



Kraus & Naimer

BLUE LINE switchgear

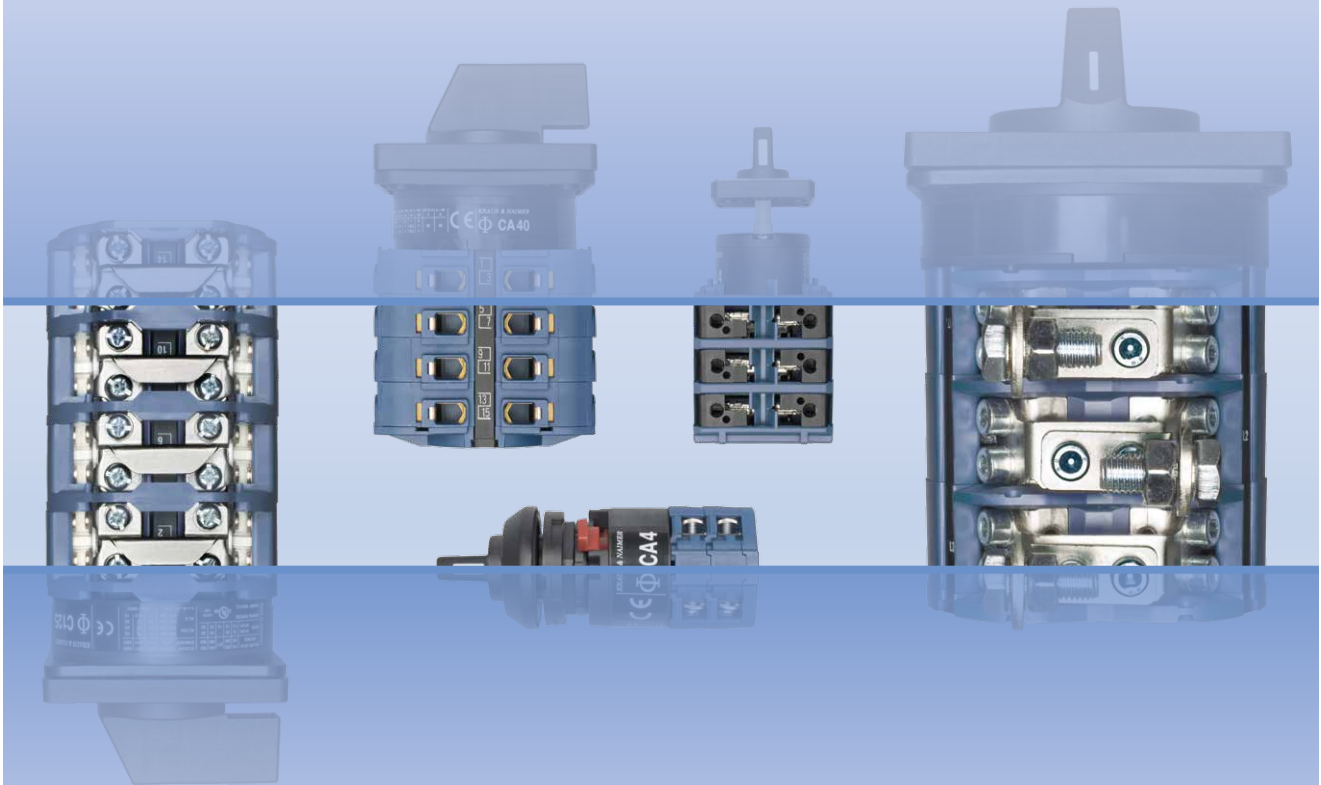
since 1907

Catalog 100

03/2017

Control and Load Switches for higher Capacities

CAD, CA and C type up to 315 A
L type up to 2400 A



Kraus & Naimer

The development of the Blue Line rotary switch, contactor 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 throughout 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

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

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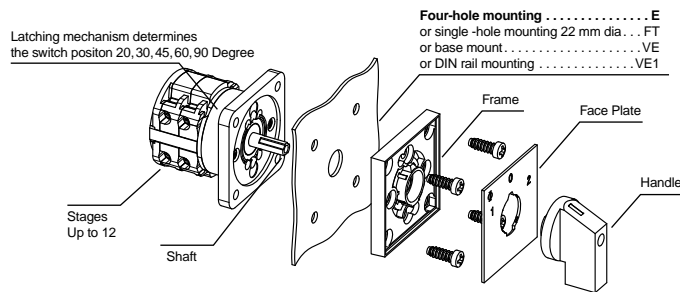
Construction Data

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 BGV A3. 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.

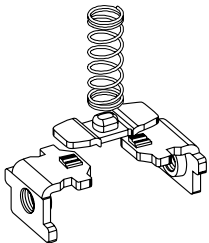
If a positive manual operation or a higher DC rating is required, many of these switches can be fitted with a snap action latching mechanism - suffix „S“ - to the switch type.

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.



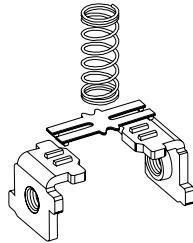
Special Contact Systems

CA4/CA4-1



High contact reliability by multiple cross-point contacts, electronic compatible, CA4 with 1 μ and CA4-1 with 35 μ 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	20°, 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

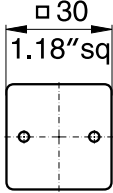
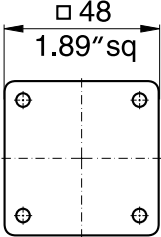
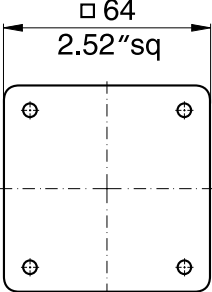
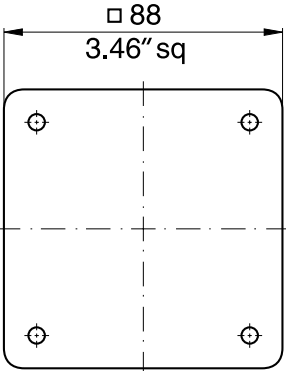
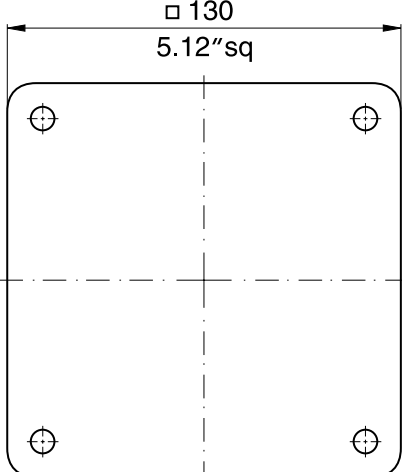


L Switches



Above illustrates the standard terminal positions.

Nominal Ratings

Switch Size	Type	According to IEC 60947-3/VDE 0660 part 107				
		Insulation Voltage ¹ U_i V	Thermal Current I_u/I_{th} A	Motor Rating 3 x 380 V-440 V AC-23 AC-3		
				kW	kW	
S00		CA4	440	10	3	2,2
		CA4-1	440	10	3	2,2
		CAD4-1	440	5	-	-
S0		CA10	690	20	7,5	5,5
		CA11	690	20	7,5	5,5
		CA20	690	25	11	7,5
		CA25	690	32	15	11
		CAD11	600	6	-	-
		CAD12	600	6	-	-
S1		CA10B	690	20	7,5	5,5
		CA11B	690	20	7,5	5,5
		CA20B	690	25	11	7,5
		CA25B	690	32	15	11
		C26	690	32	15	11
		C32	690	50	22	15
		C42	690	63	30	18,5
		CA40	690	40	18,5	15
		CA50	690	50	22	18,5
		CA63	690	63	30	18,5
S2		C43	690	63	30	18,5
		C80	690	115	45	30
		C125	690	150	75	37
		C200-4	690	200	75	37
		L350	690	350	90	37
		L351	690	350	90	37
		L630	690	630 ²	90	37
		L631	690	630 ²	90	37
		L1000	690	1000 ²	90	37
	S3		C315	690	315	132
		C316³	1000	315	132	55
		L400	690	500	132	55
		L600	690	800 ²	132	55
		L800	690	1100 ²	132	55
		L1200	690	1450 ²	132	55
		L1600	690	1900 ²	132	55
	L2000	690	2400 ²	132	55	

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

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

A202-600

VE

Type of Switch

Extending the switch type coding the following combinations will define:

Amendment	Definition	For switch types
-1	with gold contacts ¹	CA4-1, CA4N-1, CA10-1, CA11-1, CA10B-1, CA11B-1, CAD4-1
-4	with quick connects	CA4-4
B ²	S0 switches with latching mechanism size S1	CA10B, CA11B, CA25B, CAD11B, CAD12B
C ²	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 ²	with snap action	CA10S, CA20S, CA25S with 60° or 90° switching C26S, C32S, C42S, CA40S, CA50S, CA63S 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**.

Modification of Switches

The part number for switch function and options may be modified in cases where items are required other than standard. The modification may involve the face plate inscription, color combination of face plate and handle, type of face plate and handle or the optional extra.

Switch Size	Escutcheon Plate Frame	Handle	Escutcheon Plate Backing	Escutcheon Plate Lettering	Dash Number
S00, S0, S1, S2, S3	black	black	brushed alu	black	-600
S00, S0, S1, S2, S3	black	black	black	mat silver	-700

Other colour combinations available on request.

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

How to order

Modification of Switches

Color combinations of face plate and handle

The standard switch consists of a transparent face plate with brushed aluminum backing and black inscription. The face plate frame is black as well as the handle. Page 6 shows further color combinations of face plate and handle which are available. The appropriate dash number must be substituted in the switch function coding to specify other color combinations as required.

Example: The complete coding for switch type CA10 with a 3 pole ON/OFF switch function, black handle and face plate frame with brushed aluminum backing and black inscription which reads 0-1 is as follows: **CA10 A202-600 E**.

The following is a list of special programs for face plate and handle combinations. They may be obtained by specifying any one of the following two (2) digit dash numbers as a part of the overall dash number. It is still necessary to prefix these two digit numbers with the first digit which represents the color combination desired.

Special programs for face plate and handle combinations

- **.00** = without face plate, without handle
- **.01** = without face plate
- **.02** = without handle
- **.03** = with square face plate without lettering
- **.04** = with rectangular face plate without lettering
- **.05** = with square face plate without lettering and without handle
- **.06** = with rectangular face plate without lettering and without handle
- **.07** = standard face plate, without lettering on rectangular section
- **.08** = with F-handle
- **.09** = with P-handle
- **.10** = face plate frame and fixation ring only (if using switches with single hole mounting: - **.16**)
- **.11** = without face plate, but with handle bearing plate
- **.12** = with yellow face plate backing and red handle
- **.14** = with B-handle
- **.16** = face plate frame and fixation ring only, if using switches with single hole mounting
- **.17** = standard face plate and rectangular add-on face plate, if using switches with single hole mounting FT2

Example: The complete coding for switch type CA10 with a 3 pole ON/OFF switch function with black face plate frame, square face plate without lettering, brushed aluminum plate backing and black handle reads as follows: **CA10 A202-603 E**.

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.

Ordering of Special Switches and Face Plates

When ordering special switches and face plates it is advisable to use our order form, as illustrated. The customer's requirements are shown in blue as an example.

For technical reasons, it may not be possible to follow the sequence of contacts requested by the customer. The final contact development which is sent with every switch will show the customer's original terminal markings.






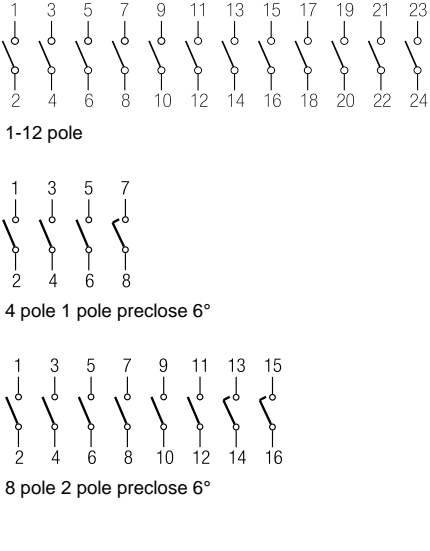






























Order forms are available on request.

		<table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>7</td><td>9</td><td>11</td><td>13</td><td>15</td><td>17</td><td>19</td><td>21</td><td>23</td><td>25</td><td>27</td><td>29</td><td>31</td><td>33</td><td>35</td><td>37</td><td>39</td><td>41</td><td>43</td><td>45</td><td>47</td> </tr> <tr> <td>R</td><td>A</td><td>S</td><td>K</td><td>S</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																								1	2	3	4	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	R	A	S	K	S																						SWITCH : CA20 TYPE/VERSION : FACE PLATE : G001 HANDLE : MOUNTING : VE OPTION : MOD/02-1A 0 60 EXTRAS : DATE : SIGNED :
1	2	3	4	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47																																																					
R	A	S	K	S																																																																										
POSITIONS																																																																														
O																																																																														
H																																																																														
A																																																																														

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

ON/OFF Switches with 60° Switching

[Dimensions p. 56](#)

1 pole 2 pole 3 pole 3 pole with red handle 4 pole 4 pole 1 pole preclose 6° ¹ 5 pole 6 pole 7 pole 8 pole 8 pole 2 pole preclose 6° ¹ 9 pole 10 pole 11 pole 12 pole						A200-600 A201-600 A202-600 A202-626 A203-600 WAA653 WAA341 A342-600 A343-600 A344-600 WAA654 WAA345 A346-600 WAA347 A348-600	1 1 2 2 2 2 3 4 4 4 4 5 5 6 6	 <p>1-12 pole</p> <p>4 pole 1 pole preclose 6°</p> <p>8 pole 2 pole preclose 6°</p>
1 pole 2 pole 3 pole 4 pole 4 pole 1 pole preclose 6° ¹ 5 pole 6 pole 7 pole 8 pole 8 pole 2 pole preclose 6° ¹ 9 pole 10 pole 11 pole 12 pole						A200-620 A201-620 A202-620 A203-620 WAA653 WAA341 A342-620 A343-620 A344-620 WAA654 WAA345 A346-620 WAA347 A348-620	1 1 2 2 2 3 4 4 4 4 5 6 6	
1 pole 2 pole 3 pole 4 pole 4 pole 1 pole preclose 6° ¹ 5 pole 6 pole						A200-621 A201-621 A202-621 A203-621 WAA653 WAA341 A342-621	1 2 2 2 3 3	
1 pole 2 pole 3 pole 4 pole 4 pole 1 pole preclose 6° ¹ 5 pole 6 pole						A200-622 A201-622 A202-622 A203-622 WAA653 WAA341 A342-622	1 1 2 2 2 3 3	
1 pole 2 pole 3 pole 4 pole 4 pole 1 pole preclose 6° ¹ 5 pole 6 pole						A200-623 A201-623 A202-623 A203-623 WAA653 WAA341 A342-623	1 1 2 2 2 3 3	
1 pole 2 pole 3 pole 4 pole 4 pole 1 pole preclose 6° ¹ 5 pole 6 pole						A200-624 A201-624 A202-624 A203-624 WAA653 WAA341 A342-624	1 1 2 2 2 3 3	
1 pole 2 pole 3 pole 4 pole 4 pole 1 pole preclose 6° ¹ 5 pole 6 pole						A200-625 A201-625 A202-625 A203-625 WAA653 WAA341 A342-625	1 1 2 2 2 3 3	






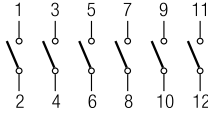





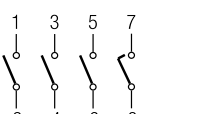
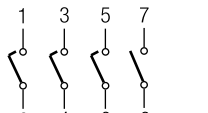






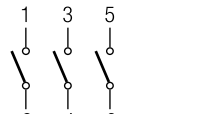


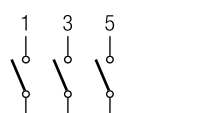
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¹for use in a three phase four-wire system with switched neutral

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






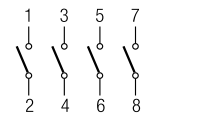





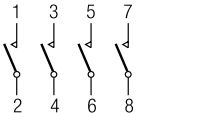





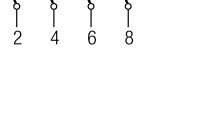
ON/OFF Switches with 90° Switching

[Dimensions p.56](#)

1 pole contacts 2 pole preclose 30° 3 pole 4 pole 4 pole 1 pole preclose 60° ¹ 4 pole 3 pole preclose 30° 5 pole contacts 6 pole preclose 30°						A290-600 A291-600 A292-600 A324-600 A293-600 WAA327 WAA325 A326-600	1 1 2 2 2 2 3 3	 1, 2, 3, 4, 5 and 6 pole
1 pole contacts 2 pole preclose 30° 3 pole 4 pole 4 pole 1 pole preclose 60° ¹ 4 pole 3 pole preclose 30° 5 pole contacts 6 pole preclose 30°						A290-620 A291-620 A292-620 A324-620 A293-620 WAA327 WAA325 A326-620	1 1 2 2 2 2 3 3	 4 pole 1 pole preclose 60°  4 pole 3 pole preclose 30°
3 pole 360° rotation	 					WAA208 WAA208	2 2	
3 pole for foot operation						CA40- CA63 WAA386	2	

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ON/OFF Switches with 30° Switching













































































1 pole 2 pole 3 pole 4 pole						WAA100 WAA101 WAA102 WAA103	1 1 2 2	 1-4 pole
1 pole with spring return 2 pole with spring return 3 pole with spring return 4 pole with spring return						A204-600 A205-600 WAA206 WAA207	1 1 2 2	 1-4 pole
1 pole with spring return 2 pole with spring return 3 pole with spring return 4 pole with spring return						A204-620 A205-620 WAA206 WAA207	1 1 2 2	

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

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
































Double-throw Switches without „OFF“ 60° Switching

[Dimensions p.56](#)






















































1 pole	 <p>F072</p>					A220-600	1		
2 pole						A221-600	2		
3 pole						A222-600	3		
4 pole						A223-600	4		
4 pole 1 pole preclose 6° ²						WAA673	4		4 pole 1 pole preclose 6°
5 pole						A369-600	5		
6 pole						A370-600	6		
7 pole						A371-600	7		
8 pole						A372-600	8		
8 pole 2 pole preclose 6° ²						WAA972	8		5 pole
9 pole						WAA373	9		
10 pole						WAA374	10		
11 pole					WAA375	11			
12 pole					WAA376	12			
									6 and 7 pole
									8 and 9 pole
									8 pole 2 pole preclose 6°
									10 and 11 pole
									12 pole

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

1 pole	 <p>F072</p>					A720-600	1		
2 pole						A721-600	2		
3 pole						A722-600	3		1-4 pole
4 pole						A723-600	4		
4 pole 1 pole preclose 6° ²						WAA973	4		4 pole 1 pole preclose 6°
1 pole with spring return	 <p>F026</p>					A795-600	1		1 pole with spring return

Double-throw Switches without „OFF“ 30° Switching

1 pole	 <p>F026</p>					WAA120	1		
2 pole						WAA121	2		
3 pole						WAA122	3		1-4 pole
4 pole						WAA123	4		
1 pole with spring return	 <p>F026</p>					A295-600	1		
2 pole with spring return						A296-600	2		
3 pole with spring return						WAA297	3		1-3 pole
1 pole with spring return	 <p>F153</p>					A295-620	1		
2 pole with spring return						A296-620	2		
3 pole with spring return						WAA297	3		

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

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

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

[Dimensions p.56](#)

1 pole 2 pole 3 pole 4 pole 4 pole 1 pole preclose 6° ³ 5 pole 6 pole 7 pole 8 pole 8 pole 2 pole preclose 6° ³						A210-600 A211-600 A212-600 A213-600 WAA913 A361-600 A362-600 WAA363 WAA364 WAA664	1 2 3 4 4 5 6 7 8 8	
1 pole 2 pole 3 pole 4 pole 4 pole 1 pole preclose 6° ³ 5 pole 6 pole 7 pole 8 pole 8 pole 2 pole preclose 6° ³						A210-620 A211-620 A212-620 A213-620 WAA913 A361-620 A362-620 WAA363 WAA364 WAA664	1 2 3 4 4 5 6 7 8 8	
1 pole 2 pole 3 pole						A210-621 A211-621 A212-621	1 2 3	
1 pole 2 pole 3 pole						A210-622 A211-622 A212-622	1 2 3	
1 pole 2 pole 3 pole						A210-623 A211-623 A212-623	1 2 3	
1 pole 2 pole 3 pole 4 pole 4 pole 1 pole preclose 6° ³						A210-624 A211-624 A212-624 A213-624 WAA913	1 2 3 4 4	

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

1 pole 2 pole 3 pole 4 pole 1 pole preclose 60°						A218-600 A219-600 WAA299 WAA294	1 2 3 4	
1 pole 2 pole 3 pole 4 pole 1 pole preclose 60°						A218-620 A219-620 WAA299 WAA294	1 2 3 4	

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

1 pole 2 pole 3 pole 4 pole 4 pole 1 pole preclose 6° ³						A710-600 A711-600 A712-600 A713-600 WAA963	1 2 3 4 4	
1 pole with spring return 2 pole to center						A714-600 A715-600	1 2	

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

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

Double-throw Switches with Spring Return to Center

[Dimensions p.56](#)

1 pole with spring return to center 2 pole 3 pole						A214-600	1	<p>1-3 pole</p>
						A215-600	2	
						A216-600	3	
1 pole 2 pole 3 pole						A214-620	1	
						A215-620	2	
						A216-620	3	
1 pole with spring return from left to center 2 pole 3 pole						A320-600	1	<p>1-3 pole</p>
						A321-600	2	
						A322-600	3	
1 pole 2 pole 3 pole						A320-621	1	
						A321-621	2	
						A322-621	3	

General Application Switches

1 pole 2 Gang 2 pole Switching sequence: 3 pole 0, A, A+B						A310-600	1	<p>1 pole 2 pole</p>	
						A312-600	2		
						WAA314	3		
1 pole 2 pole 3 pole						A310-620	1		<p>3 pole</p>
						A312-620	2		
						WAA314	3		
1 pole 3 Gang 2 pole Switching sequence: 3 pole 0, A, A+B, A+B+C						A311-600	2	<p>1 pole 2 pole</p>	
						WAA313	3		
						WAA315	5		
1 pole 2 pole 3 pole						A311-620	2		<p>3 pole</p>
						WAA313	3		
						WAA315	5		
1 pole 2 Gang 2 pole Series switching 3 pole Switching sequence: 0, A, B, A+B						WAA330	1	<p>1 pole 2 pole</p>	
						WAA331	2		
						WAA332	3		
1 pole 2 pole 3 pole						WAA330	1		<p>3 pole</p>
						WAA331	2		
						WAA332	3		
2 pole 2 Gang Series-parallel Switching						WAA339	2		
						WAA339	2		
Switching sequence: 0, A+B series, A, A+B parallel						WAA339	2		
						WAA339	2		

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


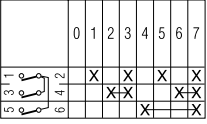



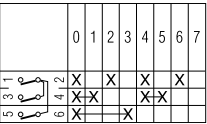



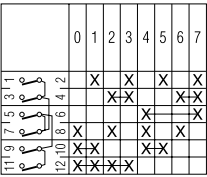



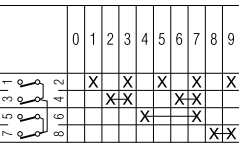



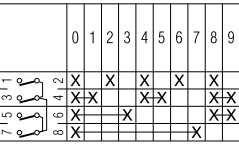



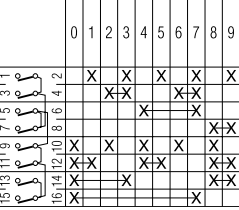



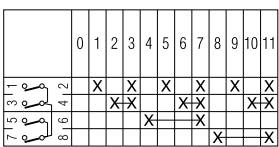



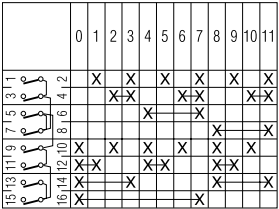
¹not available for switch type CA25 ²not available for switch type C315 ³available only up to switch type CA63

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

Coding Switches/Binary Code

[Dimensions p.56](#)


























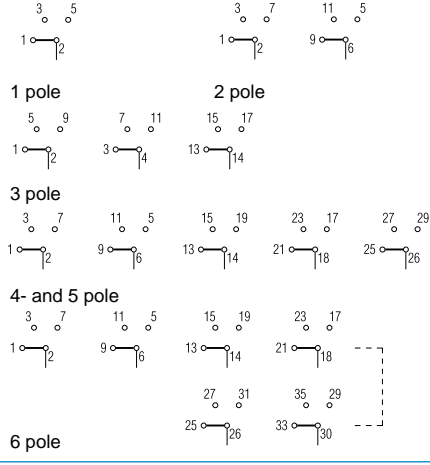

























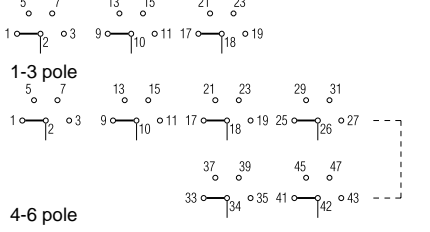





















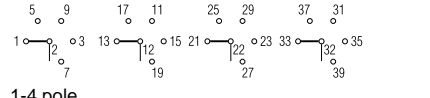

























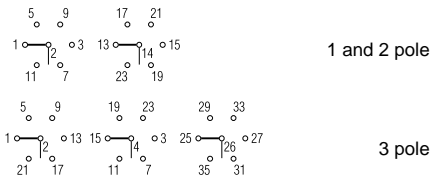





























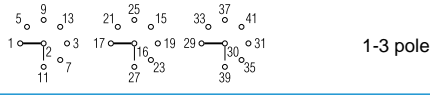

































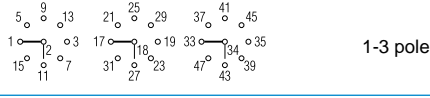




































































































































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0 - 7 360° rotation	 F322				A540-600	2	
0 - 7 complement 360° rotation	 F322				WAA541	2	
0 - 7 + complement 360° rotation	 F322				WAA542	3	
0 - 9	 F007				A550-600	2	
0 - 9 complement	 F007				WAA551	2	
0 - 9 + complement	 F007				WAA552	4	
0 - 11 360° rotation	 F009				A543-600	2	
0 - 11 + complement 360° rotation	 F009				WAA545	4	


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

Multi-step Switches without „OFF“

[Dimensions p.56](#)






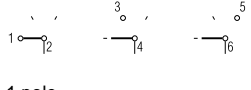




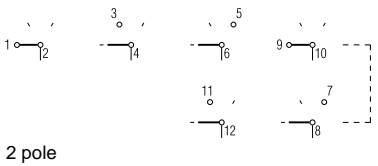





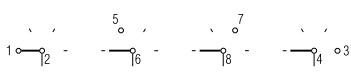




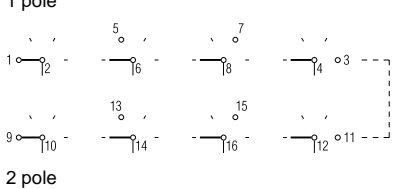
1 pole 3 Step 2 pole 3 pole 4 pole 5 pole 6 pole	 F076	     	     	     	     	A230-600 A250-600 A270-600 A476-600 WAA484 WAA489	2 3 5 6 8 9	
1 pole 4 Step 2 pole 3 pole 4 pole 5 pole 6 pole	 F077	     	     	     	     	A231-600 A251-600 A271-600 A477-600 WAA485 WAA490	2 4 6 8 10 12	
1 pole 5 Step 2 pole 3 pole 4 pole	 F078	    	    	    	    	A232-600 A252-600 WAA272 WAA478	3 5 8 10	
1 pole 6 Step 2 pole 3 pole	 F079	     	     	     	     	A233-600 WAA253 WAA273	3 6 9	
1 pole 7 Step 2 pole 3 pole	 F110	      	      	      	      	WAA234 WAA254 WAA274	4 7 11	
1 pole 8 Step 2 pole 3 pole	 F111	       	       	       	       	WAA235 WAA255 WAA275	4 8 12	
1 pole 9 Step	 F010	       	       	       	       	WAA236	5	
1 pole 10 Step	 F011	       	       	       	       	WAA237	5	
1 pole 11 Step	 F012	       	       	       	       	WAA238	6	
1 pole 12 Step 1 pole 360° rotation	 F013	       	       	       	       	WAA239 WAA639	6 6	

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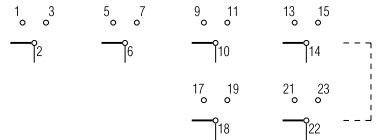


















































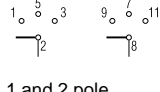











































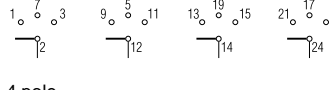




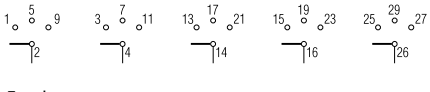
¹switch type C315 with  handle ²not available for switch type CA11B

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

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

1 pole 3 Step	 F076					A730-600	2	
2 pole						A750-600	3	
1 pole 4 Step	 F077					A731-600	2	
2 pole						A751-600	4	

Multi-step Switches with „OFF“

1 pole 2 Step	 F075					A240-600	1	
2 pole						A260-600	2	
3 pole						A280-600	3	
4 pole						WAA480	4	
5 pole						WAA486	5	
6 pole						WAA491	6	
1 pole	 F098					A240-620	1	1-6 pole
2 pole						A260-620	2	
3 pole						A280-620	3	
4 pole						WAA480	4	
5 pole						WAA486	5	
6 pole						WAA491	6	
1 pole 3 Step	 F109					A241-600	2	
2 pole						A261-600	3	
3 pole						A281-600	5	
4 pole						WAA481	6	
5 pole						WAA487	8	
1 pole	 F115					A241-620	2	
2 pole						A261-620	3	
3 pole						A281-620	5	
4 pole						WAA481	6	
5 pole						WAA487	8	
1 pole	 F289					A241-621	2	
2 pole						A261-621	3	
								

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

Multi-step Switches with „OFF“






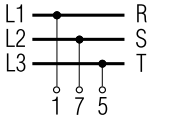











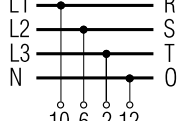






[Dimensions p. 56](#)

1 pole 4 Step 2 pole 3 pole 4 pole						A242-600	2	
						WAA262	4	
						WAA282	6	
						WAA482	8	
1 pole 2 pole 3 pole 4 pole						A242-620	2	1-4 pole
						WAA262	4	
						WAA282	6	
						WAA482	8	
1 pole 5 Step 2 pole 3 pole						A243-600	3	
						WAA263	5	
1 pole 2 pole 3 pole						A243-620	3	1-3 pole
						WAA263	5	
1 pole 6 Step 2 pole 3 pole						A244-600	3	
						WAA264	6	
1 pole 2 pole 3 pole						A244-620	3	1-3 pole
						WAA264	6	
1 pole 7 Step 2 pole						WAA245	4	
						WAA265	7	
1 pole 2 pole						WAA245	4	1 pole
						WAA265	7	
1 pole 8 Step						WAA246	4	
						WAA246	4	
1 pole 9 Step						WAA247	5	
						WAA247	5	
1 pole 10 Step						WAA248	5	
						WAA248	5	
1 pole 11 Step 1 pole 360° rotation						WAA249	6	
						WAA649	6	
1 pole 1 pole 360° rotation						WAA249	6	
						WAA649	6	

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






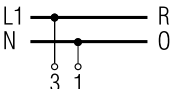






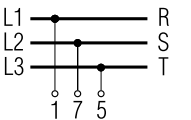































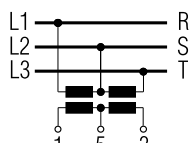

Voltmeter Switches without „OFF“

[Dimensions p.56](#)

3 phase 3 wire	 F792					A023-600	2	 
	 F793					A023-620	2	
3 phase 3 wire 3 phase to phase and phase to neutral	 F794					A025-600	3	 
	 F795					A025-620	3	

Voltmeter Switches with „OFF“






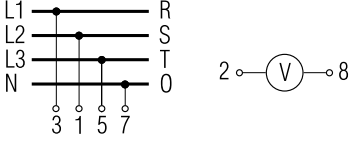

























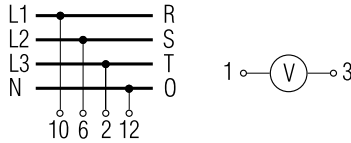






























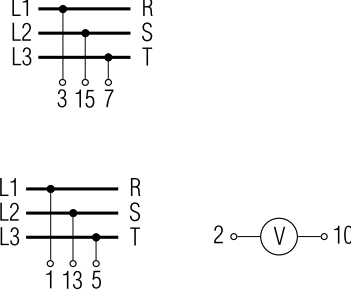















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2 pole 360° rotation	 F170-PRL					WAA002	1	 
3 phase 3 wire	 F775					A004-600	2	 
	 F776					A004-620	2	
	 F408-PRL					A004-621	2	
	 F777					A004-622	2	
	 F409-PRL					A004-623	2	
	 F778					A004-624	2	
	 F212-PRL					WAA011	2	 

Function	Escutch. Plate	Type/Handle				Code	Stages	Connection Diagram
		CA4	CA4-1	CA10- CAD4-1	CA10B- CA25 CAD..			

Voltmeter Switches with „OFF“

[Dimensions p.56](#)

3 phase to neutral	 F779					WAA005	2	
	 F780					WAA005	2	
	 F411-PRL					WAA005	2	
	 F412-PRL					WAA005	2	
	 F781					WAA005	2	
3 phase to phase and 3 phase to neutral	 F782					A007-600	3	
	 F783					A007-620	3	
	 F414-PRL					A007-621	3	
	 F784					A007-622	3	
	 F415-PRL					A007-623	3	
	 F785					A007-624	3	
2 separate 3 phase with center „OFF“	 F786					WAA008	4	
	 F787					WAA008	4	
	 F418-PRL					WAA008	4	
	 F788					WAA008	4	

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

Voltmeter Switches with „OFF“

[Dimensions p.56](#)

3 phase and 1 phase to neutral					WAA010	3	
	F789						
					WAA010	3	
	F790						
					WAA010	3	
	F419-PRL						
					WAA010	3	
	F719						

Ammeter Switches

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Single pole with one current transformer					WAA046	1	
	F058						
					WAA046	1	
	F208						
					WAA046	1	
	F340-PRL						
Single pole with 3 current transformers without „OFF“					A017-600	3	
	F181-PRL						
					A017-620	3	
	F719						
Single pole with 3 current transformers with „OFF“ 360° rotation					A048-600	3	
	F059						
					A048-620	3	
	F066						
					A048-621	3	
	F186						
					A048-622	3	
F318-PRL							
				A048-623	3		
	F172-PRL						

¹available only up to switch type CA25B

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](#)

Single pole with 2 current transformers (3 readings)	<p>F172-PRL</p>					A021-600	2	
	<p>F066</p>					A021-620	2	
Single pole with 4 current transformers	<p>F060</p>					WAA036	4	
	<p>F327-PRL</p>					WAA036	4	
2 pole 2 current transformers	<p>F057</p>					WAA037	3	
	<p>F064</p>					WAA037	3	
	<p>F320-PRL</p>					WAA037	3	
2 pole 3 current transformers	<p>F181-PRL</p>					WAA019	5	
	<p>F719</p>					WAA019	5	
	<p>F059</p>					A038-600	5	
	<p>F059</p>					A038-620	5	
	<p>F172-PRL</p>					A038-621	5	
	<p>F318-PRL</p>					A038-621	5	
2 pole 4 current transformers	<p>F060</p>					WAA039	6	
	<p>F327-PRL</p>					WAA039	6	

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¹available only up to switch type CA25B

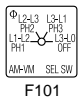




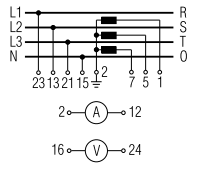





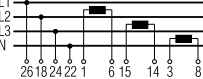
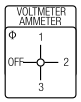




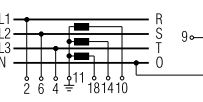
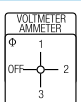





Switch Function and Configuration

C, CA, CAD Switches

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






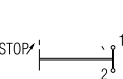











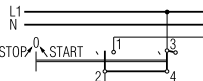





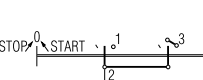





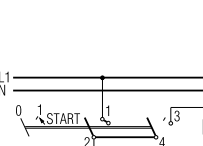










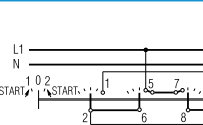





Volt-ammeter Switches

Dimensions p.56

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

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Control Switches

Stop switch	 F022					WAA174	1	
Start switch	 F023					A175-600	1	
Stop start switch single pole	 F024					A176-600	1	
Stop start switch 2 pole	 F024					WAA183	2	
Stop start switch with spring return from start to run	 F119					A178-600	1	
	 F130					A178-620	1	
Stop start switch with spring return to run for 2 units	 F121					WAA177	2	
	 F132					WAA177	2	

¹available 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				

Dimensions p. 56

Control Switches

Stop start switch with spring return to run with contactor interlock contactors for 2 units					WAA182	2	
	F121						
					WAA182	2	
	F132						
Motor voltage control switch					WAA150	2	
	F144-PRL						

Control Switches with electrically isolated contacts

Stop start switch single pole					A789-600	1	
	F024						
Stop start switch with spring return to 1					A791-600	1	
	F119						
Stop start switch with spring return to run for 2 units					WAA790	2	
	F121						
Contactor control with spring return to „OFF“					WAA179	2	
	F025						
					WAA179	2	
	F034						
Circuit breaker control					WAA537	2	
	F143-PRL						

Control and Alarm Switches¹

With slip clutch and without indicator device					WAA190	5 ³	
Without indicator device					WAA192	2	

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

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

Motor Reversing Switches

Dimensions p.56

2 pole						A400-600	2	
						A400-620	2	
						A400-621	2	
3 pole						A401-600	3	
						A401-620	3	
						A401-621	3	
3 pole with spring return to „OFF“						A228-600	3	
						A228-620	3	
3 pole for use with reversing contactors						WAA402	4	

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Motor Control Switches

2 speed 2 winding 0-A-B Υ or Δ						WAA451	3	
						WAA451	3	
3 speed 2 winding 0-A Δ -B Υ -A $\Upsilon\Upsilon$						WAA457	6	
						WAA457	6	

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

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

Motor Control Switches

Dimensions p. 56

2 speed single winding						A440-600	4	
						A440-620	4	
2 speed single winding without „OFF“						A466-600	4	
2 speed single winding with center „OFF“						A441-600	4	
						A441-620	4	
2 speed single winding reversing						A442-600	6	
						A442-620	6	
2 speed single winding for use with contactors						WAA444	5	
						WAA444	5	
2 speed reversing for 2 way operation with slip clutch for „OFF“ load use						WAA468	10 ¹	
						WAA468	10 ¹	

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¹incl. slip clutch

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

Star-delta Switches

Dimensions p. 56

OFF-star-delta						A410-600	4	
						A410-620	4	
Reversing						WAA413	5	
With auxiliary contact closed in „OFF“ position						WAA416	5	
For use with reversing contactors						A419-600	4	

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Start and Run Switches

Split-phase start						A425-600	2	
						A425-620	2	
Split-phase start reversing						WAA426	3	
						WAA426	3	
Split-phase reversing auto cutout of start field winding						WAA622	3	

¹not available for switch type CA25

Function/Type	Escutch. Plate	Handle	Code	Stages	Double Latching	Connection Diagram	L350 L630 L1000 L1250	L351 L631 L1001 L1251
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ON/OFF Switches with 60° Switching

[Dimensions p. 56](#)

1 pole 2 pole 3 pole 4 pole	L350			WAA200 WAA201 WAA202 WAA203	1 2 3 4			1-4 pole
1 pole 2 pole 3 pole 4 pole	L351			WAA200 WAA201 WAA202 WAA203	1 2 3 4			1-4 pole
1 pole 2 pole 3 pole 4 pole	L400			WAA200 WAA201 WAA202 WAA203	2 2 4 4			1-4 pole
3 pole with lugs suitable for protective cover				WAA302	3			A302
1 pole 2 pole 3 pole 4 pole				WAA200 WAA201 WAA202 WAA203	2 2 4 4			A302
1 pole 2 pole 3 pole 4 pole	L600			WAA200 WAA201 WAA202 WAA203	3 3 6 6			1-4 pole
1 pole 2 pole 3 pole 4 pole	L630			WAA200 WAA201 WAA202 WAA203	2 4 6 8	● ●		1-4 pole
1 pole 2 pole 3 pole 4 pole	L631			WAA200 WAA201 WAA202 WAA203	2 4 6 8	● ●		1-4 pole
1 pole 2 pole 3 pole 4 pole	L800			WAA200 WAA201 WAA202 WAA203	2 4 6 8			1-4 pole
1 pole 2 pole 3 pole 4 pole	L1000			WAA200 WAA201 WAA202 WAA203	3 6 9 12	● ● ●		1-4 pole
1 pole 2 pole 3 pole	L1200			WAA200 WAA201 WAA202	3 6 9			1-3 pole
1 pole 2 pole 3 pole	L1600			WAA200 WAA201 WAA202	4 8 12			1-3 pole
1 pole 2 pole	L2000			WAA200 WAA201	5 10	●		1 und 2 pole

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Function/Type	Escutch. Plate	Handle	Code	Stages	Double Latching	Connection Diagram	L350 L630 L1000 L1250	L351 L631 L1001 L1251
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ON/OFF Switches with 90° Switching

[Dimensions p. 56](#)

1 pole 2 pole 3 pole 4 pole	L350 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	1 2 3 4			
1 pole 2 pole 3 pole 4 pole	L351 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	1 2 3 4			
1 pole 2 pole 3 pole 4 pole	L400 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	2 2 4 4			
3 pole	with lugs suitable for protective cover			WAA307	3			
3 pole	360° rotation			WAA208	4			
1 pole 2 pole 3 pole 4 pole	L600 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	3 3 6 6			
1 pole 2 pole 3 pole 4 pole	L630 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	2 4 6 8			
1 pole 2 pole 3 pole 4 pole	L631 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	2 4 6 8			
1 pole 2 pole 3 pole 4 pole	L800 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	2 4 6 8	● ● ●		
1 pole 2 pole 3 pole 4 pole	L1000 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	3 6 9 12	● ● ●		
1 pole 2 pole 3 pole	L1200			WAA290 WAA291 WAA292	3 6 9	● ● ●		1-3 pole
1 pole 2 pole 3 pole	L1600			WAA290 WAA291 WAA292	4 8 12	● ● ●		1-3 pole
1 pole 2 pole	L2000			WAA290 WAA291	5 10	● ●		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 L630 L1000 L1250	L351 L631 L1001 L1251
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Double-throw Switches without „OFF“ 60° Switching [Dimensions p. 56](#)

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





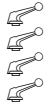
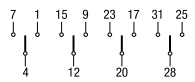
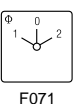
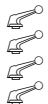
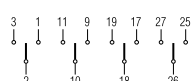
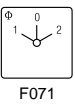
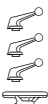
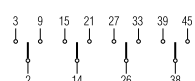
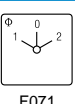


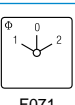
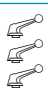
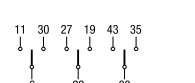
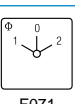
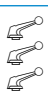

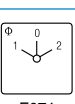
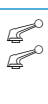
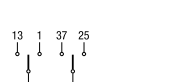
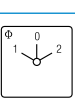


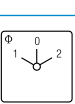


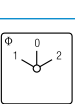


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Switch Function and Configuration

L Switches

Function/Type	Escutch. Plate	Handle	Code	Stages	Double Latching	Connection Diagram	L350 L630 L1000 L1250	L351 L631 L1001 L1251
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Double-throw Switches with Center „OFF" 60° Switching Dimensions p.56

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

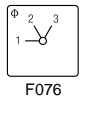


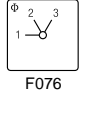


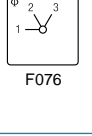


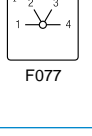


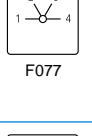


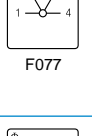


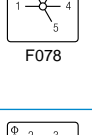

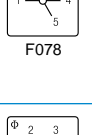


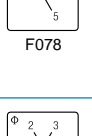

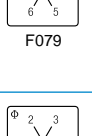




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● Additional length for switches size S2 for mounting E/EF = 27 mm
 ● Additional length for switches size S3 for mounting E/EF = 31,5 mm and mounting ER/VE = 20,1 mm

Function/Type	Escutch. Plate	Handle	Code	Stages	Double Latching	Connection Diagram	L350 L630 L1000 L1250	L351 L631 L1001 L1251
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Multi-step Switches single pole without „OFF“

[Dimensions p.56](#)




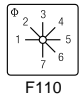


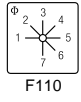


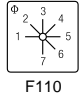























3 Step	L350			WAA230	4			
3 Step	L351			WAA230	4			
3 Step	L400			WAA230	4			
4 Step	L350			WAA231	4			
4 Step	L351			WAA231	4			
4 Step	L400			WAA231	4			
5 Step	L350			WAA232	6			
5 Step	L351			WAA232	6			
5 Step	L400			WAA232	6			
6 Step	L350			WAA233	6			
6 Step	L351			WAA233	6			

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Function/Type	Escutch. Plate	Handle	Code	Stages	Double Latching	Connection Diagram	L350 L630 L1000 L1250	L351 L631 L1001 L1251
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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 L630 L1000 L1250	L351 L631 L1001 L1251
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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°	Code	CA4 CA4-1 CAD4-1
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<p>Panel Mount</p>				
	<p>Two hole, Protection IP 40</p>	●	E E-V	● ●
	<p>Two hole Protection IP 66/67/69k</p>	●	EF EF-V	● ●
	<p>Two hole with shaft for radio knobs, Protection IP 40 Shaft diam. 6 mm/.24 inch</p>		E9	●
	<p>Shaft diam. 6.35 mm/.25 inch, Protection IP 40</p>		E91	●
<p>Mosaic Mount</p>				
	<p>For Siemens-Mosaic 30 mm grid depth, Protection IP 40</p>		E92	●
	<p>For Subklew-, Kreutzenbeck-, Symo-Mosaic, Protection IP 40 28 mm 25 mm 25 mm grid depth</p>		E93	●
	<p>For Mauell-Mosaic 30 mm grid depth, Protection IP 40</p>		E94	●

Two or Four Hole Panel Mount	Terminals rotated 90°	Code	CAD. CA10- CA25	CA10B- CA63 C42	C43 C80- C200-4 L350 Size S2	C315 L400- L2000 Size S2
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<p>Panel Mount</p>  <p>Four hole, Protection IP 40</p> <p>Four hole, Protection IP 66/67/69k</p> <p>Two hole, Protection IP 66/69k</p>	<p>●</p> <p>●</p> <p>●</p>	<p>E E-V</p> <p>EF EF-V</p> <p>E22 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>Panel mount using larger face plate, handle and heavy duty stop</p>  <p>Four hole, Protection IP 40</p> <p>Four hole, Protection IP 66/67/69k</p>		<p>EG</p> <p>EGF</p>	<p>●</p> <p>●</p>	<p>CA40- CA63</p> <p>CA40- CA63</p>	<p>C80- C200-4</p> <p>C80- C200-4</p>	
<p>Double End Mount</p>  <p>Four hole, Protection IP 40</p> <p>Four hole, Protection IP 66/67/69k</p>		<p>ER</p> <p>ERF</p>	<p>CAD. CA10- CA25</p> <p>CAD. CA10- CA25</p>	<p>●</p> <p>●</p>	<p>●</p> <p>●</p>	<p>●</p> <p>●</p>

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Two or Four Hole Panel Mount	Code	CAD.. CA10- CA25	CA10B CA11B CA20B CA25B	C32 C42 CA40 CA50 CA63	C43
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	<p>Panel mount with heavy duty latching and metal shaft</p> <p>Four hole, Protection IP 40 48 x 48 Plate – S0</p>	KN2	●			
	<p>Four hole, Protection IP 40 64 x 64 Plate – S1</p>	KN1	●	●	●	
	<p>Four hole, Protection IP 40 64 x 64 Plate – S1 complete with 6mm square metal shaft</p>	KD1	●	●	●	
<p>Panel mount with protective cover</p>  	<p>Four hole Protection front IP 40 rear IP 40</p> <p>Four hole with additional shaft seal Protection front IP 66/67/69k rear IP 40</p> <p>Four hole Protection front IP 40 rear IP 42</p> <p>Four hole with additional shaft seal Protection front IP 66/67/69k rear IP 42</p> <p>Two hole Protection front IP 66/69k rear IP 42</p>	<p>EC</p> <p>ED</p> <p>EC1</p> <p>ED1</p> <p>ED22</p>	<p>CAD.. CA10- CA25</p> <p>CAD.. CA10- CA25</p> <p>CAD.. CA10- CA25</p>	<p>●</p> <p>●</p> <p>●</p> <p>●</p>		

Single Hole Mount	Terminals rotated 90°	Code	CA4 CA4-1 CAD4-1	CAD.. CA10- CA25
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		Code	mm	mm
 <p>Single Hole Mount complete with lock nut and shaft seal Bezel mount, Protection IP 66/67/69k</p>	●	FS1 FS1-V	16/22 16/22	22
	●	FT1 FT1-V		22
 <p>Square face plate, Protection IP 66/67/69k</p>	●	FS2 FS2-V	16/22 16/22	22
	●	FT2 FT2-V		22
	●	FT3 FT3-V		22/30 22/30
<p>S1 square face plate and heavy duty stop, Protection IP 66/67/69k</p>	●	FH3 FH3-V		22 22
 <p>Rectangular face plate, Protection IP 66/67/69k</p>	●	FS4 FS4-V	16/22 16/22	22
	●	FT6 FT6-V		22
 <p>Lock nut spanner</p>		S00 T170 09		

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



Four hole, Protection IP 40

Four hole with integrated simplified door clutch, Protection IP 65



Two hole, Protection IP 40

Two hole with integrated simplified door clutch, Protection IP 65



Snap-on for DIN Rail EN 60715, Protection IP 40

●	VE VE-V	CAD.. CA10- CA25	●	●
●	VF VF-V	CAD.. CA10- CA25	●	
●	VE22 VE22V	CAD.. CA10- CA25	●	
●	VF22 VF22V	CAD.. CA10- CA25	●	
	VE1		●	●

Base Mount	Code	CA4 CA4-1 CAD4-1	CAD.. CA10- CA25
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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>Mounting Plates for Plaster Depth Boxes acc. to DIN 49073 and ÖNORM E8608</p>	<p>Code</p>	<p>CAD.. CA10- CA25</p>
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 <p>A white square switch plate with a central rotary knob. The knob has three positions labeled '1', '0', and '2'. An upward-pointing arrow is visible on the knob. A small circular symbol is located below the knob.</p>	<p>Plaster depth trim, Protection IP 40</p>	<p>UE1</p>	<p>●</p>
 <p>A white square switch plate with a central rotary knob. The knob has three positions labeled '1', '0', and '2'. An upward-pointing arrow is visible on the knob. A small circular symbol is located below the knob. A red indicator light is visible in the bottom-left corner of the plate.</p>	<p>With light, Protection IP 40</p>	<p>UE2</p>	<p>●</p>
 <p>A white square switch plate with a central rotary knob. The knob has three positions labeled '1', '0', and '2'. An upward-pointing arrow is visible on the knob. A small circular symbol is located below the knob. A red indicator light is visible in the bottom-left corner of the plate.</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

F707	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	F219	F180	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	
F756																		

Miscellaneous

F119	F130	F122	F126	F125	F129	F225	F248	F246	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










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

Handles

Type	Color	Code	Size S00 S0 S1 S2 S3
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Type	Color	Code	Size S00 S0 S1 S2 S3
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Black and Red are standard colours. White and Electro-Grey available on request.

R-Handle  S0	black red white electro-gray	G001 G002 G003 G007	— ● ● ● ● — ● ● ● ● — ● ● ● ● — ● ● ● ●	I-Handle  S00 S0-S3	black red white electro-gray	G251 G252 G253 G257	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
F-Handle  S0	black red white electro-gray	G221 G222 G223 G227	● ● ● ● — ● ● ● ● — ● ● ● ● — ● ● ● ● —	B-Handle  S0	black red white electro-gray	G521 G522 G523 G527	— ● ● — — — ● ● — — — ● ● — — — ● ● — —
S-Handle  S0 S1	black red white electro-gray	G301 G302 G303 G307	— ● ● — — — ● ● — — — ● ● — — — ● ● — —	L-Handle  S0	black red white electro-gray	G501 G502 G503 G507	— — ● — — — — ● — — — — ● — — — — ● — —
P-Handle  S0 S1-S3	black red white electro-gray	G211 G212 G213 G217	— ● ● ● ● — ● ● ● ● — ● ● ● ● — ● ● ● ●	K-Handle  S0	black red white electro-gray	G411 G412 G413 G417	— — ● ● ● — — ● ● ● — — ● ● ● — — ● ● ●
Handwheel  S0	black	G971	— — — — ●	O-Handle  S0	black red white electro-gray	G321 G322 G323 G327	— — ● — — — — ● — — — — ● — — — — ● — —

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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	L630/1	C315	L600	L1600	
			CA4-1	CA20	CA20B	CA25B	C42	CA63	C125	L1000	C316	L800	L2000	
USA	Underwriters Laboratories Inc.	 ¹								●	●	●	●	
		 ² ³	●	●	●	●	●	●	●	●			●	
Canada	UL investigated acc. to CSA	 ⁶	●	●	●	●	●	●	●	●	●	●	●	
		 ¹ c									●	●	●	●
		 ² ³ 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 ⁴	+	+	+	+	+	+	+	+	+	+	+	
Great Britain	British Standards Institution	BS EN 60947 ⁴	+	+	+	+	+	+	+	+	+	+	+	
International Electrical Commission (IEC) Recommendation		IEC 60947 ⁵	+	+	+	+	+	+	+	+	+	+	+	
China	China Quality Certification Centre	 GB14048.3	●	●	●									
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

¹ 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).

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

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

⁴ 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.

⁵ IEC does not operate an approval scheme.

⁶ File No. 13002ass No. 3211-05 resp. 4652-04.

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

Rated Insulation Voltage U_i	IEC 60947-3, EN 60947-3 ¹ VDE 0660 part 107 ¹ SEV ⁴ UL/Canada CEE/NEMKO min. voltage	V	440	690	690	690	690	690	690	690	690	690	690	690	690	690	690	690	690	690	1000	
		V	380	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660
		V	300	300	600	600	300	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
		V	400/380	380	400	400	–	400	400	400	–	–	–	400	–	–	–	–	–	–	–	–
			on request																			
Rated Impulse Withstand Voltage U_{imp}		kV	4	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6/8	
Rated Thermal Current I_U/I_{th}	IEC 60947-3, EN 60947-3 VDE 0660 part 107	A	10	20	20	25	32	32	50	63	40	50	63	115	150	200	315					
	SEV ⁴ 380 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					
Rated Operational Current I_e																						
AC-21A Switching of resistive loads, including moderate overloads	IEC 60947-3, EN 60947-3 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 ⁴ 380 V	A	10	16	16	25	32	32	40	63	40	50	63	100	160	–	315					
	660 V	A	–	12	12	20	32	32	40	63	40	50	63	–	–	–	315					
AC-22A Switching of combined resistive or low inductive loads including moderate overloads	IEC 60947-3, EN 60947-3 VDE 0660 220 V-500 V 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 VDE 0660 220 V-240 V 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 ⁴ Heavy	VAC	A300	A300	A600	A600	A300	A600	A600	A600	A600	A600	A600	–	–	–	A600					
Ampere Rating Resistive or low inductive loads	UL/Canada ⁴	A	10	20	20	30	30	40	50	65	45	55	60	100	150	–	240					
Resistive load/motor load	CEE NEMKO	A	4/2	10/6	10/6	16/10	–	25/10	32/10	40/10	–	–	–	63/10	–	–	–					
		A	6/4 ²	10/6	–	20/10	–	–	–	–	–	–	–	–	–	–	–					
Breaking capacity	220 V-240 V 380 V-440 V 660 V-690 V	A	50	150	150	200	280	280	380	550	290	330	440	860	1100	1100	2000					
		A	50	150	150	200	250	250	360	550	290	330	440	860	1100	1100	2000					
		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									
Short Circuit Protection																						
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					
DC Switching Capacity⁶																						
No. of series contacts	1 2 3 4 5 6 8		Rated Operational Current I_e																			
Voltage V			CA4 CA10 CA11 CA20 CA25 C315 ³ CA4-1 CA10B CA11B CA20B CA25B C26S C32S C42S C80 C125 C316 ³																			
Resistive loads	24 48 70 95 120 145 190	A	10	20	20	25	32	–	50	–	115	–	315									
$T \leq 1$ ms	48 95 140 190 240 290 350		6	12	12	20	25	32	40	63	100	150	250									
	60 120 180 240 300 360 450		2,5	4,5	4,5	7,5	10	23	27	30	–	–	–									
	110 220 330 440 550 660 –		0,7	1	1	1,5	2	6,5	–	–	–	–	–									
	220 440 660 – – – –		0,3	0,4	0,4	0,5	0,6	1,2	–	–	–	–	–									
	440 660 – – – –		0,2	0,27	0,27	0,3	0,3	0,4	–	–	–	–	–									
Inductive loads	24 48 70 95 120 145 190	A	6	12	12	20	25	32	40	63	100	150	250									
$T = 50$ ms	30 60 90 120 150 180 240		3	5	5	9	12	25	30	55	33	50	70									
	48 95 140 190 240 290 350		1	2	2	3	3	16	20	–	–	–	–									
	60 120 180 240 300 360 450		0,7	1	1	1,5	1,5	11	15	–	–	–	–									
	110 220 330 440 550 660 –		0,3	0,4	0,4	0,5	0,5	3,2	3,5	–	–	–	–									
Min. Ambient Temperature of Stages			-25 °C (valid only without optional extra, C315/C316 on request)																			
Max. Ambient Temperature of Stages^{5,7}	open at 100 % I_U/I_{th} 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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¹Valid for lines with grounded common neutral termination, overvoltage category III, pollution degree 3. Values for other supply systems on request. ²Valid for CA4 only. ³DC switching capacity applies to ON/OFF switches. Switching capacity for other configurations on request. ⁴International Standards and Approvals, refer to page 43. ⁵For electromagnetic optional extras see additional data in Catalog 101. ⁶Values for switches with spring return on request. ⁷Storage temperature: -40 °C to 85 °C (in case of temperature below -5 °C no shock load permissible).

Selection Data	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 VDE 0660 part 107																	
AC-2	Slip ring motor starting, reversing and plugging, star-delta starting CA4-CA50	3 phase	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	45	55	55	90
		500 V	-	10	10	15	18,5	18,5	22	40	22	30	40	55	75	75	110		
		660 V-690 V	-	10	10	13	15	15	22	37	22	30	37	55	55	55	55		
AC-3	Direct-on-line starting, star-delta starting CA63-C315	3 phase	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	-	5,5	5,5	7,5	11	11	15	18,5	15	18,5	18,5	30	37	37	55		
		660 V-690 V	-	5,5	5,5	7,5	11	11	15	18,5	15	18,5	22	30	30	30	37		
AC-4	Direct-on-line starting, reversing, plugging and inching	3 phase	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	-	1,5	1,5	3	5,5	5,5	6	7,5	6	7	7,5	11	15	15	25		
		660 V-690 V	-	1,5	1,5	3	5,5	5,5	6	7,5	6	7,5	9	11	15	15	22		
AC-23A	Frequent switching of motors or other high inductive loads	3 phase	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	-	7,5	7,5	11	15	15	30	45	18,5	22	30	55	90	90	132		
		660 V-690 V	-	7,5	7,5	11	15	15	22	40	18,5	22	30	45	55	55	37		
Ratings	UL/Canada	Standard motor load DOL-Rating (similar AC-3)	3 phase	HP	0,75	1,5	1,5	3	5	5	7,5	7,5	7,5	7,5	7,5	10	15	-	30
			3 pole		1	3	3	7,5	10	10	15	15	15	15	20	25	-	75	
		440 V-480 V	-	-	5	10	-	20	25	25	25	25	30	40	-	75			
		550 V-600 V	-	-	5	10	-	25	30	30	25	30	30	40	50	-	60		
Heavy motor load Reversing-Rating (similar AC-4)	3 phase	110 V-120 V	HP	0,33	0,5	0,5	1,5	2	2	3	3	3	3	5	7,5	-	15		
		220 V-240 V		0,75	1	1	3	5	5	7,5	7,5	7,5	7,5	10	15	-	40		
	440 V-480 V	0,75	2	2	3	5	5	7,5	7,5	7,5	10	10	15	-	40				
	550 V-600 V	-	-	2	5	-	10	15	15	15	15	15	20	25	-	50			
Max. Permissible Wire Gage - Use copper wire only	Single-core or stranded wire	mm ²	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	
			1,5	2,5	2,5	4	6	6	10	16	16	16	16	35	70	95 ¹	185 ¹		
		AWG	14	12	12	10	8	8	8	6	6	6	6	2	2/0	-	MCM 350		
		Flexible wire (sleeving in accordance with DIN 46228) Flexible AWG wires (without sleeve)	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x	2x
1,5	2,5		2,5	4	4	6	6	10	10	10	10	10	25	50	95 ¹	150 ¹			
AWG	(1)	(2,5)	(2,5)	(2,5)	(4)	(4)	(6)	(10)	(10)	(10)	(10)	(10)	(25)	(50)	-	MCM 300			

¹Cable lug must accept M8 (C200-4) and M12 (C315/C316) screw. ²The insulation material of the conductor has to be PVC (typical wire codes are H05V-K0,5 ... H07V-K1,5 or H05V-U0,5 ... H07V-U1,5 etc.). Other materials on request. Connected conductors, which have to be disconnected and re-connected again must be cut in order to ensure a proper electrical connection and to prevent a complete cut-off of the wire insulation.

Selection Data	L350				L630							
	L351	L400	L600	L631	L800	L1000	L1200	L1600	L2000			

Rated Insulation Voltage U_i	IEC 60947-3, EN 60947-3 ¹ VDE 0660 part 107 ¹		V	690	690	690	690	690	690	690	690	690	
	UL/Canada ²		V	600	600	600	600	600	600	600	600	600	
	min. voltage		V	on request									
Rated Impulse Withstand Voltage U_{imp}			kV	6	6	6	6	6	6	6	6	6	
Rated Thermal Current I_u/I_{th}	IEC 60947-3, EN 60947-3 VDE 0660 part 107												
	Ambient temp. +35 °C during 24 hours with peaks up to +40 °C		A	350	500	800	630	1100	1000	1450	1900	2400	
	Ambient temp. +55 °C during 24 hours with peaks up to +60 °C		A	350	500	750	600	950	920	1300	1700	2000	
UL/Canada ²		A	350	400	630	630	800	1000	1200	1600	2000		
Rated Operational Current I_e													
AC-20A No-load operation	IEC 60947-3, EN 60947-3 VDE 0660 part 107		690 V	A	350	500	800	630	1100	1000	1450	1900	2400
	Occasional switching under load $\cos \varphi$ 0,8 (AC-20B)	3 phase, 3 pole	220 V-440 V	A	350	500	800	500	1000	630	1200	1200	1200
		and	500 V	A	350	450	500	450	630	500	800	800	800
1 phase, 2 pole	660 V-690 V	A	315	350	400	360	400	400	400	400	400	400	
AC-21B Switching of resistive loads, including moderate overloads	3 phase, 3 pole	220 V-440 V	A	250	450	500	350	630	400	800	800	800	
	and	500 V	A	250	400	450	315	500	350	630	630	630	
	1 phase, 2 pole	660 V-690 V	A	200	300	350	250	350	300	350	350	350	
Interrupting Rating	UL/Canada ²		600 V	A	200	300	300	200	300	200	300	200	200
	CSA		600 V	A	200	200	200	200	200	200	200	200	200
Rated Utilization Category	IEC 60947-3, EN 60947-3 VDE 0660 part 107												
AC-23B Occasional switching of motors or other high inductive loads	3 phase	220 V-240 V	kW	45	75	75	45	75	45	75	75	75	
	3 pole	380 V-440 V	kW	90	132	132	90	132	90	132	132	132	
		500 V	kW	110	132	132	110	132	110	132	132	132	
		660 V-690 V	kW	55	55	65	65	65	65	65	65	65	
Short Circuit Protection													
Max. fuse size	(aR-characteristic)		A	400	500	800	630	1100	1000	2x800	2x1000	2x1250	
Rated short-time withstand current	(1s-current)		A	on request									
Terminals													
		for connection screw		M12	M12	M16	M16	M16	M16	M16	2xM16	4xM16	
		length	mm	20	30	40	30	40	40	40	50	50	
Min. Ambient Temperature of Stages				-5 °C (-25 °C on request)									
Max. Ambient Temperature of Stages^{3, 4}				55 °C during 24 hours with peaks up to 60 °C, permissible load see Rated Thermal Current.									

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

Selection Data	CAD4-1	CAD11	CAD12
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Rated Insulation Voltage U_i		IEC 60947-3, EN 60947-3 ¹ VDE 0660 part 107	V	440	600	600
		SEV ²	V	–	600	600
		North America	V	300	300	300
		min. voltage	V	1 ⁷	1	6
Rated Impulse Withstand Voltage U_{imp}				on request		
Rated Thermal Current I_U/I_{th}		IEC 60947-3, EN 60947-3 VDE 0660 part 107	A	5	6	6
		SEV ²	A	–	5	5
		North America	A	5	6	6
Rated Operational Current I_e		IEC 60947-3, EN 60947-3 VDE 0660 part 107				
AC-21A	Switching of resistive loads, including moderate overloads	North America ³ 1 V/6 V	A	5/2	6/3	–/6
		12 V/24 V	A	1,2/0,7	2/1	5/5
		48 V/110 V	A	0,45/0,25	0,8/0,4	4/3
		220 V/400 V	A	0,15/–	0,2/0,13	2/1,3
		440 V/500 V	A	0,1/–	0,1/0,08	1/0,8
	600 V	A	–	0,05	0,5	
AC-1	Resistive or low inductive loads	SEV ² 1 V/6 V	A	–	5/3	–/5
		12 V/24 V	A	–	2/1	5/5
		48 V/110 V	A	–	0,8/0,4	4/3
		220 V/380 V	A	–	0,2/0,13	2/1,3
		440 V/500 V	A	–	0,1/0,08	1/0,8
	600 V	A	–	0,05	0,5	
Power loss per contact at I_u			W	0,4	0,5	0,2
Short Circuit Protection						
	Max. fuse size	(gG-characteristic)	A	5	6	6
	Rated short-time withstand current	(1s-current)	A	30	35	50
DC Switching Capacity⁵		IEC 60947-3, EN 60947-3 VDE 0660 part 107				
DC-1	Resistive load T = 1 ms	SEV ² 1 V/6 V	A	3/1,2	4/2,5	–/4
		North America ³ 12 V/24 V	A	0,7/0,4	1,5/0,8	3/2,2
		48 V/60 V	A	0,25/0,2	0,3/0,27	1,2/1
		110 V/220 V	A	0,13/–	0,2/0,1	0,6/0,3
		240 V/500 V	A	0,08/–	0,08/0,03	0,25/0,1
		600 V	A		0,02	0,1
Max. Permissible Wire Gage - Use copper wire only						
Single-core or stranded wire			mm ²	2x	2x	2x
			mm ²	1,5	2,5	2,5
			AWG	14	12	12
Flexible wire (sleeving in accordance with DIN 46228) Flexible AWG wires (without sleeve)			mm ²	2x	2x	2x
			mm ²	1,5	2,5	2,5
			AWG	(1)	(2,5)	(2,5)
			AWG	16	14	14
Min. Ambient Temperature of Stages				–25 °C (valid only without optional extra)		
Max. Ambient Temperature of Stages^{4,6}		open at 100 % I_U/I_{th} 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		

¹Valid for lines with grounded common neutral termination, overvoltage category III, pollution degree 3. Values for other supply systems on request.

²International Standards and Approvals, refer to page 43. ³Max. 300 V. ⁴For electromagnetic optional extras see additional data in Catalog 101.

⁵Values for switches with spring return on request. ⁶Storage temperature: –40 °C to 85 °C (in case of temperature below –5 °C no shock load permissible).

⁷Values with lower voltages on request.

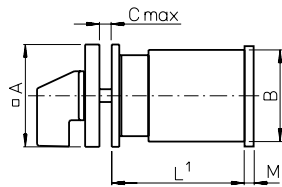
Tightening torque of screws

Type	Tightening torque	
C26	2,5 Nm	22 lb-in
C26L	2,5 Nm	22 lb-in
C26M	2,5 Nm	22 lb-in
C26S	2,5 Nm	22 lb-in
C26X	2,5 Nm	22 lb-in
C32	2,7 Nm	24 lb-in
C32L	2,7 Nm	24 lb-in
C32S	2,7 Nm	24 lb-in
C32X	2,7 Nm	24 lb-in
C42	3 Nm	26,4 lb-in
C42M	3 Nm	26,4 lb-in
C42S	3 Nm	26,4 lb-in
C42X	3 Nm	26,4 lb-in
C43	3 Nm	26,4 lb-in
C80	4 Nm	35 lb-in
C125	4,5 Nm	39,8 lb-in
C200-4	8 Nm	70 lb-in
C315	14 Nm	125 lb-in
CA4	0,6 Nm	5 lb-in
CA4-1	0,6 Nm	5 lb-in
CA4-4	0,6 Nm	5 lb-in
CA4N-1	0,6 Nm	5 lb-in
CA10	0,6 Nm	5 lb-in
CA10-1	0,6 Nm	5 lb-in
CA10B	0,6 Nm	5 lb-in
CA10B-1	0,6 Nm	5 lb-in
CA10L	0,6 Nm	5 lb-in
CA10M	0,6 Nm	5 lb-in
CA10R	0,6 Nm	5 lb-in
CA10S	0,6 Nm	5 lb-in
CA10X	0,6 Nm	5 lb-in
CA10Y	0,6 Nm	5 lb-in
CA11-1	0,6 Nm	5 lb-in
CA11B	0,6 Nm	5 lb-in
CA11B-1	0,6 Nm	5 lb-in
CA20	1,3 Nm	12 lb-in
CA20B	1,3 Nm	12 lb-in
CA20S	1,3 Nm	12 lb-in
CA20X	1,3 Nm	12 lb-in
CA20Y	1,3 Nm	12 lb-in
CA25	1,3 Nm	12 lb-in

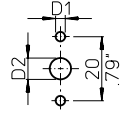
Type	Tightening torque	
CA25B	1,3 Nm	12 lb-in
CA25R	1,3 Nm	12 lb-in
CA25S	1,3 Nm	12 lb-in
CA25X	1,3 Nm	12 lb-in
CA25Y	1,3 Nm	12 lb-in
CA40	1,8 Nm	16 lb-in
CA40C	1,8 Nm	16 lb-in
CA40L	1,8 Nm	16 lb-in
CA40M	1,8 Nm	16 lb-in
CA40S	1,8 Nm	16 lb-in
CA40X	1,8 Nm	16 lb-in
CA50	1,8 Nm	16 lb-in
CA50C	1,8 Nm	16 lb-in
CA50L	1,8 Nm	16 lb-in
CA50M	1,8 Nm	16 lb-in
CA50S	1,8 Nm	16 lb-in
CA50X	1,8 Nm	16 lb-in
CA63	1,8 Nm	16 lb-in
CA63C	1,8 Nm	16 lb-in
CA63L	1,8 Nm	16 lb-in
CA63M	1,8 Nm	16 lb-in
CA63S	1,8 Nm	16 lb-in
CA63X	1,8 Nm	16 lb-in
CAD11	0,8 Nm	7 lb-in
CAD11B	0,8 Nm	7 lb-in
CAD11R	0,8 Nm	7 lb-in
CAD12	0,8 Nm	7 lb-in
CAD12B	0,8 Nm	7 lb-in
CAD12R	0,8 Nm	7 lb-in
CAD4-1	0,4 Nm	3,5 lb-in
L350	25 Nm	220 lb-in
L351	25 Nm	220 lb-in
L400	25 Nm	220 lb-in
L600	25 Nm	220 lb-in
L630	25 Nm	220 lb-in
L631	25 Nm	220 lb-in
L800	25 Nm	220 lb-in
L1000	25 Nm	220 lb-in
L1200	25 Nm	220 lb-in
L1600	25 Nm	220 lb-in
L2000	25 Nm	220 lb-in

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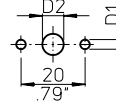
Two or Four Hole Panel Mounting



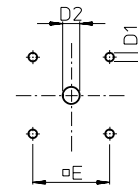
E
for CA4, CA4-1,
CAD4-1



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



E
E-V
ER

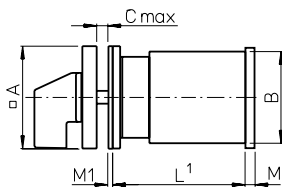


	CA10	CA4	CA11	CA20	CA25 ³	CA20B	CA10B	CA11B	CA25B	C26	C32	C42 ³	C43	CA40 ³	CA50 ³	CA63 ³	C125	C200-4	L switches	L switches
		CAD4-1	CAD12																Size S2	Size S3
A	0	48	48	48	(64)	64	64	64	64	64	64	(88)	88	64	(88)	88	88	88	88	130
	1.18	1.89	1.89	1.89	(2.52)	2.52	2.52	2.52	2.52	2.52	2.52	(3.46)	3.46	2.52	(3.46)	3.46	3.46	3.46	3.46	5.12
B	29,5	43	45	46		56	56	58	60	66	66	84	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	3.30	2.19x2.52	3.30	3.46	3.46	3.46	3.46	4.96
C	4	4	4	4		4	4	4	4	4	4	5,5	4	4	5,5	5,5	5,5	5,5	5,5	7
	.16	.16	.16	.16		.16	.16	.16	.16	.16	.16	.22	.16	.16	.22	.22	.22	.22	.22	.28
D1	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
D2	8-11	8-19	8-19	8-19		10-22	10-22	10-22	10-22	10-22	10-22	13-30	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	.51-1.18	.39-.87	.51-1.18	.51-1.18	.51-1.18	.51-1.18	.51-1.18	.61-.98
E	-	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
M²	-	4,5	4,5	5,5		5	5,5	7,5	7,5	7,5	7,5	7,5	7,5	7,6	9,4	9,4	9,4	9,4	27,5	11,9 (32)
	-	.18	.18	.22		.20	.22	.30	.30	.30	.30	.30	.30	.30	.37	.37	.37	.37	1.08	.47 (1.26)

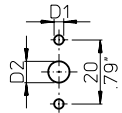
²M, additional length for mounting ER only
³Dimensions in () for ER mounting plate only

⁴Dimensions in () for L800, L1200, L1600

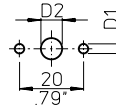
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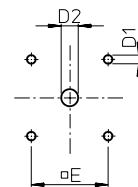
EF
for CA4, CA4-1,
CAD4-1



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



EF
EF-V
ERF



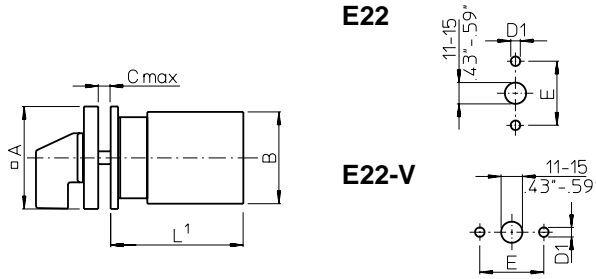
	CA10	CA4	CA11	CA20	CA25 ³	CA20B	CA10B	CA11B	CA25B	C26	C32	C42 ³	C43	CA40 ³	CA50 ³	CA63 ³	C125	C200-4	L switches	L switches
		CAD4-1	CAD12																Size S2	Size S3
A	30	48	48	48	(64)	64	64	64	64	64	64	(88)	88	64	(88)	88	88	88	88	130
	1.18	1.89	1.89	1.89	(2.52)	2.52	2.52	2.52	2.52	2.52	2.52	(3.46)	3.46	2.52	(3.46)	3.46	3.46	3.46	3.46	5.12
B	29,5	43	45	46		56	56	58	60	66	66	84	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	3.30	2.19x2.52	3.30	3.46	3.46	3.46	3.46	4.96
C	4	4	4	4		4	4	4	4	4	4	5,5	4	4	5,5	5,5	5,5	5,5	5,5	7
	.16	.16	.16	.16		.16	.16	.16	.16	.16	.16	.22	.16	.16	.22	.22	.22	.22	.22	.28
D1	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
D2	8-11	15-19	15-19	15-19		19-22	19-22	19-22	19-22	19-22	19-22	26-30	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	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
E	-	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
M²	-	4,5	4,5	5,5		5	5,5	7,5	7,5	7,5	7,5	7,5	7,5	7,6	9,4	9,4	9,4	9,4	27,5	11,9 (32)
	-	.18	.18	.22		.20	.22	.30	.30	.30	.30	.30	.30	.30	.37	.37	.37	.37	1.08	.47 (1.26)
M1	1	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	.04	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

²M, additional length for mounting ERF only
³Dimensions in () for ERF mounting plate only

⁴Dimensions in () for L800, L1200, L1600

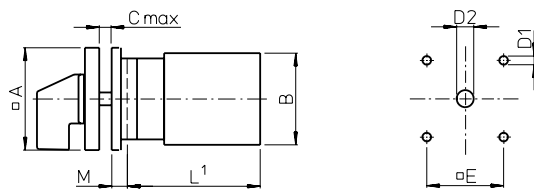
¹see page 56

Two or Four Hole Panel Mounting



	CA10	CA11	CAD11	CA20	CA25
A	48 1.89	48 1.89		48 1.89	48 1.89
B	43 1.69	45 1.77		46 1.81	46 1.81
C	4 .16	4 .16		4 .16	4 .16
D1	5 .20	5 .20		5 .20	5 .20
E	30 1.17	30 1.17		30 1.17	30 1.17

**EG
EGF**



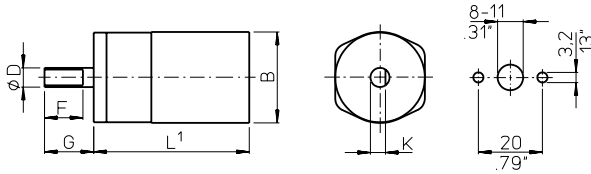
	CA10	CA11	CAD11	CA20	CA25	C26	C32	C42	CA40	CA50	CA63	C80	C125	C200-4
													L switches	Size S2
A	64 2.52	64 2.52		64 2.52	64 2.52	88 3.46	88 3.46	88 3.46	88 3.46	88 3.46	88 3.46	130 5.12	130 5.12	
B	43 1.69	45 1.77		46 1.81	46 1.81	58 2.28	60 2.36	66 2.60	55,5x64 2.19x2.52	84 3.30	84 3.30	88 3.46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

¹see page 56

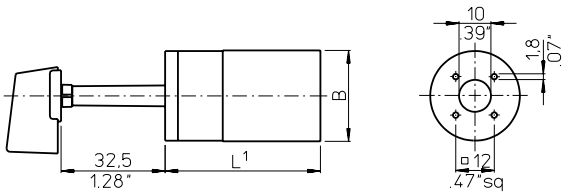
Four Hole Panel Mounting or Mosaic Mounting

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**E9
E91**



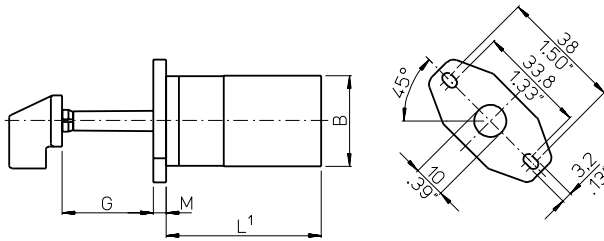
E92



CA4
CA4
CAD4-1
29,5
1.16

B

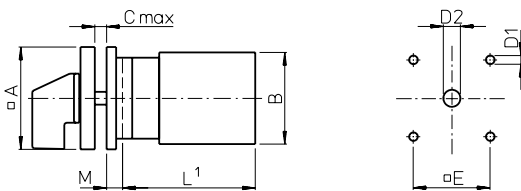
**E93
E94**



CA4
CA4-1
CAD4-1

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

**KN1
KD1
KN2**

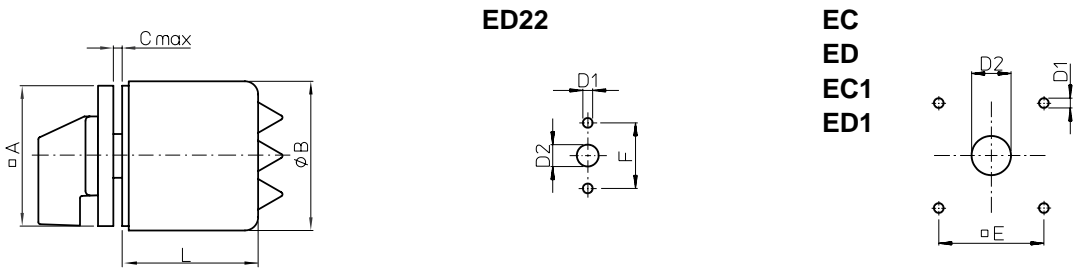


KN2	CA10 CA11 CAD11 CAD12	CA20	CA25
A	48 1.89	48 1.89	48 1.89
B	43 1.69	45 1.77	46 1.81
C	4 .16	4 .16	4 .16
D1	5 .20	5 .20	5 .20
D2	8-19 .31-.75	8-19 .31-.75	8-19 .31-.75
E	36 1.42	36 1.42	36 1.42
M	5,2 .20	5,2 .20	5,2 .20

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

¹see page 56

Two or Four Hole Panel Mounting

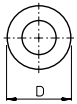


	CA10		CAD11		CAD12		CA11		CA20		CA25		CA10B		CA20B		CA11B		CA25B		C26		
	EC	ED	ED22	ED	ED22	ED	ED22	ED	ED22	ED	ED22	ED	ED22	ED	ED1	ED	ED1	ED	ED1	ED	ED1	ED	ED1
A	48	1.89	48	1.89	48	1.89	48	1.89	64	2.52	64	1.89	2.52	64	2.52	64	2.52	64	2.52	64	2.52	64	2.52
B	50	1.97	74	2.91	50	1.97	74	2.91	68	2.68	74	2.91	2.68	88	3.46	74	2.91	3.46	2.91	88	3.46	74	2.91
C	4	.16	-	.16	4	-	.16	-	4	-	.16	-	.16	4	-	4	-	.16	-	4	-	.16	-
D	4	.16	4	.16	4	.16	4	.16	4	.16	4	.16	4	.16	4	.16	4	.16	4	.16	4	.16	4
D1	5	.20	5	.20	5	.20	5	.20	5	.20	5	.20	5	.20	5	.20	5	.20	5	.20	5	.20	5
D2	8-19	.31-.75	-	.31-.75	8-19	-	.31-.75	-	10-22	.39-.87	-	.39-.87	-	10-22	.39-.87	10-22	.39-.87	10-22	.39-.87	10-22	.39-.87	10-22	.39-.87
D2	15-19	.43-.75	11-15	.43-.59	15-19	.43-.75	11-15	.43-.59	19-22	.75-.87	11-15	.75-.87	19-22	.75-.87	19-22	.75-.87	19-22	.75-.87	19-22	.75-.87	19-22	.75-.87	19-22
E	36	1.42	-	1.42	36	-	1.42	-	48	1.89	-	1.89	-	48	1.89	48	1.89	48	1.89	48	1.89	48	1.89
F	-	1.17	-	1.17	-	1.17	-	1.17	-	1.17	-	1.17	-	-	-	-	-	-	-	-	-	-	-
M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stages L	53,5	2.10	74,3	2.93	53,5	2.10	74,3	2.93	-	74,3	2.93	-	2.93	73,7	2.90	-	2.90	-	73,7	2.90	-	73,7	2.90
2	53,5	2.10	74,3	2.93	53,5	2.10	74,3	2.93	-	74,3	2.93	-	2.93	73,7	2.90	-	2.90	-	73,7	2.90	-	73,7	2.90
3	67,5	2.66	74,3	2.93	67,5	2.66	94,3	3.71	-	74,3	2.93	-	2.93	93,7	3.69	-	3.69	-	93,7	3.69	-	93,7	3.69
4	67,5	2.66	74,3	2.93	81,5	3.21	94,3	3.71	-	94,3	3.71	-	3.71	93,7	3.69	-	3.69	-	93,7	3.69	-	93,7	3.69
5	81,5	3.21	94,3	3.71	-	-	104	4.10	-	104	4.10	-	4.10	93,7	3.69	104	4.10	-	127	5	-	114,5	4.50
6	81,5	3.21	94,3	3.71	-	-	-	-	-	-	-	-	104	4.10	-	127	5	-	139,5	5.47	-	127	5
7	-	-	-	-	-	-	-	-	-	-	-	-	127	5	-	139,5	5.47	-	152	5.98	-	139,5	5.47
8	-	-	-	-	-	-	-	-	-	-	-	-	127	5	-	152	5.98	-	164,5	6.48	-	152	5.98
9	-	-	-	-	-	-	-	-	-	-	-	-	139,5	5.47	-	164,5	6.48	-	177	6.97	-	164,5	6.48
10	-	-	-	-	-	-	-	-	-	-	-	-	152	5.98	-	177	6.97	-	-	-	-	177	6.97
11	-	-	-	-	-	-	-	-	-	-	-	-	152	5.98	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	164,5	6.48	-	-	-	-	-	-	-	-	-

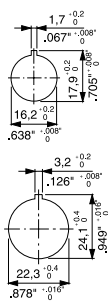
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Single Hole Mounting or Base Mounting

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



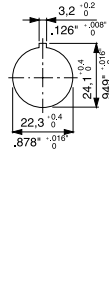
FS1...
FS2...
FS4...



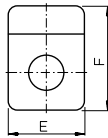
FH3...
FS2...
FT2...
FT4...



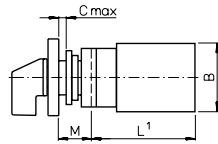
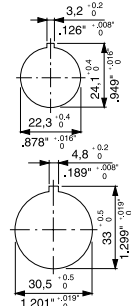
FH3...
FH4...
FT1...
FT2...
FT6...



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



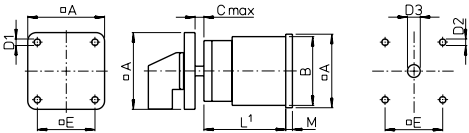
FT3...
FT4...



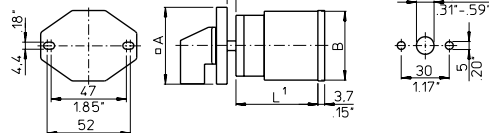
	CA4	CA10	CA11	CA20	CA25
A/E	30	48	48	48	48
FH3...	1.18	1.89	1.89	1.89	1.89
FH4...	-	64	64	64	64
	-	2.52	2.52	2.52	2.52
B	28	43	45	46	46
C	1.10	1.69	1.77	1.81	1.81
D	5	6	6	6	6
F	.20	.24	.24	.24	.24
FH4...	29,5	39	39	39	39
M	1.16	1.54	1.54	1.54	1.54
	39	59	59	59	59
	1.54	2.32	2.32	2.32	2.32
	-	78,5	78,5	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

< back to table of contents >

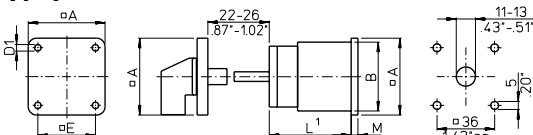
VE
VE-V



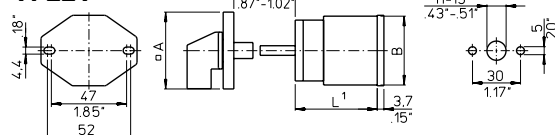
VE22
VE22V



VF
VF-V



VF22
VF22V



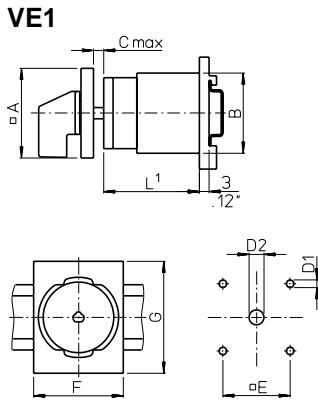
	CA10	CA11	CAD11	CA20	CA25 ²	CA10B	CA11B	CA20B	CA25B	C26	C32	C42 ²	C43	CA40 ²	CA50 ²	CA63 ²	C125	C80	C200-4	L switches	L switches
																				Size S2	Size S3
A	48	48	48	48 (64)	48 (64)	64	64	64	64	64	64	64 (88)	88	64 (88)	88	88	88	88	88	88	128
B	1.89	1.89	1.89	1.89 (2.52)	1.89 (2.52)	2.52	2.52	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	46	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	1.81	2.20	2.20	2.20	2.20	2.28	2.36	2.60	3.30	2.19x2.52	3.30	3.46	3.46	3.46	3.46	3.46	4.96
D1	10,5	10,5	10,5	10,5	10,5	13,5	13,5	13,5	13,5	13,5	13,5	16	16	13,5	16	16	16	16	16	16	19,3
D2	.41	.41	.41	.41	.41	.53	.53	.53	.53	.53	.53	.53	.63	.53	.63	.63	.63	.63	.63	.63	.76
D3	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
E	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	.21	.21	.21	.21	.21	.21	.21	.21	.21	.28
M	5	5	5	5	5	5	5	5	5	5	5	5	6	5 (6)	6	6	6	6	6	6	7
	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.24	.20 (.24)	.24	.24	.24	.24	.24	.24	.28
	8-19	8-19	8-19	8-19	8-19	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
	.31-.75	.31-.75	.31-.75	.31-.75	.31-.75	.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
	36	36	36 (48)	36 (48)	36 (48)	48	48	48	48	48	48	48 (68)	68	48 (68)	68	68	68	68	68	68	104
	1.42	1.42	1.42 (1.89)	1.42 (1.89)	1.42 (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
	2,2	2,2	3,2	3,2	3,2	2,5	2,5	2,5	2,5	5	5	5	7	5,1	8,9	8,9	8,9	8,9	8,9	27	11,4 (31,9)
	.09	.09	.13	.13	.13	.10	.10	.10	.10	.20	.20	.20	.28	.21	.35	.35	.35	.35	.35	1.06	.45 (1.25)

²Dimensions in () for revertive mounting plate

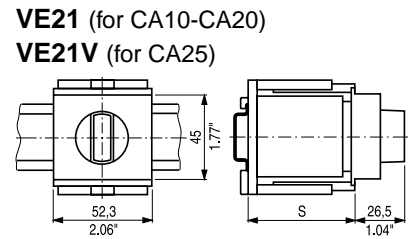
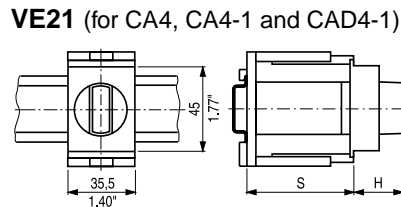
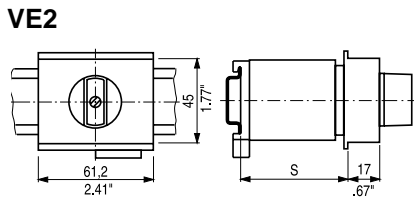
³Dimensions in () for L800, L1200, L1600

¹see page 56

Base Mounting



	CA10	CA11	CAD11	CA20	CA25	CA10B	CA11B	CA20B	CA25B	C26	C32	C42	CA40	CA50	CA63
A	48	48	48	48	48	64	64	64	64	64	64	64	64	64	64
	1.89	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	2.52
B	43	45	46	46	46	56	56	56	56	58	60	66	55,5x64	55,5x64	55,5x64
	1.69	1.77	1.81	1.81	1.81	2.20	2.20	2.20	2.20	2.28	2.36	2.60	2.19x2.52	2.19x2.52	2.19x2.52
C	10,5	10,5	10,5	10,5	10,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5
	.41	.41	.41	.41	.41	.53	.53	.53	.53	.53	.53	.53	.53	.53	.53
D1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20
D2	8-15	8-15	8-15	8-15	8-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15
	.31-.59	.31-.59	.31-.59	.31-.59	.31-.59	.39-.59	.39-.59	.39-.59	.39-.59	.39-.59	.39-.59	.39-.59	.39-.59	.39-.59	.39-.59
E	36	36	36	36	36	48	48	48	48	48	48	48	48	48	48
	1.42	1.42	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
F	48	48	48	48	48	70	70	70	70	70	70	70	70	70	70
	1.89	1.89	1.89	1.89	1.89	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76
G	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36

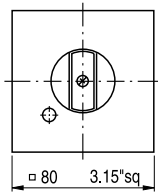


	VE2				S_{min.}	H	VE21, VE21V				
	CA10 CAD11 CAD12	CA11 CA20 CL10	CA25	Max. no. of stages			CA4 CAD4-1	CA10 CAD11 CA11	CA20	CA25	No. of stages
S = 46 1.81	3	1	-		44 1.73	21 .83	1/2	1/2	1/2	1/2	1
S = 50 1.97	3	1	1		46 1.81	26,5 1.04	3	3	-	-	2
S = 61 2.40	4	2	2		54 2.13	26,5 1.04	4	-	-	-	-
S = 67 2.64	5	2	2		56 2.20	-	-	-	3	3	-
S = 69 2.70	5	3 ²	3		60 2.36	-	-	-	-	-	3
					62 2.44	26,5 1.04	5	-	-	-	-
					66 2.60	-	-	4/5	-	-	-
					68 2.68	-	-	-	4	-	-
					70 2.76	26,5 1.04	6	-	-	4	-
					74 2.91	-	-	6	-	-	4

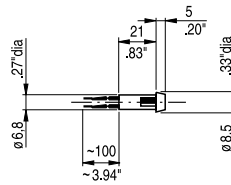
¹see page 56 ²not available for switch type CA20

Wall Mounting, Face plates and Additional Length

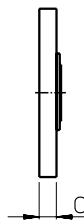
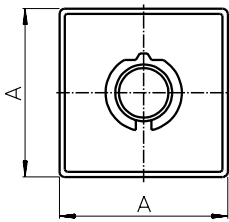
UE1
UE2
UE3



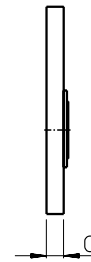
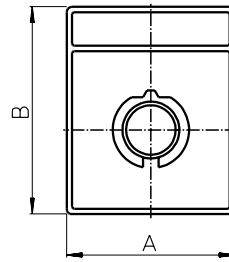
Lamp



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



Size	A	C
S00	30 1.18	5,5 .22
S0	48 1.89	6,3 .25
S1	64 2.52	7,4 .29
S2	88 3.46	8,5 .33
S3	130 5.12	11,5 .45



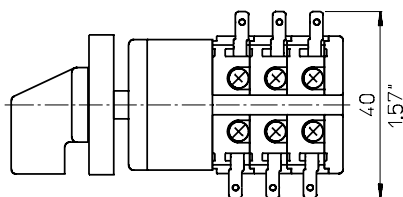
Size	A	B	C
S00	30 1.18	39 1.54	5,5 .22
S0	48 1.89	59 2.32	6,7 .26
S1	64 2.52	78 3.07	7,4 .29

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Additional length for amendment (page 6)

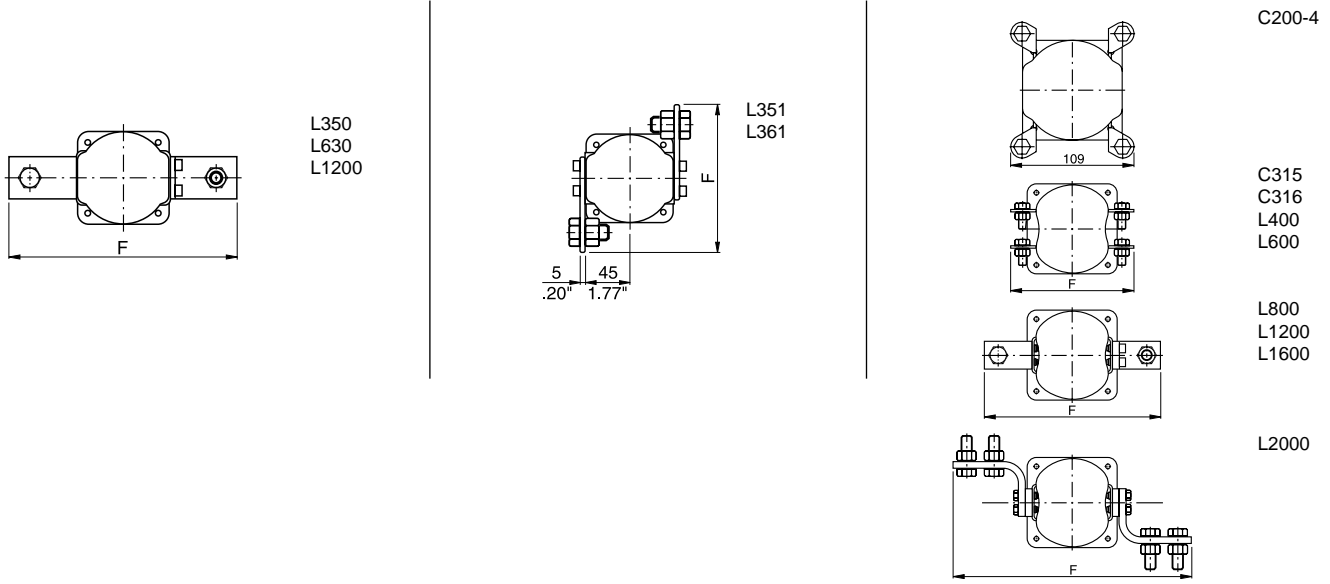
Amendment		Amendment					
		CAD11 CAD12	CA10 CA11 CA20 CA25	C26	C32	C42	CA40 CA50 CA63
B	S0 switches with latching mechanism size S1	5,4 .21	-	-	-	-	-
C	S1 switches with latching mechanism size S2	-	-	9,2 .36	9,2 .36	-	8,2 .32
S	with snap action	-	17,3 .68	12,2 .48	12,2 .48	12,2 .48	12,2 .48

Quick connects for switches CA4-4



Additional Length

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



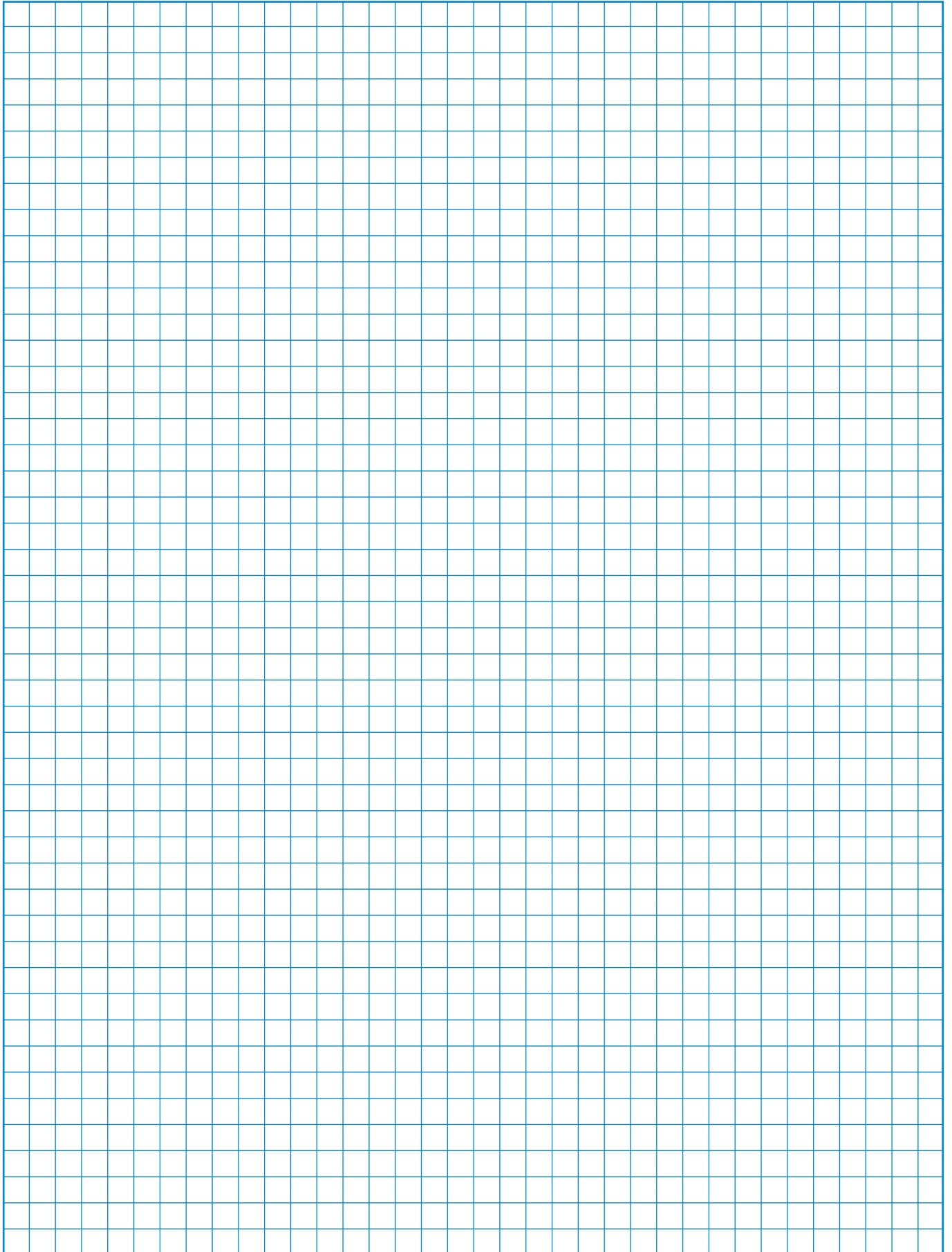
F	L350		L630		L1000		L351		L631		C315		L800		L1600	
	C316	L400	L600	L1200	L2000	C316	L400	L600	L1200	L2000	C316	L400	L600	L1200	L2000	
	190	220	230	138	148	150	180	208	256	326	150	180	208	256	326	326
	7.48	8.66	9.06	5.43	5.83	5.91	7.09	8.19	10.08	12.83	5.91	7.09	8.19	10.08	12.83	12.83

Length L

Stages	CA4	CA10											CA40	C125	C315		
	CA4-1	CAD11	CA40	C200-4	C315											L switches	L switches
	CAD4-1	CAD12	CA11	CA20	CA25	CA10B	CA11B	CA20B	CA25B	C26	C32	C42	C43	CA63	C80	Size S2	Size S3
1	30	33,5	36,7	37,7	39	38,9	42,1	43,1	44,4	42	46,8	50,8	59	42,5	61,5	67,5	78,6
	1.18	1.32	1.44	1.48	1.51	1.53	1.66	1.70	1.75	1.65	1.84	2.00	2.32	1.67	2.42	2.66	3.09
2	38	43	49,4	50,4	53	48,4	54,8	55,8	58,4	54,7	64,3	72,3	80,5	55,2	88,0	100	117,2
	1.50	1.69	1.94	1.98	2.09	1.91	2.16	2.20	2.30	2.15	2.51	2.85	3.17	2.17	3.46	3.94	4.61
3	46	52,5	62,1	63,1	67	57,9	67,5	68,5	72,4	67,4	81,8	93,8	102	67,9	114,5	132,5	155,8
	1.81	2.07	2.44	2.48	2.64	2.28	2.66	2.70	2.85	2.65	3.22	3.69	4.02	2.67	4.51	5.22	6.13
4	54	62	74,8	75,8	81	67,4	80,2	81,2	86,4	80,1	99,3	115,3	123,5	80,6	141	165	194,4
	2.13	2.44	2.94	2.98	3.19	2.65	3.16	3.20	3.40	3.15	3.91	4.54	4.86	3.17	5.55	6.50	7.65
5	62	71,5	87,5	88,5	95	76,9	92,9	93,9	100,4	92,8	116,8	136,8	145	93,3	167,5	197,5	233
	2.44	2.81	3.44	3.48	3.74	3.03	3.66	3.70	3.95	3.65	4.60	5.39	5.71	3.67	6.59	7.78	9.17
6	70	81	100,2	101,2	109	86,4	105,6	106,6	114,4	105,5	134,3	158,3	166,5	106	194	230	271,6
	2.76	3.19	3.94	3.98	4.29	3.40	4.16	4.20	4.50	4.15	5.29	6.23	6.56	4.17	7.64	9.06	10.69
7	78	90,5	112,9	113,9	123	95,9	118,3	119,3	128,4	118,2	151,8	179,8	188	118,7	220,5	262,5	310,2
	3.07	3.56	4.44	4.48	4.84	3.78	4.66	4.70	5.05	4.65	5.98	7.08	7.40	4.67	8.68	10.33	12.21
8	86	100	125,6	126,6	137	105,4	131	132	142,4	130,9	169,3	201,3	209,5	131,4	247	295	348,8
	3.39	3.94	4.94	4.98	5.39	4.15	5.16	5.20	5.60	5.15	6.67	7.93	8.25	5.17	9.72	11.61	13.73
9	94	109,5	138,3	139,3	151	114,9	143,7	144,7	156,4	143,6	186,8	222,8	231	144,1	273,5	327,5	387,4
	3.70	4.31	5.44	5.48	5.94	4.52	5.66	5.70	6.15	5.65	7.36	8.77	9.09	5.67	10.77	12.89	15.25
10	-	119	151	152	165	124,4	156,4	157,4	170,4	156,3	204,3	244,3	252,2	156,8	300	360	426
	-	4.68	5.94	5.98	6.50	4.90	6.16	6.20	6.70	6.15	8.04	9.62	9.54	6.17	11.81	14.17	16.77
11	-	128,5	163,7	164,7	179	133,9	169,1	170,1	184,4	169	221,8	265,8	274	169,5	326,5	392,5	464,6
	-	5.06	6.44	6.48	7.05	5.27	6.66	6.70	7.25	6.65	8.73	10.46	10.79	6.67	12.85	15.45	18.29
12	-	138	176,4	177,4	193	143,4	181,8	182,8	198,4	181,7	239,3	287,3	295,5	182,2	353	425	503,2
	-	5.43	6.94	6.98	7.60	5.65	7.16	7.20	7.80	7.15	9.42	11.31	11.63	7.17	13.90	16.73	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 Number
Main Switches and Main Switches with Emergency Function 16 A-315 A Maintenance Switches 20 A-315 A Switch Disconnectors 20 A-315 A According to IEC 60947-3, EN 60947-3, VDE 0660 part 107, IEC 60204, EN 60204 and VDE 0113	500
C, CA and CAD Switches 10 A-315 A and L Switches 350 A-2400 A C, CA and CAD switches are designed for universal application. They are recommended for instrument, isolator, double-throw and motor control. L switches are designed for load and off-load applications. They are used to switch resistive or low inductive loads.	100
Optional Extras and Enclosures 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.	101
A and AD Switches 6 A-25 A 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.	110
CG, CH and CHR Switches 10 A-25 A 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.	120
DH, DHR, DK and DKR Switches 6 A-16 A 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.	130
X Switches 200 A-630 A 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.	140
KG Switches 20 A-315 A and KH and KHR Switches 16 A-80 A 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.	150
Push Buttons and Pilot Lights, 22,5 mm Ø 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.	302

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