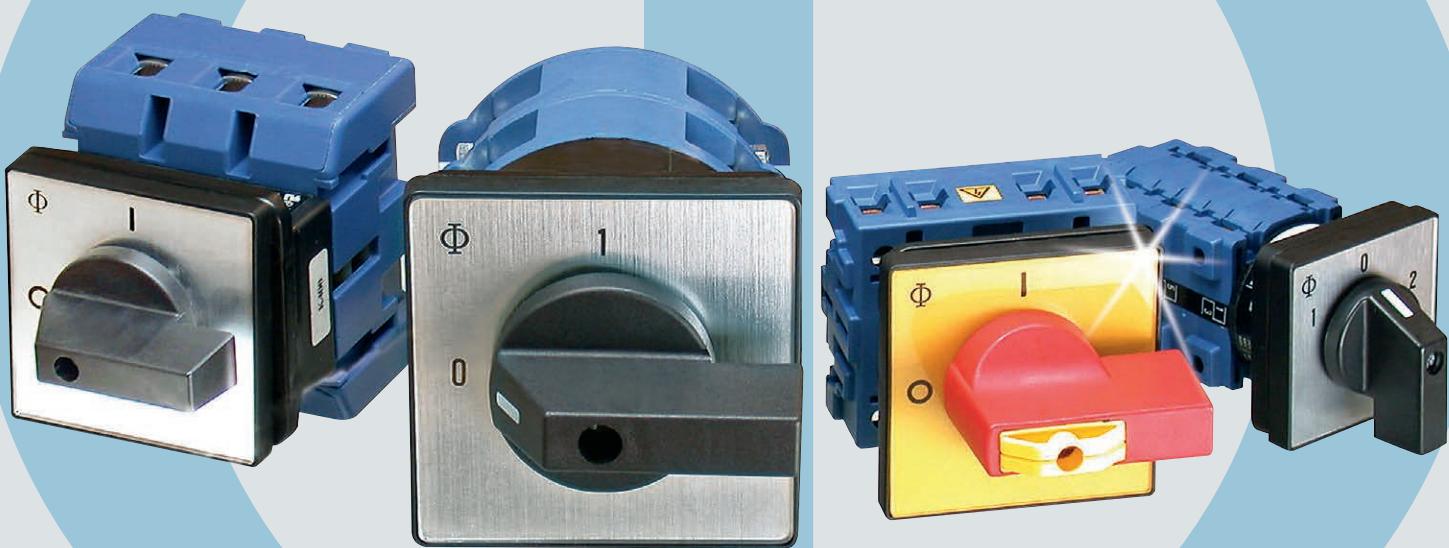




Kraus & Naimer Pty.Ltd.

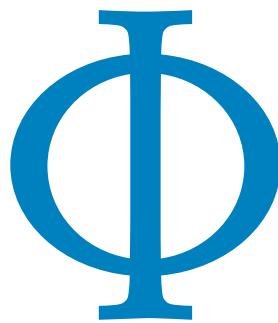
BLUE LINE switchgear

Short Form Catalogue



FOR COMPLETE PRODUCT RANGE VISIT

www.krausnaimer.com.au



Kraus & Naimer

BLUE LINE switchgear

The development of the Blue Line rotary switch, load break switch disconnector, contactor and motor starter product ranges is based on One Hundred years experience by Kraus & Naimer. In the Design and manufacture of electrical switchgear, Kraus and Naimer have pioneered the introduction of the cam operated rotary switch, and continues to be recognised 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 recognised for their quality and workmanship. They are supported by the world-wide sales and service organisation.

The Kraus & Naimer Registered Trademark



WORLDWIDE SYMBOL
FOR QUALITY SWITCHGEAR

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Rotary Cam Switches 10A - 2400A	5 - 12
- Control, Instrument, Motor Switches	
- Infinite number of switch programmes	
- CA / CG / CH Switches with fingerproof terminals	
- CA / CG / CH Switches with captive plus-minus terminal screws	
- CAD Switches having self-cleaning "H" Bridge with 'cross wire' contacts	
- CHR Switches with captive terminal screws for use with ring terminals	
- Special Switches designed to any contact programme	



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Smart Switches (Available from wholesalers)	14 - 15
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Enclosed KG Main Switches 20A - 315A	16 - 18
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- Padlockable maintenance and safety switches
- Enclosed IP 65 protection in Plastic or Stainless Steel
- 3, 4, 6 and 8 pole models available
- Enclosure cable entries top, bottom, sides and rear, or blank

KG Main Switches 20A - 315A	16 - 18
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- Padlockable main and emergency switches
- Modular frame sizes
- 3, 4, 6 and 8 pole models available
- Forced positive contact movement
- Cam operated auxiliary contacts

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- Control and indicating devices
- 22mm IP65 / IP69K
- Fingerproof connections
- Pot drive unit

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Technical Data

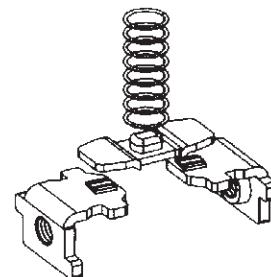
Rated Operational Current

Multi cross point contacts		1V	6V	12V	24V	48V	110V	240V
CA4/CG4	AC21A	-	-	-	10	10	10	10
	DC21 B	-	-	-	10	6	0.7	0.2
H-Bridge cross wire contacts								
CGD4 - 1	AC21A	5	2	1.2	0.7	0.45	0.25	0.15
	DC21B	3	1.2	0.7	0.4	0.25	0.13	0.08
CAD11	AC21A	5	3	2	1	0.8	0.4	0.2
	DC21B	4	2.5	1.5	0.8	0.3	0.2	0.1
CAD12	AC21A	-	5	5	5	4	3	2
	DC21B	-	4	3	2.2	1.2	0.6	0.3

Special Contact Systems

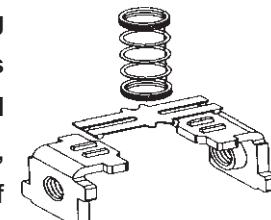
CA4/CG4 (0,5 µm)

A high contact reliability is achieved by the use of multiple crosspoint contacts, having a fourpoint contact face to minimise contact resistance. Terminals on the CA series are accessible from both sides, and the terminals on the CG series are accessible from the rear. Both switches have finger proof terminals. These are the smallest cam switch 30mm sq.



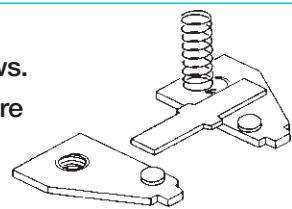
CAD11/CAD12 / CGD4 - 1

H-bridge cross wire contact system. The moving contact is made of spring type material to absorb possible contact bounce. These corrosive resistant contacts are capable of operating on systems voltages as low as 1 volt. CAD11 = Gold contacts. CAD12 = Silver contacts. Both switches have screw driver guides, finger proof terminals and captive plus-minus terminal screws capable of accepting two variant cable sizes.



C/CA

Switches C/CA have finger proof terminals and captive plus-minus terminal screws. Each stage contains two rigid, double-break silver alloy contacts. The terminals are accessible from both sides. Ranging from 20 ~ 315 amperes these switches will accept a wide range of "optional extras".



KG/KH Switches: This durable switch line possesses high short circuit withstand capabilities, with positive movement during both making and breaking functions. The KG/KH range of isolators and changeover switches exhibit excellent AC-3 and AC-23 making and breaking capabilities.

This 'Short Form' catalogue illustrates only a small selection of the KRAUS & NAIMER switches. Other switches available are:- A11, A14, AD11, AD12, CH10 ~ CHR16B, DH, DHR, DK, DKR, L350 ~ L1251,X200 ~ X630. Additional information available on request.

Rotary Cam Switches

Rated Values

Escutcheon Plate Dimensions Note: for drilling details refer to pages 34 & 35		TYPE	According to IEC 60947-3/VDE 0660, part 107				
			Cable mm ²	Nominal Voltage U _i v	Thermal Current I _u /I _{th}	Motor Rating kW	AC-23A AC-3 kW
S00		CA4 CG4	2 x 1.5	440	10	3	2.2
			2 x 1.5	440	10	3	2.2
S0		CG 8 CA10 CA20 CA25 CH10 CH16	2 x 2.5	690	20	7.5	5.5
			2 x 2.5	690	20	7.5	5.5
			2 X 4	690	25	11	7.5
			2 x 6	690	32	15	11
			2 x 4	690	20	7.5	5.5
			2 x 4	690	25	11	7.5
S1		CA10B CA20B CA25B CA40 CA50 CA63 C26 C32 C42 CHR10B CHR20B	2 x 2.5	690	20	7.5	5.5
			2 x 4	690	25	11	7.5
			2 x 6	690	32	15	11
			1 x 16	690	40	18.5	15
			1 x 16	690	50	22	18.5
			1 x 16	690	63	30	18.5
			2 x 6	690	32	15	11
			2 x 10	690	50	22	15
			2 x 16	690	63	30	18.5
			Ring	690	20	7.5	5.5
S2			Ring	690	25	11	7.5
		C43 C80 C125 C200-4	2 x 16	690	63	30	18.5
			35	690	115	45	30
			70	690	150	75	37
			M8	690	200	75	37
S3		C315 C316 L400 L600 L800 L1200 L1600 L2000	M12	690	315	132	55
			M12	1000	315	132	55
			M12	690	500	132	55
			M16	690	800*	132	55
			M16	690	1100*	132	55
			M16	690	1450*	132	55
			2 X M16	690	1900*	132	55
			2 X M16	690	2400*	132	55
		For further technical details, refer to Catalogue 100 and 120. Gold contacts and quick connects see Catalogue 100 P4.					
		* MAX AMBIENT TEMP, 35°C					

For Safety and Maintenance Switches Refer Page 16-19

Rotary Cam Switches - Panel Mounting

 CG4 A290 FS2	 CA10 A291 E	Selection Data IEC 60947-3, EN 60947, VDE 0660	CG 4 CA 4	CG 8 CH 10 CA 10	CA20	C26 CA25	CA 40	C32 CA 50
		Rated Thermal Current Rated Category	$I_u = I_{th}$ 3 x 380 V/440 V	A kW	10 3	20 7.5	25 11	32 15
		Rated Thermal Current Rated Category	$I_u = I_{th}$ 3 x 380 V/440 V	A kW	63 30	115 45	150 75	200 75

Function	Front Plate	Code No.	No. of Stages	Code No.	No. of Stages
OFF / ON Switches 90° Switching		1 Pole		2 Pole	
Waterproof switches to IP 65 available in E24 Mounting - no additional price		CG 4 A290-621 E CA 10 A290-621 E CH 10 A290-621 E CA20 A290-621 E CA25 A290-621 E CA40/C26 A290-621 E CA50/C32 A290-621 E CA63/C42 A290-621 E C80 A290-621 E C125 A290-621 E C200-4 A290-621 E C315 A290-621 E	1 1 1 1 1 1 1 1 1 1 1 1 1	CG 4 A291-621 E CA 10 A291-621 E CH 10 A291-621 E CA20 A291-621 E CA25 A291-621 E CA40/C26 A291-621 E CA50/C32 A291-621 E CA63/C42 A291-621 E C80 A291-621 E C125 A291-621 E C200-4 A291-621 E C315 A291-621 E	1 1 1 1 1 1 1 1 1 1 1 1
1 - 8 Pole		3 Pole		4 Pole	
		CG 4 A292-621 E CA10 A292-621 E CH10 A292-621 E CA20 A292-621 E CA25 A292-621 E CA40/C26 A292-621 E CA50/C32 A292-621 E CA63/C42 A292-621 E C80 A292-621 E C125 A292-621 E C200-4 A292-621 E C315 A292-621 E	2 2 2 2 2 2 2 2 2 2 2 2	CG 4 A324-621 E CA10 A324-621 E CH10 A324-621 E CA20 A324-621 E CA25 A324-621 E CA40/C26 A324-621 E CA50/C32 A324-621 E CA63/C42 A324-621 E C80 A324-621 E C125 A324-621 E C200-4 A324-621 E C315 A324-621 E	2 2 2 2 2 2 2 2 2 2 2 2
		6 Pole		8 Pole - 60°	
		CG 4 A326-621 E CA10 A326-621 E CH10 A326-621 E CA20 A326-621 E CA25 A326-621 E CA40/C26 A326-621 E CA50/C32 A326-621 E CA63/C42 A326-621 E C80 A326-621 E C125 A326-621 E C200-4 A326-621 E	3 3 3 3 3 3 3 3 3 3 3 3	CG 4 A344-620 E CA10 A344-620 E CH10 A344-620 E CA20 A344-620 E CA25 A344-620 E CA40/C26 A344-621 E CA50/C32 A344-621 E CA63/C42 A344-621 E C80 A344-620 E C125 A344-620 E C200-4 A344-620 E C315 A344-620 E	4 4 4 4 4 4 4 4 4 4 4 4
OFF / ON Switches 60° Switching		1 Pole		3 Pole	
1 - 4 Pole		CG 4 A200-620 E CA 10 A200-620 E CH 10 A200-620 E CA20 A200-620 E CA25 A200-620 E CA40/C26 A200-620 E CA50/C32 A200-620 E CA63/C42 A200-620 E C80 A200-620 E C125 A200-620 E C200-4 A200-620 E C315 A200-620 E	1 1 1 1 1 1 1 1 1 1 1 1	CG 4 A202-620 E CA 10 A202-620 E CH 10 A202-620 E CA20 A202-620 E CA25 A202-620 E CA40/C26 A202-620 E CA50/C32 A202-620 E CA63/C42 A202-620 E C80 A202-620 E C125 A202-620 E C200-4 A202-620 E C315 A202-620 E	2 2 2 2 2 2 2 2 2 2 2 2

Rotary Cam Switches - Panel Mounting

 CG4 A210 FS2	 CA10 A211 E	Selection Data IEC 60947-3, EN 60947, VDE 0660	CG 4 CA 4	CG 8 CH 10 CA 10	CA20 CA20B CA25
		Rated Thermal Current	$I_u = I_{th}$	A	10
		Rated Category	3 x 380 V/440 V	AC-23A	3
			kW	7.5	11
		Rated Thermal Current	$I_u = I_{th}$	A	63
		Rated Category	3 x 380 V/440 V	AC-23A	30
			kW	45	75
					75
					315
					500
					132
					132

Function	Front Plate	Code No.	No of Stages	Code No.	No. of Stages
		1 Pole		2 Pole	
		CG4 A210 - 620 E	1	CG4 A211 - 620 E	2
		CA10 A210 - 620 E	1	CA10 A211 - 620 E	2
		CH10 A210 - 620 E	1	CH10 A211 - 620 E	2
		CA20 A210 - 620 E	1	CA20 A211 - 620 E	2
		CA25 A210 - 620 E	1	CA25 A211 - 620 E	2
		CA40/C26 A210 - 620 E	1	CA40/C26 A211 - 620 E	2
		CA50/C32 A210 - 620 E	1	CA50/C32 A211 - 620 E	2
		CA63/C42 A210 - 620 E	1	CA63/C42 A211 - 620 E	2
		C80 A210 - 620 E	1	C80 A211 - 620 E	2
		C125 A210 - 620 E	1	C125 A211 - 620 E	2
		C200-4 A210 - 620 E	1	C200-4 A211 - 620 E	2
		C315 A210 - 620 E	1	C315 A211 - 620 E	2
		3 Pole		4 Pole ⁽¹⁾	
		CG4 A212 - 620 E	3	CG4 A213 - 620 E	4
		CA10 A212 - 620 E	3	CA10 A213 - 620 E	4
		CH10 A212 - 620 E	3	CH10 A213 - 620 E	4
		CA20 A212 - 620 E	3	CA20 A213 - 620 E	4
		CA25 A212 - 620 E	3	CA25 A213 - 620 E	4
		CA40/C26 A212 - 620 E	3	CA40/C26 A213 - 620 E	4
		CA50/C32 A212 - 620 E	3	CA50/C32 A213 - 620 E	4
		CA63/C42 A212 - 620 E	3	CA63/C42 A213 - 620 E	4
		C80 A212 - 620 E	3	C80 A213 - 620 E	4
		C125 A212 - 620 E	3	C125 A213 - 620 E	4
		C200-4 A212 - 620 E	3	C200-4 A213 - 620 E	4
		C315 A212 - 620 E	3	C315 A213 - 620 E	4
		6 Pole		8 Pole	
		CA10 A362 - 620 E	6	CA10 WAA364 - 620 E	8

Gang Switches - Sequence Switching

Function	Code No.	Function	Code No.		
OFF / A / A + B 60° Switching	1 Pole	OFF / A / A + B 60° Switching	3 Pole		
			CA10 WAA314 - 620 E		
OFF / A / A + B 60° Switching	2 Pole	OFF / A / A + B/ A+B+C 30° Switching	Without Bridges		
			CA10 A311 - 620 E		
CA10 A310 - 620 E					

Special Application

Ship To Shore, UPS Bypass⁽²⁾, Series Parallel, Special Meter,
For further information, contact your nearest KRAUS & NAIMER stockist.

(1) If Preclosing 4th Pole Required Change A213 To A663

(2) UPS Bypass Switches, see p13

Rotary Cam Switches - Panel Mounting

KG Switch See P17~ P20	CA10 A220 E	Selection Data IEC 60947-3, EN 60947, VDE 0660		CG 4 CA 4	CG 8 CH 10 CA 10	CA20 CA20B	C26 CA25	C32 CA 40 CA 50	
		Rated Thermal Current Rated Category	I _U = I _{th} 3 x 380 V/440 V	A kW	10 3	20 7.5	25 11	32 15	40 18.5
Rated Thermal Current Rated Category	I _U = I _{th} 3 x 380 V/440 V	A kW	C 42 CA 63	C 42 CA 63	C 80	C 125	C 200-4	C 315	L 400
				63 30	115 45	150 75	200 75	315 132	500 132

Function	Front Plate	Code No.	No of Stages	Code No.	No. of Stages
Changeover Switches without Centre "OFF" 60° Switching		1 Pole		2 Pole	
1-4 pole		CG4 A220 - 600 E CA10 A220 - 600 E CH10 A220 - 600 E CA20 A220 - 600 E CA25 A220 - 600 E CA40/C26 A220 - 600 E CA50/C32 A220 - 600 E CA63/C42 A220 - 600 E C80 A220 - 600 E C125 A220 - 600 E C200-4 A220 - 600 E C315 A220 - 600 E	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CG4 A221 - 600 E CA10 A221 - 600 E CH10 A221 - 600 E CA20 A221 - 600 E CA25 A221 - 600 E CA40/C26 A221 - 600 E CA50/C32 A221 - 600 E CA63/C42 A221 - 600 E C80 A221 - 600 E C125 A221 - 600 E C200-4 A221 - 600 E C315 A221 - 600 E	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
5 pole		3 Pole		4 Pole (1)	
6- and 7 pole		CG4 A222 - 600 E CA10 A222 - 600 E CH10 A222 - 600 E CA20 A222 - 600 E CA25 A222 - 600 E CA40/C26 A222 - 600 E CA50/C32 A222 - 600 E CA63/C42 A222 - 600 E C80 A222 - 600 E C125 A222 - 600 E C200-4 A222 - 600 E C315 A222 - 600 E	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	CG4 A223 - 600 E CA10 A223 - 600 E CH10 A223 - 600 E CA20 A223 - 600 E CA25 A223 - 600 E CA40/C26 A223 - 600 E CA50/C32 A223 - 600 E CA63/C42 A223 - 600 E C80 A223 - 600 E C125 A223 - 600 E C200-4 A223 - 600 E C315 A223 - 600 E	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
8 pole		6 Pole		8 Pole	
		CA10 A370-600 E	6	CA10 A372-600 E	8

Binary Coded Decimal Switches - from 1 Volt.
For PLC and Electronic Applications.

Additional positions and combinations available on request.

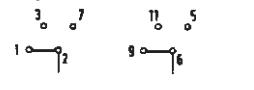
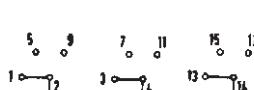
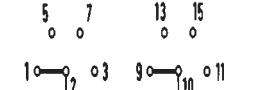
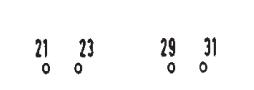
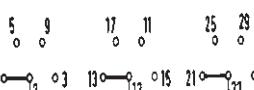
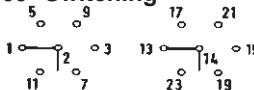
CG4-1 = Gold Plated Contact POA
CAD11 = Gold Wiping H-bridge Contacts
CAD12 = Silver Wiping H-bridge Contacts

Front Plate	Code No.	No of Stages	Code No.	No of Stages
	0-7 Binary		0-11 Binary	
	CAD11 A540 - 600 E CAD12 A540 - 600 E	2 2	CAD11 A543 - 600 E CAD12 A543 - 600 E	2 2
	0-7 Complement		0-9 Binary	
	CAD11 A541 - 600 E CAD12 A541 - 600 E	2 2	CAD11 A550 - 600 E CAD12 A550 - 600 E	2 2
	0-7 + Complement		0-9 Complement	
	CAD11 WAA542 - 600 E CAD12 WAA542 - 600 E	3 3	CAD11 A551 - 600 E CAD12 A551 - 600 E	2 2

(1) If Preclosing 4th Pole Required Change A223 To A673

Rotary Cam Switches - Panel Mounting

		Selection Data	IEC 60947-3, EN 60947, VDE 0660	CG 4 CA 4	CG 8 CH 10 CA 10	CA20	C26	C32
		Rated Thermal Current	$I_u = I_{th}$	A	10	20	25	40
		Rated Category	3 x 380 V/440 V	AC-23A	kW	3	7.5	11
						15	200	50
		Rated Thermal Current	$I_u = I_{th}$	A	63	115	150	315
		Rated Category	3 x 380 V/440 V	AC-23A	kW	30	45	75
						75	132	132
					C 42 CA 63	C 80	C125	C200-4
						C 200-4	C315	L400
								500
								132

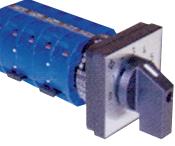
Function	Front Plate	Code No.	No. of Stages	Code No.	No. of Stages
3 Step Switches without "OFF" 60° Switching  1 pole  2 pole  3 pole  1 - 3 Pole Drawing for 4 - 6 Pole on Request		1 Pole CG 4 A230 - 600 E CA10 A230 - 600 E CH10 A230 - 600 E CA20 A230 - 600 E 3 Pole CG 4 A270 - 600 E CA10 A270 - 600 E CH10 A270 - 600 E CA20 A270 - 600 E 5 Pole CA10 WAA484 - 600 E	2 2 2 2	2 Pole CG 4 A250 - 600 E CA10 A250 - 600 E CH10 A250 - 600 E CA20 A250 - 600 E 4 Pole CG 4 A476 - 600 E CA10 A476 - 600 E CH10 A476 - 600 E CA20 A476 - 600 E 6 Pole CA10 WAA489 - 600 E	3 3 3 3
4 Step Switches without "OFF" 60° Switching   1 - 4 Pole		1 Pole CG 4 A231 - 600 E CA10 A231 - 600 E CH10 A231 - 600 E CA20 A231 - 600 E 3 Pole CG 4 A271 - 600 E CA10 A271 - 600 E CH10 A271 - 600 E CA20 A271 - 600 E	2 2 2 2	2 Pole CG 4 A251 - 600 E CA10 A251 - 600 E CH10 A251 - 600 E CA20 A251 - 600 E 4 Pole CG 4 A477 - 600 E CA10 A477 - 600 E CH10 A477 - 600 E CA20 A477 - 600 E	4 4 4 4
5 Step Switches without "OFF" 60° Switching  1 - 3 Pole		1 Pole CG 4 A232 - 600 E CA10 A232 - 600 E CH10 A232 - 600 E CA20 A232 - 600 E 3 Pole CG 4 WAA272 - 600 E CA10 WAA272 - 600 E CH10 WAA272 - 600 E CA20 WAA272 - 600 E	3 3 3 3	2 Pole CG 4 A252 - 600 E CA10 A252 - 600 E CH10 A252 - 600 E CA20 A252 - 600 E Refer to catalogue or enquire for details on additional 'standard' switches.	5 5 5 5
6 Step Switches without "OFF" 60° Switching  1 - 2 pole		1 Pole CG 4 A233 - 600 E CA10 A233 - 600 E CH10 A233 - 600 E CA20 A233 - 600 E 2 Pole CG 4 WAA253 - 600 E CA10 WAA253 - 600 E CH10 WAA253 - 600 E CA20 WAA253 - 600 E	3 3 3 3	2 Pole CG 4 WAA253 - 600 E CA10 WAA253 - 600 E CH10 WAA253 - 600 E CA20 WAA253 - 600 E	6 6 6 6

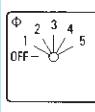
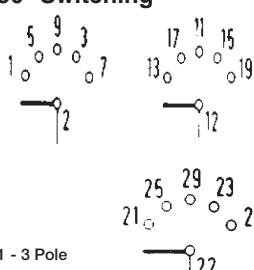
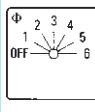
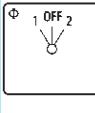
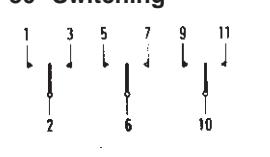
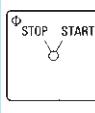
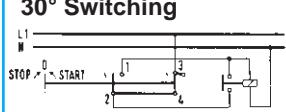
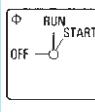
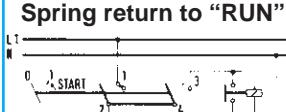
Rotary Cam Switches - Panel Mounting

	Selection Data IEC 60947-3, EN 60947, VDE 0660	CG 4	CG 8	CA20	C26	C32			
		CA 4	CH 10	CA 10	CA20B	CA25	CA 40	CA 50	
CG4 A240 FS2	Rated Thermal Current I _U = I _{th} 3 x 380 V/440 V	A	10	20	25	32	40	50	
CA10 A280 E	Rated Category AC-23A	kW	3	7.5	11	15	18.5	22	
	Rated Thermal Current I _U = I _{th} 3 x 380 V/440 V	C 42	C 80	C125	C200-4	C315	L400		
	Rated Category AC-23A	CA 63	A	63	115	150	200	315	500
			kW	30	45	75	75	132	132

Function	Front Plate	Code No.	No. of Stages	Code No.	No. of Stages
6 Step Switches cont.		3 Pole			
3 Pole		CA10 WAA273-600 E CH10 WAA273-600 E CA20 WAA273-600 E	9 9 9	Refer to catalogue or enquire for details on additional 'standard' switches.	
2 Step Switches with "OFF"		1 Pole		2 Pole	
60° Switching		CG 4 A240 - 620 E CA10 A240 - 620 E CH10 A240 - 620 E CA20 A240 - 620 E	1 1 1 1	CG 4 A260 - 620 E CA10 A260 - 620 E CH10 A260 - 620 E CA20 A260 - 620 E	2 2 2 2
		3 Pole		4 Pole	
		CG 4 A280 - 620 E CA10 A280 - 620 E CH10 A280 - 620 E CA20 A280 - 620 E	3 3 3 3	CG 4 WAA480 - 620 E CA10 WAA480 - 620 E CH10 WAA480 - 620 E CA20 WAA480 - 620 E	4 4 4 4
3 Step Switches with "OFF"		1 Pole		2 Pole	
45° Switching		CG 4 A241 - 620 E CA10 A241 - 620 E CH10 A241 - 620 E CA20 A241 - 620 E	2 2 2 2	CG 4 A261 - 620 E CA10 A261 - 620 E CH10 A261 - 620 E CA20 A261 - 620 E	3 3 3 3
1- and 2 pole		3 Pole		4 Pole	
		CG 4 A281 - 620 E CA10 A281 - 620 E CH10 A281 - 620 E CA20 A281 - 620 E	5 5 5 5	CG 4 WAA481 - 620 E CA10 WAA481 - 620 E CH10 WAA481 - 620 E CA20 WAA481 - 620 E	6 6 6 6
1-3 Pole					
4 Pole Drawing on Request					
4 Step Switches with "OFF"		1 Pole		2 Pole	
30° Switching		CG 4 A242 - 620 E CA10 A242 - 620 E CH10 A242 - 620 E CA20 A242 - 620 E	2 2 2 2	CG 4 WAA262 - 620 E CA10 WAA262 - 620 E CH10 WAA262 - 620 E CA20 WAA262 - 620 E	4 4 4 4
		3 Pole		4 Pole drawing on request	
		CG 4 WAA282 - 620 E CA10 WAA282 - 620 E CH10 WAA282 - 620 E CA20 WAA282 - 620 E	6 6 6 6	CG 4 WAA482 - 620 E CA10 WAA482 - 620 E CH10 WAA482 - 620 E CA20 WAA482 - 620 E	8 8 8 8
1-4 Pole					
		This catalogue lists some of the many common 'Standard Switches' available. For additional selection refer to catalogue 100 or enquire.			

Rotary Cam Switches - Panel Mounting

		Selection Data	IEC 60947-3, EN 60947, VDE 0660	CG 4 CA 4	CG 8 CH 10 CA 10	CA20	C26	C32
		Rated Thermal Current	$I_u = I_{th}$	A	10	20	25	40
		Rated Category	3 x 380 V/440 V	kW	3	7.5	11	15
					C 42 CA 63	C 80	C125	C200-4
		Rated Thermal Current	$I_u = I_{th}$	A	63	115	150	200
		Rated Category	3 x 380 V/440 V	kW	30	45	75	132
					C 42 CA 63	C 80	C125	C200-4
						C 125	C 200-4	C 315
							L 400	
								C 32
								CA 50

Function	Front Plate	Code No.	No. of Stages	Code No.	No. of Stages
5 Step Switches with "OFF" 30° Switching  		1 Pole CG 4 A243 - 620 E CA10 A243 - 620 E CH10 A243 - 620 E CA20 A243 - 620 E	3	2 Pole CG 4 WAA263 - 600 E CA10 WAA263 - 600 E CH10 WAA263 - 600 E CA20 WAA263 - 600 E	5
		3 Pole CG 4 WAA283 - 620 E CA10 WAA283 - 620 E CH10 WAA283 - 620 E CA20 WAA283 - 620 E	8	Refer to catalogue or enquire for details on additional 'standard' switches.	5
6 Step Switches with "OFF" 30° Switching  		1 Pole CG 4 A244 - 620 E CA10 A244 - 620 E CH10 A244 - 620 E CA20 A244 - 620 E	3	2 Pole CG 4 WAA264 - 620 E CA10 WAA264 - 620 E CH10 WAA264 - 620 E CA20 WAA264 - 620 E	6
		3 Pole CA10 WAA284 - 620 E CH10 WAA284 - 620 E CA20 WAA284 - 620 E	9	Refer to catalogue or enquire for details on additional 'standard' switches.	6
Double Throw Spring Return to "OFF" 30° Switching  		1 Pole CA10 A214 - 620 E CH10 A214 - 620 E	1	2 Pole CA10 A215 - 620 E CH10 A215 - 620 E	2
		3 Pole CA10 A216 - 620 E CH10 A216 - 620 E	3	Refer to catalogue or enquire for details on additional 'standard' switches.	2
Stop Start Switch 30° Switching  		1 Pole CA10 A176 - 600 E CH10 A176 - 600 E	1	2 Pole CA10 WAA183 - 600 E CH10 WAA183 - 600 E	2
Stop Start Switch Spring return to "RUN"  		1 Pole CA10 A178 - 620 E	1	Refer to catalogue or enquire for details on additional 'standard' switches.	2

Rotary Cam Switches - Panel Mounting

	Selection Data IEC 60947-3, EN 60947, VDE 0660	CG 4	CG 8 CH 10	CA20	C26	C32		
		CA 4	CA 10	CA20B	CA25	CA 40	CA 50	
Rated Thermal Current	$I_u = I_{th}$	A	10	20	25	32	40	50
Rated Category	3 x 380 V/440 V	AC-23A	3	7.5	11	15	18.5	22
Rated Thermal Current	$I_u = I_{th}$	A	63	115	150	200	315	500
Rated Category	3 x 380 V/440 V	AC-23A	30	45	75	75	132	132
			C 42 CA 63	C 80	C125	C200-4	C315	L400

Function	Front Plate	Code No.	No. of Stages	Code No.	No. of Stages
Motor Reversing 3 Phase 60° Switching		L1 — R L2 — S L3 — T 1 3 9 2 6 10 	3	Single or Three phase 90° Enclosed IP65 Single Phase Rev. 	3
		CA10 A401 - 620 E CA40/C26 A401 - 620 E		3 Phase Rev. M3 M1 M2 	
		CA10 WAA622 - 600 E CA20B WAA622 - 600 E	3	CA10C2Y096*PFAUS0001 CA10 AU9Y96600FT20002	3
		L1 — R L2 — S L3 — T 1 3 9 2 6 10 	3	Off-Star-Delta 	4
		CA10 A228 - 600 E CA40/C26 WAA228 - 600 E		CA10 A410 - 620 E CA40/C26 A410 - 620 E	
		3 Phase - 3 Wire 	2	Δ Y Tap wound Motor (2 Speed) 	
Meter/Motor Switches		CA10 A004 - 625 E CH10 A004 - 625 E	2	CA10 A441 - 620 E CA20 A441 - 620 E	4
		1 Pole - 3 Current Transformers 	3	3 Ph - Ph / 3 Ph - N 	3
		CA10 A058/AUN0180 E CH10 A058/AUN0180 E		CA10 A007/AU2122 E CH10 A007/AU2122 E	
		1 Pole - 4 Current Transformers 	4	2 Pole - 3 Current Transformers (Can be used for direct reading) 	5
		CA10 WAA036 - 620 E CH10 WAA036 - 620 E	4	AMMETER A038 	
		CA10 A038 - 622 E CA40/C26 A038 - 622 E	4	AMMETER A038 	

UPS – Maintenance Bypass Switches

Maintenance Bypass Switches

Kraus & Naimer Maintenance Bypass Switches are an accepted industrial standard wherever emergency power equipment is installed and maintained.

The Maintenance Bypass Switch can be utilized as a simple method of isolating a UPS without interrupting the power source. This allows servicing of the UPS with complete safety to maintenance personnel. A wide range of models has been established, while a broad selection of designer specified options is available on request.

Options Include

Maintenance Bypass Switches are available as - Switch only, Enclosed or Enclosed wired to terminals.

1. Key interlock (V760) with auxiliaries for signal confirmation on locking/unlocking or to shut down the inverter of a UPS prior to switching to the bypass position.
2. Push button interlock with auxiliaries (V400). Switching only possible if push button is depressed, simultaneously closing or opening auxiliaries for signal confirmation to the UPS.
3. A solenoid interlock device (V140) that prevents the operation of the switch except under predetermined electrical conditions.
4. Automatic changeover switches also available.

Current rating to AC22A – 240v	amps	max. cable size	KVA ratings to AC22A – 240v	KVA
CA10B	16	2.5mm	CA10B	3.68
C26	32	6mm	C26	7.3
C42	63	16mm	C42	14
Current rating to AC22A – 415v	amps	max. cable size	KVA ratings to AC22A – 415v	KVA
CA10B	16	2.5mm	CA10B	11.5
C26	32	6mm	C26	23
C42	63	16mm	C42	45
C80	100	35mm	C80	72
C125	150	70mm	C125	107
C200-4	200	M8 95mm	C200-4	143
C315	315	M12 185mm	C315	225



V760



V400



V140



Enclosed & Wired
to Terminals

Smart Switch

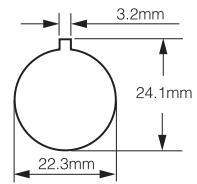
These devices only fit switches with the same colour identification label



Switch Body



Black Label - Handles and Optional Extras fit all Switches



Match the label colours
to ensure the switch body and handle, key or padlock device are compatible.

Smart Switches 22mm IP66 Protection		
Amps	Description	Code
	OFF - ON switch body only	
20 20 20	1 Pole 2 Pole 3 Pole	 KN11 KN12 KN13
	MAN - OFF - AUTO switch body only	
20 20	1 Pole 3 Pole	 KN16 KN17
	MAN - AUTO switch body only	
20 20	1 Pole 3 Pole	KN19 KN20
	FOR - OFF - REV switch body only	
20	1 phase or 3 phase	KN26
	FOR - OFF - REV switch enclosed - IP 66	
	Padlocking Handles	
	Red / Yellow	 KN15
	Key Operators Select by Switch Function	
	For OFF ON For MAN OFF AUTO For MAN AUTO	 KN14 KN18 KN21
	Handle Operators (Plates are included with switch body)	
	Round bezel Standard square frame	 KN22 KN23
	Mounting Accessories	
	Drilled enclosure	KN24

KG Main Switches

Nominal Ratings

	Frame Size	Type	IEC 60947-3/VDE 0660, part 107					
			Rated Values					
			Cable Size mm ²	Thermal Current I _u /I _{th}	Operational Current AC-21A A	Utilization AC-23A kW	Category 3 x 380 V - 440 V kW	
			mm ²	A	A	kW	kW	
S0 = 48mm x 48mm	S0/S1	KG10A/KG10B	2.5	20	20	5.5	3.7	
S0 = 48mm x 48mm	S0/S1	KG20A/KG20B	6	25	25	7.5	5.5	
S1 = 64mm x 64mm	S0/S1	KG32A/KG32B	6	32	32	11	7.5	
S1 = 64mm x 64mm	S0/S1	KG41/KG41B	16	40	40	15	11	
S1 = 64mm x 64mm	S0/S1	KG64/KG64B	16	63	63	22	18.5	
S1 = 64mm x 64mm	S1	KG80	50	80	80	30	22	
S1 = 64mm x 64mm	S1	KG100	50	100	100	37	30	
S1 = 64mm x 64mm	S1	KG105	50	125	125	45	37	
S2 = 88mm x 88mm	S2	KG125 (Tunnel)	95					
S2 = 88mm x 88mm	S2	KG126 (Lugs)	M10	125	125	45	37	
S2 = 88mm x 88mm	S2	KG127 (Both)	Both					
S2 = 88mm x 88mm	S2	KG160 (Tunnel)	95					
S2 = 88mm x 88mm	S2	KG161 (Lugs)	M10	160	160	55	45	
S2 = 88mm x 88mm	S2	KG162 (Both)	Both					
S2 = 88mm x 88mm	S2	KG210 (Tunnel)	185					
S2 = 88mm x 88mm	S2	KG211 (Lugs)	M12	200	200	75	55	
S2 = 88mm x 88mm	S2	KG212 (Both)	Both					
S2 = 88mm x 88mm	S2	KG250 (Tunnel)	185					
S2 = 88mm x 88mm	S2	KG251 (Lugs)	M12	250	250	90	55	
S2 = 88mm x 88mm	S2	KG252 (Both)	Both					
S2 = 88mm x 88mm	S2	KG315 (Tunnel)	185					
S2 = 88mm x 88mm	S2	KG316 (Lugs)	M12	315	315	110	75	
S2 = 88mm x 88mm	S2	KG317 (Both)	Both					

FOR HIGHER CURRENT RATINGS

Please contact your nearest KRAUS & NAIMER stockist.

IEC 60947-3

SWITCHES - DISCONNECTORS - SWITCH DISCONNECTORS

IEC 60947 is a safety and performance standard for low voltage switchgear (up to 1000V) which has universally replaced IEC 408 and combined specific requirements of many individual national standards. IEC 60947 is a uniform standard for most countries around the world and establishes a truly global marketplace. IEC 60947-3 is a section of the standard specific to switches. Importantly, it recognises that devices for the switching function and isolating function require very different performance criteria. Switching requires high performance of current carrying parts to make and break loads under normal and overload conditions, i.e., motor reversing applications. Isolation requires high insulation, sufficient spacing of current carrying parts and mechanical integrity that the handle corresponds to actual contact position for the safety of maintenance personnel.

Practicality of real life applications calls for three definitions within IEC 60947-3; Switches, Disconnectors and Switch Disconnectors. A switch does not have to satisfy the isolation and mechanical strength tests, and a disconnector likewise the load tests. A Switch Disconnector must satisfy all tests and is suitable for safety switch applications. A switch disconnector must have a direct drive late make early break auxiliary contact in series with a load breaking device to be suitable as a safety switch.

Kraus & Naimer have developed complete products which satisfy all IEC 60947 criteria, some of which are listed overleaf. For further information, please contact our offices.

KG Main Switches - Padlockable Panel Mount, Enclosed Plastic or Stainless Steel

Selection Data		Switch Type										KG125 KG160 KG210 KG250 KG315 KG126 KG161 KG211 KG251 KG316 KG127 KG162 KG212 KG252 KG317				
IEC 60947, EN 60947, VDE 0660		KG10 KG20 KG32 KG41 KG64										KG125 KG160 KG210 KG250 KG315 KG126 KG161 KG211 KG251 KG316 KG127 KG162 KG212 KG252 KG317				
IEC 204, EN 60204, VDE 0113		KG10B KG20B KG32B KG41B KG64B										KG125 KG160 KG210 KG250 KG315 KG126 KG161 KG211 KG251 KG316 KG127 KG162 KG212 KG252 KG317				
Nominal Voltage	U_i	V	690	690	690	690	690	690	690	690	690	KG125 KG160 KG210 KG250 KG315 KG126 KG161 KG211 KG251 KG316 KG127 KG162 KG212 KG252 KG317				
Thermal Current	I_u / I_{th}	A	20	25	32	40	63	80	100	125	125	KG125 KG160 KG210 KG250 KG315 KG126 KG161 KG211 KG251 KG316 KG127 KG162 KG212 KG252 KG317				
Enclosed Thermal Current	I_{the}	A	20	25	32	40	63	80	100	125	125	KG125 KG160 KG210 KG250 KG315 KG126 KG161 KG211 KG251 KG316 KG127 KG162 KG212 KG252 KG317				
Operational Current AC21A	I_e	A	20	25	32	40	63	80	100	125	125	KG125 KG160 KG210 KG250 KG315 KG126 KG161 KG211 KG251 KG316 KG127 KG162 KG212 KG252 KG317				
Utilisation Category	3 x 380V / 440V AC-23A/B		kW	5,5	7,5	11	15	22	30	37	45	KG125 KG160 KG210 KG250 KG315 KG126 KG161 KG211 KG251 KG316 KG127 KG162 KG212 KG252 KG317				

Product	Code No.		Code No.
Panel Mount IP65 Size 0 = 48 x 48 Red / Yellow Padlock Handle - V840G/D C/W Off . On Escutcheon	Panel Mount - Lockable 3 Pole KG10B K300*AU2100 E KG20B K300*AU2100 E KG32B K300*AU2100 E KG41B K300*AU2100 E KG64B K300*AU2100 E KG80 K300*AU2100 E KG100 K300*AU2100 E KG105 K300*AU2100 E KG126 K300*AU2100 E KG161 K300*AU2100 E KG211 K300*AU2100 E KG251 K300*AU2100 E KG316 K300*AU2100 E	Plastic Enclosure IP65 Red / Yellow Padlock Handle - V840G	Enclosed - Plastic - Lockable 3 Pole KG20A T203/AU1902 PFE1 KG32A T203/AU1902 PFE1 KG41 K302-PFE1 AUS0001 KG41 K302*AU0162*KL12 KG64 K302-PFE1 AUS0001 KG64 K302*AU0162*KL12 KG80 K302*AU0163*KL12 KG100 K302*AU0163*KL12 KG126 K302*AU0760*6FE KG161 K302*AU0760*6FE KG211 K302*AU0171*6FE KG251 K302*AU0171*6FE KG316 K302*AU0171*6FE
Panel Mount IP65 Size 1 = 64 x 64 Red / Yellow Padlock Handle - V840G/D C/W Off . On Escutcheon	Panel Mount - Lockable 3 Pole . KG10B K302*AU2100 E KG20B K302*AU2100 E KG32B K302*AU2100 E KG41B K302*AU2100 E KG64B K302*AU2100 E KG80 K302*AU2100 E KG100 K302*AU2100 E KG105 K302*AU2100 E KG126 K302*AU2100 E KG161 K302*AU2100 E KG211 K302*AU2100 E KG251 K302*AU2100 E KG316 K302*AU2100 E	Plastic Enclosure IP65 Red / Yellow Padlock Handle - V845	Enclosed - Plastic - Lockable 3 Pole KG20B K302*AU0160*KL12 KG32B K302*AU0160*KL12 KG41B K302*AU0152*KL12 KG64B K302*AU0152*KL12 KG80 K302*AU0153*6FE KG100 K302*AU0153*6FE KG126 K302*AU0761*6FE KG161 K302*AU0761*6FE KG211 K302*AU0172*6AE _{metal} KG251 K302*AU0172*6AE _{metal} KG316 K302*AU0172*6AE _{metal}
Stainless Steel Enclosure IP65	Panel Mount - Lockable 4 Pole KG10B K400*AU2100 E KG20B K400*AU2100 E KG32B K400*AU2100 E KG41B K400*AU2100 E KG64B K400*AU2100 E KG80 K400*AU2100 E KG100 K400*AU2100 E KG105 K400*AU2100 E KG126 K400*AU2100 E KG161 K400*AU2100 E KG211 K400*AU2100 E KG251 K400*AU2100 E KG316 K400*AU2100 E	Enclosed - Lockable Stainless Steel 3 pole KG41B K302*AU1150*6SH1 KG64B K302*AU1150*6SH1 KG80 K302*AU1148*6SH1 KG100 K302*AU1148*6SH1 KG125 K302*AU1145*6SH2 KG161 K302*AU1145*6SH2 KG211 K302*AU1151*6SH3 KG251 K302*AU1151*6SH3 KG316 K302*AU1151*6SH3	Enclosed - Lockable Stainless Steel Enclosures... Marine Grade 316 IP65 N/O contact late make early break. Finish:- Bead Blast or Food Industry.(FI) Available on request:- Integrated Rain Hood. Hinged Door. Mounting Flanges Stainless Steel Padlock Device
	Variations on request:- Stop/Start Pushbuttons. Control & Changeover Switches. Selection of auxiliary contacts.		

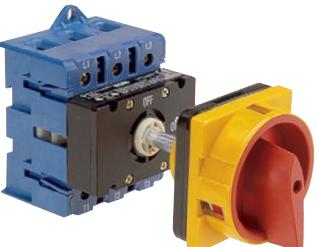
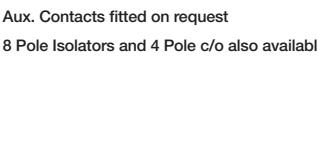
(1) 4 Pole changeover enclosed. Refer page 20.

For Panel and Base mount 4 Pole changeover Refer to page 20.

(2) Suitable for no load switching (AC-20A) above 690v.

KG Main Switches - Base Mounted Padlockable with Extension Shafts

Selection Data		Switch Type										KG125 KG160 KG210 KG250 KG315				
IEC 60947-3, EN 60947, VDE 0660		KG10 KG20 KG32 KG41 KG64					KG126 KG161 KG211 KG251 KG316									
IEC 204, EN 60204, VDE 0113		KG10B KG20B KG32B KG41B KG64B					KG80 KG100 KG105 KG127 KG162					KG212 KG252 KG317				
Nominal Voltage	U _i	V	690	690	690	690	690	690	690	690	1000 ⁽¹⁾	1000 ⁽¹⁾	1000 ⁽¹⁾	1000 ⁽¹⁾	1000 ⁽¹⁾	
Thermal Current	I _U / I _{th}	A	20	25	32	40	63	80	100	125	125	160	200	250	315	
Enclosed Thermal Current	I _{the}	A	20	25	32	40	50	63	80	100	100	140	200	250	315	
Operational Current AC21A	I _e	A	20	25	32	40	63	80	100	125	125	160	200	250	315	
Utilisation Category	3 x 380V / 440V AC-23A/B		kW	5,5	7,5	11	15	22	30	37	45	45	55	75	90	110

Product	Code No.		Code No.
KG10B - KG100 = Base/DIN Mount Base Mounted with Door Clutch M280E 300mm Shaft Extension Padlock Device V840G/D	Door Clutch M280E/EF P'lockable HandleV840G/D Esc. plate OFF - ON 3 Pole		Door Clutch M280E/EF P'lockable HandleV840G/D Esc. plate OFF - ON 3 Pole + 1N/O 1 N/C aux. (N/O aux. early break)
			
KG10B - KG100 = Base/DIN Mount Base Mounted with Door Clutch M280E 300mm Shaft Extension Padlock Device V845	Door Clutch M280E/EF P'lockable Handle V845 Esc. plate OFF - ON 3 Pole (without aux's)	VE-Mounting 	Door Clutch M280E/EF P'lockable HandleV840G/D Esc. plate OFF - ON 4 Pole
			
6 Pole Isolator Aux. Contacts fitted on request 8 Pole Isolators and 4 Pole c/o also available	6 Pole Isolator Panel Mounted Escutcheon plate OFF-ON		3 Pole Change Over Panel Mounted with OFF Escutcheon 1/0FF/2
			
			
		TERMINATION: KG10 ~ KG125, KG160, KG210 KG250 & KG315 Tunnel. KG126, KG161, KG211, KG251 & KG316 Lugs. KG127, KG162, KG212, KG252 & KG317 Tunnel & Lugs.	

(1) Suitable for no load switching (AC-20A) above 690v.

Application Guide AS/NZS 947-3 3F Lockout Isolators

Get a Handle on Safety with your Eyes Closed

Product Features

M700 Door Interlock

- Padlockable in 'OFF' only - safety requirement according to AS/NZS 947-3
- In 'ON' the door interlock is engaged - the cabinet cannot be opened
- In 'ON' the door interlock can be defeated by using a tool - authorised entry only
- The door interlock re-engages when the door is closed after authorised defeat in 'ON'
- In 'OFF' and padlocked, the door interlock defeat is disabled - no access
- When the door is opened the handle position is locked - assured alignment
- Mechanical Position Indicator on the switch module - visible when the door is open
- Internal Padlock Device on switch module
- Robust, keyed, floating head on switch shaft



KG Switch Disconnectors

- 13/14mm contact gap. 690v - 1000v insulation
- High AC3 and AC23 ratings
- Large, finger proof IP20 box type terminals
- Double break forced opening safety rated auxiliary contacts. Silver or Gold 1 to 6 N/O - N/C
- Positive drive make and break main contacts. 3 to 8 poles OFF ON, 3 or 4 pole C/O
- IEC 947-3 3F disconnect handle. Isolation is assured 'OFF' is 'OFF'



General Features

- Custom colours and engraving for escutcheon plates and header labels
- Scratch-proof reverse engraving
- IP65 dust and water protection
- Robust, double insulated handle
- Asymmetric shaft and interlock profiles ensure the handle position matches the switch position
- Fixed length shaft ensures shaft must engage with the handle

Telephone **1800 567 948** for further technical information

IEC 947-1

Equipment Suitable For Isolation - The Following Clauses Apply

Clause 7.1.6 Additional constructional requirements for equipment suitable for isolation

Clause 7.1.6.1 Additional constructional requirements

Equipment suitable for isolation shall provide, in the open position (see 2.4.21) an isolation distance in accordance with the requirements necessary to satisfy the isolation function (see 7.2.3.1 and 7.2.2) (dielectric test)

Indication of the position of the mains contacts shall be provided by one or more of the following means:

- (1) The position of the actuator
- (2) A separate mechanical indicator
- (3) Visibility of the moving contacts

The effectiveness of each of the means of indication provided on the equipment and its mechanical strength shall be verified in accordance with clause 8.2.5

Clause 8.2.5 Verification of the effectiveness of indication of the main contact position of equipment suitable for isolation

To verify the effectiveness of the indication of the main contact position, all means of indication of contact position shall continue to function correctly after the operational performance type tests, and special durability type tests (if performed).

Switch Classifications

All low voltage switches installed in Australia and New Zealand shall meet AS/NZS 60947 and carry the appropriate easily identifiable symbol depending on the switch classification.

Switch

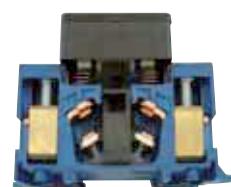
A mechanical switching device capable of making and breaking currents under normal conditions, which may include specified overload conditions according to the duty, and abnormal circuit conditions such as short-circuit. (motor reversing switches, control switches, start delta switches, etc)

Disconnect

A mechanical switching device which in the open position, complies with the requirements specified for the isolating function (Off load isolator)

Switch Disconnector

A 'Switch' which in the open position, complies with the requirements specified for the isolating function (On load isolator)



Changeover Switches Base Mount & Enclosed

Product	Base Mount Code No.		Base Mount Code No.
VE2-Mounting 	Base Mount Code No. 2 Pole Changeover Din Rail Mtg - MCB cut out Eng: Mains Off Gen	 	3 Pole changeover (unenclosed) with M280E door clutch Eng: Mains Off Gen
	KH32 T902*NZ0001 VE2 KH40 T902*NZ0001 VE2 KH63 T902*NZ0001 VE2 KH80 T902*NZ0001 VE2		KG20B K900*AUN0123 VE KG32B K900*AUN0123 VE KG41B K900*AUN0123 VE KG64B K900*AUN0123 VE KG 80 K900*AUN0123 VE KG100 K900*AUN0123 VE KG126 K900*AUN0124 VE KG161 K900*AUN0124 VE
	3 Pole Changeover Din Rail Mtg - MCB cut out Eng: Mains Off Gen		3 Pole changeover (unenclosed) with M280E door clutch Eng: Mains Off Aux
	KG32A T903*NZ0001 VE2 KG41B T903*NZ0001 VE2 KG64B T903*NZ0001 VE2 KG80 T903*NZ0001 VE2 KG100 T903*NZ0001 VE2		KG20B K900*AUV0291 VE KG32B K900*AUV0291 VE KG41B K900*AUV0291 VE KG64B K900*AUV0291 VE KG 80 K900*AUV0291 VE KG100 K900*AUV0291 VE KG126 K900*AUV0291 VE KG161 K900*AUV0291 VE
	3 Pole Changeover Din Rail Mtg - MCB cut out Eng: Mains Off Aux		3 Pole changeover (unenclosed) with M280E door clutch Eng: Mains Off Aux
	KG32A T903*AUV0290 VE2 KG41B T903*AUV0290 VE2 KG64B T903*AUV0290 VE2 KG80 T903*AUV0290 VE2 KG100 T903*AUV0290 VE2		KG20B K900*AUV0291 VE KG32B K900*AUV0291 VE KG41B K900*AUV0291 VE KG64B K900*AUV0291 VE KG 80 K900*AUV0291 VE KG100 K900*AUV0291 VE KG126 K900*AUV0291 VE KG161 K900*AUV0291 VE
	4 Pole Changeover Din Rail Mtg - MCB cut out Eng: Mains Off Gen		4 Pole Changeover (unenclosed) with M280E door clutch Eng: Mains Off Gen
	KG32A T904*AUN0127 VE2 KG41B T904*AUN0127 VE2 KG64B T904*AUN0127 VE2 KG 80 T904*AUN0127 VE2 KG100 T904*AUN0127 VE2		KG20B K950*AUN0125 VE KG32B K950*AUN0125 VE KG41B K950*AUN0125 VE KG64B K950*AUN0125 VE KG 80 K950*AUN0125 VE KG100 K950*AUN0125 VE KG126 K950*AUN0126 VE KG161 K950*AUN0126 VE 6KE252 K950*AUN0130 VE(250A) 6KE402 K950*AUN0130 VE(400A)

For Further Information Regarding The Range of Enclosed Isolators

Refer to the Kraus & Naimer "Enclosed Switch Catalogue" on www.krausnaimer.com.au

Changeover Switches Base Mount & Enclosed

Product	Base Mount Code No.		Base Mount Code No.	
	<p>Enclosed Code No. 3 Pole Changeover <u>Enclosed - Plastic IP65</u> Eng: Mains Off Gen</p> <p>KG20B K900*AUN0115*KL12 KG32B K900*AUN0115*KL12 KG41B K900*AUN0116*KL12 KG64B K900*AUN0116*KL12 KG 80 K900*AUN0117*6FE KG100 K900*AUN0117*6FE KG126 K900*AUN0118*6FE KG161 K900*AUN0118*6FE</p>		<p>Enclosure for Domestic / Commercial Installations</p> <p>Suitable for VE2 2 & 3 Pole Changeover To 63 Amp IP40</p>	64CC6
	<p>3 Pole Changeover <u>Enclosed - Plastic IP65</u> Eng: Mains Off Aux</p> <p>KG20B K900*AUV0290*KL12 KG32B K900*AUV0290*KL12 KG41B K900*AUV0290*KL12 KG64B K900*AUV0290*KL12 KG 80 K900*AUV0290*6FE KG100 K900*AUV0290*6FE KG126 K900*AUV0290*6FE KG161 K900*AUV0290*6FE</p>	<p>Suitable for VE2 2 Pole Changeover To 40 Amp IP65</p>	6FKV	
	<p>4 Pole Changeover <u>Enclosed - Plastic IP65/Metal IP65</u> Eng: Mains Off Gen</p> <p>KG20B K950*AUN0119*6FE KG32B K950*AUN0119*6FE KG41B K950*AUN0120*6FE KG64B K950*AUN0120*6FE KG 80 K950*AUN0121*6FE KG100 K950*AUN0121*6FE KG126 K950*AUN0122*6FE KG161 K950*AUN0122*6FE 6KE252 K950*AUN0128*6AE(250A) * 6KE402 K950*AUN0129*6IP (400A) *</p>		  <p>64CC6</p>	
		<p>For 3 Pole changeover KG20B - 190 x 100 x 90 - 6mm KG32B - 190 x 100 x 90 - 6mm KG41B - 250 x 145 x 100 - 16mm KG64B - 250 x 145 x 100 - 16mm KG 80 - 280 x 190 x 130 - 35mm KG100 - 280 x 190 x 130 - 35mm KG126 - 560 x 380 x 180 - M10 (Lugs) - 95mm KG161 - 560 x 380 x 180 - M10 (Lugs) - 95mm</p> <p>For 4 Pole changeover KG20B - 190 x 190 x 130 - 6mm KG32B - 190 x 190 x 130 - 6mm KG41B - 280 x 190 x 130 - 16mm KG64B - 280 x 190 x 130 - 16mm KG 80 - 380 x 280 x 130 - 35mm KG100 - 380 x 280 x 130 - 35mm KG126 - 560 x 380 x 180 - M10 (Lugs) - 95mm KG161 - 560 x 380 x 180 - M10 (Lugs) - 95mm 6KE252 - 600 x 600 x 350 Metal - M10 (Lugs) - 150mm 6KE402 - 800 x 600 x 400 Metal - M10 (Lugs) - 240mm</p>		

For Further Information Regarding The Range of Enclosed Isolators

Refer to the Kraus & Naimer "Enclosed Switch Catalogue" on www.krausnaimer.com.au

Optional Extras

Keylocks	Code	Mounting Units	Code
Direct drive operator	V750/A9	Panel mount 2 or 4 screw	E
For base mounting	V750D/ VE21	Panel mount 2 or 4 screw IP65	EFA
IP66 For single hole 22mm Standard K&N Key	V750D/3	Base mounting 4 screw mount	VE
Direct Drive Key Operator Mounted in a IP66 Hinged / Flip Lid Enclosure	V755/ 6CL	Base mount DIN rail	VE1
Direct Drive Key Operator <u>Nominate key barrel:-</u> 570 Lockwood, Bi-Lock,Lock Focus, KabaQuattro, Efco, Schlage, CL, etc..... <u>Customised key systems:-</u> Key Indication, cylinder removable from front (RL), Electronic key interlocks etc. <u>Nominate Mounting:-</u> Panel mount, Wall Plate mounting, enclosed (plastic,s/steel etc.,	6S0LW V755/A	Base mount DIN rail with MCB cut out	VE2
Separate Drive Key Lock Programmable locking positions using <u>Streb</u> barrel	V760/A.E	Double end mount 4 screw fixing	ER
Separate Drive Key Lock Programmable locking positions for: Lockwood 5-6 pin barrels C4 (201). Bi - Lock.(specify) Includes: Kraus & Naimer Pty. Ltd. standard barrel:- 6S1 V760 S (Lockwood type).	V760/A	Double end mount for fixing of plate with DIN mounting	VE1E
Mounting Units	Code	IP66 Single hole without plate 16/22mm 22/30mm	FSI FT1
Right Angle Drive	K3 M330/A K3 M330/B	IP66 Single hole square plate 16/22mm 22/30mm	FS2 FT2
Terminal Covers		Next size up handle and plate	EG
3 main contacts KG 20 - KG 100 KG 126 / KG 161 KG 251 / KG 316	M160 / 3 M160 / 33 M160 / 4	Single hole with plate 16/22mm Rectangle 30 x 39 Single hole with plate 16/22mm Rectangle 48 x 59 Single hole with plate 16/22mm Rectangle 64 x 78 Header 2 Lines Header 3 Lines	FS4 FT6 FH4 PRC PRA
4 main contacts KG 20 - KG 100 KG 126 / KG 161 KG 251 / KG 316	M160 / 43 M160 / 43 M160 / 41		

Optional Extras

Padlock	Code	Door Clutch & Shaft Extensions	Code
The padlock is an integral part of the switch handle	V840A 	Door clutch for misaligned doors with locking handle Note: Knowledgeable personnel using a simple tool are able to defeat the interlock Refer to Page 19	M700 
Locking handle for DIN cutout handles	V840B 	Door clutch with shaft extension Interlocked or Non Interlocked Available	M280E 
For a padlocks	V845 	IP66 Single hole 22mm door clutch and locking handle	V840G/B 
Padlock with integral flat or raised handle - 2 padlock	V840D 	IP66 Single hole 22mm door clutch and locking handle	V840G 
Padlock with integral flat or raised handle - 3 padlock	V840G/B 	IP66 Single hole 22mm door clutch and locking handle	V845 
Padlock with integral flat or raised handle - 4 padlock	V840G 	Single hole 22mm door clutch and locking handle	V840E 
Padlock device	V850 	Single hole 22mm door clutch	M295A 
Shaft locking device	V840VE 	IP66/67 Single hole mounting with integrated door clutch ★Override function in On-Position	M800 
Heavy Duty Stainless Steel Lock-out safety device	6SS V840 	Shaft extention asymmetric profile	M004D 
Clip on aux contacts - base mount for KG20 -KG32 for KG41 - KG64	KO-H010/A11-VE K1-H010/A11-VE	Shaft extention square profile	L100A/M004E 
Clip on aux contacts - panel mount for KG20 -KG32 for KG41 - KG64	KO-H010/A11-E K1-H010/A11-E		

Special Drive Options & Enclosures

Special Drives	Optional Code No.	Description
	G800/A	<p>Heavy Duty Drive Create your own handle/drive unit and weld it onto the removable plate. Long rods, T-bars, etc.</p> <p>E Panel Mount, PK Plastic Encl. GK Aluminium Enclosure</p>
	G800/B	<p>Limit Switch Heavy duty roller & actuator for spring return or stepping applications.</p> <p>E Panel Mount PK Plastic Enclosure GK Aluminium Enclosure Also Available in 6CL 56 Plastic Enclosure.</p>
	G900/B	<p>Rope Operator Heavy duty for GK / PK or 6CL 56 series enclosures.</p> <p>Drive Only Also Available in 6CL 56 Plastic Enclosure</p>
	GK	<p>Aluminium Enclosures for Drives Switch length 4 stages. Various sizes available on request.</p>
	PK	<p>Plastic Enclosures for Drives Switch length 4 stages. Various sizes available on request.</p>
	DIP Exd	<p>HAZARDOUS AREAS Dust Ignition Proof Flame Proof</p>
	6S	<p>Stainless Steel Enclosures Marine Grade 316</p> <p>208H x 113W x 96D 240H x 140W x 120D 350H x 230W x 170D 500H x 320W x 175D 710H x 320W x 175D C/W rain hood (Other sizes available on request)</p> <p>Finish:- Bead Blast or Food Industry. (Nº4)</p> <p>Options:- Rain Hood. Hinge Door.</p> <p>Variations on request:- Stop / Start Pushbutton. Control & Changeover Switches. Selection of auxiliary contacts.</p>

Standard Enclosures

Enclosure Information

The following options can be included by substituting suffix code "E" for the optional code number.. PF, KS, KL, 6CL...

Note: KG enclosed isolators listed complete on page 17

Example: 3pole 20Amp Off/On Switch
Enclosed with Padlockabe handle

CA 10 A292-621 PF
V840G

Enclosures	Description	Code No.
 KS enclosure	KS	CG 4 & CA 4 Switches Material - Very high UV resistance - High chemical resistance Dimensions mm 1 stage - 90L x 70W x 60H 2 stage - 90L x 70W x 72.5H
 PF enclosure	PF	Standard without Cover Interlock Very high UV resistance Excellent chemical resistance
 6 CL 56/98 enclosure	6 CL 56/98 6 CL 56/98-4 6 CL 56/195	Industrial Enclosure IP66 Dimensions mm - 101L x 101W x 91H /98 series - 198L x 101W x 91H /195 series Flip Lid Chemical resistant orange available on request. (Nominate entries prefered).
 6 FE enclosure	6FE B85AG 6FE C65AG 6FE C85AG 6FE D85AG 6FE M95AG	General Purpose ABS Enclosures Excellent Chemical resistance IP67. 6FE B85AG - 110H x 80W x 85D 6FE C65AG - 140H x 80W x 65D 6FE C85AG - 140H x 80W x 85D 6FE D85AG - 170H x 60W x 85D 6FE M95AG - 230H x 140W x 95D
 6 FEC enclosure		Polycarbonate Enclosures IP67 6FEC - 190H x 190W x 130D 6FEC - 190H x 190W x 180D 6FEC - 280H x 190W x 130D 6FEC - 280H x 190W x 180D 6FEC - 280H x 280W x 130D 6FEC - 380H x 280W x 130D 6FEC - 380H x 280W x 180D 6FEC - 560H x 380W x 180D 6FEC - 560H x 380W x 230D
 AE enclosure	6AE 1033 6AE 1385 6AE 1338	Metal Enclosures IP67 Switches mounted to gear tray with door interlock. 6AE 1033/300 x 300 x 210 6AE 1385/380 x 380 x 250 6AE 1338/600 x 380 x 350 Additional metal enclosures available

FOR FURTHER INFORMATION ON LARGER ENCLOSURES
PLEASE CALL YOUR NEAREST BRANCH



NEW from Kraus and Naimer (Australia)

Motor isolators 3, 4 and 6 pole (c/w aux contacts)
supplied in glass reinforced plastic IP66 enclosures.



Why use the GRP type of enclosure

1. Is highly tolerant of the most aggressive of environments. Can be installed in marine, chemical and direct sunlight areas.
Has high resistance to ultraviolet light.
2. GRP enclosures are resistant to high impacts.
3. GRP is non conductive, inert and non sparking.
4. Easy to drill or punch entries for installing electrical operators e.g. pushbutton, pilot lights, etc.
5. Low Maintenance.

Available in various sizes, either screw lid or hinged.

Options include: No entries, punched entries, IP66 metal glands, EMC glands + RFI kit.

Sydney

Phone:
1800 567 948

Email: sales-au@krausnaimer.com

Melbourne

Phone:
1800 567 948

Email: sales-au@krausnaimer.com

Brisbane

Phone:
1800 567 948

Email: sales-au@krausnaimer.com

Adelaide

Phone:
+61 8 8371 1443

Email: salessa@krausnaimer.com



Kraus & Naimer

BLUE LINE switchgear

since 1907

NEW

IP66 Stainless Steel Enclosed Motor Isolators.

The new IP66 Stainless Steel Enclosed Motor Isolators.

The new range of enclosures added to the Kraus & Naimer 6S Series of Stainless Steel Enclosures provide rigorous protection for vital switchgear and can replace popular plastic versions currently installed.

These units are ideally suited for the use in the Dairy, Beverage, Meat and Poultry Processing areas.

They are also suitable for use in the Marine, Waste Water Treatment, Mining, Material Handling and Conveyor Systems.

The 6S Series Enclosures are Australian Manufactured and Features:

- IP66 Rating,
- Marine Grade 316 Stainless Steel, 1.6mm Thickness,
- Removable Mounting Feet,
- Bottom Threaded Entries,
- 4 Screw Cover Fixing,



7.5kW = KG20A K302* AUV0378*6SSFI
11kW = KG32A K302* AUV0378*6SSFI

22kW = KG64B K302* AUV1065*6SSFI

SYDNEY	VICTORIA	QUEENSLAND	SOUTH AUSTRALIA
379 Liverpool Road Ashfield, NSW 2131 Telephone: 1800 567 948	Tech Sales - North & West 0418 334 320 - South & East 0407 060 043 Telephone: 1800 567 948	Unit 7/35 Hugo Place Mansfield, QLD 4122 Telephone: 1800 567 948	Unit 9/780-802 South Road Glandore, SA 5037 Telephone: (08) 8371 1443

New Product

Maintenance Switches For EMC - Frequency Regulated Motor

According to IEC 60204 and VDE 0113



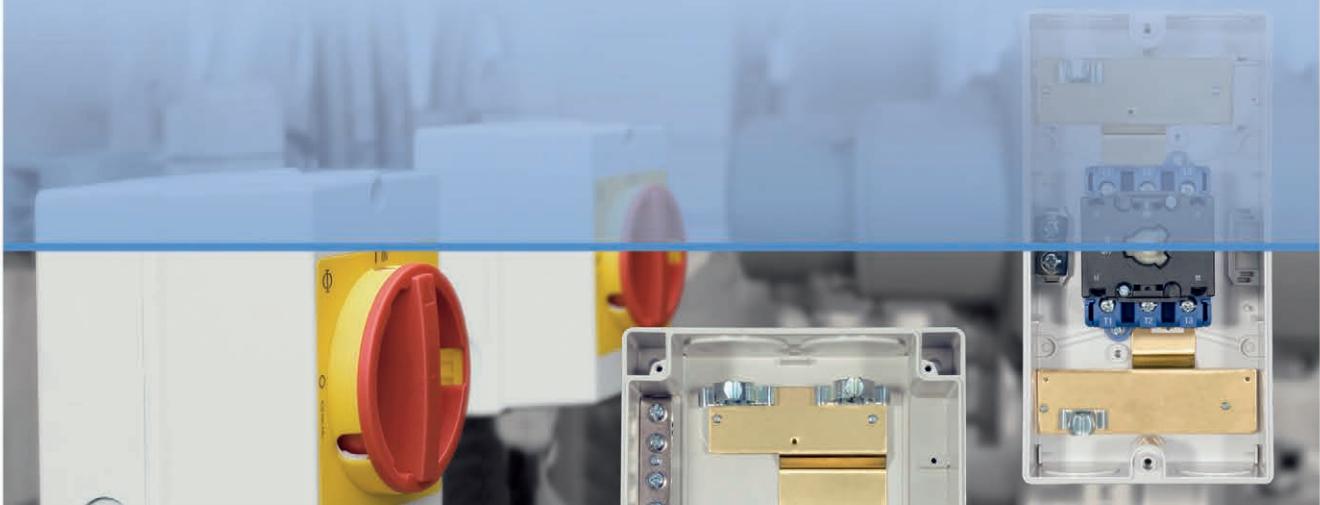
Kraus & Naimer

BLUE LINE switchgear

since 1907

Maintenance Switches for

EMC-compliant connection



DOWNLOAD NOW FROM
www.krausnaimer.com.au

New Product

G20 (S) - DC Switch With Knife Contacts

Kraus and Naimer have developed and designed a new DC Switch; the G20(S). The 'Knife contacts' have been designed in a new way resulting in a switching capacity of 20 Amps at 690V DC (DC-22A) and high short circuit withstand capability.

Finger-proof terminals according to EN 50274 and protection degree IP20 offer maximum safety. With a standard latching mechanism, the G20 complies with all regulations required for main switches according to IEC/EN 60204.

In addition the G20 is also ideal for AC applications with high short circuit fault levels, as well as electronic circuitry with low current and voltages.

- Self-cleaning and vibration resistant knife contacts
- Compact design
- High DC switching capacity
- Highest contact reliability (better than any H-bridge contact system)
- High short circuit withstand capability
- Finger-proof terminals (IP20) even if jumper leads are used
- Terminal extensions (accessory item) for ring type cable lugs (max. width 6mm) and quick connect lugs available
- Heat resistant contact system according to standard EN 12101-3

G20 - with normal latching (in preparation)

G20S - with snap action latching



Utilisation Category	No. of Series Contacts G20S						Rated Operational Current Ie/A
	Total Voltage in Volts						
	1	2	3	4	5	6	
DC-21A	250	500	750	1000	-	-	20
	440	880	-	-	-	-	13
DC-22A	250	500	750	1000	-	-	20
	330	660	990	-	-	-	10
	440	880	-	-	-	-	5
DC-23A	48	96	144	192	240	144	20
	60	120	180	240	300	288	15
	110	220	330	440	550	360	12
	160	320	480	640	-	-	8
	250	500	750	1000	-	-	5
	330	660	990	-	-	-	3
	440	880	-	-	-	-	1

KF Switch Range 1 Pole per module (16-32A)

The innovative modular system is both simple and very safe while offering enormous flexibility.

The position of the various modules in relation to each other can be defined by the user.

Than assembled in the factory

Rotating contact movement (instead of the classical vertical lifting) allows

- Big contact gaps
- High mechanical life expectancy
- Very precise movement sequence
- Self cleaning contacts
- Forced opening and closing of contacts
- Compact (very shallow design)
- Up to 1000V insulation voltage according to IEC possible
- Lateral drive possible (latching module not in the centre but on left or right hand side)
- Coupling profile determines pre-closing function of switched 4th pole
- Visible contacts (windows) available on request
- Design allows a big variation of terminal markings



Telephone 1800 567 948 for further technical information

Control & Signalling Units 22mm - Assembled Units

Item	Code No.	Item	Code No.
Push Button IP67/IP69K	1 Normally Open AC - 15 240v 6A  Green Red Yellow Blue White	Push Button IP67/IP69K  Green Red Yellow Blue White	1 Normally Closed AC - 15 240v 6A PSN*NZ0018 PSN-WD0002 PSN*NZ0019 PSN*NZ0009 PSN*NZ0020
Pilot Light IP67/IP69K	c/w 24V LED  Green Red Yellow Blue White	Pilot Light IP67/IP69K  Green Red Yellow Blue White	c/w 240V LED PSN-WD0005 PSN-WD0006 PSN*NZ0004 PSN*NZ0012 PSN*NZ0013
Double - Push Button IP67/IP69K	c/w 240V LED PSN/DDL/GR/X1-XO-K11 c/w 24V LED PSN*AUN0144	Emergency Stop Non-Illuminated IP67/IP69K 	*Reset by twisting 1 Normally Closed PSN*NZ0006 (enclosure available on request)

For further information refer to Catalogue 302

*NOTE ALSO AVAILABLE AS RESET BY PULLING OR
KEY OPERATION

Palm Push Buttons AC-15 230v 6A, IP66

Foot & Palm Switch Red & Yellow Reset By Pulling			Foot & Palm Switch Spring Return Black & White Enclosed with Red Operator		
1 x N/C	PFT/R-V-KC01-IY		N/O x N/C	PFT/R-KC11-I	

Potentiometer Units Heavy Duty & Standard 22mm Mounting

Heavy Duty With K&N Switch Front IP65 Reinforced Stop. Optional Keyed or Stepping 48mm Square Front Engraved With Swoop			Standard IP66 3 Screw Terminals P max = 0.5 watt		
1k	CA10NZQ172*02FT2		1.0k Ohm	PSN/R1k	
2.2	CA10NZU606*01FT2		4.7k Ohm	PSN/R4K7	
4.7k	CA10NZU607*01FT2		10k Ohm	PSN/R10K	
10k	CA10NZV049*02FT2				
64mm Square Front Engraved With Swoop			Heavy Duty Pot Units. Developed by Kraus & Naimer for use in industrial applications. The 270° single turn pot drive features a HEAVY DUTY drive, large operator handle and sealing to IP65. With easy mount 22mm single hole mounting the drive has smooth stepless operation and comes complete with a header label. Options include keys and additional contacts		
1k	CA10NZQ172*02FH3				
2.2k	CA10NZU606*01FH3				
4.7k	CA10NZQ607*01FH3				
10k	CA10NZQ049*02FH3				

Control & Signalling Units 22mm - Loose Components

Push Buttons AC-15 230v 6A, IP67/IP69K				
Push Buttons Front Element Flush Illuminated	Green PSN/DL/G Red PSN/DL/R		Push Buttons Front Element Flush Illuminated Green PSN/DLH/G Red PSN/DLH/R	
Push Buttons AC-15 230v 6A, IP67/IP69K				
Push Buttons Front Element Flush Non Illuminated	Green PSN/D/G Red PSN/D/R		Push Buttons Front Element Flush Non Illuminated Green PSN/DH/G Red PSN/DH/R	
Rotary Switches AC-15 230v 6A, IP66				
Rotary Switch Front Element Latching Non Illuminated (changeable to spring return)	2 Position PSN/WRK 2 Position PSN/WKV 3 Position PSN/WRK3		Rotary Switch Front Element Latching Non Illuminated (changeable to spring return) 2 Position PSN/WRLK/*K 2 Position PSN/WKLK3/* *Specify colour - G,R,Y,B,O Colour Green -G Red - R Yellow - Y Blue - B Opaque - O	
Double Push Buttons AC-15 230v 6A, IP66 Colour Cap Opaque				
Double Push Button Non Illuminated	Red/Green PSN/DDL/GR Red/Green PSN/DDL/GR/X1-X0 Red/Green STOP START PSN/DDL/GR/GB1-GB0		Double Push Button Non Illuminated Black/Black Arrow/Arrow PSN/DDL/S/X7-X7 Black/White PSN/DDL/WS	
Pilot Lights IP67/69K				
Flush	Green PSN/L/G Red PSN/L/R Yellow PSN/L/Y Blue PSN/L/B Opaque PSN/L/W		Extended (conical) Green PSN/LH/G Red PSN/LH/R Yellow PSN/LH/Y Blue PSN/LH/B Opaque PSN/LH/W	
Push Buttons Pilot Lights Accessories				
Contact Blocks Front Mounting			Contact Blocks Base Mounting N/O PSN/KC10 N/C PSN/KC01	
N/O	PSN/K10			
N/C	PSN/K01			
LED Pilot Assemblies 12-30v AC/DC			LED Pilot Assemblies 85-260v AC/DC Green PSN/LED230/G Red PSN/LED230/R White PSN/LED230/W DIN Rail Mounting PSN/IVS	
Green	PSN/LED/G			
Red	PSN/LED/R			
White	PSN/LED/W			
Coupling Plate			Protection Extras (not with legend carriers) Single PB's PSN/T/D Double PB's PSN/T/DD Shroud PSN/XGWK Bulb Extractor PSN/LG Blank Plug PSN/B	
PB's & Lights	PSN/A			
Legend Carrier W/O Legend			Emergency Stop Extras Shroud PSN/XGPV Plate 60mm PSN/XAK1 Plate 90mm PSN/XBK1	
PB's Lights	PSB/ST/X			
Double PB's	PSB/STDD/X			
Legend Insert	PSN/XST			
Engraving	F*AU			
Plastic Enclosure			LED Test Elements For Press To Test 12v to 30v PSN/XLED/T 85v to 260v PSN/XLED230/T Resistor Element 42v -60v PSN/XLED60	
Top Yellow, Bottom Black				
1 x 22.5mm	PSN/IY1			

Castell & Fortress Trapped Key Interlocking Systems

Products	Applications
Panel Door Interlock Multiple Panel Door Interlock	As part of an interlock system, the locks are used to control access to areas, e.g. switchgear panels or machines where hazards may be present, until a safe condition has been achieved.
Key Operated Rotary Switches	As part of an interlock system, the switch units are used for the direct control or isolation of control or power circuits controlling the plant or machinery.
Solenoid Controlled Interlock Unit	As above with a solenoid facility to integrate with other electronic control processes within the system.
Key Operated Rotary Switch for Use in Hazardous Areas	A key operated rotary switch for use as part of an interlocked system, in areas where explosive/flammable gases or dust particles may be present. BASEEFA certified (EExdIIC T6 Zones 1 & 2.)
H31 Basic Interlock and Keys	This form of basic interlock is normally used in the mechanical interlocking of electrical switchgear. Used in conjunction with other interlocking systems.
Door Interlock	Specifically designed for sliding doors.
Interlock Deadlock	Single or multi-keyed deadlocks, with either claw bolt or limit switch.
Mechanical Key Exchange Boxes	A range of mechanical key exchange units into which any sequence of trapped and freed keys can be incorporated.
Electronic Time Delay Rotation Sensing Unit Temperature Sensing	As part of an interlock system, the locks are used to control access to areas, e.g. switchgear panels or machines where hazards may be present, until a safe condition has been achieved.
Other Products	Fortress Amgard Modular Safety Systems. Castell Products. Smith Ellis – Valve Interlocks. HF Securite Products. Load banks

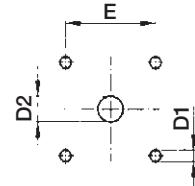
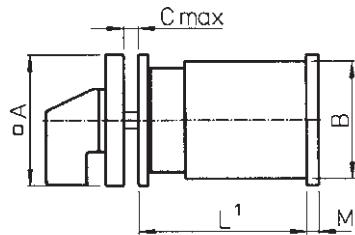


Handles

Type	Colour	Code	Size 00 0 1 2 3	Type	Colour	Code	Size 00 0 1 2 3	
I - Handle <i>"Standard Handle"</i>	Black	G251	√ √ √ √ -	R - Handle	Black	G001	- √ √ √ √	
	Red	G252	√ √ √ √ -		Red	G002	- √ √ √ √	
	Electro-grey	G257	√ √ √ √ -		Electro-grey	G007	- √ √ √ √	
F - Handle	Black	G221	√ √ √ √ -	B - Handle	Black	G521	- √ √ - -	
	Red	G222	√ √ √ √ -		Red	G522	- √ √ - -	
	Electro-grey	G227	√ √ √ √ -		Electro-grey	G257	- √ √ - -	
K - Handle	Black	G411	- - √ √ √		White (For UE mtg)	G258	- - √ - -	
	Red	G412	- - √ √ √					
	Electro-grey	G417	- - √ √ √					
L Handle	Black	G501	- - √ - -	P - Handle	Black	G211	- √ √ √ √	
	Red	G502	- - √ - -		Red	G212	- √ √ √ √	
	Electro-grey	G507	- - √ - -		Electro-grey	G217	- √ √ √ √	
Handwheel	Black		- - - - √	S0	S1 ~ S3			
				S Handle	Black	G301	- √ √ - -	
					Red	G302	- √ √ - -	
					Electro-grey	G307	- √ √ - -	
				S0	S1			
				The Handles listed are for the Kraus & Naimer standard profile shafts, enquire for Handle code numbers suitable for square shafts.				

Dimensions mm

Rotary Cam Switches - Panel Mounting



E Panel Mounting
Size 0 - Size 3

	CG4	CAD's CA10	CA20	CA25	CA63 CA50 CA40	C26	C32	C42	C80	C200-4	C315
A	30	48	48	48	64	64	64	88	88	130	
B	28	43	45	46	45/58	60	66	84	88	126	
C	4	4	4	4	4	4	4	5,5	5,5	7	
D1	3,2	5	5	5	5	5	5	6	6	7	
D2	8	8	8	10	10	10	10	13	13	16	
E	-	36	36	36	48	48	48	68	68	104	
M	-	4,5	4,5	5,5	6,5	7,5	7,5	9,4	9,4	11,9	

Length L

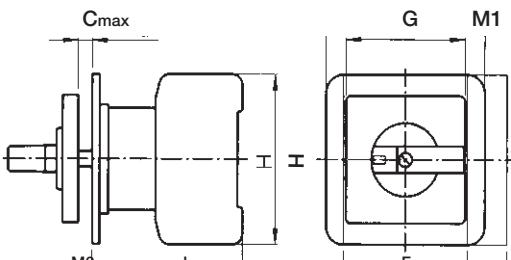
Stages	CG4	CAD's CA10	CA20	CA25	CA63 CA50 CA40	C26	C32	C42	C80	C200-4	C315
										C125	L-switches Size S3
1	38,5	31,7	35,9	37,2	41	45,8	49,8	61,5	67,5	78,6	
2	50	41,2	48,6	51,2	53,7	63,3	71,3	88	100	117,2	
3	62,5	50,7	61,3	65,2	66,4	80,8	92,8	114,5	132,5	155,8	
4	74,5	60,2	74	79,2	79,1	98,3	114,3	141	165	194,4	
5	86,5	69,7	86,7	93,2	91,8	115,8	135,8	167,5	197,5	233	
6	94,5	79,2	99,4	107,2	104,5	133,3	157,3	194	230	271,6	
7	110,5	88,7	112,1	121,2	117,2	150,8	178,8	220,5	262,5	310,2	
8	122,5	98,2	124,8	135,2	129,9	168,3	200,3	247	295	348,8	
9	-	107,7	137,5	149,2	142,6	185,8	221,8	273,5	327,5	387,4	
10	-	117,2	150,2	163,2	155,3	203,3	243,3	300	360	426	
11	-	126,7	162,9	177,2	168	220,8	264,8	326,5	392,5	464,6	
12	-	136,2	175,6	191,2		238,3	286,3	353	425	503,2	

Dimensions mm

KG Main Switches

Panel Mounting

3 and 4 Pole



	A	B	C	D1	D2	F	G	H	L	M1	M2	M3
KG10A	48	36	4	11	5	48	48	50	48.2			
KG20A, KG32A	48	36	4	10	5	48	42	54	53.8			
KG20B, KG32B	64	48	4	10	5	64	42	54	53.8	13.5	9	2
KG41B, KG64B	64	48	4	10	5	64	50	64	60.5	16	12.5	16
KG80, KG100, KG105	64	48	4	10	5	70	70	80	70.6	22	10	25
KG126, KG161	88	68	5.5	13	6	-	112	108	96	38	21	22
KG251, KG316	88	68	5.5	13	6	-	145	126	103	52.5	21	24.5 x 2

M1 = Extra Length 4th Pole / Neutral Contact / Earth Block

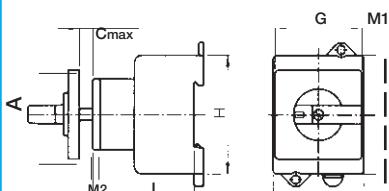
M2 = Extra Length Top Mounted Auxiliary Contacts

M3 = Extra Length Terminal Cover

Base Mounted

3 and 4 Pole

Note : 6 Pole Width = 3 Pole Width x 2



	A	B	C	D1	D2	G	H	L	M1	M2	M3
KG10	48	36	12	8	5	48	50	49.2			
KG20A, KG32A	48	36	12	8	5	42	54	50			
KG20B, KG32B	64	48	13.5	10	5	42	54	50	13.5	-	20
KG41B, KG64B	64	48	13.5	10	5	50	64	61	16	10	16
KG80, KG100, KG105	64	48	13.5	10	5	70	80	68	22	10	25
KG126, KG161	88	68	16	13	6	112	108	91	38	0	22
KG251, KG316	88	68	16	13	6	145	126	98	52.5	0	24.5 x 2

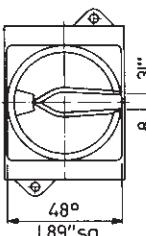
M1 = Extra Length 4th Pole / Neutral Contact / Earth Block

M2 = Extra Length Top Mounted Auxiliary Contacts

M3 = Extra Length Terminal Cover

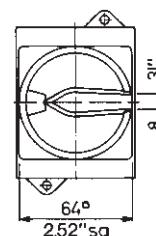
Padlock Device V840G

36 mm sq. Fixation
KG10, KG20, KG32



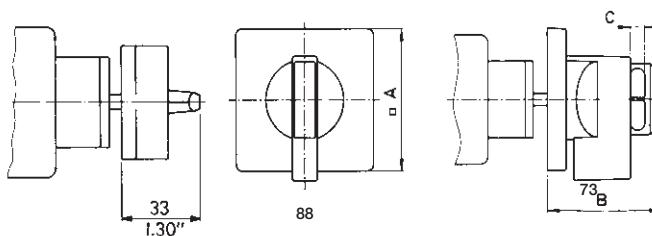
Padlock Device V840G

48 mm sq. Fixation
KG10B, KG20B, KG32B, KG41B, KG64B,
KG80, KG100, KG105



Padlock Device V845

68mm sq. Fixation
KG126, KG161, KG251, KG316



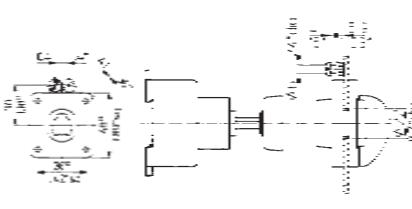
Door Interlock M280E 48mm sq.

36 mm sq. Fixation
KG10, KG20, KG32



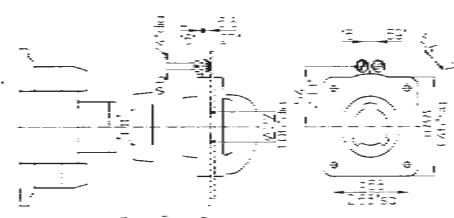
Door Interlock M280E 64mm sq.

48mm sq. Fixation
KG10, KG20, KG32, KG41, KG64, KG80, KG100, KG105



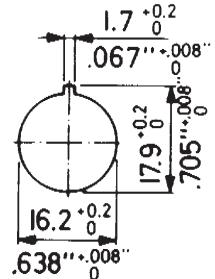
Door Interlock M280E 88mm sq.

68mm sq. Fixation
KG126, KG161, KG251, KG316



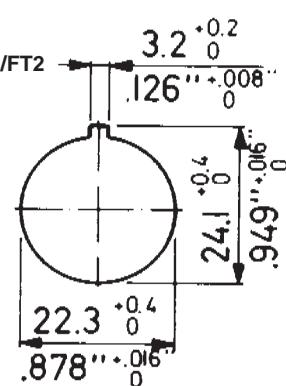
Single Hole Mounting FS1/FS2 (Size 00)

To accomodate
16.2 in 22.3 Hole
S00 T160 - 01



Single Hole Mounting FT1/FT2 (Size 0)

To accomodate
22.3 in 30.5 Hole
S0E T160 - 01



SWITCH ORDERING CHART

Mounting Requirements

- | | |
|---|---|
| <input type="checkbox"/> E Panel Mount. (5 hole mount) | <input type="checkbox"/> L100 Various shaft lengths (metal) |
| <input type="checkbox"/> VE Base mount suitable for door clutch etc. | <input type="checkbox"/> M004 Adjustable shaft (advise length). |
| <input type="checkbox"/> E - V Panel Mount.(vertical access to terminals | <input type="checkbox"/> PF Enclosure ABS IP56 |
| <input type="checkbox"/> E22 Panel mount. (3 hole, size 0) | <input type="checkbox"/> GK Enclosure aluminium IP54. |
| <input type="checkbox"/> ER Combined panel square base plates. | <input type="checkbox"/> M280E Door clutch (specify depth required). |
| <input type="checkbox"/> T146 K DIN rail mounting plate. (size 0 and size 1) | <input type="checkbox"/> 6 CL Enclosure 56 series. |
| <input type="checkbox"/> FT1 Single hole mtg. w/o esc. plate IP65. ($S_0 = 22.3\text{mm}$) | <input type="checkbox"/> 6 SS Enclosure stainless steel. |
| <input type="checkbox"/> FT2 Single hole mtg. wth square plate IP65. ($S_0 = 22.3\text{mm}$) | <input type="checkbox"/> KS/KL Enclosures IP65. |
| <input type="checkbox"/> EF Panel seal IP65. (mounts between switch and panel). | <input type="checkbox"/> 6S115 x 70 Wall plate stainless or Plastic |
| <input type="checkbox"/> KD/KN Heavy duty mounting plate and metal shaft. | <input type="checkbox"/> Other, nominate type of mounting required. |

Handle Operation

- | | |
|---|---|
| <input type="checkbox"/> Normal/standard handle (G251) or | <input type="checkbox"/> V840A/.Padlockable handle ($S_0 & S_1$). |
| <input type="checkbox"/> V750D Key operator size 00 ~ 0. | <input type="checkbox"/> V845 Padlock Handle. (c/w esc.plate) |
| <input type="checkbox"/> V755A or C Key operator (530 series) . | <input type="checkbox"/> V840G Padlock device. |
| <input type="checkbox"/> V750/A9 Key operator size 0 switch.(Lockwood) | <input type="checkbox"/> V850 Padlockable with handle device |
| <input type="checkbox"/> 6SOLW V750 Key operator (201 Lockwood etc.) | <input type="checkbox"/> V400 Push-button interlock device. |
| <input type="checkbox"/> V760 Seperate key and handle (programmable). | <input type="checkbox"/> Other specify |

Essential Data

1. Switch/circuit requirement... Amp Volts kW
2. Cable size or limiting dimensions
3. AC or DC (DC voltage required)..... Duty:- AC21/AC22/AC23/AC11 or other.
4. PLC/Electronic circuit/dry circuit or standard switch.

KRAUS & NAIMER “The Switchgear Innovators“

Ohm's Law

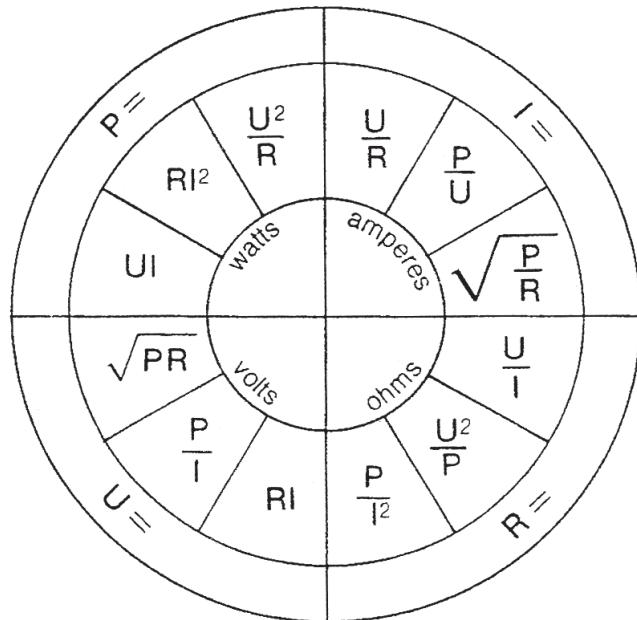
SYMBOLS

U = Voltage in volts

I = Current in amperes

R = Resistance on ohms

P = Power in watts



Useful Formulae

$$kW = kVA \times pF$$

$$kW = \frac{hp \times 746}{1000 \times Eff} \quad \frac{hp \times 746 \times 100}{1000 \times \%Eff}$$

$$kW = \frac{\text{Line amps} \times \text{Line volts} \times 1.732 \times pF}{1000}$$

$$kVA = \frac{kW}{pF}$$

$$kVA = \frac{hp \times 756}{1000 \times Eff \times pF}$$

$$kVA = \frac{\text{Line amps} \times \text{Line volts} \times 1.732}{1000}$$

$$\text{Line Amps} = \frac{kVA \times 1000}{\text{Line volts} \times 1.732}$$

$$\text{Line Amps} = \frac{kW \times 1000}{\text{Line volts} \times 1.732 \times pF}$$

$$\text{Line Amps} = \frac{hp \times 746}{\text{Line volts} \times 1.732 \times Eff \times pF}$$

$$\text{Horsepower} = \frac{kVA \times 1000 \times Eff}{746} \quad (hp)$$

$$hp = \frac{kVA \times 1000 \times Eff \times pF}{746}$$

$$hp = \frac{\text{Line amps} \times \text{Line volts} \times 1.732 \times Eff \times pF}{746}$$

1 Watt = 1 joule/second

1 hp = 746 Watts

1 hp = 746 joules/second

VOLT-DROP Single Phase

Service Voltage = 240V

$$\text{Max Permissible Vd} = \frac{240 \times 2.5}{100} \quad (2.5\% \text{ Service Voltage}) \\ = 6V$$

$$\text{Max Unit Vd} = \frac{\text{Max Vd} \times 1000}{1 \times \text{distance}} \quad (\text{Length of cable run})$$

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AC-23A					
Frequent switching of motors or other highly inductive loads (selection criteria for main switches).					
AC-22					
Isolation of 6 Pole star delta motor circuits					

IP Ratings

IP65 - where 6 means complete protection against accidental contact with live or internal moving parts. Protection against the ingress of dust (dust tight). Where 5 means water projected by nozzle against the equipment from any direction shall have no harmful effect.

IP66 - where 6 means complete protection against accidental contact with live or internal moving parts. Protection against the ingress of dust (dust tight). Where 6 means water projected by powerful jets against the enclosure from any direction shall have no harmful effect.

IP69K - where 6 means complete protection against accidental contact with live or internal moving parts. Protection against the ingress of dust (dust tight). Where 9K means where water directed against the enclosure under extremely high pressure from any direction must not have any harmful effect. Water pressure of 100 bar. Water temperature of 80 deg C.

The Range of Blue Line Switchgear

Technical Catalogues for the following products are available from our website. www.krausnaimer.com.au

Main Switches and Main Switches with Emergency Function 16 A-315 A

Maintenance Switches 20 A-315 A

500

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

CL SWitches 10 A-20 A

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.

100

L switches are designed for load and off-load applications. They are used to switch resistive or low inductive loads.

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 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 80 A-630 A

X switches can be applied for load, tap and gang duties. They incorporate 6 contacts in each switching stage. Their compact design provides a minimum length dimension for mounting purpose.

140

KG Switches 20 A-315 A and KH and KHR Switches 16 A-80 A

KC, KG, KH and KHR switches are excellent circuit interrupters. 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

KC switches offer spring cage terminals for greater termination security.

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 economical efficiency in a modular design.

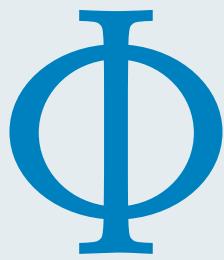
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Disconnectors for Photovoltaic

Maintence Switches for EMC - Compliant Connection

Frequency regulated motors.

We reserve the right to make technical and dimensional changes without prior notice. Any errors or omissions are not binding.



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