



Kraus & Naimer

BLUE LINE switchgear

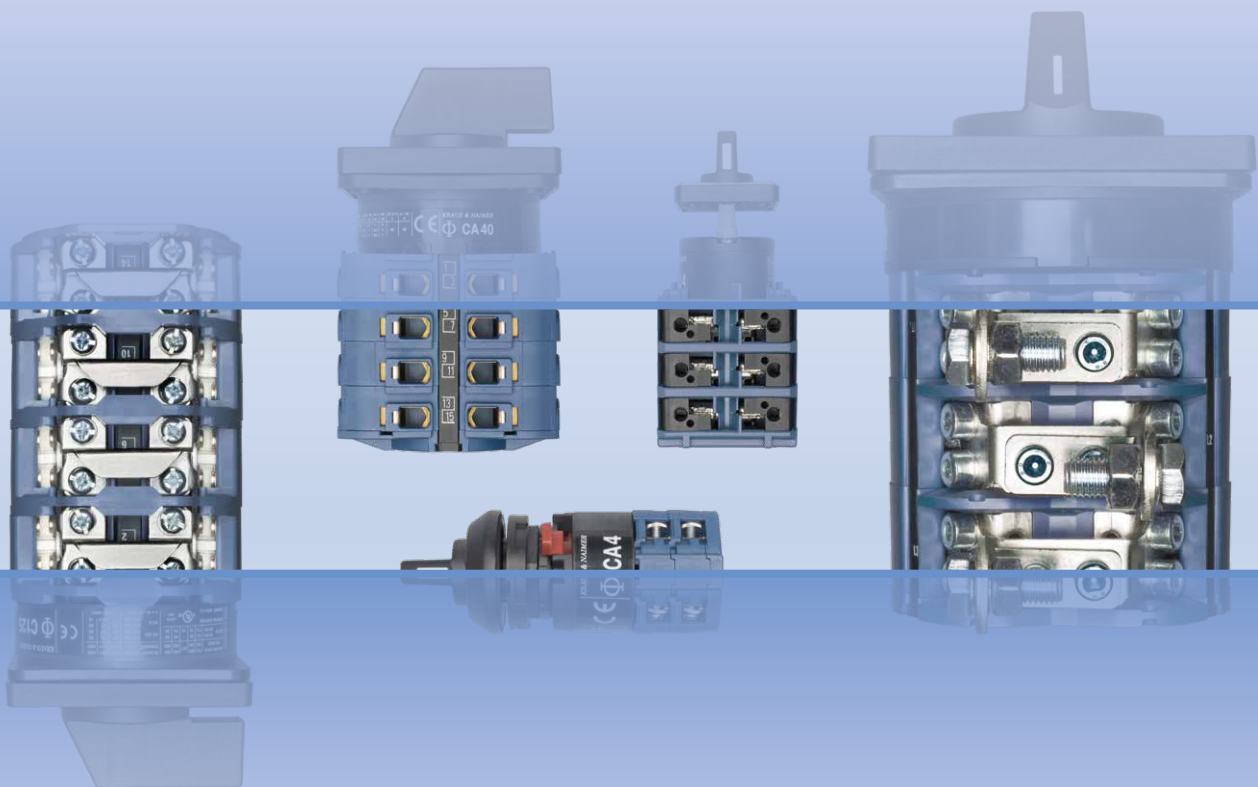
since 1907

Catalog 100

02/2019

Control and Load Switches for higher Capacities

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



Kraus & Naimer

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

BLUE LINE

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

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

The Kraus & Naimer Registered Trademark



WORLDWIDE SYMBOL
FOR QUALITY SWITCHGEAR

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

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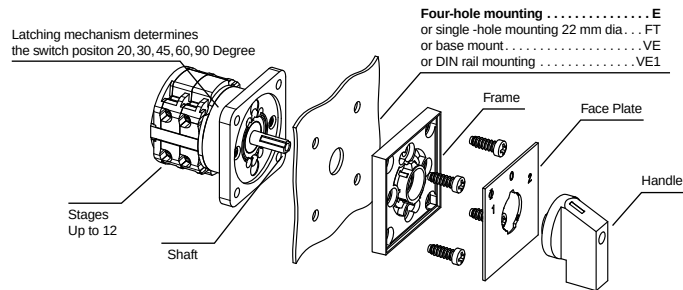
Construction Data

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

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

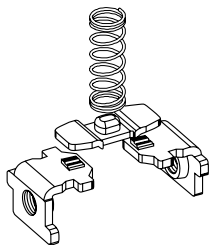
If a positive manual operation or a higher DC rating is required, many of these switches can be fitted with a snap action latching mechanism - suffix „S“ - to the switch type.

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



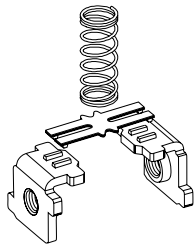
Special Contact Systems

CA4/CA4-1



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

CAD4-1/CAD11/CAD12



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

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

CA and CAD Switches (CA4-CA25B)



CA Switches (CA40-CA63)



C Switches



L Switches



Above illustrates the standard terminal positions.

Nominal Ratings

Switch Size	Type	According to IEC 60947-3/VDE 0660 part 107			
		Insulation Voltage ¹ U_i V	Thermal Current I_u/I_{th} A	Motor Rating 3 x 380 V-440 V AC-23 AC-3	
				kW	kW
S00					
S0					
S1					
S2					
S3					

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

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

How to order

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

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

1. Type of Switch

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

2. Switch Function

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

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

3. Type of Mounting

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

Specify the mounting code to indicate required mounting.

CA10

A202

VE

Type of Switch

Extending the switch type coding the following combinations will define:

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

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

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.

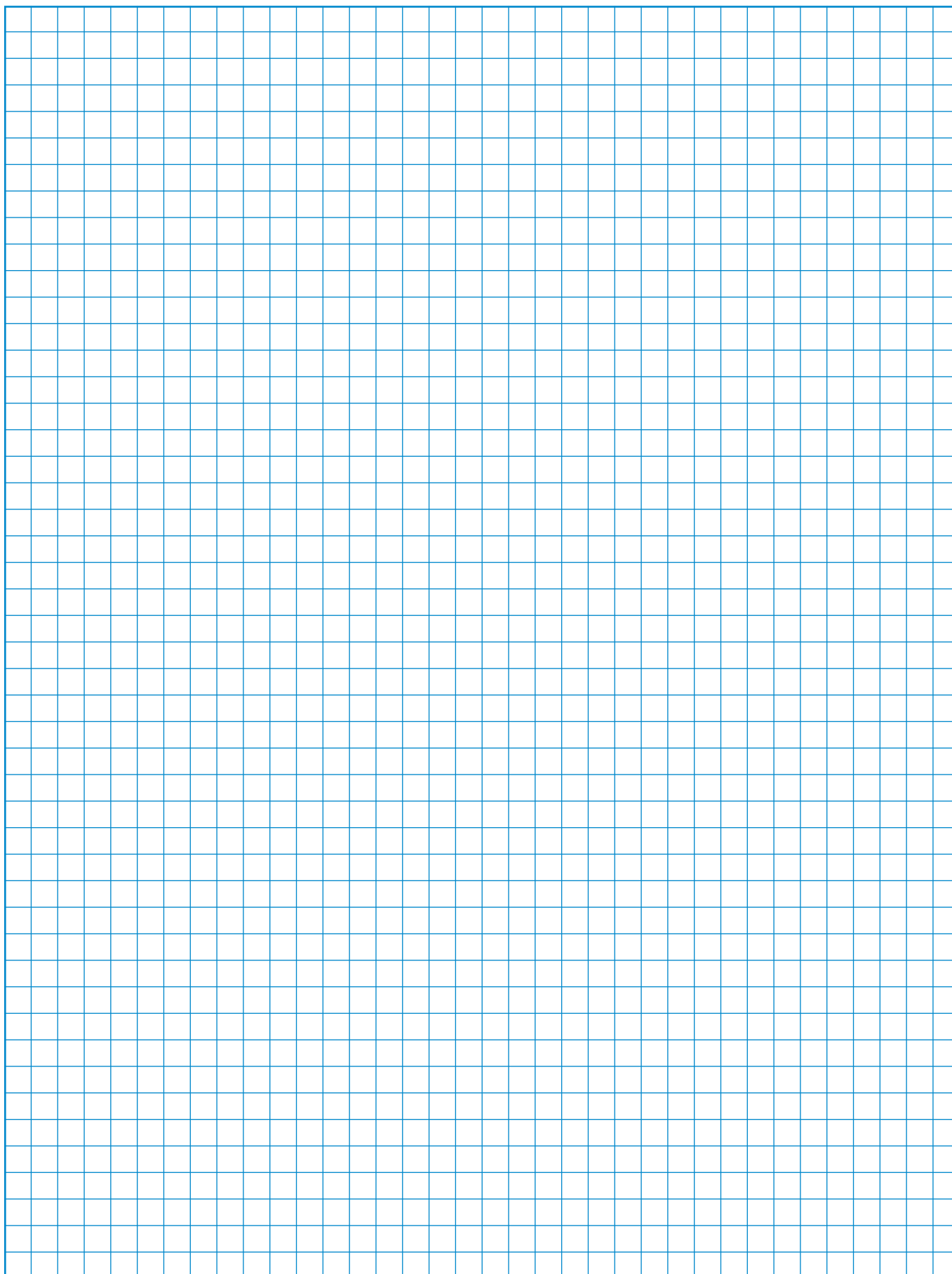
¹Technical data on request. ²Additional length for switches with B, C, S, amendments refer page 54.

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

Order forms are available on request.

Notes:



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Switch Function and Configuration

C, CA, CAD Switches

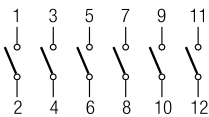
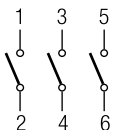
Function	Escutch. Plate	Type/Handle	Code	Stages	Connection Diagram
		CA4 CAD.. CA4-1 CA10- CA10B- CA40 CAD4-1 CA25 CA25B C315			

ON/OFF Switches with 60° Switching

Dimensions p. 56

1 pole 2 pole 3 pole 4 pole 4 pole 1 pole preclose 6° 5 pole 6 pole 7 pole 8 pole 8 pole 2 pole preclose 6° 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 2 3 3 4 4 4 4 5 5 6 6	           	1-12 pole    	4 pole 1 pole preclose 6°        	8 pole 2 pole preclose 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 2 3 3	 1, 2, 3, 4, 5 and 6 pole
3 pole 360° rotation	 F062					WAA208	2	

ON/OFF Switches with 30° Switching

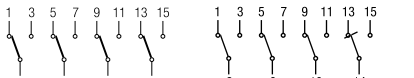
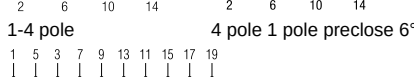
1 pole 2 pole 3 pole 4 pole	 F169					WAA100 WAA101 WAA102 WAA103	1 1 2 2		1-4 pole
1 pole with spring return 2 pole with spring return 3 pole with spring return 4 pole with spring return	 F153					A204 A205 WAA206 WAA207	1 1 2 2		1-4 pole

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- CAD4-1 CA25 CA25B C315			

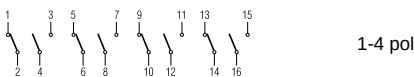
Double-throw Switches without „OFF“ 60° Switching

Dimensions p. 56

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

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

1 pole	 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 pole mit Rückzug

Double-throw Switches without „OFF“ 30° Switching

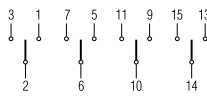
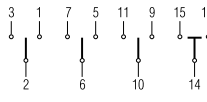
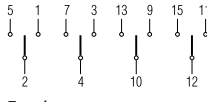
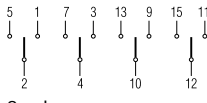
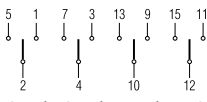
1 pole	 F026					WAA120	1	 1-4 pole
2 pole						WAA121	2	
3 pole						WAA122	3	
4 pole						WAA123	4	
1 pole with spring return	 F026					A295	1	 1-3 pole
2 pole with spring return						A296	2	
3 pole with spring return						WAA297	3	

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

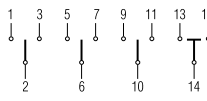
Function	Escutch. Plate	Type/Handle CA4 CAD.. CA4-1 CA10- CA10B- C80- CAD4-1 CA25 CA63 C315	Code	Stages	Connection Diagram
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Double-throw Switches with Center „OFF“ 60° Switching

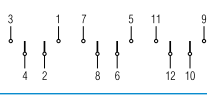
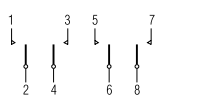
[Dimensions p. 56](#)

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

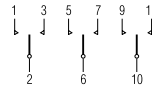
1 pole	 F071					A710	1	 1-4 pole
2 pole						A711	2	
3 pole						A712	3	
4 pole 1 pole preclose 6° ³						A713	4	
4 pole						WAA963	4	 4 pole 1 pole preclose 6°
1 pole with spring return to center	 F025					A714	1	 1 and 2 pole
2 pole						A715	2	

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

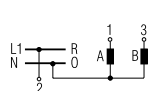
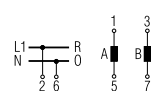
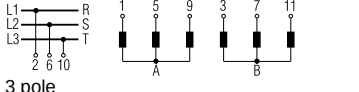
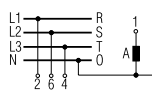
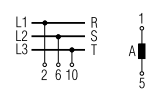
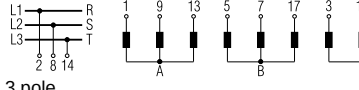
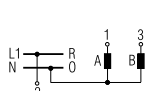
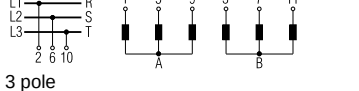
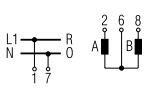
Function	Escutch. Plate	Type/Handle	Code	Stages	Connection Diagram
		CA4 CAD.. CA40 CA4-1 CA10- C26- CAD4-1 CA25 CA25B C315			

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

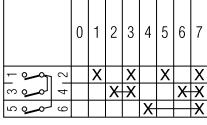
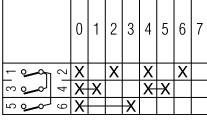
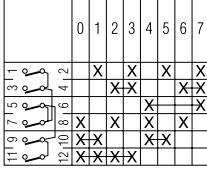
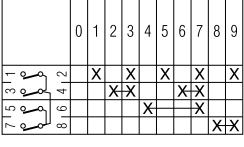
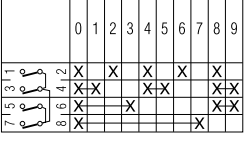
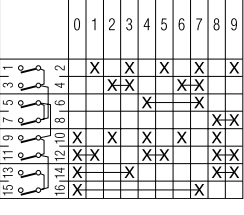
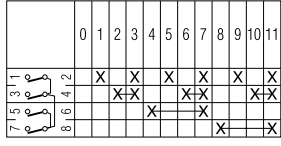
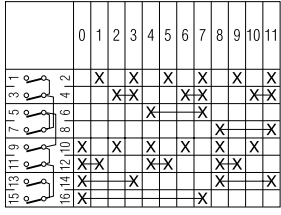
1 pole 2 Gang 2 pole Switching sequence: 3 pole 0, A, A+B	 F075	  	  	  	  	A310 A312 WAA314	1 2 3	 1 pole  2 pole  3 pole
1 pole 3 Gang 2 pole Switching sequence: 3 pole 0, A, A+B, A+B+C	 F001	  	  	  	  	A311 WAA313 WAA315	2 3 5	 1 pole  2 pole  3 pole
1 pole 2 Gang 2 pole Series switching 3 pole Switching 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						A540	2	
0 - 7 complement 360° rotation						WAA541	2	
0 - 7 + complement 360° rotation						WAA542	3	
0 - 9						A550	2	
0 - 9 complement						WAA551	2	
0 - 9 + complement						WAA552	4	
0 - 11 360° rotation						A543	2	
0 - 11 + complement 360° rotation						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	 F076	     	     	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	 F077	     	     	A231 A251 A271 A477 WAA485 WAA490	2 4 6 8 10 12	       
1 pole 5 Step 2 pole 3 pole 4 pole	 F078	     	     	A232 A252 WAA272 WAA478	3 5 8 10	    
1 pole 6 Step 2 pole 3 pole	 F079	     	     	A233 WAA253 WAA273	3 6 9	    
1 pole 7 Step 2 pole 3 pole	 F110	     	     	WAA234 WAA254 WAA274	4 7 11	   
1 pole 8 Step 2 pole 3 pole	 F111	     	     	WAA235 WAA255 WAA275	4 8 12	   
1 pole 9 Step	 F1010	     	     	WAA236	5	
1 pole 10 Step	 F1011	     	     	WAA237	5	
1 pole 11 Step	 F1012	     	     	WAA238	6	
1 pole 12 Step 1 pole 360° rotation	 F1013	     	     	WAA239 WAA639	6 6	

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

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

Multi-step Switches without „OFF“ with electrically isolated contacts

[Dimensions p. 56](#)

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

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 pole 3 Step 2 pole 3 pole 4 pole 5 pole	 F109					A241 A261 A281 WAA481 WAA487	2 3 5 6 8	   

Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD-1 CAD4-1 CAD.. CA10- CA25 CA10B- CA63 C80- C315	Code	Stages	Connection Diagram
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Multi-step Switches with „OFF“

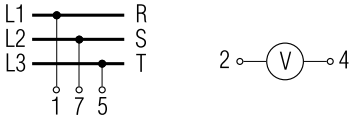
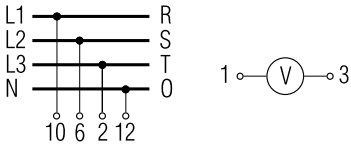
Dimensions p. 56

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	

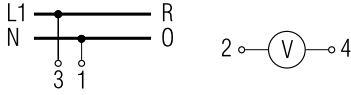
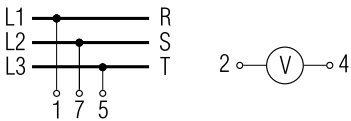
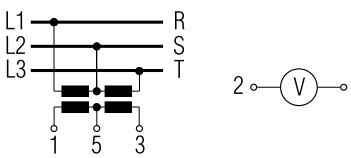
Function	Escutch. Plate	Type/Handle	Code	Stages	Connection Diagram
		CA4 CA4-1 CA10- CAD4-1 CA25 CAD.. CA10B- CA25B			

Voltmeter Switches without „OFF“

[Dimensions p. 56](#)

3 phase 3 wire	 F792					A023	2	
3 phase 3 wire 3 phase to phase and phase to neutral	 F794					A025	3	

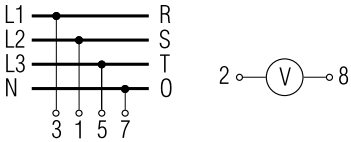
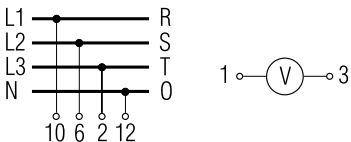
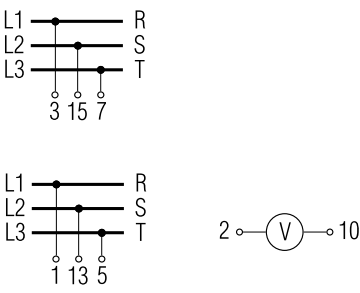
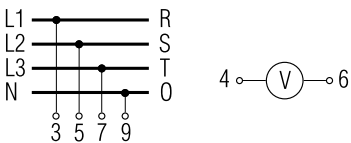
Voltmeter Switches with „OFF“

2 pole 360° rotation	 F170-PRL					WAA002	1	
3 phase 3 wire	 F775					A004	2	
	 F212-PRL					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](#)

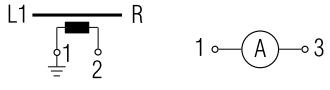
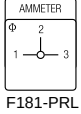
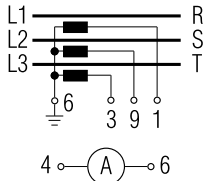
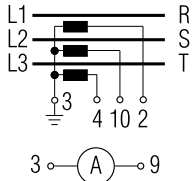
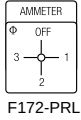
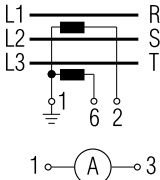
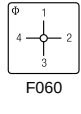
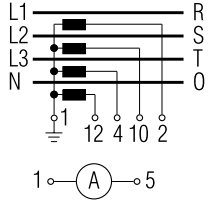
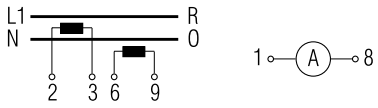
3 phase to neutral	 F779					WAA005	2	
3 phase to phase and 3 phase to neutral	 F782					A007	3	
2 separate 3 phase with center „OFF“	 F786					WAA008	4	
3 phase and 1 phase to neutral	 F789					WAA010	3	

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

Ammeter Switches

[Dimensions p. 56](#)

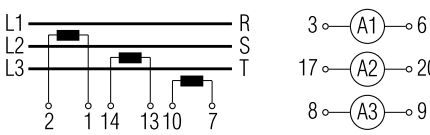
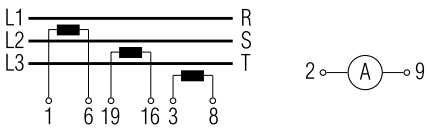
Single pole with one current transformer						WAA046	1	
Single pole with 3 current transformers without „OFF“						WAA017	3	
Single pole with 3 current transformers with „OFF“ 360° rotation						A048	3	
Single pole with 2 current transformers (3 readings)						WAA021	2	
Single pole with 4 current transformers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

¹available only up to switch type CA25B

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

Ammeter Switches

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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

Funktion	Switch Symbol	Type/Griff				Code	Fluch- stages ten	Circuit Diagram
		CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA25B	C26- C43 CA40- CA63			

Volt-ammeter Switches

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3 phase - phase to phase 3 current						WAA027	6	
						WAA028	7	
3 phase voltage 3 phase current 4 wire						WAA033	5	
						WAA035	5	

Control Switches

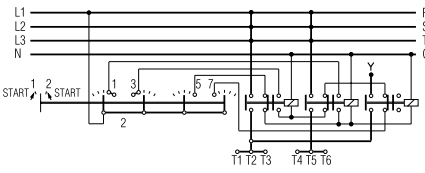
Stop switch						WAA174	1	
Start switch						A175	1	
Stop start switch single pole						A176	1	
Stop start switch 2 pole						WAA183	2	
Stop start switch with spring return from start to run						A178	1	
Stop start switch with spring return to run for 2 units						WAA177	2	

¹available only up to switch type CA25B

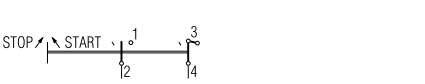
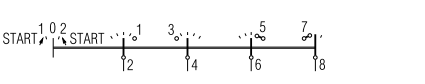
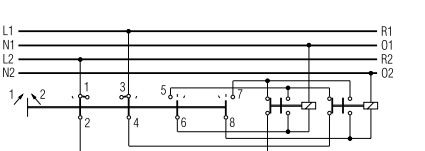
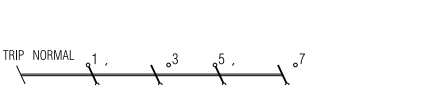
Function	Escutch. Plate	Type/Handle	C26- C43 CA40- CA63	Code	Stages	Connection Diagram
		CA4 CAD.. CA4-1 CA10- CAD4-1 CA25 CA25B				

Control Switches

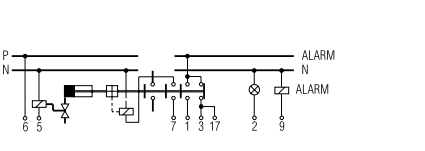
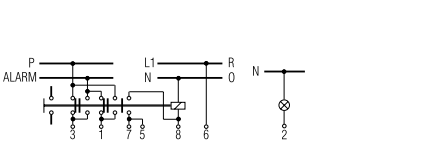
Dimensions p. 56

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

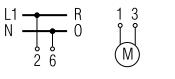
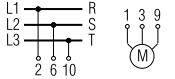
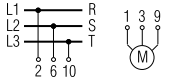
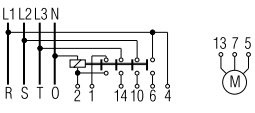
With slip clutch and without indicator device						WAA190	5 ³	
Without indicator device						WAA192	2	

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

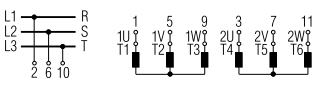
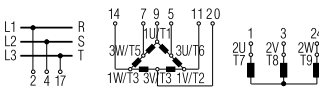
Function	Escutch. Plate	Type/Handle				Code	Stages	Connection Diagram
		CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA..B C26-C43 CA40-CA63	C80- C315			

Motor Reversing Switches

Dimensions p. 56

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

Motor Control Switches

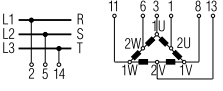
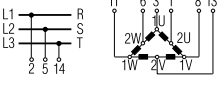
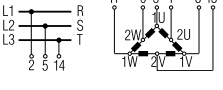
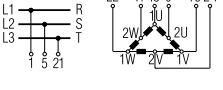
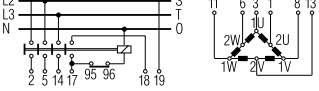
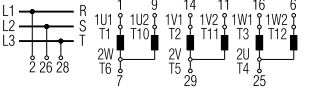
2 speed 2 winding 0-A-BY or Δ						WAA451	3	
3 speed 2 winding 0-A-BY or Δ						WAA457	6	

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- CAD4-1 CA25 CA25B C315			

Motor Control Switches

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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	

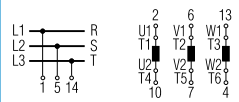
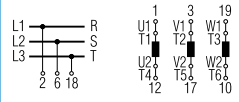
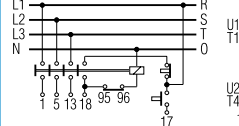
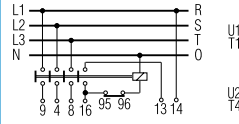
¹incl. slip clutch

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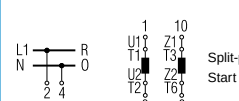
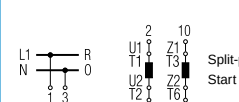
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		CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA..B C26-C43 CA40-CA63	C80- C315			

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		 ¹			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 Latching	Connection Diagram	L350 L630 L1000	L351 L631
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ON/OFF Switches with 60° Switching

[Dimensions p. 56](#)

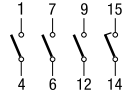
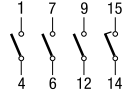
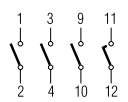
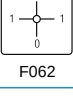
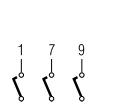
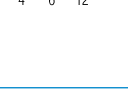
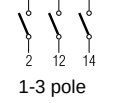
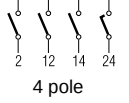
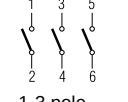
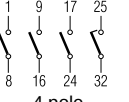
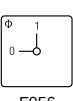
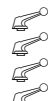
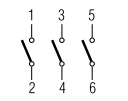
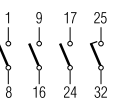
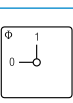
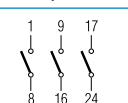
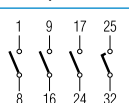
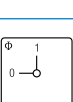
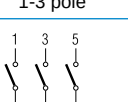
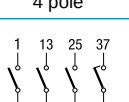
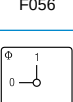
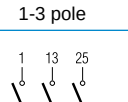
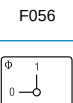
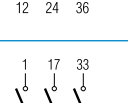
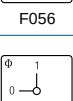
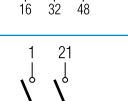
1 pole 2 pole 3 pole 4 pole	L350			WAA200 WAA201 WAA202 WAA203	1 2 3 4			1-4 pole
1 pole 2 pole 3 pole 4 pole	L351			WAA200 WAA201 WAA202 WAA203	1 2 3 4			1-4 pole
1 pole 2 pole 3 pole 4 pole	L400			WAA200 WAA201 WAA202 WAA203	2 2 4 4			1-4 pole
3 pole with lugs suitable for protective cover				WAA302	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 Latching	Connection Diagram	L350 L630 L1000	L351 L631
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ON/OFF Switches with 90° Switching

[Dimensions p. 56](#)

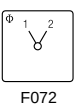
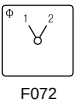
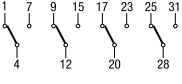
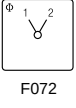
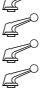
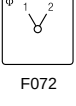
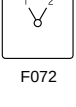
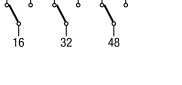
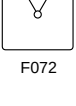
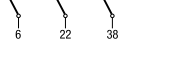
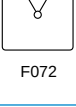
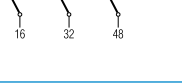
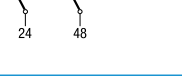
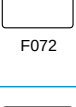
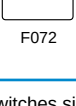
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1 pole 2 pole 3 pole 4 pole	L351 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	1 2 3 4			1-4 pole
1 pole 2 pole 3 pole 4 pole	L400 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	2 2 4 4			1-4 pole
3 pole 3 pole	with lugs suitable for protective cover 360° rotation	 	 	WAA307 WAA208	3 4		 	WAA307
1 pole 2 pole 3 pole 4 pole	L600 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	3 3 6 6		 	1-3 pole 4 pole
1 pole 2 pole 3 pole 4 pole	L630 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	2 4 6 8		 	1-3 pole 4 pole
1 pole 2 pole 3 pole 4 pole	L631 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	2 4 6 8		 	1-3 pole 4 pole
1 pole 2 pole 3 pole 4 pole	L800 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	2 4 6 8	● ● ●	 	1-3 pole 4 pole
1 pole 2 pole 3 pole 4 pole	L1000 1 pole preclose 60°			WAA290 WAA291 WAA292 WAA293	3 6 9 12	● ● ●	 	1-3 pole 4 pole
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 Latching	Connection Diagram	L350 L630 L1000	L351 L631
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Double-throw Switches without „OFF“ 60° Switching

[Dimensions p. 56](#)

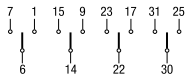
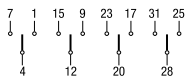
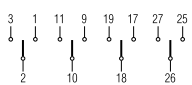
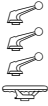
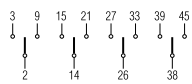
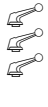
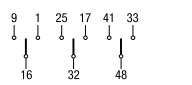
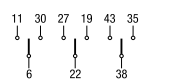
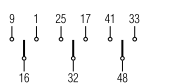
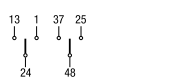
1 pole 2 pole 3 pole 4 pole	L350			WAA220 WAA221 WAA222 WAA223	2 4 6 8			1-4 pole
1 pole 2 pole 3 pole 4 pole	L351			WAA220 WAA221 WAA222 WAA223	2 4 6 8			1-4 pole
1 pole 2 pole 3 pole 4 pole	L400			WAA220 WAA221 WAA222 WAA223	2 4 6 8			1-4 pole
1 pole 2 pole 3 pole 4 pole	L600			WAA220 WAA221 WAA222 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			

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Function/Type	Escutch. Plate	Handle	Code	Stages	Double Latching	Connection Diagram	L350 L630 L1000	L351 L631
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Double-throw Switches with Center „OFF“ 60° Switching

[Dimensions p.56](#)

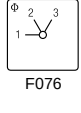
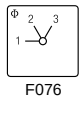
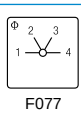
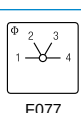
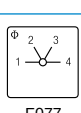
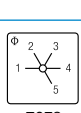
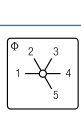
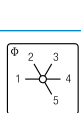
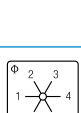
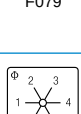
1 pole 2 pole 3 pole 4 pole	L350			WAA210 WAA211 WAA212 WAA213	2 4 6 8			1-4 pole
1 pole 2 pole 3 pole 4 pole	L351			WAA210 WAA211 WAA212 WAA213	2 4 6 8			1-4 pole
1 pole 2 pole 3 pole 4 pole	L400			WAA210 WAA211 WAA212 WAA213	2 4 6 8			1-4 pole
1 pole 2 pole 3 pole 4 pole	L600			WAA210 WAA211 WAA212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

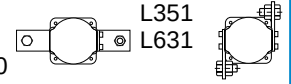
Function/Type	Escutch. Plate	Handle	Code	Stages	Double Latching	Connection Diagram	L350 L630 L1000	L351 L631
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Multi-step Switches single pole without „OFF“

[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 Latching	Connection Diagram	L350 L630 L1000	L351 L631
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Multi-step Switches single pole without „OFF“

[Dimensions p. 56](#)

6 Step	L400		F079		WAA233	6		
7 Step	L350		F110		WAA234	8		
7 Step	L351		F110		WAA234	8		
7 Step	L400		F110		WAA234	8		
8 Step	L350		F111		WAA235	8		
8 Step	L351		F111		WAA235	8		
8 Step	L400		F111		WAA235	8		
9 Step	L350		F010		WAA236	10		
9 Step	L351		F010		WAA236	10		
9 Step	L400		F010		WAA236	10		
10 Step	L350		F011		WAA237	10		

Function/Type	Escutch. Plate	Handle	Code	Stages	Double Latching	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
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	●

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

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

Single Hole Mount

Terminals
rotated 90°

Code

CA4
CA4-1
CAD4-1

CAD..
CA10-
CA25

Single Hole Mount complete with lock nut and shaft seal

Bezel mount,
Protection IP 66/67/69k



●

FS1
FS1-V
FT1
FT1-V
FT3
FT3-V

mm
16/22
16/22

22
22
22/30
22/30



Square face plate, Protection IP 66/67/69k

●

FS2
FS2-V
FT2
FT2-V
FT4
FT4-V

16/22
16/22

22
22
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
FT6
FT6-V

16/22
16/22

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

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



Four hole, Protection IP 40



Four hole with integrated simplified door clutch,
Protection IP 65



Two hole, Protection IP 40



Two hole with integrated simplified door clutch,
Protection IP 65



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

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

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

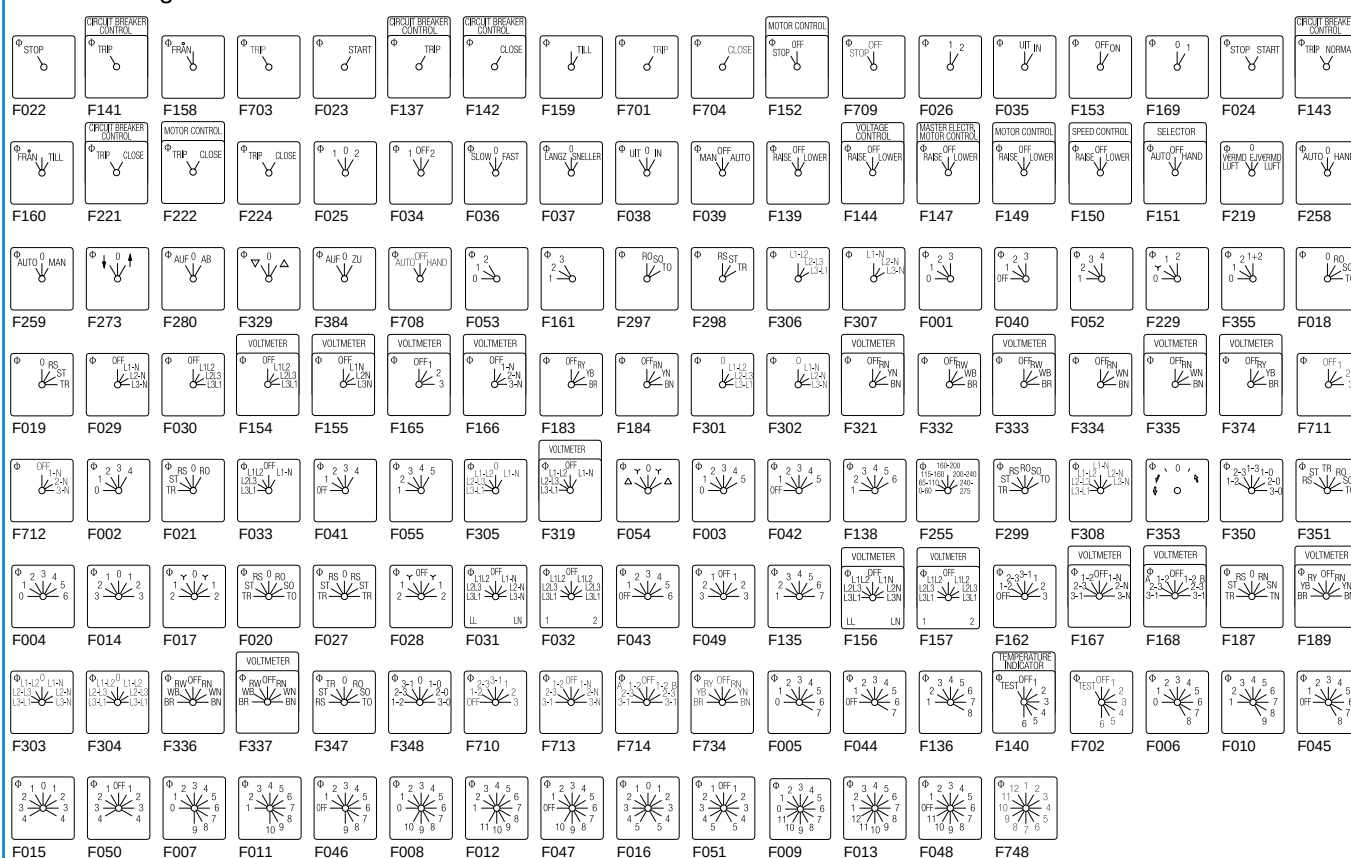


Square and rectangular face plates are available for each size of switch. The face plate consists of a frame and a faceplate having the switch positions which is then embossed with hot-foil backing. The face plate frame is an essential part of the switch and serves as a bearing surface for the handle.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

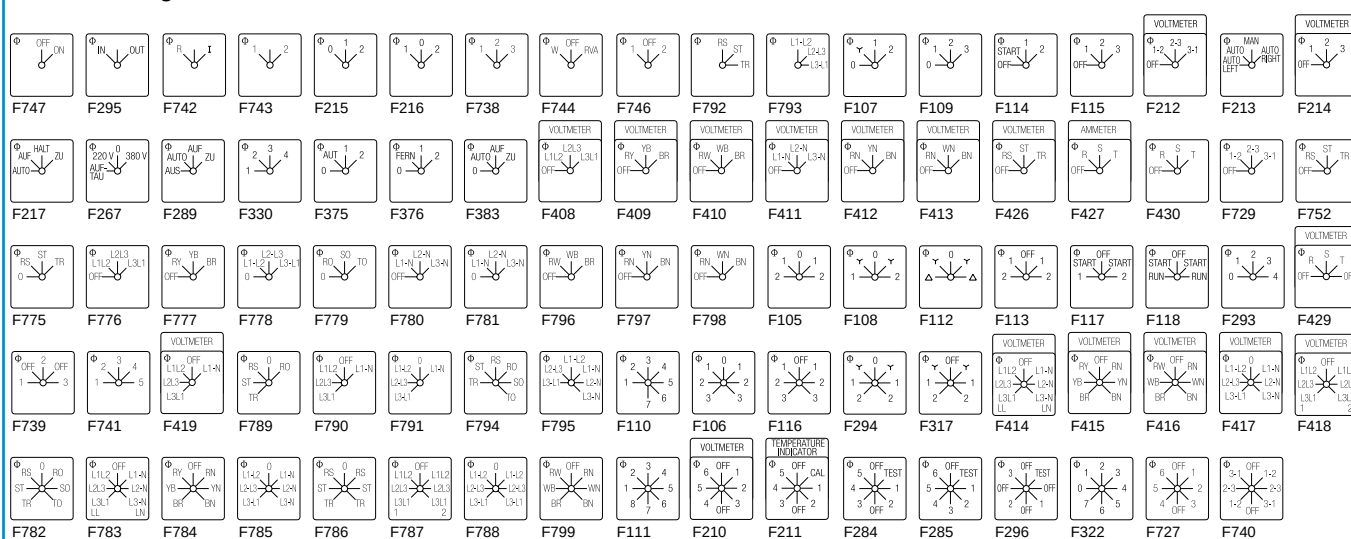
Standard Letterings Available

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

30° switching



45° switching



Face plates

60° switching

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

90° switching

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

Miscellaneous

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

¹INTERRUPTEUR PRINCIPAL, OUVERTURE EN POSITION 0 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

R-Handle  black red G001 G002 — ● ● ● ● — ● ● ● ●	
F-Handle  black red G221 G222 ● ● ● ● — ● ● ● ● —	
S-Handle  S0S1 black red G301 G302 — ● ● — — — ● ● — —	
P-Handle  S0S1-S3 black red G211 G212 — ● ● ● ● — ● ● ● ●	
Handwheel  black G971 — — — — ●	

Type	Color	Code	Size				
			S00	S0	S1	S2	S3

I-Handle  S00S0-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.									●	●	●	●
			●	●	●	●	●	●	●			●	
Canada	UL investigated acc. to CSA		●	●	●	●	●		●	●	●	●	●
										●	●	●	●
			●	●	●	●	●	●	●			●	
Switzerland	Schweizerischer Elektrotechnischer Verein		+	+	+	+	+	+	+	+	+	+	+
Denmark	Danmarks Elektriske Materielkontrol		+	+	+	+	+	+	+	+	+	+	+
Norway	Norges Elektriske Materielkontrol		+	+	+	+	+	+	+	+	+	+	+
Sweden	Svenska Elektriska Materielkontrollanstalten		+	+	+	+	+	+	+	+	+	+	+
Finland	Sähkötar-kastuskeskus		+	+	+	+	+	+	+	+	+	+	+
Austria	Österreichischer Verband für Elektrotechnik		+	+	+	+	+	+	+	+	+	+	+
Federal Republic of Germany	Verband Deutscher Elektrotechniker	VDE 0660 ⁴	+	+	+	+	+	+	+	+	+	+	+
Great Britain	British Standards Institution	BS EN 60947 ⁴	+	+	+	+	+	+	+	+	+	+	+
International Electrical Commission (IEC) Recommendation		IEC 60947 ⁵	+	+	+	+	+	+	+	+	+	+	+
China	China Quality Certification Centre	 GB/T14048.3	●	●	●	●	●	●	●	●			
Russia Belarus Kazakhstan	Eurasian Conformity		●	●	●	●	●	●	●	●	+	+	+
Russian Federation	Russian Maritime Register of Shipping		●	●	●	●							
Germanischer Lloyd			+	+	+	+	+	+	+	+	+	+	+
Lloyds Register EMEA			+	+	+	+	+	+	+	+	+	+	+

● Switch approved

+ Switch conforms to requirements

+ No approval required

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).

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

⁵IEC does not operate an approval scheme.

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

Selection Data

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

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

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

Selection Data

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

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Rated Utilization Category				IEC 60947-3, EN 60947-3 VDE 0660 part 107																				
AC-2	Slip ring motor starting, reversing and plugging, star-delta starting CA4-CA50	3 phase 3 pole	220 V-240 V 380 V-440 V 500 V 660 V-690 V	kW	2,5	4	4	5,5	7,5	8	10	18,5	10	11	18,5	30	37	37	55					
					4,5	7,5	7,5	11	15	15	18,5	30	18,5	22	30	45	55	55	90					
					–	10	10	15	18,5	18,5	22	40	22	30	40	55	75	75	110					
					–	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 380 V-440 V 500 V 660 V-690 V	kW	1,5	3	3	4	5,5	5,5	7,5	11	7,5	11	11	15	22	22	37					
					2,2	5,5	5,5	7,5	11	11	15	18,5	15	18,5	18,5	30	37	37	55					
					–	5,5	5,5	7,5	11	11	15	18,5	15	18,5	18,5	30	37	37	55					
					–	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 220 V-240 V 380 V-440 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					
					0,55	2,2	2,2	3	4	4	5,5	6	5,5	6	6	7,5	11	11	22					
AC-4	Direct-on-line starting, reversing, plugging and inching	3 phase 3 pole	220 V-240 V 380 V-440 V 500 V 660 V-690 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					
					0,55	1,5	1,5	3	5,5	5,5	6	7,5	6	7	7,5	11	15	15	25					
					–	1,5	1,5	3	5,5	5,5	6	7,5	6	7	7,5	11	15	15	25					
					–	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 220 V-240 V 380 V-440 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					
					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					
AC-23A	Frequent switching of motors or other high inductive loads	3 phase 3 pole	220 V-240 V 380 V-440 V 500 V 660 V-690 V	kW	1,8	3,7	3,7	5,5	7,5	7,5	11	15	7,5	11	15	30	37	37	75					
					3	7,5	7,5	11	15	15	22	30	18,5	22	30	45	75	75	132					
					–	7,5	7,5	11	15	15	30	45	18,5	22	30	55	90	90	132					
					–	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 220 V-240 V 380 V-440 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					
					0,75	2,5	2,5	3	4	4	5,5	10	4	5,5	10	15	22	22	37					
Ratings				UL/Canada																				
	Standard motor load DOL-Rating (similar AC-3)	3 phase 3 pole	110 V-120 V 220 V-240 V 440 V-480 V 550 V-600 V	HP	0,75	1,5	1,5	3	5	5	7,5	7,5	7,5	7,5	7,5	10	15	–	30					
					1	3	3	7,5	10	10	15	15	15	15	15	20	25	–	75					
					–	–	5	10	–	20	25	25	25	25	30	30	40	–	75					
					–	–	5	10	–	25	30	30	25	30	30	40	50	–	60					
		1 phase 2 pole	110 V-120 V 220 V-240 V 277 V 440 V-480 V 550 V-600 V	HP	0,33	0,5	0,5	1,5	2	2	3	3	3	3	3	5	7,5	–	15					
					0,75	1	1	3	5	5	7,5	7,5	7,5	7,5	10	10	15	–	40					
	Heavy motor load Reversing-Rating (similar AC-4)	3 phase 3 pole	110 V-120 V 220 V-240 V 440 V-600 V	HP	0,75	2	2	3	5	5	7,5	7,5	7,5	7,5	10	10	15	–	40					
					–	–	2	5	–	10	15	15	15	15	15	20	25	–	50					
					–	–	2	5	–	15	20	20	15	20	20	25	30	–	50					
					–	–	2	5	–	15	20	20	15	20	20	25	30	–	50					
		1 phase 2 pole	110 V-120 V 220 V-240 V 277 V	HP	–	0,17	0,17	0,33	1,5	1,5	1,5	2	–	–	–	3	5	–	7,5					
					–	0,5	0,5	0,75	3	3	3	5	–	–	–	7,5	10	–	15					
–	0,6	0,6	1	3	3	3	5	–	–	–	7,5	10	–	15										

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 1,5 2x 2,5 2x 2,5 2x 4 2x 6 2x 6 2x 10 2x 16 16 16 16 16 35 70 95¹ 185¹
14 12 12 10 8 8 8 6 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 1,5 2x 2,5 2x 2,5 2x 4 2x 4 2x 6 2x 6 2x 10 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 300
16 14 14 12 10 10 8 6 6 6 6 3 1/0 -

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 Thermal Current I_e

CA4 CA10 CA10S CA20 CA20S CA25 CA25S CA40S CA63S

Utilization category

24 48 72 96 120 144 192

A

- 16 16 21 24 26 32 40 63

DC-21A

48 96 144 192 240 288 384

A

- 14 15 18 24 25 32 40 63

Switching of resistive load

60 120 180 240 300 360 480

A

- 13 15 17 21 24 28 40 50

Time constant L/R≤1ms

110 220 330 440 550 660 -

A

- 6 7 6 7 7 9,3 - -

220 440 660 - - - -

A

- 0,9 1 1 1 1 1 - -

Utilization category

24 48 72 96 120 144 192

A

- 14 15 18 24 25 32 40 63

DC-22A

48 96 144 192 240 288 384

A

- 13 15 17 24 25 32 40 63

Switching of mixed resistive

60 120 180 240 300 360 480

A

- 12 15 16 19 24 25 20 25

and inductive load

110 220 330 440 550 660 -

A

- 1,9 2 2 2 2,25 3 - -

f.e. shunt motors

220 440 660 - - - -

A

- 0,3 0,35 0,3 0,35 0,35 0,35 - -

time constant L/R≤2,5ms

Utilization category

24 48 72 96 120 144 192

A

- 13 15 16 23 23 32 40 63

DC-23A

48 96 144 192 240 288 384

A

- 12 15 15 23 21 32 40 63

Switching of highly

60 120 180 240 300 360 480

A

- 10 13 14 16 18 25 - -

inductive loads

110 220 330 440 550 660 -

A

- 1,5 1,75 1,7 1,75 2 2,5 - -

f.e. series motors

220 440 660 - - - -

A

- 0,2 0,3 0,2 0,3 0,2 0,3 - -

Zeitkonstante L/R≤15ms

Utilization category

24 48 - - - - -

A

- 3 - 4 - 5 - - -

DC-13

48 96 - - - - -

A

- 1,7 - 2,4 - 3 - - -

Control of electromagnets

60 120 - - - - -

A

- 1,4 - 1,8 - 2,5 - - -

Time constant L/R≤100ms

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.

Selection Data										
	L350	L400	L600	L630	L800	L1000	L1200	L1600	L2000	

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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 mo- derate 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 CSA	600 V	A	200	300	300	200	300	200	300	200	200	200	
		600 V	A	200	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 Rated short-time withstand current	(aR-characteristic) (1s-current)	A	400	500	800	630	1100	1000	2x800	2x1000	2x1250		
			A	on request										
Anschlussklemmen														
for connection screw length				mm	M12 20	M12 30	M16 40	M16 30	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	
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.

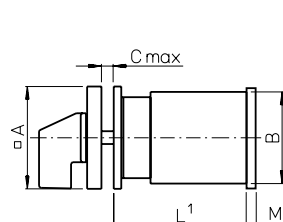
²International Standards and Approvals, refer to page 43. ³For electromagnetic optional extras see additional data in Catalog 101. ⁴Storage temperature: -40 °C to 85 °C (in case of temperature below -5 °C no shock load permissible).

Selection Data	CAD4-1	CAD11	CAD12
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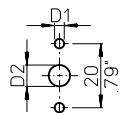
Bemessungsisolationsspannung U_i	IEC 60947-3, EN 60947-3 ¹ VDE 0660 part 107	V	440	600	600
	SEV ²	V	–	600	600
	North America	V	300	300	300
	min. voltage	V	1 ⁷	1	6
Rated Impulse Withstand Voltage U_{imp}			on request		
Rated Thermal Current I_u/I_{th}	IEC 60947-3, EN 60947-3 VDE 0660 part 107	A	5	6	6
	SEV ²	A	–	5	5
	Nordamerika	A	5	6	6
Bemessungsbetriebsstrom I_e AC-21A Switching of resistive loads, including moderate overloads	IEC 60947-3, EN 60947-3 VDE 0660 part 107 North America ³				
	1 V/6 V	A	5/2	6/3	–/6
	12 V/24 V	A	1,2/0,7	2/1	5/5
	48 V/110 V	A	0,45/0,25	0,8/0,4	4/3
	220 V/400 V	A	0,15/–	0,2/0,13	2/1,3
	440 V/500 V	A	0,1/–	0,1/0,08	1/0,8
	600 V	A	–	0,05	0,5
	AC-1 Resistive or low inductive loads				
	SEV ²				
	1 V/6 V	A	–	5/3	–/5
	12 V/24 V	A	–	2/1	5/5
	48 V/110 V	A	–	0,8/0,4	4/3
	220 V/380 V	A	–	0,2/0,13	2/1,3
	440 V/500 V	A	–	0,1/0,08	1/0,8
	600 V	A	–	0,05	0,5
Power loss per contact at I_u		W	0,4	0,5	0,2
Short Circuit Protection					
Max. fuse size (gG-characteristic)		A	5	6	6
Rated short-time withstand current (1s-current)		A	30	35	50
DC Switching Capacity⁵ DC-1 Resistive load T = 1 ms	IEC 60947-3, EN 60947-3 VDE 0660 part 107				
	SEV ²				
	1 V/6 V	A	3/1,2	4/2,5	–/4
	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
Max. Permissible Wire Gage - Use copper wire only	240 V/500 V	A	0,08/–	0,08/0,03	0,25/0,1
	600 V	A		0,02	0,1
	Single-core or stranded wire	mm ²	2x	2x	2x
		AWG	1,5	2,5	2,5
			14	12	12
	Flexible wire	mm ²	2x	2x	2x
	(sleeving in accordance with DIN 46228)		1,5	2,5	2,5
	Flexible AWG wires (without sleeve)	AWG	(1)	(2,5)	(2,5)
Tightening torque of screws					
		Nm	0,4	0,6	0,6
		lb-in	3,5	5	5
Min. Ambient Temperature of Stages Max. Ambient Temperature of Stages^{4, 6}			-25 °C (valid only without optional extra) 55 °C during 24 hours with peaks up to 60 °C 35 °C during 24 hours with peaks up to 40 °C		
open at 100 % I_u/I_{th} enclosed at 100 % I_{the}					

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

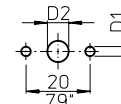
Two or Four Hole Panel Mounting



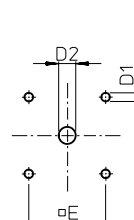
E
for CA4, CA4-1,
CAD4-1



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



E
E-V
ER

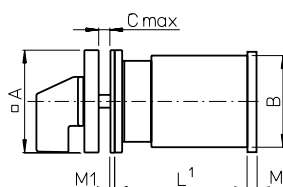


	CA10												CA40 ³				C315 ⁴	
	CA4	CA11	CA10B								CA50 ³		C125			L switches	L switches	
	CAD4-1	CAD11			CA11B							CA63 ³	C80	C200-4	Size S2	Size S3		
	CAD12	CA20	CA25 ³	CA20B	CA25B	C26	C32	C42 ³	C43									
A	0	48	48	48 (64)	64	64	64	64 (88)	88	64 (88)	88	88	88	88	130			
	1.18	1.89	1.89	1.89 (2.52)	2.52	2.52	2.52	2.52 (3.46)	3.46	2.52	(3.46)	3.46	3.46	3.46	5.12			
B	29.5	43	45	46	56	56	58	60	66	84	55,5x64	84	88	88	126			
	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	3.46	3.46	4.96			
C	4	4	4	4	4	4	4	4	5.5	4	5.5	5.5	5.5	5.5	7			
	.16	.16	.16	.16	.16	.16	.16	.16	.22	.16	.22	.22	.22	.22	.28			
D1	3.2	5	5	5	5	5	5	5 (6)	6	5 (6)	6	6	6	6	7			
	.13	.20	.20	.20	.20	.20	.20	.20 (.24)	.24	.20 (.24)	.24	.24	.24	.24	.28			
D2	8-11	8-19	8-19	8-19	10-22	10-22	10-22	10-22	13-30	10-22	13-30	13-30	13-30	13-30	15.5-25			
	.31-.43	.31-.75	.31-.75	.31-.75	.39-.87	.39-.87	.39-.87	.39-.87	.51-1.18	.39-.87	.51-1.18	.51-1.18	.51-1.18	.51-1.18	.61-.98			
E	-	36	36	36 (48)	48	48	48	48 (68)	68	48 (68)	68	68	68	68	104			
	-	1.42	1.42	1.42 (1.89)	1.89	1.89	1.89	1.89 (2.68)	2.68	1.89 (2.68)	2.68	2.68	2.68	2.68	4.09			
M ²	-	4.5	4.5	5.5	5	5.5	7.5	7.5	7.5	7.6	9.4	27.5	27.5	27.5	11.9 (32)			
	-	.18	.18	.22	.20	.22	.30	.30	.30	.30	.37	1.08	1.08	1.08	.47 (1.26)			

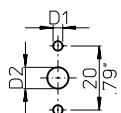
²M, additional length for mounting ER only

³Dimensions in () for ER mounting plate only

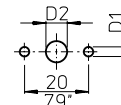
⁴Dimensions in () for L800, L1200, L1600



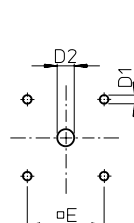
EF
for CA4, CA4-1,
CAD4-1



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



EF
EF-V
ERF



	CA10																	
	CA4	CA11			CA10B						CA40 ³						C315 ⁴	
	CA4-1	CAD11			CA11B						CA50 ³				C125		L switches	L switches
	CAD4-1	CAD12	CA20	CA25 ³	CA20B	CA25B	C26	C32	CA42 ³	C43	CA63 ³	C80	C200-4	Size S2	Size S3			
A	30	48	48	48 (64)	64	64	64	64	64 (88)	88	64 (88)	88	88	88	88	130		
	1.18	1.89	1.89	1.89 (2.52)	2.52	2.52	2.52	2.52	2.52 (3.46)	3.46	2.52 (3.46)	3.46	3.46	3.46	5.12			
B	29.5	43	45	46	56	56	58	60	66	84	55,5x64	84	88	88	126			
	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	3.46	3.46	4.96			
C	4	4	4	4	4	4	4	4	4	5,5	4	5,5	5,5	5,5	7			
	.16	.16	.16	.16	.16	.16	.16	.16	.16	.22	.16	.22	.22	.22	.28			
D1	3,2	5	5	5	5	5	5	5	5 (6)	6	5 (6)	6	6	6	7			
	.13	.20	.20	.20	.20	.20	.20	.20	.20 (.24)	.24	.20 (.24)	.24	.24	.24	.28			
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	26-30	26-30	22-25			
	.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	1.02-1.18	1.02-1.18	.87-.98			
E	-	36	36	36 (48)	48	48	48	48	48 (68)	68	48 (68)	68	68	68	104			
	-	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	2.68	2.68	4.09			
M ²	-	4,5	4,5	5,5	5	5,5	7,5	7,5	7,5	7,5	7,6	9,4	27,5	27,5	11,9 (32)			
	-	.18	.18	.22	.20	.22	.30	.30	.30	.30	.30	.37	1.08	1.08	.47 (1.26)			
M1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
	.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-			

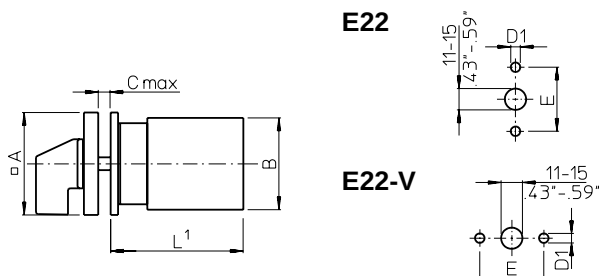
²M, additional length for mounting ERF only

³Dimensions in () for ERF mounting plate only

⁴Dimensions in () for L800, L1200, L1600

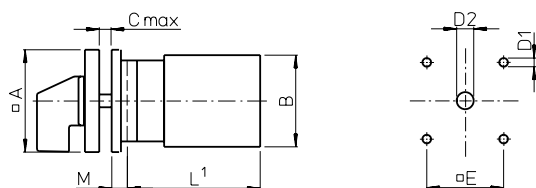
¹see page 56

Two or Four Hole Panel Mounting



	CA10 CA11 CAD11 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
E	30 1.17	30 1.17	30 1.17

EG EGF

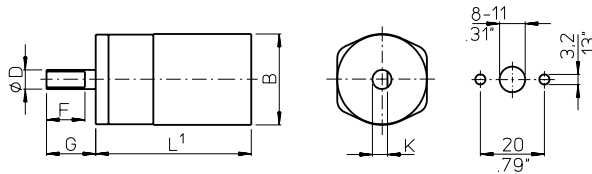


	CA10 CA11 CAD11 CAD12	CA20	CA25	C26	C32	C42	CA40 CA50 CA63	C80	C125 C200-4 L switches Size S2
A	64 2.52	64 2.52	64 2.52	88 3.46	88 3.46	88 3.46	88 3.46	130 5.12	130 5.12
B	43 1.69	45 1.77	46 1.81	58 2.28	60 2.36	66 2.60	55,5x64 2.19x2.52	84 3.30	88 3.46
C	4 .16	4 .16	4 .16	5,5 .22	5,5 .22	5,5 .22	5,5 .22	7 .28	7 .28
D1	5 .20	5 .20	5 .20	6 .24	6 .24	6 .24	6 .24	7 .28	7 .28
D2	10-22 .39-.87	10-22 .39-.87	10-22 .39-.87	13-30 .51-1.18	13-30 .51-1.18	13-30 .51-1.18	13-30 .51-1.18	15,5-25 .61-.98	15,5-25 .61-.98
D2	19-22 .75-.87	19-22 .75-.87	19-22 .75-.87	26-30 1.02-1.18	26-30 1.02-1.18	26-30 1.02-1.18	26-30 1.02-1.18	22-25 .87-.98	22-25 .87-.98
E	48 1.89	48 1.89	48 1.89	68 2.68	68 2.68	68 2.68	68 2.68	104 4.09	104 4.09
M	6,7 .26	6,7 .26	6,7 .26	0,5 .02	0,5 .02	0,5 .02	0,5 .02	2 .08	2 .08

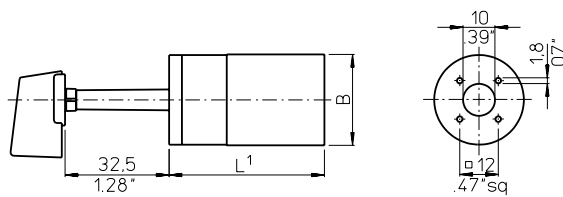
¹see page 56

Four Hole Panel Mounting or Mosaic Mounting

E9 E91



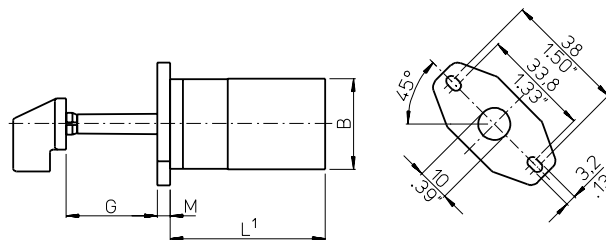
E92



CA4
CA4
CAD4-1
29,5
1.16

B

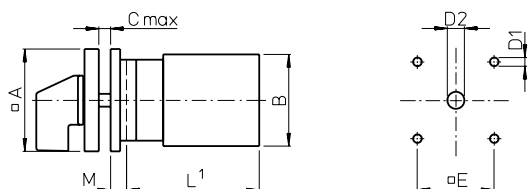
E93 E94



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

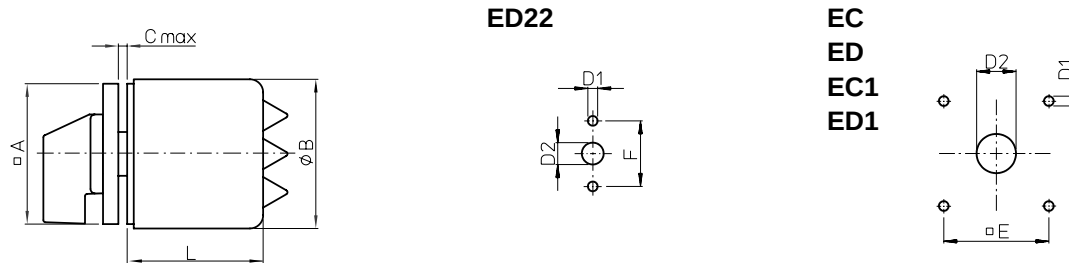


KN2	CA10 CA11 CAD11 CAD12	CA20	CA25
A	48 1.89	48 1.89	48 1.89
B	43 1.69	45 1.77	46 1.81
C	4 .16	4 .16	4 .16
D1	5 .20	5 .20	5 .20
D2	8-19 .31-.75	8-19 .31-.75	8-19 .31-.75
E	36 1.42	36 1.42	36 1.42
M	5,2 .20	5,2 .20	5,2 .20

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

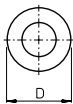
Two or Four Hole Panel Mounting



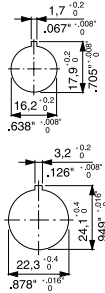
		CA10 CAD11 CAD12		CA11		CA20		CA25		CA10B		CA20B CA11B		CA25B		C26	
		EC ED	ED22	EC ED	ED22	EC ED	ED22	EC ED	ED22	EC ED	EC1 ED1	EC ED	EC1 ED1	EC ED	EC1 ED1	EC ED	EC1 ED1
EC/EC1 ED/ED1/ ED22	A	48 1.89	48 1.89	48 1.89	48 1.89	64 2.52	48 1.89	64 2.52	48 1.89	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	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 M	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	-
	7	-	-	-	-	-	-	-	-	127 5	-	139,5 5.47	-	152 5.98	-	139,5 5.47	-
	8	-	-	-	-	-	-	-	-	127 5	-	152 5.98	-	164,5 6.48	-	152 5.98	-
	9	-	-	-	-	-	-	-	-	139,5 5.47	-	164,5 6.48	-	177 6.97	-	164,5 6.48	-
	10	-	-	-	-	-	-	-	-	152 5.98	-	177 6.97	-	-	-	177 6.97	-
	11	-	-	-	-	-	-	-	-	152 5.98	-	-	-	-	-	-	-
	12	-	-	-	-	-	-	-	-	164,5 6.48	-	-	-	-	-	-	-

Single Hole Mounting or Base Mounting

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



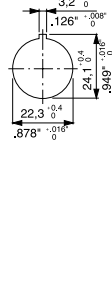
FS1...
FS2...
FS4...



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



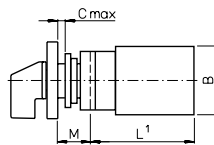
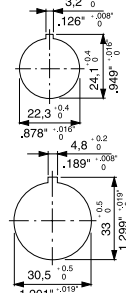
FH3...
FH4...
FT1...
FT2...
FT6...



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



FT3...
FT4...



A/E

FH3...

FH4...

B

C

D

F

M

FH4...

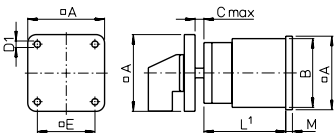
FH3...

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 1.54	39 1.54	39 1.54
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

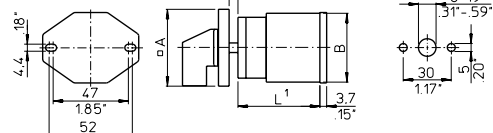
VE

VE-V



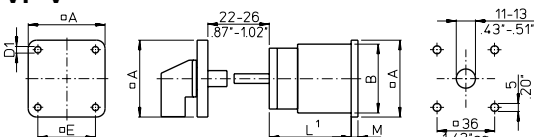
VE22

VE22V



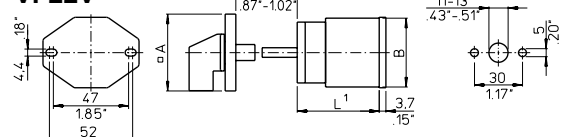
VF

VF-V



VF22

VF22V



	CA10 CA11 CAD11 CAD12	CA20	CA25 ²	CA10B CA11B CA20B	CA25B	C26	C32	CA42 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)

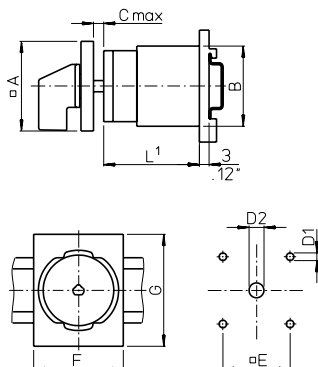
²Dimensions in () for revertive mounting plate

³Dimensions in () for L800, L1200, L1600

¹see page 56

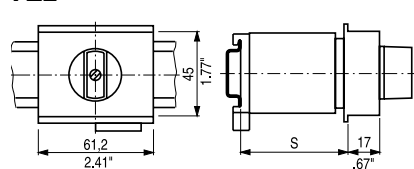
Base Mounting

VE1

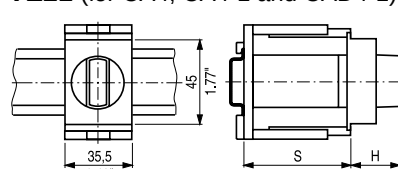


	CA10 CA11 CAD11 CAD12	CA20	CA25	CA10B CA11B CA20B	CA25B	C26	C32	C42	CA40 CA50 CA63
A	48 1.89	48 1.89	48 1.89	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52
B	43 1.69	45 1.77	46 1.81	56 2.20	56 2.20	58 2.28	60 2.36	66 2.60	55,5x64 2.19x2.52
C	10,5 .41	10,5 .41	10,5 .41	13,5 .53	13,5 .53	13,5 .53	13,5 .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

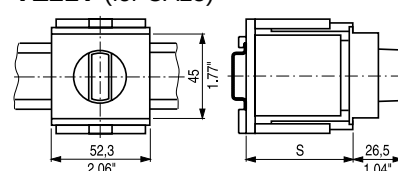


VE21 (for CA4, CA4-1 and CAD4-1)



VE21 (for CA10-CA20)

VE21V (for CA25)



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

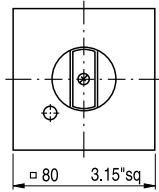
¹see page 56 ²not available for switch type CA20

Dimensions

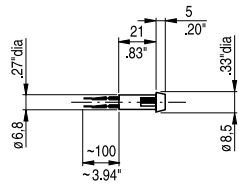
mm
inch

Wall Mounting, Face plates and Additional Length

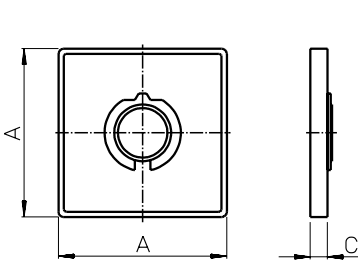
UE1
UE2
UE3



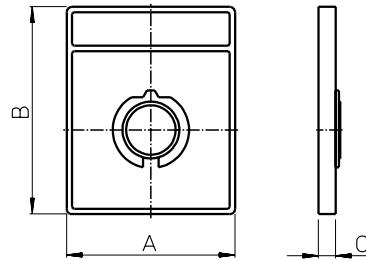
Lamp



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



Size	A	C
S00	30 1.18	5.5 .22
S0	48 1.89	6.3 .25
S1	64 2.52	7.4 .29
S2	88 3.46	8.5 .33
S3	130 5.12	11.5 .45

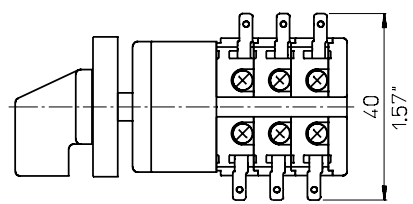


Size	A	B	C
S00	30 1.18	39 1.54	5.5 .22
S0	48 1.89	59 2.32	6.7 .26
S1	64 2.52	78 3.07	7.4 .29

Additional length for amendment (page 6)

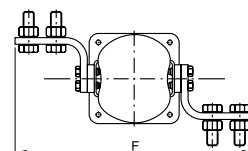
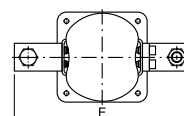
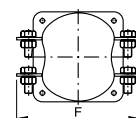
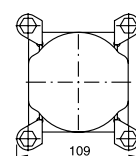
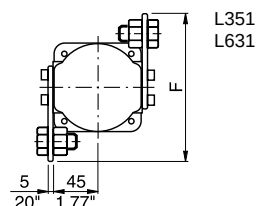
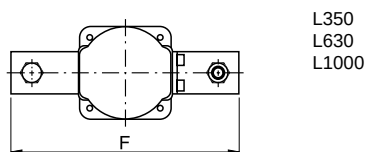
Amendment		CAD11 CAD12	CA10 CA11 CA20 CA25	C26	C32	C42	CA40 CA50 CA63
B	S0 switches with latching mechanism size S1	5.4 .21	-	-	-	-	-
C	S1 switches with latching mechanism size S2	-	-	9.2 .36	9.2 .36	-	8.2 .32
S	with snap action	-	17.3 .68	12.2 .48	12.2 .48	12.2 .48	12.2 .48

Quick connects for switches CA4-4



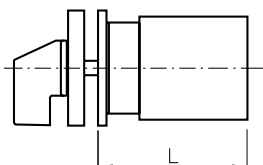
Additional Length

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



	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

SALES AND SERVICE ORGANIZATION

Australia

Kraus & Naimer Pty. Ltd.
379 Liverpool Road, ASHFIELD, N.S.W. 2131
Tel: +61 2 9797-7333, Fax: 0092
salesaus@krausnaimer.com

Austria

Kraus & Naimer GmbH
Schumannsgasse 35
1180 WIEN
Tel: +43 1 404 06-0, Fax: 404 06-190
aso@krausnaimer.com

Belgium, Luxembourg

Kraus & Naimer B.V.
Ikaros Business Park
Ikaroslaan 2
1930 ZAVENTHEM
Tel: +32 2 757-0141, Fax: 1640
sales.be@krausnaimer.com

Brazil

Central and South America
Kraus & Naimer Ind. Com. Ltda.
Rua Santa Monica, 1061
Parque Industrial San Jose
06715-865 Cotia - SP
Tel: +55 11 2198-1288, Fax: 1251
knbrasil@krausnaimer.com.br

Canada

Kraus & Naimer Ltd.
219 Connie Crescent, Unit: 13A
CONCORD, Ontario, L4K 1L4
Tel: +1 905 738-1666, Fax: 9327
salescan@krausnaimer.com

Cyprus

ELECTROMATIC CONSTRUCTIONS LTD.
72, Evagoras Pellikarides Str., 2235 LATSIA-Nicosia
P. O. Box 12630, 2251 LATSIA-Nicosia
Tel: +357 2 48 41 41, Fax: 48 57 47

Czech Republic

OBZOR, výrobní družstvo Zlín
Na Slanici 378
76413 ZLÍN
Tel: +420 57 7195-111/-153 (Techn. Supp.)
Fax: +420 57 7195-152/-138
ots@obzor.cz

Denmark

THIIM A/S
Transformervej 31
2730 HERLEV
Tel: +45 4485 8000, Fax: 8005
thiim@thiim.com

Finland

Kraus & Naimer Oy
Kiitoradankuja 8
01530 VANTAA
Tel: +358 9 825-424-0, Fax: 424-10
myynti@krausnaimer.com

France

Kraus & Naimer s.a.s.
33, rue Bobillot
75013 PARIS
Tél: +33 1 58 40 80 80, Fax: 45 80 91 19
ventes@krausnaimer.com

Germany

Kraus & Naimer GmbH
Wikingerstraße 20-28, 76189 KARLSRUHE
Postfach 10 01 24, 76231 KARLSRUHE
Tel: +49 721 59 88-0, Fax: 59 28 28
sales.ger@krausnaimer.com

Great Britain

Kraus & Naimer Ltd.
115 London Road
NEWBURY/BERKSHIRE RG14 2AH
Tel: +44 1635 262626, Fax: 37807
sales-uk@krausnaimer.com

Greece

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

Hungary

GANZ, Schalter- u. Gerätefabrik
X. Kőbányai út 41/c, Postfach 87
1475 BUDAPEST
Tel: +36 1 261-5479, Fax: 4685
ganzkk@ganzkk.hu

Iceland

JOHAN RÖNNING LTD.
Klettagarðar 25
104 REYKJAVÍK
Tel: +354 5200 800
ronning@ronning.is

India

BLISS ELECTRICALS Pvt. Ltd.
SA42 A&B, 2nd Flr, Lake City Mall,
Kapurbavdi Junction,
THANE (W) - 400 607
Tel: +91-22-25368609
kane.shriram@blisselectricals.com

Republic of Ireland

Kraus & Naimer Ltd.
4235 Atlantic Avenue
Westpark Business Campus
Shannon, Co. Clare
Tel: +353 61 704700, Fax: 471084
sales-ie@krausnaimer.com

Italy

Kraus & Naimer s.r.l.
Via Terracini, 9
24047 TREVIGLIO (BG)
Tel: +39 0363-30 11 12, Fax: 30 21 13
SalesItaly@krausnaimer.com

Japan

Kraus & Naimer Ltd.
Yoshiwada Building 2F
1-11-6 Hamamatsucho
Minato-Ku, TOKYO 105-0013
Tel: +81 3 3436-6151, Fax: 6325
sales-jpn@krausnaimer.com

Mexico

JC Ingeniería y Control, SA de CV.
Ángel Gavino 30.
C. Satélite, C. Medicos,
Naucalpan Edo. de Mexico, C.P. 53100
Tel. (+52 55) 55 62 75 77, Fax. 55 62 04 34
ventas@cingenieriacontrol.com

Middle East - UAE

Branch Office, **Kraus & Naimer Pte. Ltd.**
SAIF Zone, P. O. Box 121607,
Sharjah, UAE
Tel: +971 6 557 8886
Fax: +971 6 557 8088
uae@krausnaimer.com

Netherlands

Kraus & Naimer B.V.
Wegtersweg 38-40, Postbus 199
7556 BR HENGEL0 (Ov.)
Tel: +31 74 291-9441, Fax: 8380
sales.nl@krausnaimer.com

New Zealand

Kraus & Naimer Ltd.
42 Miramar Avenue, WELLINGTON 6022
P. O. Box 15-009, WELLINGTON 6243
Tel: +64 4 380-9888, Fax: 9877
sales-nz@krausnaimer.com

Norway

Kraus & Naimer AS
Hjalmar Brantings vei 8, P. O. Box 21, Økern
0508 OSLO
Tel: +47 22 64 44 20, Fax: 65 39 49
ordre.no@krausnaimer.com

Poland

ASTAT sp. z o.o.
ul. Dąbrowskiego 461
60451 POZNAN
Tel: +48 61 848-8871/72, Fax: 8276
info@astat.com.pl

Portugal

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

Singapore

Kraus & Naimer Pte. Ltd.
Blk 115A, Commonwealth Drive
#03-17/23
SINGAPORE 149 596
Tel: +65 6473-8166, Fax: 8643
sgp@krausnaimer.com

Slovenia

SCHRACK Technik d.o.o.
Pameče 175
2380 Slovenj Gradec
Tel: +386 2 883 92 00, Fax: +386 2 884 34 71
m.abeln@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
Tel: +27 11 608-6060, Fax: 608-2874
salesZAF@krausnaimer.com

Spain

Kraus & Naimer B.V.
Tel: +34 662 696 014
sales.es@krausnaimer.com

Sweden

Kraus & Naimer AB
Dr. Widerströms Gata 11, FRUÅNGEN
Box 42097, 126 14 STOCKHOLM
Tel: +46 8 97 00 80, Fax: 97 87 33
order.se@krausnaimer.com

Switzerland

AWAG Elektrotechnik AG
Sandbühlstraße 2, Postfach
8604 VOLKETSCH
Tel: +41 44 908 19 19, Fax: 19 99
info@awag.ch, www.awag.ch

Turkey

KARDEŞ ELEKTRİK SANAYİ VE TİCARET ANONİM ŞİRKETİ
Beşyol, Eski Londra Asfaltı-6
34295 İSTANBUL-Sefaköy
Tel: +90 212 624-9204, Fax: 592-4810
info@unalkardes.com.tr

USA

Kraus & Naimer Inc.
760 New Brunswick Road
SOMERSET, NJ 08873
Tel: +1 732 560-1240, Fax: 8823
salesusa@krausnaimer.com



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Contact us:

www.krausnaimer.com