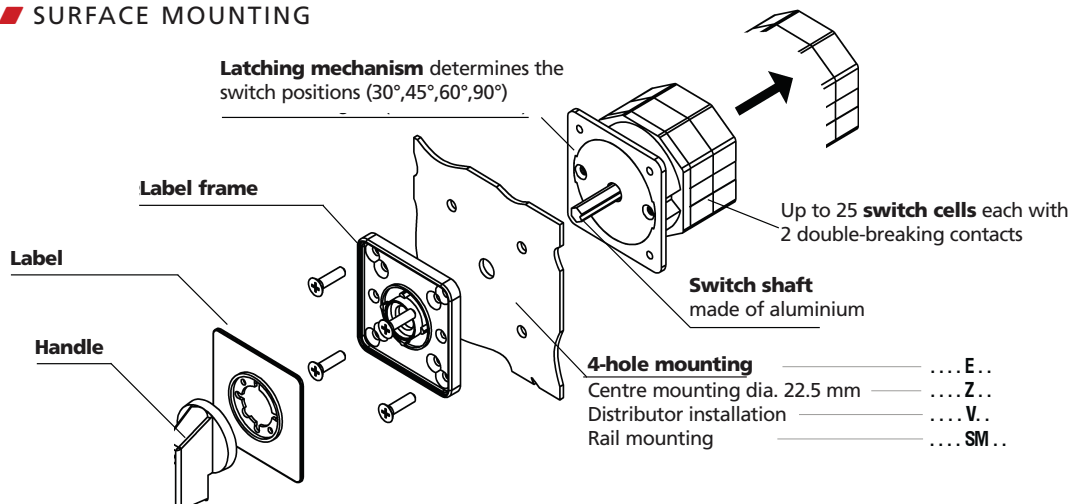


■ CAM SWITCHES 10-32 A – GENERAL INFORMATION

■ SCHRACK INFO

Cam switches are suitable for virtually any desired application and can be used, e.g., as motor switches, main switches, control switches and instrument switches.

■ SURFACE MOUNTING



■ CAM SWITCHES FOR PANEL MOUNTING



IN005120

■ SCHRACK INFO

- For 4-hole pattern
- Front mounting
- Switching capacity: AC 3 up to 15 kW
- Nominal current: 20 A to 50 A
- Type E
- Degree of protection: IP 65

■ CAM SWITCHES WITH CENTRAL FASTENING



IN025120

■ SCHRACK INFO

- 22 mm diameter
- Degree of protection: IP 65

■ CAM SWITCHES FOR DIN-RAIL MOUNTING



IN085220

■ SCHRACK INFO

- Switching capacity: up to 11 kW
- Nominal current: up to 32 A
- Type: SMA
- Degree of protection: IP 40

■ CAM SWITCHES PLASTIC ENCLOSED



IN036120

■ SCHRACK INFO

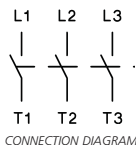
- Switching capacity: AC 3 up to 15 kW
- Nominal current: up to 32 A
- Type P (insulated enclosure) and G (cast enclosure)
- Degree of protection: IP 40

MAIN SWITCHES, CONTROL SWITCHES, COMMAND AND SIGNALLING DEVICES

CAM SWITCHES, ON-OFF SWITCHES FOR PANEL MOUNTING, IP65 (IP40)



IN005120

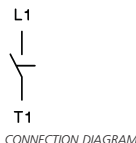


DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
1-pole/20 A	M10H E A1	9004840040630		IN005120
2-pole/20 A	M10H E A2	9004840040647		IN005220
3-pole/20 A/5.5 kW	M10H E A3	9004840040654		IN005320
1-pole/20 A/ON-OFF	M10H E A1+0035	9004840110159		IN005121

CAM SWITCHES, ON-OFF KEY SWITCHES FOR PANEL MOUNTING, IP65 (IP40)



IN005122



DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
Key switch, 1-pole/20 A/ON-OFF	M10H E A1+S A+0025+8100	9004840122619		IN005122

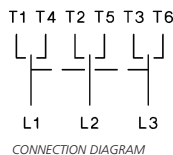
CAM SWITCHES, CHANGEOVER SWITCHES WITH ZERO POSITION FOR PANEL MOUNTING, IP65 (IP40)



IN006320



IN006122



DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
1-pole/20 A	M10H E U1	9004840040661		IN006120
2-pole/20 A	M10H E U2	9004840040678		IN006220
3-pole/20 A/5.5 kW	M10H E U3	9004840040685		IN006320
1-pole/20 A/MAN-OFF- AUTO	M10H E U1+0885	9004840110128		IN006121
1-pole/20 A/HAND-0- AUTO	M10H E U1+0095	9004840533217		IN006122
2-pole/20 A/MAN-OFF- AUTO	M10H E U2+0885	9004840110135		IN006221

MAIN SWITCHES, CONTROL SWITCHES, COMMAND AND SIGNALLING DEVICES

CAM SWITCHES, CHANGEOVER SWITCHES WITHOUT ZERO POSITION FOR PANEL MOUNTING, IP65 (IP40)



IN007122



IN007121



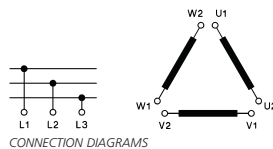
CONNECTION DIAGRAM

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
1-pole/20 A	M10H E W1	9004840122640		IN007122
1-pole/20 A/HAND- AUTO	M10H E W1+082S	9004840110142		IN007121

CAM SWITCHES, WYE-DELTA SWITCHES FOR PANEL MOUNTING, IP65 (IP40)



IN108900



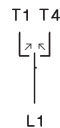
CONNECTION DIAGRAMS

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
Wye-delta switch, 32 A/15 kW	N20 E SD	9004840067828		IN108900

CAM SWITCHES, CHANGEOVER SWITCHES WITH SPRING RETURN FOR PANEL MOUNTING, IP65 (IP40)



IN004120



CONNECTION DIAGRAM

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
Changeover switch with spring return, 20 A	M10H E UR1	9004840122589		IN004120



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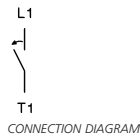


MAIN SWITCHES, CONTROL SWITCHES, COMMAND AND SIGNALLING DEVICES

■ CAM SWITCHES, ROTARY SWITCH FOR PANEL MOUNTING, IP65



IN008120

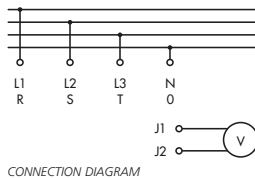


DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
Rotary switch "Start", 1-pole, 20 A	M10H E SE	9004840122558		IN008120

■ CAM SWITCHES, VOLTMETER SWITCH FOR PANEL MOUNTING, IP65



IN009V00



■ SCHRACK INFO

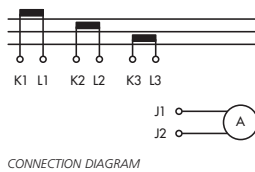
- 3 line to line and 3 phase to neutral voltages

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
3 line to line and 3 phase to neutral voltages, 1-pole/20 A	M10H E V1+503	9004840110111		IN009V00

■ CAM SWITCHES, AMMETER SWITCH FOR PANEL MOUNTING, IP65



IN009A00



DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
Ammeter switch for 3 current transformer circuits, 1-pole/20 A	M10H E M31+504	9004840110104		IN009A00



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MAIN SWITCHES, CONTROL SWITCHES, COMMAND AND SIGNALLING DEVICES

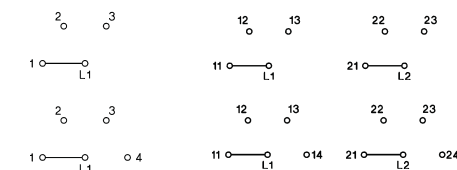
CAM SWITCHES, STEP SWITCHES 1- AND 2-POLE WITHOUT ZERO POSITION FOR PANEL MOUNTING, IP65



IN003121



IN003122



CONNECTION DIAGRAM, 1-pole

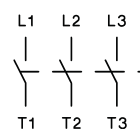
CONNECTION DIAGRAM, 2-pole

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
1-POLE				
3-step switch/20 A	M10H E ST31	9004840110166		IN003121
4-step switch/20 A	M10H E ST41	9004840110173		IN003122
2-POLE				
3-step switch/20 A	M10H E ST32	9004840122565		IN003123
4-step switch/20 A	M10H E ST42	9004840122572		IN003124
3-POLE				
4-step switch/20 A	M10H E ST43	9004840653427		IN003125
4-POLE				
4-step switch/20 A	M10H E ST44	9004840653434		IN003126

CAM SWITCHES, ON-OFF SWITCHES WITH CENTRAL FASTENING, DIA. 22 mm, IP65



IN025120



CONNECTION DIAGRAM

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
1-pole/20 A	M10H Z A1	9004840041071		IN025120
2-pole/20 A	M10H Z A2	9004840041088		IN025220
3-pole/20 A/5.5 kW	M10H Z A3	9004840041095		IN025320
3-pole/32 A/11 kW	M20 Z A3	9004840041699		IN125325



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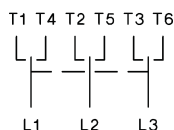


MAIN SWITCHES, CONTROL SWITCHES, COMMAND AND SIGNALLING DEVICES

CAM SWITCHES, CHANGEOVER SWITCHES WITH ZERO POSITION WITH CENTRAL FASTENING, DIA. 22 mm, IP65



IN026220



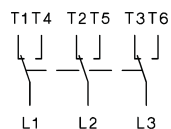
CONNECTION DIAGRAM

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
1-pole/20 A	M10H Z U1	9004840040975		IN026120
2-pole/20 A	M10H Z U2	9004840040814		IN026220
3-pole/20 A/5.5 kW	M10H Z U3	9004840040890		IN026320

CAM SWITCHES, CHANGEOVER SWITCHES WITHOUT ZERO POSITION WITH CENTRAL FASTENING, DIA. 22 mm, IP65



IN027220



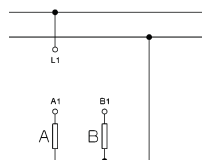
CONNECTION DIAGRAM

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
1-pole/20 A	M10H Z W1	9004840041019		IN027120
2-pole/20 A	M10H Z W2	9004840040777		IN027220
3-pole/20 A/5.5 kW	M10H Z W3	9004840041101		IN027320

CAM SWITCHES, GROUP SWITCHES 1-POLE, 2 GROUPS WITH CENTRAL FASTENING, DIA. 22 mm, IP65



IN020901



CONNECTION DIAGRAM

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
Group switch, 1-pole/20 A	M10H Z GR11	9004840040692		IN020901

MAIN SWITCHES, CONTROL SWITCHES, COMMAND AND SIGNALLING DEVICES

CAM SWITCHES, ROTARY SWITCH WITH CENTRAL FASTENING, DIA. 22 mm, IP65



IN02C102



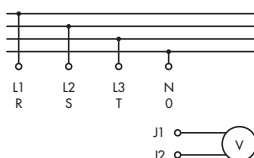
CONNECTION DIAGRAM

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
Rotary switch "Start", 1-pole, 20 A	M10H Z SE	9004840383881		IN02C102

CAM SWITCHES, VOLTMETER SWITCH WITH CENTRAL FASTENING, DIA. 22 mm, IP65



IN009V02



CONNECTION DIAGRAM

SCHRACK INFO

- 3 line to line and 3 phase to neutral voltages

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
3 line to line and 3 phase to neutral voltages, 1-pole/20 A	M10H EV1	9004840223187		IN009V02

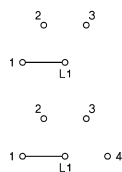
CAM SWITCHES, CHANGEOVER SWITCH, 1-POLE WITHOUT ZERO POSITION WITH CENTRAL FASTENING, DIA. 22 mm, IP65



IN023901



IN023902



CONNECTION DIAGRAM, 1-pole

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
3 stages/20 A	M10H Z ST31	9004840041040		IN023901
4 stages/20 A	M10H Z ST41	9004840041057		IN023902



Order no. blue: on stock, usually ready for delivery on the day of order!

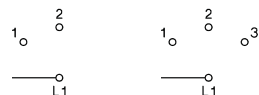


MAIN SWITCHES, CONTROL SWITCHES, COMMAND AND SIGNALLING DEVICES

CAM SWITCHES, STEP SWITCH, 1-POLE WITH ZERO POSITION WITH CENTRAL FASTENING, DIA. 22 mm, IP65



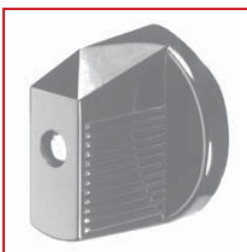
IN023903



CONNECTION DIAGRAMS

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
2 stages/ 20 A	M10H Z ST021	9004840655049		IN023904
3 stages/20 A	M10H Z ST031	9004840041064		IN023903

ACCESSORIES FOR CAM SWITCHES WITH CENTRAL FASTENING



IN16001



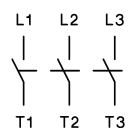
IN16000

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
T-handle black for switches M10, M10H, M20	A1535	9004840106930		IN16001
T-handle blue for switches M10, M10H, M20	A1549	9004840106923		IN16000

CAM SWITCHES, ON-OFF SWITCHES FOR DIN-RAIL MOUNTING, IP40



IN085220



CONNECTION DIAGRAM

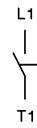
DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
1-pole/20 A	M10H SMA A1	9004840041439		IN085120
2-pole/20 A	M10H SMA A2	9004840041446		IN085220
3-pole/20 A/5.5 kW	M10H SMA A3	9004840041453		IN085320

MAIN SWITCHES, CONTROL SWITCHES, COMMAND AND SIGNALLING DEVICES

CAM SWITCHES, ON-OFF KEY SWITCHES FOR DIN-RAIL MOUNTING, IP40



IN085121



CONNECTION DIAGRAM

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
Key switch, 1-pole/20 A	M10H SMA A1+S A	9004840378931		IN085121

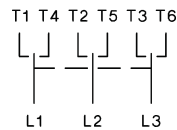
CAM SWITCHES, CHANGEOVER SWITCHES WITH ZERO POSITION FOR DIN-RAIL MOUNTING, IP40



IN086122



IN086121



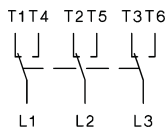
CONNECTION DIAGRAM

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
1-pole/20 A	M10H SMA U1	9004840041460		IN086120
2-pole/20 A	M10H SMA U2	9004840041477		IN086220
3-pole/20 A	M10H SMA U3	9004840041484		IN086320
1-pole/20 A/HAND-0- AUTO	M10H SMA U1+009S	9004840094268		IN086121
1-pole/20 A/MAN-0- AUTO	M10H SMA U1+081S	9004840094275		IN086122
1-pole/20 A/TAG-0-NACHT	M10H SMA U1+143S	9004840094282		IN086123

CAM SWITCHES, CHANGEOVER SWITCHES WITHOUT ZERO POSITION FOR DIN-RAIL MOUNTING, IP40



IN087220



CONNECTION DIAGRAM

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
1-pole/20 A	M10H SMA W1	9004840041491		IN087120
2-pole/20 A	M10H SMA W2	9004840041507		IN087220
3-pole/20 A	M10H SMA W3	9004840041514		IN087320



Order no. blue: on stock, usually ready for delivery on the day of order!

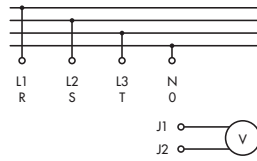


MAIN SWITCHES, CONTROL SWITCHES, COMMAND AND SIGNALLING DEVICES

CAM SWITCHES, VOLTMETER SWITCHES FOR DIN-RAIL MOUNTING, IP40



IN009V01



CONNECTION DIAGRAM

SCHRACK INFO

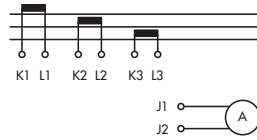
- 3 line to line and 3 phase to neutral voltages

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
3 line to line and 3 phase to neutral voltages, 1-pole/20 A	M10H SMA V1	9004840164503		IN009V01

CAM SWITCHES, AMMETER SWITCHES FOR DIN-RAIL MOUNTING, IP40



IN009A01



CONNECTION DIAGRAM

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
Ammeter switch for 3 current transformer circuits, 1-pole/20 A	M10H SMA M31	9004840164497		IN009A01

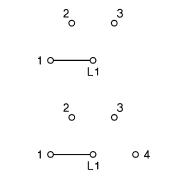
CAM SWITCHES, STEP SWITCHES 1- AND 2-POLE WITHOUT ZERO POSITION FOR DIN-RAIL MOUNTING, IP40



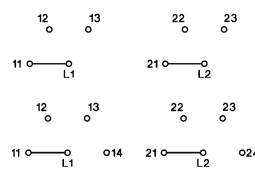
IN083121



IN083220



CONNECTION DIAGRAM, 1-pole



CONNECTION DIAGRAM, 2-pole

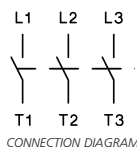
DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
1-POLE				
3-step switch/20 A	M10H SMA ST31	9004840122602		IN083120
4-step switch/20 A	M10H SMA ST41	9004840122626		IN083220
2-POLE				
3-step switch/20 A	M10H SMA ST32	9004840122596		IN083121
4-step switch/20 A	M10H SMA ST42	9004840122633		IN083221

MAIN SWITCHES, CONTROL SWITCHES, COMMAND AND SIGNALLING DEVICES

CAM SWITCHES, ON-OFF SWITCH, PLASTIC ENCLOSED, IP40



IN035220



SCHRACK INFO

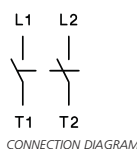
- Insulated enclosure

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
1-pole/20 A	M10 P A1+K6	9004840041217		IN035120
2-pole/20 A	M10 P A2+K6	9004840040852		IN035220
3-pole/20 A/5.5 kW	M10 P A3+K6	9004840041224		IN035320
3-pole/32 A/11 kW	N20 P A3+K6	9004840041705		IN135325

CAM SWITCHES, HEATING EMERGENCY SWITCHES, 2-POLE, PLASTIC ENCLOSED, IP40



IN032009



SCHRACK INFO

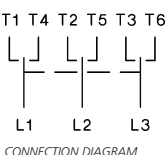
- Insulated enclosure

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
Heating emergency stop switch 2-pole/20 A	M10 P A2+904465	9004840041200		IN032009

CAM SWITCHES, CHANGEOVER SWITCHES WITH ZERO POSITION, PLASTIC ENCLOSED, IP40



IN036320



SCHRACK INFO

- Insulated enclosure

DESCRIPTION	TYPE	EAN CODE	AVAILABLE	ORDER NO.
1-pole/20 A	M10 P U1	9004840041231		IN036120
2-pole/20 A	M10 P U2	9004840041248		IN036220
3-pole/20 A/5.5 kW	M10 P U3	9004840041255		IN036320



Order no. blue: on stock, usually ready for delivery on the day of order!

MAIN SWITCHES, CONTROL SWITCHES, COMMAND AND SIGNALLING DEVICES

CAM SWITCHES – TECHNICAL DATA

Data meet IEC 947-3, IEC 947-5-1, VDE 0660, EN 60947-3, EN 60947-5-1, SEV, CEE24

Type		M10	M10H	M20
Therm. nom. current I_{th} open	A	20	20	32
Therm. nom. current I_{th} sealed	A	20	20	32
Nominal operating voltage U_n	A	440	690 ¹⁾	690 ¹⁾
Breaker conditions ²⁾ in acc. with VDE, IEC up to		440	440	440
Breaking capacity I_{eff}				
3 x 220-440V	A	160	160	220
3 x 500V	A	-	100	160
3 x 660-690V	A	80	120	120
Utilisation cat. AC21A, AC21B Switching of resistive load including slight overload				
Nominal operating current I_n	A	20	20	32
Utilisation cat. AC23A, AC23B Switching of motors and other highly inductive loads				
Nominal operating current I_n 400 V A		16	16	30
Nominal power 220-240V kW		4	4	7,5
3-phase, 3-pole 380-440V kW		7,5	7,5	15
500V kW		-	7,5	15
660-690V kW		-	7,5	15
Wye-delta switch for cage motors				
Nominal power 220-240V kW		3,7	3,7	7,5
3-phase, 3-pole 380-415V kW		7,5	7,5	15
Utilisation category AC3 Switching of 3-phase AC motors				
Nominal operating current I_n 400 V A		12	12	22
Nominal power 220-240V kW		3	3	5,5
3-phase, 3-pole 380-440V kW		5,5	5,5	11
500V kW		-	5,5	11
660-690V kW		-	5,5	11
Utilisation category AC4 Cage motors, jog operation				
Nominal power 220-240V kW		0,55	0,55	2,2
3-phase, 3-pole 380-440V kW		1,5	1,5	4
500V kW		-	1,5	4
660-690V kW		-	1,5	4
Utilisation category AC15 Switching of magn. drives, contactors, valves, pulling magnets				
Nominal operating current I_n up to 240V A		6	6	12
380 - 440V A		4	4	6
2-pole breaking 500V A		-	5	8
Utilisation cat. DC21A, DC21B Switching of resistive load, time constant L/R" 1 ms				
Nominal operating current I_n 1-pole 30V A		20	20	32
60V A		4	4	6
110V A		0,6	0,6	3
220V A		0,3	0,3	0,8
440V A		-	-	0,4
Utilisation category DC3 - DC5 Switching of shunt and series motors, time constant L/R" 15 ms				
Nominal operating current I_n 1-pole 30V A		8	8	13
60V A		1	1	2,4
110V A		0,3	0,3	0,5
Degree of protection from rear		IP00	IP20	IP00

1) Applies to: Mains with earthed Y point, overvoltage category I to III, pollution degree 3: Uimp = 6 kV. Values for other conditions on request.

2) The breaker condition in acc. with IEC 947-1 and VDE 0660 apply to: systems with earthed Y point, overvoltage category III and inhomogeneous field.

CAM SWITCHES – TECHNICAL DATA

Data meet IEC 947-3, IEC 947-5-1, VDE 0660, EN 60947-3, EN 60947-5-1

Type		M10 P	M10H	M20
Terminal capacity				
solid or stranded	mm ²	1-2.5	1-2.5 ¹⁾	1.5-6
finely stranded	mm ²	0.75-2.5	0.75-2.5 ¹⁾	1-4
finely stranded with end sleeve	mm ²	0.75-2.5	0.75-1.5	1-4
Clampable conductor per terminal		2	2	2
Terminal screw		M3	M3.5	M4
Tightening torque	Nm lb.inch	0.6-1.2 5-11	0.8-1.4 7-12	1.2-1.8 11-16
Short-circuit protection				
Max. fuse, gL (gG)	A	20	20	35
Rated short-time current protection (1-second power)	A	250	250	400
Conditional rated short-circuit current kA _{eff}		10	10	10
Short-term load capacity				
Load duration	3s A	100	100	200
	10s A	60	60	130
Values apply only to contacts that are already closed	30s A	35	35	85
	60s A	25	25	65
Power loss at AC21A				
per pole	A W	20 0.6	20 0.5	32 0.9
Switching of capacitive load				
Maximum making capacity up to 500 V	A	140	140	300

Data acc. to cULus

Type			M10 P	M10H	M20
Rated operating voltage		V~	300	600	600
Rated operating current	"General Use"	A	20	20	35
	with jumper	A	15	-	25
DOL rating, 3-phase	110-120V	hp	1½	1½	5
	200-208V	hp	2	2	5
	220-240V	hp	3	3	5
	440-480V	hp	-	5	10
	550-600V	hp	-	7½	15
DOL rating, 1-phase	110-120V	hp	½	½	1½
	200-208V	hp	1	1	3
	220-240V	hp	1½	1½	5
Fuse size (RK5)	Manual motor controller and motor disconnect	A	40 ²⁾	40	80
Heavy pilot duty		AC	A300	A600	A600
Terminal capacity					
solid		AWG	12 - 20	12 - 20	10 - 18
finely stranded		AWG	14 - 20	14 - 20	8 - 18
Tightening torque		Nm	1.7	1-1.7	1.7-2.8
		lb.inch	15	9-15	15-25

1) Maximum terminal capacity with prepared conductor

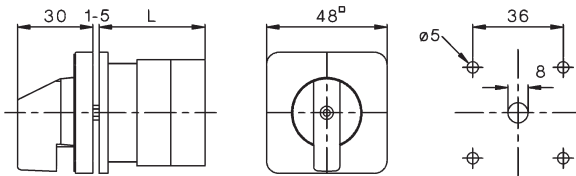
2) 5KA / 300V

MAIN SWITCHES, CONTROL SWITCHES, COMMAND AND SIGNALLING DEVICES

CAM SWITCHES – DIMENSIONS

FOR PANEL MOUNTING

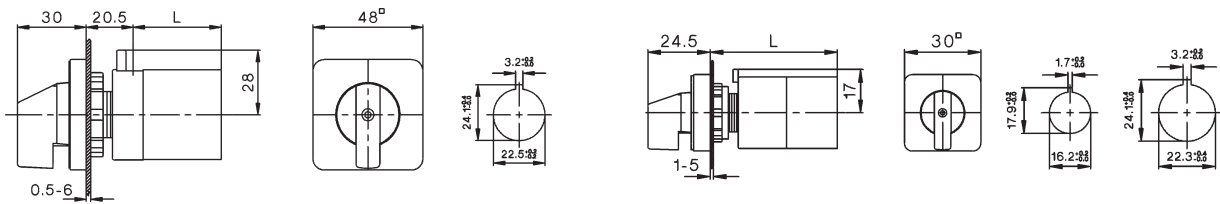
Cam switch for panel mounting
M10H E..



FOR CENTRE MOUNTING

Cam switch for central fixing
M10H Z.., M20 Z..

M4H Z..



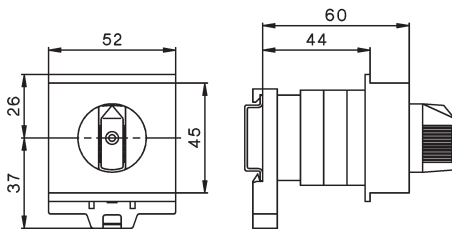
Dimension L for switching programs

Switching programs	A1, A2, U1, W1, UR1, SE, SA, GR11, ST021 1 switch cell	A3, U2, W2 ST31, ST41, ST031 2 switch cells	U3, W3 V1, M31, ST32 3 switch cells	ST42 4 switch cells
M4H	51	62.5	74.5	86.5
M10H	36.5	46	55.5	65
M20	38.5	51	63.5	76

FOR DIN-RAIL MOUNTING

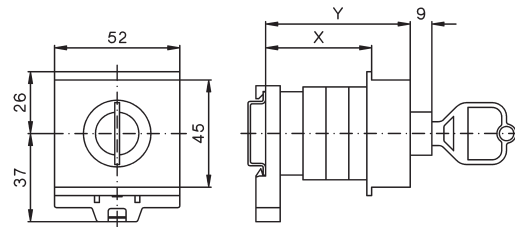
Cam switch for DIN-rail mounting

M10H SMA.. 1-3 switch cells
M20 SMA.. 1,2 switch cells



Key switch for DIN-rail mounting

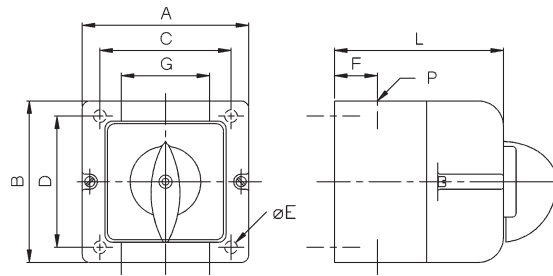
Type	Dimension X for switch cells				Dimension Y for switch cells		
	1	2	3	4	1	2	3
M10H	44	75	75	91	60	90	90
M20	59	75	75	91	75	90	90



CAM SWITCHES – DIMENSIONS

INSULATED ENCLOSURE

Switch with insulated enclosure
M10 P..



Type	A	B	C	D	E	F	G	P	Dimension L for ... switch cells			
									1	2	3	4
M10	66	64	50	36	5	15,5	26	M20	43	52	62	71