Kraus & Naimer

Catalog 150
10/2021

Switch and Optional Extras

KG type up to 315 A
KH and KHR type up to 80 A



Kraus & Naimer

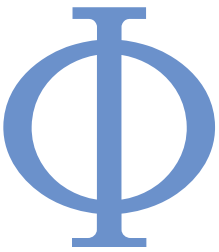
The development of the Blue Line rotary switch and motor starter product ranges is based on more than hundred years experience by Kraus & Naimer in the design and manufacture of electrical switchgear. Kraus & Naimer pioneered the introduction of the cam operated rotary switch and continues to be recognized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

BLUE LINE

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

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

The Kraus & Naimer Registered Trademark



WORLDWIDE SYMBOL FOR QUALITY SWITCHGEAR

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

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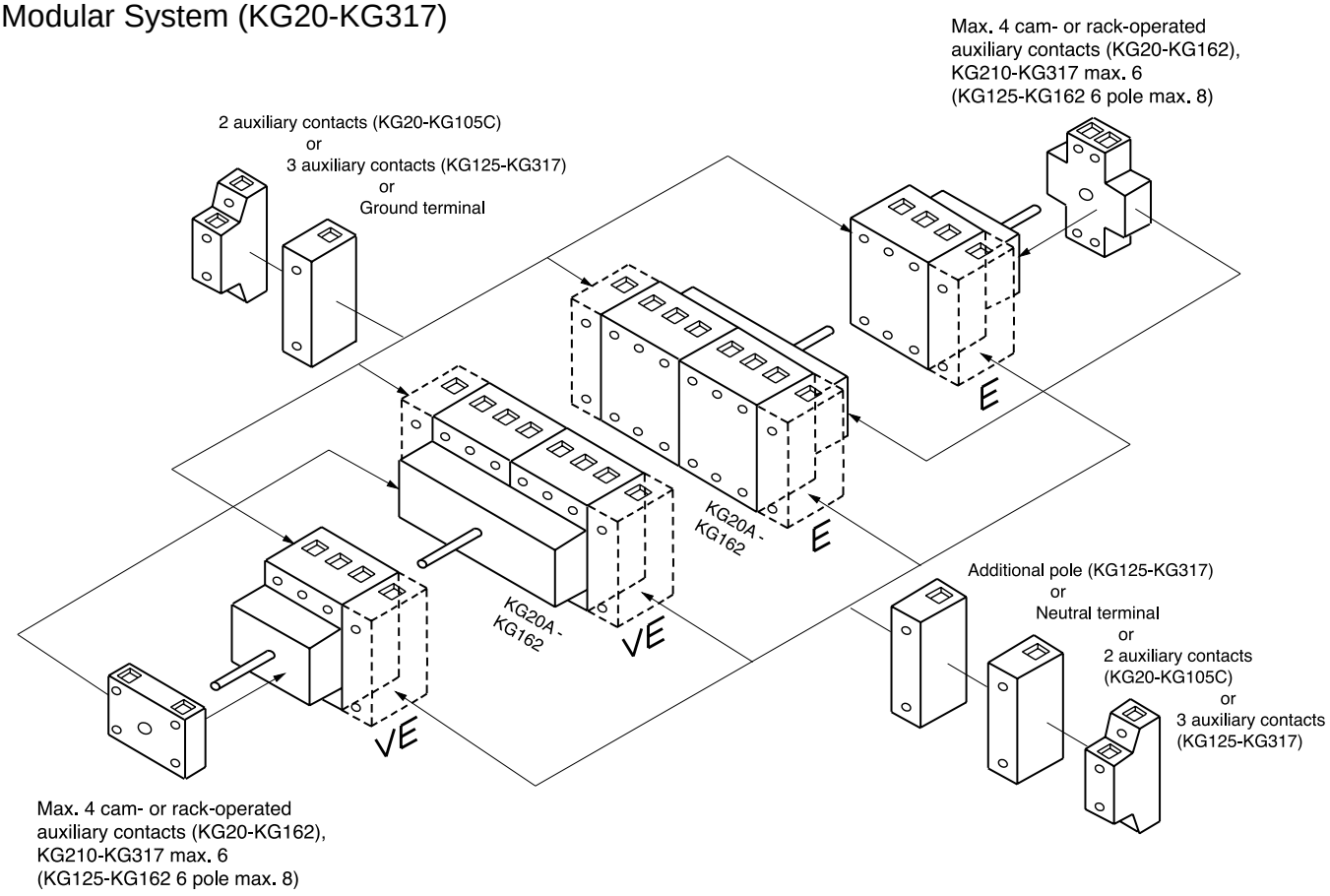
The KG10A through KG317 switch line offers excellent performance characteristics and exceed the requirements of IEC 60947-3 as well as the new VDE 0660 part 107. KG switches are principally used as motor and industrial panel disconnectors, double-throw transfer switches, safety switches, main disconnect switches and distribution system isolation switches. This durable switch line possesses high short-circuit withstand capabilities, with positive contact movement during making and breaking functions. KG switches exhibit excellent AC-3 and AC-23 making and breaking capabilities providing an additional safety advantage.

The safety level of the KG switch series in numerous areas surpasses those of many international standards organizations: Positive contact movement during making and breaking operations. Higher dimensioned air and creepage distances for 690 V or 1000 V. Dead front, finger-proof box terminals according to EN 50274, VDE 0660 part 514 and DGUV V3. Switch types KG210, KG250 and KG315 require an option protective cover.

This advanced switch-generation affords significant advantages during mounting and wiring. For ease of installation, switch terminals are on the same plane as the power conductors. The KG10A through KG105C base mounted switches feature a two hole mounting as well as a “quick mount“ designed for standard DIN rails according to EN 50022. KG125 through KG317 feature a four hole mounting.

The flexibility of the KG's modular system offers maximum versatility for the modifying of switches in the field. Modules can easily be added to switches which have already been installed in equipment often without having to remove existing wiring. This modular design also minimizes the need for high inventory levels. Other important accessories such as make before break auxiliary contacts, additional box and bolt terminals, shaft extensions, door clutches, terminal covers and padlock devices enhance the flexibility and versatility of this proven line of switches.

Modular System (KG20-KG317)



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Face plate Frame mm

48 x 48



KG10A

64 x 64



KG10B

30 x 30



KG20
KG32

48 x 48



KG20A
KG32A

64 x 64



KG20B
KG32B

48 x 48



KG41
KG64

64 x 64



KG41B
KG64B

64 x 64



KG80
KG100
KG105

88 x 88



KG80C
KG100C
KG105C

88 x 88



KG125, KG160
KG210, KG250, KG315
(with box terminals)

88 x 88



KG126, KG161
KG211, KG251, KG316
(with bolt terminals)

88 x 88



KG127, KG162
KG212, KG252, KG317
(bolt terminals on top,
box terminals at the bottom)

Typen	IEC 60947-3/VDE 0660 part 107 Rated Values			UL and Canada		
	Thermal Current	Utilization Category AC-23A	AC-3	Ampere-Rating	Standard Motor Load DOL-Rating	
	I_u/I_{th}	3 x 380 V-440 V		3 x 600 V	3 x 240 V	3 x 480 V
	A	**kW**		**A**	**HP**	**HP**
KG10A	20	5,5	3,7	20	2	3
KG10B	20	5,5	3,7	20	2	3
KG20	25	7,5	5,5	25	7,5	15
KG20A	25	7,5	5,5	25	7,5	15
KG20B	25	7,5	5,5	25	7,5	15
KG32	32	11	7,5	30	10	20
KG32A	32	11	7,5	30	10	20
KG32B	32	11	7,5	30	10	20
KG41	40	15	11	40	15	25
KG41B	40	15	11	40	15	25
KG64	63	22	18,5	60	15	30
KG64B	63	22	18,5	60	15	30
KG80	80	30	22	80[1]	25	50
KG80C	80	30	22	80[1]	25	50
KG100	100	37	30	100[1]	25	50
KG100C	100	37	30	100[1]	25	50
KG105	125	45	37	125	40	60
KG105C	125	45	37	125	40	60
KG125	125	45	37	150[1]	30	60
KG126	125	45	37	150[1]	30	60
KG127	125	45	37	150[1]	30	60
KG160	160	55	45	200[1]	40	60
KG161	160	55	45	200[1]	40	60
KG162	160	55	45	200[1]	40	60
KG210	200	75	55	200[1]	50	75
KG211	200	75	55	200[1]	50	75
KG212	200	75	55	200[1]	50	75
KG250	250	90	55	250[1]	60	75
KG251	250	90	55	250[1]	60	75
KG252	250	90	55	250[1]	60	75
KG315	315	110	75	300[1]	75	100
KG316	315	110	75	300[1]	75	100
KG317	315	110	75	300[1]	75	100

[1]Valid when connected with wire rated for 75 °C.

How to order

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

Three or four pieces of data (shown below) are required for ordering Blue Line Switch Disconnectors. Code numbers for ordering are shown in this catalog.

1. Type of Switch

The type of switch required may be easily selected by referring to the tables on pages 5 and 25 which show the thermal current and power rating of each switch. For further technical details, refer to pages 22/23 and 36/37.

2. Switch Function

The code numbers for the KG switches shown on pages 11-13 and on page 27 for the KH switches indicate the switch function, face plates and handles. Additional coding to modify the type and color of handle and face plate is explained below and on page 7.

3. Type of Mounting

Switch types and enclosures for the KG switches are shown on pages 8-10. The KH switches may be selected by referring to the table on page 26.

KG100	K302 M004	VE

4. Optional Extras

Pages 16-21 list optional extras and their coding for the KG switches. For the KH/KHR switches refer to pages 30-34. A table shows the different switch sizes in which the optional extra is available.

There are some optional extras which are available in a variety of programs. Additional ordering data may, therefore, be required.

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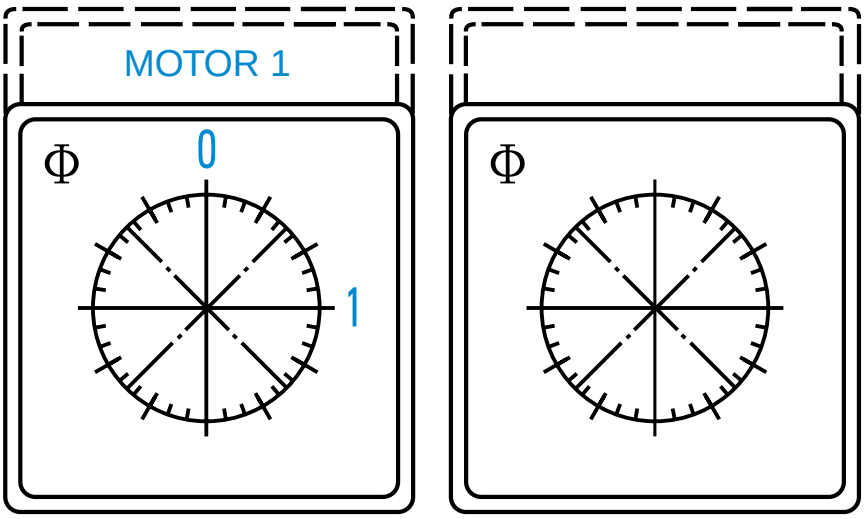
Handles, Face plates and Optional Extras

Various standards for the KG switches are listed in the table on pages 8-10 and for the KH/KHR switches on page 26.

When a handle, face plate or optional extra is required but not covered by the standard code number, the code number for the selected component should be entered separately. A complete range of standard face plates are illustrated on pages 14/15 and 28/29. Non standard or special face plate engravings are available at extra cost.

Ordering of Special Face plates

When ordering special escutcheon plates it is advisable to use our order form, as illustrated. **Example:** Customer's requirements are shown beside.hese two numbers with a digit number which represents the color combination required.



Order forms are available upon request.

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Mounting		Type	Code
	Front mounting		
	Two hole panel mounting, Protection IP 66/67	KG20 KG32	**E**
	Four hole panel mounting, Protection IP 66/67 Protection IP 66/67 Protection IP 66/67	KG10A KG41- KG100 KG160- KG315	**E**
	Single hole mounting 22 mm		
	Without face plate, Protection IP 66/67/69k	KG10A KG20A KG32A	**FT1**
	With square face plate, Protection IP 66/67/69k	KG10A KG20A KG32A	**FT2**
	Base mounting		
	Screw/Snap-on base mounting for track EN 50022, Protection IP 40	KG10A- KG317	**VE**
	Snap-on base mounting for track EN 50022, Protection IP 40	KG125- KG162	**VE1**
	Screw base mounting (KG20A-KG162) and Snap-on base mounting (KG20A-KG105) for track EN 50022. Face plate for 45 mm knock-out. Protection IP 40	KG20A KG32A KG41- KG64B KG80- KG105 KG125- KG162	**VE2**
	Snap-on base mounting for track EN 50022. Both the face plate for 45 mm standard knock-out and the handle are adjustable in height. Protection IP 40	KG10A	**VE21**

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Plastic Enclosure Protection IP 66	Type	Code
	The KL and CL enclosures are available in 3 sizes allowing for installation of 3, 4, 6 and 8 pole KG switches. The KL-series is made of strong durable plastic and offers high UV-resistance. All KL- and KS-enclosures are flame resistant in accordance with UL94V-0. The CL-series is especially designed for applications in an aggressive environment, such as oil, chemical substances and grease. Each enclosure has 2 knock-outs on top and bottom for metric thread according to EN 50262. Included in each enclosure is a ground and neutral terminal. One of these terminals must be eliminated if a 3 pole switch with lateral mounted auxiliary contacts or a 4 pole switch is installed. All enclosures can be supplied with a cover coupling for additional safety. Increased wiring space and mounting holes with slots are featured in this new line. These enclosures are also available for conduit entries for PG-thread.	KG20 KG32 KG20B KG32B KG41 KG64 KG41B KG64B KG80 KG100 KG105	
	Without cover interlock		**KL.0** **CL.0**
	With cover interlock (The enclosure can only be opened at 9 o'clock position)		**KL.1** **CL.1**
	With cover interlock (The enclosure can only be opened at 12 o'clock position)		**KL.2** **CL.2**
	KS and CS enclosures have a compact size which allows for the installation of a 3, 4 or 6 pole KG10 ON/OFF switch or a 3 pole KG20 ON/OFF switch. The design, options and mounting are the same as those of the KL and CL enclosures.	KG10 KG20	
	Without cover interlock		**KS50** **CS50**
	With cover interlock (The enclosure can only be opened at 9 o'clock position)		**KS51** **CS51**
	With cover interlock (The enclosure can only be opened at 12 o'clock position)		**KS52** **CS52**

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Plastic Enclosure with Ground Terminal Protection IP 65 resp. IP 54	Threads	Type	Code
Conduit entries with NPT-thread, Protection 65		KG20A KG32A KG41 KG64	
Without cover coupling	1/2"		**PFA4**
	3/4"		**PFA**
And for switches with cam-operated auxiliary contacts	1/2"		**PFD4**
	3/4"		**PFD**
With cover coupling	1/2"		**PFB4**
	3/4"		**PFB**
And for switches with cam-operated auxiliary contacts	1/2"		**PFE4**
	3/4"		**PFE**
Without cover coupling, combined with padlock device V840A	1/2"		**PFC4**
	3/4"		**PFC**
And for switches with cam-operated auxiliary contacts	1/2"		**PFF4**
	3/4"		**PFF**
Conduit entries with NPT-thread, Protection 54		KG20B KG32B KG41B KG64B KG80 KG100	
Without cover coupling	3/4"		**PFA5**
	1"		**PFA**
And for switches with cam-operated auxiliary contacts	3/4"		**PFD5**
	1"		**PFD**
With cover coupling	3/4"		**PFB5**
	1"		**PFB**
And for switches with cam-operated auxiliary contacts	3/4"		**PFE5**
	1"		**PFE**
Without cover coupling, combined with padlock device V840A	3/4"		**PFC5**
	1"		**PFC**
And for switches with cam-operated auxiliary contacts	3/4"		**PFF5**
	1"		**PFF**
These enclosures are also available with PG-, BSI- or metric ISO-thread on request.			



KG20A, KG32A, KG41, KG64
3 and 4 pole (ON/OFF Switches)
Protection IP 65



KG80, KG100
3 and 4 pole[1] (ON/OFF Switches)
KG20B, KG32B, KG41B, KG64B
6 and 8 pole (ON/OFF Switches)
3 and 4 pole (Double-throw Switches)
Protection IP 54
On top and at the bottom an additional conduit entry .63“

[1]For switches with cam-operated auxiliary contacts only 3 pole.

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Function	KG10A	KG10B	KG20 KG32	KG20A KG32A	KG20B KG32B	KG41 KG64	KG41B KG64B	KG80 KG100 KG105	KG80C KG100C KG105C	KG125-KG317	Escutch. Plate	Code
ON/OFF Switches 3 pole				**Types of Mounting**								
Without auxiliary contacts	E FT1 FT2 VE VE21 KS.[2]	E VE	E VE KL. KS.[1]	E FT1 FT2 VE VE2 PF..	E VE	E VE VE2 KL. PF..	E VE	E VE VE2 KL. PF..[4]	E VE	E VE VE1[3] VE2[3]		**K300**
With cam/rack-operated auxiliary contact 1 NO	E FT1 FT2 VE VE21 KS.[2]	E VE	E VE KL.	E FT1 FT2 VE VE2 PF..	E VE	VE VE2 KL. PF..	E VE	E VE VE2 KL. PF..[4]	E VE	E VE VE1[3]		**K301**
With cam/rack-operated auxiliary contacts 1 NO and 1 NC	E FT1 FT2 VE VE21 KS.[2]	E VE	E VE KL.	E FT1 FT2 VE VE2 PF..	E VE	VE VE2 KL. PF..	E VE	E VE VE2 KL. PF..[4]	E VE	E VE VE1[3]		**K302**
With cam/rack-operated auxiliary contacts 2 NO			E VE KL.	E FT1 FT2 VE VE2 PF..	E VE	VE VE2 KL. PF..	E VE	E VE VE2 KL. PF..[4]	E VE	E VE VE1[3]		**K312**
With lateral mounted auxiliary contacts 1 NO and 1 NC			E VE KL.	E FT1 FT2 VE VE2 PF..	E VE	E VE VE2 KL. PF..	E VE	E VE VE2 KL. PF..[4]	E VE			**K304**
With GRD-terminal			E VE	E FT1 FT2 VE VE2	E VE	E VE VE2	E VE	E VE VE2	E VE	E VE VE1[3] VE2[3]		**K305**
With GRD- and N-terminal			E VE	E FT1 FT2 VE VE2	E VE	E VE VE2	E VE	E VE VE2	E VE	E VE VE1[3] VE2[3]		**K307**

[1]Only for switch type KG20. [2]When using KS. the switch type changes to KG10. [3]Only for switch types KG125-KG162.
[4]Only for switch types KG80 and KG100.

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Function	KG10A	KG10B	KG20 KG32	KG20A KG32A	KG20B KG32B	KG41 KG64	KG41B KG64B	KG80 KG100 KG105	KG80C KG100C KG105C	KG125- KG317	Escutch. Plate	Code
ON/OFF Switches 4 pole			**Types of Mounting**									
Without auxiliary contacts	E FT1 FT2 VE VE21 KS.[1]	E VE	E VE KL.	E FT1 FT2 VE VE2 PF..	E VE	E VE VE2 KL. PF..	E VE	E VE VE2 KL. PF..[3]	E VE	E VE VE1[2] VE2[2]		**K400**
With cam-operated auxiliary contact 1 NO			E VE KL.	E FT1 FT2 VE VE2 PF..	E VE	VE VE2 KL. PF..	E VE	E VE VE2 KL.	E VE	E VE VE1[2]		**K401**
With cam-operated auxiliary contacts 1 NO and 1 NC	E FT1 FT2 VE VE21 KS.[1]	E VE	E VE KL.	E FT1 FT2 VE VE2 PF..	E VE	VE VE2 KL. PF..	E VE	E VE VE2 KL.	E VE	E VE VE1[2]		**K402**
With lateral mounted auxiliary contacts 1 NO and 1 NC			E VE	E FT1 FT2 VE VE2 PF..	E VE	E VE VE2	E VE	E VE VE2 PF..[3]	E VE			**K404**
ON/OFF Switches 6 pole												
Without auxiliary contacts	E FT1 FT2 VE VE21 KS.[1]	E VE		E VE VE2	E VE KL. PF..		E VE VE2 KL. PF..	E VE VE2	E VE	E[2] VE[2] VE1[2]		**K600**
With cam-operated auxiliary contact 1 NO				E VE VE2	E VE KL. PF..		E VE VE2 KL. PF..	E VE VE2	E VE	E[2] VE[2] VE1[2]		**K601**
With cam-operated auxiliary contacts 1 NO and 1 NC	E FT1 FT2 VE VE21 KS.[1]	E VE		E VE VE2	E VE KL. PF..		E VE VE2 KL. PF..	E VE VE2	E VE	E[2] VE[2] VE1[2]		**K602**

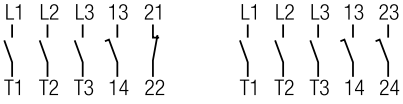
[1]When using KS. the switch type changes to KG10. [2]Only for switch types KG125-KG162. [3]Only for switch types KG80 and KG100.

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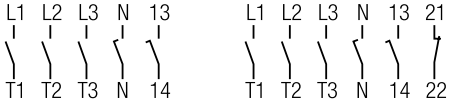
Function	KG10A	KG10B	KG20A KG32A	KG20B KG32B	KG41B KG64B	KG80 KG100 KG105	KG80C KG100C KG105C	KG125- KG162	Escutch. Plate	Code
ON/OFF Switches 8 pole			**Types of Mounting**							
Without auxiliary contacts			E VE VE2	E VE KL. PF..	E VE VE2 KL. PF..	E VE VE2	E VE	E VE VE1		**K800**
Double-throw Switches 3 pole										
Without auxiliary contacts			E VE VE2	E VE KL. PF..	E VE VE2 KL. PF..	E VE VE2	E VE	E VE VE1		**K900**
Double-throw Switches 4 pole										
Without auxiliary contacts			E VE VE2	E VE KL. PF..	E VE VE2 KL. PF..	E VE VE2	E VE	E VE VE1		**K950**

Connection Diagrams

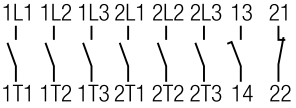
ON/OFF Switches 3 pole (with cam-operated auxiliary contacts)



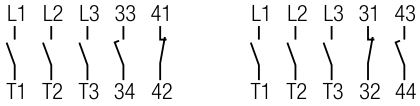
ON/OFF Switches 4 pole (with cam-operated auxiliary contacts)



ON/OFF Switches 6 pole (with cam-operated auxiliary contacts)

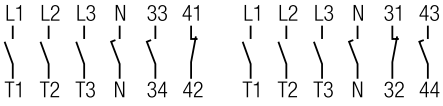


With lateral mounted auxiliary contacts



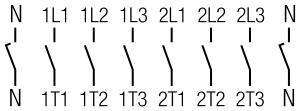
Mounting E, FT1, FT2 VE, VE2, KL., PF..

With lateral mounted auxiliary contacts

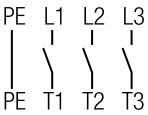


Mounting E, FT1, FT2 VE, VE2

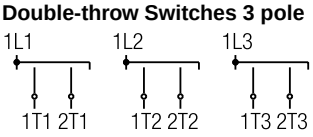
ON/OFF Switches 8 pole



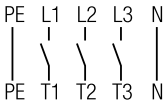
With GRD-terminal



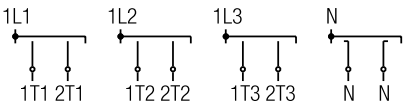
Double-throw Switches 3 pole



With GRD- and N-terminal



Double-throw Switches 4 pole



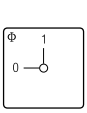
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Square and rectangular face plates are available for each size of switch. The face plate consists of a frame and a faceplate having the switch position which is than embossed with hot-foil backing. The face plate frame is an essential part of the switch and serves as a bearing surface for the handle. If the switch is to be mounted without an face plate we would recommend the handle bearing plate T100-04, which is available for switch types KG10B, KG20B, KG32B, KG41B, KG80, KG100, KG105, KG80C, KG100C, KG105C and KG125-KG317. Face plates with special lettering are also available upon request.





Standard Face plates



F056



F063



F068



F134



F201



F252



F346



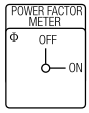
F456



F058



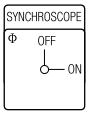
F065



F178



F208



F253



F360



F378



F458



F057



F064



F437



F990


F991

[1]Not available for switch types KG20 and KG32.

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Type	Color	Code	KG20 KG32	KG10A- KG64	KG10B- KG105	KG80C- KG105C	KG125- KG162	KG210- KG317
I-Handle 	black red	G251 G252	● ●	● ●	● ●	● ●	● ●	— —
B-Handle 	black red	G521 G522	— —	● ●	● ●	— —	— —	— —
R-Handle 	black red	G001 G002	— —	● ●	● ●	● ●	● ●	— —
F-Handle 	black red	G221 G222	● ●	● ●	● ●	● ●	● ●	— —
L-Handle 	black red	G501 G502	— —	— —	● ●	— —	— —	— —
P-Handle   KG10A-KG64 KG10B-KG317	black red	G211 G212	— —	● ●	● ●	● ●	● ●	● ●
K-Handle 	black red	G411 G412	— —	— —	● ●	● ●	● ●	● ●

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Protective Covers, Auxiliary Contacts		Type	Code
Protective Covers			
	For 3 resp. 4 main contacts	KG10A KG10B	**M160/A12 K2**
	For 3 main contacts with box terminal	KG20- KG315	**M160/3.**
	with bolt terminal	KG126 KG161	**M160/33**
		KG211 KG251 KG316	**M160/31**
	For 4 main contacts with box terminal	KG20- KG315	**M160/4.**
	with bolt terminal	KG126 KG161	**M160/43**
		KG211 KG251 KG316	**M160/41**
Cam- and rack-operated Auxiliary Contacts (mounting only at factory)			
	Cam-operated auxiliary contacts Up to 4 cam-operated auxiliary contacts can be added to all switches.	KG20- KG105C	**M510A**
	Select between a contact system with a rigid contact bridge for excellent AC-15 making and breaking capabilities or a H-bridge design with "cross-wire" contacts for low voltages and currents (mounting E from KG41 and mounting VE from KG80). The contact systems with gold contacts or gold-plated contacts allow for use in aggressive environments also. Special programs are also available upon request.		
	Rack-operated auxiliary contacts Switch types KG125-KG162 can be supplied with up to 4 auxiliary contacts, KG210-KG317 with up to 6 auxiliary contacts.	KG125- KG317	**M510B**
Ordering data:	Quantity and operation of the auxiliary contacts and type of the contact system.		
Lateral mounted Auxiliary Contacts			
	Lateral mounted auxiliary contacts with 1 NO and 1 NC.	KG20- KG105C	
	Terminal numbers Attachment Standard contacts (nonoverlapping) left / right		
	For mounting E, FT1 and FT2 (33-34, 41-42) (53-54, 61-62)		**H010/A11-E**
	For mounting VE, VE2, KL. and PF.. (31-32, 43-44) (51-52, 63-64)		**H010/A11-VE**
	Overlapping contacts		
	For mounting E, FT1 and FT2 (33-34, 41-42) (53-54, 61-62)		**H010/B11-E**
	For mounting VE, VE2, KL. and PF.. (31-32, 43-44) (51-52, 63-64)		**H010/B11-VE**
	Lateral mounted auxiliary contacts with 2 NO and 1 NC.	KG125- KG317	
	Terminal numbers Attachment Standard contacts (nonoverlapping) left / right		
	For mounting E (013-014, 023-024, 031-032) (043-044, 053-054, 061-062)		**H010/A21-E**
	For mounting VE (011-012, 023-024, 033-034) (041-042, 053-054, 063-064)		**H010/A21-VE**
	Overlapping of 1 NO and 1 NC		
	For mounting E (013-014, 023-024, 031-032) (043-044, 053-054, 061-062)		**H010/B21-E**
	For mounting VE (011-012, 023-024, 033-034) (041-042, 053-054, 063-064)		**H010/B21-VE**

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Ground and Neutral Terminals	Type	Code	Additional Main Contacts	Type	Code
Ground terminal	KG20-KG32B	**K0 H052/A**		KG125 KG126 KG127	**K3 H050/P**[1] **K3 H050/Q**[1] **K3 H050/R**[1]
	KG41-KG64B	**K1 H052/B**		KG160 KG161 KG162	**K3 H050/S**[1] **K3 H050/T**[1] **K3 H050/U**[1]
	KG80-KG105C	**K2 H052/C**		KG210 KG250	**K3 H050/G**[1]
	KG125 KG160	**K3 H052/H**[1]		KG211 KG251	**K3 H050/H**[1]
	KG126 KG161	**K3 H052/J**[1]		KG212 KG252	**K3 H050/J**[1]
	KG127 KG162	**K3 H052/K**[1]		KG315 KG316 KG317	**K3 H050/K**[1] **K3 H050/L**[1] **K3 H050/M**[1]
	KG210 KG250 KG315	**K3 H052/D**[1]	**Terminals for Control Circuit**		
	KG211 KG251	**K3 H052/E**[1]			
	KG212 KG252	**K3 H052/F**[1]			
	KG316 KG317	**K3 H052/L**[1] **K3 H052/M**[1]	Max. Permissible Wire Gage Single-core or stranded wire — Flexible wire		
Neutral terminal	KG20-KG32B	**K0 H053/A**			
	KG41-KG64B	**K1 H053/B**	2,5 mm² AWG12 — 2,5 mm² AWG14	KG41-KG64B	**K1B D220 KS**
	KG80-KG100C	**K2 H053/C**	2,5 mm² AWG12 — 2,5 mm² AWG14	KG80-KG105C	**K2B D520 KSA**
	KG125 KG160	**K3 H053/H**[1]	4 mm² AWG10 — 4 mm² AWG12	KG125-KG162	**K3A D720 KS**
	KG126 KG161	**K3 H053/J**[1]	4 mm² AWG10 — 4 mm² AWG12	KG210-KG317	**K3B D520 KS**
	KG127 KG162	**K3 H053/K**[1]	**Wiring Aid**		
	KG210 KG250 KG315	**K3 H053/D**[1]		KG126 KG127 KG161 KG162	**K3A D720 09**
	KG211 KG251	**K3 H053/E**[1]		KG211 KG212 KG251 KG252 KG316 KG317	**K3B D520 09**
	KG212 KG252	**K3 H053/F**[1]			
	KG316 KG317	**K3 H053/L**[1] **K3 H053/M**[1]	Ordering data: Switch mounting.		

[1]Mounting only at factory.

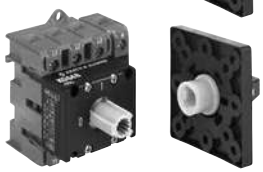
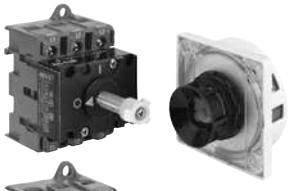
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Shaft Extensions, Simplified Door Clutch	Type	Code

Shaft Extensions

	With asymmetric profile		
	Shaft length not adjustable	KG10B KG20B, KG32B KG41B-KG105C	**L100**
	Shaft with adjustable length with set screw with shear ring	KG10A KG20A, KG32A KG41-KG317	**M004D** **M004**
	With square profile		
	Shaft length not adjustable	KG10B KG20B, KG32B KG41B-KG105C	**L100A**
	Shaft with adjustable length with set screw with clamping bushing	KG41B-KG317 KG125-KG317	**M004E** **M004A**
Ordering data:	Free shaft length or dimension from mounting surface to cover.		

Simplified Door Clutch

	The simplified door clutches are utilized primarily when the switch is mounted to the bottom of the enclosure and the handle and face plate are mounted on the cover.		
	With shaft extension Front protection IP 40 Front protection IP 65	KG10A KG20A, KG32A KG41B-KG105	**M290/A3** **M290/A3.EF**[1]
	With profile extension parts Front protection IP 65	KG41B-KG105	**M290/A1.EF**
	With padlock device, single hole mounting 22 mm, protection IP 66. An additional aluminum shaft extension is required.		
	Loc bar is accessible from 3 o´clock which achieve a compact design.	KG10B KG20B, KG32B KG41B-KG105, KG125-KG317[2]	**V840E**
	The cover disc is available in black, yellow and electro-gray. The handle may be supplied in black, red and electro-gray.	KG10B KG20B, KG32B KG41B-KG105	**V840G** **V840F**
	Operation of the locking bar from the front. Available in black, red and electro-gray.	KG10A KG20A, KG32A KG41, KG64 KG10B KG20B, KG32B KG41B-KG105	**V845**
	Centering device for simplified door clutches with single hole mounting and shaft extension Misalignment between the shaft and mounting are compensated in all 4 directions.	KG10B KG20B, KG32B KG41B-KG105	**M600**
Ordering data:	Free shaft length or dimension from face of the switch to the cover and color selection.		

[1]Available for switch types KG10A, KG20A and KG32A. [2]Only for ON/OFF switches 3 and 4 pole.

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Door Clutches	Type	Code
 The M280 door clutch has an adjustable shaft and can be supplied with an interlock device.	KG10A KG20A KG32A	
With protected profile shaft fixation with set screw Front protection IP 40 Front protection IP 66/67 shaft fixation with shear ring Front protection IP 40 Front protection IP 66/67	KG41B KG64B KG80 KG100 KG105 KG125- KG317	**M280E** **M280E/.EF** **M280D** **M280D/.EF**
 Without protected profile Front protection IP 40 Front protection IP 65	KG41 KG64	**M280B/.** **M280B/.EF**
 Handle lockable with padlocks Protection IP 66 The face plate is available in black, yellow and alu. The handle may be supplied in black and red. The M700 is a padlock door clutch and a mechanical interlocking safety device. Using the device the electrical panel may be opened only when the switch is in the OFF position and no padlock is fitted. **Note: Only in the ON position can knowledgeable personnel using a simple tool to defeat the interlock.** The M700`s flexibility allows for successful installation with as much as + or – 5 mm of misalignment between the shaft and door.	KG10B KG20B KG32B KG41B KG64B KG80 KG100 KG105 KG125- KG317	**M700/.**
 Standard handle and standard face plate Protection IP 66 The M700`s flexibility allows for successful installation with as much as + or – 5 mm of misalignment between the shaft and door.		**M701**
 Unlock insert for the M700 to open the door in ON-position. (After the locking has been made inactive, it is necessary to take effective precautions against an opening of the door by unauthorized persons.)		**S1D M700 29**
 The M800 door clutch utilizes a simple and robust design and features a compact size. It has an interlock in the ON-position while a padlock can be fitted in the OFF-position. The door clutch may be opened only if the switch is in the OFF-position. In special cases, however, authorized people have a requirement to open the door, even if the switch is in the ON-position. Further characteristics are the single hole mounting with IP 66/67 protection degree, as well as the Accepted Misalignment up to ± 3 mm horizontally and ± 5 mm vertically. Maximum 3 padlocks with a minimum shackle diameter from 5 up to 8 mm are possible.		**M810/.** **M800/.**
Ordering data: Dimension from face of the switch to the cover or dimension from mounting surface to cover, the interlock program and the color selection.		

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Padlock Devices		Type	Code
	The padlock device is an integral part of the switch.		
	For 2 padlocks Operation of the locking bar from the bottom. Available in black, red and electro-gray.	KG10A KG20A, KG32A KG10B KG20B, KG32B KG41-KG105 KG125-KG162	**V840A**
	For 4 padlocks Operation of the locking bar from the front. Available in black, red and electro-gray.	KG10A KG20A, KG32A KG41, KG64 KG10B KG20B, KG32B KG41B, KG64B KG80-KG105 KG80C-KG105C KG125-KG317	**V845**
	For mounting VE2 Operation of the locking bar from the front.	KG10A KG20A, KG32A KG41, KG64 KG80-KG105	**V840B**
	For distribution box with 70 mm depth.	KG20A, KG32A KG41, KG64	**V840H/..E**
	Padlock device with integrated F- or B-handle. The cover disc is available in black, yellow and electro-gray. The handle may be supplied in black, red and electro-gray.		
	For 2 padlocks with F-handle	KG10A KG20A, KG32A KG41, KG64	**V840D**
	For 3 padlocks with F-handle	KG80C-KG105C KG125-KG162	
	For 3 padlocks with F-handle with B-handle	KG10B KG20B, KG32B KG41B, KG64B KG80-KG105	**V840G** **V840G/B**
	For 4 padlocks with F-handle with B-handle		**V840F/F** **V840F/B**
	Padlock device for switches with base mounting for locking when control cabinet is opened. Padlock devices **with simplified door clutch and single hole mounting** see page 18.	KG20B, KG32B KG41B, KG64B KG80-KG105 KG125-KG317	**V840VE**
Ordering data:	For V840 and V845 color selection required.		

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Additional Module for Motor Control Center (MCC), Angular drive	Type	Code
Angular drive		
	KG125-KG317[1]	**M330**

[1]Only for ON/OFF switches 3 and 4 pole.

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Selection Data	KG10 KG20 KG32 KG41 KG64 KG80 KG100 KG105 KG125 KG160 KG210 KG250 KG315 KG10A KG20A KG32A KG41B KG64B KG80C KG100C KG105C KG126 KG161 KG211 KG251 KG316 KG10B KG20B KG32B KG127 KG162 KG212 KG252 KG317

Rated Insulation Voltage U_i	IEC/VDE[1]		V	690	690	690	690	690	690	690	690	1000[2]	1000[2]	1000[2]	1000[2]	1000[2]
	UL/Canada		V	300	600	600	600	600	600	600	600	600	600	600	600	600
	CEE/NEMKO		V	400	500	500	500	500	500	500	-	-	-	-	-	-
Rated Impulse Withstand Voltage U_{imp} [1]			kV	4	6	6	6	6	6	6	6	8	8	8	8	8
Rated Thermal Current	IEC/VDE	I_u open = I_{th}	A	20	25	32	40	63	80	100	125	125	160	200	250	315
		I_{the} enclosed	A	20	25	32	40	63	80	100	125	125	160	200	250	315
	UL/Canada	ON/OFF function	A	20	25	30	40	60	80[3]	100[3]	125	150[3]	200[3]	200[3]	250[3]	300[3]
	UL/Canada	Double-throw function	A	20	25	30	40	60	80[3]	100[3]	115	125[3]	160[3]	-	-	-
Rated Operational Current I_e																
AC-21A Switching of resistive loads, including moderate overloads	IEC/VDE		A	20	25	32	40	63	80	100	125	125	160	200	250	315
AC-22A Switching of combined resistive or low inductive loads, including moderate overloads	IEC/VDE	220 V-500 V	A	20	20	32	40	63	80	100	125	125	160	200	200	250
		660 V-690 V	A	16	20	32	40	55	65	85	90	100	100	125	125	140
Ampere-Rating	ON/OFF function UL/Canada[4]	600 V	A	20[7]	25	30	40	60	80[3]	100[3]	125	150[3]	200[3]	200[3]	250[3]	300[3]
Resistive or low inductive loads	Double-throw function UL/Canada[4]	600 V	A	20[7]	25	30	40	60	80[3]	100[3]	115	125[3]	160[3]	-	-	-
Rated Utilization Category	IEC/VDE															
AC-3 Direct-on-line starting	3 phase 3 pole	220 V-240 V	kW	2,2	4	5,5	7,5	11	15	18,5	22	22	30	37	37	45
		380 V-440 V	kW	3,7	5,5	7,5	11	18,5	22	30	37	37	45	55	55	75
		500 V	kW	3,7	5,5	7,5	15	22	30	37	45	45	55	75	75	90
		690 V	kW	3,7	5,5	7,5	11	15	18,5	22	22	30	37	40	40	45
AC-23A Frequent switching of motors or other high inductive loads	3 phase 3 pole	220 V-240 V	kW	3	5,5	5,5	7,5	11	18,5	22	25	30	30	37	37	55
		380 V-440 V	kW	5,5	7,5	11	15	22	30	37	45	45	55	75	90	110
		500 V	kW	5,5	7,5	11	18,5	30	37	45	55	55	75	90	110	132
		690 V	kW	5,5	7,5	11	15	18,5	22	30	30	37	37	45	45	45
DOL-Rating Standard motor load (similar AC-3)	UL/Canada[4] 3 phase 3 pole	120 V	HP	1	2	3	5	5	10	10	15	15	20	25	30	40
		240 V	HP	2	7,5	10	15	15	25	25	40	30	40	50	60	75
		480 V	HP	-	15	20	25	30	50	50	60	60	60	75	75	100
		600 V	HP	-	20	25	30	40	50	50	50	60	60	75	75	100
Power loss per contact at I_u			W	0,9	0,7	1,1	1	2,2	1,7	2,4	3,8	3,1	5	5	8	12,7
Resistance to vibration[5]				C	A	A	A	A	A	A	A	C	C	C	C	C
Resistance to shock[5]				C	B	B	B	B	B	B	B	C	C	C	C	C
Short Circuit Protection																
Max. fuse size	(gG-characteristic)		A	20	35	35	50	63	80	100	125	125	160	200	250	315
Rated short-time withstand current	(1 s-current)		A	130	350	430	500	580	1600	1850	2000	2500	3000	4000	4600	5800
Max. Permissible Wire Gage - Use copper wire only																
For box terminal	Single-core or stranded wire		mm^2	2,5	6	6	16	16	50	50	50	95	95	185	185	185
			AWG	12	10	10	6	6	1/0	1/0	1/0	3/0	3/0	-	-	-
			MCM	-	-	-	-	-	-	-	-	-	-	350	350	350
	Flexible wire sleeving in accordance with DIN 46228		mm^2	2,5	4	4	10	10	35	35	35	70	70	120	120	120
	Flexible wire without sleeve		mm^2	2,5	4	4	10	10	35	35	35	70	70	150	150	150
			AWG	12	10	10	6	6	2	2	2	2/0	2/0	-	-	-
			MCM	-	-	-	-	-	-	-	-	-	-	300	300	300
	Cable lug or track must accept											M10 x	M10 x	M12 x	M12 x	M12 x
	connection screw		mm	-	-	-	-	-	-	-	-	20	20	20	20	20
	Max. width		mm	-	-	-	-	-	-	-	-	20	20	25	25	25
	Max. width with protective cover		mm	-	-	-	-	-	-	-	-	25	25	34	34	34
Min. Ambient Temperature				-5 °C												
Max. Ambient Temperature[6]	open at 100 % I_u/I_{th}			50 °C during 24 hours with peaks up to 55 °C												
	enclosed at 100 % I_{the}			35 °C during 24 hours with peaks up to 40 °C												

[1] Valid for lines with common neutral termination, overvoltage category III, pollution degree 3. Values for other supply systems on request. [2] Suitable for no load switching applications (AC-20A) above 690 V. [3] Valid when connected with wire rated for 75 °C. [4] International Standards and Approvals, refer to page 24. [5] A: min. 4 g, 2-100 Hz, 1,6 mm. B: min. 6 g, 6 ms. C: on request. [6] Storage temperature: -40 °C to 85 °C (in case of temperature below -5 °C no shock load permissible). [7] Max. 277 V.

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DC Switching Capacity								Rated Operational Current I_e / A															
No. of series connected contacts, total voltage / V								KG20 for utilization category						KG32 for utilization category						KG41 for utilization category					
								DC-21		DC-22		DC-23		DC-21		DC-22		DC-23		DC-21		DC-22		DC-23	
1	2	3	4	5	6	7	8	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
80	160	240	320	400	480	560	640	25	25	25	25	21	21	32	32	32	32	30	30	40	40	40	40	40	40
110	220	330	440	550	660	770	880	25	25	18	18	12	12	32	32	25	25	18	18	40	40	32	32	25	25
140	280	420	560	700	840	1000	-	21	21	12	12	8	8	28	28	18	18	12	12	28	28	20	20	14	14
170	340	510	680	850	1000	-	-	-	20	-	9	-	5	-	25	-	12	-	8	-	25	-	12	-	10
200	400	600	800	1000	-	-	-	-	18	-	6	-	3	-	23	-	8	-	5	-	23	-	8	-	5
230	460	690	920	1000	-	-	-	-	11	-	4	-	2	-	15	-	5	-	3	-	10	-	5	-	3

Auxiliary Contacts for KG Switches

Selection Data				Auxiliary contacts for:				
				KG10 KG10A KG10B	KG20 KG20B- KG32B	KG41- KG105C	KG125- KG162	KG210- KG317
Rated Insulation Voltage U_i		IEC/VDE UL/Canada	V V	690 300	500 600	690 600	690 600	690 600
Rated Thermal Current I_u/I_{th}		IEC/VDE/BS UL/Canada	A A	20 20	10 10	16 10	16 10	16 10
Rated Operational Current I_e								
AC-21A	Switching of resistive loads, including mod-erate overloads	IEC/VDE	A	20	10	16	16	16
AC-15	Switching of control devices, contactors, valves etc.	110 V-240 V 380 V-440 V 500 V	A A A	6 4 -	2,5 1,5 1	6 3 1,5	6 3 1,5	6 3 1,5
Pilot Duty	Heavy	UL/Canada		A300	A600	A600	A600	A600
Ampere-Rating	Resistive or low inductive loads	UL/Canada	A	20[1]	10	10	10	10
Short Circuit Protection								
	Max. fuse size	(gG-characteristic)	A	20	10	16	16	16
Max. Permissible Wire Gage - Use copper wire only								
		Single-core or stranded wire	mm^2 AWG	2,5 12	1,5 14	2,5 12	2,5 12	2,5 12
		Flexible wire sleeving in accordance with DIN 46228	mm^2	2,5	1,5	2,5	2,5	2,5
		Flexible wire without sleeve	mm^2 AWG	2,5 12	1,5 16	2,5 14	2,5 14	2,5 14

[1]Max. 277 V.

Tightening torque of screws

Type	Tightening torque		Type	Tightening torque		Type	Tightening torque		Type	Tightening torque		Type	Tightening torque	
KG10	0,8 Nm	7 lb-in	KG32A	1,25 Nm	11 lb-in	KG80C	3 Nm	27 lb-in	KG127	14 Nm	125 lb-in	KG250	16 Nm	140 lb-in
KG10A	0,8 Nm	7 lb-in	KG32B	1,25 Nm	11 lb-in	KG100	3 Nm	27 lb-in	KG160	14 Nm	125 lb-in	KG251	16 Nm	140 lb-in
KG10B	0,8 Nm	7 lb-in	KG41	1,8 Nm	16 lb-in	KG100C	3 Nm	27 lb-in	KG161	14 Nm	125 lb-in	KG252	16 Nm	140 lb-in
KG20	1,25 Nm	11 lb-in	KG41B	1,8 Nm	16 lb-in	KG105	3 Nm	27 lb-in	KG162	14 Nm	125 lb-in	KG315	16 Nm	140 lb-in
KG20A	1,25 Nm	11 lb-in	KG64	1,8 Nm	16 lb-in	KG105C	3 Nm	27 lb-in	KG210	16 Nm	140 lb-in	KG316	16 Nm	140 lb-in
KG20B	1,25 Nm	11 lb-in	KG64B	1,8 Nm	16 lb-in	KG125	14 Nm	125 lb-in	KG211	16 Nm	140 lb-in	KG317	16 Nm	140 lb-in
KG32	1,25 Nm	11 lb-in	KG80	3 Nm	27 lb-in	KG126	14 Nm	125 lb-in	KG212	16 Nm	140 lb-in			

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Country	Authority	Mark or Standard	KG10 KG10A KG10B	KG20 KG20A KG20B	KG32 KG32A KG32B	KG41 KG41B	KG64 KG64B	KG80 KG80C	KG100 KG100C	KG105 KG105C	KG125 KG126 KG127	KG160 KG161 KG162	KG210 KG211 KG212	KG250 KG251 KG252	KG315 KG316 KG317
USA	Underwriters Laboratories	[1] oder	●	●	●	●	●	●	●	●	●	●	●	●	●
Canada	Canadian Standards Association	[4] [2] oder	●	●	●	●	●	●	●	●	●	●	●	●	●
International Electrical Commission (IEC) Recommendation		IEC 60204-1[3] IEC 60947-3[3]	+	+	+	+	+	+	+	+	+	+	+	+	+
China	China Quality Certification Centre	GB/T14048.3		●	●	●	●	●	●	●	●	●		●	●
Russia Belarus Kazakhstan	Eurasian Conformity	EAC	●	●	●	●	●	●	●	●	●	●	●	●	●
Russian Federation	Russian Maritime Register of Shipping			●	●	●	●	●	●	●					
Lloyds Register EMEA		Lloyd's Register		●	●	●	●	●							

● Switch approved + Switch conforms to requirements

[1] Devices provided with terminals suitable to connect unprepared wires are approved under the “Listing Program“ (File No. E35541, Guide No. NLRV). Devices with bolt terminals are approved under the “Recognized Component Program“ (File No. E35541, Guide No. NLRV2).
[2] Approved by use of “UL Certification Services for Canada“ (File No. E35541, Guide No. NLRV7 or NLRV8 respectively).
[3] IEC does not operate an approval program.
[4] File No. 13002, Class No. 3211-05 resp. 4652-04.

KG switches are approved by UL and CSA as „disconnect switches for use in motor circuits“. Switches using ring type terminations (KG127, KG162, KG212, KG252, KG317) it is necessary to make connections to separate terminals.

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The switches described in this catalog exceed the requirements of IEC 60947-3 and VDE 0660 part 107 and meet the standard on main switches and maintenance switches.

The new series offers a 4 pole switch body and symmetrically placed contacts. The adjustable length through shaft offers increased stability and permits interlocking devices to be added at the end of the switch. While reduced forces of the latching mechanism allows for easier operation.

The safety level of the KH- and KHR-series in numerous areas surpasses those of many international standard organizations: Positive contact movement during making and breaking operations. Higher air and creepage distances as well as for 800 V or 1000 V and finger-proof terminals according to EN 50274, VDE 0660 part 514 and DGUV V3. (protection IP 20 up to KHR40). Excellent AC-3 and AC-23A making and breaking capabilities providing an additional safety advantage. For connecting with ring type terminals the KHR-series were designed. The terminal screw is held in place by a clamp allowing the ring type wire lug to be easily inserted in the terminal and tightened.

The KH- and KHR-series affords significant advantages during mounting and wiring. For ease of installation, switch terminations are on the same plane as the power conductors. Captive plus-minus screws and integrated screwdriver guides reduce wiring time. All base mounted switches feature a two hole mounting as well as ”quick mount” designed for standard DIN rails according to EN 50022.

A large range of optional extras such as lateral mounted auxiliary contacts, ground terminals, auxiliary contacts (installed only at factory) also with contact systems for special programs, door clutches, shaft extensions and padlock devices enhance the flexibility of this proven line.

KH-series



KHR-series



Nominal Ratings

Face plate Frame mm	Type	IEC 60947-3/VDE 0660 part 107 Rated Values			UL and Canada		
		Thermal Current	Utilization Category AC-23A	AC-3	Ampere-Rating	Standard Motor Load DOL-Rating	
		I_u/I_{th}	3 x 380 V-440 V		3 x 600 V	3 x 240 V	3 x 480 V
		A	**kW**		**A**	**HP**	**HP**
48 x 48	**KH16**	16	7,5	5,5	16	2	5
	KH20	20	10	6,5	20	2	5
	KH25	25	12	7,5	25	3	7,5
	KHR16	16	7,5	5,5	16	2	5
	KHR20	20	10	6,5	20	2	5
	KHR25	20	10	7,5	20	3	7,5
64 x 64	**KH16B**	16	7,5	5,5	16	2	5
	KH20B	20	10	6,5	20	2	5
	KH25B	25	12	7,5	25	3	7,5
	KHR16B	16	7,5	5,5	16	2	5
	KHR20B	20	10	6,5	20	2	5
	KHR25B	20	10	7,5	20	3	7,5
	KH32	32	16	11	30	5	10
	KH40	40	20	15	40	7,5	15
	KHR32	32	16	11	30	5	10
	KHR40	32	16	15	30	7,5	15
64 x 64	**KH63**	63	30	22	60	20	40
	KH80	80	40	30	80	25	50
	KHR63	63	30	22	60	20	40
	KHR80	80	40	30	80	25	50







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Mounting	Type	Code
 **Panel mounting** Four hole panel mounting, Protection IP 66/67	KH16-KHR80	**E**
Single hole mounting 22 mm		
 With square face plate 48 x 48 mm, Protection IP 66/67/69k	KH16-KHR25	**FT2**
With square face plate 64 x 64 mm, Protection IP 66/67/69k	KH16-KHR80	**FH3**[1]
Base mounting		
 Screw/Snap-on base mounting for track EN 50022, Protection IP 40	KH16-KHR80	**VE**
 Screw/Snap-on base mounting for track EN 50022. Face plate for 45 mm knock-out, Protection IP 40	KH16-KHR80	**VE2**

[1]For KH63-KHR80 use flexible wire only in order to avoid excessive pressure on single hole mounting.

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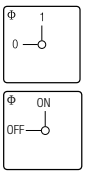
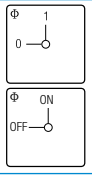
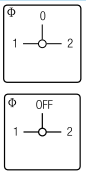
Plastic Enclosure Protection IP 66/67	Type	Code



The KL and CL enclosures are available in 3 sizes allowing for installation of 3, 4 and 6 pole KG switches. The KL-series is made of strong durable plastic and offers high UV-resistance. All KL- and KS-enclosures are flame resistant in accordance with UL94V-0. The CL-series is especially designed for applications in an aggressive environment, such as oil, chemical substances and grease. Each enclosure has 2 knock-outs on top and bottom for metric thread according to EN 50262. Included in each enclosure is a ground terminal. All enclosures can be supplied with a cover coupling for additional safety. Increased wiring space and mounting holes with slots are featured in this new line. These enclosures are also available for conduit entries for PG-thread. KS and CS enclosures have a compact size which allows for the installation of a 4 pole KH16/KHR16 ON/OFF switch or a KH20/KHR20 ON/OFF switch. The design, options and mounting are the same as those of the KL and CL enclosures.

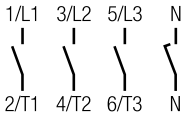
	KH16-KHR80	**KL. CL. KS. CS.**
Without cover interlock		**0**
With cover interlock (The enclosure can only be opened at 9 o'clock position)		**1**
With cover interlock (The enclosure can only be opened at 12 o'clock position)		**2**

Switch Function and Configuration

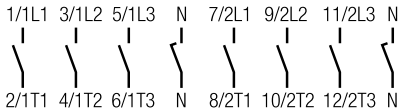
Function	KH16 KH20 KH25	KHR16 KHR20 KHR25	KH16B KH20B KH25B	KHR16B KHR20B KHR25B	KH32 KH40	KHR32 KHR40	KH63 KH80	KHR63 KHR80	Escutch. Plate	Code
Types of Mounting										
ON/OFF Switches 4 pole	E FT2 FH3 VE VE2 KS./KL.	E FT2 FH3 VE VE2 KS./KL.	E VE	E VE	E FH3 VE VE2 KL.	E FH3 VE VE2 KL.	E FH3 VE VE2 KL.	E FH3 VE VE2 KL.		**K400**
ON/OFF Switches 8 pole	E VE	E VE	E VE KL.	E VE KL.	E VE	E VE				**K800**
Double-throw Switches 4 pole	E VE	E VE	E VE KL.	E VE KL.	E VE VE2					**K950**

Connection Diagrams

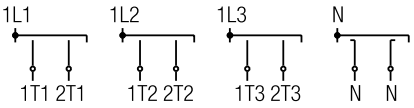
ON/OFF Switches 4 pole



ON/OFF Switches 8 pole



Double-throw Switches 4 pole



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Square and rectangular face plates are available for each size of switch. The face plate consists of a frame and a faceplate having the switch position which is than embossed with hot-foil backing. The face plate frame is an essential part of the switch and serves as a bearing surface for the handle. If the switch is to be mounted without an face plate we would recommend the handle bearing plate T100-04 which is available for switch types KH16B-KHR25B, KH32-KHR40 and KH63-KHR80. Face plates with special lettering are also available upon request.





Standard Face plates



F056



F063



F068



F134



F201



F252



F346



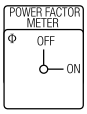
F456



F058



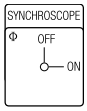
F065



F178



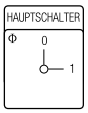
F208



F253



F360



F378


F458


F990


F991

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Type	Color	Code	KH16-KH25	KHR16-KHR25	KH16B-KH25B	KHR16B-KHR25B	KH32-KHR40	KH63-KHR80
I-Handle 	black red	G251 G252	● ●	● ●	● ●	● ●	● ●	● ●
B-Handle 	black red	G521 G522	● ●	● ●	● ●	● ●	● ●	● ●
R-Handle 	black red	G001 G002	● ●	● ●	● ●	● ●	● ●	● ●
F-Handle 	black red	G221 G222	● ●	● ●	● ●	● ●	● ●	● ●
L-Handle 	black red	G501 G502	— —	— —	● ●	● ●	● ●	● ●
P-Handle  KH16-KHR25 KH16B-KHR80	black red	G211 G212	● ●	● ●	● ●	● ●	● ●	● ●
K-Handle 	black red	G411 G412	— —	— —	● ●	● ●	● ●	● ●

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Protective Covers and Auxiliary Contacts	Type	Code

Protective Covers

	For mounting E	KH32-KHR40	**K1 M160/45-E**
	For mounting VE		**K1 M160/45-VE**
	For mounting E	KH63-KHR80	**K1 M160/44-E**
	For mounting VE		**K1 M160/44-VE**

Cam-operated Auxiliary Contacts (mounting only at factory)

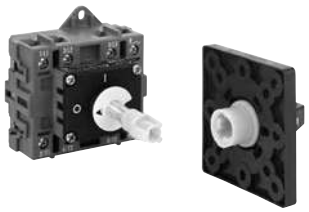
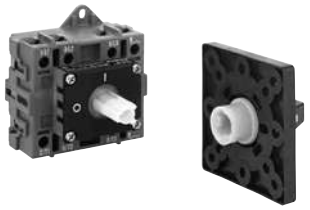
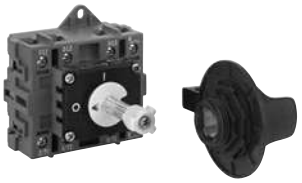
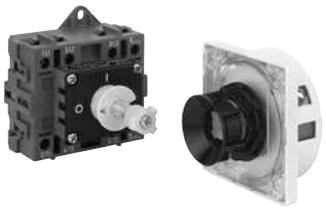
For mounting E  KH16-KHR25B  KH32-KHR80 For mounting VE 	Up to 4 cam-operated auxiliary contacts can be added to all switches (KH16-KHR25B max. 4/KH32-KHR80 max. 2). Select between a contact system with a rigid contact bridge for excellent AC-15 making and breaking capabilities or a contact system with gold contacts applicable for aggressive environments also.	KH16-KHR80	**M510A**

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Auxiliary Contacts, Ground Terminal and Shaft Extensions			Type	Code
Lateral mounted Auxiliary Contacts				
	Lateral mounted auxiliary contacts with 1 NO and 1 NC.			
		Terminal numbers		
	Standard contacts (nonoverlapping)	Attachment left	right	
	For mounting E	(33-34, 41-42)	(53-54, 61-62)	KH16-KHR25B **H010/A11-E**
	For mounting VE	(31-32, 43-44)	(51-52, 63-64)	KH16-KHR25B **H010/A11-VE**
	For mounting E	(33-34, 41-42)	(53-54, 61-62)	KH32-KHR80 **H010/11A-E**
	For mounting VE	(31-32, 43-44)	(51-52, 63-64)	KH32-KHR80 **H010/11A-VE**
	Overlapping contacts			
	For mounting E	(33-34, 41-42)	(53-54, 61-62)	KH16-KHR25B **H010/B11-E**
	For mounting VE	(31-32, 43-44)	(51-52, 63-64)	KH16-KHR25B **H010/B11-VE**
	For mounting E	(33-34, 41-42)	(53-54, 61-62)	KH32-KHR80 **H010/11B-E**
	For mounting VE	(31-32, 43-44)	(51-52, 63-64)	KH32-KHR80 **H010/11B-VE**
Ground Terminal				
			KH16-KHR80	**H052**
Shaft Extensions				
	With asymmetric profile		KH16-KHR80	
	Shaft length not adjustable			**L100**[1]
	Shaft with adjustable length with set screw with shear ring			**M004D**[3] **M004**[3]
	With square profile			
	Shaft length not adjustable			**L100A**[1]
	Shaft with adjustable length with set screw			**M004E**[2]
Ordering data:	Free shaft length or dimension from mounting surface to cover.			

[1]Available for switch types from KH16B. [2]Available for switch types from KH32. [3]Not available for KH..B.

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Simplified Door Clutch	Type	Code
 The simplified door clutches are utilized primarily when the switch is mounted to the bottom of the enclosure and the handle and face plate are mounted on the cover. With shaft extension Front protection IP 40	KH16- KHR80	**M290/A3**
 With profile extension parts Front protection IP 65		**M290/A1.EF[2]**
 With padlock device, single hole mounting 22 mm, protection IP 66. An additional aluminum shaft extension is required.		**V840E[1]**
 The cover disc is available in black, yellow and electro-gray. The handle may be supplied in black, red and electro-gray.		**V840G[1]** **V840F[1]**
 Operation of the locking bar from the front. Available in black, red and electro-gray.		**V845**
 Centering device for simplified door clutches with single hole mounting and shaft extension Misalignment between the shaft and mounting are compensated in all 4 directions.		**M600[1]**
Ordering data: Free shaft length or dimension from face of the switch to the cover and color selection.		

[1]Available for switch types from KH16B. [2]Available for switch types from KH32.

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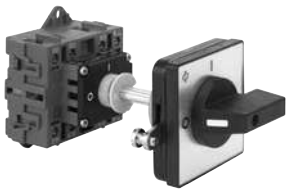
Door Clutches	Type	Code

The M280 door clutch has an adjustable shaft and can be supplied with an interlock device.

The following interlock programs are available:

A = Without interlock by door clutch
B = With interlock by door clutch
C = With interlock by rods
D = With interlock by door clutch and rods

With protected profile



shaft fixation with set screw

Front protection IP 40	KH16-KHR80	**M280E**
Front protection IP 66/67		**M280E/.EF**

shaft fixation with shear ring

Front protection IP 40		**M280D**
Front protection IP 66/67		**M280D/.EF**



Handle lockable with padlocks — KH16B-KHR80 — **M700/.**
Protection IP 66
Selection of escutch. plate and handle color required:

Escutcheon Plate	Frame Plate	Handle	Lock Bar
A = brushed alu	black	black	red
B = brushed alu	black	red	yellow
C = brushed black	black	black	red
D = brushed black	black	red	yellow
E = yellow	black	red	yellow

The M700 is a padlock door clutch and a mechanical interlokking safety device. Using the device the electrical panel may be opened only when the switch is in the OFF position and no padlock is fitted. **Note: Only in the ON position can knowledgeable personnel using a simple tool to defeat the interlock.**The M700`s flexibility allows for successful installation with as much as + or – 5 mm of misalignment between the shaft and door.



Standard handle and standard face plate — **M701**
Protection IP 66
The M700`s flexibility allows for successful installation with as much as + or – 5 mm of misalignment between the shaft and door.



Unlock insert for the M700 — **S1D M700 29**
to open the door in ON position. (After the locking has been made inactive, it is necessary to take effective precautions against an opening of the door by unauthorized persons.)

Ordering data: Dimension from face of the switch to the cover or dimension from mounting surface to cover, the interlock program and the color selection.

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Padlock Devices	Type	Code
The padlock device is an integral part of the switch.		
 For 2 padlocks Operation of the locking bar from the bottom. Available in black, red and electro-gray.	KH16-KHR80	**V840A**
 For 4 padlocks Operation of the locking bar from the front. Available in black, red and electro-gray.		**V845**
Padlock device with integrated F- or B-handle. The cover disc is available in black, yellow and electro-gray. The handle may be supplied in black, red and electro-gray.		
 For 2 padlocks with F-handle	KH16-KHR25	**V840D**
For 3 padlocks with F-handle with B-handle	KH16B-KHR80	**V840G** **V840G/B**
For 4 padlocks with F-handle with B-handle		**V840F/F** **V840F/B**
Padlock devices **with simplified door clutch and single hole mounting** see page 32.		
Ordering data: For V840 and V845 color selection required.		

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Country	Authority	Mark or Standard	KH16 KH16B	KHR16 KHR16B	KH20 KH20B	KHR20 KHR20B	KH25 KH25B	KHR25 KHR25B	KH32 KHR32	KH40 KHR40	KH63 KHR63	KH80 KHR80
USA	Underwriters Laboratories	c UL us		●		●		●	●	●	●	●
Canada	Canadian Standards Association	c UL us	●		●		●		●	●	●	●
International Electrical Commission (IEC) Recommendation		IEC 60204-1[1] IEC 60947-3[1]	+	+	+	+	+	+	+	+	+	+
Russia Belarus Kazakhstan	Eurasian Conformity	EAC	● ●		● ●		● ●		● ●	●	● ●	● ●

● Switch approved
\+ Switch conforms to requirements

[1]IEC does not operate an approval program.

The switches of the KH/KHR-series are approved by UL and CSA as „disconnect switches for use in motor circuits“. UL approved terminals are required when making connection to switches having ring type terminations (KHR).

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Selection Data	KH16 KHR16 KH20 KHR20 KH25 KHR25 KH32 KH63 KH80 KH16B KHR16B KH20B KHR20B KH25B KHR25B KHR32 KH40 KHR40 KHR63 KHR80

Rated Insulation Voltage U_i	IEC/EN/VDE[1]		V	800[2]	800[2]	800[2]	800[2]	800[2]	800[2]	800[2]	800[2]	800[2]	1000[2]	1000[2]
	UL/Canada		V	600	600	600	600	600	600	600	600	600	600	600
Rated Impulse Withstand Voltage U_{imp}[1]			kV	6	6	6	6	6	6	6	6	6	8	8
Rated Thermal Current	IEC/EN/VDE	I_u open = I_{th}	A	16	16	20	20	25	20	32	40	32	63	80
		I_{the} enclosed	A	16	16	20	20	25	20	32	40	32	63	80
	UL/Canada		A	16	16	20	20	25	20	30	40	30	60	80
Rated Operational Current I_e														
AC-21A Switching of resistive loads, including moderate overloads	IEC/EN/VDE		A	16	16	20	20	25	20	32	40	32	63	80
AC-22A Switching of combined resistive or low inductive loads, including moderate overloads	IEC/EN/VDE		A	16	16	20	20	25	20	32	40	32	63	80
Ampere-Rating Resistive or low inductive loads	UL/Canada		A	16	16	20	20	25	20	30	40	30	60	80
Rated Utilization Category	IEC/EN/VDE													
AC-3 Direct-on-line starting	3 phase 3 pole	220 V-240 V	kW	3	3	3,5	3,5	4	4	5,5	7,5	7,5	11	15
		380 V-440 V	kW	5,5	5,5	6,5	6,5	7,5	7,5	11	15	15	22	30
		500 V	kW	5,5	5,5	6,5	6,5	7,5	7,5	11	15	15	30	37
		660 V-690 V	kW	5,5	5,5	6,5	6,5	7,5	7,5	11	15	15	18,5	22
AC-23A Frequent switching of motors or other high inductive loads	3 phase 3 pole	220 V-240 V	kW	4,5	4,5	5,5	5,5	7	5,5	9	11	9	18,5	23
		380 V-440 V	kW	7,5	7,5	10	10	12	10	16	20	16	30	40
		500 V	kW	10	10	12	12	15	13	20	25	20	40	55
		660 V-690 V	kW	13	13	15	15	17	17	22	25	25	30	37
DOL-Rating Standard motor load (similar AC-3)	UL/Canada 3 phase 3 pole	110 V-120 V	HP	1	1	1	1	1,5	1,5	2	3	3	7,5	10
		220 V-240 V	HP	2	2	2	2	3	3	5	7,5	7,5	20	25
		440 V-480 V	HP	5	5	5	5	7,5	7,5	10	15	15	30	40
		550 V-600 V	HP	5	5	5	5	7,5	7,5	10	15	15	40	50
Power loss per contact at I_u			W	0,2	0,2	0,3	0,3	0,3	0,3	0,4	0,6	0,4	1,5	2,7
Resistance to vibration[3]				C	C	C	C	C	C	C	C	C	C	C
Resistance to shock[3]				C	C	C	C	C	C	C	C	C	C	C
Short Circuit Protection														
Max. fuse size	(gG-characteristic)		A	25	25	35	35	35	35	35	50	50	80	100
Rated short-time withstand current	(1s-current)		A	400	400	450	450	500	500	850	950	950	1200	1600
Max. Permissible Wire Gage - Use copper wire only														
KH For box terminal	Single-core or stranded wire		mm^2	6	-	6	-	6	-	10	10	-	35	35
			AWG	10	-	10	-	10	-	8	8	-	2	2
	Flexible wire sleeving in accordance with DIN46228		mm^2	4	-	4	-	4	-	6	6	-	25	25
	Flexible wire without sleeve		mm^2	4	-	4	-	4	-	6	6	-	25	25
			AWG	12	-	12	-	12	-	10	10	-	4	4
KHR Connection with insulated ring and fork type terminals														
Internal diameter ≥			mm	-	3,2	-	3,2	-	3,2	3,7	-	3,7	5,2	5,2
External diameter ≤			mm	-	7,4	-	7,4	-	7,4	8,8	-	8,8	12,7	12,7
Ambient Temperature[4]				-5 °C (-25 °C on request)										
Ambient Temperature[4]	open at 100 % I_u/I_{th}			50 °C during 24 hours with peaks up to 55 °C										
	enclosed at 100 % I_{the}			35 °C during 24 hours with peaks up to 40 °C										

[1]Valid for lines with grounded common neutral termination, overvoltage category III, pollution degree 3. Values for other supply systems on request. [2]Suitable for no load switching applications (AC-20A) above 690 V. [3]C: on request. [4]Storage temperature: -40 °C to 85 °C (in case of temperature below -5 °C no shock load permissible).

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Selection Data				Auxiliary contacts for: KH16-KHR80
Rated Insulation Voltage U_i	IEC/EN/VDE		V	440
	UL/Canada		V	300
Rated Thermal Current I_u/I_{th}	IEC/EN/VDE		A	10
	UL/Canada		A	10
Rated Operational Current I_e				
AC-21A	Switching of resistive loads, including moderate overloads	IEC/EN/VDE	A	10
AC-15	Switching of control devices, contactors, valves etc.	110 V-240 V 380 V-440 V	A A	2,5 1,5
Pilot Duty	Heavy	UL/Canada		A300
Ampere-Rating	Resistive or low inductive loads	UL/Canada	A	10
Short Circuit Protection				
	Max. fuse size	(gG-characteristic)	A	10
Max. Permissible Wire Gage - Use copper wire only				
	Single-core or stranded wire		mm^2 AWG	1,5 (2,5)[1] 14 (12)[1]
	Flexible wire sleeving in accordance with DIN46228		mm^2	1,5 (2,5)[1]
	Flexible wire without sleeve		mm^2 AWG	1,5 (2,5)[1] 16 (14)[1]

[1]The values in brackets are valid for switches KH32-KHR80 E mounting.

Tightening torque of screws

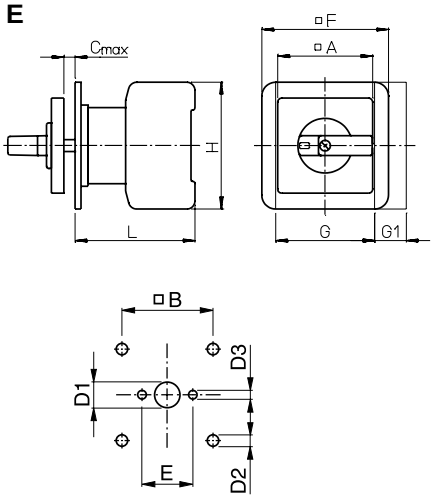
Type	Tightening torque		Type	Tightening torque		Type	Tightening torque	
KH16	1,2 Nm	10 lb-in	KH25B	1,2 Nm	10 lb-in	KHR20	1,2 Nm	10 lb-in
KH16B	1,2 Nm	10 lb-in	KH32	1,2 Nm	10 lb-in	KHR20B	1,2 Nm	10 lb-in
KH20	1,2 Nm	10 lb-in	KH40	1,2 Nm	10 lb-in	KHR32	1,2 Nm	10 lb-in
KH20B	1,2 Nm	10 lb-in	KH63	3 Nm	27 lb-in	KHR63	2,2 Nm	20 lb-in
KH25	1,2 Nm	10 lb-in	KH80	3 Nm	27 lb-in	KHR80	2,2 Nm	20 lb-in

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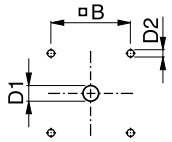
Mounting
(Additional length for auxiliary contacts see page 42)

ON/OFF Switches 3 and 4 pole

E

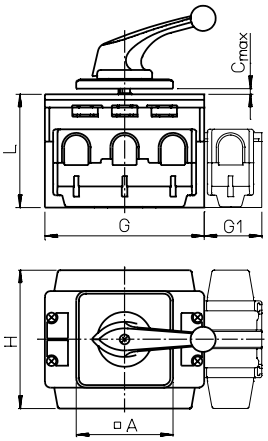


	A	B	C	D1	D2	D3	E	F	G	G1[1]	H	L
KG10A	48	36	4	11-15	5	-	-	48	48	-	50	48,2
	1.89	1.42	.16	.43-.59	.20	-	-	1.89	1.65	-	1.97	1.90
KG10B	64	48	4	11-15	5	-	-	64	48	-	50	57,2
	2.52	1.89	.16	.43-.59	.20	-	-	2.52	1.65	-	1.97	2.25
KG20, KG32	30	-	4	8-11	-	3,2	20	-	42	13,5	54	50,8
	1.18	-	.16	.31-.43	-	.13	.79	-	1.65	.53	2.13	2.00
KG20A, KG32A	48	36	4	10-15	5	-	-	48	42	13,5	54	53,8
	1.89	1.42	.16	.39-.59	.20	-	-	1.89	1.65	.53	2.13	2.12
KG20B, KG32B	64	48	4	10-15	5	-	-	64	42	13,5	54	53,8
	2.52	1.89	.16	.39-.59	.20	-	-	2.52	1.65	.53	2.13	2.12
KG41, KG64	48	36	4	10-15	5	-	-	64	50	16	64	60,5
	1.89	1.42	.16	.39-.59	.20	-	-	2.52	1.97	.63	2.52	2.38
KG41B, KG64B	64	48	4	10-15	5	-	-	64	50	16	64	60,5
	2.52	1.89	.16	.39-.59	.20	-	-	2.52	1.97	.63	2.52	2.38
KG80, KG100, KG105	64	48	4	10-15	5	-	-	70	70	22	80	70,6
	2.52	1.89	.16	.39-.59	.20	-	-	2.76	2.76	.87	3.15	2.78
KG80C, KG100C, KG105C	88	68	4	10-15	6	-	-	88	70	22	80	70,6
	3.46	2.68	.16	.39-.59	.24	-	-	3.46	2.76	.87	3.15	2.78

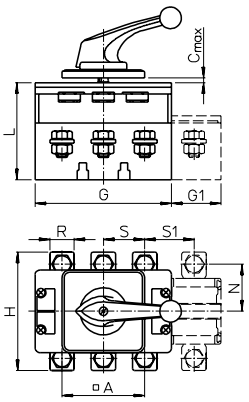


	A	B	C	D1	D2	G	G1[1]	H	L	N	R	S	S1
KG125, KG160	88	68	5,5	13-17	6	112	38	108	96	-	-	-	-
	3.46	2.68	.22	.51-.67	.24	4.41	1.50	4.25	3.78	-	-	-	-
KG126, KG161	88	68	5,5	13-17	6	112	38	110	96	45	20	36	38
	3.46	2.68	.22	.51-.67	.24	4.41	1.50	4.33	3.78	1.77	.79	1.36	1.50
KG127, KG162	88	68	5,5	13-17	6	112	38	109	96	45	20	36	38
	3.46	2.68	.22	.51-.67	.24	4.41	1.50	4.29	3.78	1.77	.79	1.36	1.50
KG210, KG250, KG315	88	68	5,5	13-17	6	145	52,5	126	103	-	-	-	-
	3.46	2.68	.22	.51-.67	.24	5.71	2.07	4.96	4.05	-	-	-	-
KG211, KG212, KG251, KG252	88	68	5,5	13-17	6	145	52,5	126	103	50	26	44	52,5
	3.46	2.68	.22	.51-.67	.24	5.71	2.07	4.96	4.05	1.97	1.02	1.73	2.07
KG316, KG317	88	68	5,5	13-17	6	145	52,5	126	103	50	26	52	52,5
	3.46	2.68	.22	.51-.67	.24	5.71	2.07	4.96	4.05	1.97	1.02	2.05	2.07

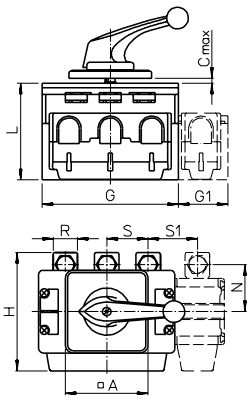
KG125, KG160 KG210, KG250, KG315



KG126, KG161 KG211, KG251, KG316

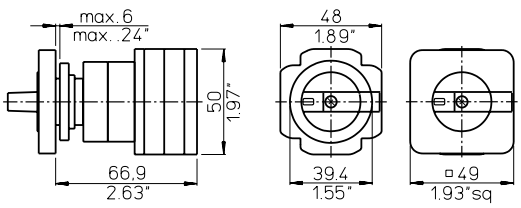


KG127, KG162 KG212, KG252, KG317

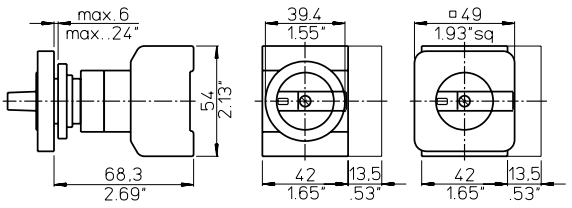


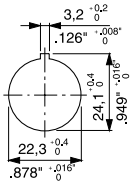
FT1, FT2

KG10A



KG20A, KG32A





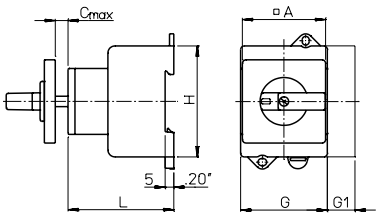
[1]For ON/OFF switches 4 pole.

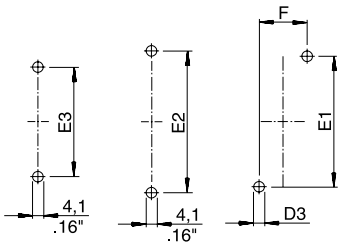
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Mounting
(Additional length for auxiliary contacts see page 42)

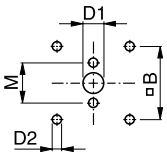
ON/OFF Switches 3 and 4 pole

VE, VE1



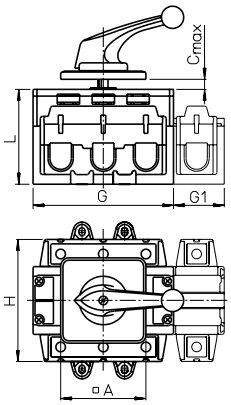


	A	B	C	D1	D2	D3	E1[1]	E2[1]	E3[1]	F	G	G1[2]	H	L	M
KG10A	48	36	12	8-15	5	4,2	60	65	50	22	48	-	50	49,5	-
	1.89	1.42	.47	.31-.59	.20	.17	2.36	2.56	1.97	.87	1.89	-	1.97	1.95	-
KG10B	64	48	29	10-15	5	4,2	60	65	50	22	48	-	50	56,5	-
	2.52	1.89	1.14	.39-.59	.20	.17	2.36	2.56	1.97	.87	1.89	-	1.97	2.22	-
KG20, KG32	30	-	12	8-11	3,2	4,1	60	-	-	22	42	13,5	54	50	20
	1.18	-	.47	.31-.43	.13	.16	2.36	-	-	.87	1.65	.53	2.13	1.97	.79
KG20A, KG32A	48	36	12	8-15	5	4,1	60	-	-	22	42	13,5	54	50	-
	1.89	1.42	.47	.31-.59	.20	.16	2.36	-	-	.87	1.65	.53	2.13	1.97	-
KG20B, KG32B	64	48	13,5	10-15	5	4,1	60	-	-	22	42	13,5	54	50	-
	2.52	1.89	.53	.39-.59	.20	.16	2.36	-	-	.87	1.65	.53	2.13	1.97	-
KG41, KG64	48	36	12	10-15	5	4,1	70	-	-	25	50	16	64	61	-
	1.89	1.42	.47	.39-.59	.20	.16	2.76	-	-	.98	1.97	.63	2.52	2.40	-
KG41B, KG64B	64	48	13,5	10-15	5	4,1	70	-	-	25	50	16	64	61	-
	2.52	1.89	.53	.39-.59	.20	.16	2.76	-	-	.98	1.97	.63	2.62	2.40	-
KG80, KG100, KG105	64	48	13,5	10-15	5	5,2	90	-	-	25	70	22	80	68	-
	2.52	1.89	.53	.39-.59	.20	.21	3.54	-	-	.98	2.76	.87	3.15	2.68	-
KG80C, KG100C, KG105C	88	68	13,5	10-15	6	5,2	90	-	-	25	70	22	80	68	-
	3.46	2.68	.53	.39-.59	.24	.21	3.54	-	-	.98	2.76	.87	3.15	2.68	-

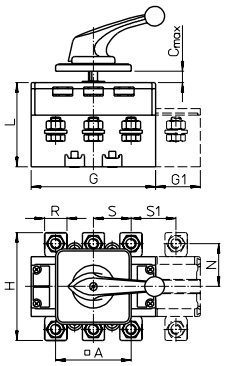


	A	B	C	D1	D2	D3	G	G1[2]	H	L[3]	N	P	Q1	Q2	R	S	S1
KG125, KG160	88	68	16	13-17	6	6,4	112	38	108	91	-	36	59-61	59-61	-	-	-
	3.46	2.68	.63	.51-.67	.24	.25	4.41	1.50	4.25	3.58	-	1.42	2.32-2.40	2.32-2.40	-	-	-
KG126, KG161	88	68	16	13-17	6	6,4	112	38	110	91	45	36	38-40	38-40	20	36	38
	3.46	2.68	.63	.51-.67	.24	.25	4.41	1.50	4.33	3.58	1.77	1.42	1.50-1.57	1.50-1.57	.79	1.36	1.50
KG127, KG162	88	68	16	13-17	6	6,4	112	38	109	91	45	36	38-40	59-61	20	36	38
	3.46	2.68	.63	.51-.67	.24	.25	4.41	1.50	4.29	3.58	1.77	1.42	1.50-1.57	2.32-2.40	.79	1.36	1.50
KG210, KG250, KG315	88	68	16	13-17	6	6,4	145	52,5	126	98	-	44	70-72	70-72	-	-	-
	3.46	2.68	.63	.51-.67	.24	.25	5.71	2.07	4.96	3.85	-	1.73	2.76-2.83	2.76-2.83	-	-	-
KG211, KG251	88	68	16	13-17	6	6,4	145	52,5	126	98	50	44	40-42	40-42	26	44	52,5
	3.46	2.68	.63	.51-.67	.24	.25	5.71	2.07	4.96	3.85	3.94	1.73	1.57-1.63	1.57-1.63	1.02	1.73	2.07
KG212, KG252	88	68	16	13-17	6	6,4	145	52,5	126	98	50	44	40-42	70-72	26	44	52,5
	3.46	2.68	.63	.51-.67	.24	.25	5.71	2.07	4.96	3.85	1.97	1.73	1.57-1.63	2.76-2.83	1.02	1.73	2.07
KG316	88	68	16	13-17	6	6,4	145	52,5	126	98	50	44	40-42	40-42	26	52	52,5
	3.46	2.68	.63	.51-.67	.24	.25	5.71	2.07	4.96	3.85	3.94	1.73	1.57-1.63	1.57-1.63	1.02	2.05	2.07
KG317	88	68	16	13-17	6	6,4	145	52,5	126	98	50	44	40-42	70-72	26	52	52,5
	3.46	2.68	.63	.51-.67	.24	.25	5.71	2.07	4.96	3.85	1.97	1.73	1.57-1.63	2.76-2.83	1.02	2.05	2.07

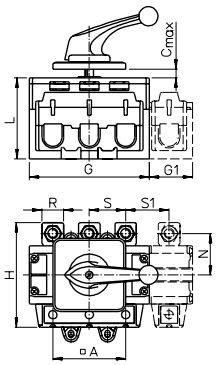
KG125, KG160 KG210, KG250, KG315

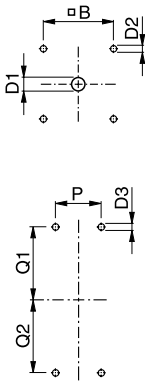


KG126, KG161 KG211, KG251 KG316

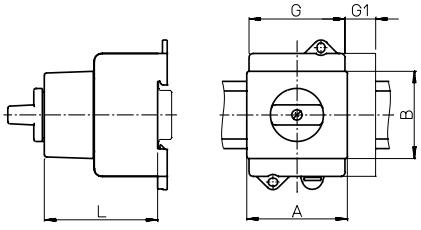


KG127, KG162 KG212, KG252 KG317



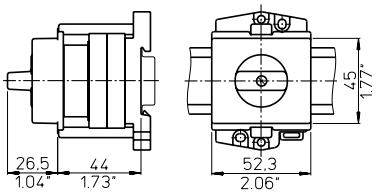


VE2



	A	B	G	G1[2]	L
KG20A, KG32A	43,7	45,4	42	13,5	56,5
	1.72	1.79	1.65	.53	2.22
KG41, KG64	52,4	45,4	50	16	56,5
	2.06	1.79	1.97	.63	2.22
KG80, KG100, KG105	70	45	70	22	65
	2.76	1.77	2.76	.87	2.56
KG125-KG162	112	45	112	38	98
	4.41	1.77	4.41	1.50	3.86

VE21



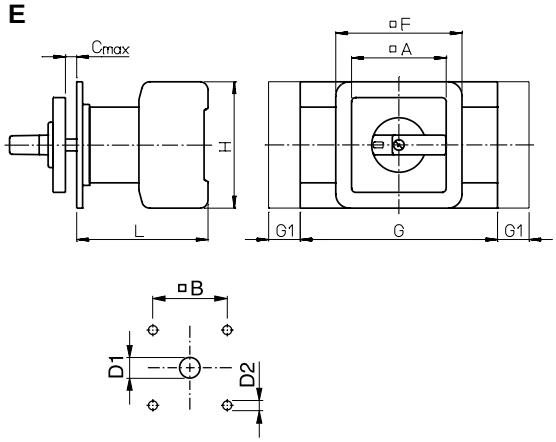
[1]Switches KG10A and KG10B allow use of E1, E2 or E3. [2]For ON/OFF switches 4 pole.
[3]KG125-KG162 additional length for mounting VE1 = 7,5 mm/.30 inch.

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Mounting
(Additional length for auxiliary contacts see page 42)

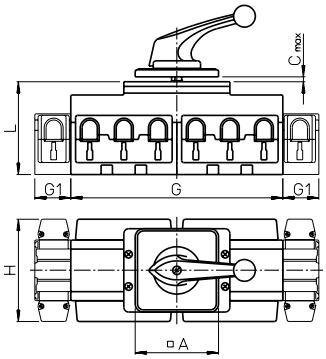
ON/OFF Switches 6 and 8 pole and Double-throw Switches

E



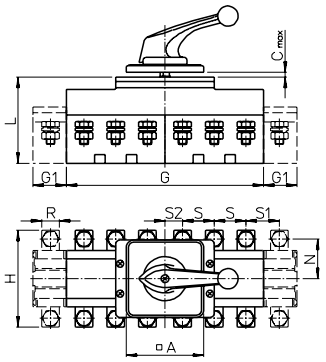
	A	B	C	D1	D2	F	G	G1[1]	H	L 6p.	L 8p.
KG10A	48	36	4	11-15	5	48	48	-	50	57,7	67,2
	1.89	1.42	.16	.43-.59	.20	1.89	1.89	-	1.97	2.27	2.65
KG10B	64	48	4	11-15	5	64	48	-	50	66,7	76,2
	2.52	1.89	.16	.43-.59	.20	2.52	1.89	-	2.13	2.84	3.00
KG20A, KG32A	48	36	4	10-15	5	48	84	13,5	54	61,3	-
	1.89	1.42	.16	.39-.59	.20	1.89	3.30	.53	2.13	2.41	-
KG20B, KG32B	64	48	4	10-15	5	64	84	13,5	54	61,3	-
	2.52	1.89	.16	.39-.59	.20	2.52	3.31	.53	2.13	2.41	-
KG41B, KG64B	64	48	4	10-15	5	64	100	16	64	66,5	-
	2.52	1.89	.16	.39-.59	.20	2.52	3.94	.63	2.52	2.62	-
KG80, KG100,	64	48	4	10-15	5	70	140	22	80	81,8	-
KG105	2.52	1.89	.16	.39-.59	.20	2.76	5.51	.87	3.15	3.22	-
KG80C, KG100C,	88	68	4	10-15	6	88	140	22	80	81,8	-
KG105C	3.46	2.68	.16	.39-.59	.24	3.46	5.51	.87	3.15	3.22	-

KG125, KG160

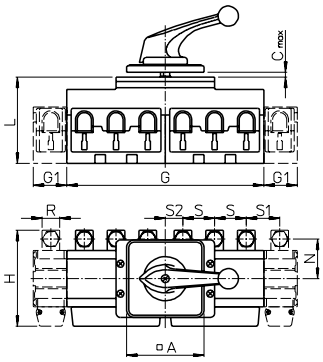


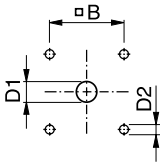
	A	B	C	D1	D2	G	G1[1]	H	L	N	R	S	S1	S2
KG125, KG160	88	68	5,5	13-17	6	224	38	108	98	-	-	-	-	-
	3.46	2.68	.22	.51-.67	.24	8.82	1.50	4.25	3.86	-	-	-	-	-
KG126, KG161	88	68	5,5	13-17	6	224	38	110	98	45	20	36	38	20
	3.46	2.68	.22	.51-.67	.24	8.82	1.50	4.33	3.86	1.77	.79	1.42	1.50	.79
KG127, KG162	88	68	5,5	13-17	6	224	38	109	98	45	20	36	38	20
	3.46	2.68	.22	.51-.67	.24	8.82	1.50	4.29	3.86	1.77	.79	1.42	1.50	.79

KG126, KG161

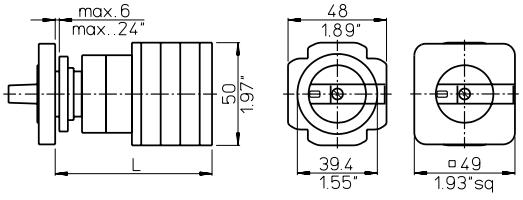


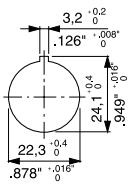
KG127, KG162





FT1, FT2





	L 6p.	L 8p.
KG10A	76,4	85,9
	3.01	3.38

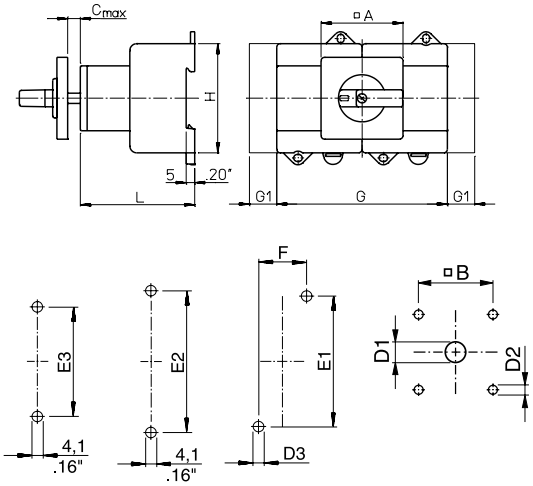
[1]For ON/OFF switches 8 pole and double-throw switches 4 pole.

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Mounting
(Additional length for auxiliary contacts see page 42)

ON/OFF Switches 6 and 8 pole and Double-throw Switches

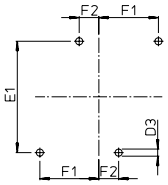
VE, VE1



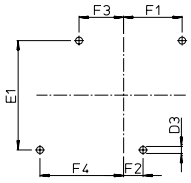
	A	B	C	D1	D2	D3	E1[1]	E2[1]	E3[1]	F	F1
KG10A	48	36	12	8-15	5	4,2	60	65	50	22	-
	1.89	1.42	.47	.31-.59	.20	.17	2.36	2.56	1.97	.87	-
KG10B	64	48	29	10-15	5	4,2	60	65	50	22	-
	2.52	1.89	1.14	.39-.59	.20	.17	2.36	2.56	1.97	.87	-
KG20A, KG32A	48	36	12	8-15	5	4,1	60	-	-	-	32
	1.89	1.42	.47	.31-.59	.20	.16	2.36	-	-	-	1.26
KG20B, KG32B	64	48	13,5	10-15	5	4,1	60	-	-	-	32
	2.52	1.89	.53	.39-.59	.20	.16	2.36	-	-	-	1.26
KG41B, KG64B	64	48	13,5	10-15	5	4,1	70	-	-	-	37,5
	2.52	1.89	.53	.39-.59	.20	.16	2.76	-	-	-	1.48
KG80, KG100	64	48	13,5	10-15	5	5,2	90	-	-	-	47,5
KG105	2.52	1.89	.53	.39-.59	.20	.21	3.54	-	-	-	1.87
KG80C, KG100C	88	68	13,5	10-15	6	5,2	90	-	-	-	47,5
KG105C	3.46	2.68	.53	.39-.59	.24	.21	3.54	-	-	-	1.87

	F2	F3	F4	G	G1[2]	H	L 6p.	L 8p.
KG10A	-	-	-	48	-	50	58,7	68,2
	-	-	-	1.89	-	1.97	2.31	2.69
KG10B	-	-	-	48	-	50	65,7	75,2
	-	-	-	1.89	-	1.97	2.59	2.96
KG20A, KG32A	10	23,5	45,5	84	13,5	54	57,5	-
	.39	.92	1.79	3.31	.53	2.13	2.26	-
KG20B, KG32B	10	23,5	45,5	84	13,5	54	57,5	-
	.39	.92	1.79	3.31	.53	2.13	2.26	-
KG41B, KG64B	12,5	28,5	53,5	100	16	64	67	-
	.49	1.12	2.11	3.94	.63	2.52	2.64	-
KG80, KG100, KG105	22,5	44,5	69,5	140	22	80	79,2	-
	.89	1.75	2.74	5.51	.87	3.15	3.12	-
KG80C, KG100C, KG105C	22,5	44,5	69,5	140	22	80	79,2	-
	.89	1.75	2.74	5.51	.87	3.15	3.12	-

ON/OFF switches 6 pole
double-throw switches 3 pole

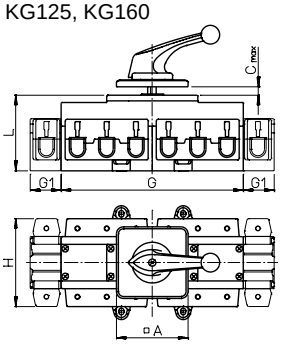


double-throw switches 4 pole

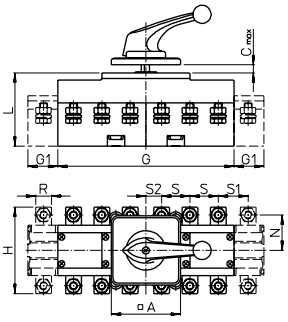


	A	B	C	D1	D2	D3	G	G1[2]	H	L[3]	N	P	Q1	Q2	R	S	S1	S2
KG125, KG160	88	68	16	13-17	6	6,4	224	38	108	93	-	76	59-61	59-61	-	-	-	-
	3.46	2.68	.63	.51-.67	.24	.25	8.82	1.50	4.25	3.66	-	2.99	2.32-2.40	2.32-2.40	-	-	-	-
KG126, KG161	88	68	16	13-17	6	6,4	224	38	110	93	45	76	38-40	38-40	20	36	38	20
	3.46	2.68	.63	.51-.67	.24	.25	8.82	1.50	4.33	3.66	1.77	2.99	1.50-1.57	1.50-1.57	.79	1.42	1.50	.79
KG127, KG162	88	68	16	13-17	6	6,4	224	38	109	93	45	76	38-40	59-61	20	36	38	20
	3.46	2.68	.63	.51-.67	.24	.25	8.82	1.50	4.29	3.66	1.77	2.99	1.50-1.57	2.32-2.40	.79	1.42	1.50	.79

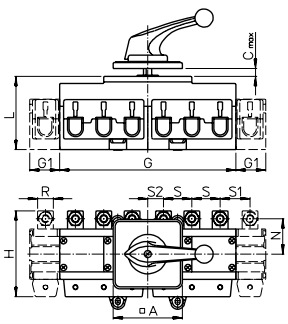
KG125, KG160

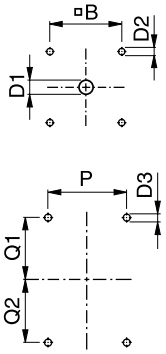


KG126, KG161

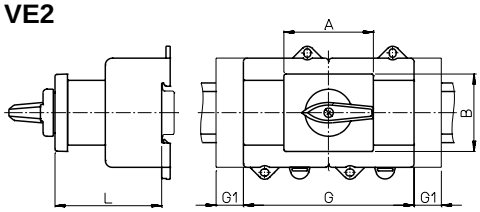


KG127, KG162



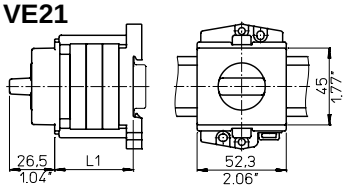


VE2



	A	B	G	G1[2]	L
KG20A, KG32A	43,7	45,4	84	13,5	64
	1.72	1.79	3.31	.53	2.52
KG41B, KG64B	105,4	45,4	100	16	62,5
	4.15	1.79	3.94	.63	2.46
KG80, KG100, KG105	70	45	140	22	76,2
	2.76	1.77	5.51	.87	3.00

VE21



	L1 6p.	L1 8p.
KG10A	46/1.81	54/2.13

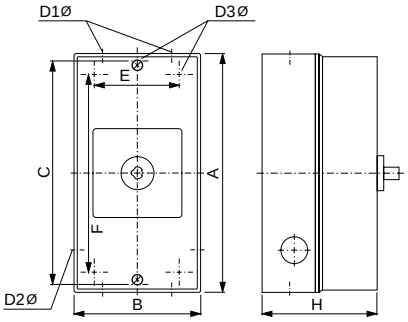
[1]Switches KG10A and KG10B allow use of E1, E2 or E3. [2]For ON/OFF switches 8 pole and double-throw switches 4 pole.
[3]Additional length for mounting VE1 = 7,5 mm/.30 inch.

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Plastic Enclosures and Optional Extras

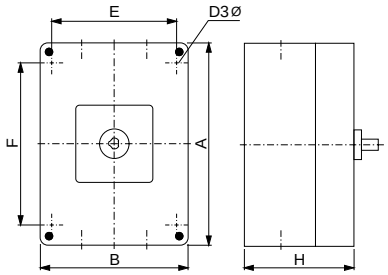
Switches in Plastic Enclosure

KL.., CL.., KS5., CS5.



	3 and 4 pole	6 pole, Double-throw Switches 3 pole	8 pole, Double-throw Switches 4 pole	A	B	C	D1	D2	D3	E	F	H
KG10[1]	x	x	x	120	85	110	2x20/25[2]	20	4,2	-	-	80
				4.72	3.35	4.33	2x.79/.98[2]	.79	.17	-	-	3.15
KG20[1]	x			120	85	110	2x20/25[2]	20	4,2	-	-	80
				4.72	3.35	4.33	2x.79/.98[2]	.79	.17	-	-	3.15
KG20, KG32	x			160	85	150	2x20/25	20	4,2	-	-	80
				6.30	3.35	5.91	2x.79/.98	.79	.17	-	-	3.15
KG20B, KG32B		x		190	100	178	2x25	25	5,6	-	-	91
				7.48	3.94	7.01	2x.98	.98	.22	-	-	3.58
			x	250	145	-	2x25/40	25	6,5	124	229	107
				9.84	5.71	-	2x.98/1.57	.98	.26	4.88	9.02	4.21
KG41, KG64	x			190	100	178	2x25	25	5,6	-	-	91
				7.48	3.94	7.01	2x.98	.98	.22	-	-	3.58
KG41B, KG64B		x	x	250	145	-	2x25/40	25	6,5	124	229	107
				9.84	5.71	-	2x.98/1.57	.98	.26	4.88	9.02	4.21
KG80, KG100, KG105	x			250	145	-	2x25/40	25	6,5	124	229	107
				9.84	5.71	-	2x.98/1.57	.98	.26	4.88	9.02	4.21

PFA-PFF5

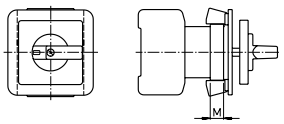


	3 and 4 pole	6 and 8 pole, Double-throw Switches	A	B	E	F	H	D3
KG20A, KG32A, KG41, KG64	x		135	92	78	110	91	4,4
			5.31	3.62	3.07	4.33	3.58	.17
KG20B, KG32B, KG41B, KG64B		x	180	140	128	150	98	4,5
			7.09	5.51	5.04	5.91	3.86	.18
KG80, KG100	x		180	140	128	150	98	4,5
			7.09	5.51	5.04	5.91	3.86	.18

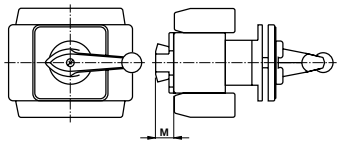
Cam/rack-operated Auxiliary Contacts

E

KG20-KG105C

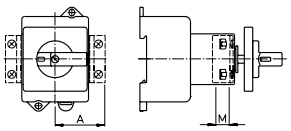


KG125-KG317

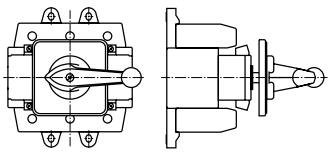


VE

KG20-KG105C



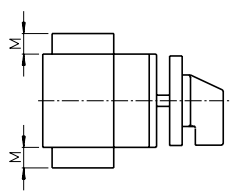
KG125-KG317



	Mounting	A	M allows use of 1 or 2 contacts	M allows use of 3 or 4 contacts
KG20, KG32	E/VE	-	9	25,8
			.35	1.02
KG41, KG64	E/VE	-	10	30
			.39	1.18
KG80, KG100 KG105	E	-	10	30
			.39	1.18
	VE	47,2	10	30
		1.86	.39	1.18
	VE2	47,2	20	40
		1.86	.79	1.57

	Mounting	M
KG125-KG317	E	21
		.83

Lateral mounted Auxiliary Contacts



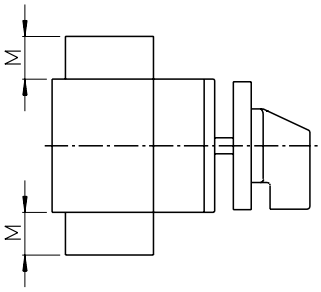
	M
KG20, KG20A, KG20B, KG32, KG32A, KG32B	10
	.39
KG41, KG41B, KG64, KG64B	11
	.43
KG80, KG80C, KG100, KG100C, KG105, KG105C	11
	.43
KG125-KG317	14
	.55

[1]KS5., CS5.

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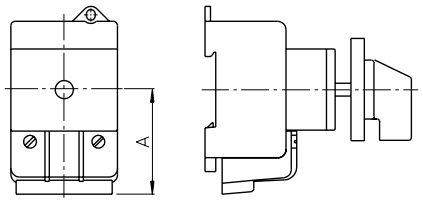
Optional Extras

Ground and Neutral Terminal, Additional Main Contact



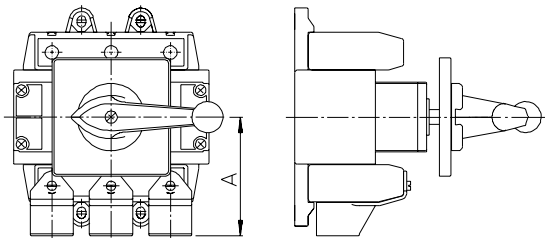
	M
KG20, KG20A, KG20B, KG32, KG32A, KG32B	13,5 .53
KG41, KG41B, KG64, KG64B	16 .63
KG80, KG80C, KG100, KG100C, KG105, KG105C	22 .87
KG125, KG126, KG127, KG160, KG161, KG162	38 1.50
KG210, KG211, KG212, KG250, KG251, KG252, KG315, KG316, KG317	52,5 2.07

Protective Cover



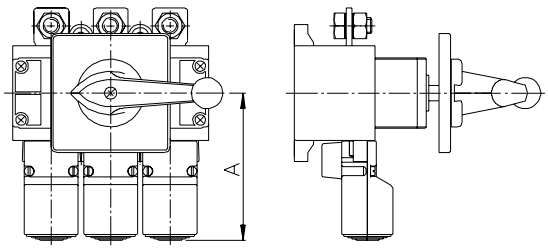
	A
KG10A, KG10B	30 1.18
KG20, KG20A, KG20B, KG32, KG32A, KG32B	47 1.85
KG41, KG41B, KG64, KG64B	49 1.93
KG80, KG80C, KG100, KG100C, KG105, KG105C	66 2.60

With box terminal



		A
KG125-KG162	with box terminal	76,2 3.00
	with bolt terminal	112 4.41
KG210-KG317	with box terminal	88 3.46
	with bolt terminal	109,5 4.29

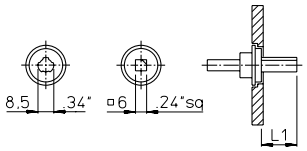
With bolt terminal



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Optional Extras

Shaft Extension



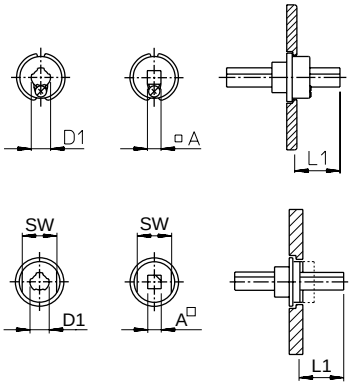
L100, L100A

L1 = Free shaft length

	Mounting	L1	L1	L1	L1	L1	L1	L1	L1	L1
KG10B	E	19	23	27	32	37	42	47	52	57
		.75	.91	1.06	1.26	1.46	1.65	1.85	2.05	2.24
	VE	18	22	26	31	36	41	46	51	56
		.71	.87	1.02	1.22	1.42	1.61	1.85	2.01	2.20
KG20B, KG32B	E	11,5	16,5	20,5	24,5	29,5	34,5	39,5	44,5	49,5
		.45	.65	.81	.96	1.16	1.36	1.56	1.75	1.95
	VE	18	23	27	31	36	41	46	51	56
		.71	.91	1.06	1.22	1.42	1.61	1.81	2.01	2.20
KG41B, KG64B	E	13,5	17,5	21,5	26,5	31,5	36,5	41,5	46,5	51,5
		.53	.69	.85	1.04	1.24	1.44	1.63	1.83	2.03
	VE	15,8	19,8	23,8	28,8	33,8	38,8	43,8	48,8	53,8
		.62	.78	.94	1.13	1.33	1.53	1.72	1.92	2.12
KG80, KG80C	E	13,5	17,5	21,5	26,5	31,5	36,5	41,5	46,5	51,5
KG100, KG100C		.53	.69	.85	1.04	1.24	1.44	1.63	1.83	2.03
KG105, KG105C	VE	16,5	20,5	24,5	29,5	34,5	39,5	44,5	49,5	54,5
		.65	.81	.96	1.16	1.36	1.56	1.75	1.95	2.15
		L1	**L1**	**L1**	**L1**	**L1**	**L1**	**L1**	**L1**	**L1**
KG10B	E	62	67	72	77	82	87	92	97	102
		2.44	2.64	2.83	3.03	3.23	3.43	3.62	3.82	4.02
	VE	61	66	71	76	81	86	91	96	101
		2.40	2.60	2.80	2.99	3.19	3.89	3.58	3.78	3.98
KG20B, KG32B	E	54,5	59,5	64,5	69,5	74,5	79,5	84,5	89,5	94,5
		2.15	2.34	2.54	2.74	2.93	3.13	3.33	3.52	3.72
	VE	61	66	71	77	81	86	91	96	101
		2.40	2.60	2.80	3.03	3.19	3.39	3.58	3.78	3.98
KG41B, KG64B	E	56,5	61,5	66,5	71,5	76,5	81,5	86,5	91,5	96,5
		2.22	2.42	2.62	2.81	3.01	3.21	3.41	3.60	3.80
	VE	58,8	63,8	68,8	73,8	78,8	83,8	88,8	93,8	98,8
		2.31	2.51	2.71	2.91	3.10	3.30	3.50	3.69	3.89
KG80, KG80C	E	56,5	61,5	66,5	71,5	76,5	81,5	86,5	91,5	96,5
KG100, KG100C		2.22	2.42	2.62	2.81	3.01	3.21	3.41	3.60	3.80
KG105, KG105C	VE	59,5	64,5	69,5	74,5	79,5	84,5	89,5	94,5	99,5
		2.34	2.54	2.74	2.93	3.23	3.33	3.52	3.72	3.92

M004, M004A, M004D, M004E

L1 = Free shaft length



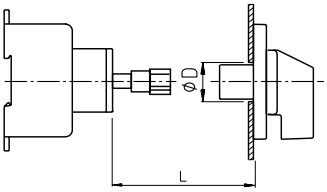
	Mounting	L1[1]	L1	L1	L1	L1	D1	A	SW
KG10A	E, VE	-	21-41	41-61	61-81	81-101	6	-	12
		-	.83-1.61	1.61-2.40	2.40-3.19	3.19-3.98	.24	-	.47
KG20A, KG32A	E	-	34,5-38	54,5-58	74,5-78	94,5-98	6	-	12
		-	1.36-1.50	2.15-2.28	2.93-3.07	3.72-3.86	.24	-	.47
	VE	-	41,5-45	61,5-65	81,5-85	101,5-105	6	-	12
		-	1.63-1.77	2.42-2.56	3.21-3.35	4.00-4.13	.24	-	.47
KG41B, KG64B	E	29,5-35,5	43-49	63-69	83-89	103-109	8,5	6	16
		1.16-1.40	1.69-1.93	2.48-2.72	3.27-3.50	4.06-4.29	.33	.24	.63
	VE	32,5-38,5	46-52	66-72	86-92	106-112	8,5	6	16
		1.28-1.52	1.81-2.05	2.60-2.83	3.39-3.62	4.17-4.41	.33	.24	.63
KG80, KG80C	E	25,5-31,5	39-45	59-65	79-85	99-105	8,5	6	16
KG100, KG100C		1.00-1.24	1.54-1.77	2.32-2.56	3.11-3.35	3.90-4.13	.33	.24	.63
KG105, KG105C	VE	30,5-36,5	44-50	64-70	84-90	104-110	8,5	6	16
		1.20-1.44	1.73-1.97	2.52-2.76	3.31-3.54	4.09-4.33	.33	.24	.63
KG125, KG126	E	39-53	69-83	99-113	129-143	159-173	11,2	8	22
KG127, KG160		1.54-2.09	2.72-3.27	3.90-4.45	5.08-5.63	6.26-6.81	.44	.32	.87
KG161, KG162	VE	44-58	74-88	104-118	134-148	164-178	11,2	8	22
		1.73-2.28	2.91-3.46	4.09-4.65	5.28-5.83	6.46-7.01	.44	.32	.87
KG210, KG211	E	38-52	68-82	98-112	128-142	158-172	11,2	8	22
KG212, KG250		1.50-2.03	2.68-3.23	3.86-4.41	5.04-5.59	6.22-6.77	.44	.32	.87
KG251, KG252	VE	43-57	73-87	103-117	133-147	163-177	11,2	8	22
KG315, KG316		1.69-2.24	2.87-3.43	4.06-4.61	5.24-5.78	6.42-6.97	.44	.32	.87
KG317									

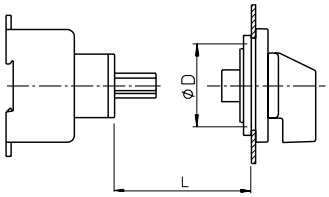
[1]Only for square shaft

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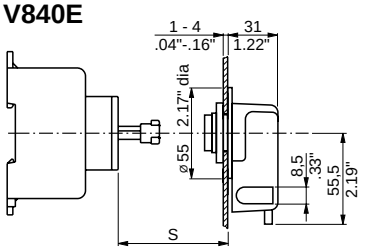
Optional Extras

Simplified Door Clutches

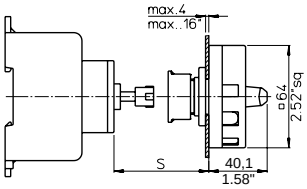




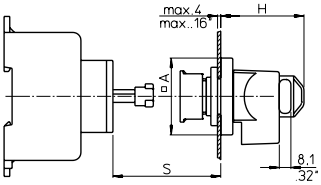
V840E



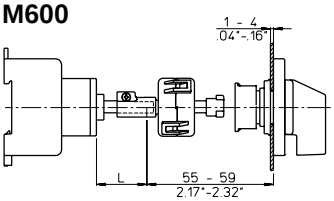
V840G/V840F



V845



M600



L see L100, M004D, M004, page 44.

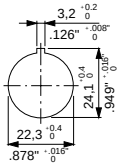
M290/A3, M290/A3.EF L = Standard length for switches of mounting VE

	L	L	L	L	L	D[1]
KG10A	37-57	57-77	77-97	97-117	-	18
	1.46-2.24	2.24-3.03	3.03-3.82	3.82-4.61	-	.71
KG20A, KG32A	55-68	75-88	95-108	115-128	-	18
	2.17-2.68	2.95-3.46	3.74-4.25	4.53-5.04	-	.71
KG41B, KG64B	60-70	80-90	100-110	120-130	-	18
	2.36-2.76	3.15-3.54	3.94-4.33	4.72-5.12	-	.71
KG80, KG100	56-68	76-88	96-108	116-128	-	18
KG105	2.20-2.68	2.99-3.46	3.78-4.25	4.57-5.04	-	.71

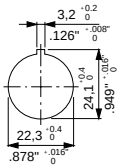
[1]For KG10A, KG20A and KG32A with M290/A3.EF: 22/.87

M290/A1.EF L = Standard length for switches of mounting VE

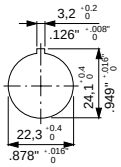
	L	L	L	L	L	L	D
KG41B, KG64B	27-31	27-38	32-45	41-54	47-60	56-69	45,6
	1.06-1.22	1.06-1.50	1.26-1.77	1.61-2.13	1.85-2.36	1.97-2.72	1.80
KG80, KG100	27-32	27-40	33-47	42-55	48-62	57-70	45,6
KG105	1.06-1.26	1.06-1.57	1.30-1.85	1.65-2.17	1.89-2.44	2.24-2.76	1.80



	S min.	S max.
KG10B	23	106
	.91	4.17
KG20B, KG32B	24,5	110
	.96	4.33
KG41B, KG64B	20	108
	.79	4.25
KG80, KG100	23	109
KG105	.91	4.29
KG125-KG317	21	110
	.83	4.33



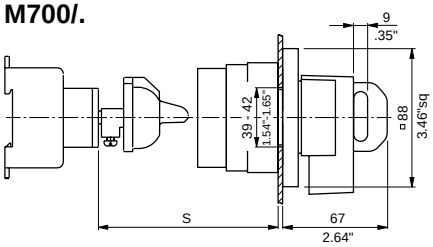
	S min.	S max.
KG10B	30	115
	1.02	4.49
KG20B, KG32B	27,5	113
	1.08	4.45
KG41B, KG64B	39,5	124
	1.56	4.88
KG80, KG100	27,5	122
KG105	1.08	4.80



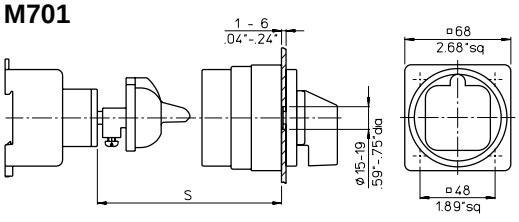
	A	H	S min.	S max.
KG10A	48	52	30	115
	1.89	2.05	1.18	4.53
KG10B	64	58	26	114
	2.52	2.28	1.02	4.49
KG20A, KG32A	48	52	50,5	119
	1.89	2.05	1.99	4.69
KG20B, KG32B	64	58	27,5	113
	2.52	2.28	1.08	4.45
KG41B, KG64B	64	58	39,5	124
	2.52	2.28	1.56	4.88
KG80, KG100	64	58	27,5	122
KG105	2.52	2.28	1.08	4.80

Door Clutches

M700/.



M701



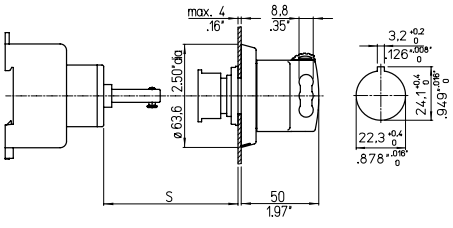
	S
KG10B	80
	3.15
KG20B, KG32B	61,5
	2.42
KG41B, KG64B	61,5
	2.42
KG80, KG100	61,5
KG105	2.42
KG125-KG317	61,5
	2.42

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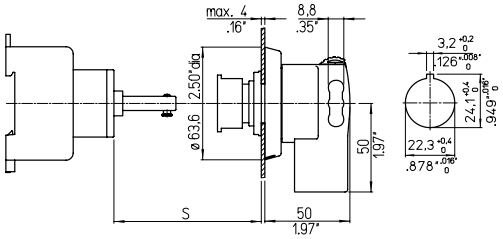
Optional Extras

Simplified Door Clutches

M810



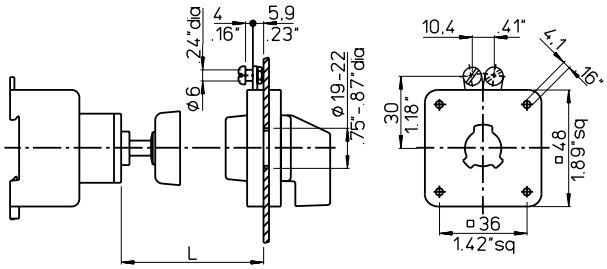
M800



M810, M800

		S
KG41B, KG64B	3-pole	59 2.32
	6-pole	57 2.24
KG80, KG100 KG105	3-pole	56 2.20
	6-pole	53 2.09
KG125-KG317		56 2.20

KG10A, KG20A, KG32A

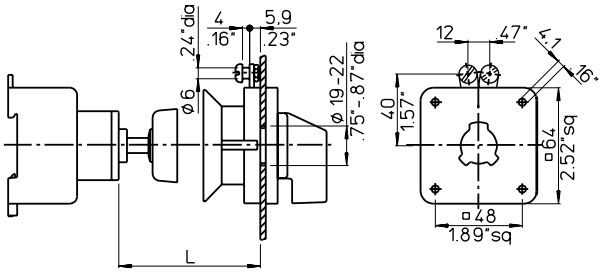


M280D, M280D/.EF, M280E, M280E/.EF

L = Standard length for switches of mounting VE

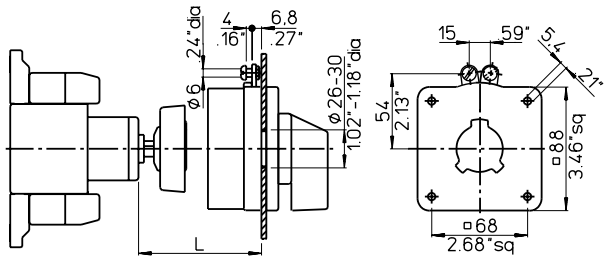
	L	L	L	L
KG10A	36-55 1.42-2.17	56-75 2.20-2.95	75-95 2.99-3.74	96-116 3.78-4.57
KG20A, KG32A	58,5-66 2.30-2.60	78,5-86 3.09-3.50	98,5-106 3.88-4.17	118,5-126 4.67-4.96

KG10B, KG20B, KG32B, KG41B, KG64B, KG80, KG100, KG105



	L	L	L	L
KG10B	32-57 1.26-2.24	58-77 2.28-3.03	78-97 3.07-3.82	98-118 3.86-4.65
KG20B, KG32B	57,5-65 2.26-2.56	77,5-85 3.05-3.35	97,5-105 3.84-4.13	117,5-125 4.63-4.92
KG41B, KG64B	62-72 2.44-2.83	82-92 3.23-3.62	102-112 4.02-4.41	122-132 4.80-5.20
KG80, KG100 KG105	60-70 2.36-2.76	80-90 3.15-3.54	100-110 3.94-4.33	120-130 4.72-5.12

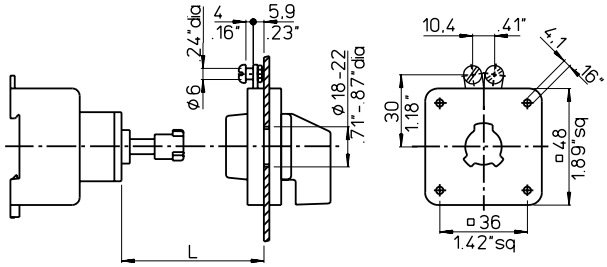
KG125-KG317



	L	L	L	L
KG125-KG317	93-109 3.66-4.29	123-139 4.84-5.47	153-169 6.02-6.65	183-199 7.20-7.83

M280B/., M280B/.EF

L = Standard length for switches of mounting VE



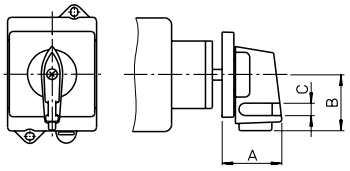
	L	L	L	L
KG41, KG64	26-34 1.02-1.34	41-49 1.61-1.93	56-64 2.20-2.52	71-79 2.80-3.11

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Optional Extras

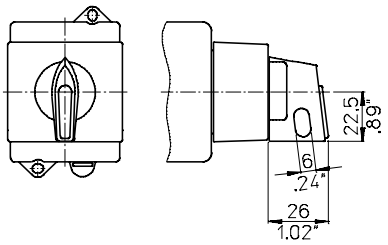
Padlock Devices, Additional Module for Motor Control Center (MCC), Angular drive

V840A

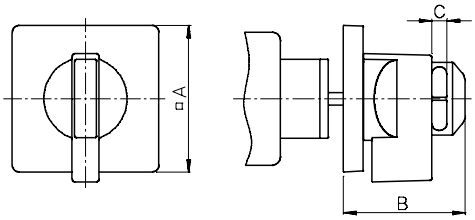


	A	B	C
KG10A, KG20A, KG32A, KG41	32,9	31,5	5
KG64	1.30	1.24	.20
KG10B, KG20B, KG32B, KG41B	41,6	40	7
KG64B, KG80, KG100, KG105	1.64	1.57	.28

V840B



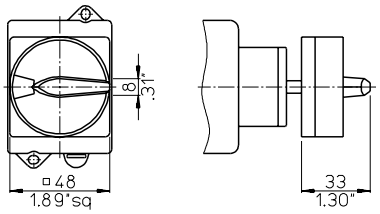
V845



	A	B	C
KG10A, KG20A, KG32A, KG41	48	51	7,2
KG64	1.89	2.01	.28
KG10B, KG20B, KG32B, KG41B	64	58	8,1
KG64B, KG80, KG100, KG105	2.52	2.28	.32
KG80C, KG100C, KG105C	88	73	9
KG125-KG317	3.47	2.87	.35

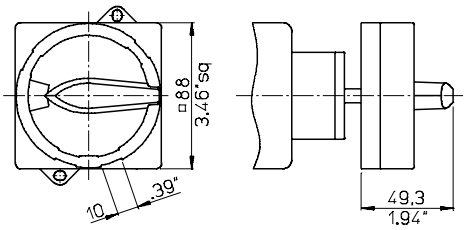
V840D

KG10A, KG20A, KG32A, KG41, KG64



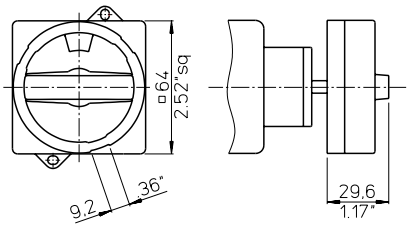
V840D

KG80C, KG100C, KG105C, KG125-KG162



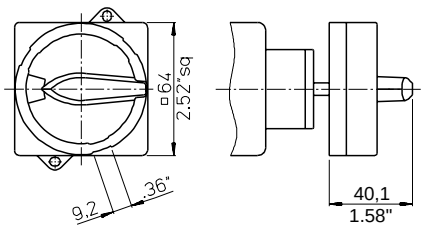
V840G/B, V840F/B

KG10B, KG20B, KG32B, KG41B, KG64B, KG80, KG100, KG105

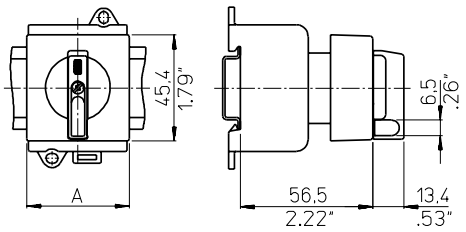


V840G, V840F/F

KG10B, KG20B, KG32B, KG41B, KG64B, KG80, KG100, KG105

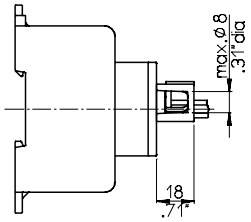


V840H/..E

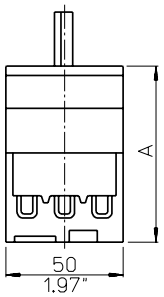


	A
KG20A, KG32A	43,7
	1.72
KG41, KG64	52,4
	2.06

V840VE

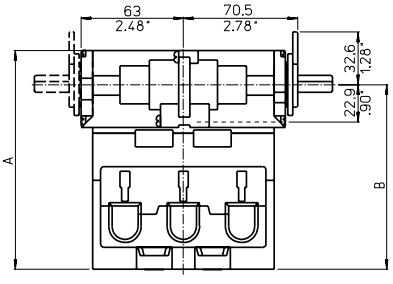


V500



	A
KG20B	69,5
KG32B	2.74
KG41B	75
KG64B	2.95

M330



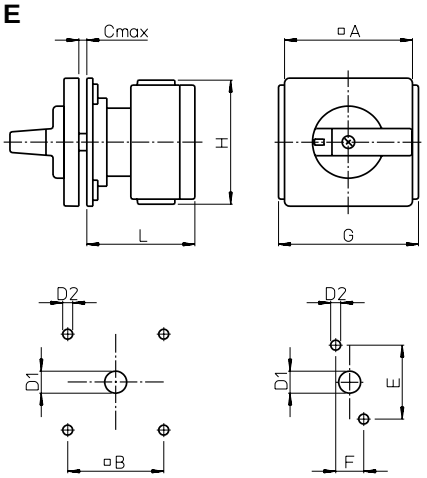
	A	B
KG125-	135	113,9
KG162	5.31	4.48
KG210-	142	120,9
KG317	5.59	4.76

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Mounting
(Additional length for auxiliary contacts see page 50)

ON/OFF Switches 4 pole

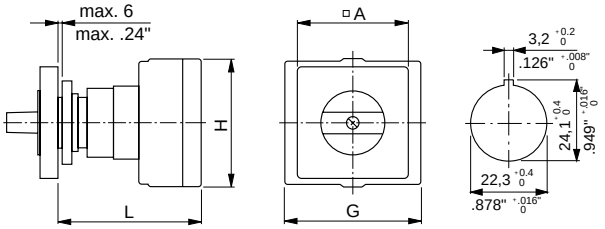
E



	A	B	C	D1	D2[1]	E	F	G	H	L
KH16-KHR25	48	36	4	10-15	5/3,5	30	12,2	60	56	49
	1.89	1.42	.16	.39-.59	.20/.14	1.18	.48	2.36	2.20	1.93
KH16B-KHR25B	64	48	4	10-15	5/3,5	30	12,2	60	56	49
	2.52	1.89	.16	.39-.59	.20/.14	1.18	.48	2.36	2.20	1.93
KH32, KHR32,	64	48	4	10-15	5/3,5	30	12,2	70	62	54
KH40, KHR40	2.52	1.89	.16	.39-.59	.20/.14	1.18	.48	2.76	2.44	2.13
KH63, KHR63	64	48	4	10-15	5/4,5	37	14	86	90	62
KH80, KHR80	2.52	1.89	.16	.39-.59	.20/.18	1.46	.55	3.39	3.54	2.44

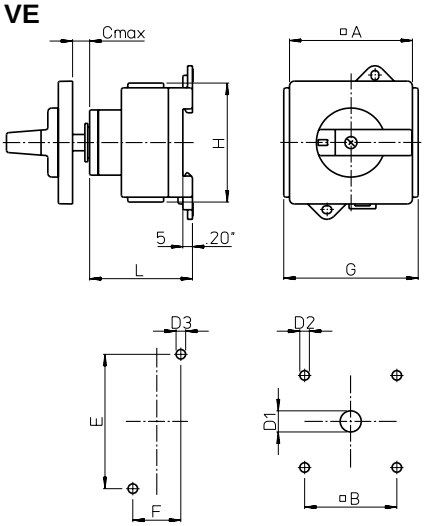
[1]Dimensions after the slash are valid for two hole panel mounting

FT2
FH3



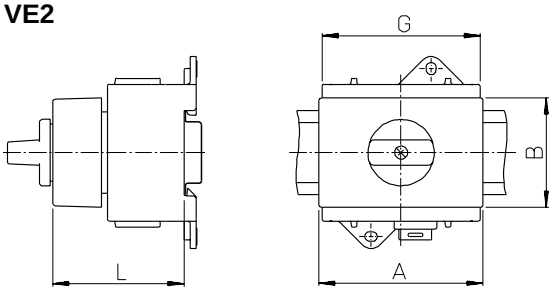
		A	G	H	L
KH16-KHR25	FT2	49	60	56	63,5
		1.93	2.36	2.20	2.50
	FH3	64	60	56	63,5
		2.52	2.36	2.20	2.50
KH32, KHR32,	FH3	64	70	62	68,7
KH40, KHR40		2.52	2.76	2.44	2.70
KH63, KHR63,	FH3	64	86	90	77,1
KH80, KHR80		2.52	3.39	3.54	3.04

VE



	A	B	C	D1	D2	D3	E	F	G	H	L
KH16-KHR25	48	36	12	8-15	5	4,2	60	22	60	56	47
	1.89	1.42	.47	.31-.59	.20	.17	2.36	.86	2.36	2.20	1.85
KH16B-KHR25B	64	48	13,5	10-15	5	4,2	60	22	60	56	47
	2.52	1.89	.53	.39-.59	.20	.17	2.36	.86	2.36	2.20	1.47
KH32, KHR32,	64	48	25,5	10-15	5	4,1	70	25	70	62	53,5
KH40, KHR40	2.52	1.89	1.00	.39-.59	.20	.16	2.76	.98	2.76	2.44	2.11
KH63, KHR63,	64	48	25,5	10-15	5	4,1	90	25	86	90	59,5
KH80, KHR80	2.52	1.89	1.00	.39-.59	.20	.16	3.54	.98	3.39	3.54	2.34

VE2



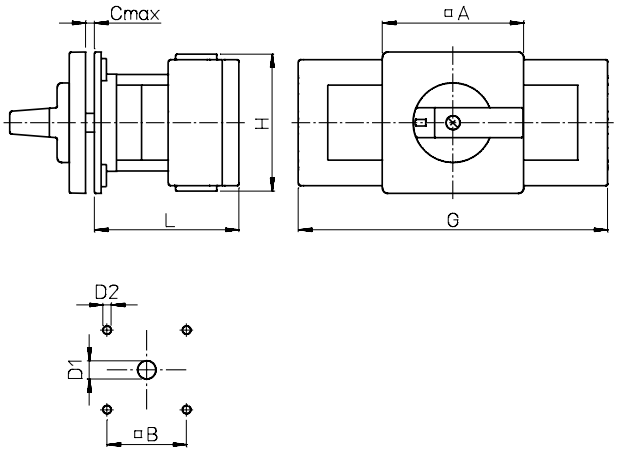
	A	B	G	L
KH16-KHR25	43,7	45,4	60	53,5
	1.72	1.79	2.36	2.11
KH32, KHR32	70,4	45,4	70	54,7
KH40, KHR40	2.77	1.79	2.76	2.15
KH63, KHR63	70,4	45,4	86	61,7
KH80, KHR80	2.77	1.79	3.39	2.43

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Mounting
(Additional length for auxiliary contacts see page 50)

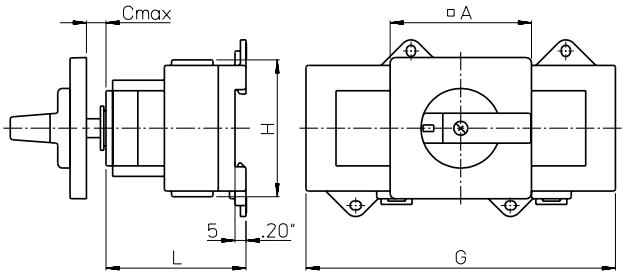
ON/OFF Switches 8 pole and Double-throw Switches

E

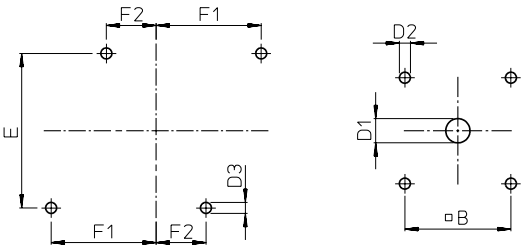


	A	B	C	D1	D2	G	H	L
KH16-KHR25	48	36	4	10-15	5	120,1	56	60
	1.89	1.42	.16	.39-.59	.20	4.73	2.20	2.36
KH16B-KHR25B	64	48	4	10-15	5	120,1	56	60
	2.52	1.89	.16	.39-.59	.20	4.73	2.20	2.36
KH32, KHR32	64	48	4	10-15	5	140,1	62	65,4
KH40, KHR40	2.52	1.89	.16	.39-.59	.20	5.52	2.44	2.57

VE

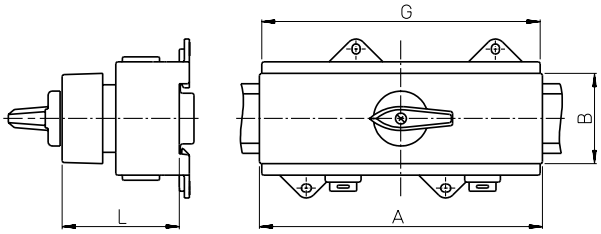


	A	C	G	H	L
KH16-KHR25	48	12	120,1	56	58
	1.89	.47	4.73	2.20	2.28
KH16B-KHR25B	64	13,5	120,1	56	58
	2.52	.53	4.73	2.20	2.28
KH32, KHR32	64	13,5	140,1	62	63,4
KH40, KHR40	2.52	.53	5.52	2.44	2.50



	B	D1	D2	D3	E	F1	F2
KH16-KHR25	36	10-15	5	4,2	60	41	19
	1.42	.39-.59	.20	.17	2.36	1.61	.75
KH16B-KHR25B	48	10-15	5	4,2	60	41	19
	1.89	.39-.59	.20	.17	2.36	1.61	.75
KH32, KHR32	48	10-15	5	4,1	70	47,5	22,5
KH40, KHR40	1.89	.39-.59	.20	.16	2.76	1.87	.89

VE2

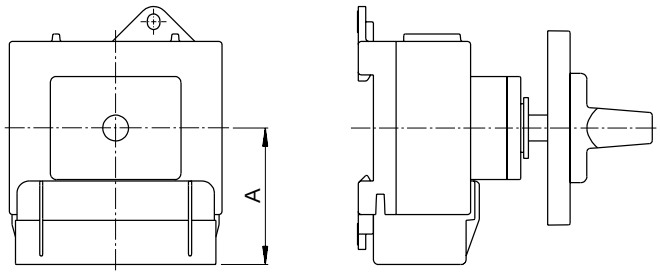


	A	B	G	L
KH32	142,4	45,4	140,1	60,9
KH40	5.61	1.79	5.52	2.40

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Optional Extras

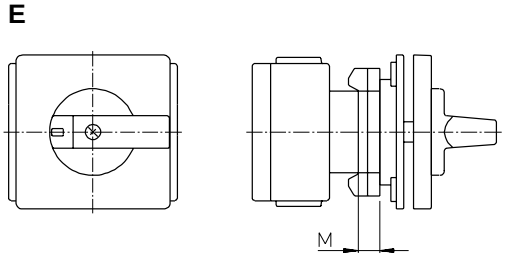
Protective Cover



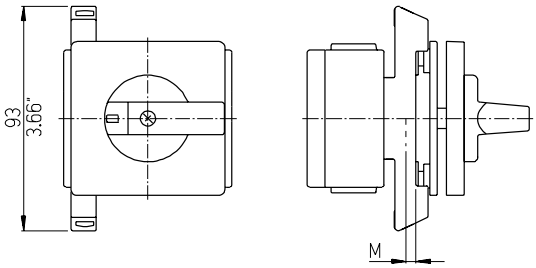
	A
KH32-KHR40	45 1.77
KH63-KHR80	68,5 2.70

Cam/rack-operated Auxiliary Contacts

E

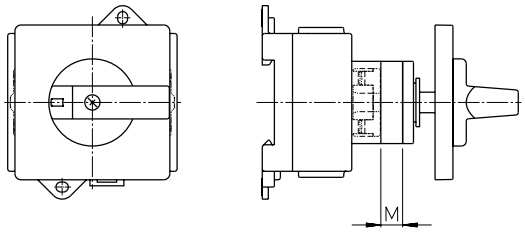


KH16-KHR25B



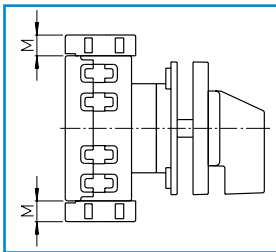
KH32-KHR80

VE



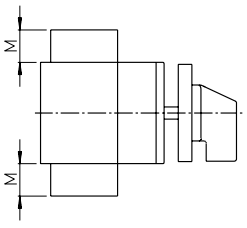
		M
KH16-KHR25B	1 or 2 contacts	9 .35
	3 or 4 contacts	25,8 1.02
KH32, KHR32, KH40, KHR40	1 or 2 contacts	0
KH63, KHR63, KH80, KHR80	1 or 2 contacts	0

Lateral mounted Auxiliary Contacts



	M
KH16-KHR25B	10 .39
KH32, KHR32, KH40, KHR40	10 .39
KH63, KHR63, KH80, KHR80	10 .39

Ground Terminal



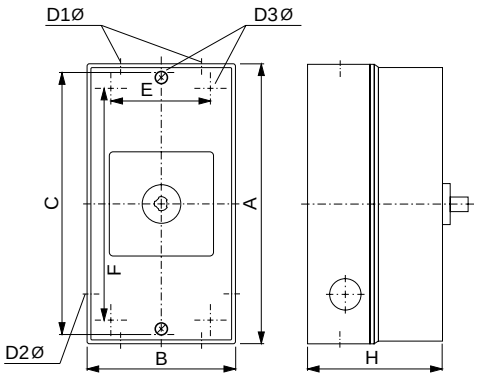
	M
KH16-KHR25B	13,5 .53
KH32, KHR32, KH40, KHR40	13,5 .53
KH63, KHR63, KH80, KHR80	20 .79

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Optional Extras

Switches in Plastic Enclosure

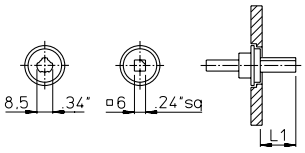
KL.., CL.., KS.., CS..



	A	B	C	D1	D2	D3	E	F	H
KH16 - KHR25	120	85	110	2x20/25[1]	20	4,2	-	-	80
	4.72	3.35	4.33	2x.79/.98[1]	.79	.17	-	-	3.15
KH16 - KHR25	160	85	150	2x20/25	20	4,2	-	-	80
	6.30	3.35	5.91	2x.79/.98	.79	.17	-	-	3.15
KH32 - KHR40	190	100	178	2x25	25	5,6	-	-	91
	7.48	3.94	7.01	2x.98	.98	.22	-	-	3.58
KH63 - KHR80	250	145	-	2x25/40	25	6,5	124	229	107
	9.84	5.71	-	2x.98/1.57	.98	.26	4.88	9.02	4.21
KH16B - KHR25B	250	145	-	2x25/40	25	6,5	124	229	107
	9.84	5.71	-	2x.98/1.57	.98	.26	4.88	9.02	4.21

[1]CS... 2x20, 2 x .79

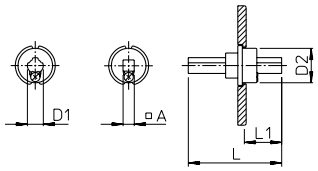
L100, L100A



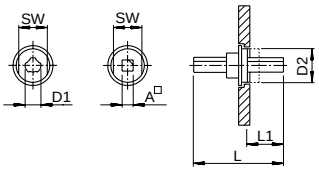
L1 = Free shaft length

	Mount-ing	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1
KH16B-KHR25B	E	11,5	16,5	20,5	24,5	29,5	34,5	39,5	44,5	49,5	54,5	59,5	64,5	69,5	74,5	79,5	84,5	89,5	94,5
		.45	.65	.81	.96	1.16	1.36	1.56	1.75	1.95	2.15	2.34	2.54	2.74	2.93	3.13	3.33	3.52	3.72
	VE	18	23	27	31	36	41	46	51	56	61	66	71	77	81	86	91	96	101
		.71	.91	1.06	1.22	1.42	1.61	1.81	2.01	2.20	2.40	2.60	2.80	3.03	3.19	3.39	3.58	3.78	3.98
KH32, KHR32,	E	14,3	18,3	22,3	27,3	32,3	37,3	42,3	47,3	52,3	57,3	62,3	67,3	72,3	77,3	82,3	87,3	92,3	97,3
KH40, KHR40,		.56	.72	.88	1.07	1.27	1.47	1.67	1.86	2.06	2.26	2.45	2.65	2.85	3.04	3.24	3.44	3.63	3.83
KH63, KHR63,	VE	19,8	23,8	27,8	32,8	37,8	42,8	47,8	52,8	57,8	62,8	67,8	72,8	77,8	82,8	87,8	92,8	97,8	102,8
KH80, KHR80		.78	.94	1.09	1.29	1.49	1.69	1.88	2.09	2.28	2.47	2.67	2.87	3.06	3.26	3.46	3.65	3.85	4.05

M004D, M004E



M004, M004A



L = Shaft length
L1 = Free shaft length max.
[1] = Only for square shaft

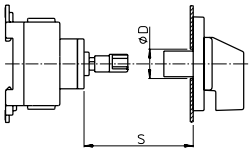
	Mount-ing	L[1]	L1[1]	L	L1	L	L1	L	L1	L	L1	D1	D2	A	SW
KH16-KHR25	E	-	-	60	11-38	80	31-58	100	51-78	120	71-98	6	13.8	-	12
				2.36	.43-1.50	3.15	1.22-2.28	3.94	2.01-3.07	4.72	2.80-3.86	.24	.54		.47
	VE	-	-	60	18-45	80	38-65	100	58-85	120	78-105	6	13.8	-	12
				2.36	.71-1.77	3.15	1.50-2.56	3.94	2.28-3.35	4.72	3.07-4.13	.24	.54		.47
KH32, KHR32,	E	56,5	3-36	70	17-49	90	37-69	110	57-89	130	77-109	8,5	18,5	6	16
KH40, KHR40,		2.22	.12-1.42	2.76	.67-1.93	3.54	1.46-2.72	4.33	2.24-3.50	5.12	3.03-4.29	.34	.73	.24	.63
KH63, KHR63,	VE	56,5	8-41	70	22-55	90	42-75	110	62-95	130	82-115	8,5	18,5	6	16
KH80, KHR80		2.22	.31-1.61	2.76	.87-2.17	3.54	1.65-2.95	4.33	2.44-3.74	5.12	3.23-4.53	.34	.73	.24	.63

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Optional Extras

Simplified Door Clutches

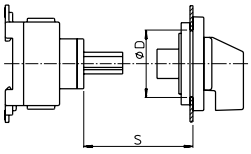
M290/A3, M290/A3.EF



S = Standard length for switches of mounting VE

	S	S	S	S	D
KH16-KHR25	34,5-61,5	54,5-81,5	74,5-101,5	94,5-121,5	18
	1.36-2.42	2.15-3.21	2.93-4.00	3.72-4.78	.71
KH32, KHR32, KH40, KHR40, KH63, KHR63, KH80, KHR80	28-55	55-75	75-95	95-115	18
	1.10-2.17	2.17-2.95	2.95-3.74	3.74-4.53	.71

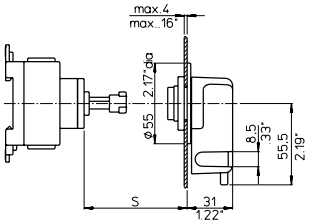
M290/A1.EF

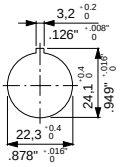


S = Standard length for switches of mounting VE

	S	S	S	S	S	S	D
KH32, KHR32, KH40, KHR40, KH63, KHR63, KH80, KHR80	25-30	27-37	34-44	42-52	49-59	57-67	45,6
	.98-1.18	1.06-1.46	1.34-1.73	1.65-2.05	1.93-2.32	2.24-2.64	1.80

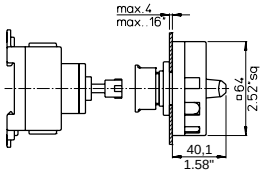
V840E

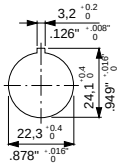




	$S_{min.}$	$S_{max.}$
KH16B-KHR25B	24,5	110
	.96	4.33
KH32, KHR32, KH40, KHR40, KH63, KHR63, KH80, KHR80	20	120
	.79	4.72

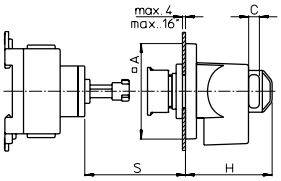
V840G/V840F

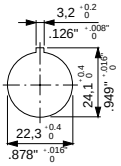




	$S_{min.}$	$S_{max.}$
KH16B-KHR25B	27,5	113
	1.08	4.45
KH32, KHR32, KH40, KHR40, KH63, KHR63, KH80, KHR80	28	124
	1.10	4.88

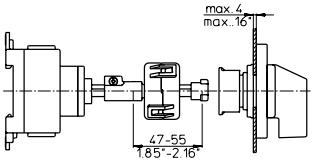
V845





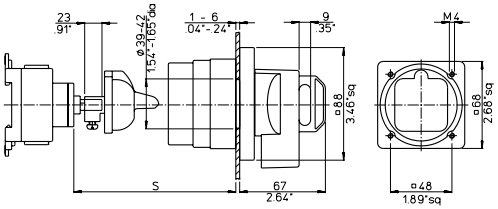
	A	C	H	$S_{min.}$	$S_{max.}$
KH16-KHR25	48	7,2	52	29,5	119
	1.89	.28	2.05	1.16	4.69
KH16B-KHR25B	64	8,1	58	27,5	113
	2.52	.32	2.28	1.08	4.45
KH32, KHR32, KH40, KHR40, KH63, KHR63, KH80, KHR80	64	8,1	58	28	124
	2.52	.32	2.28	1.10	4.88

M600

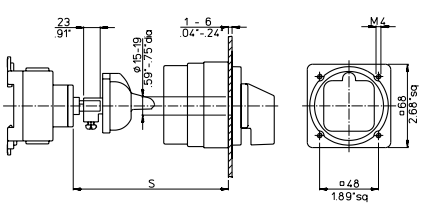


Door Clutches

M700/.



M701



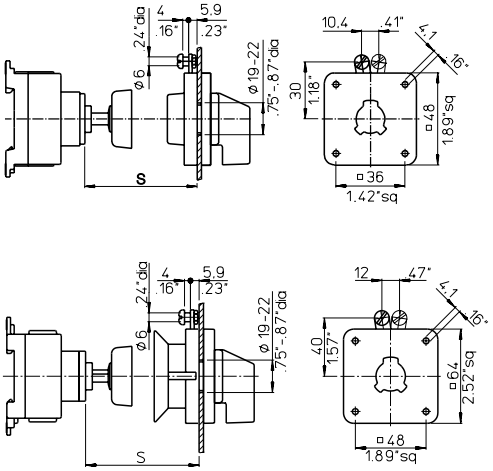
	$S_{min.}$ L100	$S_{min.}$ M004D, M004
KH16B-KHR25B	61,5	-
	2.42	
KH32, KHR32, KH40, KHR40, KH63, KHR63, KH80, KHR80	61,5	68
	2.42	2.68

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Optional Extras

Door Clutches

M280D, M280D/.EF, M280E, M280E/.EF



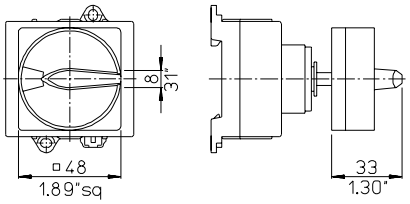
S = Standard length for switches of mounting VE

	S	S	S	S
KH16-KHR25	35-60 1.38-2.36	60-80 2.36-3.15	80-100 3.15-3.94	100-120 3.94-4.72

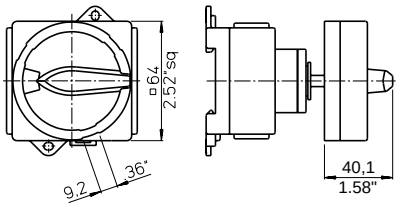
	S	S	S	S
KH16B-KHR25B	37-64 1.46-2.52	64-84 2.52-3.31	84-104 3.31-4.09	104-124 4.09-4.88
KH32, KHR32, KH40, KHR40, KH63, KHR63, KH80, KHR80	32-57 1.26-2.24	57-77 2.24-3.03	77-97 3.03-3.82	97-117 3.82-4.61

Padlock Devices

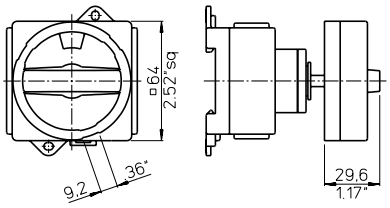
V840D



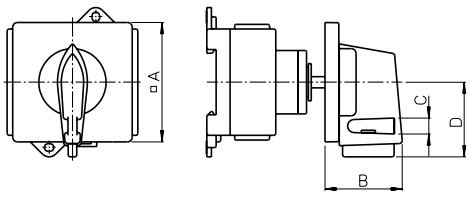
V840G, V840F/F



V840G/B, V840F/B

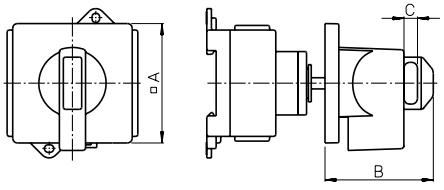


V840A



	A	B	C	D
KH16-KHR25	48 1.89	32,9 1.30	5 .20	31,5 1.24
KH16B-KHR25B	64 2.52	41,6 1.64	7 .28	40 1.57
KH32, KHR32, KH40, KHR40, KH63, KHR63, KH80, KHR80	64 2.52	41,6 1.64	7 .28	40 1.57

V845



	A	B	C
KH16-KHR25	48 1.89	51 2.01	7,2 .28
KH16B-KHR25B	64 2.52	58 2.28	8,1 .32
KH32, KHR32, KH40, KHR40, KH63, KHR63, KH80, KHR80	64 2.52	58 2.28	8,1 .32

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The Range of “Blue Line” Switchgear

Technical literature covering the following products is available on request.

	Catalog Number
Main Switches and Main Switches with Emergency Function 16 A-315 A **Maintenance Switches 20 A-315 A** **Switch Disconnectors 20 A-315 A** According to IEC 60947-3, EN 60947-3, VDE 0660 part 107, IEC 60204, EN 60204 and VDE 0113	**500**
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. 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. 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 switching duties. They incorporate 6 contacts in each switching stage. Their compact design provides a minimum length dimension for mounting purposes.	**140**
KG Switches 20 A-315 A and KH and KHR Switches 16 A-80 A KG, KH and KHR switches are excellent circuit interruptors. They have high through fault and fault making capacities and are especially designed for use as isolators and safety switches for machine tools, distribution panels and switchboards. KG ON/OFF switches offer unusually high dimensioned air and creepage distances between terminals which are designed for time saving “straight-line” wiring. ON/OFF switches are available with up to 8 poles and double-throw switches are available with up to 4 poles.	**150**
Push Buttons and Pilot Lights, 22,5 mm Ø A complete range of state-of-the-art push buttons and pilot lights represent an ideal combination of functional security and economical efficiency in a modular design.	**302**

We reserve the right to make technical and dimensional changes without prior notice.

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