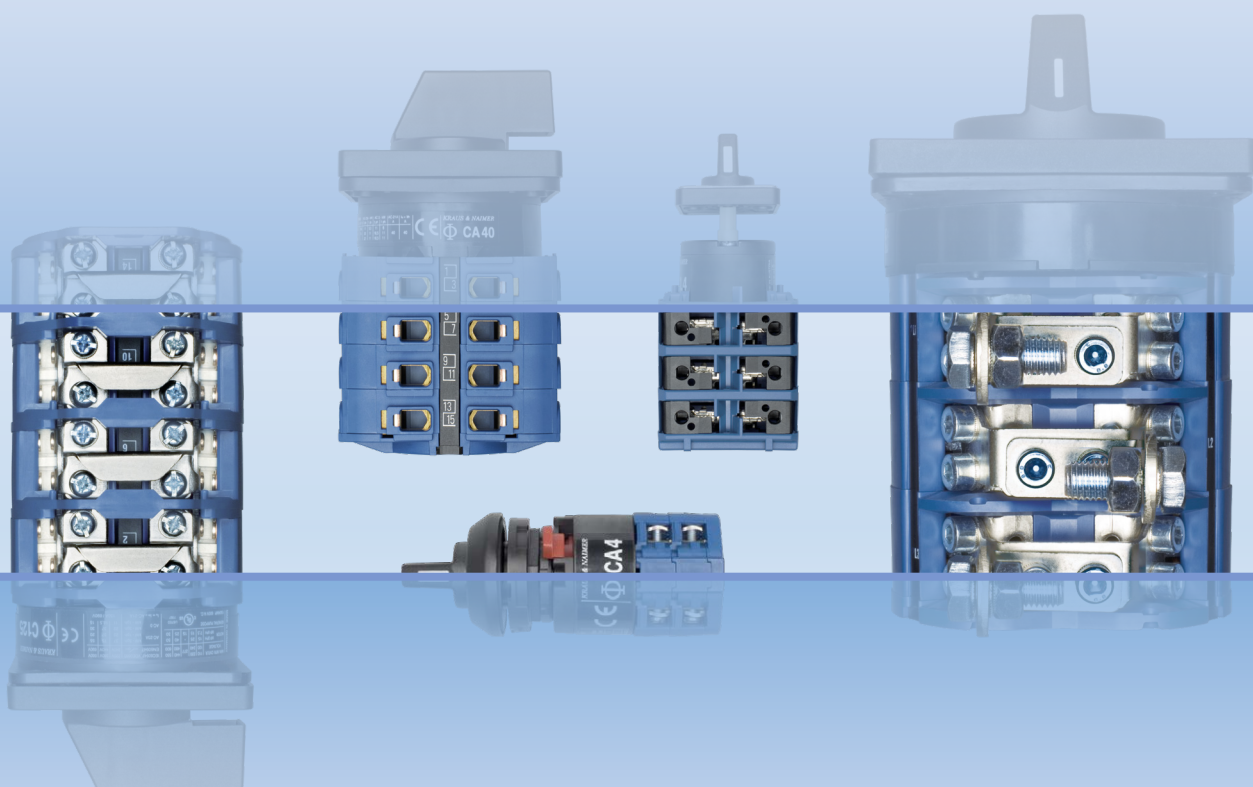


Control and Load Switches for higher Capacities

CAD, CA and C type up to 315 A

L type up to 2400 A



Kraus & Naimer

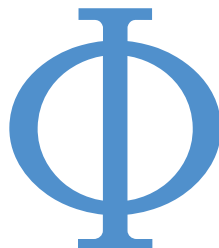
The development of the Blue Line rotary switch and motor starter product ranges is based on more than hundred years experience by Kraus & Naimer in the design and manufacture of electrical switchgear. Kraus & Naimer pioneered the introduction of the cam operated rotary switch and continues to be recognized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

BLUE LINE

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

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

The Kraus & Naimer Registered Trademark



WORLDWIDE SYMBOL
FOR QUALITY SWITCHGEAR

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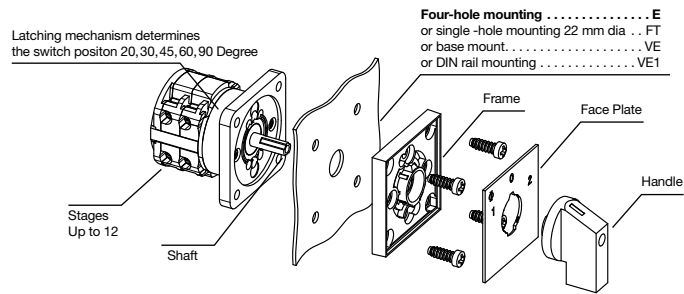
Construction Data

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

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

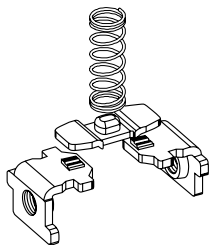
If a positive manual operation or a higher DC rating is required, many of these switches can be fitted with a snap action latching mechanism - suffix „S“ - to the switch type.

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



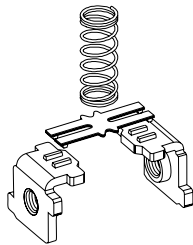
Special Contact Systems

CA4/CA4-1



High contact reliability by multiple cross-point contacts, electronic compatible.

CAD4-1/CAD11/CAD12



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

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

CA and CAD Switches (CA4-CA25B)



CA Switches (CA40-CA63)



C Switches



L Switches



Above illustrates the standard terminal positions.

Nominal Ratings

Switch Size	Type	According to IEC 60947-3/VDE 0660 part 107			
		Insulation Voltage 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					
S0					
S1					
S2					
S3					

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.

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

How to order

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

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

1. Type of Switch

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

2. Switch Function

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

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

3. Type of Mounting

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

Specify the mounting code to indicate required mounting.

CA10

A202

VE

Type of Switch

Extending the switch type coding the following combinations will define:

Amendment	Definition	For switch types
-1	with gold contacts 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, CA25L, C26L
M	with lockout-relay with manual release for std. sw.	CA10M, CA25M, C26M, C42M
X	with power failure release	CA10X, CA20X, CA25X, C26X, C32X, C42X
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**.

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.

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

[< back to table of contents >](#)

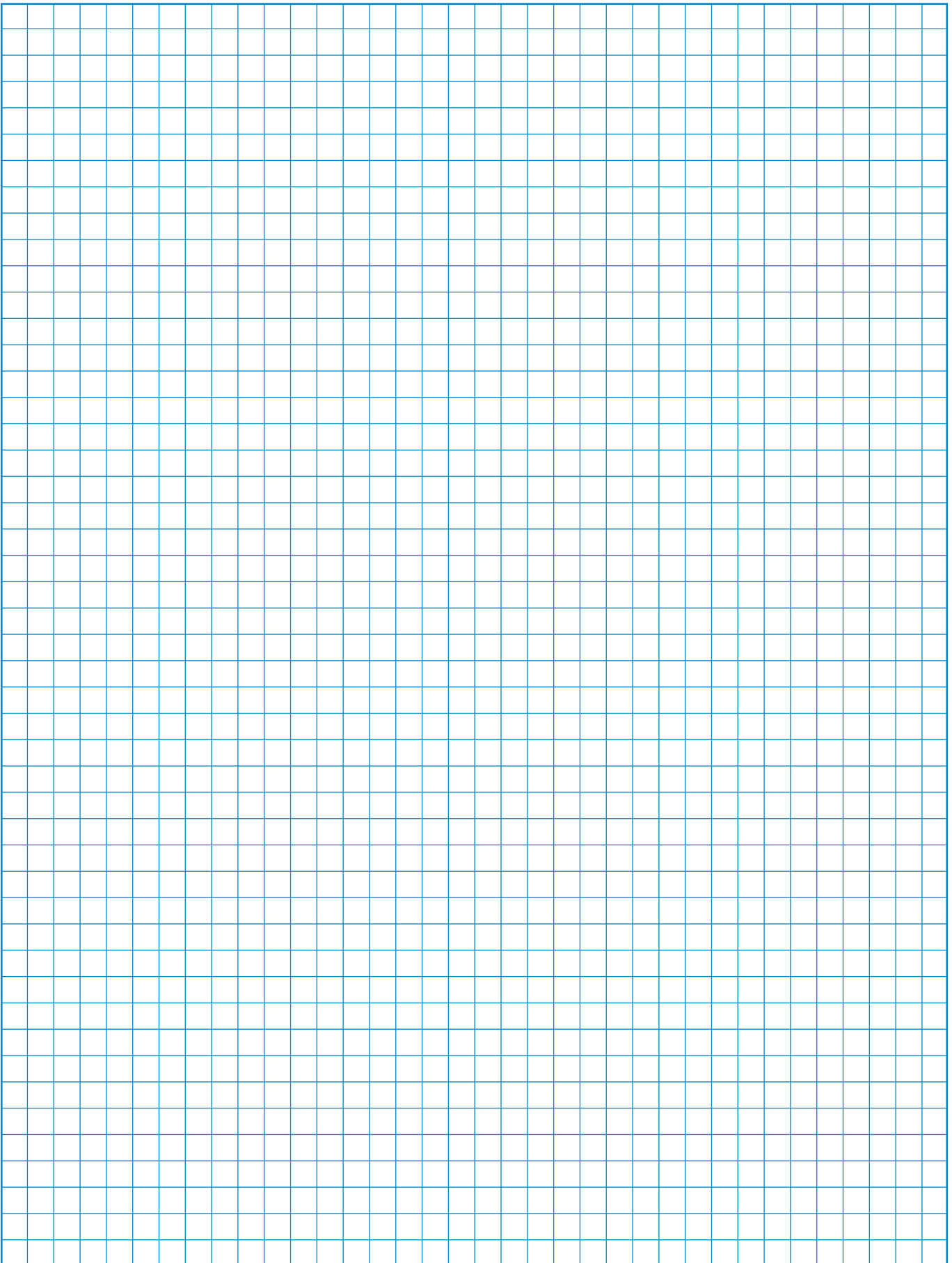
When ordering special switches and face plates it is advisable to use our order form, as illustrated. The customer's requirements are shown in blue as an example.

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.

[illegible]

Order forms are available on request.

Notes:



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

ON/OFF Switches with 60° Switching

Dimensions p. 56

1 pole 2 pole 3 pole 4 pole 5 pole 6 pole 7 pole 8 pole 9 pole 10 pole 11 pole 12 pole	 F070	         	         	A200 A201 A202 A203 WAA653 WAA341 A342 A343 A344 WAA654 WAA345 A346 WAA347 A348	1 1 2 2 2 3 3 4 4 4 5 5 6 6	              
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ON/OFF Switches with 90° Switching

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°	 F056	         	         	A290 A291 A292 A324 A293 WAA327 WAA325 A326	1 1 2 2 2 2 3 3	             
3 pole 360° rotation	 F062	         	         	WAA208	2	  

ON/OFF Switches with 30° Switching

1 pole 2 pole 3 pole 4 pole	 F169	         	         	WAA100 WAA101 WAA102 WAA103	1 1 2 2	    
1 pole with spring return 2 pole with spring return 3 pole with spring return 4 pole with spring return	 F153	       	       	A204 A205 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 CAD.. CA40 CA4-1 CA10- CA10B- C26- CAD4-1 CA25 CA25B C315			

Double-throw Switches without „OFF“ 60° Switching

Dimensions p. 56

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

1 pole	 F072					A720	1	 1-4 pole
2 pole						A721	2	
3 pole						A722	3	
4 pole						A723	4	
4 pole 1 pole preclose 6° ²					WAA973	4		4 pole 1 pole preclose 6°
1 pole with spring return	 F026					A795	1	 1 polig mit Rückzug

Double-throw Switches without „OFF“ 30° Switching

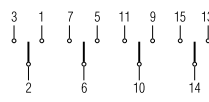
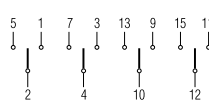
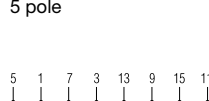
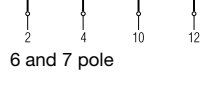
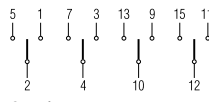
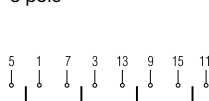
1 pole	 F026					WAA120	1	 1-4 pole
2 pole						WAA121	2	
3 pole						WAA122	3	
4 pole						WAA123	4	
1 pole with spring return	 F026					A295	1	 1-3 pole
2 pole with spring return						A296	2	
3 pole with spring return						WAA297	3	

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

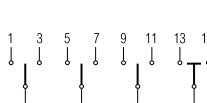
Function	Escutch. Plate	Type/Handle CA4 CAD.. CA4-1 CA10- CA10B- C80- CAD4-1 CA25 CA63 C315	Code	Stages	Connection Diagram
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Double-throw Switches with Center „OFF“ 60° Switching

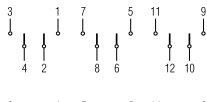
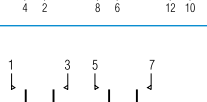
[Dimensions p. 56](#)

1 pole	 F071					A210	1	 1-4 pole
2 pole						A211	2	
3 pole						A212	3	
4 pole						A213	4	
4 pole 1 pole preclose 6° ³						WAA913	4	
5 pole						A361	5	
6 pole						A362	6	
7 pole						WAA363	7	
8 pole	 F057					WAA364	8	 4 pole 1 pole preclose 6°
8 pole 2 pole preclose 6° ³						WAA664	8	
								 5 pole
								 6 and 7 pole
								 8 pole
								 8 pole 2 pole preclose 6°

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

1 pole	 F057					A218	1	 1-4 pole
2 pole						A219	2	
3 pole						WAA299	3	
4 pole 1 pole preclose 60° ³						WAA294	4	

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

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

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

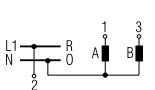
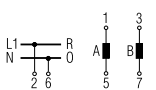
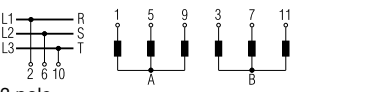
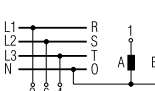
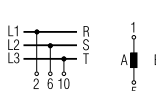
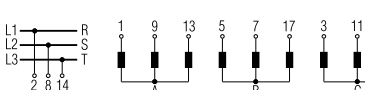
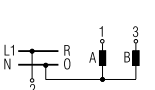
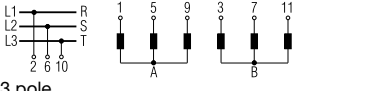
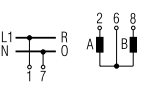
Function	Escutch. Plate	Type/Handle	Code	Stages	Connection Diagram
		CA4 CAD.. CA40 CA4-1 CA10- CA10B- C26- CAD4-1 CA25 CA25B C315			

Double-throw Switches with Spring Return to Center

Dimensions p. 56

1 pole with spring return 2 pole to center 3 pole	 F025	  	  	  	  	A214 A215 A216	1 2 3	 1-3 pole
1 pole with spring return 2 pole from left to center 3 pole	 F261	  	  	  		A320 A321 A322	1 2 3	 1-3 pole

General Application Switches

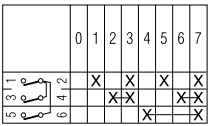
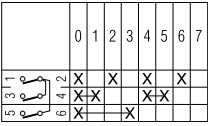
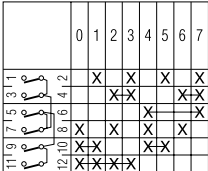
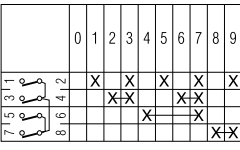
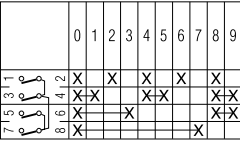
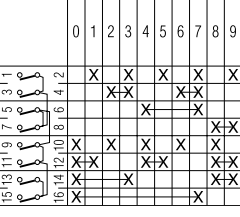
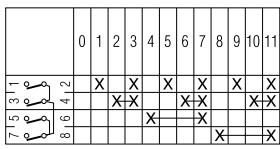
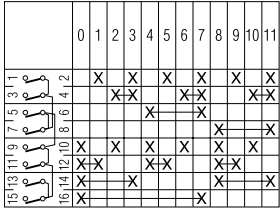
1 pole 2 Gang 2 pole Switching sequence: 3 pole 0, A, A+B	 F075	  	  	  	  	A310 A312 WAA314	1 2 3	 1 pole  2 pole  3 pole
1 pole 3 Gang 2 pole Switching sequence: 3 pole 0, A, A+B, A+B+C	 F001	  	  	  	  	A311 WAA313 WAA315	2 3 5	 1 pole  2 pole  3 pole
1 pole 2 Gang 2 pole Series switching 3 pole Switching sequence: 0, A, B, A+B	 F001	  	  	  	  	WAA330 WAA331 WAA332	1 2 3	 1 pole  2 pole  3 pole
2 pole 2 Gang Series-parallel Switching Switching sequence: 0, A+B series, A, A+B parallel	 F001	  	  	  		WAA339	2	

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](#)

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

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“

Dimensions p. 56

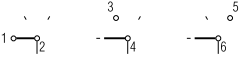
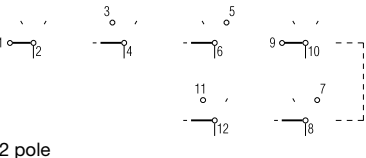
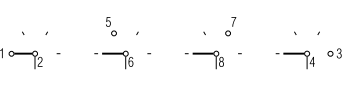
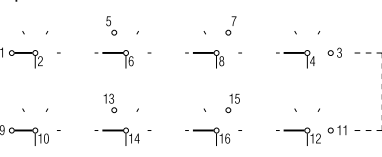
1 pole 3 Step 2 pole 3 pole 4 pole 5 pole 6 pole		     	     	A230 A250 A270 A476 WAA484 WAA489	2 3 5 6 8 9	          
1 pole 4 Step 2 pole 3 pole 4 pole 5 pole 6 pole		     	     	A231 A251 A271 A477 WAA485 WAA490	2 4 6 8 10 12	       
1 pole 5 Step 2 pole 3 pole 4 pole		     	     	A232 A252 WAA272 WAA478	3 5 8 10	    
1 pole 6 Step 2 pole 3 pole		     	     	A233 WAA253 WAA273	3 6 9	    
1 pole 7 Step 2 pole 3 pole		     	     	WAA234 WAA254 WAA274	4 7 11	   
1 pole 8 Step 2 pole 3 pole		     	     	WAA235 WAA255 WAA275	4 8 12	   
1 pole 9 Step		     	     	WAA236	5	
1 pole 10 Step		     	     	WAA237	5	
1 pole 11 Step		     	     	WAA238	6	
1 pole 12 Step 1 pole 360° rotation		     	     	WAA239 WAA639	6 6	 

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

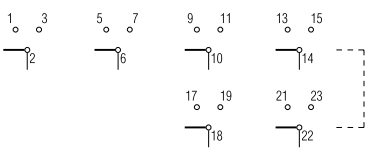
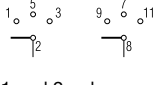
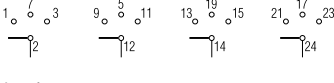
Function	Escutch. Plate	Type/Handle CA4 CAD.. CA4-1 CA10- CA10B- C80- CAD4-1 CA25 CA63 C315	Code	Stages	Connection Diagram
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Multi-step Switches without „OFF“ with electrically isolated contacts

[Dimensions p. 56](#)

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

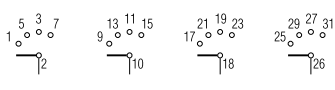
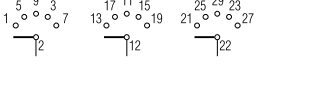
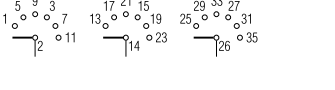
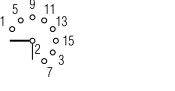
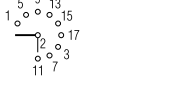
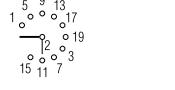
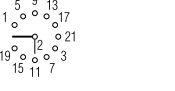
Multi-step Switches with „OFF“

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

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“

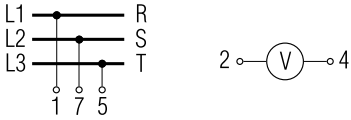
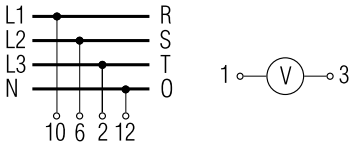
Dimensions p. 56

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

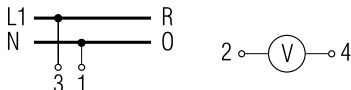
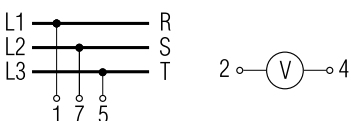
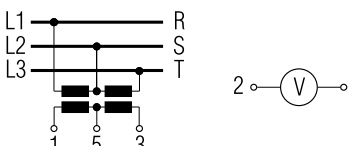
Function	Escutch. Plate	Type/Handle	Code	Stages	Connection Diagram
		CA4 CA4-1 CA10- CAD4-1 CA25 CAD.. CA10B- CA25B			

Voltmeter Switches without „OFF“

[Dimensions p. 56](#)

3 phase 3 wire						A023	2	
3 phase 3 wire 3 phase to phase and phase to neutral						A025	3	

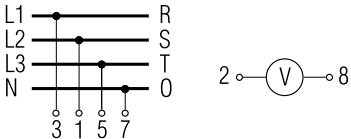
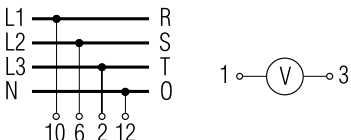
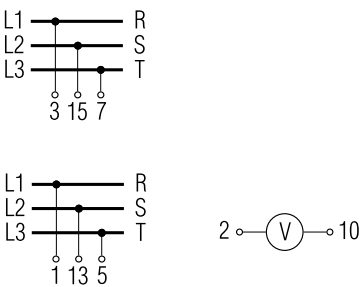
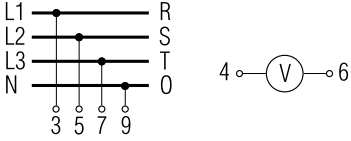
Voltmeter Switches with „OFF“

2 pole 360° rotation						WAA002	1	
3 phase 3 wire						A004	2	
						WAA011	2	

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

Voltmeter Switches with „OFF“

[Dimensions p. 56](#)

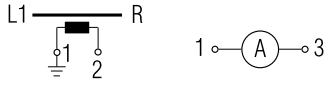
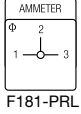
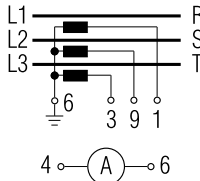
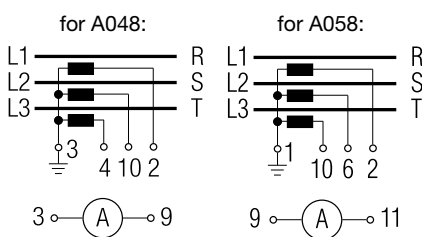
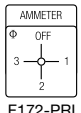
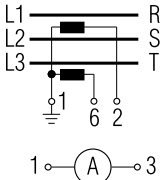
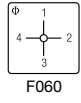
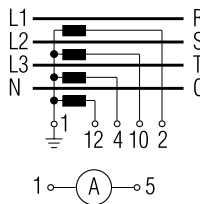
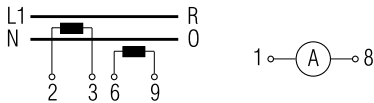
3 phase to neutral	 F779					WAA005	2	
3 phase to phase and 3 phase to neutral	 F782					A007	3	
2 separate 3 phase with center „OFF“	 F786					WAA008	4	
3 phase and 1 phase to neutral	 F789					WAA010	3	

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

Ammeter Switches

[Dimensions p. 56](#)

Single pole with one current transformer						WAA046	1	
Single pole with 3 current transformers without „OFF“						WAA017	3	
Single pole with 3 current transformers with „OFF“ 360° rotation						A048 A058	3 3	
Single pole with 2 current transformers (3 readings)						WAA021	2	
Single pole with 4 current transformers						WAA036	4	
2 pole 2 current transformers						WAA037	3	

¹available only up to switch type CA25B

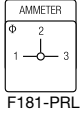
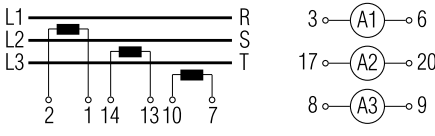
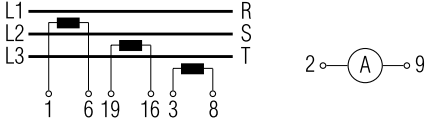
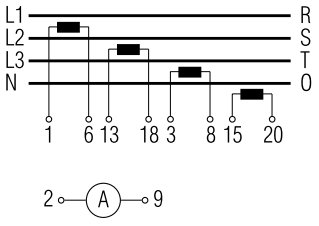
Switch Function and Configuration

C, CA, CAD Switches

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

Ammeter Switches

[Dimensions p. 56](#)

2 pole 3 current transformers	 F181-PRL				WAA019	5	
	 F059				A038	5	
2 pole 4 current transformers	 F060				WAA039	6	

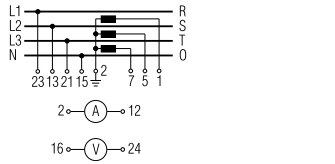
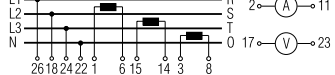
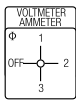
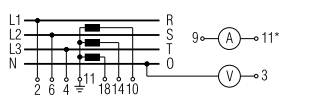
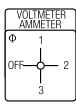
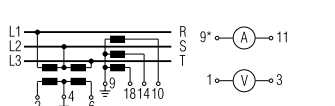
¹available only up to switch type CA25B

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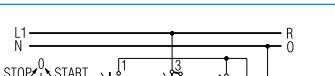
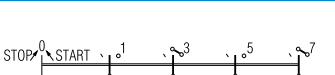
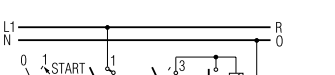
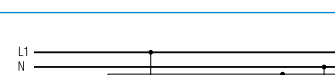
Funktion	Escutch. Plate	Type/Griff	C26- C43 CA40- CA63	Code	Stages	Connection Diagram
		CA4 CA4-1 CAD4-1	CAD.. CA10- CA10B- CA25B			

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	

Control Switches

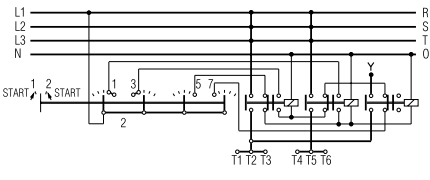
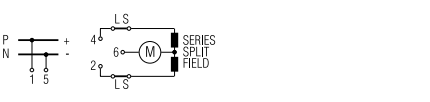
Stop switch	 F022				WAA174	1	
Start switch	 F023				A175	1	
Stop start switch single pole	 F024				A176	1	
Stop start switch 2 pole	 F024				WAA183	2	
Stop start switch with spring return from start to run	 F119				A178	1	
Stop start switch with spring return to run for 2 units	 F121				WAA177	2	

¹available only up to switch type CA25B

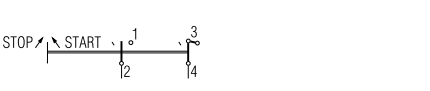
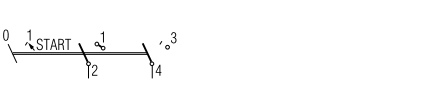
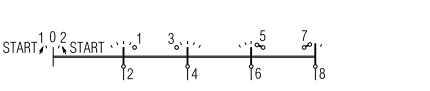
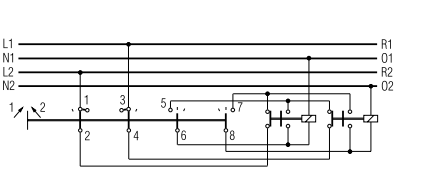
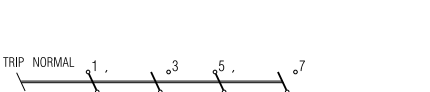
Function	Escutch. Plate	Type/Handle	C26- C43- CA40- CA63	Code	Stages	Connection Diagram
		CA4 CAD.. CA4-1 CA10- CAD4-1 CA25 CA25B				

Control Switches

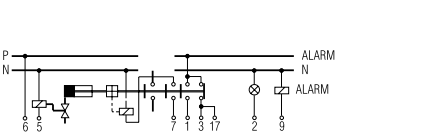
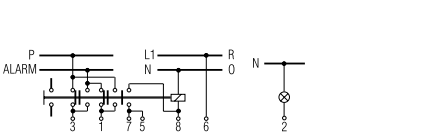
Dimensions p. 56

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

Control Switches with electrically isolated contacts

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

Control and Alarm Switches¹

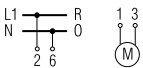
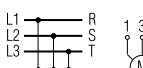
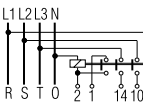
With slip clutch and without indicator device						WAA190	5 ³	
Without indicator device						WAA192	2	

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

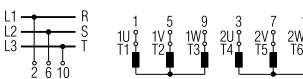
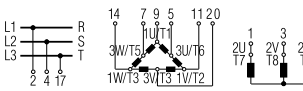
Function	Escutch. Plate	Type/Handle				Code	Stages	Connection Diagram
		CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA..B C26-C43 CA40-CA63	C80- C315			

Motor Reversing Switches

Dimensions p. 56

2 pole						A400	2	
3 pole						A401	3	
3 pole with spring return to „OFF“			 ¹	 ²		A228	3	
3 pole for use with reversing contactors				 ³		WAA402	4	

Motor Control Switches

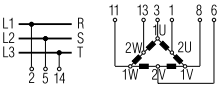
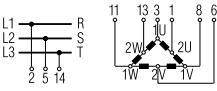
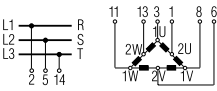
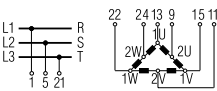
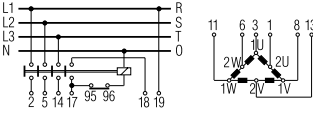
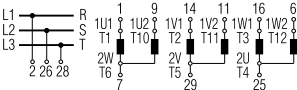
2 speed 2 winding 0-A-BY or Δ						WAA451	3	
3 speed 2 winding 0-A-BY or Δ						WAA457	6	

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

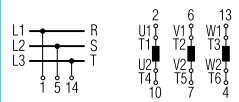
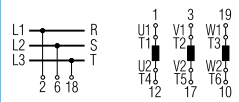
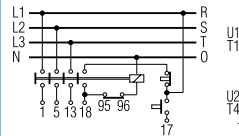
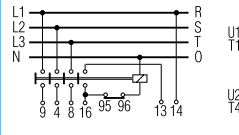
2 speed single winding	 F073					A440	4	
2 speed single winding without „OFF“	 F072					A466	4	
2 speed single winding with center „OFF“	 F071					A441	4	
2 speed single winding reversing	 F105					A442	6	
2 speed single winding for use with contactors	 F073					WAA444	5	
2 speed reversing for 2 way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

¹incl. slip clutch

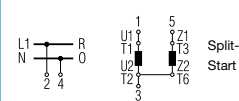
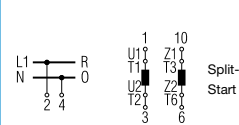
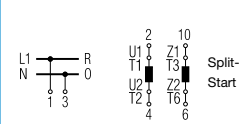
Function	Escutch. Plate	Type/Handle	Code	Stages	Connection Diagram
	CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA..B C26-C43 CA40-CA63 C315		

Star-delta Switches

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OFF-star-delta	 F080					A410	4	
Reversing	 F112					WAA413	5	
With auxiliary contact closed in „OFF“ position	 F080					WAA416	5	
For use with reversing contactors	 F061					A419	4	

Start and Run Switches

Split-phase start	 F119					A425	2	
Split-phase start reversing	 F120					WAA426	3	
Split-phase reversing auto cutout of start field winding	 F104					WAA622	3	

¹not available for switch type CA25

Function/Type	Escutch. Plate	Handle	Code	Stages	Double Lat- ching	Connection Diagram	L350 L630 L1000	L351 L631
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ON/OFF Switches with 60° Switching

[Dimensions p. 56](#)

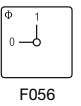
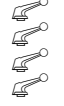
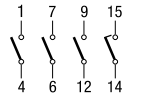
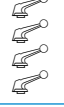
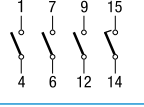
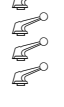
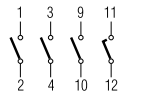
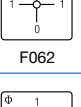
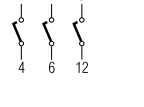
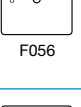
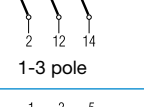
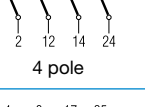
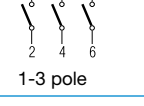
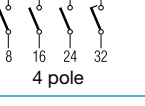
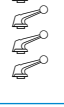
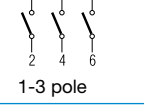
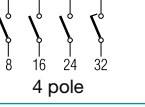
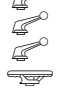
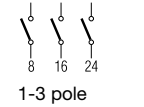
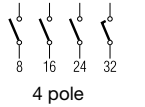
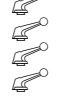
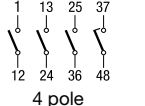
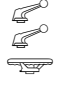
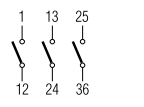
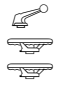
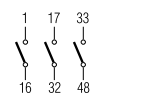
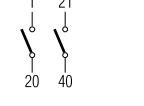
1 pole 2 pole 3 pole 4 pole	L350			WAA200 WAA201 WAA202 WAA203	1 2 3 4			1-4 pole
1 pole 2 pole 3 pole 4 pole	L351			WAA200 WAA201 WAA202 WAA203	1 2 3 4			1-4 pole
1 pole 2 pole 3 pole 4 pole	L400			WAA200 WAA201 WAA202 WAA203	2 2 4 4			1-4 pole
3 pole with lugs suitable for protective cover				WAA302	3			WAA302
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 and 2 pole

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Function/Type	Escutch. Plate	Handle	Code	Stages	Double Lat- ching	Connection Diagram	L350 L630 L1000	L351 L631
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ON/OFF Switches with 90° Switching

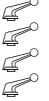
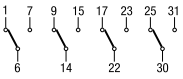
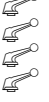
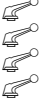
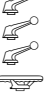
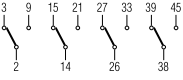
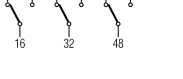
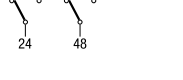
[Dimensions p. 56](#)

1 pole 2 pole 3 pole 4 pole	L350 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	1 2 3 4			1-4 pole
1 pole 2 pole 3 pole 4 pole	L351 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	1 2 3 4			1-4 pole
1 pole 2 pole 3 pole 4 pole	L400 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	2 2 4 4			1-4 pole
3 pole	with lugs suitable for protective cover			WAA307	3			
3 pole	360° rotation			WAA208	4			WAA307
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

- 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

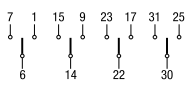
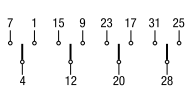
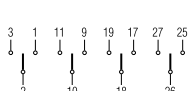
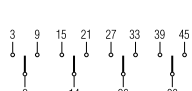
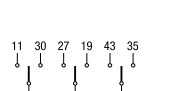
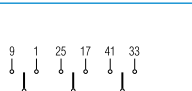
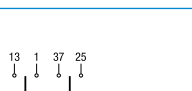
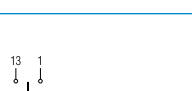
Function/Type	Escutch. Plate	Handle	Code	Stages	Double Lat- ching	Connection Diagram	L350 L630 L1000	L351 L631
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Double-throw Switches without „OFF“ 60° Switching [Dimensions p. 56](#)

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			

Function/Type	Escutch. Plate	Handle	Code	Stages	Double Lat- ching	Connection Diagram	L350 L630 L1000	L351 L631
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Double-throw Switches with Center „OFF" 60° Switching [Dimensions p.56](#)

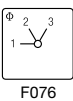
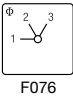
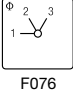
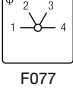
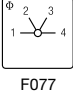
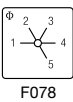
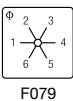
1 pole 2 pole 3 pole 4 pole	L350			WAA210 WAA211 WAA212 WAA213	2 4 6 8			1-4 pole
1 pole 2 pole 3 pole 4 pole	L351			WAA210 WAA211 WAA212 WAA213	2 4 6 8			1-4 pole
1 pole 2 pole 3 pole 4 pole	L400			WAA210 WAA211 WAA212 WAA213	2 4 6 8			1-4 pole
1 pole 2 pole 3 pole 4 pole	L600			WAA210 WAA211 WAA212 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			

- 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

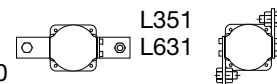
Function/Type	Escutch. Plate	Handle	Code	Stages	Double Lat- ching	Connection Diagram	L350 L630 L1000	L351 L631
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Multi-step Switches single pole without „OFF“

[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		

Function/Type	Escutch. Plate	Handle	Code	Stages	Double Lat- ching	Connection Diagram	L350 L630 L1000	L351 L631
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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		

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

Two or Four Hole Panel Mount	Terminals rotated 90°	Code	CAD.. CA10- CA25	CA10B- CA63 C42	C43 C80- C200-4 L350 Size S2	C315 L400- L2000 Size S3
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Panel Mount						
	Four hole, Protection IP 40	●	E E-V	● ●	● ●	● ●
	Four hole, Protection IP 66/67/69k	●	EF EF-V	● ●	● ●	● ●
	Two hole, Protection IP 66/69k	●	E22 E22-V	● ●		
Panel mount using larger face plate, handle and heavy duty stop						
	Four hole, Protection IP 40		EG	●	CA40- CA63	C80- C200-4
	Four hole, Protection IP 66/67/69k		EGF	●	CA40- CA63	C80- C200-4
Double End Mount						
	Four hole, Protection IP 40		ER	CAD.. CA10- CA25	●	●
	Four hole, Protection IP 66/67/69k		ERF	CAD.. CA10- CA25	●	●

Two or Four Hole Panel Mount	Code	CAD.. CA10- CA25	CA10B CA11B CA20B CA25B	C32 C42 CA40 CA50 CA63	C43
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	Panel mount with heavy duty latching and metal shaft				
	Four hole, Protection IP 40 48 x 48 Plate – S0	KN2	●		
	Four hole, Protection IP 40 64 x 64 Plate – S1	KN1	●	●	●
	Four hole, Protection IP 40 64 x 64 Plate – S1 complete with 6mm square metal shaft	KD1	●	●	●
Panel mount with protective cover					
	Four hole Protection front IP 40 rear IP 30	EC	CAD.. CA10- CA25	●	
	Four hole with additional shaft seal Protection front IP 65 rear IP 30	ED	CAD.. CA10- CA25	●	
	Four hole Protection front IP 40 rear IP 42	EC1		●	
	Four hole with additional shaft seal Protection front IP 65 rear IP 42	ED1		●	
	Two hole Protection front IP 66/69k rear IP 42	ED22	CAD.. CA10- CA25		

Single Hole Mount	Terminals rotated 90°	Code	CA4 CA4-1 CAD4-1	CAD.. CA10- CA25
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			mm	mm
 Single Hole Mount complete with lock nut and shaft seal Bezel mount, Protection IP 66/67/69k	●	FS1 FS1-V	16/22 16/22	
	●	FT1 FT1-V		22
	●	FT3 FT3-V		22/30 22/30
 Square face plate, Protection IP 66/67/69k	●	FS2 FS2-V	16/22 16/22	
	●	FT2 FT2-V		22
	●	FT4 FT4-V		22/30 22/30
S1 square face plate and heavy duty stop, Protection IP 66/67/69k	●	FH3 FH3-V		22 22
 Rectangular face plate, Protection IP 66/67/69k	●	FS4 FS4-V	16/22 16/22	
	●	FT6 FT6-V		22 22
S1 rectangular face plate and heavy duty stop, Protection IP 66/67/69k	●	FH4 FH4-V		22 22
 Lock nut spanner		S00 T170 09		

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

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VE
VE-V

CAD..
CA10-
CA25

•

•

•

VF
VF-V

CAD..
CA10-
CA25



Two hole, Protection IP 40

Two hole with integrated simplified door clutch, Protection IP 65

•

VE22
VE22V

•
CAD..
CA10-
CA25

•

VF22
VF22V

•
CAD..
CA10-
CA25



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

VE1

•

•

Base Mount	Code	CA4 CA4-1 CAD4-1	CAD.. CA10- CA25
------------	------	------------------------	------------------------

 Snap-on for DIN Rail EN 60715 with face plate for 45 mm standard knock-out.  Snap-on for DIN Rail EN 60715. With face plate for 45 mm standard knock-out. The handle and plate are adjustable in height.		VE2	●	
		VE21	●	CAD.. CA10- CA20
		VE21V		CA25

Mounting Plates for Plaster Depth Boxes acc. to DIN 49073 and ÖNORM E8608	Code	CAD.. CA10- CA25
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	Plaster depth trim, Protection IP 40	UE1	●
	With light, Protection IP 40	UE2	●
	With facility for light addition, Protection IP 40	UE3	●

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Face plates

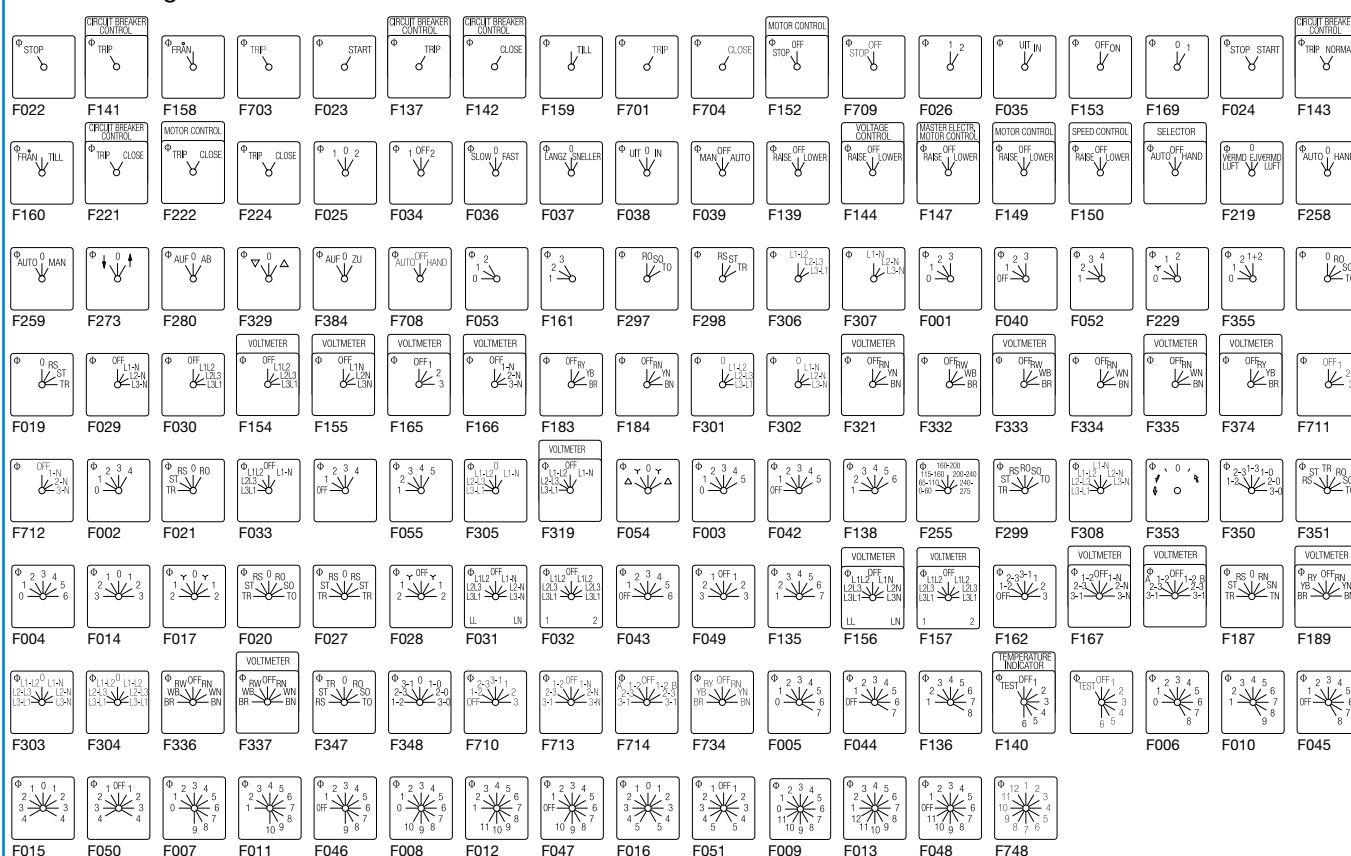


Square and rectangular face plates are available for each size of switch. The face plate consists of a frame and a faceplate having the switch positions which is then embossed with hot-foil backing. The face plate frame is an essential part of the switch and serves as a bearing surface for the handle. 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.

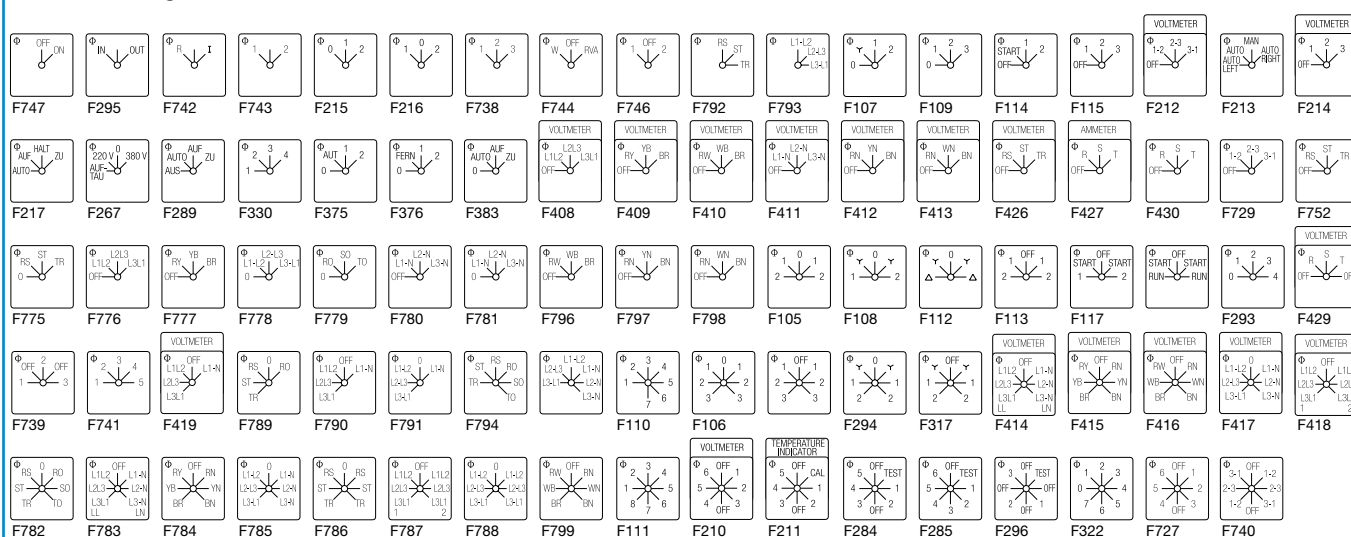
Standard Letterings Available

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

30° switching

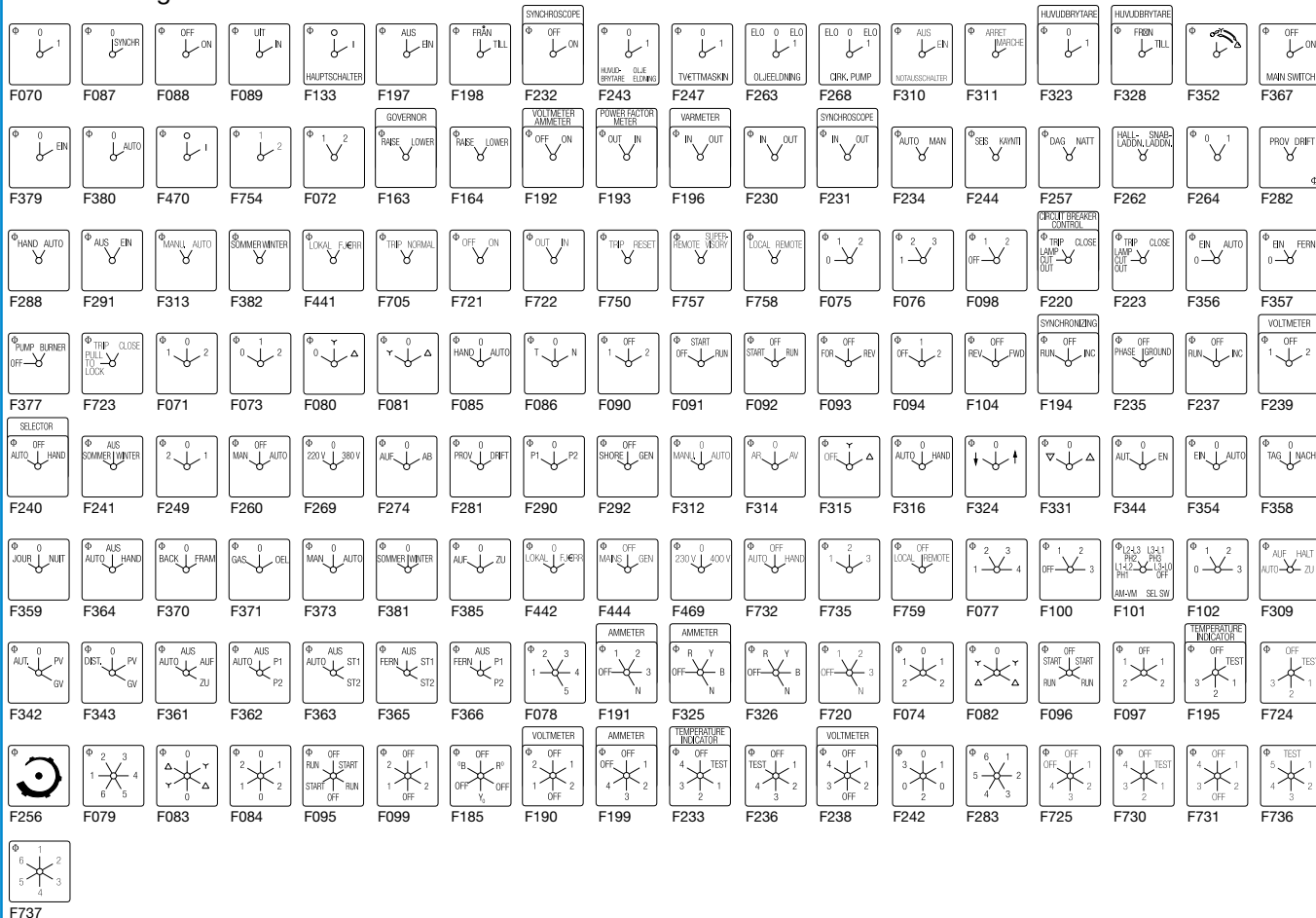


45° switching

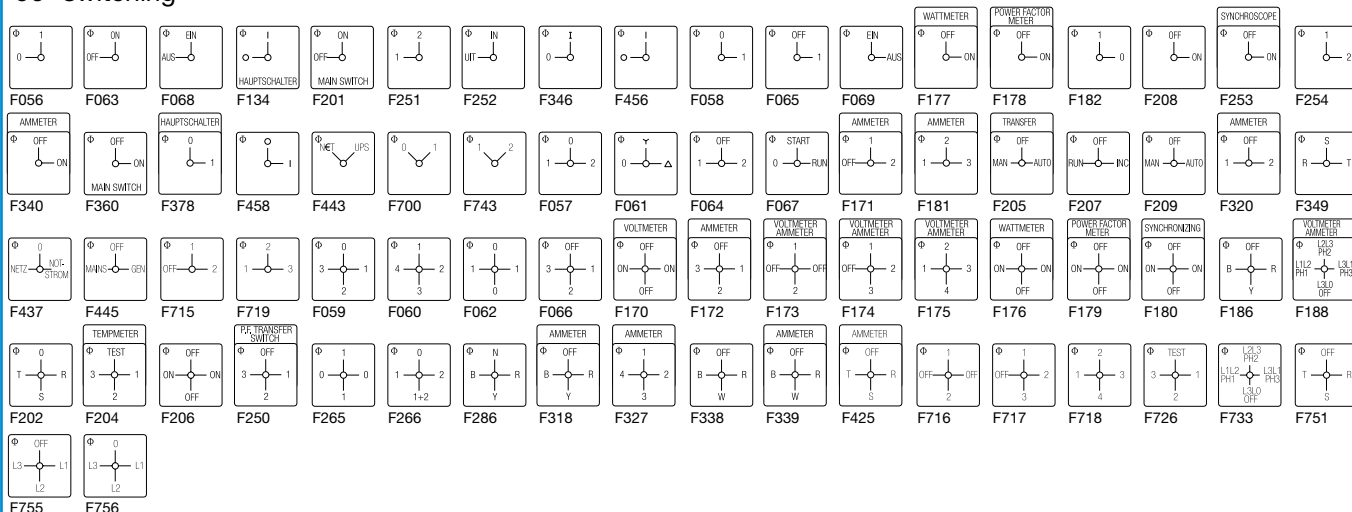


Face plates

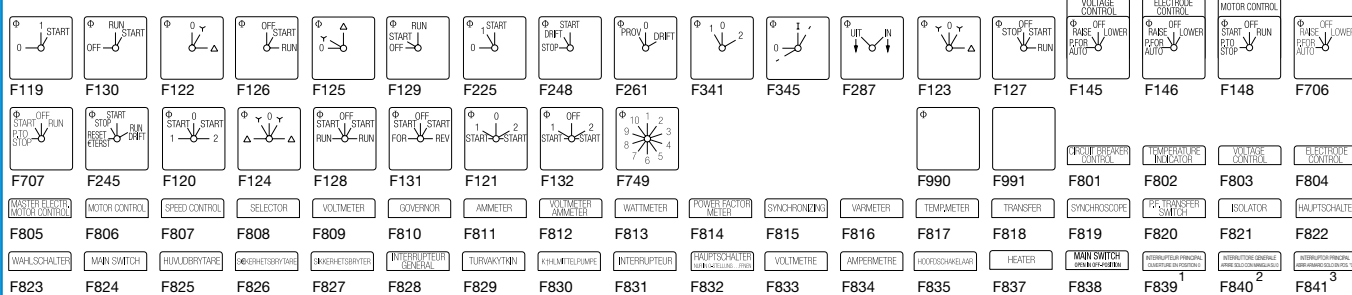
60° switching



90° switching



Miscellaneous



¹INTERRUPTEUR PRINCIPAL, OUVERTURE EN POSITION 0 ²INTERRUTTORE 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

Type	Color	Code	Size				
			S00	S0	S1	S2	S3

R-Handle 	black red	G001 G002	— ● ● ● ●	— ● ● ● ●			
F-Handle 	black red	G221 G222	● ● ● ● —	● ● ● ● —			
S-Handle  S0 S1	black red	G301 G302	— ● ● — —	— ● ● — —			
P-Handle  S0 S1-S3	black red	G211 G212	— ● ● ● ●	— ● ● ● ●			
Handwheel 	black	G971	— — — — ●				

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

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International Standards and Approvals

Country	Authority	Mark or Standard	CAD11/12 CA4 CA4-1	CA10 CA11 CA20	CA10B CA11B CA20B	CA25 CA25B	C26 C32 C42	CA40 CA50 CA63	C43 C80 C125	C315 C316	L350/1 L630/1 L1000	L400 L600 L800	L1200 L1600 L2000
USA	Underwriters Laboratories Inc.	 ¹								● ●	● ●	● ●	● ●
		 ² ₃	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●			●	
Canada	UL investigated acc. to CSA	 ⁵	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●		● ● ●	● ● ●	● ● ●	● ● ●	● ● ●
		 ¹								● ●	● ●	● ●	● ●
		 ² ₃	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●				●
International Electrical Commission (IEC) Recommendation		IEC 60947 ⁴	+	+	+	+	+	+	+	+	+	+	+
China	China Quality Certification Centre	 GB/T14048.3	●	●	●	●	●		● ● ●	● ●			
Russia Belarus Kazakhstan	Eurasian Conformity		● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●
Russian Federation	Russian Maritime Register of Shipping		● ●	● ●	● ●	● ●							
Lloyds Register EMEA			●	●	●								
● Switch approved + Switch conforms to requirements ¹Approved 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). ²Approved under the “Listing Program”. File No. E35541, Category Control No. NLRV (U.S.) resp. NLRV7 (Canada). ³Switch types CAD11/CAD12 approved under the “Listing Program”. File No. E60262, Category Control No. NRNT (U.S.) resp. NRNT7 (Canada). ⁴IEC does not operate an approval scheme. ⁵File No. 13002ass No. 3211-05 resp. 4652-04.													

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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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 3 pole	220 V-240 V	kW	2,5	4	4	5,5	7,5	8	10	18,5	10	11	18,5	30	37	37	55			
			380 V-440 V		4,5	7,5	7,5	11	15	15	18,5	30	18,5	22	30	40	55	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 3 pole	220 V-240 V	kW	1,5	3	3	4	5,5	5,5	7,5	11	7,5	11	11	15	22	22	37			
			380 V-440 V		2,2	5,5	5,5	7,5	11	11	15	18,5	15	18,5	18,5	30	37	37	55			
			500 V		–	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			
	1 phase 2 pole	110 V-120 V	kW	0,3	0,6	0,6	1,5	2,2	2,2	2,5	3	2,5	3	3	3,7	5,5	5,5	11				
		220 V-240 V		0,55	2,2	2,2	3	4	4	5,5	6	5,5	6	6	7,5	11	11	22				
		380 V-440 V		0,75	3	3	3,7	5,5	5,5	7,5	11	7,5	11	11	13	18,5	18,5	30				
AC-4	Direct-on-line starting, reversing, plugging and inching	3 phase 3 pole	220 V-240 V	kW	0,37	0,55	0,55	1,5	2,5	2,7	3,7	5,5	3,7	4	5,5	6	10	10	15			
			380 V-440 V		0,55	1,5	1,5	3	5,5	5,5	6	7,5	6	7	7,5	11	15	15	25			
			500 V		–	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			
	1 phase 2 pole	110 V-120 V	kW	0,15	0,3	0,3	0,45	0,75	0,75	1,1	1,2	1,1	1,2	1,2	1,5	2,2	2,2	4				
		220 V-240 V		0,25	0,75	0,75	1,1	1,5	1,5	2,2	2,4	2,2	2,4	2,4	3	4	4	7,5				
		380 V-440 V		0,5	1,5	1,5	2,2	3	3	3,7	4	3,7	4	4	5,5	7,5	7,5	11				
AC-23A	Frequent switching of motors or other high inductive loads	3 phase 3 pole	220 V-240 V	kW	1,8	3,7	3,7	5,5	7,5	7,5	11	15	7,5	11	15	30	37	37	75			
			380 V-440 V		3	7,5	7,5	11	15	15	22	30	18,5	22	30	45	75	75	132			
			500 V		–	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			
	1 phase 2 pole	110 V-120 V	kW	0,37	0,75	0,75	1,5	2,2	2,2	2,5	4	2,2	2,5	4	5,5	11	11	18,5				
		220 V-240 V		0,75	2,5	2,5	3	4	4	5,5	10	4	5,5	10	15	22	22	37				
		380 V-440 V		1,1	3,7	3,7	5,5	7,5	7,5	11	18,5	7,5	11	18,5	22	37	37	55				
Ratings				UL/Canada																		
	Standard motor load DOL-Rating (similar AC-3)	3 phase 3 pole	110 V-120 V	HP	0,75	1,5	1,5	3	5	5	7,5	7,5	7,5	7,5	7,5	10	15	–	30			
			220 V-240 V		1	3	3	7,5	10	10	15	15	15	15	15	20	25	–	75			
			440 V-480 V		–	–	5	10	–	20	25	25	25	25	30	30	40	–	75			
			550 V-600 V		–	–	5	10	–	25	30	30	25	30	30	40	50	–	60			
	1 phase 2 pole	110 V-120 V	HP	0,33	0,5	0,5	1,5	2	2	3	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	7,5	10	15	–	40				
		277 V		0,75	2	2	3	5	5	7,5	7,5	7,5	7,5	10	10	15	–	40				
		440 V-480 V		–	–	2	5	–	10	15	15	15	15	15	20	25	–	50				
550 V-600 V	–	–	2	5	–	15	20	20	15	20	20	20	25	30	–	50						
	Heavy motor load Reversing-Rating (similar AC-4)	3 phase 3 pole	110 V-120 V	HP	–	0,5	0,5	1	2	2	3	5	–	–	–	7,5	10	–	15			
			220 V-240 V		–	1	1	2	3	3	5	7,5	–	–	–	15	20	–	30			
			440 V-600 V		–	–	3	5	–	10	15	20	–	–	–	25	30	–	40			
1 phase 2 pole	110 V-120 V	HP	–	0,17	0,17	0,33	1,5	1,5	1,5	2	–	–	–	3	5	–	7,5					
	220 V-240 V		–	0,5	0,5	0,75	3	3	3	5	–	–	–	7,5	10	–	15					
	277 V		–	0,6	0,6	1	3	3	3	5	–	–	–	7,5	10	–	15					

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

Max. Permissible Wire Gage - Use copper wire only

Single-core or stranded wire

mm²
AWG

2x 2x 2x 2x 2x 2x 2x 2x
1,5 2,5 2,5 4 6 6 10 16 16 16 16 35 70 95¹ 185¹
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)

mm²
AWG

2x 2x 2x 2x 2x 2x 2x 2x
1,5 2,5 2,5 4 4 6 6 10 10 10 10 25 50 95¹ 150¹
(1) (2,5) (2,5) (2,5) (4) (4) (6) (10) (10) (10) (10) (25) (50) - MCM
16 14 14 12 10 10 8 6 6 6 6 3 1/0 - 300

Tightening torque of screws

Nm
lb-in

0,4 0,6 0,6 1,3 1,3 1,3 2,2 3 1,8 1,8 1,8 4 4,5 8 14
3,5 5 5 12 12 12 19,5 26,4 16 16 16 35 39,8 70 125

DC Switching Capacity²

contacts in series: 1 2 3 4 5 6 8
Permissible voltage in volts

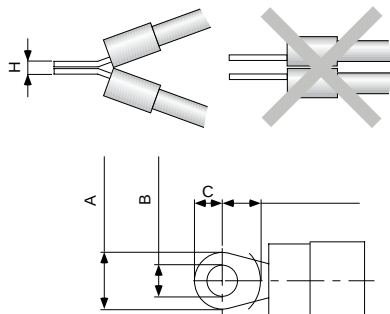
Rated Operational Current I_o

CA4 CA10 CA10S CA20 CA20S CA25 CA25S CA40 CA40S CA63S

Utilization category DC-21A	24	48	72	96	120	144	192	A	10	16	16	21	24	26	32	35	40	63
Switching of resistive load	48	96	144	192	240	288	384	A	6	14	15	18	24	25	32	32	40	63
Time constant L/R≤1ms	60	120	180	240	300	360	480	A	5	13	15	17	21	24	28	28	40	50
	110	220	330	440	550	660	-	A	4	6	7	6	7	7	9,3	-	-	-
	220	440	660	-	-	-	-	A	0,8	0,9	1	1	1	1	1	-	-	-
Utilization category DC-22A	24	48	72	96	120	144	192	A	8	14	15	18	24	25	32	35	40	63
Switching of mixed resistive and inductive load	48	96	144	192	240	288	384	A	5	13	15	17	24	25	32	32	40	63
f.e. shunt motors	60	120	180	240	300	360	480	A	4	12	15	16	19	24	25	-	20	25
Time constant L/R≤2,5ms	110	220	330	440	550	660	-	A	1,5	1,9	2	2	2	2,25	3	-	-	-
	220	440	660	-	-	-	-	A	0,3	0,3	0,35	0,3	0,35	0,35	0,35	-	-	-
Utilization category DC-23A	24	48	72	96	120	144	192	A	7	13	15	16	23	23	32	35	40	63
Switching of highly inductive loads	48	96	144	192	240	288	384	A	4	12	15	15	23	21	32	26	40	63
f.e. series motors	60	120	180	240	300	360	480	A	3,5	10	13	14	16	18	25	-	-	-
Time constant L/R≤15ms	110	220	330	440	550	660	-	A	1	1,5	1,75	1,7	1,75	2	2,5	-	-	-
	220	440	660	-	-	-	-	A	0,2	0,2	0,3	0,2	0,3	0,2	0,3	-	-	-
Utilization category DC-13	24	48	-	-	-	-	-	A	0,8	3	-	4	-	5	-	-	-	-
Control of electromagnets	48	96	-	-	-	-	-	A	0,5	1,7	-	2,4	-	3	-	-	-	-
Time constant L/R≤100ms	60	120	-	-	-	-	-	A	0,2	1,4	-	1,8	-	2,5	-	-	-	-
	110	220	-	-	-	-	-	A	-	0,7	-	1	-	1,5	-	-	-	-
	220	440	-	-	-	-	-	A	-	0,15	-	0,35	-	0,5	-	-	-	-

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

Ring cable lug - Dimensions



	A (mm)	B (mm)	C (mm)	H (mm)
C26-6	10	M4	5	3,7
C32-6	12,9	M5	6,1	3,8
C42-6	15,6	M6	7,1	4,1
C80-6	23,1	M6	9,1	5,4
C125-6	28,5	M6	11,8	4,9
C200-4	-	M8	-	4,8
C315	23,6	M12	18,3	3,4

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

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			
	UL/Canada ²			V	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		
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 φ 0,8	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	
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	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 length					mm	Cable lug or copper bus									
						M12 20	M12 30	M16 40	M16 30	M16 40	M16 40	M16 40	M16 40	2xM16 50	4xM16 50
Tightening torque of screws					Nm lb-in	25 220	25 220	25 220	25 220	25 220	25 220	25 220	25 220	25 220	25 220
Min. Ambient Temperature of Stages Max. Ambient Temperature of Stages ^{3, 4}					-5 °C (-25 °C on request) 55 °C during 24 hours with peaks up to 60 °C, permissible load see Rated Thermal Current.										

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

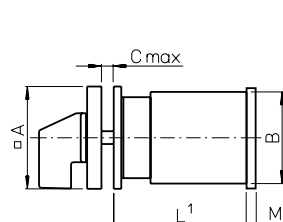
²International Standards and Approvals, refer to page 43. ³For electromagnetic optional extras see additional data in Catalog 101. ⁴Storage temperature: -40 °C to 85 °C (in case of temperature below -5 °C no shock load permissible).

Selection Data	CAD4-1	CAD11	CAD12
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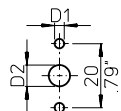
Rated Insulation Voltage U_i		IEC 60947-3, EN 60947-3 ¹ VDE 0660 part 107	V	440	600	600		
		SEV ²	V	–	600	600		
		North America	V	300	300	300		
		min. voltage	V	1 ⁷	1	6		
Rated Impulse Withstand Voltage U_{imp}				on request				
Rated Thermal Current I_U/I_{th}		IEC 60947-3, EN 60947-3 VDE 0660 part 107	A	5	6	6		
		SEV ²	A	–	5	5		
		Nordamerika	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 Capacity ⁵		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				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)				2x	2x	2x		
		mm ²	1,5	2,5	2,5			
			(1)	(2,5)	(2,5)			
		Flexible AWG wires (without sleeve)	AWG	16	14	14		
Tightening torque of screws			Nm lb-in	0,4 3,5	0,6 5	0,6 5		
Min. Ambient Temperature of Stages				-25 °C (valid only without optional extra)				
Max. Ambient Temperature of Stages ^{4, 6}				55 °C during 24 hours with peaks up to 60 °C				
				35 °C during 24 hours with peaks up to 40 °C				

Dimensions

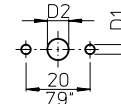
Two or Four Hole Panel Mounting



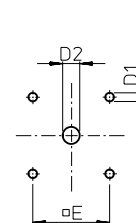
E
for CA4, CA4-1,
CAD4-1



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



E
E-V
ER

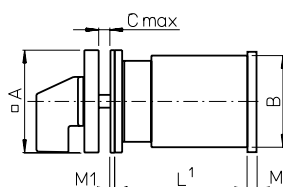


	CA10		CA10B		CA40 ³		C125		L switches		C315 ⁴	
	CA4	CA11	CA10B	CA11B	CA50 ³	CA63 ³	C80	C200-4	Size S2	Size S3	Size S2	Size S3
	CAD4-1	CAD12	CA20	CA25 ³	CA20B	CA25B	C26	C32	C42 ³	C43	C80	C200-4
A	0	48	48	48 (64)	64	64	64	64	64 (88)	88	64 (88)	88
	1.18	1.89	1.89	1.89 (2.52)	2.52	2.52	2.52	2.52	2.52 (3.46)	3.46	2.52	3.46
B	29.5	43	45	46	56	56	58	60	66	84	55.5x64	84
	1.16	1.69	1.77	1.81	2.20	2.20	2.28	2.36	2.60	3.30	2.19x2.52	3.30
C	4	4	4	4	4	4	4	4	4	5.5	4	5.5
	.16	.16	.16	.16	.16	.16	.16	.16	.16	.22	.16	.22
D1	3,2	5	5	5	5	5	5	5	5 (6)	6	5 (6)	6
	.13	.20	.20	.20	.20	.20	.20	.20	.20 (.24)	.24	.20 (.24)	.24
D2	8-11	8-19	8-19	8-19	10-22	10-22	10-22	10-22	10-22	13-30	10-22	13-30
	.31-.43	.31-.75	.31-.75	.31-.75	.39-.87	.39-.87	.39-.87	.39-.87	.39-.87	.51-1.18	.39-.87	.51-1.18
E	-	36	36	36 (48)	48	48	48	48	48 (68)	68	48 (68)	68
	-	1.42	1.42	1.42 (1.89)	1.89	1.89	1.89	1.89	1.89 (2.68)	2.68	1.89 (2.68)	2.68
M²	-	4.5	4.5	5.5	5	5.5	7.5	7.5	7.5	7.5	7.6	9.4
	-	.18	.18	.22	.20	.22	.30	.30	.30	.30	.30	.37

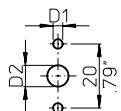
²M, additional length for mounting ER only

³Dimensions in () for ER mounting plate only

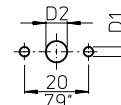
⁴Dimensions in () for L800, L1200, L1600



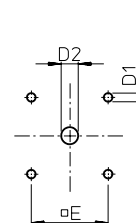
EF
for CA4, CA4-1,
CAD4-1



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



EF
EF-V
ERF



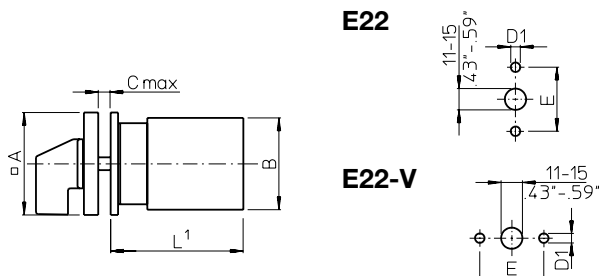
	CA10		CA10B		CA40 ³		C125		L switches		C315 ⁴	
	CA4	CA11	CA10B	CA11B	CA50 ³	CA63 ³	C80	C200-4	Size S2	Size S3	Size S2	Size S3
	CAD4-1	CAD12	CA20	CA25 ³	CA20B	CA25B	C26	C32	C42 ³	C43	C80	C200-4
A	30	48	48	48 (64)	64	64	64	64	64 (88)	88	64 (88)	88
	1.18	1.89	1.89	1.89 (2.52)	2.52	2.52	2.52	2.52	2.52 (3.46)	3.46	2.52	3.46
B	29.5	43	45	46	56	56	58	60	66	84	55.5x64	84
	1.16	1.69	1.77	1.81	2.20	2.20	2.28	2.36	2.60	3.30	2.19x2.52	3.30
C	4	4	4	4	4	4	4	4	4	5.5	4	5.5
	.16	.16	.16	.16	.16	.16	.16	.16	.16	.22	.16	.22
D1	3,2	5	5	5	5	5	5	5	5 (6)	6	5 (6)	6
	.13	.20	.20	.20	.20	.20	.20	.20	.20 (.24)	.24	.20 (.24)	.24
D2	8-11	15-19	15-19	15-19	19-22	19-22	19-22	19-22	19-22	26-30	19-22	26-30
	.31-.43	.59-.75	.59-.75	.59-.75	.75-.87	.75-.87	.75-.87	.75-.87	.75-.87	1.02-1.18	.75-.87	1.02-1.18
E	-	36	36	36 (48)	48	48	48	48	48 (68)	68	48 (68)	68
	-	1.42	1.42	1.42 (1.89)	1.89	1.89	1.89	1.89	1.89 (2.68)	2.68	1.89 (2.68)	2.68
M²	-	4.5	4.5	5.5	5	5.5	7.5	7.5	7.5	7.5	7.6	9.4
	-	.18	.18	.22	.20	.22	.30	.30	.30	.30	.30	.37
M1	.04	-	-	-	-	-	-	-	-	-	-	-

²M, additional length for mounting ERF only

³Dimensions in () for ERF mounting plate only

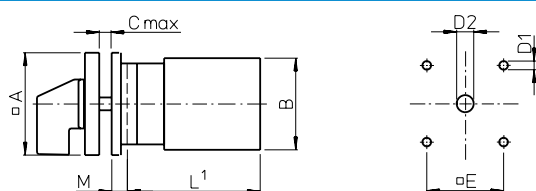
⁴Dimensions in () for L800, L1200, L1600

Two or Four Hole Panel Mounting



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

EG EGF

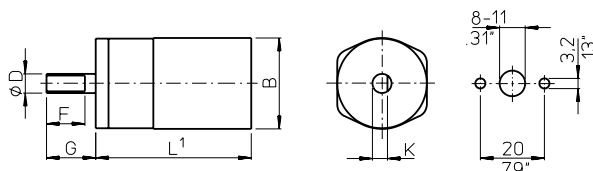


	CA10	CA11	CAD11	CA20	CA25	C26	C32	C42	CA40	CA50	CA63	C80	C125	C200-4
													L switches	Size S2
A	64	64	64	64	64	88	88	88	88	88	88	130	130	130
	2.52	2.52	2.52	2.52	2.52	3.46	3.46	3.46	3.46	3.46	3.46	5.12	5.12	5.12
B	43	45	46	45	46	58	60	66	55,5x64	55,5x64	55,5x64	84	88	88
	1.69	1.77	1.81	1.77	1.81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

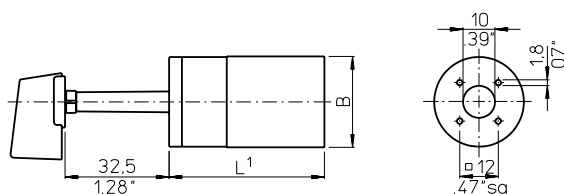
¹see page 56

Four Hole Panel Mounting or Mosaic Mounting

E9 E91



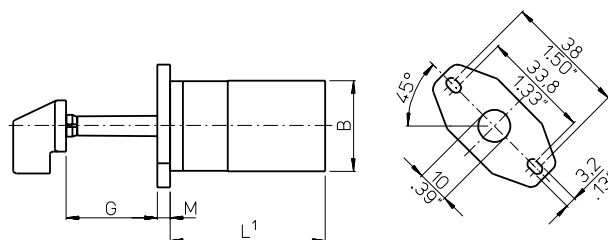
E92



CA4
CA4
CAD4-1
29,5
1.16

B

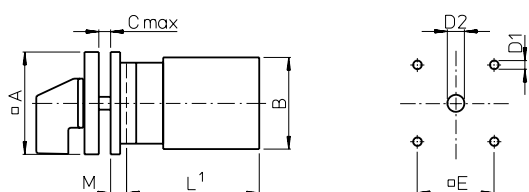
E93 E94



CA4
CA4-1
CAD4-1

	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

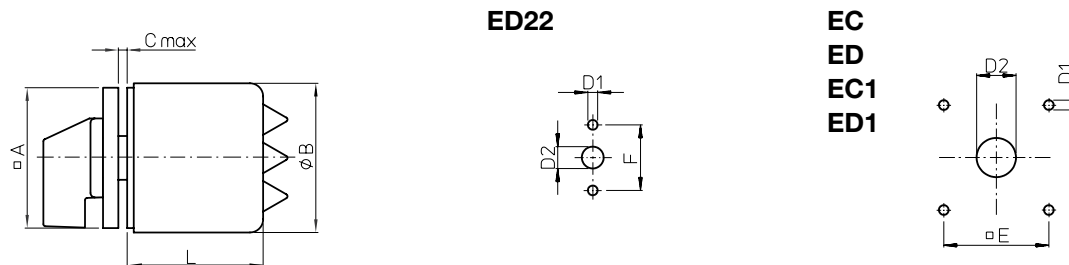


KN2	CA10 CA11 CAD11 CAD12	CA20	CA25
A	48 1.89	48 1.89	48 1.89
B	43 1.69	45 1.77	46 1.81
C	4 .16	4 .16	4 .16
D1	5 .20	5 .20	5 .20
D2	8-19 .31-.75	8-19 .31-.75	8-19 .31-.75
E	36 1.42	36 1.42	36 1.42
M	5,2 .20	5,2 .20	5,2 .20

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

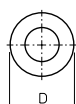


		CA10 CAD11 CAD12		CA11		CA20		CA25		CA10B		CA20B CA11B		CA25B		C26	
		EC ED	ED22	EC ED	ED22	EC ED	ED22	EC ED	ED22	EC ED	EC1 ED1	EC ED	EC1 ED1	EC ED	EC1 ED1	EC ED	EC1 ED1
EC/EC1 ED/ED1/ ED22	A	48 1.89	48 1.89	48 1.89	48 1.89	64 2.52	48 1.89	64 2.52	48 1.89	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52
	B	50 1.97	74 2.91	50 1.97	74 2.91	68 2.68	74 2.91	68 2.68	74 2.91	88 3.46	74 2.91	88 3.46	74 2.91	88 3.46	74 2.91	88 3.46	74 2.91
	C	4 .16	-	4 .16	-	4 .16	-	4 .16	-	4 .16	-	4 .16	-	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 .16	4 .16	4 .16	4 .16	4 .16
EC/EC1 ED/ED1/ ED22	D1	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20
	D2	8-19 .31-.75	-	8-19 .31-.75	-	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	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 .43-.59	19-22 .75-.87	11-15 .43-.59	19-22 .75-.87	19-22 .75-.87	19-22 .75-.87	19-22 .75-.87	19-22 .75-.87	19-22 .75-.87	19-22 .75-.87	19-22 .75-.87
	E	36 1.42	-	36 1.42	-	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	48 1.89
ED/ED22 Stages L	F	-	30 1.17	-	30 1.17	-	30 1.17	-	30 1.17	-	-	-	-	-	-	-	-
	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	53,5 2.10	74,3 2.93	53,5 2.10	74,3 2.93	-	74,3 2.93	-	74,3 2.93	-	73,7 2.90	-	73,7 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	-	74,3 2.93	-	73,7 2.90	-	73,7 2.90	-	73,7 2.90	-	73,7 2.90
Stages L	3	67,5 2.66	74,3 2.93	67,5 2.66	94,3 3.71	-	74,3 2.93	-	94,3 3.71	-	73,7 2.90	-	93,7 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	-	94,3 3.71	-	93,7 3.69	-	93,7 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	-	-	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	-
Stages L	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	-
Stages L	11	-	-	-	-	-	-	-	-	152 5.98	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	164,5 6.48	-	-	-	-	-	-	-

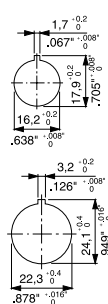
Single Hole Mounting or Base Mounting

< back to table of contents >

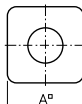
FS1...
FT1...
FT3...



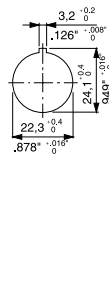
FS1...
FS2...
FS4...



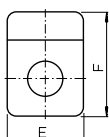
FH3...
FS2...
FT2...
FT4...



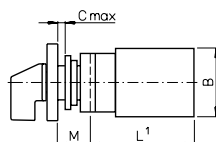
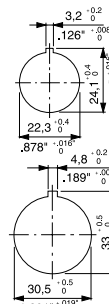
FH3...
FH4...
FT1...
FT2...
FT6...



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



FT3...
FT4...



A/E

FH3...

FH4...

B

C

D

F

M

FH4...

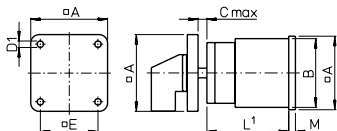
FH3...

FH4...

CA4 CA4-1 CAD4-1	CA10 CA11 CAD11 CAD12	CA20	CA25
30 1.18	48 1.89	48 1.89	48 1.89
-	64 2.52	64 2.52	64 2.52
-	64 2.52	64 2.52	64 2.52
28 1.10	43 1.69	45 1.77	46 1.81
5 .20	6 .24	6 .24	6 .24
29,5 1.16	39,4 1.55	39,4 1.55	39,4 1.55
39 1.54	59 2.32	59 2.32	59 2.32
-	78,5 3.09	78,5 3.09	78,5 3.09
12,5 .49	18,2 .72	18,2 .72	18,2 .72
-	25,2 .99	25,2 .99	25,2 .99
-	25,2 .99	25,2 .99	25,2 .99

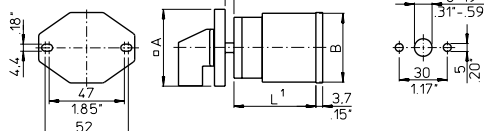
VE

VE-V



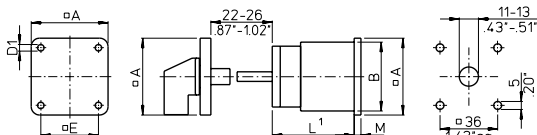
VE22

VE22V



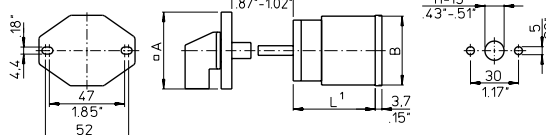
VF

VF-V



VF22

VF22V



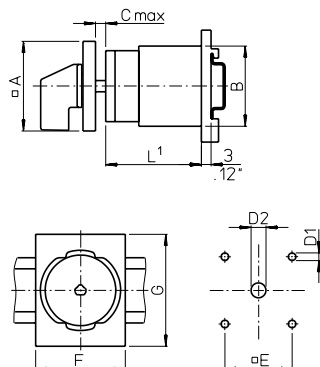
	CA10 CA11 CAD11 CAD12	CA20	CA25 ²	CA10B CA11B CA20B	CA25B	C26	C32	C42 ²	C43	CA40 ² CA50 ² CA63 ²	C80	C125 C200-4	L switches Size S2	L switches Size S3
A	48 1.89	48 1.89	48 (64) 1.89 (2.52)	64 2.52	64 2.52	64 2.52	64 2.52	64 (88) 2.52 (3.46)	88 3.46	64 (88) 2.52 (3.46)	88 3.46	88 3.46	88 3.46	128 5.04
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	84 3.30	55,5x64 2.19x2.52	84 3.30	88 3.46	88 3.46	126 4.96
C	10,5 .41	10,5 .41	10,5 .41	13,5 .53	13,5 .53	13,5 .53	13,5 .53	13,5 .53	16 .63	13,5 .53	16 .63	16 .63	16 .63	19,3 .76
D1	4,1 .16	4,1 .16	4,1 .16	4,1 .16	4,1 .16	4,1 .16	4,1 .16	5,4 .21	5,4 .21	5,4 .21	5,4 .21	5,4 .21	5,4 .21	7 .28
D2	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	6 .24	5 (6) .20 (.24)	6 .24	6 .24	6 .24	7 .28
D3	8-19 .31-.75	8-19 .31-.75	8-19 .31-.75	10-22 .39-.87	10-22 .39-.87	10-22 .39-.87	10-22 .39-.87	10-22 .39-.87	13-30 .51-1.18	10-22 .39-.87	13-30 .51-1.18	13-30 .51-1.18	13-30 .51-1.18	15,5-25 .61-.98
E	36 1.42	36 1.42	36 (48) 1.42 (1.89)	48 1.89	48 1.89	48 1.89	48 1.89	48 (68) 1.89 (2.68)	68 2.68	48 (68) 1.89 (2.68)	68 2.68	68 2.68	68 2.68	104 4.09
M	2,2 .09	2,2 .09	3,2 .13	2,5 .10	2,5 .10	5 .20	5 .20	5 .20	7 .28	5,1 .21	8,9 .35	8,9 .35	27 1.06	11,4 (31.9) .45 (1.25)

²Dimensions in () for revertive mounting plate

³Dimensions in () for L800, L1200, L1600

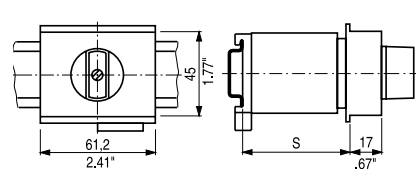
Base Mounting

VE1

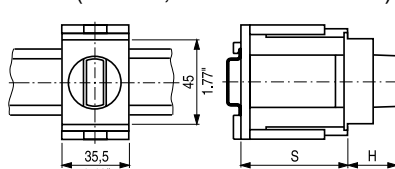


	CA10 CA11 CAD11 CAD12	CA20	CA25	CA10B CA11B CA20B	CA25B	C26	C32	C42	CA40 CA50 CA63
A	48 1.89	48 1.89	48 1.89	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52
B	43 1.69	45 1.77	46 1.81	56 2.20	56 2.20	58 2.28	60 2.36	66 2.60	55,5x64 2.19x2.52
C	10,5 .41	10,5 .41	10,5 .41	13,5 .53	13,5 .53	13,5 .53	13,5 .53	13,5 .53	13,5 .53
D1	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20
D2	8-15 .31-.59	8-15 .31-.59	8-15 .31-.59	10-15 .39-.59	10-15 .39-.59	10-15 .39-.59	10-15 .39-.59	10-15 .39-.59	10-15 .39-.59
E	36 1.42	36 1.42	36 1.42	48 1.89	48 1.89	48 1.89	48 1.89	48 1.89	48 1.89
F	48 1.89	48 1.89	48 1.89	70 2.76	70 2.76	70 2.76	70 2.76	70 2.76	70 2.76
G	60 2.36	60 2.36	60 2.36	60 2.36	60 2.36	60 2.36	60 2.36	60 2.36	60 2.36

VE2

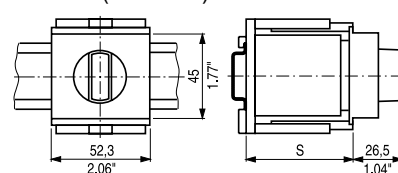


VE21 (for CA4, CA4-1 and CAD4-1)



VE21 (for CA10-CA20)

VE21V (for CA25)

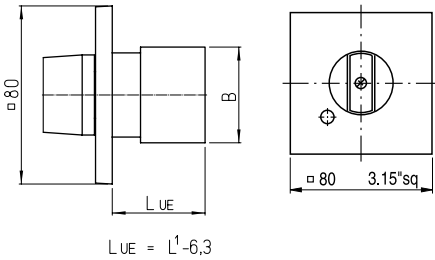


	VE2						VE21, VE21V				
	CA10 CAD11 CAD12	CA11 CA20	CA25			CA4 CA4-1 CAD4-1	CA10 CAD11 CAD12	CA11	CA20	CA25	
	Max. no. of stages				S _{min.}	H	No. of stages				
S = ⁴⁶ _{1.81}	3	1	-	44 1.73	21 .83	1/2	1/2	1/2	1/2	1	
S = ⁵⁰ _{1.97}	-	-	1	46 1.81	26,5 1.04	3	3	-	-	2	
S = ⁶¹ _{2.40}	4	2	2	54 2.13	26,5 1.04	4	-	-	-	-	
S = ⁶⁷ _{2.64}	5	-	-	56 2.20	-	-	-	3	3	-	
S = ⁶⁹ _{2.70}	-	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	

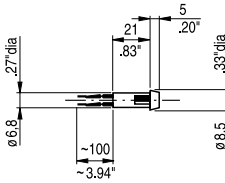
¹see page 56 ²not available for switch type CA20

Wall Mounting, Face plates and Additional Length

UE1
UE2
UE3

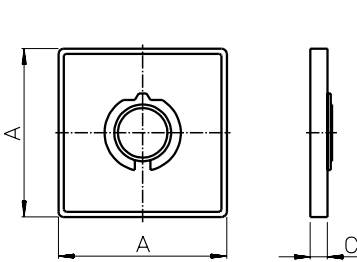


Lamp

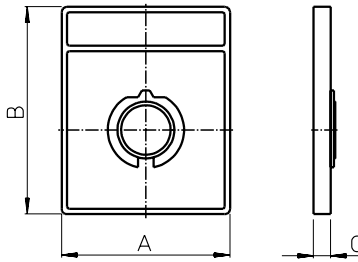


	CA10		
	CA11		
	CAD11		
	CAD12	CA20	CA25
B	43	45	46
	1.69	1.77	1.81

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



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

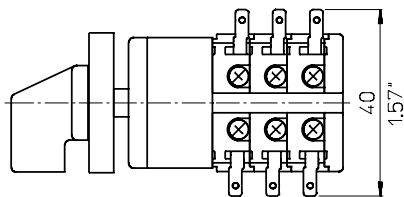


Size	A	B	C
S00	30	39	5,5
	1.18	1.54	.22
S0	48	59	6,7
	1.89	2.32	.26
S1	64	78	7,4
	2.52	3.07	.29

Additional length for amendment (page 6)

Amendment		CAD11	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

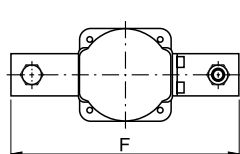
Quick connects for switches CA4-4



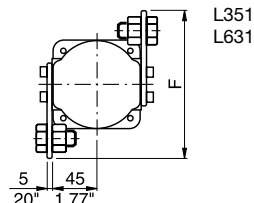
¹see page 56

Additional Length

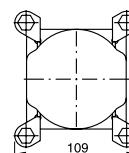
Terminal lugs for switches C200-4-, C315, C316 and L switches



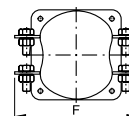
L350
L630
L1000



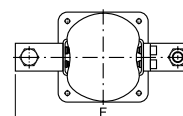
L351
L631



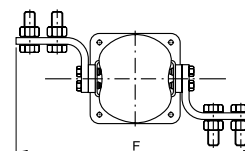
C200-4



C315
C316
L400
L600



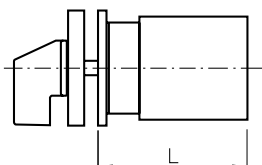
L800
L1200
L1600



L2000

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

Length L



	CA4 CA4-1 CAD4-1	CA10 CAD11 CAD12	CA11	CA20	CA25	CA10B	CA11B	CA20B	CA25B	C26	C32	C42	C43	CA40 CA50 CA63	C80	C125 C200-4 L switches Size S2	C315 L switches Size S3
1	30 1.18	33,5 1.32	36,7 1.44	37,7 1.48	39 1.51	38,9 1.53	42,1 1.66	43,1 1.70	44,4 1.75	42 1.65	46,8 1.84	50,8 2.00	59 2.32	42,5 1.67	61,5 2.42	67,5 2.66	78,6 3.09
2	38 1.50	43 1.69	49,4 1.94	50,4 1.98	53 2.09	48,4 1.91	54,8 2.16	55,8 2.20	58,4 2.30	54,7 2.15	64,3 2.51	72,3 2.85	80,5 3.17	55,2 2.17	88,0 3.46	100 3.94	117,2 4.61
3	46 1.81	52,5 2.07	62,1 2.44	63,1 2.48	67 2.64	57,9 2.28	67,5 2.66	68,5 2.70	72,4 2.85	67,4 2.65	81,8 3.22	93,8 3.69	102 4.02	67,9 2.67	114,5 4.51	132,5 5.22	155,8 6.13
4	54 2.13	62 2.44	74,8 2.94	75,8 2.98	81 3.19	67,4 2.65	80,2 3.16	81,2 3.20	86,4 3.40	80,1 3.15	99,3 3.91	115,3 4.54	123,5 4.86	80,6 3.17	141 5.55	165 6.50	194,4 7.65
5	62 2.44	71,5 2.81	87,5 3.44	88,5 3.48	95 3.74	76,9 3.03	92,9 3.66	93,9 3.70	100,4 3.95	92,8 3.65	116,8 4.60	136,8 5.39	145 5.71	93,3 3.67	167,5 6.59	197,5 7.78	233 9.17
6	70 2.76	81 3.19	100,2 3.94	101,2 3.98	109 4.29	86,4 3.40	105,6 4.16	106,6 4.20	114,4 4.50	105,5 4.15	134,3 5.29	158,3 6.23	166,5 6.56	106 4.17	194 7.64	230 9.06	271,6 10.69
7	78 3.07	90,5 3.56	112,9 4.44	113,9 4.48	123 4.84	95,9 3.78	118,3 4.66	119,3 4.70	128,4 5.05	118,2 4.65	151,8 5.98	179,8 7.08	188 7.40	118,7 4.67	220,5 8.68	262,5 10.33	310,2 12.21
8	86 3.39	100 3.94	125,6 4.94	126,6 4.98	137 5.39	105,4 4.15	131 5.16	132 5.20	142,4 5.60	130,9 5.15	169,3 6.67	201,3 7.93	209,5 8.25	131,4 5.17	247 9.72	295 11.61	348,8 13.73
9	94 3.70	109,5 4.31	138,3 5.44	139,3 5.48	151 5.94	114,9 4.52	143,7 5.66	144,7 5.70	156,4 6.15	143,6 5.65	186,8 7.36	222,8 8.77	231 9.09	144,1 5.67	273,5 10.77	327,5 12.89	387,4 15.25
10	-	119 4.68	151 5.94	152 5.98	165 6.50	124,4 4.90	156,4 6.16	157,4 6.20	170,4 6.70	156,3 6.15	204,3 8.04	244,3 9.62	252,2 9.54	156,8 6.17	300 11.81	360 14.17	426 16.77
11	-	128,5 5.06	163,7 6.44	164,7 6.48	179 7.05	133,9 5.27	169,1 6.66	170,1 6.70	184,4 7.25	169 6.65	221,8 8.73	265,8 10.46	274 10.79	169,5 6.67	326,5 12.85	392,5 15.45	464,6 18.29
12	-	138 5.43	176,4 6.94	177,4 6.98	193 7.60	143,4 5.65	181,8 7.16	182,8 7.20	198,4 7.80	181,7 7.15	239,3 9.42	287,3 11.31	295,5 11.63	182,2 7.17	353 13.90	425 16.73	503,2 19.81

Notes:

[< back to table of contents >](#)

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

Australia

[Kraus & Naimer Pty. Ltd.](#)
379 Liverpool Road, ASHFIELD, N.S.W. 2131
P: 1800 567 948
E: sales-au@krausnaimer.com

Austria

[Kraus & Naimer GmbH](#)
Schumannsgasse 39
1180 WIEN
P: +43 1 404 06 0
E: sales-at@krausnaimer.com

Belgium, Luxembourg

[Kraus & Naimer B.V.](#)
Ikaros Business Park
Ikaroslaan 83
1930 ZAVENTHEM
P: +32 2 757 0141
F: +32 2 757 1640
E: sales-be@krausnaimer.com

Brazil

Central and South America
[Kraus & Naimer Ind. Com. Ltda.](#)
Rua Santa Monica, 1061
Parque Industrial San Jose
P: +55 11 2198 1288
F: +55 11 2198 1251
E: knbrasil@krausnaimer.com.br

Canada

[Kraus & Naimer Ltd.](#)
219 Connie Crescent, Unit 13A
CONCORD, Ontario, L4K 1L4
P: +1 905 738 1666
E: sales-ca@krausnaimer.com

Cyprus

ELECTROMATIC CONSTRUCTIONS LTD.
72, Evagoras Pallikarides Str., 2235 LATSIA-Nicosia
P. O. Box 12630, 2251 LATSIA-Nicosia
P: +357 2 48 41 41
F: +357 2 48 57 47
E: electromatic@cytanet.com.cy

Czech Republic

OBZOR, výrobní družstvo Zlín
Na Slanici 378
763 02 ZLÍN
P: +420 577 195 150
F: +420 577 195 152
E: odbyt@obzor.cz

Denmark

THIIM A/S
Transformervej 31
2860 SOEBORG
P: +45 4485 8000
F: +45 4485 8005
E: thiim@thiim.com

Finland

[Kraus & Naimer Oy](#)
Kiitoradankuja 8
01530 VANTAA
P: +358 9 825 424 0
E: sales-fi@krausnaimer.com

France

[Kraus & Naimer s.a.s.](#)
33, rue Bobillot
75013 PARIS
P: +33 1 58 40 80 80
E: sales-fr@krausnaimer.com

Germany

[Kraus & Naimer GmbH](#)
Wikingerstraße 20-28, 76189 KARLSRUHE
Postfach 10 01 24, 76231 KARLSRUHE
P: +49 721 59 88 0
E: sales-de@krausnaimer.com

Great Britain

[Kraus & Naimer Ltd.](#)
115 London Road
NEWBURY/BERKSHIRE RG14 2AH
P: +44 1635 262626
F: +44 1635 37807
E: sales-uk@krausnaimer.com

Greece

KALAMARAKIS-SAPOUNAS S. A.
Ionias & Neromilou Str., P. O. Box 46566
13671 ACHARNES/ATHENS
P: +30 2 10 240 6000 6
F: +30 2 10 240 6007
E: kalamarakis.sapounas@ksa.gr

Hungary

GANZ KK KFT.
X. Kőbányai út 41/c, Postfach 87
1475 BUDAPEST
P: +36 1 261 5479
E: ganzkk@ganzkk.hu

Iceland

JOHAN RÖNNING LTD.
Klettagarðar 25
104 REYKJAVIK
P: +354 5200 800
E: ronning@ronning.is

Republic of Ireland

[Kraus & Naimer Ltd.](#)
4235 Atlantic Avenue
Westpark Business Campus
Shannon, Co. Clare
P: +353 61 704700
F: +353 61 471084
E: sales-ie@krausnaimer.com

Italy

[Kraus & Naimer s.r.l.](#)
Via Terracini, 9
24047 TREVIGLIO (BG)
P: +39 0363 30 11 12
E: sales-it@krausnaimer.com

Japan

[Kraus & Naimer Ltd.](#)
Yoshiwada Building 2F
1-11-6 Hamamatsucho
Minato-Ku, TOKYO 105-0013
P: +81 3 3436 6151
F: +81 3 3436 6325
E: sales-jp@krausnaimer.com

Mexico

JC INGENIERÍA Y CONTROL, SA DE CV.
Ángel Gavirño 30.
C. Satélite, C. Medicos,
Naucalpan Edo. de Mexico, C.P. 53100
P: +52 55 55 62 75 77
F: +52 55 55 62 04 34
E: ventas@jcingenieriacontrol.com

Netherlands

[Kraus & Naimer B.V.](#)
Wegtersweg 38-40, Postbus 199
7556 BR HENGEL (Ov.)
P: +31 74 291 9441
F: +31 74 291 98380
E: sales-nl@krausnaimer.com

New Zealand

[Kraus & Naimer Ltd.](#)
42 Miramar Avenue, WELLINGTON 6022
P. O. Box 15-009, WELLINGTON 6243
P: + 64 0800 736 522
E: sales-nz@krausnaimer.com

Norway

[Kraus & Naimer AB Avd. Norge](#)
Postboks 27 Vollebakk
0516 Oslo
P: +47 22 64 44 20
E: sales-no@krausnaimer.com

Poland

ASTAT LOGISTYKA SP. Z O.O.
Dąbrowskiego 441
60451 POZNAŃ
P: +48 61 849 80 89
E: k.swiderski@astat.pl

Portugal

ELECTRICOL-DAMAS, FERREIRA & DAMASCENO, LDA.
Apartado 1063, S. Ant. Cavaleiros
2670 LOURES
P: +351 21 989 8939
F: +351 21 988 6464
E: electricol@electricol.pt

Singapore, India, Middle East – UAE

[Kraus & Naimer Pte. Ltd.](#)
115A, Commonwealth Drive
#03-17/23
SINGAPORE 149 596
P: +65 6473 8166
E: sales-sg@krausnaimer.com

Slovenia

SCHRACK TECHNIK D.O.O.
Pameče 175
SI-2380 SLOVENJ GRADEC
P: +386 2 88 392 00
F: +386 2 88 434 71
E: d.goljat@schrack.si

Republic of South Africa

[Kraus & Naimer Pty. Ltd.](#)
7 Village Crescent, Linbro Village
Linbro Business Park, SANDTON 2065
P. O. Box 511, KELVIN 2054
P: +27 11 608 6060
E: sales-za@krausnaimer.com

Spain

[Kraus & Naimer B.V.](#)
P: +34 662 696 014
E: sales-es@krausnaimer.com

Sweden

[Kraus & Naimer AB](#)
Dr. Widerströms Gata 11, Hägersten
Box 42097, 126 14 STOCKHOLM
P: +46 8 97 00 80
E: sales-se@krausnaimer.com

Switzerland

AWAG Elektrotechnik AG
Sandbühlstraße 2
CH-8604 VOLKETSWIL
P: +41 44 908 19 19
E: info@awag.ch

Turkey

KARDES ELEKTRİK SANAYİ VE TİCARET A.Ş.
Yassioren Mah. Hıfıa Sok. No: 4
34277 Arnavutköy-Istanbul-Turkey
P: +90 212 624 92 04 118
F: +90 212 592 48 10
E: info@unalkardes.com.tr

USA

[Kraus & Naimer Inc.](#)
760 New Brunswick Road
SOMERSET, NJ 08873
P: +1 732 560 1240
E: sales-us@krausnaimer.com



Kraus & Naimer



Contact us:

www.krausnaimer.com