Kraus & Naimer

BLUE LINE switchgear

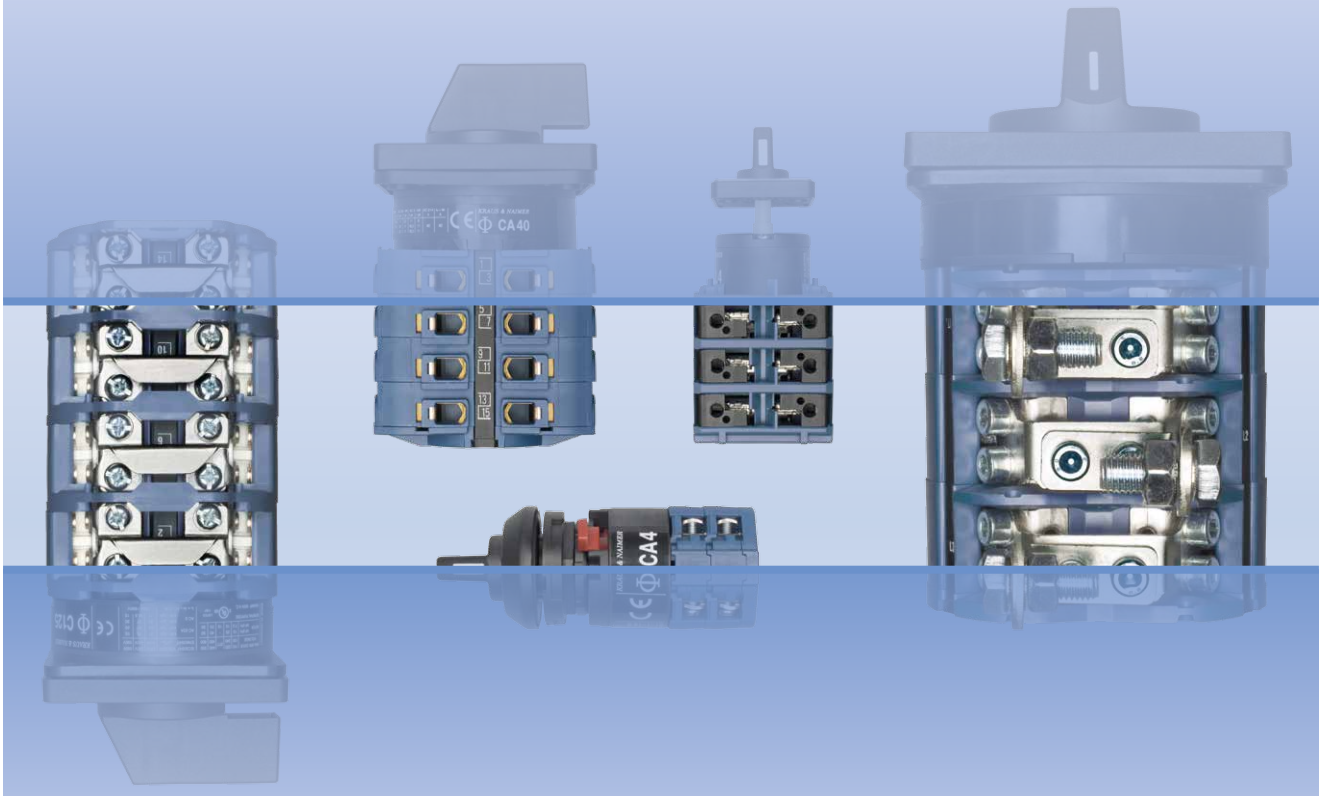
since 1907

Catalog 100

04/2015

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

Contents

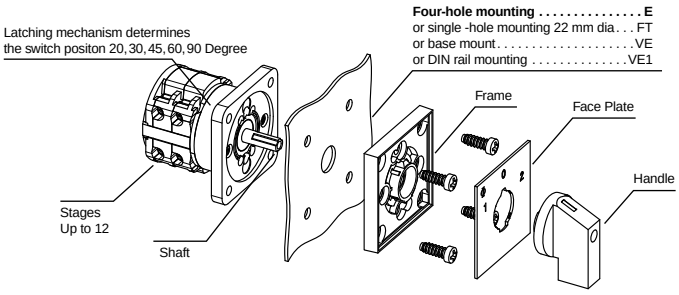
Construction Data

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

The stage is the basis for all switches and can be supplied with a maximum of 2 contacts. The terminals are accessible from the side. CA and CAD switches are supplied with open terminals to facilitate wiring and are protected against accidental finger contact according to EN 50274, VDE 0660 part 514 and BGV A3. Switches up to type CA25B are supplied with captive screws with clamping plates. The switch types CA40-CA63 are supplied with box terminals. Captive plus-minus terminal screws and integrated screwdriver guides facilitate wiring.

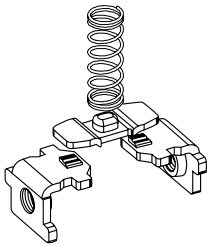
If a positive manual operation or a higher DC rating is required, many of these switches can be fitted with a snap action latching mechanism - suffix „S“ - to the switch type.

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



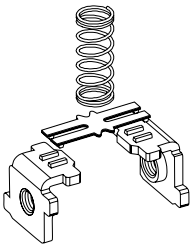
Special Contact Systems

CA4/CA4-1



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

CAD4-1/CAD11/CAD12



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

Type	Size	Possible Switching Angles	Max. No. of Stages
CA4, CA4-1, CAD4-1	S00	30°, 45°, 60°, 90°	9
CA10-CA25	S0	30°, 45°, 60°, 90°	12
CA10S-CA25S	S0	60°, 90°	on request
CAD11, CAD12	S0	30°, 45°, 60°, 90°	12
CA10B-CA25B	S1	30°, 45°, 60°, 90°	12
C26, C32, C42	S1	20°, 30°, 45°, 60°, 90°	12
C26S, C32S, C42S	S1	60°	on request
CA40, CA50, CA63	S1	30°, 45°, 60°, 90°	12
C43, C80, C125, C200-4	S2	20°, 30°, 45°, 60°, 90°	12
C315	S3	20°, 30°, 45°, 60°, 90°	12
L350, L351, L630, L631	S2	30°, 45°, 60°, 90°	12
L1000, L1001, L1250, L1051			
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.

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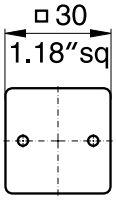
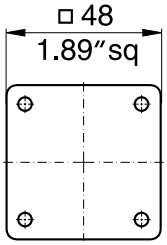
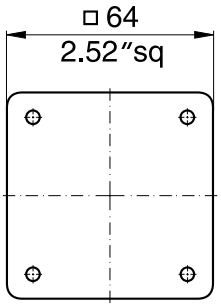
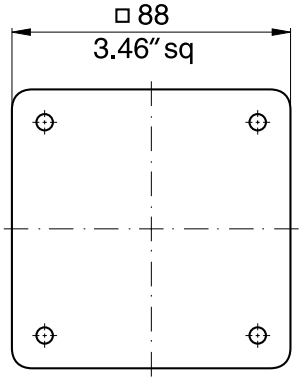
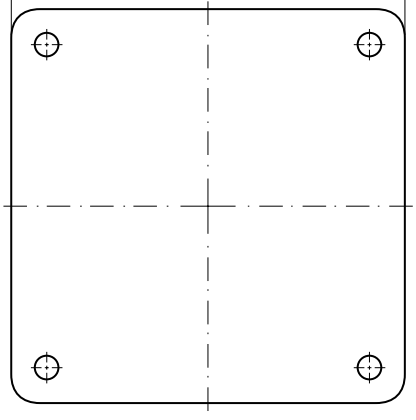
Switch Size	Type	According to IEC 60947-3/VDE 0660 part 107			
		Insulation Voltage[1] U_i V	Thermal Current I_u/I_{th} A	Motor Rating 3 x 380 V-440 V AC-23 kW	AC-3 kW
S00 	**CA4**	440	10	3	2,2
	CA4-1	440	10	3	2,2
	CAD4-1	440	5	-	-
S0 	**CA10**	690	20	7,5	5,5
	CA11	690	20	7,5	5,5
	CA20	690	25	11	7,5
	CA25	690	32	15	11
	CAD11	600	6	-	-
	CAD12	600	6	-	-
S1 	**CA10B**	690	20	7,5	5,5
	CA11B	690	20	7,5	5,5
	CA20B	690	25	11	7,5
	CA25B	690	32	15	11
	C26	690	32	15	11
	C32	690	50	22	15
	C42	690	63	30	18,5
	CA40	690	40	18,5	15
	CA50	690	50	22	18,5
	CA63	690	63	30	18,5
S2 	**C43**	690	63	30	18,5
	C80	690	115	45	30
	C125	690	150	75	37
	C200-4	690	200	75	37
	L350	690	350	90	37
	L351	690	350	90	37
	L630	690	630[2]	90	37
	L631	690	630[2]	90	37
	L1000	690	1000[2]	90	37
	L1001	690	1000[2]	90	37
	L1250	690	1250[2]	90	37
	L1251	690	1250[2]	90	37
S3 	**C315**	690	315	132	55
	C316[3]	1000	315	132	55
	L400	690	500	132	55
	L600	690	800[2]	132	55
	L800	690	1100[2]	132	55
	L1200	690	1450[2]	132	55
	L1600	690	1900[2]	132	55
	L2000	690	2400[2]	132	55

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

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

How to order

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

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

1. Type of Switch

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

2. Switch Function

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

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

3. Type of Mounting

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

Specify the mounting code to indicate required mounting.

CA10	A202-600	VE

Type of Switch

Extending the switch type coding the following combinations will define:

Amendment	Definition	For switch types
-1	with gold contacts[1]	CA4-1, CA4N-1, CA10-1, CA11-1, CA10B-1, CA11B-1, CAD4-1
-4	with quick connects	CA4-4
B[2]	S0 switches with latching mechanism size S1	CA10B, CA11B, CA25B, CAD11B, CAD12B
C[2]	S1 switches with latching mechanism size S2	CA40C, CA50C, CA63C
L	with lockout-relay w/o manual release for std. sw.	CA10L, C25L, C26L, CA40L, CA50L, CA63L
M	with lockout-relay with manual release for std. sw.	CA10M, C25M, C26M, C42M, CA40M, CA50M, CA63M
X	with power failure release	CA10X, CA11X, CA20X, CA25X, C26X, C32X, C42X, CA40X, CA50X, CA63X
Y	with power failure release and trip-free release	CA10Y, CA11Y, CA20Y, CA25Y
S[2]	with snap action	CA10S, CA11S, CA20S, CA25S with 60° or 90° switching C26S, C32S, C42S, CA40S, CA50S, CA63S with 60° switching
R	with spring return latching mechanism	CA10R, CA25R, CAD11R, CAD12R

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

Modification of Switches

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

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

Other colour combinations available on request.

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

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Modification of Switches

Color combinations of face plate and handle

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

Example: The complete coding for switch type CA10 with a 3 pole ON/OFF switch function, electro-gray handle and electro-gray face plate frame with brushed aluminum backing and black inscription which reads 0-1 is as follows: **CA10 A202-100 E**.

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

Special programs for face plate and handle combinations

-000 = without face plate, without handle
- .01 = without face plate
- .02 = without handle
- .03 = with square face plate without lettering
- .04 = with rectangular face plate without lettering
- .05 = with square face plate without lettering and without handle
- .06 = with rectangular face plate without lettering and without handle
- .07 = standard face plate, without lettering on rectangular section
- .08 = with F-handle
- .09 = with P-handle
- .10 = face plate frame and fixation ring only (if using switches with single hole mounting: **- .16**)
- .11 = without face plate, but with handle bearing plate
- .12 = with yellow face plate backing and red handle
- .14 = with B-handle
- .16 = face plate frame and fixation ring only, if using switches with single hole mounting
- .17 = standard face plate and rectangular add-on face plate, if using switches with single hole mounting FT2

Example: The complete coding for switch type CA10 with a 3 pole ON/OFF switch function with electro-gray face plate frame, square face plate without lettering, brushed aluminum plate backing and electro-gray handle reads as follows: **CA10 A202-103 E**.

Handles, Face Plates and Optional Extras

The handles for standard switches shown on pages 8-32 are suitable for mounting units with four hole mounting. Alternative types of handles available are illustrated on page 42, and mounting units on pages 31-37.
When a handle, face plate or optional extra is required but not covered by the dash number, the code number for the selected component should be entered separately. A comprehensive range of available standard face plates is illustrated on pages 40 and 41. Non-standard or special face plate engravings are available at extra cost.
The large number of optional extras and enclosures is covered in Catalog **101**.

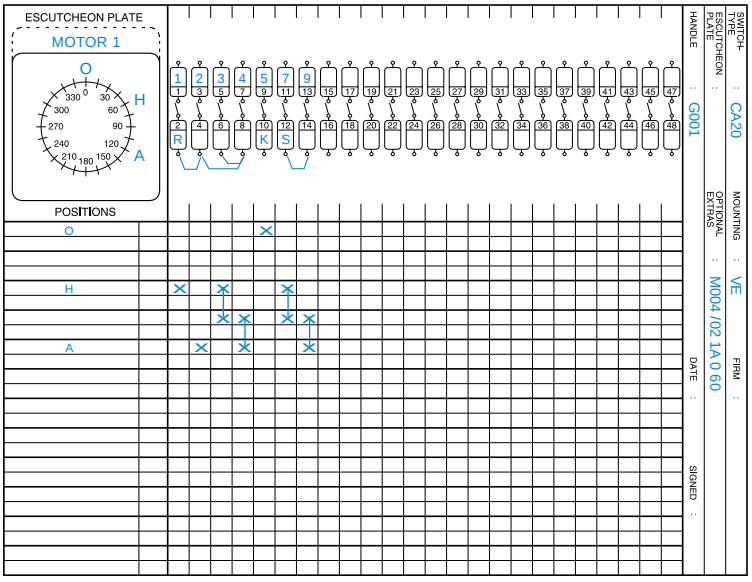
Switch Size

Blue Line switches are available in sizes S00, S0, S1, S2 and S3. These size codes indicate the dimensions of the mounting, the face plate and the handle, as well as the size of optional devices and enclosures.
Page 5 lists these sizes and the various switch types they include.

Ordering of Special Switches and Face Plates

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

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



Order forms are available on request.

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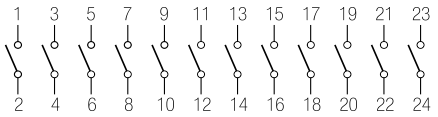
Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA25B	CA40 C26- C315	Code	Stages	Connection Diagram

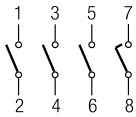
ON/OFF Switches with 60° Switching

Dimensions p. 55

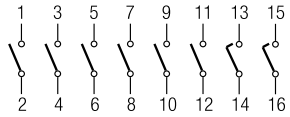
Function	Escutch. Plate	Code	Stages
1 pole		A200-600	1
2 pole		A201-600	1
3 pole		A202-600	2
3 pole with red handle		A202-626	2
4 pole		A203-600	2
4 pole 1 pole preclose 6°[1]		WAA653	2
5 pole		WAA341	3
6 pole		A342-600	3
7 pole		A343-600	4
8 pole		A344-600	4
8 pole 2 pole preclose 6°[1]		WAA654	4
9 pole		WAA345	5
10 pole		A346-600	5
11 pole		WAA347	6
12 pole		A348-600	6
1 pole		A200-620	1
2 pole		A201-620	1
3 pole		A202-620	2
4 pole		A203-620	2
4 pole 1 pole preclose 6°[1]		WAA653	2
5 pole		WAA341	3
6 pole		A342-620	3
7 pole		A343-600	4
8 pole		A344-620	4
8 pole 2 pole preclose 6°[1]		WAA654	4
9 pole		WAA345	5
10 pole		A346-620	5
11 pole		WAA347	6
12 pole		A348-620	6
1 pole		A200-621	1
2 pole		A201-621	1
3 pole		A202-621	2
4 pole		A203-621	2
4 pole 1 pole preclose 6°[1]		WAA653	2
5 pole		WAA341	3
6 pole		A342-621	3
1 pole		A200-622	1
2 pole		A201-622	1
3 pole		A202-622	2
4 pole		A203-622	2
4 pole 1 pole preclose 6°[1]		WAA653	2
5 pole		WAA341	3
6 pole		A342-622	3
1 pole		A200-623	1
2 pole		A201-623	1
3 pole		A202-623	2
4 pole		A203-623	2
4 pole 1 pole preclose 6°[1]		WAA653	2
5 pole		WAA341	3
6 pole		A342-623	3
1 pole		A200-624	1
2 pole		A201-624	1
3 pole		A202-624	2
4 pole		A203-624	2
4 pole 1 pole preclose 6°[1]		WAA653	2
5 pole		WAA341	3
6 pole		A342-624	3
1 pole		A200-625	1
2 pole		A201-625	1
3 pole		A202-625	2
4 pole		A203-625	2
4 pole 1 pole preclose 6°[1]		WAA653	2
5 pole		WAA341	3
6 pole		A342-625	3



1-12 pole



4 pole 1 pole preclose 6°



8 pole 2 pole preclose 6°

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

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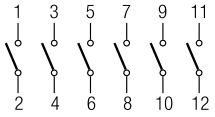
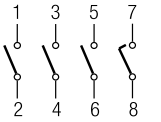
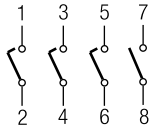
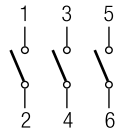
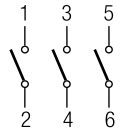
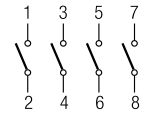
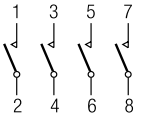
Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA25B	CA40 C26- C315	Code	Stages	Connection Diagram
ON/OFF Switches with 90° Switching								
1 pole contacts 2 pole preclose 30° 3 pole 4 pole 4 pole 1 pole preclose 60°[1] 4 pole 3 pole preclose 30° 5 pole contacts 6 pole preclose 30°						A290-600 A291-600 A292-600 A324-600 A293-600 WAA327 WAA325 A326-600	1 1 2 2 2 2 3 3	 1, 2, 3, 4, 5 and 6 pole
1 pole contacts 2 pole preclose 30° 3 pole 4 pole 4 pole 1 pole preclose 60°[1] 4 pole 3 pole preclose 30° 5 pole contacts 6 pole preclose 30°						A290-620 A291-620 A292-620 A324-620 A293-620 WAA327 WAA325 A326-620	1 1 2 2 2 2 3 3	 4 pole 1 pole preclose 60°  4 pole 3 pole preclose 30°
3 pole 360° rotation	 					WAA208 WAA208	2 2	
3 pole for foot operation					CA40- CA63	WAA386	2	
ON/OFF Switches with 30° Switching								
1 pole 2 pole 3 pole 4 pole						WAA100 WAA101 WAA102 WAA103	1 1 2 2	 1-4 pole
1 pole with spring return 2 pole with spring return 3 pole with spring return 4 pole with spring return					[3]	A204-600 A205-600 WAA206 WAA207	1 1 2 2	 1-4 pole
1 pole with spring return 2 pole with spring return 3 pole with spring return 4 pole with spring return						A204-620 A205-620 WAA206 WAA207	1 1 2 2	

Dimensions p. 55

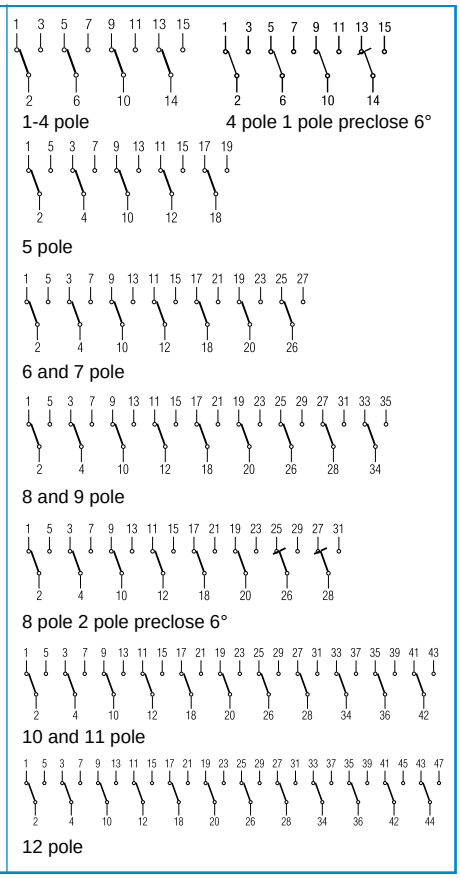
[1] for use in a three phase four-wire system with switched neutral [2] not available for switch type CA25 [3] not available for switch type C315

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

Double-throw Switches without „OFF“ 60° Switching

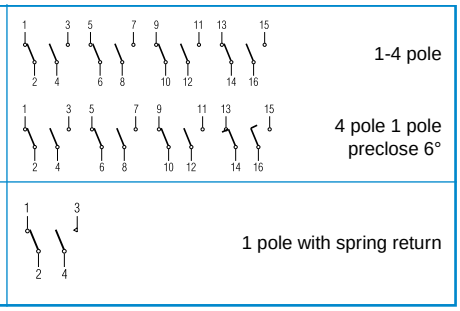
Dimensions p. 55

Function	Escutch. Plate	CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA25B	CA40 C26- C315	Code	Stages	Connection Diagram
1 pole						A220-600	1	
2 pole						A221-600	2	
3 pole						A222-600	3	
4 pole						A223-600	4	
4 pole 1 pole preclose 6°[2]						WAA673	4	
5 pole						A369-600	5	
6 pole						A370-600	6	
7 pole						A371-600	7	
8 pole						A372-600	8	
8 pole 2 pole preclose 6°[2]						WAA972	8	
9 pole						WAA373	9	
10 pole						WAA374	10	
11 pole						WAA375	11	
12 pole						WAA376	12	



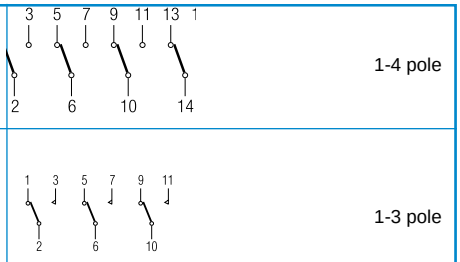
Double-throw Switches without „OFF“ with electrically isolated contacts

Function	Escutch. Plate	CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA25B	CA40 C26- C315	Code	Stages	Connection Diagram
1 pole						A720-600	1	
2 pole						A721-600	2	
3 pole						A722-600	3	
4 pole						A723-600	4	
4 pole 1 pole preclose 6°[2]						WAA973	4	
1 pole with spring return						A795-600	1	



Double-throw Switches without „OFF“ 30° Switching

Function	Escutch. Plate	CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA25B	CA40 C26- C315	Code	Stages	Connection Diagram
1 pole						WAA120	1	
2 pole						WAA121	2	
3 pole						WAA122	3	
4 pole						WAA123	4	
1 pole with spring return						A295-600	1	
2 pole with spring return						A296-600	2	
3 pole with spring return			[1]			WAA297	3	
1 pole with spring return						A295-620	1	
2 pole with spring return						A296-620	2	
3 pole with spring return			[1]			WAA297	3	



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

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

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

Dimensions p. 55

Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA63	C80- C315	Code	Stages	Connection Diagram
1 pole						A210-600	1	
2 pole						A211-600	2	
3 pole						A212-600	3	
4 pole						A213-600	4	
4 pole 1 pole preclose 6°[3]						WAA913	4	
5 pole						A361-600	5	
6 pole						A362-600	6	
7 pole						WAA363	7	
8 pole						WAA364	8	
8 pole 2 pole preclose 6°[3]						WAA664	8	1-4 pole
1 pole						A210-620	1	
2 pole						A211-620	2	
3 pole						A212-620	3	
4 pole						A213-620	4	
4 pole 1 pole preclose 6°[3]						WAA913	4	
5 pole						A361-620	5	
6 pole						A362-620	6	
7 pole						WAA363	7	
8 pole						WAA364	8	
8 pole 2 pole preclose 6°[3]						WAA664	8	4 pole 1 pole preclose 6°
1 pole						A210-621	1	
2 pole						A211-621	2	
3 pole						A212-621	3	5 pole
1 pole						A210-622	1	
2 pole						A211-622	2	
3 pole						A212-622	3	
1 pole						A210-623	1	6 and 7 pole
2 pole						A211-623	2	
3 pole						A212-623	3	
1 pole						A210-624	1	
2 pole						A211-624	2	
3 pole						A212-624	3	8 pole
4 pole						A213-624	4	
4 pole 1 pole preclose 6°[3]						WAA913	4	8 pole 2 pole preclose 6°

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

Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA63	C80- C315	Code	Stages	Connection Diagram
1 pole						A218-600	1	
2 pole						A219-600	2	
3 pole						WAA299	3	
4 pole 1 pole preclose 60°					[1]	WAA294	4	1-4 pole
1 pole						A218-620	1	
2 pole						A219-620	2	
3 pole					[1]	WAA299	3	
4 pole 1 pole preclose 60°					[1]	WAA294	4	

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

Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA63	C80- C315	Code	Stages	Connection Diagram
1 pole						A710-600	1	
2 pole						A711-600	2	
3 pole						A712-600	3	
4 pole						A713-600	4	
4 pole 1 pole preclose 6°[3]						WAA963	4	1-4 pole
								4 pole 1 pole preclose 6°
1 pole with spring return					[2]	A714-600	1	
2 pole to center						A715-600	2	1 and 2 pole

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

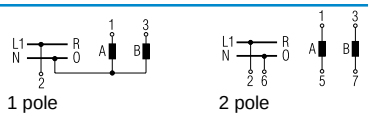
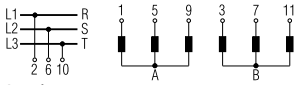
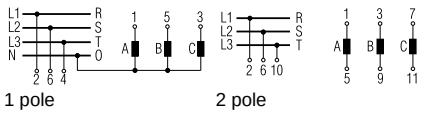
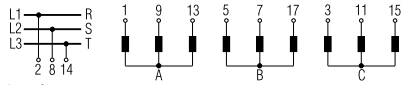
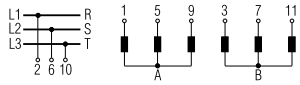
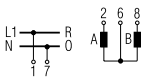
Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA25B	CA40 C26- C315	Code	Stages	Connection Diagram

Double-throw Switches with Spring Return to Center

Dimensions p. 55

1 pole 2 pole 3 pole	with spring return to center			[1]		[2] [3]	A214-600 A215-600 A216-600	1 2 3	 1-3 pole
1 pole 2 pole 3 pole				[1]		[2] [3]	A214-620 A215-620 A216-620	1 2 3	
1 pole 2 pole 3 pole	with spring return from left to center			[1]			A320-600 A321-600 A322-600	1 2 3	 1-3 pole
1 pole 2 pole 3 pole				[1]			A320-621 A321-621 A322-621	1 2 3	

General Application Switches

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

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

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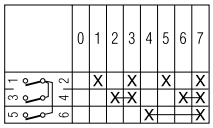
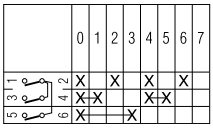
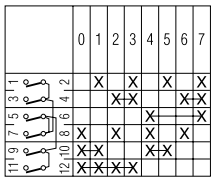
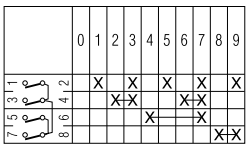
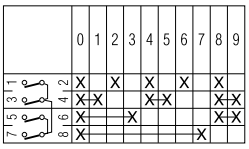
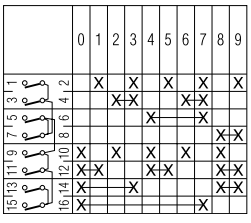
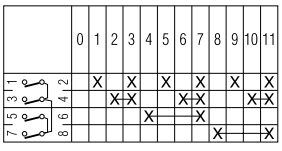
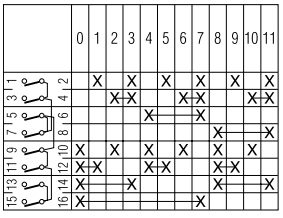
Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CA10 CA11 CA12	CA10B- CA25B	CA40 C26- C315	Code	Stages	Connection Diagram
Coding Switches/Binary Code								
0 - 7 360° rotation						A540-600	2	
0 - 7 complement 360° rotation						WAA541	2	
0 - 7 + complement 360° rotation						WAA542	3	
0 - 9						A550-600	2	
0 - 9 complement						WAA551	2	
0 - 9 + complement						WAA552	4	
0 - 11 360° rotation						A543-600	2	
0 - 11 + complement 360° rotation						WAA545	4	

Dimensions p. 55

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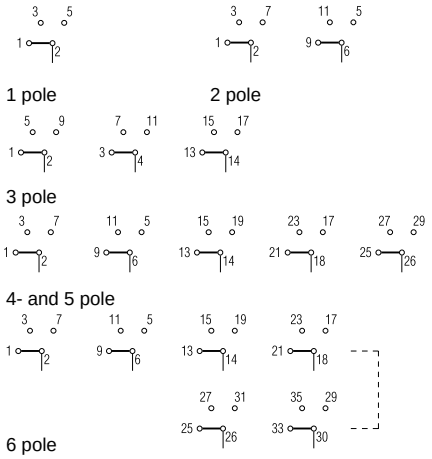
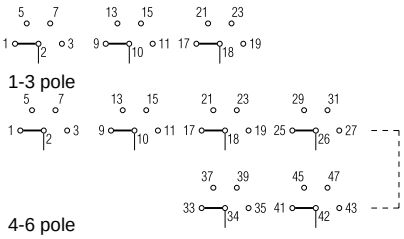
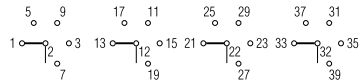
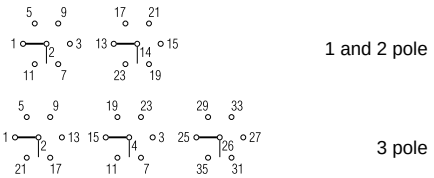
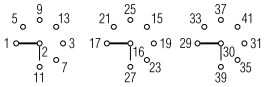
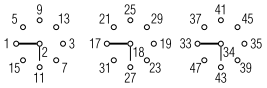
Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA63	C80- C315	Code	Stages	Connection Diagram
Multi-step Switches without „OFF“								Dimensions p. 55
1 pole 3 Step 2 pole 3 pole 4 pole 5 pole 6 pole						A230-600 A250-600 A270-600 A476-600 WAA484 WAA489	2 3 5 6 8 9	 1 pole 2 pole 3 pole 4- and 5 pole 6 pole
1 pole 4 Step 2 pole 3 pole 4 pole 5 pole 6 pole						A231-600 A251-600 A271-600 A477-600 WAA485 WAA490	2 4 6 8 10 12	 1-3 pole 4-6 pole
1 pole 5 Step 2 pole 3 pole 4 pole						A232-600 A252-600 WAA272 WAA478	3 5 8 10	 1-4 pole
1 pole 6 Step 2 pole 3 pole						A233-600 WAA253 WAA273	3 6 9	 1 and 2 pole 3 pole
1 pole 7 Step 2 pole 3 pole						WAA234 WAA254 WAA274	4 7 11	 1-3 pole
1 pole 8 Step 2 pole 3 pole						WAA235 WAA255 WAA275	4 8 12	 1-3 pole
1 pole 9 Step						WAA236	5	
1 pole 10 Step						WAA237	5	
1 pole 11 Step						WAA238	6	
1 pole 12 Step 1 pole 360° rotation					[1] [1]	WAA239 WAA639	6 6	

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

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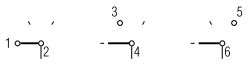
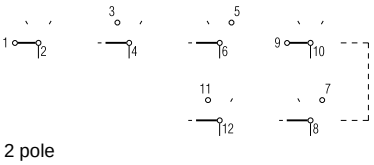
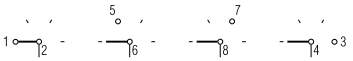
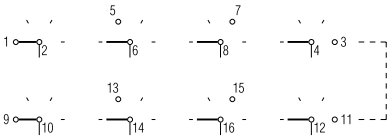
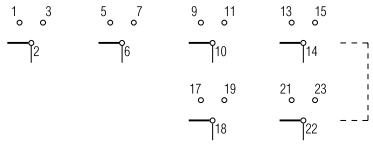
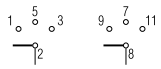
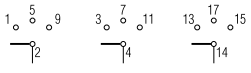
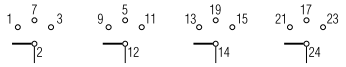
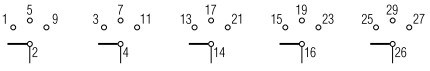
Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA63	C80- C315	Code	Stages	Connection Diagram
Multi-step Switches without „OFF“ with electrically isolated contacts Dimensions p. 55								
1 pole 3 Step		▭	▭	▭	▭	A730-600	2	 1 pole
2 pole		▭	▭	▭	▭	A750-600	3	 2 pole
1 pole 4 Step		▭	▭	▭	▭	A731-600	2	 1 pole
2 pole		▭	▭	▭	▭	A751-600	4	 2 pole
Multi-step Switches with „OFF“								
1 pole 2 Step 2 pole 3 pole 4 pole 5 pole 6 pole		▭ ▭ ▭ ▭ ▭ ▭	▭ ▭ ▭ ▭ ▭ ▭	▭ ▭ ▭ ▭ ▭ ▭	▭ ▭ ▭ ▭ ▭ ◪	A240-600 A260-600 A280-600 WAA480 WAA486 WAA491	1 2 3 4 5 6	 1-6 pole
1 pole 2 pole 3 pole 4 pole 5 pole 6 pole		▭ ▭ ▭ ▭ ▭ ▭	▭ ▭ ▭ ▭ ▭ ▭	▭ ▭ ▭ ▭ ▭ ▭	▭ ▭ ▭ ▭ ▭ ◪	A240-620 A260-620 A280-620 WAA480 WAA486 WAA491	1 2 3 4 5 6	
1 pole 3 Step 2 pole 3 pole 4 pole 5 pole		▭ ▭ ▭ ▭ ▭	▭ ▭ ▭ ▭ ▭	▭ ▭ ▭ ▭ ▭	▭ ▭ ▭ ◪ ◪	A241-600 A261-600 A281-600 WAA481 WAA487	2 3 5 6 8	 1 and 2 pole
1 pole 2 pole 3 pole 4 pole 5 pole		▭ ▭ ▭ ▭ ▭	▭ ▭ ▭ ▭ ▭	▭ ▭ ▭ ▭ ▭	▭ ▭ ▭ ◪ ◪	A241-620 A261-620 A281-620 WAA481 WAA487	2 3 5 6 8	 3 pole  4 pole  5 pole
1 pole 2 pole		▭ ▭	▭ ▭	▭ ▭	▭ ▭	A241-621 A261-621	2 3	

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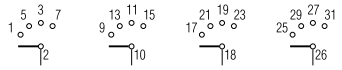
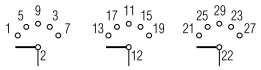
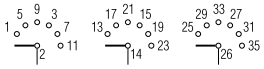
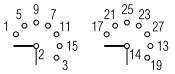
Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA63	C80- C315	Code	Stages	Connection Diagram
Multi-step Switches with „OFF“								Dimensions p. 55
1 pole 4 Step						A242-600	2	
2 pole						WAA262	4	
3 pole						WAA282	6	
4 pole						WAA482	8	
1 pole						A242-620	2	
2 pole						WAA262	4	1-4 pole
3 pole						WAA282	6	
4 pole						WAA482	8	
1 pole 5 Step						A243-600	3	
2 pole						WAA263	5	
3 pole						WAA283	8	
1 pole						A243-620	3	
2 pole						WAA263	5	1-3 pole
3 pole						WAA283	8	
1 pole 6 Step						A244-600	3	
2 pole						WAA264	6	
3 pole						WAA284	9	
1 pole						A244-620	3	
2 pole						WAA264	6	1-3 pole
3 pole						WAA284	9	
1 pole 7 Step						WAA245	4	 
2 pole						WAA265	7	
1 pole						WAA245	4	
2 pole						WAA265	7	1 pole 2 pole
1 pole 8 Step						WAA246	4	
1 pole						WAA246	4	
1 pole 9 Step						WAA247	5	
1 pole						WAA247	5	
1 pole 10 Step						WAA248	5	
1 pole						WAA248	5	
1 pole 11 Step						WAA249	6	
1 pole 360° rotation						WAA649	6	
1 pole						WAA249	6	
1 pole 360° rotation						WAA649	6	

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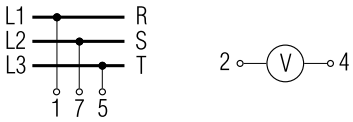
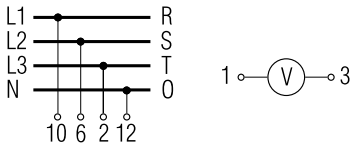
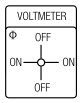
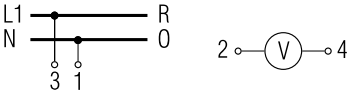
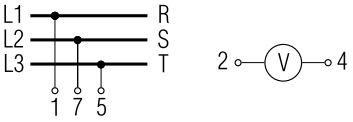
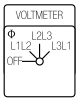
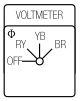
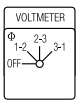
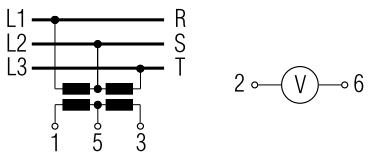
Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CA10- CA25	CAD..	CA10B- CA25B	Code	Stages	Connection Diagram

Voltmeter Switches without „OFF“

Dimensions p. 55

3 phase 3 wire						A023-600	2	
						A023-620	2	
3 phase 3 wire 3 phase to phase and phase to neutral						A025-600	3	
						A025-620	3	

Voltmeter Switches with „OFF“

2 pole 360° rotation						WAA002	1	
3 phase 3 wire						A004-600	2	
						A004-620	2	
						A004-621	2	
						A004-622	2	
						A004-623	2	
						A004-624	2	
						WAA011	2	

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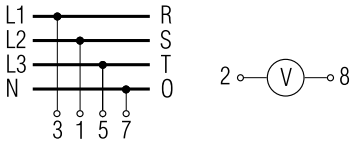
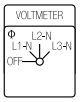
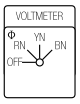
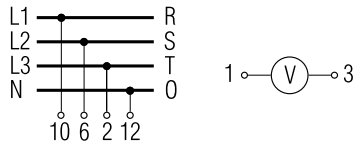
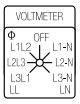
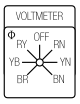
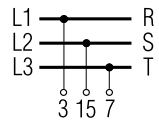
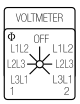
Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CA10- CA25	CAD..	CA10B- CA25B	Code	Stages	Connection Diagram

Voltmeter Switches with „OFF“

Dimensions p. 55

3 phase to neutral						WAA005	2	
						WAA005	2	
						WAA005	2	
						WAA005	2	
						WAA005	2	
3 phase to phase and 3 phase to neutral						A007-600	3	
						A007-620	3	
						A007-621	3	
						A007-622	3	
						A007-623	3	
						A007-624	3	
2 separate 3 phase with center „OFF“						WAA008	4	
						WAA008	4	
						WAA008	4	
						WAA008	4	

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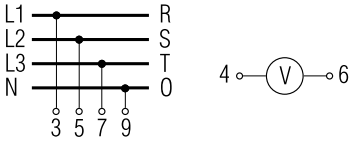
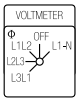
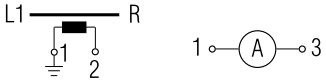
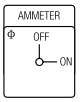
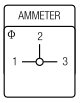
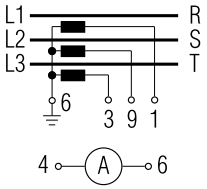
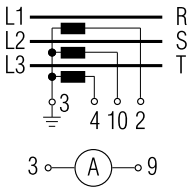
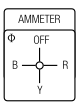
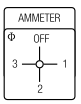
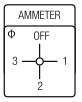
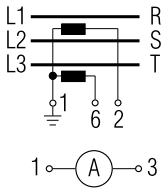
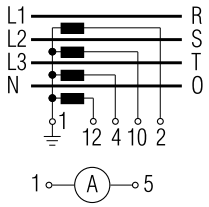
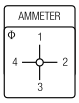
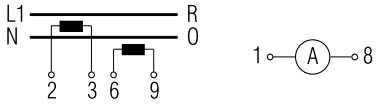
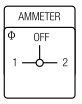
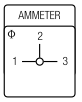
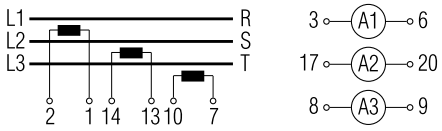
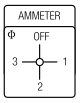
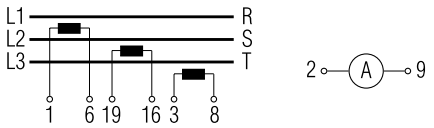
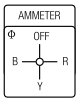
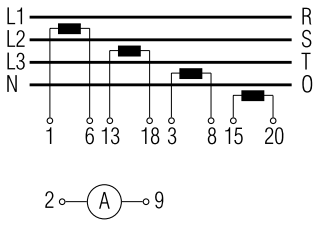
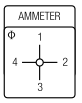
Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA63 C32	C43- C125	Code	Stages	Connection Diagram
Voltmeter Switches with „OFF“								Dimensions p. 55
3 phase and 1 phase to neutral				[1]		WAA010	3	
				[1]		WAA010	3	
				[1]		WAA010	3	
				[1]		WAA010	3	
Ammeter Switches								
Single pole with one current transformer						WAA046	1	
						WAA046	1	
						WAA046	1	
Single pole with 3 current transformers without „OFF“						A017-600	3	
						A017-620	3	
Single pole with 3 current transformers with „OFF“ 360° rotation						A048-600	3	
						A048-620	3	
						A048-621	3	
						A048-622	3	
						A048-623	3	

[1] available only up to switch type CA25B

Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA63- C42	C43- C125	Code	Stages	Connection Diagram
Ammeter Switches								Dimensions p. 55
Single pole with 2 current transformers (3 readings)				[1]		A021-600	2	
				[1]		A021-620	2	
Single pole with 4 current transformers						WAA036	4	
						WAA036	4	
2 pole 2 current transformers						WAA037	3	
						WAA037	3	
						WAA037	3	
2 pole 3 current transformers				[1]		WAA019	5	
				[1]		WAA019	5	
						A038-600	5	
						A038-620	5	
						A038-621	5	
2 pole 4 current transformers						WAA039	6	
						WAA039	6	

[1] available only up to switch type CA25B

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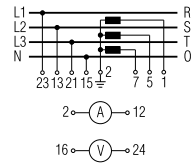
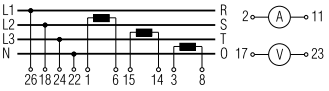
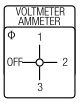
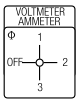
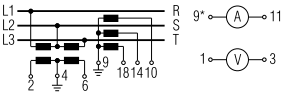
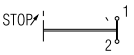
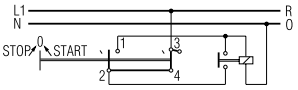
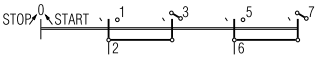
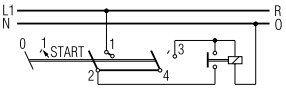
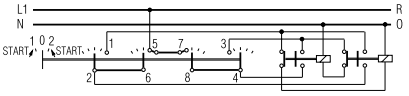
Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA25B	C26- C43 CA40- CA63	Code	Stages	Connection Diagram
Volt-ammeter Switches								
3 phase - phase to phase 3 current		☐	☐	☐		WAA027	6	
		☐	☐	☐	☐[1]	WAA028	7	
3 phase voltage 3 phase current 4 wire		☐	▦	▦	▦[1]	WAA033	5	
3 phase voltage 3 phase current 3 wire		☐	▦	▦	▦[1]	WAA035	5	
Control Switches								
Stop switch		☐	☐	☐	☐[1]	WAA174	1	
Start switch		☐	☐	☐	☐[1]	A175-600	1	
Stop start switch single pole		☐	☐	☐	☐[1]	A176-600	1	
Stop start switch 2 pole		☐	☐	☐	☐	WAA183	2	
Stop start switch with spring return from start to run		☐	☐	☐	☐	A178-600	1	
		☐	☐	☐	☐	A178-620	1	
Stop start switch with spring return to run for 2 units		☐	☐	☐	☐[1]	WAA177	2	
		☐	☐	☐	☐[1]	WAA177	2	

[1]available only up to switch type CA25B

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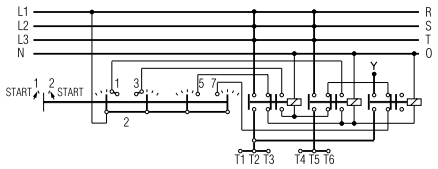
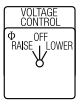
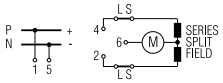
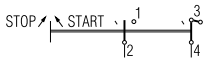
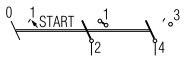
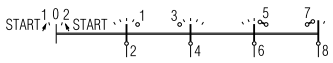
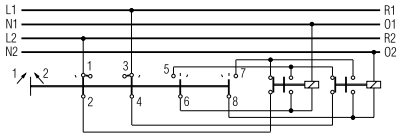
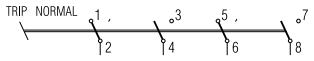
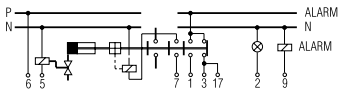
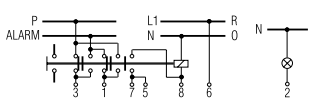
Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA25B	C26- C43 CA40- CA63	Code	Stages	Connection Diagram
Control Switches								
Stop start switch with spring return to run with contactor interlock contactors for 2 units		☐	☐	☐	☐	WAA182	2	
		☐	☐	☐	☐	WAA182	2	
Motor voltage control switch		☐	☐	☐		WAA150	2	
Control Switches with electrically isolated contacts								
Stop start switch single pole		☐	☐	☐	☐[4]	A789-600	1	
Stop start switch with spring return to 1		☐	☐	☐	☐[4]	A791-600	1	
Stop start switch with spring return to run for 2 units		☐	☐	☐	☐[4]	WAA790	2	
Contactor control with spring return to „OFF“		☐	☐	☐	☐	WAA179	2	
		☐	☐	☐	☐	WAA179	2	
Circuit breaker control		☐	☐	☐		WAA537	2	
Control and Alarm Switches[1]								
With slip clutch and without indicator device			☐[2]	☐[2]		WAA190	5[3]	
Without indicator device			☐[2]			WAA192	2	

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

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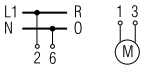
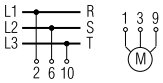
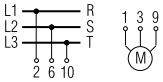
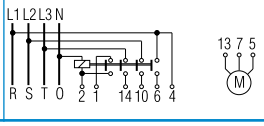
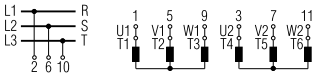
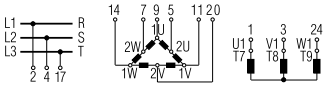
Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA..B C26-C43 CA40-CA63	C80- C315	Code	Stages	Connection Diagram
Motor Reversing Switches								
2 pole						A400-600	2	
						A400-620	2	
						A400-621	2	
3 pole						A401-600	3	
						A401-620	3	
						A401-621	3	
3 pole with spring return to „OFF“			[1]	[2]		A228-600	3	
			[1]	[2]		A228-620	3	
3 pole for use with reversing contactors				[3]		WAA402	4	
Motor Control Switches								
2 speed 2 winding 0-A-BY or Δ						WAA451	3	
						WAA451	3	
3 speed 2 winding 0-AΔ-BY-AYY						WAA457	6	
						WAA457	6	

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

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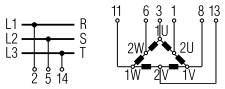
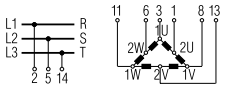
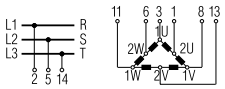
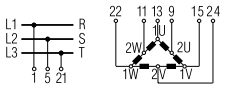
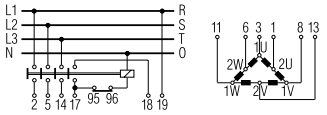
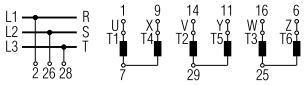
Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA10B- CA25B	CA40 C26- C315	Code	Stages	Connection Diagram
Motor Control Switches								
2 speed single winding						A440-600	4	
						A440-620	4	
2 speed single winding without „OFF“						A466-600	4	
2 speed single winding with center „OFF“						A441-600	4	
						A441-620	4	
2 speed single winding reversing						A442	6	
						A442	6	
2 speed single winding for use with contactors						WAA444	5	
						WAA444	5	
2 speed reversing for 2 way operation with slip clutch for „OFF“ load use						WAA468	10[1]	
						WAA468	10[1]	

[1]incl. slip clutch

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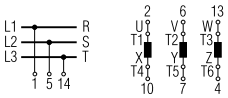
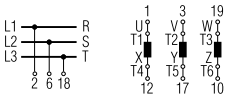
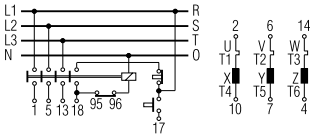
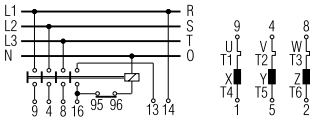
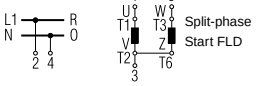
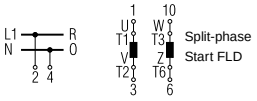
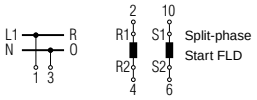
Function	Escutch. Plate	Type/Handle CA4 CA4-1 CAD4-1	CAD.. CA10- CA25	CA..B C26-C43 CA40-CA63	C80- C315	Code	Stages	Connection Diagram
Star-delta Switches								
OFF-star-delta						A410-600	4	
						A410-620	4	
Reversing						WAA413	5	
With auxiliary contact closed in „OFF“ position						WAA416	5	
For use with reversing contactors						A419-600	4	
Start and Run Switches								
Split-phase start						A425-600	2	
						A425-620	2	
Split-phase start reversing			[1]			WAA426	3	
			[1]			WAA426	3	
Split-phase reversing auto cutout of start field winding						WAA622	3	

[1] not available for switch type CA25

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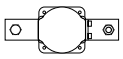
Function/Type	Escutch. Plate	Handle	Code	Stages	Double Latching	Connection Diagram	L350 L630 L1000 L1250  L351 L631 L1001 L1251 

ON/OFF Switches with 60° Switching

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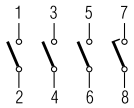
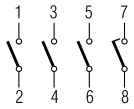
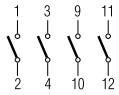
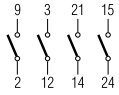
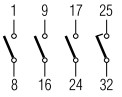
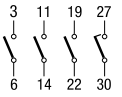
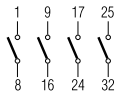
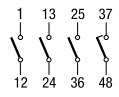
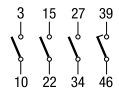
1 pole 2 pole 3 pole 4 pole	L350/			WAA200-600 WAA201-600 WAA202-600 WAA203-600	1 2 3 4			1-4 pole
1 pole 2 pole 3 pole 4 pole	L351			WAA200-600 WAA201-600 WAA202-600 WAA203-600	1 2 3 4			1-4 pole
1 pole 2 pole 3 pole 4 pole	L400			WAA200-600 WAA201-600 WAA202-600 WAA203-600	2 2 4 4			1-4 pole
3 pole	with lugs suitable for protective cover			WAA302-600	3			A302
1 pole 2 pole 3 pole 4 pole				WAA200-600 WAA201-600 WAA202-600 WAA203-600	2 2 4 4			
1 pole 2 pole 3 pole 4 pole	L600			WAA200-600 WAA201-600 WAA202-600 WAA203-600	3 3 6 6			1-4 pole
1 pole 2 pole 3 pole 4 pole	L630			WAA200-600 WAA201-600 WAA202-600 WAA203-600	2 4 6 8	● ●		1-4 pole
1 pole 2 pole 3 pole 4 pole	L631			WAA200-600 WAA201-600 WAA202-600 WAA203-600	2 4 6 8	● ●		1-4 pole
1 pole 2 pole 3 pole 4 pole	L800			WAA200-600 WAA201-600 WAA202-600 WAA203-600	2 4 6 8			1-4 pole
1 pole 2 pole 3 pole 4 pole	L1000			WAA200-600 WAA201-600 WAA202-600 WAA203-600	3 6 9 12	● ● ●		1-4 pole
1 pole 2 pole 3 pole 4 pole	L1001			WAA200-600 WAA201-600 WAA202-600 WAA203-600	3 6 9 12	● ● ●		1-4 pole
1 pole 2 pole 3 pole	L1200			WAA200-600 WAA201-600 WAA202-600	3 6 9			1-3 pole
1 pole 2 pole 3 pole	L1250			WAA200-600 WAA201-600 WAA202-600 WAA203-600	4 8 12	● ●		1-3 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

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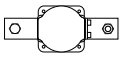
Function/Type	Escutch. Plate	Handle	Code	Stages	Double Latching	Connection Diagram	L350 L630 L1000 L1250  L351 L631 L1001 L1251 

ON/OFF Switches with 60° Switching

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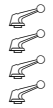
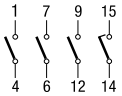
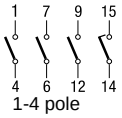
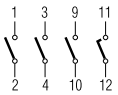
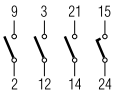
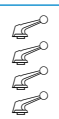
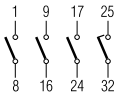
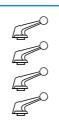
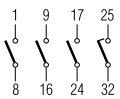
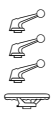
1 pole 2 pole 3 pole	L1251			WAA200-600 WAA201-600 WAA202-600 WAA203-600	4 8 12	● ●	 1-3 pole
1 pole 2 pole 3 pole	L1600			WAA200-600 WAA201-600 WAA202-600	4 8 12		 1-3 pole
1 pole 2 pole	L2000			WAA200-600 WAA201-600	5 10	●	 1 and 2 pole

ON/OFF Switches with 90° Switching

1 pole 2 pole 3 pole 4 pole	L350 1 pole preclose 60°			WAA290-600 WAA291-600 WAA292-600 WAA293-600	1 2 3 4		 1-4 pole
1 pole 2 pole 3 pole 4 pole	L351 1 pole preclose 60°			WAA290-600 WAA291-600 WAA292-600 WAA293-600	1 2 3 4		 1-4 pole
1 pole 2 pole 3 pole 4 pole 3 pole 3 pole	L400 1 pole preclose 60° with lugs suitable for protective cover 360° rotation	  	  	WAA290-600 WAA291-600 WAA292-600 WAA293-600 WAA307-600 WAA208-600	2 2 4 4 3 4		 1-3 pole  4 pole  A307
1 pole 2 pole 3 pole 4 pole	L600 1 pole preclose 60°			WAA290-600 WAA291-600 WAA292-600 WAA293-600	3 3 6 6		 1-3 pole  4 pole
1 pole 2 pole 3 pole 4 pole	L630 1 pole preclose 60°			WAA290-600 WAA291-600 WAA292-600 WAA293-600	2 4 6 8		 1-3 pole  4 pole
1 pole 2 pole 3 pole 4 pole	L631 1 pole preclose 60°			WAA290-600 WAA291-600 WAA292-600 WAA293-600	2 4 6 8		 1-3 pole  4 pole
1 pole 2 pole 3 pole 4 pole	L800 1 pole preclose 60°			WAA290-600 WAA291-600 WAA292-600 WAA293-600	2 4 6 8	● ● ●	1-3 pole 4 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

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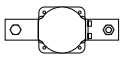
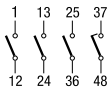
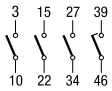
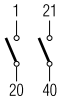
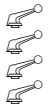
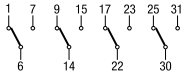
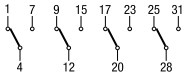
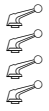
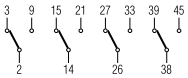
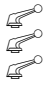
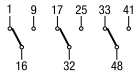
Function/Type	Escutch. Plate	Handle	Code	Stages	Double Latching	Connection Diagram	L350 L630 L1000 L1250  L351 L631 L1001 L1251 

ON/OFF Switches with 90° Switching

Dimensions p. 55

1 pole 2 pole 3 pole 4 pole	L1000 1 pole preclose 60°			WAA290-600 WAA291-600 WAA292-600 WAA293-600	3 6 9 12	● ● ●	 1-3 pole  4 pole
1 pole 2 pole 3 pole 4 pole	L1001 1 pole preclose 60°			WAA290-600 WAA291-600 WAA292-600 WAA293-600	3 6 9 12	● ● ●	 1-3 pole  4 pole
1 pole 2 pole 3 pole	L1200			WAA290-600 WAA291-600 WAA292-600	3 6 9	● ● ●	 1-3 pole
1 pole 2 pole 3 pole	L1250			WAA290-600 WAA291-600 WAA292-600 WAA293-600	4 8 12	● ●	 1-3 pole
1 pole 2 pole 3 pole	L1251			WAA290-600 WAA291-600 WAA292-600 WAA293-600	4 8 12	● ●	 1-3 pole
1 pole 2 pole 3 pole	L1600			WAA290-600 WAA291-600 WAA292-600	4 8 12	● ● ●	 1-3 pole
1 pole 2 pole	L2000			WAA290-600 WAA291-600	5 10	● ●	 1- and 2 pole

Double-throw Switches without „OFF“ 60° Switching

1 pole 2 pole 3 pole 4 pole	L350			WAA220-600 WAA221-600 WAA222-600 WAA223-600	2 4 6 8		 1-4 pole
1 pole 2 pole 3 pole 4 pole	L351			WAA220-600 WAA221-600 WAA222-600 WAA223-600	2 4 6 8		 1-4 pole
1 pole 2 pole 3 pole 4 pole	L400			WAA220-600 WAA221-600 WAA222-600 WAA223-600	2 4 6 8		 1-4 pole
1 pole 2 pole 3 pole 4 pole	L600			WAA220-600 WAA221-600 WAA222-600 WAA223-600	3 6 9 12	● ●	 1-4 pole
1 pole 2 pole 3 pole	L630			WAA220-600 WAA221-600 WAA222-600	4 8 12	●	 1-3 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

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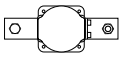
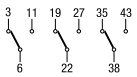
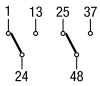
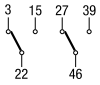
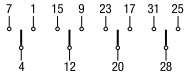
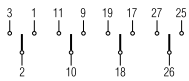
Function/Type	Escutch. Plate	Handle	Code	Stages	Double Latching	Connection Diagram	L350 L630 L1000 L1250  L351 L631 L1001 L1251 

Double-throw Switches without „OFF“ 60° Switching

Dimensions p. 55

1 pole 2 pole 3 pole	L631			WAA220-600 WAA221-600 WAA222-600	4 8 12	●		1-3 pole
1 pole 2 pole 3 pole	L800			WAA220-600 WAA221-600 WAA222-600	4 8 12	●		1-3 pole
1 pole 2 pole	L1000			WAA220-600 WAA221-600	6 12	●		1 and 2 pole
1 pole 2 pole	L1001			WAA220-600 WAA221-600	6 12	●		1 and 2 pole
1 pole	L1200			WAA220-600	6			
1 pole	L1250			WAA220-600	8			
1 pole	L1251			WAA220-600	8			
1 pole	L1600			WAA220-600	8			
1 pole	L2000			WAA220-600	10			

Double-throw Switches with Center „OFF“

1 pole 2 pole 3 pole 4 pole	L350			WAA210-600 WAA211-600 WAA212-600 WAA213-600	2 4 6 8			1-4 pole
1 pole 2 pole 3 pole 4 pole	L351			WAA210-600 WAA211-600 WAA212-600 WAA213-600	2 4 6 8			1-4 pole
1 pole 2 pole 3 pole 4 pole	L400			WAA210-600 WAA211-600 WAA212-600 WAA213-600	2 4 6 8			1-4 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

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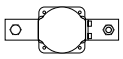
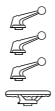
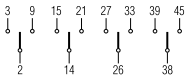
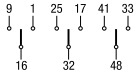
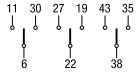
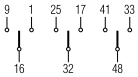
Function/Type	Escutch. Plate	Handle	Code	Stages	Double Latching	Connection Diagram	L350 L630 L1000 L1250  L351 L631 L1001 L1251 

Double-throw Switches with Center „OFF“

Dimensions p. 55

1 pole 2 pole 3 pole 4 pole	L600			WAA210-600 WAA211-600 WAA212-600 WAA213-600	3 6 9 12	● ●		1-4 pole
1 pole 2 pole 3 pole	L630			WAA210-600 WAA211-600 WAA212-600	4 8 12	●		1-3 pole
1 pole 2 pole 3 pole	L631			WAA210-600 WAA211-600 WAA212-600	4 8 12	●		1-3 pole
1 pole 2 pole 3 pole	L800			WAA210-600 WAA211-600 WAA212-600	4 8 12	●		1-3 pole
1 pole 2 pole	L1000			WAA210-600 WAA211-600	6 12	●		1 and 2 pole
1 pole 2 pole	L1001			WAA210-600 WAA211-600	6 12	●		1 and 2 pole
1 pole	L1200			WAA210-600	6			
1 pole	L1250			WAA210-600	8			
1 pole	L1251			WAA210-600	8			
1 pole	L1600			WAA210-600	8			
1 pole	L2000			WAA210-600	10			

Multi-step Switches single pole without „OFF“

3 Step	L350			WAA230-600	4		
3 Step	L351			WAA230-600	4		
3 Step	L400			WAA230-600	4		

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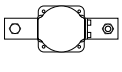
Function/Type	Escutch. Plate	Handle	Code	Stages	Double Latching	Connection Diagram	L350 L630 L1000 L1250  L351 L631 L1001 L1251 

Multi-step Switches single pole without „OFF“

Dimensions p. 55

4 Step	L350			WAA231-600	4		
4 Step	L351			WAA231-600	4		
4 Step	L400			WAA231-600	4		
5 Step	L350			WAA232-600	6		
5 Step	L351			WAA232-600	6		
5 Step	L400			WAA232-600	6		
6 Step	L350			WAA233-600	6		
6 Step	L351			WAA233-600	6		
6 Step	L400			WAA233-600	6		
7 Step	L350			WAA234-600	8		
7 Step	L351			WAA234-600	8		
7 Step	L400			WAA234-600	8		
8 Step	L350			WAA235-600	8		
8 Step	L351			WAA235-600	8		
8 Step	L400			WAA235-600	8		

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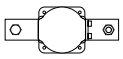
Function/Type	Escutch. Plate	Handle	Code	Stages	Double Latching	Connection Diagram	L350 L630 L1000 L1250  L351 L631 L1001 L1251 

Multi-step Switches single pole without „OFF“

Dimensions p. 55

9 Step	L350			WAA236-600	10		
9 Step	L351			WAA236-600	10		
9 Step	L400			WAA236-600	10		
10 Step	L350			WAA237-600	10		
10 Step	L351			WAA237-600	10		
10 Step	L400			WAA237-600	10		
11 Step	L350			WAA238-600	12		
11 Step	L351			WAA238-600	12		
11 Step	L400			WAA238-600	12		
12 Step	L350			WAA239-600	12		
12 Step	L351			WAA239-600	12		
12 Step	L400			WAA239-600	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-L1251 Size S2	C315 L400-L2000 Size S3
Panel Mount						
						
Four hole, Protection IP 40		E	●	●	●	●
	●	E-V	●	●		
Four hole, Protection IP 66/67/69k		EF	●	●	●	●
	●	EF-V	●	●		
Two hole, Protection IP 66/69k		E22	●			
	●	E22-V	●			
Panel mount using larger face plate, handle and heavy duty stop						
						
Four hole, Protection IP 40		EG	●	CA40-CA63	C80-C200-4	
Four hole, Protection IP 66/67/69k		EGF	●	CA40-CA63	C80-C200-4	
Double End Mount						
						
Four hole, Protection IP 40		ER	CAD.. CA10-CA25	●	●	●
Four hole, Protection IP 66/67/69k		ERF	CAD.. CA10-CA25	●	●	●

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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	KN2	●			
 Four hole, Protection IP 40 64 x 64 Plate – S1	KN1	●	●	●	
Four hole, Protection IP 40 64 x 64 Plate – S1 complete with 6mm square metal shaft	KD1	●	●	●	
Panel mount with protective cover					
 Four hole Protection front IP 40 rear IP 30	EC	CAD.. CA10- CA25	●		
Four hole with additional shaft seal Protection front IP 65 rear IP 30	ED	CAD.. CA10- CA25	●		
 Four hole Protection front IP 40 rear IP 42	EC1		●		
Four hole with additional shaft seal Protection front IP 66/67/69k rear IP 42	ED1		●		
Two hole Protection front IP 66/69k rear IP 42	ED22	CAD.. CA10- CA25			

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Single Hole Mount	Terminals rotated 90°	Code	CA4 CA4-1 CAD4-1	CAD.. CA10-CA25
			mm	mm
 **Single Hole Mount complete with lock nut and shaft seal** Bezel mount, Protection IP 66/67/69k		FS1	16/22	
	●	FS1-V	16/22	
		FT1		22
	●	FT1-V		22
		FT3		22/30
	●	FT3-V		22/30
 Square face plate, Protection IP 66/67/69k		FS2	16/22	
	●	FS2-V	16/22	
		FT2		22
	●	FT2-V		22
		FT4		22/30
	●	FT4-V		22/30
S1 square face plate and heavy duty stop, Protection IP 66/67/69k		FH3		22
	●	FH3-V		22
 Rectangular face plate, Protection IP 66/67/69k		FS4	16/22	
	●	FS4-V	16/22	
		FT6		22
	●	FT6-V		22
S1 rectangular face plate and heavy duty stop, Protection IP 66/67/69k		FH4		22
	●	FH4-V		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
Base Mount					
 Four hole, Protection IP 40		VE	CAD..	●	●
	●	VE-V	CA10-CA25	●	
Four hole with integrated simplified door clutch, Protection IP 65		VF	CAD..		
	●	VF-V	CA10-CA25		
 Two hole, Protection IP 40		VE22	●		
	●	VE22V	CAD.. CA10-CA25		
Two hole with integrated simplified door clutch, Protection IP 65		VF22	●		
	●	VF22V	CAD.. CA10-CA25		
 Snap-on for DIN Rail EN 60715, Protection IP 40		VE1	●	●	

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Base Mount	Code	CA4 CA4-1 CAD4-1	CAD.. CA10- CA25
DIN Rail Mount			
 Snap-on for DIN Rail EN 60715 with face plate for 45 mm standard knock-out.	VE2		●
 Snap-on for DIN Rail EN 60715. With face plate for 45 mm standard knock-out. The handle and plate are adjustable in height.	VE21 VE21V	●	CAD.. CA10- CA20 CA25

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Mounting Plates for Plaster Depth Boxes acc. to DIN 49073 and ÖNORM E8608	Code	CAD.. CA10-CA25
	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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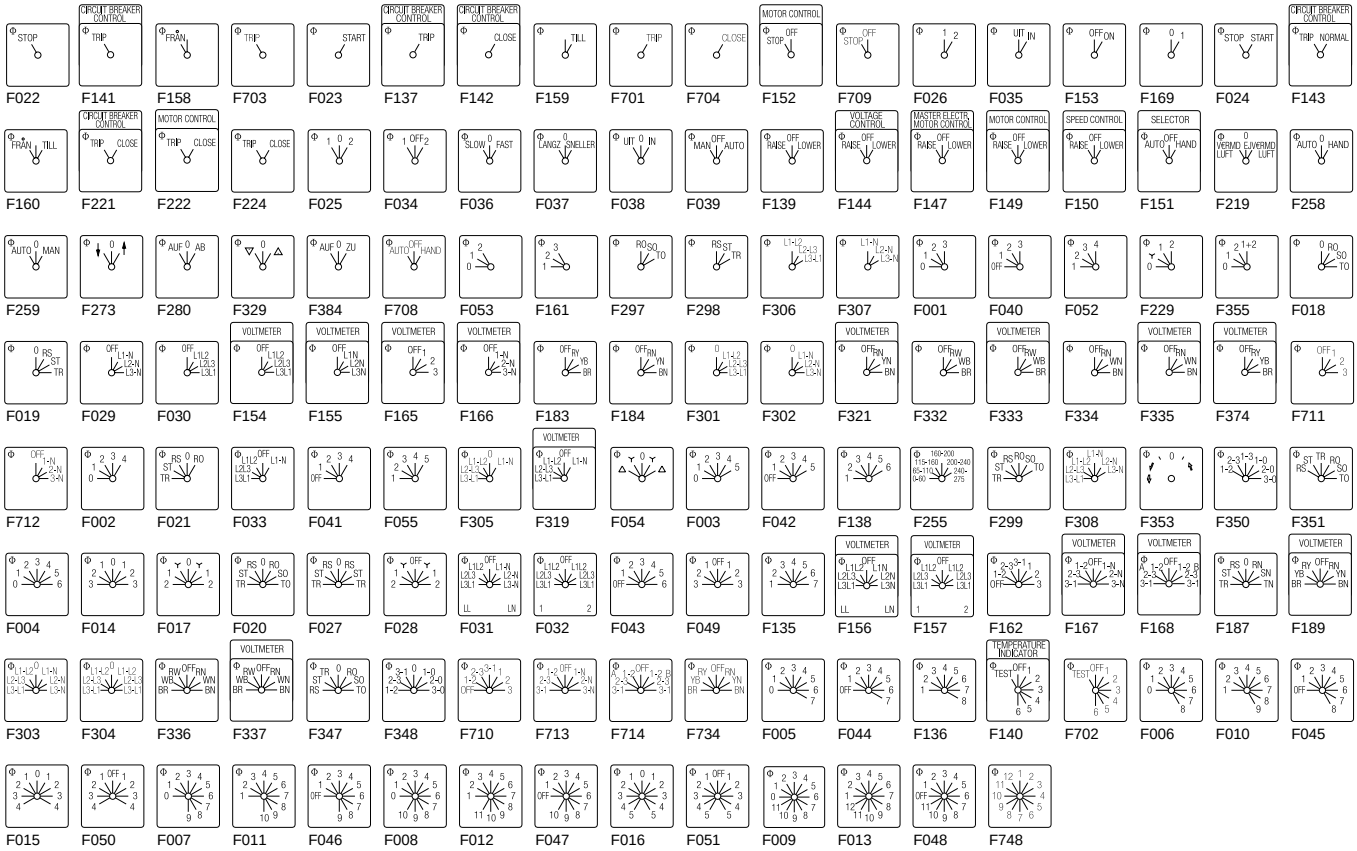
Face plates

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 than 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.

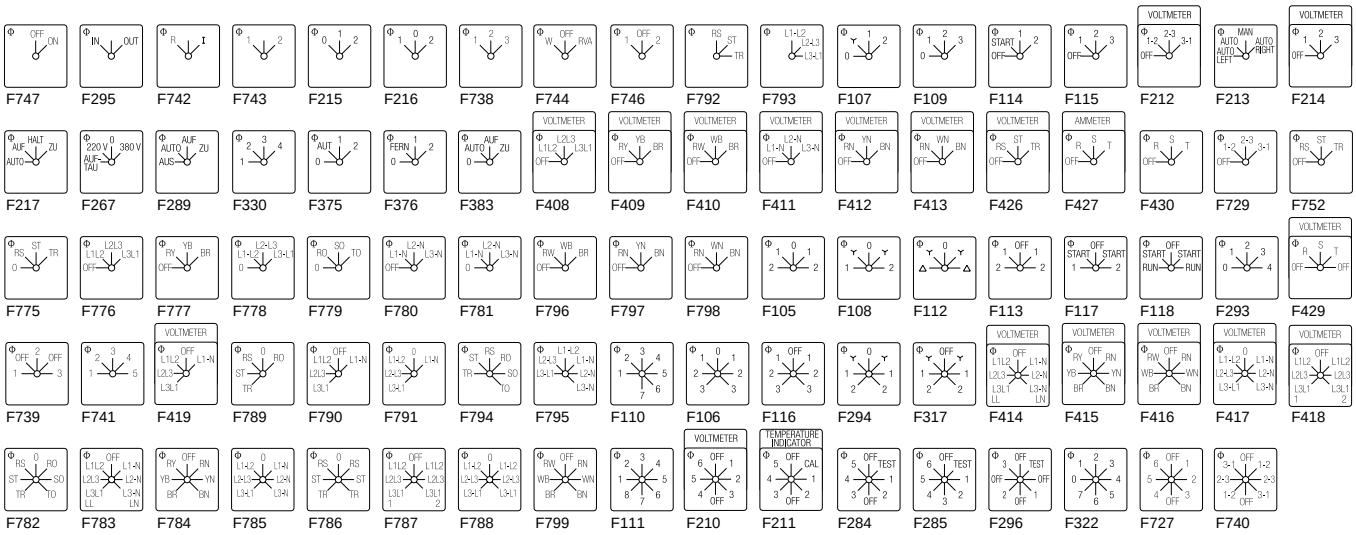
Standard Letterings Available

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

30° switching



45° switching



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Face plates

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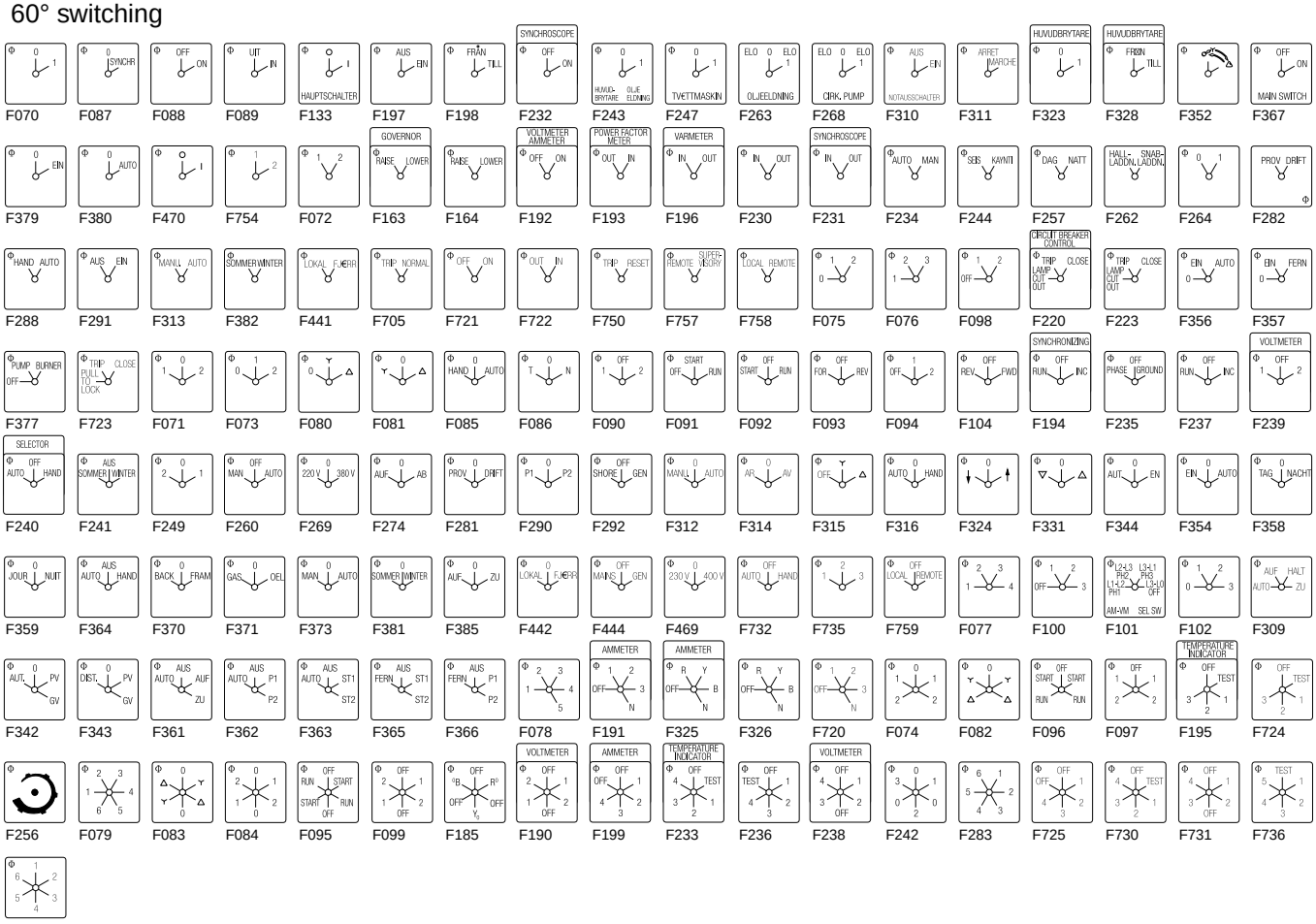
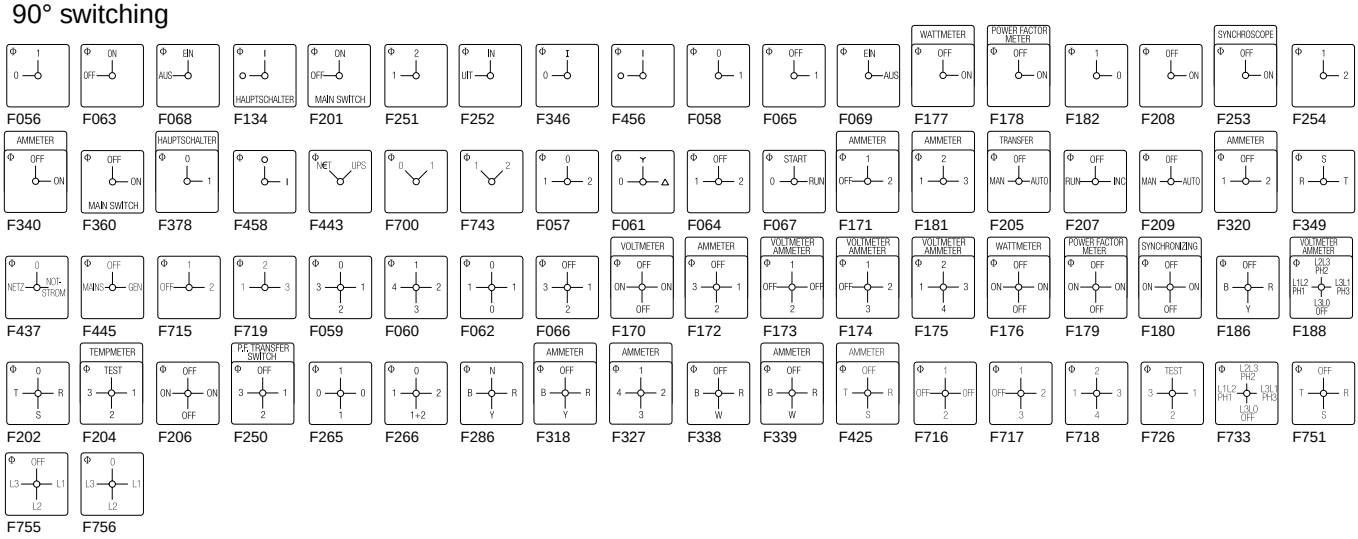
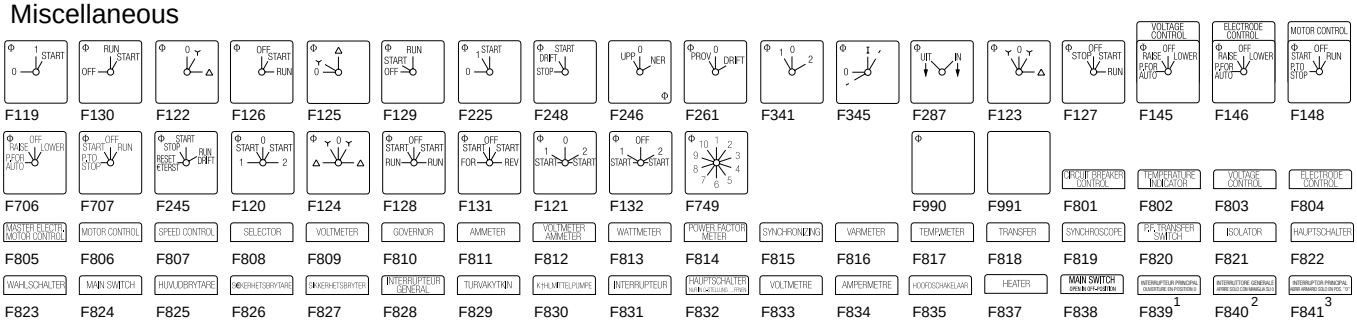
60° switching



90° switching



Miscellaneous



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

Handles

Black and Red are standard colours. White and Electro-Grey available on request.

Type	Color	Code	Size S00 S0 S1 S2 S3
R-Handle 	black red white electro-gray	G001 G002 G003 G007	— ● ● ● ● — ● ● ● ● — ● ● ● ● — ● ● ● ●
F-Handle 	black red white electro-gray	G221 G222 G223 G227	● ● ● ● — ● ● ● ● — ● ● ● ● — ● ● ● ● —
S-Handle  S0 S1	black red white electro-gray	G301 G302 G303 G307	— ● ● — — — ● ● — — — ● ● — — — ● ● — —
P-Handle  S0 S1-S3	black red white electro-gray	G211 G212 G213 G217	— ● ● ● ● — ● ● ● ● — ● ● ● ● — ● ● ● ●
Handwheel 	black	G971	— — — — ●

Type	Color	Code	Size S00 S0 S1 S2 S3
I-Handle  S00 S0-S3	black red white electro-gray	G251 G252 G253 G257	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
B-Handle 	black red white electro-gray	G521 G522 G523 G527	— ● ● — — — ● ● — — — ● ● — — — ● ● — —
L-Handle 	black red white electro-gray	G501 G502 G503 G507	— — ● — — — — ● — — — — ● — — — — ● — —
K-Handle 	black red white electro-gray	G411 G412 G413 G417	— — ● ● ● — — ● ● ● — — ● ● ● — — ● ● ●
O-Handle 	black red white electro-gray	G321 G322 G323 G327	— — ● — — — — ● — — — — ● — — — — ● — —

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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	L350/1 L630/1 L1000/1	L1250/1 C315 C316	L400 L600 L800	L1200 L1600 L2000
USA	Underwriters Laboratories Inc.	[1]								●●●	●●●	●●	●
		[2] [3]	●●●	●●●	●●●	●●	●●●	●●●	●●●			●	
Canada	UL investigated acc. to CSA	[6]	●●●	●●●	●●●	●●	●●●		●●●	●●●	●●●	●●●	●●●
		c [1]								●●●	●●●	●●	●
		c [2] [3]	●●●	●●●	●●●	●●	●●●	●●●	●●●			●	
Switzerland	Schweizerischer Elektrotechnischer Verein		+++	+++	+++	++	+++	+++	+++	+++	+++	+++	+++
Denmark	Danmarks Elektriske Materiellkontrol		+++	+++	+++	++	+++	+++	+++	+++	+++	+++	+++
Norway	Norges Elektriske Materiellkontroll		+++	+++	+++	++	+++	+++	+++	+++	+++	+++	+++
Sweden	Svenska Elektriska Materielkontroll-anstalten		+++	+++	+++	++	+++	+++	+++	+++	+++	+++	+++
Finland	Sähkötar-kastuskeskus		+++	+++	+++	++	+++	+++	+++	+++	+++	+++	+++
Austria	Österreichischer Verband für Elektrotechnik		+++	+++	+++	++	+++	+++	+++	+++	+++	+++	+++
Federal Republic of Germany	Verband Deutscher Elektrotechniker	VDE 0660[4]	+++	+++	+++	++	+++	+++	+++	+++	+++	+++	+++
Great Britain	British Standards Institution	BS EN 60947[4]	+++	+++	+++	++	+++	+++	+++	+++	+++	+++	+++
International Electrical Commission (IEC) Recommendation		IEC 60947[5]	+++	+++	+++	++	+++	+++	+++	+++	+++	+++	+++
China	China Quality Certification Centre	GB14048.3	●	●●	●●								
Russia Belarus Kazakhstan	Eurasian Conformity		●●●	●●●	●●●	●●	●●●	●●●	●●●	+++	+●	+++	+++
Russian Federation	Russian Maritime Register of Shipping		●●	●●●	●●●	●●							
Germanischer Lloyd			+++	+++	+++	++	+++	+++	+++	+++	+++	+++	+++
Lloyds Register EMEA			+++	+++	+++	++	+++	+++	+++	+++	+++	+++	+++

● Switch approved + Switch conforms to requirements + No approval required

[1] Approved under the "Component Program" (UL-Recognized Industrial Component). File No. E35541, Category Control No. NLRV2 (U.S.) resp. NLRV8 (Canada).
[2] Approved under the "Listing Program". File No. E35541, Category Control No. NLRV (U.S.) resp. NLRV7 (Canada).
[3] Switch types CAD11/CAD12 approved under the "Listing Program". File No. E60262, Category Control No. NRNT (U.S.) resp. NRNT7 (Canada).
[4] It is not required for Industrial Switchgear to bear a symbol but must conform to requirements. By stating the specific standard no. on the product the manufacturer declares that all requirements of the product standard are met.
[5] IEC does not operate an approval scheme.
[6] File No. 13002ass No. 3211-05 resp. 4652-04.

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Selection Data

			CA4	CA10	CA11	CA20	CA25			C42								C315
			CA4-1	CA10B	CA11B	CA20B	CA25B	C26	C32	C43	CA40	CA50	CA63	C80	C125	C200-4	C316	
Rated Insulation Voltage U_i	IEC 60947-3, EN 60947-3[1]																	
	VDE 0660 part 107[1]	V	440	690	690	690	690	690	690	690	690	690	690	690	690	690	690	690/1000
	SEV[4]	V	380	660	660	660	690	660	660	660	690	690	690	660	660	–	660	
	UL/Canada	V	300	300	600	600	300	600	600	600	600	600	600	600	600	–	600	
	CEE/NEMKO	V	400/380	380	400	400	–	400	400	400	–	–	–	400	–	–	–	
	min. voltage		on request															
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																	
	VDE 0660 part 107	A	10	20	20	25	32	32	50	63	40	50	63	115	150	200	315	
	SEV[4] 380 V	A	10	16	16	25	32	32	40	63	40	50	63	100	160	–	315	
	660 V	A	–	12	12	25	32	32	40	63	40	50	63	–	–	–	315	
	UL/Canada	A	10	20	20	30	30	40	50	65	45	55	65	100	150	–	240	
Rated Operational Current I_e																		
AC-21A Switching of resistive loads, including moderate overloads	IEC 60947-3, EN 60947-3 VDE 0660 part 107	A	10	20	20	25	32	32	40	63	40	50	63	100	150	200	315	
AC-1 Resistive or low inductive loads	SEV[4] 380 V	A	10	16	16	25	32	32	40	63	40	50	63	100	160	–	315	
	660 V	A	–	12	12	20	32	32	40	63	40	50	63	–	–	–	315	
AC-22A Switching of combined resistive or low inductive loads including moderate overloads	IEC 60947-3, EN 60947-3 VDE 0660 part 107 220 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 VDE 0660 part 200 220 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[4] Heavy	VAC	A300	A300	A600	A600	A300	A600	A600	A600	A600	A600	A600	–	–	–	A600	
Ampere Rating Resistive or low inductive loads	UL/Canada[4]	A	10	20	20	30	30	40	50	65	45	55	60	100	150	–	240	
Resistive load/motor load	CEE	A	4/2	10/6	10/6	16/10	–	25/10	32/10	40/10	–	–	–	63/10	–	–	–	
	NEMKO	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	

DC Switching Capacity[6]

No. of series contacts	1	2	3	4	5	6	8		**Rated Operational Current I_e**										
	Voltage V								CA4 CA4-1	CA10 CA10B	CA11 CA11B	CA20 CA20B	CA25 CA25B	C26S	C32S	C42S	C80	C125	C315[3] C316[3]
Resistive loads	24	48	70	95	120	145	190	A	10	20	20	25	32	–	50	–	115	–	315
T ≤ 1 ms	48	95	140	190	240	290	350		6	12	12	20	25	32	40	63	100	150	250
	60	120	180	240	300	360	450		2,5	4,5	4,5	7,5	10	23	27	30	–	–	–
	110	220	330	440	550	660	–		0,7	1	1	1,5	2	6,5	–	–	–	–	–
	220	440	660	–	–	–	–		0,3	0,4	0,4	0,5	0,6	1,2	–	–	–	–	–
	440	660	–	–	–	–	–		0,2	0,27	0,27	0,3	0,3	0,4	–	–	–	–	–
Inductive loads	24	48	70	95	120	145	190	A	6	12	12	20	25	32	40	63	100	150	250
T = 50 ms	30	60	90	120	150	180	240		3	5	5	9	12	25	30	55	33	50	70
	48	95	140	190	240	290	350		1	2	2	3	3	16	20	–	–	–	–
	60	120	180	240	300	360	450		0,7	1	1	1,5	1,5	11	15	–	–	–	–
	110	220	330	440	550	660	–		0,3	0,4	0,4	0,5	0,5	3,2	3,5	–	–	–	–

Min. Ambient Temperature of Stages		-5 °C
Max. Ambient Temperature of Stages[5, 7]	open at 100 % I_u/I_{th}	55 °C during 24 hours with peaks up to 60 °C
	enclosed at 100 % I_{the}	35 °C during 24 hours with peaks up to 40 °C

[1]Valid for lines with grounded common neutral termination, overvoltage category III, pollution degree 3. Values for other supply systems on request. [2]Valid for CA4 only. [3]DC switching capacity applies to ON/OFF switches. Switching capacity for other configurations on request. [4]International Standards and Approvals, refer to page 43. [5]For electromagnetic optional extras see additional data in Catalog 101. [6]Values for switches with spring return on request. [7]Storage temperature: -40 °C to 85 °C (in case of temperature below -5 °C no shock load permissible).

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Selection Data

					CA4 CA4-1	CA10 CA10B	CA11 CA11B	CA20 CA20B	CA25 CA25B	C26	C32	C42 C43	CA40	CA50	CA63	C80	C125	C200-4	C315 C316
Rated Utilization Category		IEC 60947-3, EN 60947-3 VDE 0660 part 107																	
AC-2	Slip ring motor starting, reversing and plugging, star-delta starting CA4-CA50	3 phase 3 pole	220 V-240 V	kW	2,5	4	4	5,5	7,5	8	10	18,5	10	11	18,5	30	37	37	55
			380 V-440 V		4,5	7,5	7,5	11	15	15	18,5	30	18,5	22	30	45	55	55	90
			500 V		–	10	10	15	18,5	18,5	22	40	22	30	40	55	75	75	110
			660 V-690 V		–	10	10	13	15	15	22	37	22	30	37	55	55	55	55
AC-3	Direct-on-line starting, star-delta starting CA63-C315	3 phase 3 pole	220 V-240 V	kW	1,5	3	3	4	5,5	5,5	7,5	11	7,5	11	11	15	22	22	37
			380 V-440 V		2,2	5,5	5,5	7,5	11	11	15	18,5	15	18,5	18,5	30	37	37	55
			500 V		–	5,5	5,5	7,5	11	11	15	18,5	15	18,5	18,5	30	37	37	55
			660 V-690 V		–	5,5	5,5	7,5	11	11	15	18,5	15	18,5	22	30	30	30	37
		1 phase 2 pole	110 V-120 V	kW	0,3	0,6	0,6	1,5	2,2	2,2	2,5	3	2,5	3	3	3,7	5,5	5,5	11
			220 V-240 V		0,55	2,2	2,2	3	4	4	5,5	6	5,5	6	6	7,5	11	11	22
			380 V-440 V		0,75	3	3	3,7	5,5	5,5	7,5	11	7,5	11	11	13	18,5	18,5	30
AC-4	Direct-on-line starting, reversing, plugging and inching	3 phase 3 pole	220 V-240 V	kW	0,37	0,55	0,55	1,5	2,5	2,7	3,7	5,5	3,7	4	5,5	6	10	10	15
			380 V-440 V		0,55	1,5	1,5	3	5,5	5,5	6	7,5	6	7	7,5	11	15	15	25
			500 V		–	1,5	1,5	3	5,5	5,5	6	7,5	6	7	7,5	11	15	15	25
			660 V-690 V		–	1,5	1,5	3	5,5	5,5	6	7,5	6	7,5	9	11	15	15	22
		1 phase 2 pole	110 V-120 V	kW	0,15	0,3	0,3	0,45	0,75	0,75	1,1	1,2	1,1	1,2	1,2	1,5	2,2	2,2	4
			220 V-240 V		0,25	0,75	0,75	1,1	1,5	1,5	2,2	2,4	2,2	2,4	2,4	3	4	4	7,5
			380 V-440 V		0,5	1,5	1,5	2,2	3	3	3,7	4	3,7	4	4	5,5	7,5	7,5	11
AC-23A	Frequent switching of motors or other high inductive loads	3 phase 3 pole	220 V-240 V	kW	1,8	3,7	3,7	5,5	7,5	7,5	11	15	7,5	11	15	30	37	37	75
			380 V-440 V		3	7,5	7,5	11	15	15	22	30	18,5	22	30	45	75	75	132
			500 V		–	7,5	7,5	11	15	15	30	45	18,5	22	30	55	90	90	132
			660 V-690 V		–	7,5	7,5	11	15	15	22	40	18,5	22	30	45	55	55	37
		1 phase 2 pole	110 V-120 V	kW	0,37	0,75	0,75	1,5	2,2	2,2	2,5	4	2,2	2,5	4	5,5	11	11	18,5
			220 V-240 V		0,75	2,5	2,5	3	4	4	5,5	10	4	5,5	10	15	22	22	37
			380 V-440 V		1,1	3,7	3,7	5,5	7,5	7,5	11	18,5	7,5	11	18,5	22	37	37	55
Ratings		UL/Canada																	
	Standard motor load DOL-Rating (similar AC-3)	3 phase 3 pole	110 V-120 V	HP	0,75	1,5	1,5	3	5	5	7,5	7,5	7,5	7,5	7,5	10	15	–	30
			220 V-240 V		1	3	3	7,5	10	10	15	15	15	15	15	20	25	–	75
			440 V-480 V		–	–	5	10	–	20	25	25	25	25	30	30	40	–	75
			550 V-600 V		–	–	5	10	–	25	30	30	25	30	30	40	50	–	60
		1 phase 2 pole	110 V-120 V	HP	0,33	0,5	0,5	1,5	2	2	3	3	3	3	3	5	7,5	–	15
			220 V-240 V		0,75	1	1	3	5	5	7,5	7,5	7,5	7,5	7,5	10	15	–	40
			277 V		0,75	2	2	3	5	5	7,5	7,5	7,5	7,5	10	10	15	–	40
			440 V-480 V		–	–	2	5	–	10	15	15	15	15	15	20	25	–	50
			550 V-600 V		–	–	2	5	–	15	20	20	15	20	20	25	30	–	50
	Heavy motor load Reversing-Rating (similar AC-4)	3 phase 3 pole	110 V-120 V	HP	–	0,5	0,5	1	2	2	3	5	–	–	–	7,5	10	–	15
			220 V-240 V		–	1	1	2	3	3	5	7,5	–	–	–	15	20	–	30
			440 V-600 V		–	–	3	5	–	10	15	20	–	–	–	25	30	–	40
		1 phase 2 pole	110 V-120 V	HP	–	0,17	0,17	0,33	1,5	1,5	1,5	2	–	–	–	3	5	–	7,5
			220 V-240 V		–	0,5	0,5	0,75	3	3	3	5	–	–	–	7,5	10	–	15
			277 V		–	0,6	0,6	1	3	3	3	5	–	–	–	7,5	10	–	15
Max. Permissible Wire Gage - Use copper wire only																			
	Single-core or stranded wire				2x	2x	2x	2x	2x	2x	2x	2x							
				mm²	1,5	2,5	2,5	4	6	6	10	16	16	16	16	35	70	95[1]	185[1]
				AWG	14	12	12	10	8	8	8	6	6	6	6	2	2/0	–	MCM 350
	Flexible wire (sleeving in accordance with DIN 46228) Flexible AWG wires (without sleeve)				2x	2x	2x	2x	2x	2x	2x	2x							
				mm²	1,5	2,5	2,5	4	4	6	6	10	10	10	10	25	50	95[1]	150[1]
					(1)	(2,5)	(2,5)	(2,5)	(4)	(4)	(6)	(10)	(10)	(10)	(10)	(25)	(50)		
				AWG	16	14	14	12	10	10	8	6	6	6	6	3	1/0	–	MCM 300

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

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Selection Data				L350 L351		L400	L600	L630 L631		L800	L1000 L1001	L1200	L1250 L1251	L1600	L2000
Rated Insulation Voltage U_i	IEC 60947-3, EN 60947-3[1]														
	VDE 0660 part 107[1]		V	690		690	690	690		690	690	690	690	690	690
	UL/Canada[2]		V	600		600	600	600		600	600	600	600	600	600
	min. voltage		V							on request					
Rated Impulse Withstand Voltage U_{imp}			kV	6		6	6	6		6	6	6	6	6	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	1250	1900	2400
	Ambient temp. +55 °C during 24 hours with peaks up to +60 °C		A	350		500	750	600		950	920	1300	1100	1700	2000
	UL/Canada[2]		A	350		400	630	630		800	1000	1200	1250	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	1250	1900	2400
Occasional switching under load cos φ 0,8 (AC-20B)	3 phase, 3 pole and 1 phase, 2 pole	220 V-440 V	A	350		500	800	500		1000	630	1200	630	1200	1200
		500 V	A	350		450	500	450		630	500	800	500	800	800
		660 V-690 V	A	315		350	400	360		400	400	400	400	400	400
AC-21B Switching of resistive loads, including moderate overloads	3 phase, 3 pole and 1 phase, 2 pole	220 V-440 V	A	250		450	500	350		630	400	800	400	800	800
		500 V	A	250		400	450	315		500	350	630	350	630	630
		660 V-690 V	A	200		300	350	250		350	300	350	300	350	350
Interrupting Rating	UL/Canada[2]	600 V	A	200		300	300	200		300	200	300	200	200	200
	CSA	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 3 pole	220 V-240 V	kW	45		75	75	45		75	45	75	45	75	75
		380 V-440 V	kW	90		132	132	90		132	90	132	90	132	132
		500 V	kW	110		132	132	110		132	110	132	110	132	132
		660 V-690 V	kW	55		55	65	65		65	65	65	65	65	65
Short Circuit Protection															
Max. fuse size	(aR-characteristic)		A	400		500	800	630		1100	1000	2x800	1250	2x1000	2x1250
Rated short-time withstand current	(1s-current)		A							on request					
Terminals															
for connection screw				Cable lug or copper bus											
				M12		M12	M16	M16		M16	M16	M16	M16	2xM16	4xM16
length			mm	20		30	40	30		40	40	40	50	50	50
Min. Ambient Temperature of Stages				-5 °C											
Max. Ambient Temperature of Stages[3, 4]				55 °C during 24 hours with peaks up to 60 °C, permissible load see Rated Thermal Current.											

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

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Selection Data				CAD4-1	CAD11	CAD12
Rated Insulation Voltage U_i	IEC 60947-3, EN 60947-3[1]					
	VDE 0660 part 107		V	440	600	600
	SEV[2]		V	–	600	600
	North America		V	300	300	300
	min. voltage		V	1[7]	1	6
Rated Impulse Withstand Voltage U_{imp}					on request	
Rated Thermal Current I_u/I_{th}	IEC 60947-3, EN 60947-3					
	VDE 0660 part 107		A	5	6	6
	SEV[2]		A	–	5	5
	North America		A	5	6	6
Rated Operational Current I_e	IEC 60947-3, EN 60947-3					
	VDE 0660 part 107					
AC-21A Switching of resistive loads, including moderate overloads	North America[3]	1 V/6 V	A	5/2	6/3	–/6
		12 V/24 V	A	1,2/0,7	2/1	5/5
		48 V/110 V	A	0,45/0,25	0,8/0,4	4/3
		220 V/400 V	A	0,15/–	0,2/0,13	2/1,3
		440 V/500 V	A	0,1/–	0,1/0,08	1/0,8
		600 V	A	–	0,05	0,5
AC-1 Resistive or low inductive loads	SEV[2]	1 V/6 V	A	–	5/3	–/5
		12 V/24 V	A	–	2/1	5/5
		48 V/110 V	A	–	0,8/0,4	4/3
		220 V/380 V	A	–	0,2/0,13	2/1,3
		440 V/500 V	A	–	0,1/0,08	1/0,8
		600 V	A	–	0,05	0,5
Power loss per contact at I_u			W	0,4	0,5	0,2
Short Circuit Protection						
Max. fuse size		(gL-characteristic)	A	5	6	6
Rated short-time withstand current		(1s-current)	A	30	35	50
DC Switching Capacity[5]	IEC 60947-3, EN 60947-3					
	VDE 0660 part 107					
DC-1 Resistive load T = 1 ms	SEV[2]	1 V/6 V	A	3/1,2	4/2,5	–/4
	North America[3]	12 V/24 V	A	0,7/0,4	1,5/0,8	3/2,2
		48 V/60 V	A	0,25/0,2	0,3/0,27	1,2/1
		110 V/220 V	A	0,13/–	0,2/0,1	0,6/0,3
		240 V/500 V	A	0,08/–	0,08/0,03	0,25/0,1
		600 V	A		0,02	0,1
Max. Permissible Wire Gage - Use copper wire only						
Single-core or stranded wire				2x	2x	2x
			mm²	1,5	2,5	2,5
			AWG	14	12	12
Flexible wire				2x	2x	2x
(sleeving in accordance with DIN 46228)			mm²	1,5	2,5	2,5
Flexible AWG wires (without sleeve)				(1)	(2,5)	(2,5)
			AWG	16	14	14
Min. Ambient Temperature of Stages				-5 °C		
Max. Ambient Temperature of Stages[4, 6]		open at 100 % I_u/I_{th}		55 °C during 24 hours with peaks up to 60 °C		
		enclosed at 100 % I_{the}		35 °C during 24 hours with peaks up to 40 °C		

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

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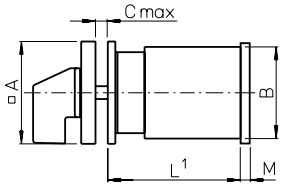
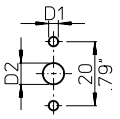
Dimensions

mm
inch

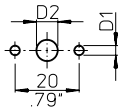
Two or Four Hole Panel Mounting



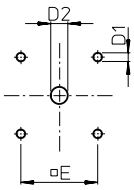
E
for CA4, CA4-1, CAD4-1



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

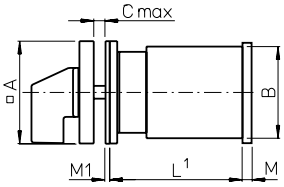


E
E-V
ER

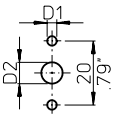


	CA4 CA4-1 CAD4-1	CA10 CA11 CAD11 CAD12	CA20	CA25[3]	CA20B	CA10B CA11B CA25B	C26	C32	C42[3]	C43	CA40[3] CA50[3] CA63[3]	C125 C80	C200-4	L switches Size S2	C315[4] L switches Size S3
A	0 1.18	48 1.89	48 1.89	48 (64) 1.89 (2.52)	64 2.52	64 2.52	64 2.52	64 2.52	64 (88) 2.52 (3.46)	88 3.46	64 (88) 2.52	88 (3.46)	88 3.46	88 3.46	130 3.46 5.12
B	29,5 1.16	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	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	5.5 .22	4 .16	5,5 .22	5,5 .22	5,5 .22	7 .28
D1	3,2 .13	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 (6) .20 (.24)	6 .24	5 (6) .20 (.24)	6 .24	6 .24	6 .24	7 .28
D2	8-11 .31-.43	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]	- -	4,5 .18	4,5 .18	5,5 .22	5 .20	5,5 .22	7,5 .30	7,5 .30	7,5 .30	7,5 .30	7,6 .30	9,4 .37	9,4 .37	27,5 1.08	11,9 (32) .47 (1.26)

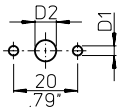
[2]M, additional length for mounting ER only
[3]Dimensions in ( ) for ER mounting plate only
[4]Dimensions in ( ) for L800, L1200, L1600



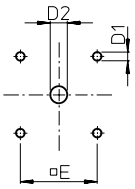
EF
for CA4, CA4-1, CAD4-1



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



EF
EF-V
ERF



	CA4 CA4-1 CAD4-1	CA10 CA11 CAD11 CAD12	CA20	CA25[3]	CA10B CA11B CA20B	CA25B	C26	C32	C42[3]	C43	CA40[3] CA50[3] CA63[3]	C125 C80	C200-4	L switches Size S2	C315[4] L switches Size S3
A	30 1.18	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	130 5.12
B	29,5 1.16	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	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	5,5 .22	4 .16	5,5 .22	5,5 .22	5,5 .22	7 .28
D1	3,2 .13	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20	5 (6) .20 (.24)	6 .24	5 (6) .20 (.24)	6 .24	6 .24	6 .24	7 .28
D2	8-11 .31-.43	15-19 .59-.75	15-19 .59-.75	15-19 .59-.75	19-22 .75-.87	19-22 .75-.87	19-22 .75-.87	19-22 .75-.87	19-22 .75-.87	26-30 1.02-1.18	19-22 .75-.87	26-30 1.02-1.18	26-30 1.02-1.18	26-30 1.02-1.18	22-25 .87-.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]	- -	4,5 .18	4,5 .18	5,5 .22	5 .20	5,5 .22	7,5 .30	7,5 .30	7,5 .30	7,5 .30	7,6 .30	9,4 .37	9,4 .37	27,5 1.08	11,9 (32) .47 (1.26)
M1	1 .04	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

[2]M, additional length for mounting ERF only
[3]Dimensions in ( ) for ERF mounting plate only
[4]Dimensions in ( ) for L800, L1200, L1600

[1]see page 55

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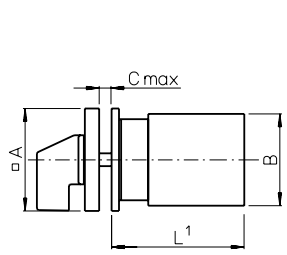
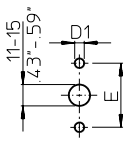
Dimensions

mm
inch

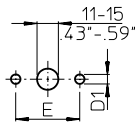
Two or Four Hole Panel Mounting

E22



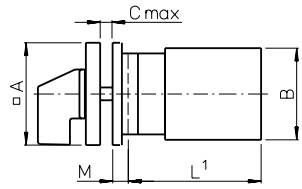


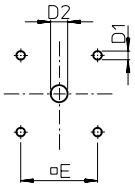
E22-V



	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
EG	**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
EGF	**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

[1]see page 55

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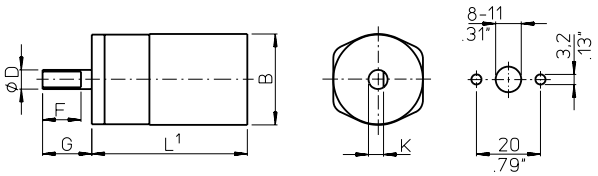
Dimensions

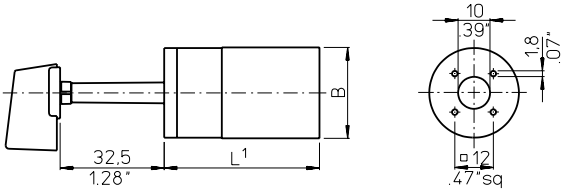
mm
inch

Four Hole Panel Mounting or Mosaic Mounting

E9
E91

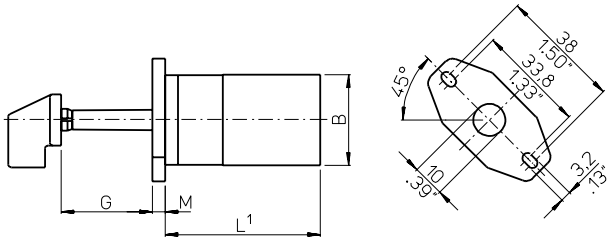


E92



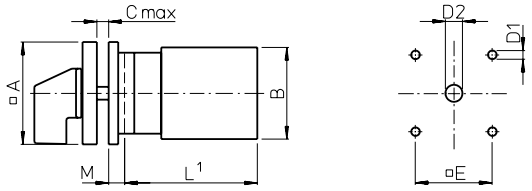
	CA4 CA4 CAD4-1
B	29,5 1.16

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

[1]see page 55

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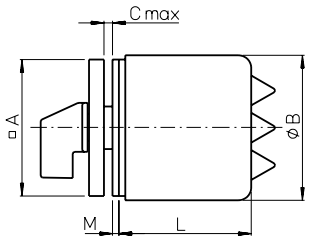
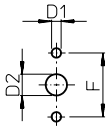
Dimensions

mm
inch

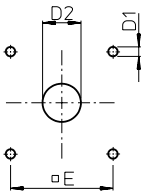
Two or Four Hole Panel Mounting



ED22



EC
ED
EC1
ED1



		CA10 CAD11 CAD12		CA11		CA20		CA25		CA10B		CA11B		CA20B CA25B		C26		C32	C42	C43	CA40 CA50 CA63
		EC		**EC**		**EC**		**EC**		**EC**	**EC1**	**EC**	**EC1**	**EC**	**EC1**	**EC**	**EC1**	**EC**	**EC**	**EC**	**EC**
		ED	**ED22**	**ED**	**ED22**	**ED**	**ED22**	**ED**	**ED22**	**ED**	**ED1**	**ED**	**ED1**	**ED**	**ED1**	**ED**	**ED1**	**ED**	**ED**	**ED**	**ED**
	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	88 3.46	88 3.46	88 3.46	88 3.46
	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	108 4.25	108 4.25	108 4.25	108 4.25
EC/EC1	**C**	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	5,5 .22
ED/ED1/ ED22	**C**	2 .08	4 .16	2 .08	4 .16	2 .08	4 .16	2 .08	4 .16	2 .08	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	7,5 .30	7,5 .30	7,5 .30	7,5 .30
	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	6 .24	6 .24	6 .24	6 .24
EC/EC1	**D2**	8-15 .31-.59	- -	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	10-15 .39-.59	10-15 .39-.59	13-15 .51-.59	13-15 .51-.59	13-15 .51-.59	13-15 .51-.59
ED/ED1/ ED22	**D2**	18-22 .71-.87	11-15 .43-.59	18-22 .71-.87	11-15 .43-.59	18-22 .71-.87	11-15 .43-.59	18-22 .71-.87	11-15 .43-.59	22-25 .87-.98	19-22 .75-.87	22-25 .87-.98	19-22 .75-.87	22-25 .87-.98	19-22 .75-.87	22-25 .87-.98	19-22 .75-.87	28-33 1.1-1.3	28-33 1.1-1.3	28-33 1.1-1.3	28-33 1.10-1.30
	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	68 2.68	68 2.68	68 2.68	68 2.68
	F	- -	30 1.17	- -	30 1.17	- -	30 1.17	- -	30 1.17	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
ED/ED22	**M**	2 .08	1,5 .06	2 .08	1,5 .06	2 .08	1,5 .06	2 .08	1,5 .06	2 .08	- -	2 .08	- -	2 .08	- -	2,2 .09	- -	2,2 .09	2,2 .09	2,2 .09	2,2 .09
Stages L	**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	101 3.98	101 3.98	101 3.98	101 3.98
	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	101 3.98	101 3.98	101 3.98	101 3.98
	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	101 3.98	139 5.47	139 5.47	101 3.98
	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	139 5.47	139 5.47	139 5.47	101 3.98
	5	81,5 3.21	94,3 3.71	- -	- -	103 4.06	- -	103 4.06	- -	- -	93,7 3.69	103 4.06	- -	103 4.06	- -	114,5 4.50	- -	139 5.47	177 6.97	177 6.97	139 5.47
	6	81,5 3.21	94,3 3.71	- -	- -	- -	- -	- -	- -	103 4.06	- -	127 5	- -	127 5	- -	127 5	- -	177 6.97	215 8.46	215 8.46	139 5.47
	7	- -	- -	- -	- -	- -	- -	- -	- -	127 5	- -	139,5 5.47	- -	139,5 5.47	- -	139,5 5.47	- -	177 6.97	215 8.46	215 8.46	139 5.47
	8	- -	- -	- -	- -	- -	- -	- -	- -	127 5	- -	152 5.98	- -	152 5.98	- -	152 5.98	- -	215 8.46	253 9.96	253 9.96	177 6.97
	9	- -	- -	- -	- -	- -	- -	- -	- -	139,5 5.47	- -	164,5 6.48	- -	164,5 6.48	- -	164,5 6.48	- -	215 8.46	253 9.96	253 9.96	177 6.97
	10	- -	- -	- -	- -	- -	- -	- -	- -	152 5.98	- -	177 6.97	- -	177 6.97	- -	177 6.97	- -	253 9.96	- -	291 11.46	177 6.97
	11	- -	- -	- -	- -	- -	- -	- -	- -	152 5.98	- -	- -	- -	- -	- -	- -	- -	253 9.96	- -	291 11.46	215 8.46
	12	- -	- -	- -	- -	- -	- -	- -	- -	164,5 6.48	- -	- -	- -	- -	- -	- -	- -	253 9.96	- -	329 12.95	215 8.46

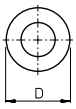
< back to table of contents >

Dimensions

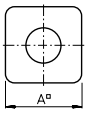
mm
inch

Single Hole Mounting or Base Mounting

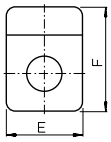
FS1...
FT1...
FT3...

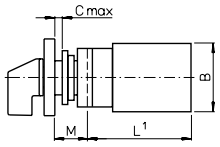


FH3...
FS2...
FT2...
FT4...

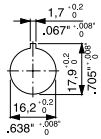


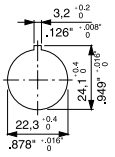
FH4...
FS4...
FT6...



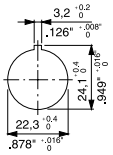


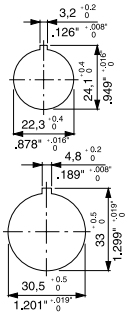
FS1...
FS2...
FS4...





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

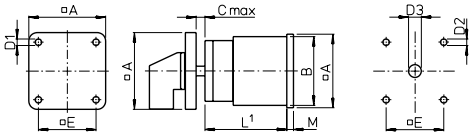




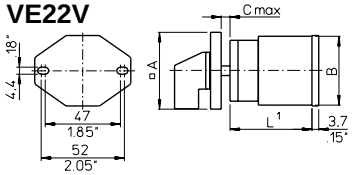
FT3...
FT4...

		CA4 CA4-1 CAD4-1	CA10 CA11 CAD11 CAD12	CA20	CA25
A/E		30 1.18	48 1.89	48 1.89	48 1.89
	FH3...	- -	64 2.52	64 2.52	64 2.52
	FH4...	- -	64 2.52	64 2.52	64 2.52
B		28 1.10	43 1.69	45 1.77	46 1.81
C		5 .20	6 .24	6 .24	6 .24
D		29,5 1.16	39 1.54	39 1.54	39 1.54
F		39 1.54	59 2.32	59 2.32	59 2.32
	FH4...	- -	78,5 3.09	78,5 3.09	78,5 3.09
M		12,5 .49	18,2 .72	18,2 .72	18,2 .72
	FH3...	- -	25,2 .99	25,2 .99	25,2 .99
	FH4...	- -	25,2 .99	25,2 .99	25,2 .99

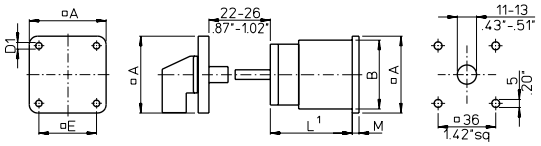
VE
VE-V



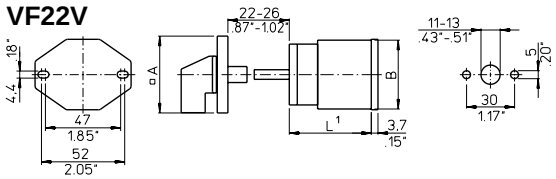
VE22
VE22V



VF
VF-V



VF22
VF22V



	CA10 CA11 CAD11 CAD12	CA20	CA25[2]	CA10B CA11B CA20B	CA25B	C26	C32	C42[2]	C43	CA40[2] CA50[2] CA63[2]	C125 C80	C200-4	L switches Size S2	C315[3] 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)

[2]Dimensions in ( ) for revertive mounting plate

[3]Dimensions in ( ) for L800, L1200, L1600

[1]see page 55

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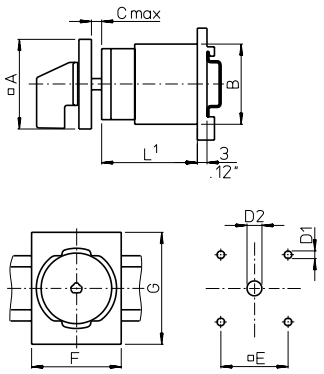
Dimensions

mm
inch

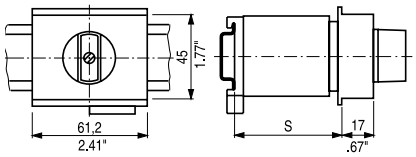
Base Mounting

VE1

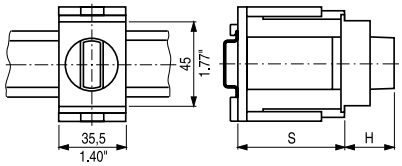


	CA10 CA11 CAD11 CAD12	CA20	CA25	CA10B CA11B CA20B	CA25B	C26	C32	C42	CA40 CA50 CA63
A	48 1.89	48 1.89	48 1.89	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52
B	43 1.69	45 1.77	46 1.81	56 2.20	56 2.20	58 2.28	60 2.36	66 2.60	55,5x64 2.19x2.52
C	10,5 .41	10,5 .41	10,5 .41	13,5 .53	13,5 .53	13,5 .53	13,5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

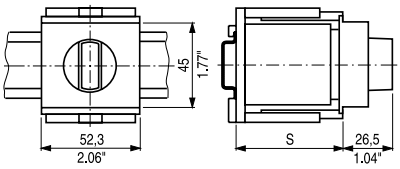
VE2



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



VE21 (for CA10-CA20)
VE21V (for CA25)



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

[1]see page 55 [2]not available for switch type CA20

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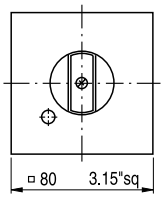
Dimensions

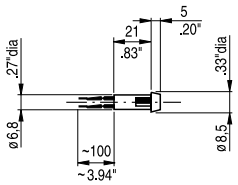
mm
inch

Wall Mounting, Face plates and Additional Length

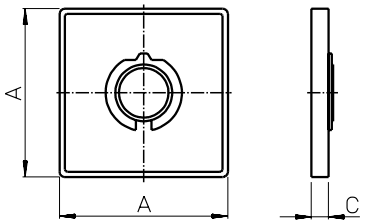
UE1
UE2
UE3



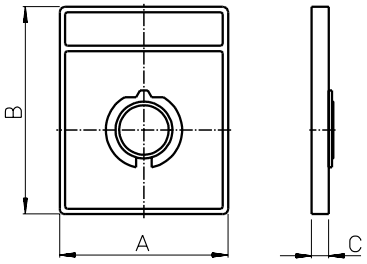
Lamp



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

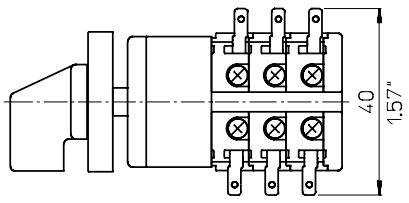


Size	A	B	C
S00	30 1.18	39 1.54	5,5 .22
S0	48 1.89	59 2.32	6,7 .26
S1	64 2.52	78 3.07	7,4 .29

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



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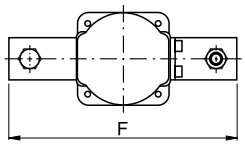
Dimensions

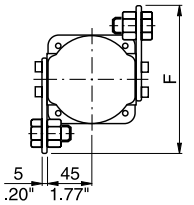
mm
inch

Additional Length

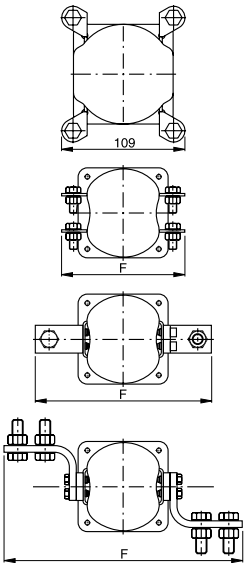
Terminal lugs for switches C200-4-, C315, C316 and L switches



L350
L630
L1200
L1250



L351
L361
L1001
L1251



C200-4

C315
C316
L400
L600

L800
L1200
L1600

L2000

	L350	L630	L1000	L1250	L351	L631	L1001	L1251	C315 C316	L400	L600	L800 L1200	L1600 L2000
F	190 7.48	220 8.66	230 9.06	240 9.45	138 5.43	148 5.83	148 5.83	148 5.83	150 5.91	180 7.09	208 8.19	256 10.08	326 12.83

Length L

Stages	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

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The Range of “Blue Line” Switchgear

Technical literature covering the following products is available on request.

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

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