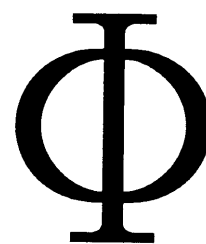


KRAUS & NAIMER
BLUE LINE SWITCHGEAR



Catalog 100

C, CA, CAD Switches 10 A-315 A



KRAUS & NAIMER

The development of the Blue Line rotary switch, contactor and motor starter product ranges is based on more than seventy-five years experience by Kraus & Naimer in the design and manufacture of electrical switchgear. Kraus & Naimer pioneered the introduction of the cam operated rotary switch and continues to

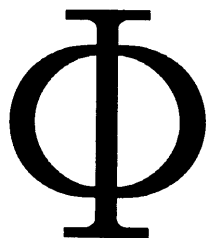
be recognized as the world leader in that product field.

BLUE LINE

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

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

The Kraus & Naimer Registered Trademark



WORLDWIDE SYMBOL
FOR QUALITY SWITCHGEAR

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

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Construction Data

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

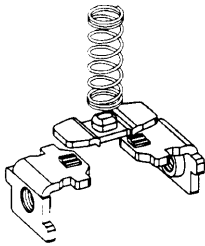
The stage is the basis for all switches and can be supplied with a maximum of 2 contacts. The terminals are accessible from the side. CA and CAD switches are supplied with open terminals to facilitate wiring and are protected against accidental finger contact according to VDE 0106 part 100 (VBG 4). Captive plus-minus terminal screws and integrated screwdriver guides also reduce 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 L350-L2000 are continuous current rated for off-load switching. They may be used to switch resistive or low inductive loads.

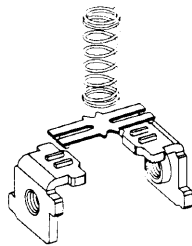
Special Contact Systems

CA4/CA4-1



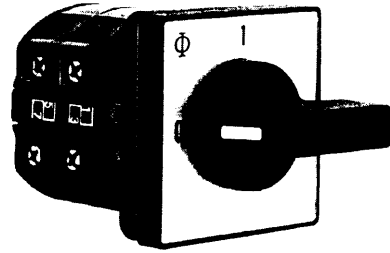
High contact reliability by multiple cross-point contacts, electronic compatible, CA4 with 1 μ and CA4-1 with 35 μ gold plating.

CAD11/CAD12

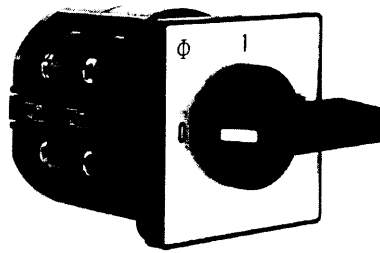


H-bridge with „cross-wire“ contact system, high contact reliability also at lower voltages. CAD11 with gold-plated contacts, CAD12 with silver contact.

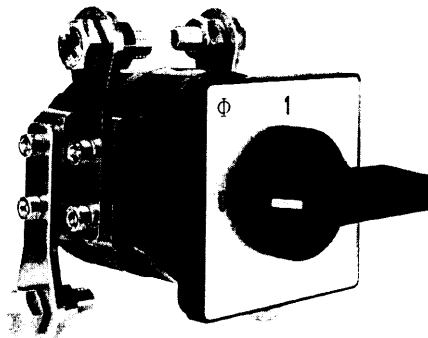
CA and CAD Switches



C Switches



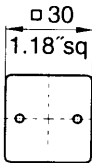
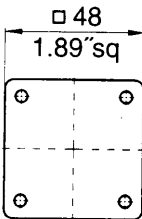
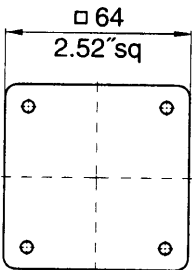
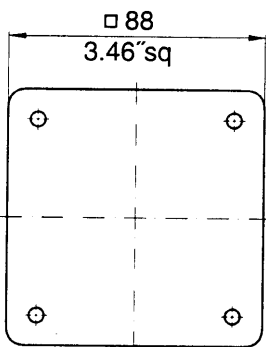
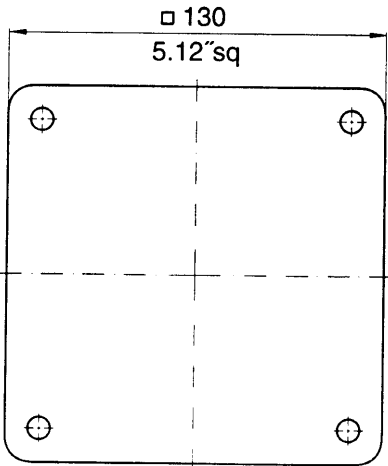
L Switches



Above illustrates the standard terminal positions.

Type	Size	Possible Switching Angles	Max. No. of Stages
CA4, CA4-1	S00	30°, 45°, 60°, 90°	9
CA10-CA25	S0	30°, 45°, 60°, 90°	12
CA10S-CA25S	S0	60°	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
C43, C80, C125	S2	20°, 30°, 45°, 60°, 90°	12
C315	S3	20°, 30°, 45°, 60°, 90°	12
L350/51, L630/31, L1000/01, L1250/51	S2	30°, 45°, 60°, 90°	12
L400, L600, L800, L1200, L1600, L2000	S3	30°, 45°, 60°, 90°	12

Nominal Ratings

Switch Size	Type	According to IEC 60947-3/VDE 0660 part 107			
		Insulation Voltage ¹ U_i V	Thermal Current I_u/I_{th} A	Motor Rating 3 x 380 V-440 V AC-23 kW	
S00 	CA4	440	10	3	2,2
	CA4-1	440	10	3	2,2
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
S2 	C43	690	63	30	18,5
	C80	690	115	45	30
	C125	690	150	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
	C316³	1000	315	132	55
	L400	690	500	132	55
	L600	690	800 ²	132	55
	L800	690	1100 ²	132	55
	L1200	690	1450 ²	132	55
	L1600	690	1900 ²	132	55
	L2000	690	2400 ²	132	55

For further technical details, refer to pages 40-43.
To furnish with gold contacts and quick connects see page 4.

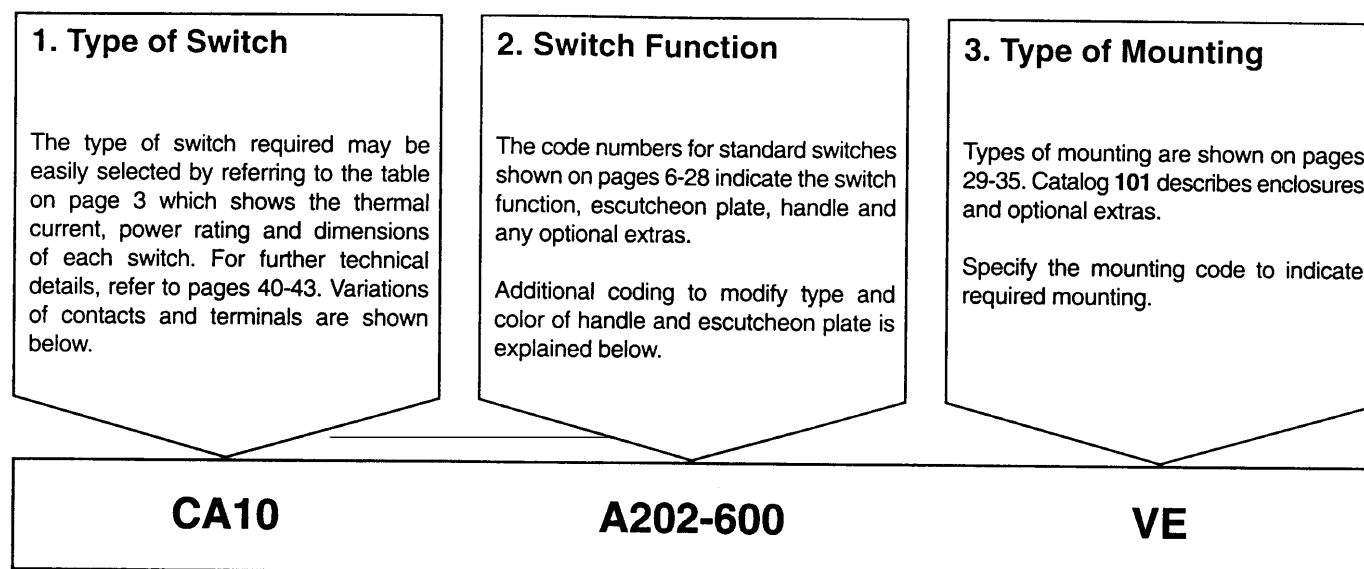
³Additional switch functions on request.

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

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.



Type of Switch

Extending the switch type coding the following combinations will define:

Amendment	Definition	For switch types
-1	with gold contacts	CA10, CA11, CA10B, CA11B
-4	with quick connects	CA4
-5	with quick connects and gold contacts	CA4
B	S0 switches with latching mechanism size S1	CA10, CA11, CA20, CA25, CAD12
C	S1 switches with latching mechanism size S2	C26, C32
L	with lockout-relay w/o manual release for std. sw.	C26, C32, C42
M	with lockout-relay with manual release for std. sw.	C26, C32, C42
X	with power failure release	CA10, CA11, CA20, CA25, CAD12, C26, C32, C42
S	with snap action	CA10, CA11, CA20, CA25, C26, C32, C42 with 60° switching

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 escutcheon plate inscription, color combination of escutcheon plate and handle, type of escutcheon plate and handle or the optional extra.

Switch Size	Escutcheon Plate Frame	Handle	Escutcheon Plate Backing	Escutcheon Plate Lettering	Dash Number
S0, S1, S2, S3	electro-gray	electro-gray	brushed alu	black	-100
S0, S1, S2, S3	electro-gray	electro-gray	black	mat silver	-500
S00, S0, S1, S2, S3	black	black	brushed alu	black	-600
S00, S0, S1, S2, S3	black	black	black	mat silver	-700

How to order

Modification of Switches

Color combinations of escutcheon plate and handle

The standard switch consists of a plexi glass escutcheon plate with brushed aluminum backing and black inscription. The escutcheon plate frame is black as well as the handle. Page 4 shows further color combinations of escutcheon 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 escutcheon 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 escutcheon 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 escutcheon plate and handle combinations

- 000 = without escutcheon plate, without handle
- .01 = without escutcheon plate
- .02 = without handle
- .03 = with square escutcheon plate without lettering
- .04 = with rectangular escutcheon plate without lettering
- .05 = with square escutcheon plate without lettering and without handle
- .06 = with rectangular escutcheon plate without lettering and without handle
- .07 = standard escutcheon plate, without lettering on rectangular section
- .08 = with F-handle
- .09 = with P-handle
- .10 = escutcheon plate with frame and fixation ring only
- .11 = without escutcheon plate, but with handle bearing plate
- .12 = with yellow escutcheon plate backing and red handle
- .14 = with B-handle

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

Handles, Escutcheon Plates and Optional Extras

The handles for standard switches shown on pages 6-28 are suitable for mounting units with four hole mounting. Alternative types of handles available are illustrated on pages 29-35. When a handle, escutcheon 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 escutcheon plates is illustrated on pages 36 and 37. Non-standard or special escutcheon 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 escutcheon plate and the handle, as well as the size of optional devices and enclosures. Page 3 lists these sizes and the various switch types they include.

Ordering of Special Switches and Escutcheon Plates

When ordering special switches and escutcheon 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.

ESCUTCHEON PLATE		MOTOR 1		POSITIONS		DATE		SIGNATURE	
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
POSITIONS									
O									
H									
A									
DATE									
SIGNATURE									

Order forms are available on request.

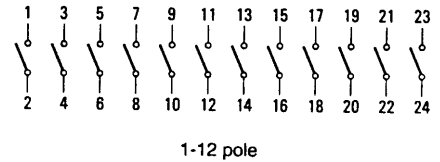
Switch Function and Configuration

C, CA, CAD Switches

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

ON/OFF Switches with 60° Switching

1 pole						A200-600	1	
2 pole						A201-600	1	
3 pole						A202-600	2	
3 pole with red handle						A202-626	2	
3 pole with V850 padlock attachment						A202-627	2	
4 pole						A203-600	2	
5 pole						A341-600	3	
6 pole						A342-600	3	
7 pole						A343-600	4	
8 pole						A344-600	4	
9 pole						A345-600	5	
10 pole						A346-600	5	
11 pole						A347-600	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	
5 pole						A341-620	3	
6 pole						A342-620	3	
7 pole						A343-620	4	
8 pole						A344-620	4	
9 pole						A345-620	5	
10 pole						A346-620	5	
11 pole						A347-620	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	
5 pole						A341-621	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	
5 pole						A341-622	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	
5 pole						A341-623	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	



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

ON/OFF Switches with 90° Switching

1 pole contacts 2 pole preclose 30° 3 pole						A290-600 A291-600 A292-600	1 1 2	1, 2, 3, 4, 5 and 6 pole
4 pole 4 pole 1 pole preclose 60° 4 pole 3 pole preclose 30°						A324-600 A293-600 A327-600	2 2 2	
5 pole contacts 6 pole preclose 30°						A325-600 A326-600	3 3	
1 pole contacts 2 pole preclose 30° 3 pole						A290-620 A291-620 A292-620	1 1 2	4 pole 1 pole preclose 60°
4 pole 4 pole 1 pole preclose 60° 4 pole 3 pole preclose 30°						A324-620 A293-620 A327-620	2 2 2	
5 pole contacts 6 pole preclose 30°						A325-620 A326-620	3 3	
3 pole 360° rotation	 					A208-600 A208-620	2 2	
3 pole for foot operation						A386-600	2	

ON/OFF Switches with 30° Switching

1 pole 2 pole 3 pole 4 pole						A100-600 A101-600 A102-600 A103-600	1 1 2 2	1-4 pole
1 pole with spring return 2 pole with spring return 3 pole with spring return 4 pole with spring return						A204-600 A205-600 A206-600 A207-600	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 A206-620 A207-620	1 1 2 2	

¹not available for switch type CA25

Function	Escutch. Plate	Type/Handle CAD.. CA4 CA10- CA10B- C26- CA4-1 CA25 CA25B C315	Code	Stages	Connection Diagram
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Double-throw Switches without „OFF“ 60° Switching

1 pole						A220-600	1	
2 pole						A221-600	2	
3 pole						A222-600	3	
4 pole						A223-600	4	
5 pole						A369-600	5	
6 pole						A370-600	6	
7 pole						A371-600	7	
8 pole						A372-600	8	
9 pole						A373-600	9	
10 pole						A374-600	10	
11 pole						A375-600	11	
12 pole						A376-600	12	

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

1 pole						A720-600	1	
2 pole						A721-600	2	
3 pole						A722-600	3	
4 pole						A723-600	4	
1 pole with spring return						A795-600	1	 1 pole with spring return

Double-throw Switches without „OFF“ 30° Switching

1 pole						A120-600	1	
2 pole						A121-600	2	
3 pole						A122-600	3	
4 pole						A123-600	4	
1 pole with spring return						A295-600	1	
2 pole with spring return						A296-600	2	
3 pole with spring return						A297-600	3	
1 pole with spring return						A295-620	1	
2 pole with spring return						A296-620	2	
3 pole with spring return						A297-620	3	

¹not available for switch type CA25

Switch Function and Configuration

C, CA, CAD Switches

Function	Escutch. Plate	Type/Handle				Code	Stages	Connection Diagram
		CA4 CA4-1	CAD.. CA10- CA25	CA10B- C43	C80- C315			

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

1 pole 2 pole 3 pole 4 pole						A210-600 A211-600 A212-600 A213-600	1 2 3 4	
5 pole 6 pole 7 pole 8 pole						A361-600 A362-600 A363-600 A364-600	5 6 7 8	
1 pole 2 pole 3 pole 4 pole						A210-620 A211-620 A212-620 A213-620	1 2 3 4	
5 pole 6 pole 7 pole 8 pole						A361-620 A362-620 A363-620 A364-620	5 6 7 8	
1 pole 2 pole 3 pole						A210-621 A211-621 A212-621	1 2 3	
1 pole 2 pole 3 pole						A210-622 A211-622 A212-622	1 2 3	
1 pole 2 pole 3 pole						A210-623 A211-623 A212-623	1 2 3	
1 pole 2 pole 3 pole 4 pole						A210-624 A211-624 A212-624 A213-624	1 2 3 4	

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

1 pole contacts 2 pole preclose 30° 3 pole 4 pole 1 pole preclose 60°						A218-600 A219-600 A299-600 A294-600	1 2 3 4	
1 pole 2 pole 3 pole 4 pole 1 pole preclose 60°						A218-620 A219-620 A299-620 A294-620	1 2 3 4	

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

1 pole 2 pole 3 pole 4 pole						A710-600 A711-600 A712-600 A713-600	1 2 3 4	
1 pole with spring return 2 pole to center						A714-600	1	

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

Double-throw Switches with Spring Return to Center

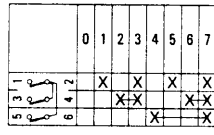
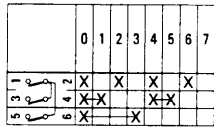
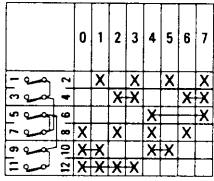
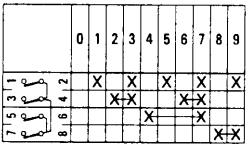
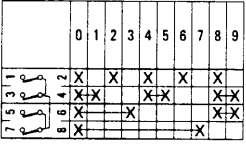
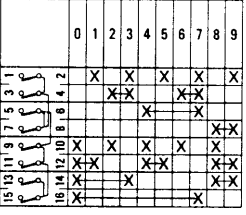
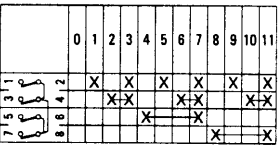
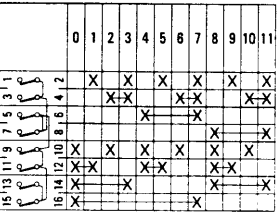
1 pole with spring return 2 pole to center 3 pole						A214-600 A215-600 A216-600	1 2 3	
						A214-620 A215-620 A216-620	1 2 3	
1 pole with spring return 2 pole from left to center 3 pole						A320-600 A321-600 A322-600	1 2 3	
						A320-621 A321-621 A322-621	1 2 3	

General Application Switches

1 pole 2 Gang 2 pole Switching sequence: 3 pole 0, A, A+B						A310-600 A312-600 A314-600	1 2 3	
						A310-620 A312-620 A314-620	1 2 3	
1 pole 3 Gang 2 pole Switching sequence: 3 pole 0, A, A+B, A+B+C						A311-600 A313-600 A315-600	2 3 5	
						A311-620 A313-620 A315-620	2 3 5	
1 pole 2 Gang 2 pole Series switching 3 pole Switching sequence: 0, A, B, A+B						A330-600 A331-600 A332-600	1 2 3	
						A330-620 A331-620 A332-620	1 2 3	
2 pole 2 Gang Series-parallel Switching sequence: 0, A+B series, A, A+B parallel						A339-600	2	
						A339-620	2	

Function	Escutch. Plate	Type/Handle CA10 CA4 CAD11 CA10B- C26- CA4-1 CAD12 CA25B C315	Code	Stages	Connection Diagram
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Coding Switches/Binary Code

0 - 7					A540-600	2	
0 - 7 complement					A541-600	2	
0 - 7 + complement					A542-600	3	
0 - 9					A550-600	2	
0 - 9 complement					A551-600	2	
0 - 9 + complement					A552-600	4	
0 - 11					A543-600	2	
0 - 11 + complement					A545-600	4	

Function	Escutch. Plate	Type/Handle				Code	Stages	Connection Diagram
		CA4 CA4-1	CAD.. CA10- CA25	CA10B- C43	C80- C315			

Multi-step Switches without „OFF“

1 pole 3 Step 2 pole 3 pole 4 pole 5 pole 6 pole		     	     	     	     	A230-600 A250-600 A270-600 A476-600 A484-600 A489-600	2 3 5 6 8 9	                 
1 pole 4 Step 2 pole 3 pole 4 pole 5 pole 6 pole		     	     	     	     	A231-600 A251-600 A271-600 A477-600 A485-600 A490-600	2 4 6 8 10 12	                 
1 pole 5 Step 2 pole 3 pole 4 pole		    	    	    	    	A232-600 A252-600 A272-600 A478-600	3 5 8 10	     
1 pole 6 Step 2 pole 3 pole		    	    	    	    	A233-600 A253-600 A273-600	3 6 9	     
1 pole 7 Step 2 pole 3 pole		     	     	     	     	A234-600 A254-600 A274-600	4 7 11	     
1 pole 8 Step 2 pole 3 pole		     	     	     	     	A235-600 A255-600 A275-600	4 8 12	     
1 pole 9 Step		     	     	     	     	A236-600	5	  
1 pole 10 Step		     	     	     	     	A237-600	5	  
1 pole 11 Step		     	     	     	     	A238-600	6	  
1 pole 12 Step 1 pole without stop		    	    	    	    	A239-600 A639-600	6 6	  

¹ switch type C315 with  handle

Function	Escutch. Plate	Type/Handle CAD.. CA4 CA10- CA10B- C80- CA4-1 CA25 C43 C315	Code	Stages	Connection Diagram
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Multi-step Switches without „OFF“ with electrically isolated contacts

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						A240-600	1	
2 pole						A260-600	2	
3 pole						A280-600	3	
4 pole						A480-600	4	
5 pole						A486-600	5	
6 pole						A491-600	6	
1 pole						A240-620	1	1-6 pole
2 pole						A260-620	2	
3 pole						A280-620	3	
4 pole						A480-620	4	
5 pole						A486-620	5	
6 pole						A491-620	6	
1 pole 3 Step						A241-600	2	
2 pole						A261-600	3	
3 pole						A281-600	5	
4 pole						A481-600	6	
5 pole						A487-600	8	
1 pole						A241-620	2	
2 pole						A261-620	3	3 pole
3 pole						A281-620	5	
4 pole						A481-620	6	
5 pole						A487-620	8	
1 pole						A241-621	2	
2 pole						A261-621	3	
1 pole						A241-621	2	
2 pole						A261-621	3	
3 pole						A281-621	5	
4 pole						A481-621	6	
5 pole						A487-621	8	
6 pole						A491-621	6	

Switch Function and Configuration

C, CA, CAD Switches

Function	Escutch. Plate	Type/Handle				Code	Stages	Connection Diagram
		CA4 CA4-1	CAD.. CA10- CA25	CA10B- C43	C80- C315			

Multi-step Switches with „OFF“

1 pole 4 Step 2 pole 3 pole 4 pole						A242-600	2	
						A262-600	4	
						A282-600	6	
						A482-600	8	
1 pole 2 pole 3 pole 4 pole						A242-620	2	1-4 pole
						A262-620	4	
						A282-620	6	
						A482-620	8	
1 pole 5 Step 2 pole 3 pole						A243-600	3	
						A263-600	5	
						A283-600	8	
						A243-620	3	
1 pole 2 pole 3 pole						A263-620	5	1-3 pole
						A283-620	8	
						A244-600	3	
						A264-600	6	
1 pole 6 Step 2 pole 3 pole						A284-600	9	

Switch Function and Configuration

C, CA, CAD Switches

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

Voltmeter Switches without „OFF“

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						A002-600	1	
3 phase 3 wire						A004-600	2	
						A004-620	2	
						A004-621	2	
						A004-622	2	
						A004-623	2	
						A004-624	2	
						A011-600	2	

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

Voltmeter Switches with „OFF“

3 phase to neutral						A005-600	2	
						A005-620	2	
						A005-621	2	
						A005-622	2	
						A005-623	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“						A008-600	4	
						A008-620	4	
						A008-621	4	
						A008-622	4	

Switch Function and Configuration

C, CA, CAD Switches

Function	Escutch. Plate	Type/Handle					Code	Stages	Connection Diagram
		CA4 CA4-1	CAD.. CA10- CA25	CA10B- CA25B	C26 C32	C43- C125			

Voltmeter Switches with „OFF“

3 phase and 1 phase to neutral							A010-600	3	
							A010-620	3	
							A010-621	3	
							A010-622	3	

Ammeter Switches

Single pole with one current transformer							A046-600	1	
							A046-620	1	
							A046-621	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	

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

Single pole with 2 current transformers (3 readings)					A021-600	2	
					A021-620	2	
Single pole with 4 current transformers					A036-600	4	
					A036-620	4	
2 pole 2 current transformers					A037-600	3	
					A037-620	3	
					A037-621	3	
2 pole 3 current transformers					A019-600	5	
					A019-620	5	
					A038-600	5	
					A038-620	5	
					A038-621	5	
					A039-600	6	
					A039-620	6	

Switch Function and Configuration

C, CA, CAD Switches

Function	Escutch. Plate	Type/Handle	Code	Stages	Connection Diagram
		CAD.. CA4 CA10- CA10B- C26- CA4-1 CA25 CA25B C43			

Volt-ammeter Switches

3 phase - phase to phase 3 current						A027-600	6	
						A028-600	7	
3 phase voltage 3 phase current 4 wire						A033-600	5	
3 phase voltage 3 phase current 3 wire						A035-600	5	

Control Switches

Stop switch						A174-600	1	
Start switch						A175-600	1	
Stop start switch single pole						A176-600	1	
Stop start switch 2 pole						A183-600	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						A177-600	2	
						A177-620	2	

Function	Escutch. Plate	Type/Handle CAD.. CA4 CA10- CA10B- C26 CA4-1 CA25 CA25B C32	Code	Stages	Connection Diagram
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Control Switches

Stop start switch with spring return to run with contactor interlock contactors for 2 units						A182-600	2	
						A182-620	2	
Motor voltage control switch						A150-600	2	

Control Switches with electrically isolated contacts

Stop start switch						A789-600	1	
Stop start switch with spring return to 1						A791-600	1	
Stop start switch with spring return to run for 2 units						A790-600	2	
Contactor control with spring return to „OFF“						A179-600	2	
						A179-620	2	
Circuit breaker control						A537-600	2	

Control and Alarm Switches¹

With slip clutch and without indicator device						A190-600	5 ³	
Without indicator device						A192-600	2	

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

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“						A228-600	3	
						A228-620	3	
3 pole for use with reversing contactors						A402-600	4	

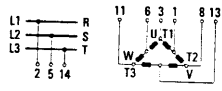
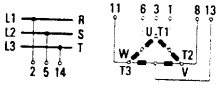
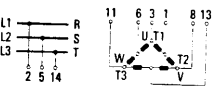
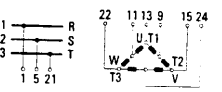
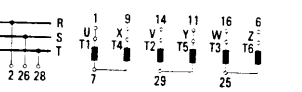
Motor Control Switches

2 speed 2 winding 0-A-BY or Δ						A451-600	3	
						A451-620	3	
3 speed 2 winding 0-AΔ-BY-AY						A457-600	6	
						A457-620	6	

¹not available for switch type CA25 ²not available for switch types C26 and C32

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

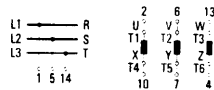
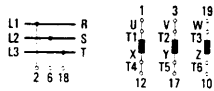
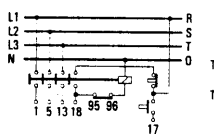
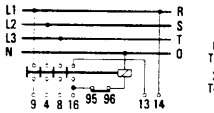
Motor Control Switches

2 speed single winding						A440-600	4	
						A440-620	4	
2 speed single winding without „OFF“						A466-600	4	
						A441-620	4	
2 speed single winding with center „OFF“						A441-600	4	
						A441-620	4	
2 speed single winding reversing						A442-600	6	
						A442-620	6	
2 speed single winding for use with contactors						A444-600	5	
						A444-620	5	
2 speed reversing for 2 way operation with slip clutch for „OFF“ load use						A468-600	10 ¹	
						A468-620	10 ¹	

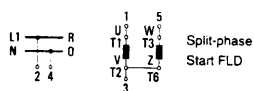
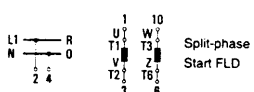
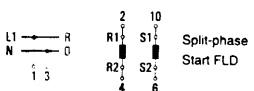
¹incl. slip clutch

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

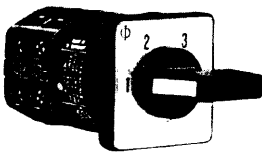
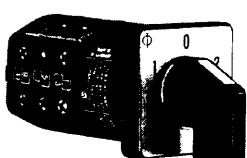
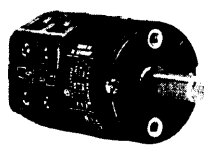
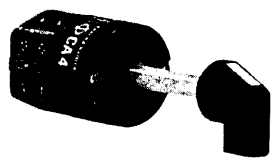
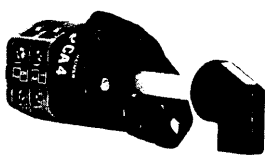
Star-delta Switches

OFF-star-delta						A410-600	4	
						A410-620	4	
Reversing						A413-600	5	
With auxiliary contact closed in „OFF“ position						A416-600	5	
For use with reversing contactors						A419-600	4	

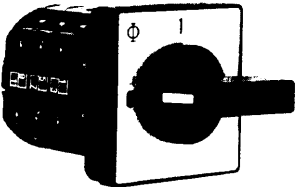
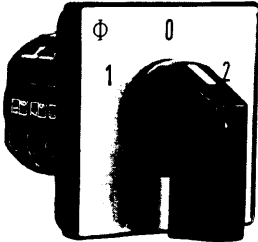
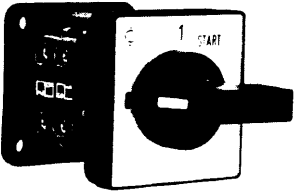
Start and Run Switches

Split-phase start						A425-600	2	
						A425-620	2	
Split-phase start reversing						A426-600	3	
						A426-620	3	
Split-phase reversing auto cutout of start field winding						A622-600	3	

¹not available for switch type CA25

Two Hole Panel Mounting or Mosaic Mounting		Terminals rotated 90° clockwise	Code	CA4 CA4-1
Panel mounting				
	Two hole panel mounting	•	E E-V	• •
	Panel mounting with shaft seal Protection IP 65			
	Two hole panel mounting	•	EF EF-V	• •
	Panel mounting with round shaft for combining with commercial radio knobs			
	Two hole panel mounting Shaft diam. 6 mm/.24 inch		E9	•
	Two hole panel mounting Shaft diam. 6.35 mm/.25 inch		E91	•
Mosaic mounting				
	For Siemens-Mosaic 30 mm grid depth		E92	•
	For Subklew-, Kreutzenbeck-, Symo-Mosaic 28 mm 25 mm 25 mm grid depth		E93	•
	For Mauell-Mosaic 30 mm grid depth		E94	•

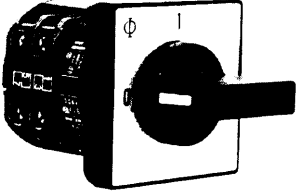
Two or Four Hole Panel Mounting	Terminals rotated 90° clockwise	Code	CAD.. CA10- CA25	CA10B- C42	C43- C125 L350- L1251 Size S2	C315 L400- L2000 Size S3
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	Panel mounting					
	Four hole panel mounting	•	E E-V	• •	• •	• •
	Four hole panel mounting Protection IP 65	•	EF EF-V	• •	• •	• •
	Two hole panel mounting Protection IP 65	•	E22 E22-V	• •		
	Panel mounting using larger escutcheon plate and handle and with heavy duty latching					
	Four hole panel mounting		EG	• •	• •	• •
	Four hole panel mounting Protection IP 65		EGF	• •		
	Panel and base mounting					
	Four hole panel mounting		ER	• •	• •	• •
	Four hole panel mounting Protection IP 65		ERF	• •	• •	• •

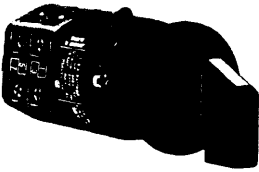
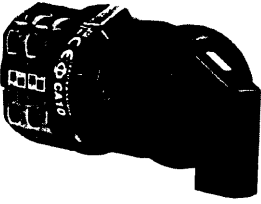
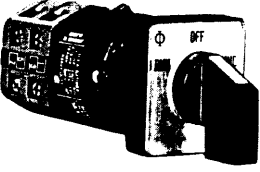
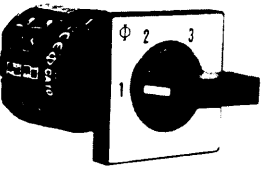
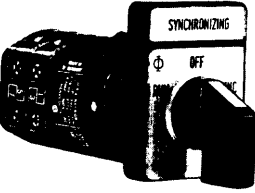
Mounting

C, CA, CAD Switches

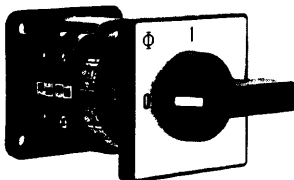
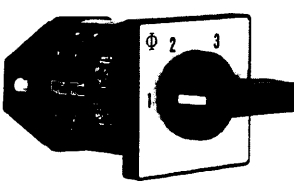
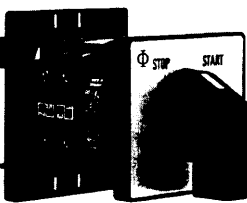
Two or Four Hole Panel Mounting	Code	CAD.. CA10- CA25	CA10B CA11B CA20B CA25B C26	C32 C42	C43
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	Panel mounting with heavy duty latching and metal shaft Four screw panel mounting Mounting plate, escutcheon plate and handle of size S0	KN2	●				
	Four screw panel mounting Mounting plate, escutcheon plate and handle of size S1	KN1	●	●	●		

Single Hole Mounting	Terminals rotated 90° clockwise	Code	CA4 CA4-1	CAD.. CA10- CA25
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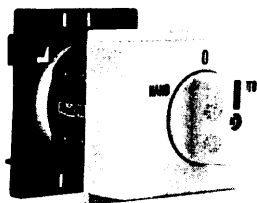
			mm	mm
 	With locking nut and shaft seal, protection IP 65	●	FS1 FS1-V	16/22 16/22
	Without escutcheon plate	●	FT1 FT1-V	22
		●	FT3 FT3-V	22/30 22/30
 	With square escutcheon plate	●	FS2 FS2-V	16/22 16/22
		●	FT2 FT2-V	22
		●	FT4 FT4-V	22/30 22/30
	With rectangular escutcheon plate	●	FS4 FS4-V	16/22 16/22
	With size S1 escutcheon plate and heavy duty latching	●	FH3 FH3-V	22 22

Base Mounting	Terminals rotated 90° clockwise	Code	CAD.. CA10- CA25	CA10B- C42	C43- L2000
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Base mounting					
 Base mounting - four hole For four hole panel mounting and with integrated simplified door clutch, protection IP 65	•	VE VE-V	• •	• •	•
	•	VF VF-V	• •		
 For two hole panel mounting For two hole panel mounting and with integrated simplified door clutch, protection IP 65	•	VE22 VE22V	• •		
	•	VF22 VF22V	• •		
 Snap-on base mounting for track EN 50022.		VE1	•	•	

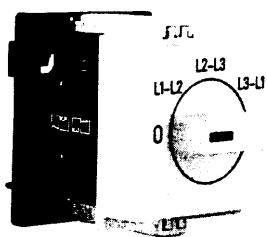
Base Mounting	Code	CA4 CA4-1	CAD.. CA10- CA25
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Base mounting



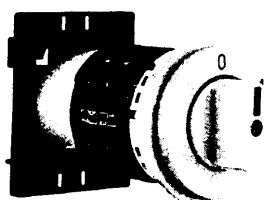
Snap-on base mounting for track EN 50022 with escutcheon plate for 45 mm standard knock-out.

VE2



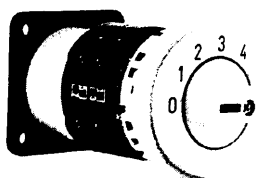
Snap-on base mounting for track EN 50022. Both the escutcheon plate for 45 mm standard knock-out and the handle are adjustable in height.

VE21



Snap-on base mounting for track EN 50022 with circular escutcheon plate for 46 mm knock-out.

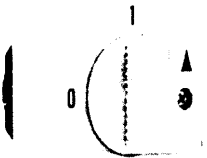
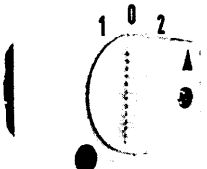
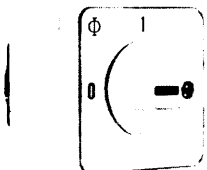
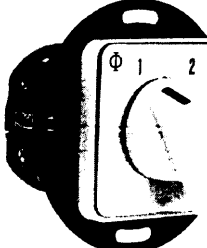
VE3



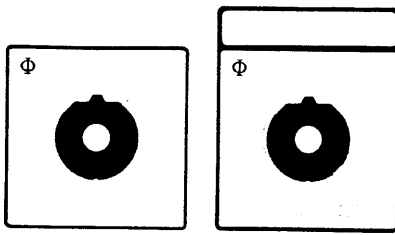
Base mounting - four hole - for circular escutcheon plate with 46 mm knock-out.

VE4

Mounting Plates for Plaster Depth Boxes acc. to DIN 49070 and ÖNORM E6508	Code	CAD.. CA10- CA25
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	Plaster depth trim	UE1	●
	With light	UE2	●
	With facility for light addition	UE3	●
	Plaster depth trim	UE4	●
	With light	UE5	●
	With facility for light addition	UE6	●
	For multiple boxes	UE7	●

Escutcheon Plates

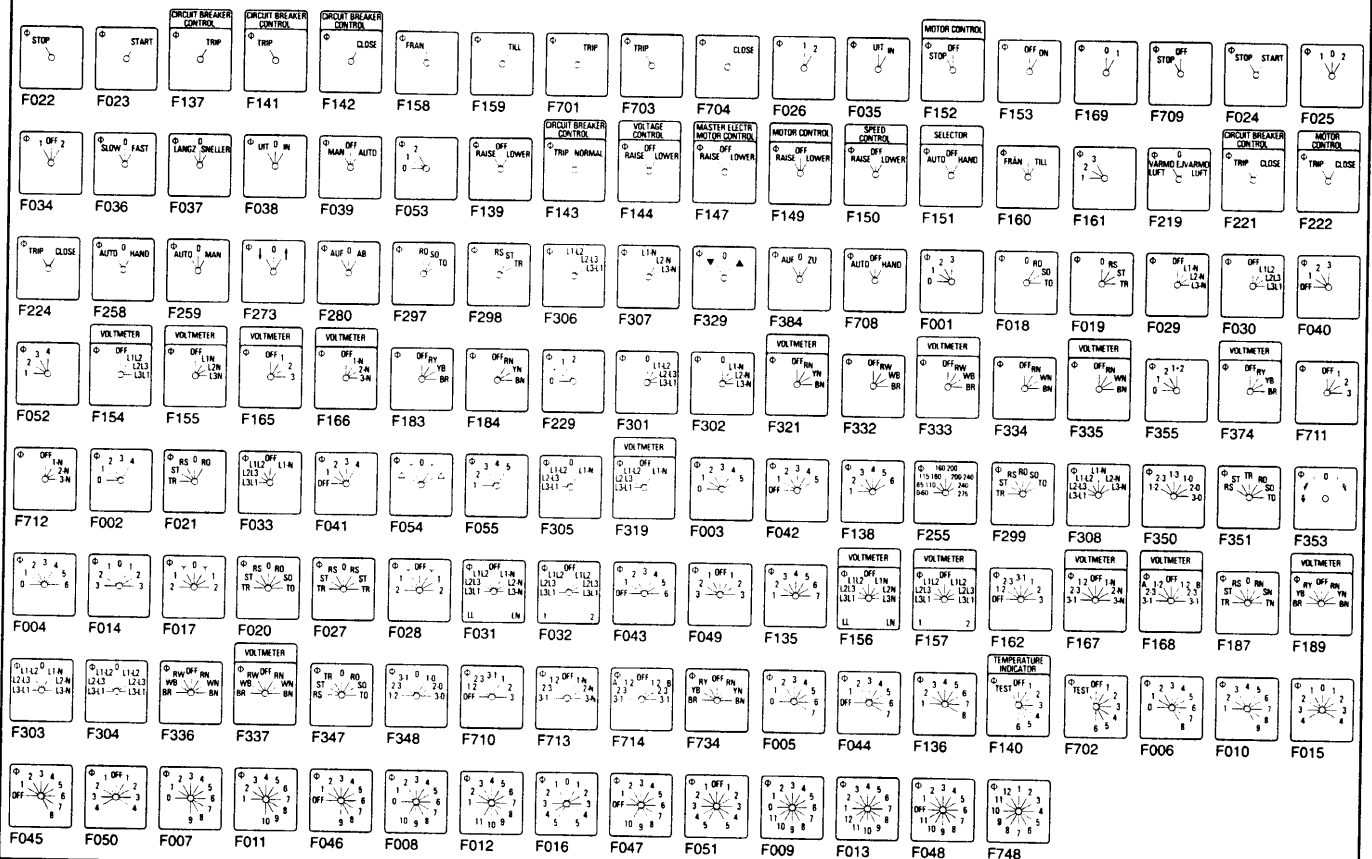


Square and rectangular escutcheon plates are available for each size of switch. The escutcheon plate consists of a frame and a faceplate having the switch positions which is then embossed with hot-foil backing. The escutcheon plate frame is an essential part of the switch and serves as a bearing surface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

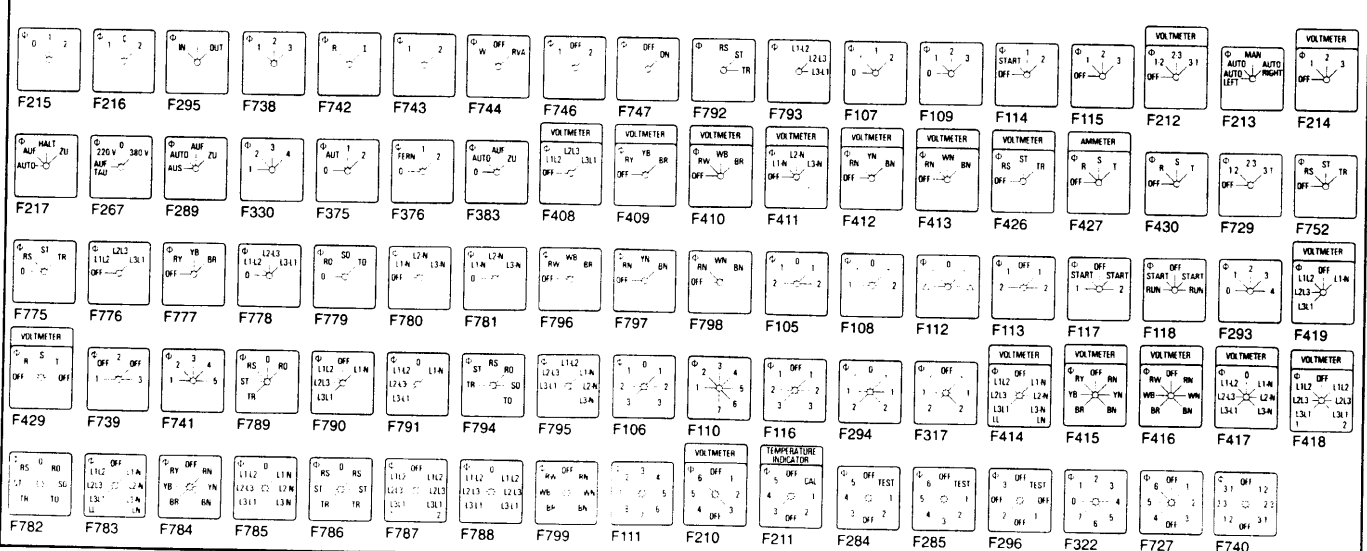
Standard Letterings Available

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

30° switching



45° switching



Escutcheon Plates

60° switching

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

90° switching

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

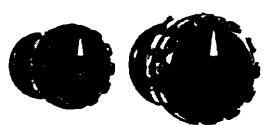
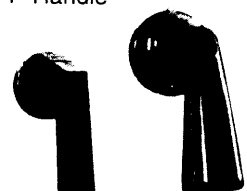
Miscellaneous

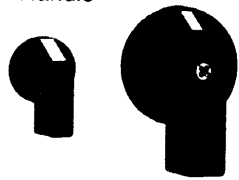
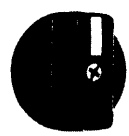
F119	F122	F125	F126	F129	F130	F225	F246	F248	F261	F341	F123	F127	F145	F146	F148	F245	F287
F345	F706	F707	F120	F121	F124	F128	F131	F132	F749								
F801	F802	F803	F804	F805	F806	F807	F808	F809	F810	F811	F812	F813	F814	F815	F816	F817	F818
F819	F820	F821	F822	F823	F824	F825	F826	F827	F828	F829	F830	F831	F832	F833	F834	F835	

Handles

Type	Color	Code	Size
			S00 S0 S1 S2 S3

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	— — — — ●
Capstan Handle 	black	G931	— — — — ●

I-Handle  S00 S0-S3	black red white electro-gray	G251 G252 G253 G257	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
B-Handle 	black red white electro-gray white (for mounting UE.)	G521 G522 G523 G527 G528	— ● ● — — — ● ● — — — ● ● — — — ● ● — — — — ● — —
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	— — ● — — — — ● — — — — ● — — — — ● — —

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	C43 C80 C125	L350/1 L630/1 L1000/1	L1250/1 C315 C316	L400 L600 L800	L1200 L1600 L2000
USA	Underwriters Laboratories						● ● ●	●	● ● ●	● ● ●	+	+
			● ● ●	● ● ●	● ● ●	● ● ●		●				
Canada	Canadian Standards Association		● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●
			● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●
Switzerland	Schweizerischer Elektrotechnischer Verein		+	+	+	+	+	+	+	+	+	+
Denmark	Danmarks Elektriske Materielkontrol		+	+	+	+	+	+	+	+	+	+
Norway	Norges Elektriske Materielkontrol		+	●	●	+	●	+	+	+	+	+
Sweden	Svenska Elektriska Materielkontrollanstalten		+	+	+	+	+	+	+	+	+	+
Finland	Sähkötar-kastuskeskus		+	+	+	+	+	+	+	+	+	+
Austria	Österreichischer Verband für Elektrotechnik		+	+	+	+	+	+	+	+	+	+
Federal Republic of Germany	Verband Deutscher Elektrotechniker	VDE 0660 ²	+	+	+	+	+	+	+	+	+	+
Great Britain	British Standards Institution	BS EN 60947 ²	+	+	+	+	+	+	+	+	+	+
International Electrical Commission (IEC)	Recommendation	IEC 60947 ³	+	+	+	+	+	+	+	+	+	+
Germanischer Lloyd			+	+	+	+	●	●	+	+	+	+
Lloyds Register of Shipping			+	+	+	+	+	+	+	+	+	+
UdSSR Register of Shipping			+	●	●	+	●	●	+	+	●	●
Bureau Veritas			+	+	+	+	+	+	+	+	+	+

● Switch approved

+ No approval required

+ Switch conforms to requirements

¹Approved under the "Component Program" (UL-Recognized Industrial Component). File No. E35541, Guide No. NLRV2.

²Industrial switchgear is not required to bear a symbol but must conform to requirements. By referring to the specific specification on the product the manufacturer implies that these requirements have been met.

³IEC does not operate an approval scheme.

⁴Approved under the "Listing-Program". File No. E35541, Guide No. NLRV resp. File No. E60262, Guide No. NRNT.

⁵File No. 13002, Class No. 321105 resp. 465204.

Selection Data

CA4 CA10 CA11 CA20 CA25 CA42
CA4-1 CA10B CA11B CA20B CA25B C26 C32 C43 C80 C125 C315/C316

Rated Insulation Voltage U_i			IEC 60947-3, EN 60947-3 ¹ VDE 0660 part 107 ¹ SEV ⁴ UL/Canada CEE/NEMKO	V V V V	440 380 300 400/380	690 660 300 380	690 660 600 400	690 660 600 400	690 660 600 —	690 660 600 400	690 660 600 400	690 660 600 400	690 660 600 —	690/1000 660 600 600	
Rated Impulse Withstand Voltage U_{imp}				kV	4	6	6	6	6	6	6	6	6	6/8	
Rated Thermal Current I_t/I_{th}			IEC 60947-3, EN 60947-3 VDE 0660 part 107 SEV ⁴ 380 V 660 V UL/Canada	A A A A	10 10 — 10	20 16 12 20 ⁵	20 16 12 20 ⁵	25 25 25 30	32 32 32 30	32 32 32 40	50 40 40 50	63 63 63 65	115 100 — 100	150 160 — 150	315 315 315 240
Rated Operational Current I_n															
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	100	150	315
AC-1	Resistive or low inductive loads	SEV ⁴ 380 V 660 V		A A	10 —	16 12	16 12	25 20	32 32	32 32	40 40	63 63	100 —	160 —	315 315
AC-22A	Switching of combined resistive or low inductive loads including moderate overloads	IEC 60947-3, EN 60947-3 VDE 0660 220 V-500 V part 107 660 V-690 V		A A	10 —	20 20	20 20	25 25	32 32	32 32	40 40	63 63	100 100	150 125	315 125
AC-15	Switching of control devices, contactors, valves etc.	IEC 60947-3, EN 60947-3 VDE 0660 220 V-240 V part 107 380 V-440 V		A A	2,5 1,5	5 4	5 4	8 5	12 6	14 6	16 7	— —	— —	— —	— —
Pilot Duty		UL/Canada ⁴ Heavy		VAC	300	300	600	600	300	600	600	600	600	600	—
Ampere Rating	Resistive or low inductive loads	UL/Canada ⁴		A	10	20 ⁵	20 ⁵	30	30	35	50	65	100	150	240
Resistive load/motor load		CEE NEMKO		A A	4/2 6/4 ²	10/6 10/6	10/6 —	16/10 20/10	— —	25/10 —	32/10 —	40/10 —	63/10 —	— —	— —
Short Circuit Protection															
Max. fuse size			(gL-characteristic)	A	10	25	25	35	35	50	63	80	125	200	315
Rated short-time withstand current			(1s-current)	A	60	140	140	280	480	350	800	1000	1300	2000	4200
DC Switching Capacity															
No. of series contacts				1 2 3 4 5 6 8											
Voltage V															
Resistive loads				A	10	20	20	25	32	—	50	—	115	—	315
T ≤ 1 ms				A	6	12	12	20	25	32	40	63	100	150	250
				A	2,5	4,5	4,5	7,5	10	23	27	30	—	—	—
				A	0,7	1	1	1,5	2	6,5	—	—	—	—	—
				A	0,3	0,4	0,4	0,5	0,6	1,2	—	—	—	—	—
				A	0,2	0,27	0,27	0,3	0,3	0,4	—	—	—	—	—
Inductive loads				A	6	12	12	20	25	32	40	63	100	150	250
T = 50 ms				A	3	5	5	9	12	25	30	55	33	50	70
				A	1	2	2	3	3	16	20	—	—	—	—
				A	0,7	1	1	1,5	1,5	11	15	—	—	—	—
				A	0,3	0,4	0,4	0,5	0,5	3,2	3,5	—	—	—	—
Ambient Temperature of Stages					55 °C during 24 hours with peaks up to 60 °C at 100 % load										

40 ¹Valid for lines with grounded common neutral termination, overvoltage category III, pollution degree 3. Values for other supply systems on request. ²Valid for CA4 only. ³DC switching capacity applies to ON/OFF switches. Switching capacity for other configurations on request. ⁴International Standards and Approvals, refer to page 39. ⁵Canada max. 16 A.

Technical Data

C, CA Switches

Selection Data

CA4	CA10	CA11	CA20	CA25				C42			C315
CA4-1	CA10B	CA11B	CA20B	CA25B	C26	C32	C43	C80	C125	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-C32	3 phase	220 V-240 V	kW	2,5	4	4	5,5	7,5	8	10	18,5	30	37	55				
		3 pole	380 V-440 V		4,5	7,5	7,5	11	15	15	18,5	30	45	55	90				
			500 V		—	10	10	15	18,5	18,5	22	40	55	75	110				
			660 V-690 V		—	10	10	13	15	15	22	37	55	55	55				
AC-3	Direct-on-line starting, star-delta starting C42-C315	3 phase	220 V-240 V	kW	1,5	3	3	4	5,5	5,5	7,5	11	15	22	37				
		3 pole	380 V-440 V		2,2	5,5	5,5	7,5	11	11	15	18,5	30	37	55				
			500 V		—	5,5	5,5	7,5	11	11	15	18,5	30	37	55				
			660 V-690 V		—	5,5	5,5	7,5	11	11	15	18,5	30	37	37				
		1 phase	110 V	kW	0,3	0,6	0,6	1,5	2,2	2,2	2,5	3	3,7	5,5	11				
		2 pole	220 V-240 V		0,55	2,2	2,2	3	4	4	5,5	6	7,5	11	22				
			380 V-440 V		0,75	3	3	3,7	5,5	5,5	7,5	11	13	18,5	30				
AC-4	Direct-on-line starting, reversing, plugging and inching	3 phase	220 V-240 V	kW	0,37	0,55	0,55	1,5	2,5	2,7	3,7	5,5	6	10	15				
		3 pole	380 V-440 V		0,55	1,5	1,5	3	5,5	5,5	6	7,5	12	15	25				
			500 V		—	1,5	1,5	3	5,5	5,5	6	7,5	12	15	25				
			660 V-690 V		—	1,5	1,5	3	5,5	5,5	6	7,5	12	15	22				
		1 phase	110 V	kW	0,15	0,3	0,3	0,45	0,75	0,75	1,1	1,2	1,5	2,2	4				
		2 pole	220 V-240 V		0,25	0,75	0,75	1,1	1,5	1,5	2,2	2,4	3	4	7,5				
			380 V-440 V		0,5	1,5	1,5	2,2	3	3	3,7	4	5,5	7,5	11				
AC-23A	Frequent switching of motors or other high inductive loads	3 phase	220 V-240 V	kW	1,8	3,7	3,7	5,5	7,5	7,5	11	15	30	37	75				
		3 pole	380 V-440 V		3	7,5	7,5	11	15	15	22	30	45	75	132				
			500 V		—	7,5	7,5	11	15	15	30	45	55	90	132				
			660 V-690 V		—	7,5	7,5	11	15	15	22	55	65	65	37				
		1 phase	110 V	kW	0,37	0,75	0,75	1,5	2,2	2,2	2,5	4	5,5	11	18,5				
		2 pole	220 V-240 V		0,75	2,5	2,5	3	4	4	5,5	10	15	22	37				
			380 V-440 V		1,1	3,7	3,7	5,5	7,5	7,5	11	18,5	22	37	55				
Ratings				UL/Canada															
Standard motor load DOL-Rating (similar AC-3)	3 phase 3 pole	120 V	HP	0,75	1,5	1,5	3	5	5	7,5	7,5	10	15	30					
		240 V		1	3	3	7,5	10	10	15	15	20	25	75					
		480 V		—	—	5	10	—	20	25	25	30	40	75					
		600 V		—	—	5	10	—	25	30	30	40	50	60					
		1 phase	120 V	HP	0,33	0,5	0,5	1,5	2	2	3	3	5	7,5	15				
		240 V	0,75		1	1	3	5	5	7,5	7,5	10	15	40					
		277 V	0,75		2	2	3	5	5	7,5	7,5	10	15	40					
		480 V	—		—	2	5	—	10	15	15	20	25	50					
		600 V	—	—	2	5	—	15	20	20	25	30	50						
		Heavy motor load Reversing-Rating (similar AC-4)	3 phase	120 V	HP	—	0,5	0,5	1	2	2	3	5	7,5	10	15			
			240 V	—		1	1	2	3	3	5	7,5	15	20	30				
			3 pole	480 V-600 V		—	—	3	5	—	10	15	20	25	30	40			
	1 phase	120 V	HP	—	0,17	0,17	0,33	1,5	1,5	1,5	2	3	5	7,5					
	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																			
Single-core or stranded wire			mm ² AWG	2x	2x	2x	2x	2x	2x	2x	2x	2x							
				1,5	2,5	2,5	4	6	6	10	16	35	70	185 ¹					
				14	12	12	10	8	8	8	6	2	2/0	MCM					
															350				
Flexible wire (sleeving in accordance with DIN 46228)			mm ² AWG	2x	2x	2x	2x	2x	2x	2x	2x								
				1,5	2,5	2,5	4	4	6	6	10	25	50	150 ¹					
				(—)	(2,5)	(2,5)	(2,5)	(4)	(4)	(6)	(10)	(25)	(50)						
				16	14	14	12	10	10	8	6	3	1/0						

¹Cable lug must accept M12 screw.

Selection Data

L350				L630		L1000		L1250			
L351	L400	L600	L631	L800	L1001	L1200	L1251	L1600	L2000		

Rated Insulation Voltage U_i			IEC 60947-3, EN 60947-3 ¹ VDE 0660 part 107 ¹ UL/Canada ²	V V	690 600	690 600	690 600	690 600	690 600	690 600	690 600	690 600	690 600	690 600	
Rated Impulse Withstand Voltage U_{imp}				kV	6	6	6	6	6	6	6	6	6	6	
Rated Thermal Current 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	600	630	800	1000	1200	1250	1600	2000	
Rated Operational Current I_o															
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	220 V-440 V	A	350	500	800	500	1000	630	1200	630	1200	1200	
		and	500 V	A	350	450	500	450	630	500	800	500	800	800	
		1 phase, 2 pole	660 V-690 V	A	315	350	400	360	400	400	400	400	400	400	
AC-21B Switching of resistive loads, including mo- derate overloads		3 phase, 3 pole	220 V-440 V	A	250	450	500	350	630	400	800	400	800	800	
		and	500 V	A	250	400	450	315	500	350	630	350	630	630	
		1 phase, 2 pole	660 V-690 V	A	200	300	350	250	350	300	350	300	350	350	
Interrupting Rating		UL/Canada ²		600 V	A	200	200	200	200	200	200	200	200	200	
Rated Utilization Category				IEC 60947-3, EN 60947-3 VDE 0660 part 107											
AC-23B Occasional switching of motors or other high inductive loads		3 phase	220 V-240 V	kW	45	75	75	45	75	45	75	45	75	75	
		3 pole	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	65	65	65	65	65	65	65	65	65	65	
Short Circuit Protection															
Max. fuse size		(gL-characteristic)		A	400	500	800	630	1250	1000	2x800	1250	2x1000	2x1250	
Rated short-time withstand current		(1s-current)		A	on request										
Terminals															
		for connection screw			M12	M12	M16	M16	M16	M16	M16	M16	2xM16	4xM16	
		length		mm	20	30	40	30	40	40	40	50	50	50	
Ambient Temperature of Stages				55 °C during 24 hours with peaks up to 60 °C, permissible load see Rated Thermal Current.											

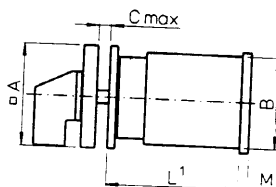
¹Valid for lines with grounded common neutral termination, overvoltage category III, pollution degree 3. Values for other supply systems on request.
²International Standards and Approvals, refer to page 39.

Selection Data	CAD11	CAD12
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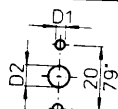
Rated Insulation Voltage U_i IEC 60947-3, EN 60947-3 ¹ VDE 0660 part 107 SEV ² UL/Canada min. voltage	V V V V	 600 600 300 0,03	 600 600 300 6
Rated Impulse Withstand Voltage U_{imp}		on request	
Rated Thermal Current I_{θ}/I_{th} IEC 60947-3, EN 60947-3 VDE 0660 part 107 SEV ² UL/Canada	A A A	 6 5 6	 6 5 6
Rated Operational Current I_n AC-21A Switching of resistive loads, including moderate overloads IEC 60947-3, EN 60947-3 VDE 0660 part 107 UL/Canada ³ 1 V/6 V 12 V/24 V 48 V/110 V 220 V/400 V 440 V/500 V 600 V AC-1 Resistive or low inductive loads SEV ² 1 V/6 V 12 V/24 V 48 V/110 V 220 V/380 V 440 V/500 V 600 V	A A A A A A A A A A A A	 6/3 2/1 0,8/0,4 0,2/0,13 0,1/0,08 0,05 5/3 2/1 0,8/0,4 0,2/0,13 0,1/0,08 0,05	 -/-6 5/5 4/3 2/1,3 1/0,8 0,5 -/-5 5/5 4/3 2/1,3 1/0,8 0,5
Short Circuit Protection Max. fuse size Rated short-time withstand current (gL-characteristic) (1s-current)	A A	 6 35	 6 50
DC Switching Capacity DC-1 Resistive load T = 1 ms IEC 60947-3, EN 60947-3 VDE 0660 part 107 SEV ² UL/Canada ³ 1 V/6 V 12 V/24 V 48 V/60 V 110 V/220 V 240 V/500 V 600 V	A A A A A A	 4/2,5 1,5/0,8 0,3/0,27 0,2/0,1 0,08/0,03 0,02	 -/-4 3/2,2 1,2/1 0,6/0,3 0,25/0,1 0,1
Max. Permissible Wire Gage Single-core or stranded wire Flexible wire (sleeving in accordance with DIN 46228)	mm ² AWG mm ² AWG	 2x 2,5 12 2x 2,5 (2,5) 14	 2x 2,5 12 2x 2,5 (2,5) 14
Ambient Temperature of Stages		55 °C during 24 hours with peaks up to 60 °C at 100 % load	

¹Valid for lines with grounded common neutral termination, overvoltage category III, pollution degree 3. Values for other supply systems on request. ²International Standards and Approvals, refer to page 39. ³Max. 300 V.

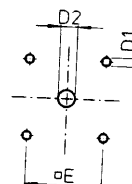
Two or Four Hole Panel Mounting



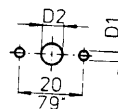
E



E
E-V
ER



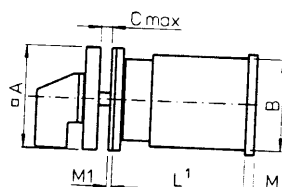
E-V



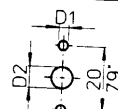
	CA4 CA4-1	CA10 CA11 CAD11 CAD12	CA20	CA25 ³	CA10B CA11B CA20B	CA25B	C26	C32	C42 ³	C43	C80	C125	L switches Size S2	L switches Size S3
A	30 1.18	48 1.89	48 1.89	48 (64) 1.89 (2.52)	64 2.52	64 2.52	64 2.52	64 2.52	64 (88) 2.52 (3.46)	88 3.46	88 3.46	88 3.46	88 3.46	130 5.12
B	28 1.10	45 1.77	43 1.69	46 1.81	56 2.20	56 2.20	58 2.28	60 2.36	66 2.60	84 3.30	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	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	6 .24	6 .24	6 .24	7 .28
D2	8-11 .31-.43	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	13-17 .51-.67	13-17 .51-.67	13-17 .51-.67	13-17 .51-.67	15.5-20 .61-.79
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	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	9.4 .37	9.4 .37	27.5 1.08	11.9 .47

²M, additional length for mounting ER only

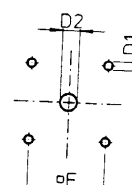
³Dimensions in () for ER mounting plate only



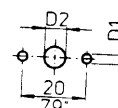
EF



EF
EF-V
ERF



EF-V

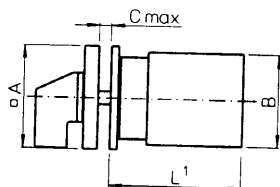


	CA4 CA4-1	CA10 CA11 CAD11 CAD12	CA20	CA25 ³	CA10B CA11B CA20B	CA25B	C26	C32	C42 ³	C43	C80	C125	L-switches Size S2	L-switches Size S3
A	30 1.18	48 1.89	48 1.89	48 (64) 1.89 (2.52)	64 2.52	64 2.52	64 2.52	64 2.52	64 (88) 2.52 (3.46)	88 3.46	88 3.46	88 3.46	88 3.46	130 5.12
B	28 1.10	43 1.69	48 1.89	46 1.81	56 2.20	48 1.89	58 2.28	60 2.36	66 2.60	84 3.30	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	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	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	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	68 2.68	68 2.68	68 2.68	104 4.09
M ²	-	4.5 .18	5.5 .22	5 .20	5.5 .22	7.5 .30	7.5 .30	7.5 .30	7.5 .30	7.5 .30	9.4 .37	9.4 .37	27.5 1.08	11.9 .47
M1	1 .04	-	-	-	-	-	-	-	-	-	-	-	-	-

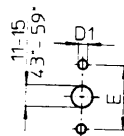
²M, additional length for mounting ERF only

³Dimensions in () for ERF mounting plate only

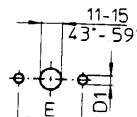
Two or Four Hole Panel Mounting



E22

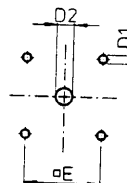
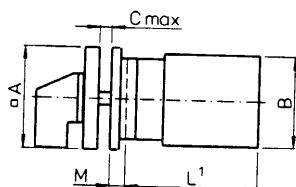


E22-V



	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
D2	11-15 .43-.59	11-15 .43-.59	11-15 .43-.59
E	30 1.17	30 1.17	30 1.17
F	36 1.42	36 1.42	36 1.42

EG
EGF

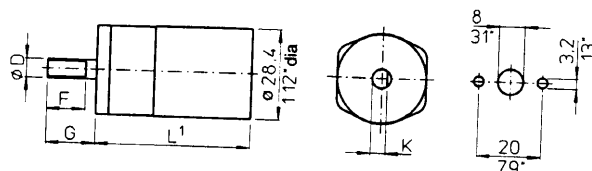


	CA10	CA11	CAD11	C125
	CAD12	CA20	CA25	L switches Size S2
A	64 2.52	64 2.52	64 2.52	130 5.12
B	43 1.69	45 1.77	46 1.81	88 3.46
C	4 .16	4 .16	4 .16	7 .28
D1	5 .20	5 .20	5 .20	7 .28
EG D2	10-15 .39-.59	10-15 .39-.59	10-15 .39-.59	15.5-20 .61-.79
EGF D2	19-22 .75-.87	19-22 .75-.87	19-22 .75-.87	22-25 .87-.98
E	48 1.89	48 1.89	48 1.89	104 4.09
EG M	6.7 .26	6.7 .26	6.7 .26	2 .08
EGF M	6.7 .26	6.7 .26	6.7 .26	2 .08

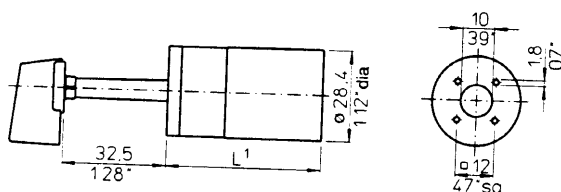
¹see page 51

Four Hole Panel Mounting or Mosaic Mounting

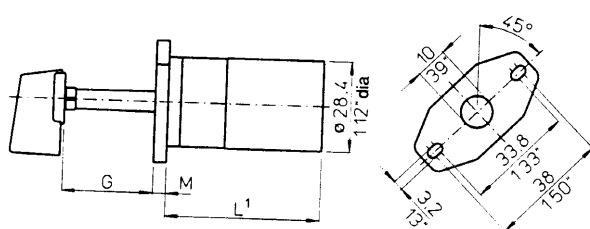
E9
E91



E92



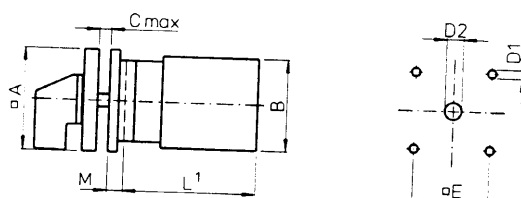
E93
E94



CA4
CA4-1

	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

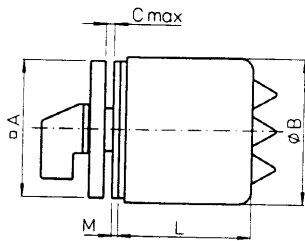


KN2	CA10	CA11	CAD11	CAD12	CA20	CA25
A	48 1.89	48 1.89	48 1.89	48 1.89	48 1.89	48 1.89
B	43 1.69	45 1.77	46 1.81	43 1.69	45 1.77	46 1.81
C	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16
D1	5 .20	5 .20	5 .20	5 .20	5 .20	5 .20
D2	8-15 .31-.59	8-15 .31-.59	8-15 .31-.59	8-15 .31-.59	8-15 .31-.59	8-15 .31-.59
E	36 1.42	36 1.42	36 1.42	36 1.42	36 1.42	36 1.42
M	5.2 .20	5.2 .20	5.2 .20	5.2 .20	5.2 .20	5.2 .20

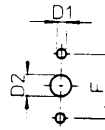
KN1	CA10	CA11	CAD11	CAD12	CA20	CA25	CA10B	CA11B	CA20B	CA25B	C26	C32	C42
A	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52	64 2.52
B	43 1.69	45 1.77	46 1.81	43 1.69	45 1.77	46 1.81	56 2.20	56 2.20	58 2.28	60 2.36	66 2.60	66 2.60	66 2.60
C	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16	4 .16
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
D2	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	10-15 .39-.59	10-15 .39-.59	10-15 .39-.59	10-15 .39-.59	10-15 .39-.59
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	48 1.89	48 1.89	48 1.89	48 1.89
M	4.7 .19	4.7 .19	4.7 .19	4.7 .19	4.7 .19	4.7 .19	7 .28	7 .28	7 .28	7 .28	7 .28	7 .28	7 .28

Dimensions mm
inch

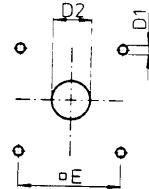
Two or Four Hole Panel Mounting



ED22



EC
ED
EC1
ED1



CA10
CAD11
CAD12

EC
ED

CA11

EC
ED

CA20

EC
ED

CA25

EC
ED

CA10B

EC
ED

CA11B

EC
ED

CA20B
CA25B

EC
ED

C26

EC
ED

C32

EC
ED

C42

EC
ED

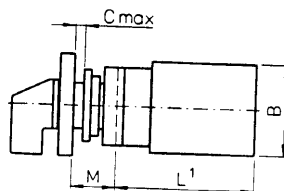
C43

EC
ED

mm
inch

Single Hole Mounting or Base Mounting

FS4
FS4-V

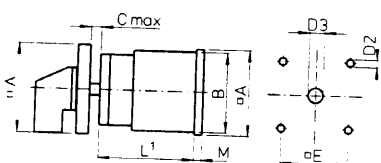


FH3...

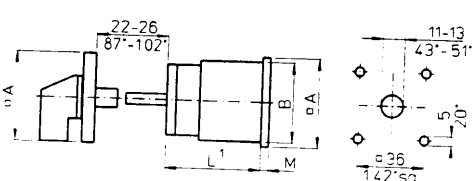
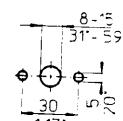
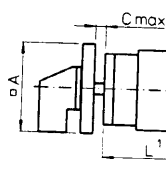
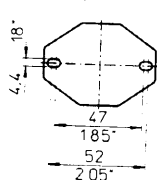
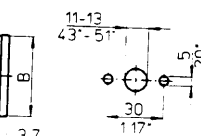
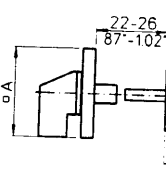
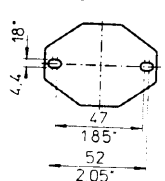
M

FH3...

	CA10			
	CA11			
CA4	CAD11			
CA4-1	CAD12	CA20		CA25
30	48	48		48
1.18	1.89	1.89		1.89
-	64	64		64
-	2.52	2.52		2.52
28	43	45		46
1.10	1.69	1.77		1.81
5	6	6		6
.20	.24	.24		.24
29.5	39	39		39
1.16	1.54	1.54		1.54
39	-	-		-
1.54	-	-		-
12.5	20	20		20
.49	.79	.79		.79
-	27	27		27
-	1.07	1.07		1.07



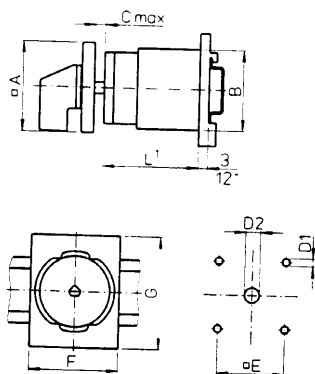
VE22
VE22V

VF22
VF22V

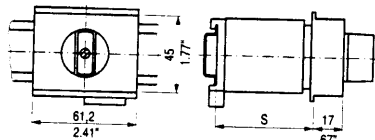
	CA10	CA11	CA10B	CA11B	CA25B	C26	C32	C42 ²	C43	C80	C125	L switches	L switches
	CA12	CA20	CA25 ²	CA20B								Size S2	Size S3
A	48	48	48 (64)	64	64	64	64	64 (88)	88	88	88	88	128
	1.89	1.89	1.89 (2.52)	2.52	2.52	2.52	2.52	2.52 (3.46)	3.46	3.46	3.46	3.46	5.04
B	43	45	46	56	56	58	60	66	84	84	88	88	126
	1.69	1.77	1.81	2.20	2.20	2.28	2.36	2.60	3.30	3.30	3.46	3.46	4.96
C	10.5	10.5	10.5	13.5	13.5	13.5	13.5	13.5	16.5	16.5	16.5	16.5	16.5

Base Mounting

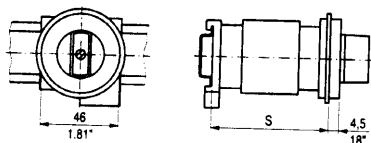
VE1



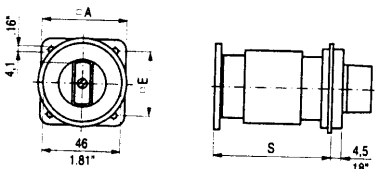
VE2



VE3



VE4



CA10

CA11

CAD11

CAD12

CA20

CA25

CA10B

CA11B

CA20B

CA25B

C26

C32

C42

A

B

C

D1

D2

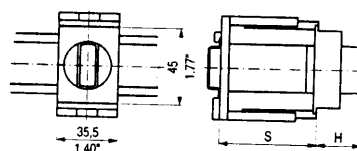
E

F

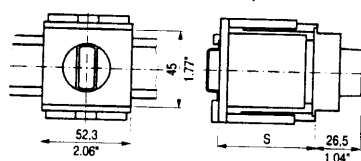
G

48	48	48	64	64	64	64	64
1.89	1.89	1.89	2.52	2.52	2.52	2.52	2.52
43	45	46	56	56	58	60	66
1.69	1.77	1.81	2.20	2.20	2.28	2.36	2.60
10.5	10.5	10.5	13.5	13.5	13.5	13.5	13.5
.41	.41	.41	.53	.53	.53	.53	.53
5	5	5	5	5	5	5	5
.20	.20	.20	.20	.20	.20	.20	.20
8-15	8-15	8-15	10-15	10-15	10-15	10-15	10-15
.31-.59	.31-.59	.31-.59	.39-.59	.39-.59	.39-.59	.39-.59	.39-.59
36	36	36	48	48	48	48	48
1.42	1.42	1.42	1.89	1.89	1.89	1.89	1.89
48	48	48	70	70	70	70	70
1.89	1.89	1.89	2.76	2.76	2.76	2.76	2.76
60	60	60	60	60	60	60	60
2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36

VE21 (for CA4 and CA4-1)



VE21 (for CA10-CA25)



VE2

CA10

CAD11

CA11

CAD12

CA20

CA25

Max. no. of stages

VE3

CA10

CAD11

CA11

CAD12

CA20

CA25

Max. no. of stages

VE4

CA10

CAD11

CA11

CAD12

CA20

CA25

Max. no. of stages

VE21

CA10

CAD11

CA4-1

CAD12

CA11

CA20

CA25

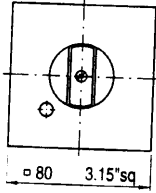
Max. no. of stages

S	3	1	-	1	1	1	2	-	S	44	21	1/2	2	2	2	1
46	1.81								44	1.73	.83					
50	1.97	3	1	1	2	1	2	2	1	1	1	3	3	-	-	2
61	2.40	4	2	2	3	2	3	3	2	2	2	4	-	-	-	-
67	2.64	5	2	2	3	2	3	3	2	2	2	-	-	3	3	-
69	2.70	5	3	3	4	3	4	4	3	2	2	-	-	-	-	3
										2.36	-	5	-	-	-	-
										2.44	26.5	5	-	-	-	-
										1.04	1.04	-	5	-	-	-
										66	-	-	5	-	-	-
										2.60	-	-	-	4	-	-
										68	-	-	-	-	-	-
										2.68	-	-	-	-	-	-
										70	26.5	6	-	-	4	-
										2.76	1.04	-	6	-	-	4
										74	-	-	6	-	-	4
										2.91	-	-	-	-	-	-

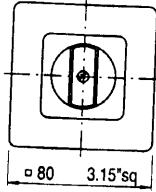
¹see page 51

Wall Mounting, Escutcheon Plates and Additional Length

UE1
UE2
UE3



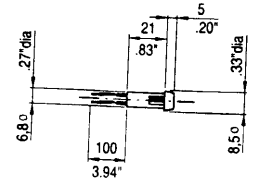
UE4
UE5
UE6



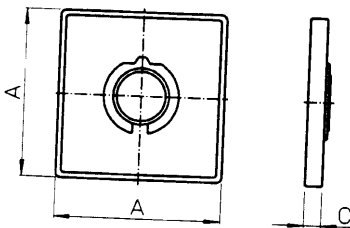
UE7



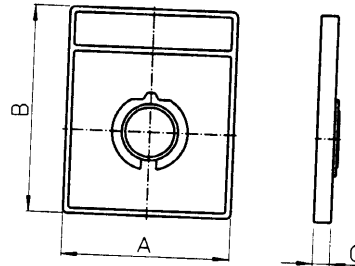
Lamp



Escutcheon 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

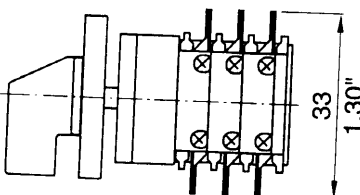


Size	A	B	C
S00	30 1.18	39 1.54	5.5 .22
S0	48 1.89	60 2.36	6.3 .25
S1	64 2.52	78.8 3.10	7.4 .29

Additional length for amendment (page 4)

	CA10	CA11	CAD11	CA20	CAD12	CA25	C26	C32	C42
Latching mechanism size S1	6.2 .24	6.2 .24	-	-	-	-	-	-	-
Latching mechanism size S2	-	-	-	-	9.2 .36	9.2 .36	-	-	-
Snap action	14.3 .56	14.3 .56	12.2 .48	12.2 .48	12.2 .48	12.2 .48	-	-	-

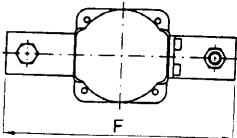
Quick connects for switches CA4, CA4-1



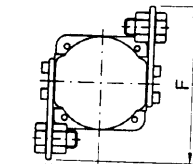
mm
inch

Additional Length

Terminal lugs for switches C315, C316 and L switches

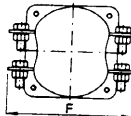


F

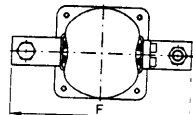


L

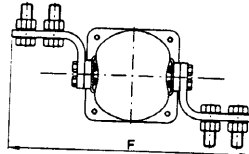
5 45
.20" 1.77"



F



F



F

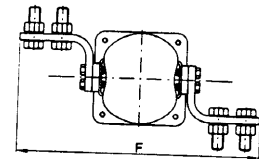
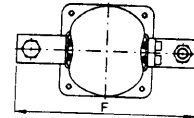
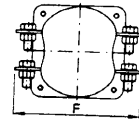
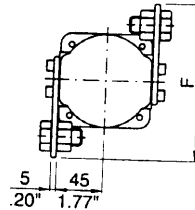
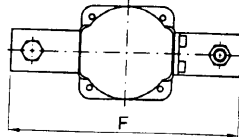
C315
C316
L400
L600

L800
L1200
L1600

L2000

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

Length L



L2000

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

Length L

C125	C315
L switches	L switches

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 20 A-1250 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 36 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. CG switch terminals are "finger-proof", according to VDE 0106. Terminals are 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 30 mV. 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 80 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 32 A-40 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
Contactors 16 A-115 A and Motor Starters 1,1 kW-55 kW These include control relays, motor contactors, two and four pole output contactors, heating contactors, thermal overload relays.	200
P-Series, Push Buttons and Pilot Lights 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. Contact blocks and pilot light assemblies snap on to the coupling plate. N/O and N/C contacts are also suitable for electronic applications.	301