>        |
| <b>X Switches 200 A-630 A</b><br>X switches can be applied for load, tap and gang switching duties. They incorporate 6 contacts in each switching stage. Their compact design provides a minimum length dimension for mounting purposes.                                                                                                                                                                                                                                                                                                                                                       | <b>140</b>        |
| <b>KG Switches 20 A-315 A and KH and KHR Switches 16 A-80 A</b><br>KG, KH and KHR switches are excellent circuit interruptors. They have high through fault and fault making capacities and are especially designed for use as isolators and safety switches for machine tools, distribution panels and switchboards. KG ON/OFF switches offer unusually high dimensioned air and creepage distances between terminals which are designed for time saving “straight-line” wiring. ON/OFF switches are available with up to 8 poles and double-throw switches are available with up to 4 poles. | <b>150</b>        |
| <b>Push Buttons and Pilot Lights, 22,5 mm Ø</b><br>A complete range of state-of-the-art push buttons and pilot lights represent an ideal combination of functional security and economical efficiency in a modular design.                                                                                                                                                                                                                                                                                                                                                                     | <b>302</b>        |

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