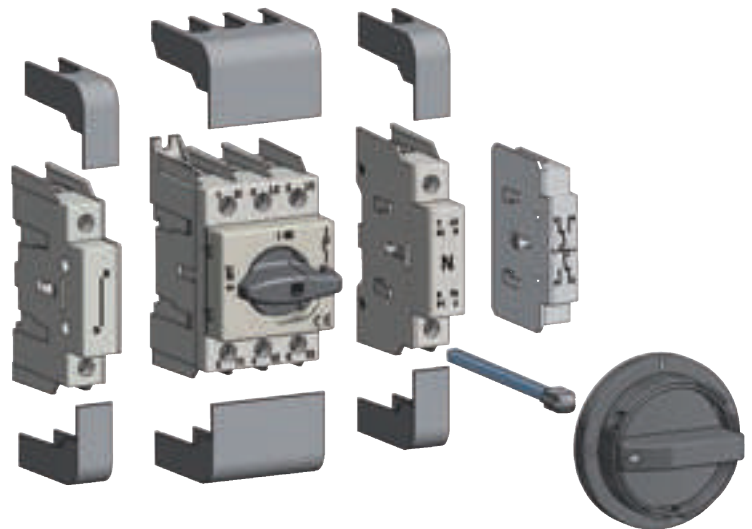




Switch Disconnectors

Manual change over Switches



Switch disconnectors

SD 16 ÷ 200 A

Generalities	I - 02
Order references	I - 03
Technical data	I - 04
Dimensions	I - 06
Accessories	I - 09

Manual change over switches

CO-SD 16 ÷ 160 A

Generalities	I - 14
Order references	I - 14
Dimensions	I - 15
Handles	I - 17
Accessories	I - 18

GENERALITIES

The modular switch disconnectors of SD series, allow the breaking and the disconnecting on load of equipment on low voltage at nominal current from 16 to 200 A.

USE

The switch disconnectors of SD series are commonly used for the following purposes:

- › main switch
- › switch for motors
- › safety switch
- › disconnector

GENERAL CHARACTERISTICS

- › high breaking capacity (AC 22 A - AC 23 A)
- › double break contacts
- › high electrical and mechanical endurance
- › resistant to damp heat
- › IP20 degree of protection (with accessory)
- › modular execution, basic mounting on 35 mm DIN rail and by screws, modular window 45 mm.

RANGE

SD1 three poles 16 - 25 - 32 - 40 - 63 A

SD2 three poles 80 - 100 - 125 A

SD3 three poles 125 - 160 - 200 A

ADDITIONAL POLES

Fourth neutral pole makes earlier and opens later than the phase contacts.

Fourth pole solid neutral.

Earth pole.

OPERATING MECHANISM

Black (standard execution) or emergency direct handle padlockable in 0 position.

Handle with door interlock handle, black or emergency handle padlockable with up to three padlocks in 0 position.

IP 65 degree of protection.

By toggle padlockable in 0 position (switch SD2).

Wide range of accessories.

NORMAL SERVICE, MOUNTING AND TRANSPORT CONDITIONS

› storage and transport ambient temperature - 25°C + 55°C

› working ambient temperature - 20°C + 40°C

› in case of higher ambient temperature (t), consider the following derating formula:

$$I_{the} = k \cdot I_n \text{ where } K = 1 - \frac{t - 40}{115 - 40}$$

› altitude max 2000 m a.s.l.

› pollution degree 3 according IEC 60947-1

› duty (CEI EN 60947-1):

8 hours; uninterrupted; intermittent 60% class 30

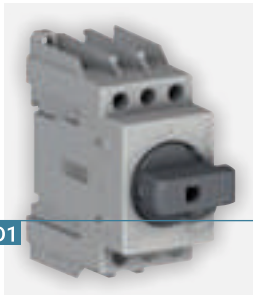
For other operating conditions contact the manufacturer.

CONFORMITY TO STANDARDS

IEC 60947-1|IEC 60947-3|CEI EN 60947-1|CEI EN 60947-3|UL508

CERTIFICATES AND APPROVALS

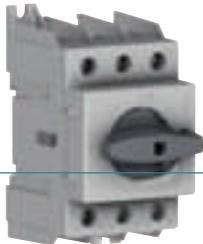
UL | INTEK



SD1



SD1 retroportella



SD2



Type	Rated current	Direct handle (black)		Direct emergency handle	
		Poles	Code	Poles	Code
SD1	16A	3P	19300	3P	19310
		4P	19330	4P	19350
		6P	193006	6P	193106
		8P	193308	8P	193508
	25A	3P	19301	3P	19311
		4P	19331	4P	19351
		6P	193016	6P	193116
		8P	193318	8P	193518
	32A	3P	19302	3P	19312
		4P	19332	4P	19352
		6P	193026	6P	193126
		8P	193328	8P	193528
	40A	3P	19303	3P	19313
		4P	19333	4P	19353
		6P	193036	6P	193136
		8P	193338	8P	193538
SD1 retroportella door mounting switch disconnector	16A	3P	19304	3P	19314
		4P	19334	4P	19354
		6P	193046	6P	193146
		8P	193348	8P	193548
	25A	3P	19300R	3P	19310R
		4P	19330R	4P	19350R
		3P	19301R	3P	19311R
		4P	19331R	4P	19351R
	32A	3P	19302R	3P	19312R
		4P	19332R	4P	19352R
	40A	3P	19303R	3P	19313R
		4P	19333R	4P	19353R
	63A	3P	19304R	3P	19314R
		4P	19334R	4P	19354R
SD2	80A	3P	19206	3P	19216
		4P	19236	4P	19256
		6P	192066	6P	192166
		8P	192368	8P	192568
	100A	3P	19207	3P	19217
		4P	19237	4P	19257
		6P	192076	6P	192176
		8P	192378	8P	192578
	125A	3P	19208	3P	19218
		4P	19238	4P	19258
		6P	192086	6P	192186
		8P	192388	8P	192588
SD2 levetta toggle	63A	3P	19205LE	-	-
		4P	19235LE	-	-
	80A	3P	19206LE	-	-
		4P	19236LE	-	-
	100A	3P	19207LE	-	-
		4P	19237LE	-	-
	125A	3P	19208LE	-	-
		4P	19238LE	-	-
SD3	125A	3P	19701	3P	19711
		4P	19731	4P	19751
	160A	3P	19702	3P	19712
		4P	19732	4P	19752
	200A	3P	19703	3P	19713
		4P	19733	4P	19753

Type			SD1					SD2			SD3		
Rated current	In	A	16	25	32	40	63	80	100	125	125	160	200
Rated insulation voltage	Ui	V	800	800	800	800	800	800	800	800	800	800	800
Impulse withstand voltage	Uimp	kV	8	8	8	8	8	8	8	8	8	8	8
Rated thermal current	40°C Ith/Ithe	A	16	25	32	40	63	80	100	125	125	160	200
Rated operational current Ie													
AC-21A	415 V	A	16	25	32	40	63	80	100	125	125	160	200
	500 V	A	16	25	32	40	63	80	100	125	125	160	160
	690 V	A	16	25	32	40	63	80	100	125	125	160	160
AC-22A	415 V	A	16	25	32	40	63	80	100	125	125	160	200
	500 V	A	16	25	32	40	63	80	100	105	125	160	160
	690 V	A	16	25	32	40	40	80	100	125	125	160	160
AC-23A	415 V	A	16	25	32	40	63	80	100	100	125	160	160
	500 V	A	16	25	32	40	63	63	63	63	125	125	125
	690 V	A	16	25	32	40	63	32	32	32	100	100	100
Rated making capacity	415 V AC23	A	160	250	320	400	400	800	1000	1000	1250	1600	1600
Rated breaking capacity	415 V AC23	A	128	200	256	320	320	640	800	800	1000	1280	1280
Rated operational power	415 V	kW	7,5	11	14	18	29	37	46	46	55	69	69
	500 V	kW	8	14	17	22	35	35	35	35	65	83	83
	690 V	kW	12	19	24	31	48	48	48	48	90	90	90
Short-circuit withstand current	1 sec	400 V	kA	1,1	1,1	1,1	1,1	1,1	1,5	1,5	1,5	3	3
Rated fuse short circuit current													
Back up fuse	gG	A	16	25	32	40	63	80	100	125	125	125	125
R.M.S. value		kA	50	50	50	50	20	50	30	20	50	50	50
Mechanical endurance		n	50000	50000	50000	50000	50000	30000	30000	30000	30000	30000	30000
Electrical endurance		n	3000	3000	3000	3000	3000	1500	1500	1000	1000	1000	1000
Power loss per pole		W	0,1	0,1	0,2	0,3	0,8	1,3	2,0	3,1	2,5	3	3
Cable section		mmq	16	16	16	16	16-25	16-50	25-50	35-50	10÷70	10÷70	70
Max terminal torque		Nm	2	2	2	2	2	2,5	2,5	2,5	6	6	6
Operation torque		Nm	1,6	1,6	1,6	1,6	1,6	1,6	1,6	1,6	2,6	2,6	2,6
Auxiliary contacts	AC15 415 V	A	3	3	3	3	3	3	3	3	3	3	3
Net weight 3 poles		Kg	0,13	0,13	0,13	0,13	0,13	0,25	0,25	0,25	0,4	0,4	0,4
Net weight 4 poles		Kg	0,16	0,16	0,16	0,16	0,16	0,32	0,32	0,32	0,5	0,5	0,5
Net weight 6 poles		Kg	0,30	0,30	0,30	0,30	0,30	0,55	0,55	0,55	0,8	0,8	0,8
Net weight 8 poles		Kg	0,40	0,40	0,40	0,40	0,40	0,62	0,62	0,62	1,0	1,0	1,0

Available to use till 200 VDC

UL 508

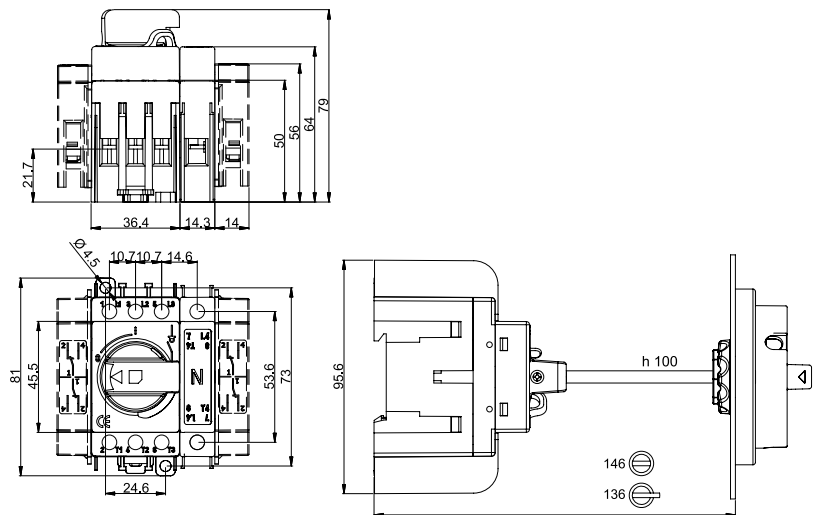


SD1 U

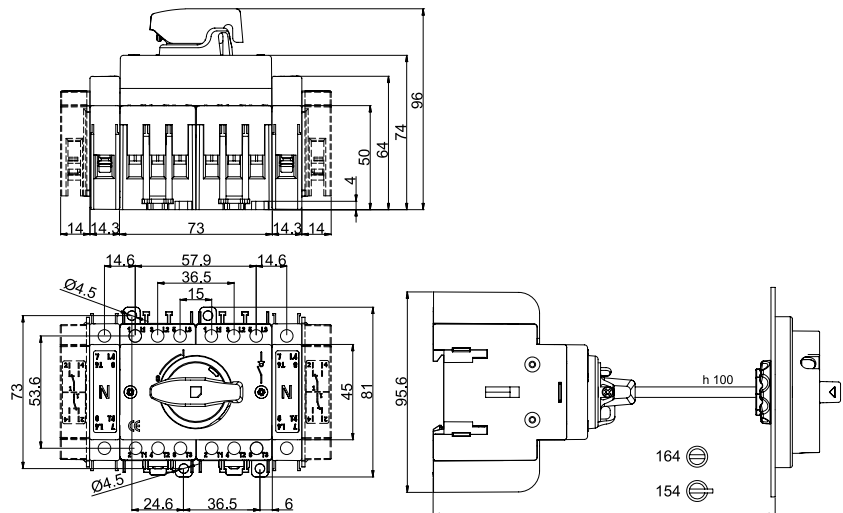
Type			SD1				SD2				SD3		
Rated current	In	A	16	25	32	40	63	80	100	125	100	125	160
General use		V AC	600	600	600	600	600	600	600	600	600	600	600
Short circuit rating		kA	5	5	5	5	5	5	5	5	10	10	10
Fuse type		RK	5	5	5	5	5	5	5	5	5	5	5
Fuse rating		A	40	40	40	40	125	125	125	125	175	175	175
Max horsepower	UL 3 phases	120V Hp	3	3	3	3	5	5	5	5	15	20	20
		240V Hp	5	7.5	7.5	10	10	15	15	15	30	40	40
		415V Hp	7,5	10	10	15	20	25	25	25	50	60	60
		480V Hp	10	15	20	20	25	30	30	30	75	100	100
		600V Hp	15	20	25	30	30	40	40	40	100	125	125
Max horsepower	UL 1 phase	120V Hp	-	-	-	-	3	5	5	5	-	-	-
		240V Hp	-	-	-	-	7,5	10	10	10	-	-	-
Max full load motor running	3 phases	120V A	19,2	19,2	19,2	19,2	30,4	30,4	30,4	30,4	84	108	108
		240V A	15,2	22	22	28	42	42	42	42	80	104	104
		415V A	14	18	18	27	44	44	44	44	83	103	103
		480V A	14	21	27	27	40	40	40	40	84	104	104
		600V A	17	22	27	32	41	41	41	41	99	125	125
Max full load motor running	1 phase	120V A	-	-	-	-	56	56	56	56	-	-	-
		240V A	-	-	-	-	50	50	50	50	-	-	-
Mechanical endurance		n	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000
Electrical endurance		n	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000
Wire size range		AWG	16÷6	16÷6	16÷6	16÷6	6÷1	6÷1	6÷1	6÷1	3/0÷6	3/0÷6	3/0÷6
Tightening type			Cu	Cu	Cu	Cu	Cu	Cu	Cu	Cu	Cu	Cu	Cu
Max terminal Torque		Nm	2	2	2	2	3,5	3,5	3,5	3,5	6	6	6
Net weight		Kg	0,13	0,13	0,13	0,13	0,25	0,25	0,25	0,25	0,25	0,25	0,25

► Add "UL" at the end of the code

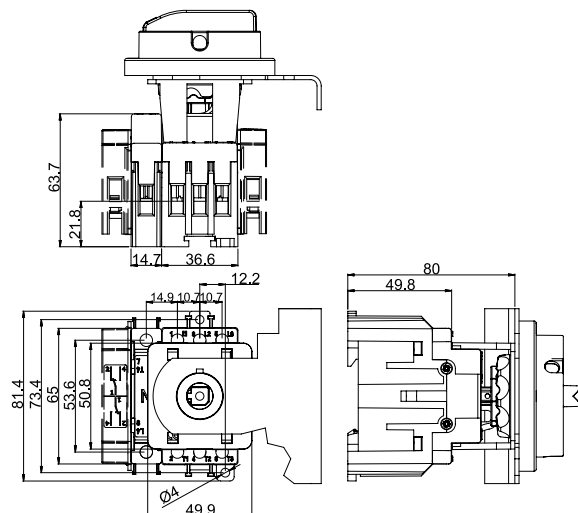
SD1 3 - 4 poles



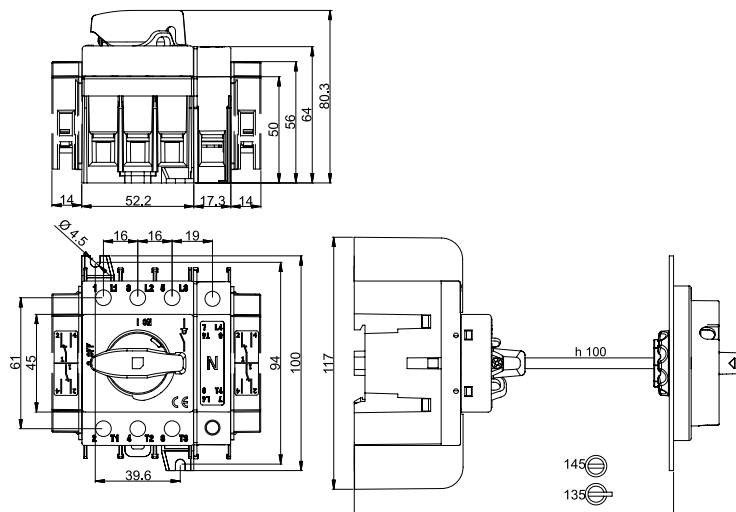
SD1 6 - 8 poles



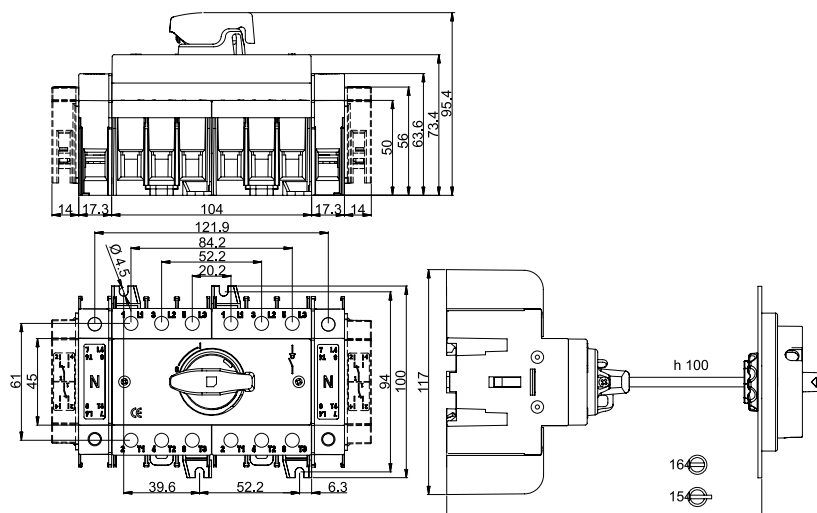
SD1 door mounting switch disconnecter



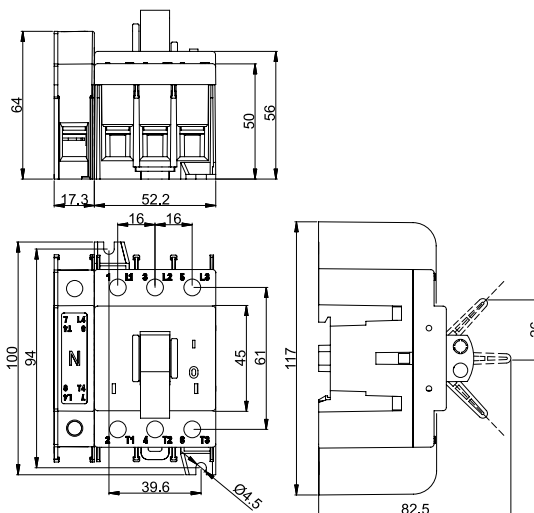
SD2 3 - 4 poles



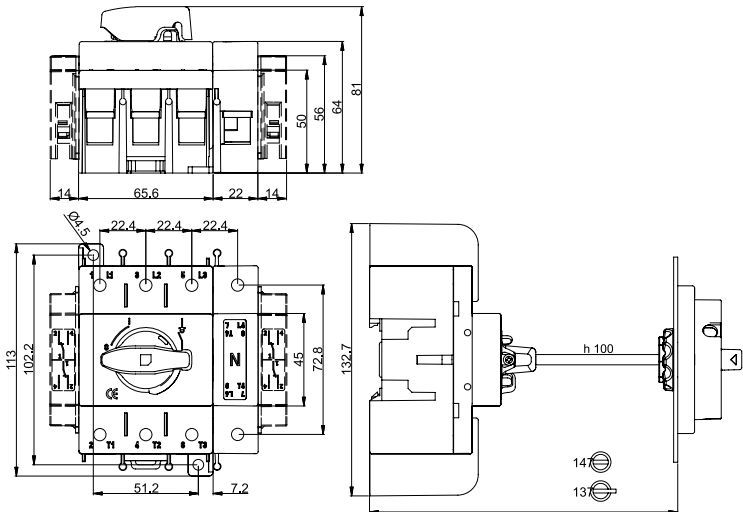
SD2 6 - 8 poles



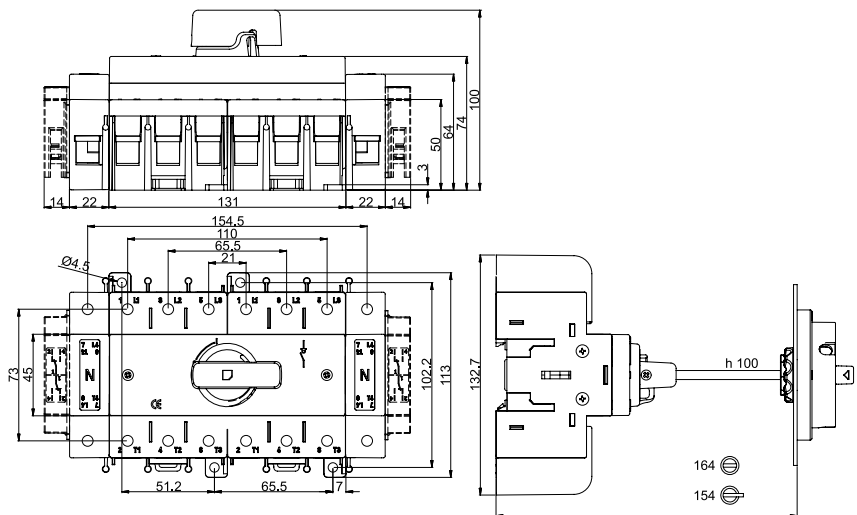
SD2 toggle



SD3 3 - 4 poles

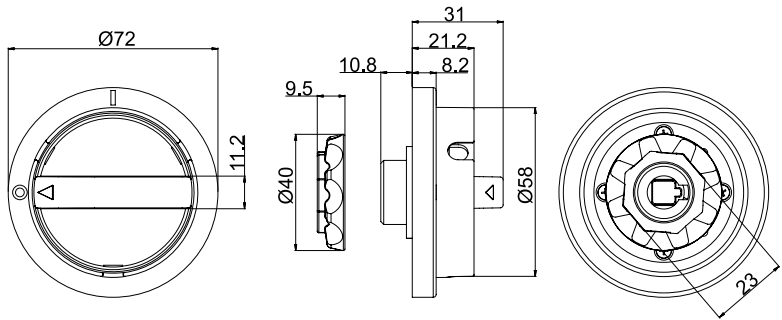


SD3 6 - 8 poles

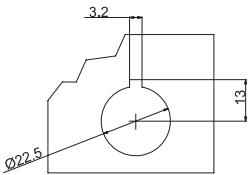


Door interlock handles

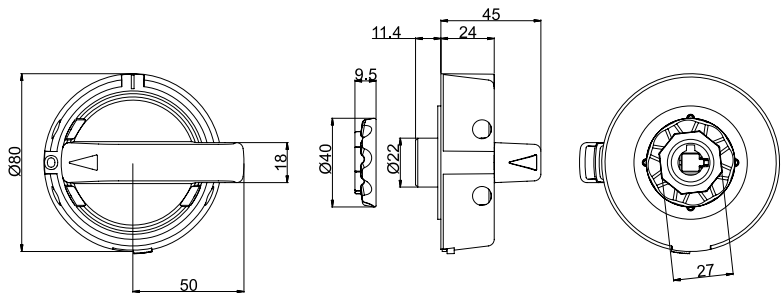
SD1 SD2 SD3 3-4 poles



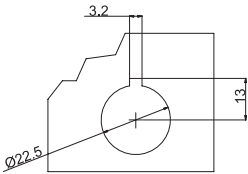
Door drilling



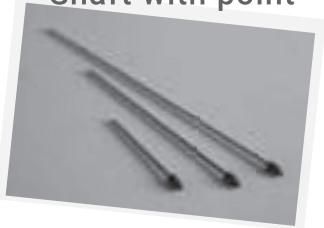
SD3 3-4 poles | SD1 SD2 SD3 6-8 poles



Door drilling



Shaft with point



Type	SD1 - SD2	aluminum	SD1 - SD2 - SD3		
Poles	3-4		3-4 6-8		
mm	100	200	100	200	300
Code	19535-100P	19535-200P	19534-100P	19534-200P	19534-300P

4th neutral pole



SD1 19320



SD2 19416



SD3 19450

Earthing neutral



SD1 19322

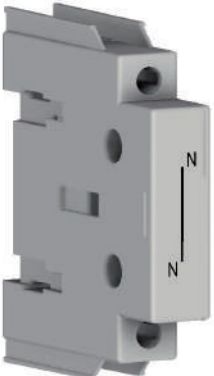


SD2 19422

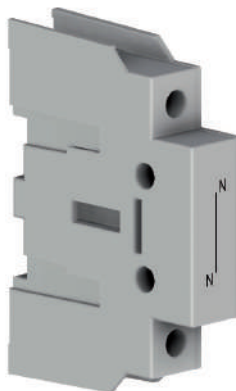


SD3 19452

Solid neutral



SD1 19321



SD2 19420



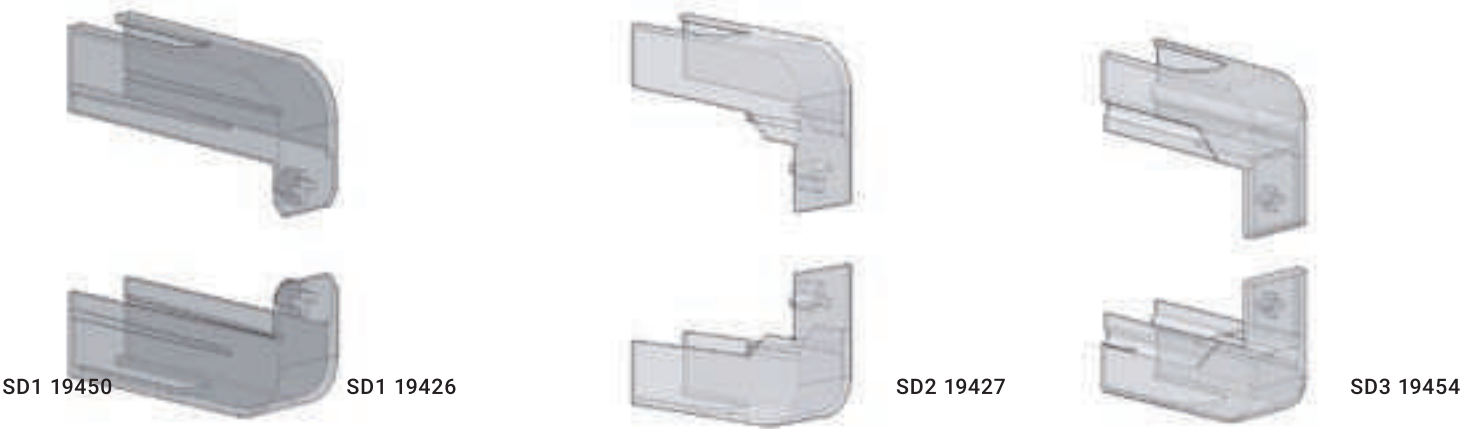
SD3 19451

4th neutral pole door mounting switch disconnecter

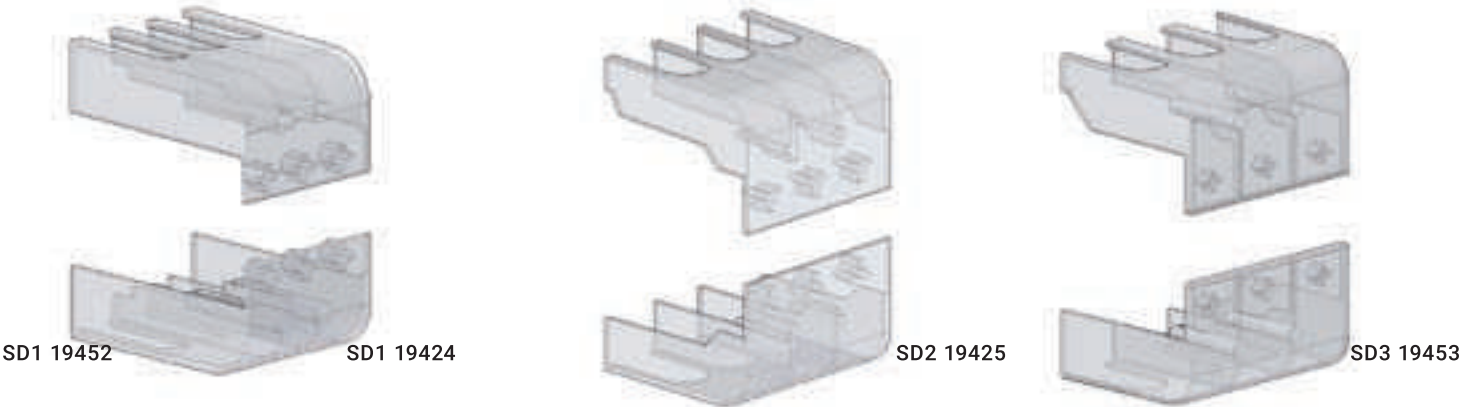


SD1 19449

4th neutral pole terminals cover kit



3 poles terminals cover kit



Change over auxiliary contacts 1NO + 1NC

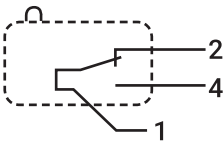
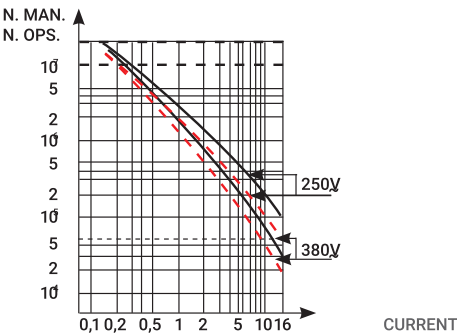


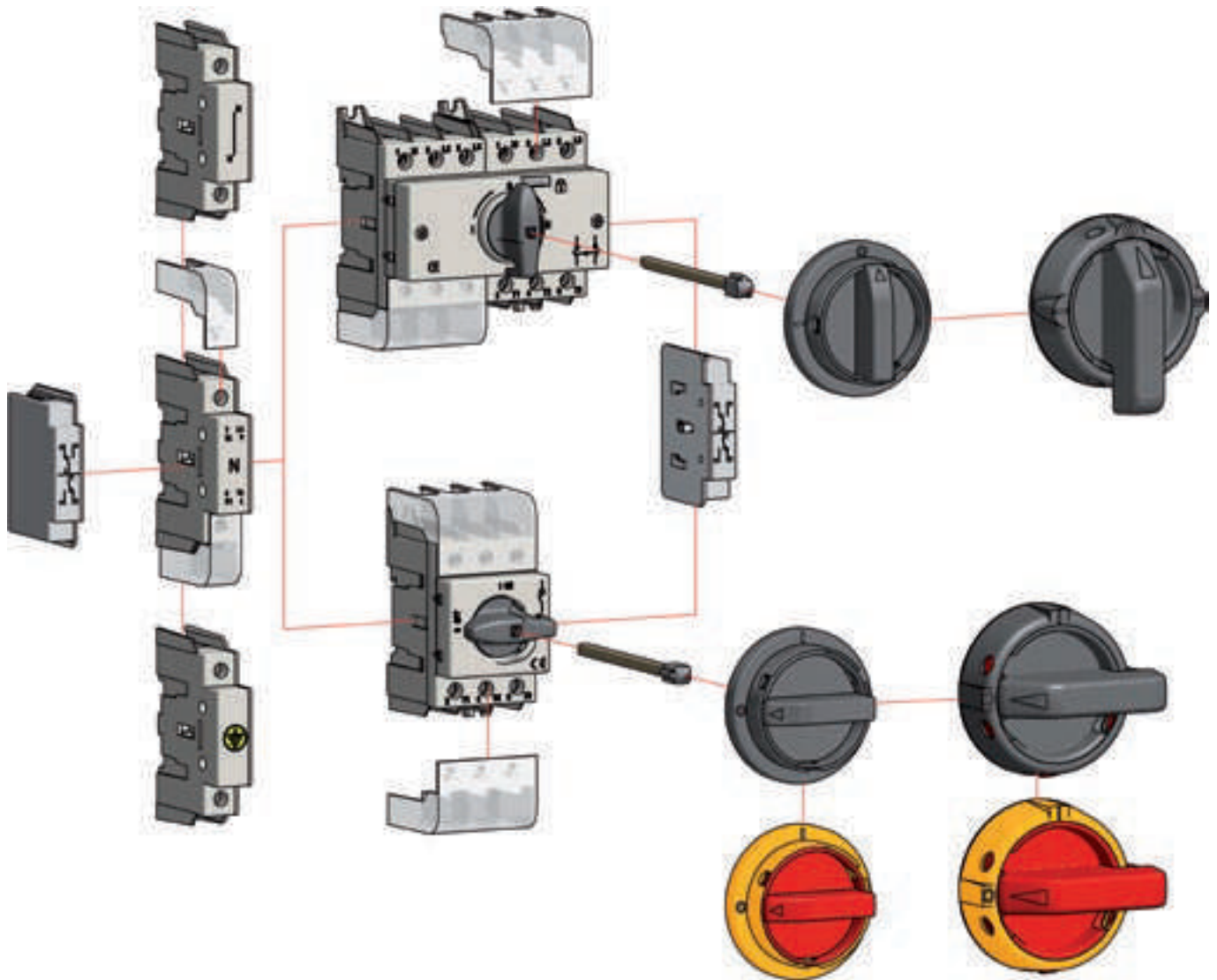
Type	SD1	SD2	SD3
	19429	19429	19429

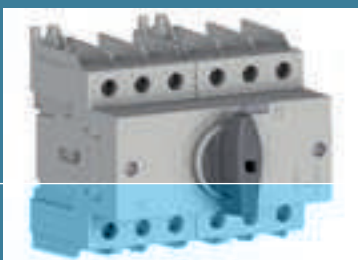
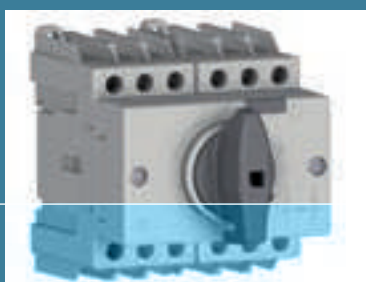
Type	SD1	SD2	SD3
	19430	19430	19430

To mount the auxiliary contacts placed on 4th pole, please order the set of screw code 11190311

- Change over auxiliary contact
- Break before main contacts switches
- Rated current 16A
- Thermal current 20A



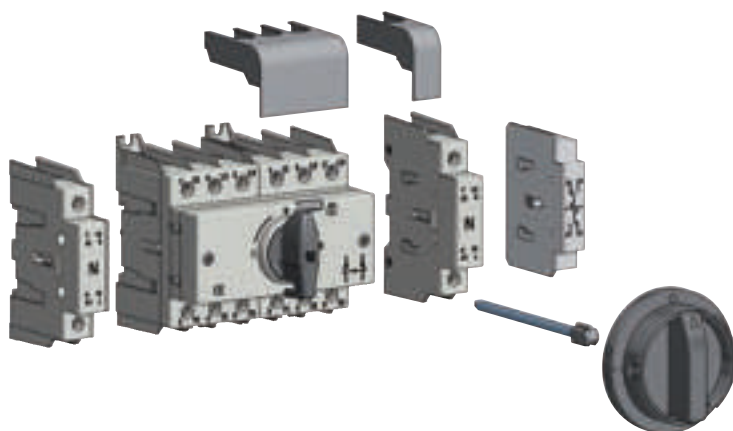




Manual change over switches

CO-SD 16 ÷ 160 A

generalities	I - 14
order references	I - 14
dimensions	I - 15
handles	I - 17
accessories	I - 18



SD CHANGE-OVER SWITCHES GENERALITIES

The manual change-over switches SD series, allow the change-over of two low voltage electrical circuits.

They are made by two standard switches of SD series mechanically interlocked (see relative section for technical characteristics page 4)

Available in standard version I-0-II (pos 0 both switches are OFF) and in close transition "OL" version I-I+II-II (pos I+II both swices are ON).

RANGE

CO-SD1 change-over switches 16 - 25 - 32 - 40 - 63 A

CO-SD2 change-over switches 80 - 100 - 125 A

CO-SD3 change-over switches 125 - 160 A

OPERATING MECHANISM

Direct handle padlockable in 0 position.

Handle with and without door interlock handle.

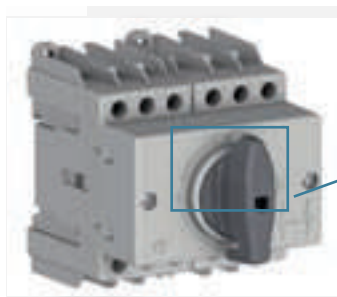
IP 65 degree of protection.

CONFORMITY TO STANDARDS

IEC 60947/1-3 | CEI EN 60947/1-3

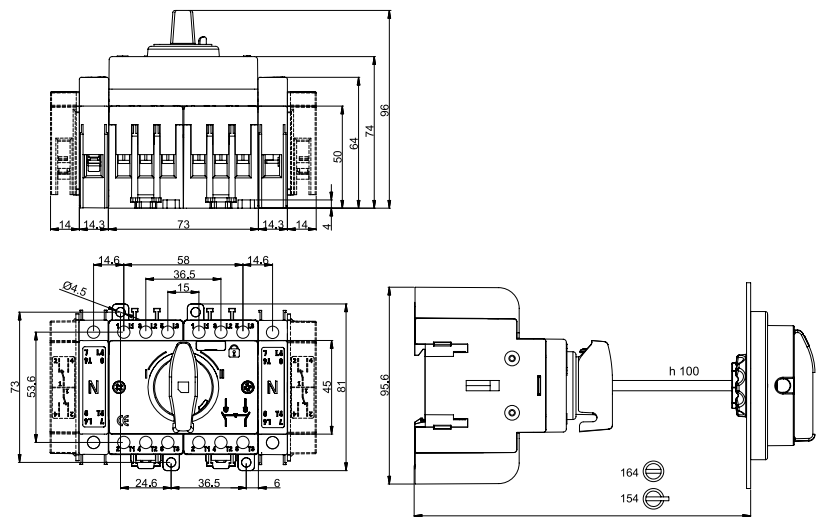
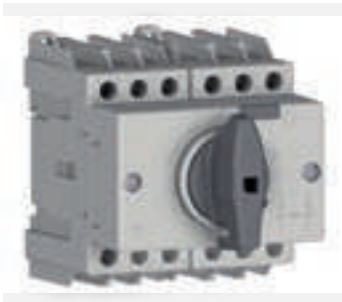
ORDER REFERENCES

Type	Rated current	Poles	Direct handle (black)	
			Code	
			Version I-0-II	Version I-I+II-II
CO SD1	16A	3P	193003	193003OL
		4P	193303	193303OL
	25A	3P	193013	193013OL
		4P	193313	193313OL
	32A	3P	193023	193023OL
		4P	193323	193323OL
	40A	3P	193033	193033OL
		4P	193333	193333OL
	63A	3P	193043	193043OL
		4P	193343	193343OL
CO SD2	80A	3P	192063	192063OL
		4P	192363	192363OL
	100A	3P	192073	192073OL
		4P	192373	192373OL
	125A	3P	192083	192083OL
		4P	192383	192383OL
CO SD3	125A	3P	197013	197013OL
		4P	197313	197313OL
	160A	3P	197023	197023OL
		4P	197323	197323OL

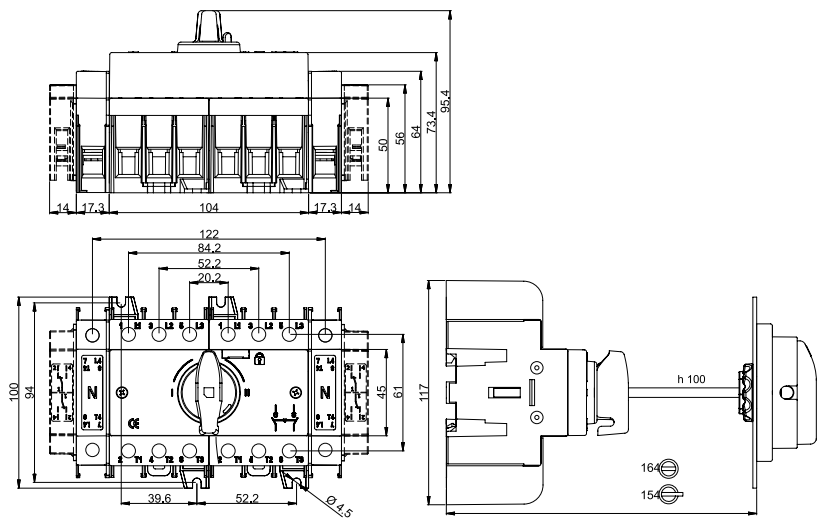
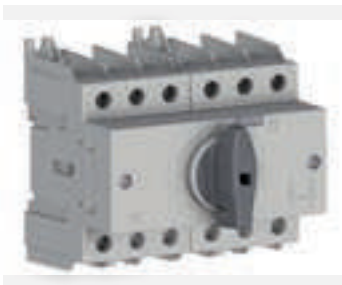


OL version flange
(close transition)

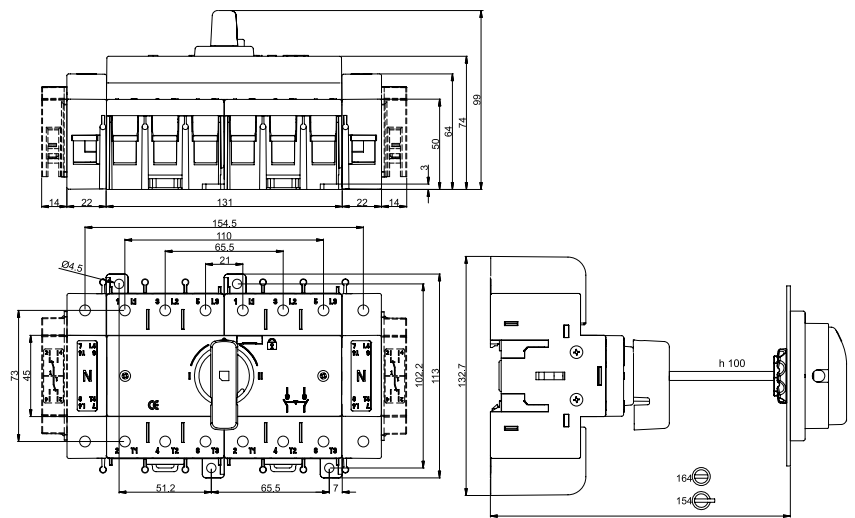
CO SD1



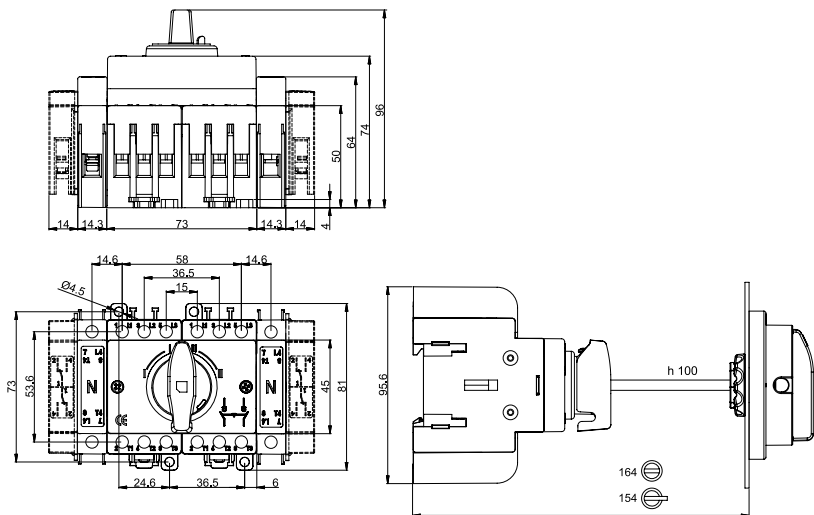
CO SD2



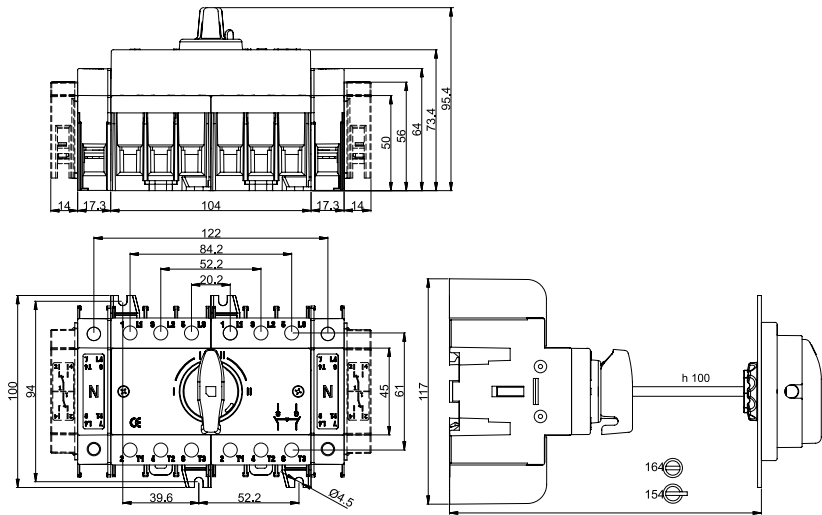
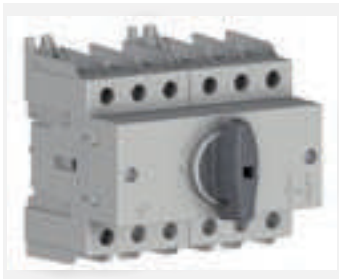
CO SD3



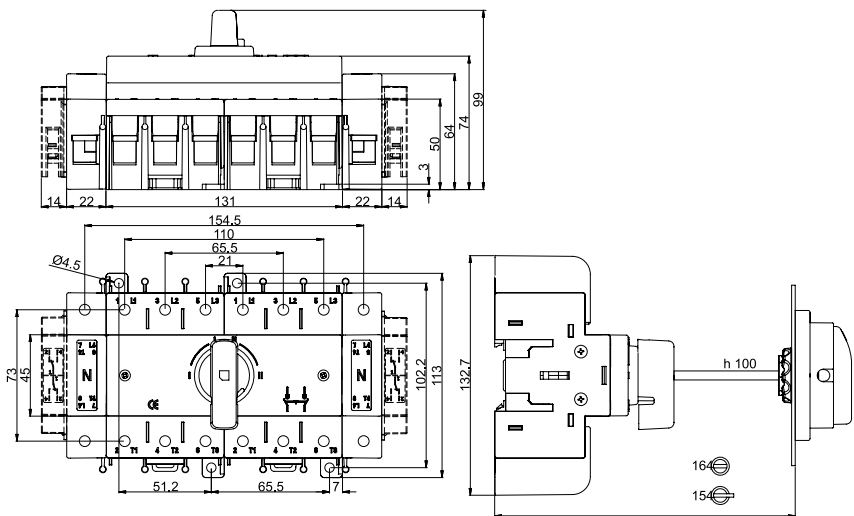
CO SD1 OL



CO SD2 OL



CO SD3 OL



Door handles

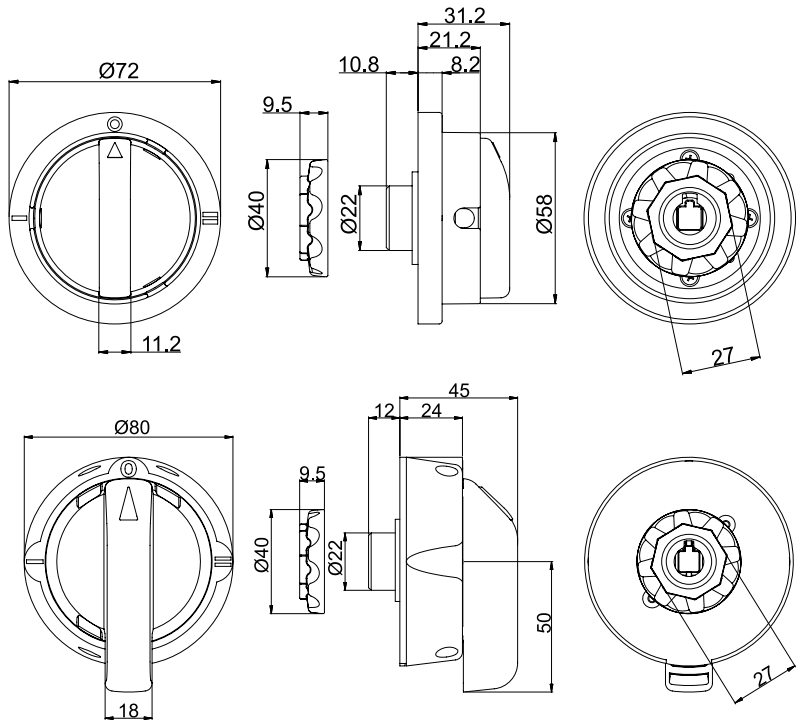
CO SD1 | CO SD2 | CO SD3



19462



19459



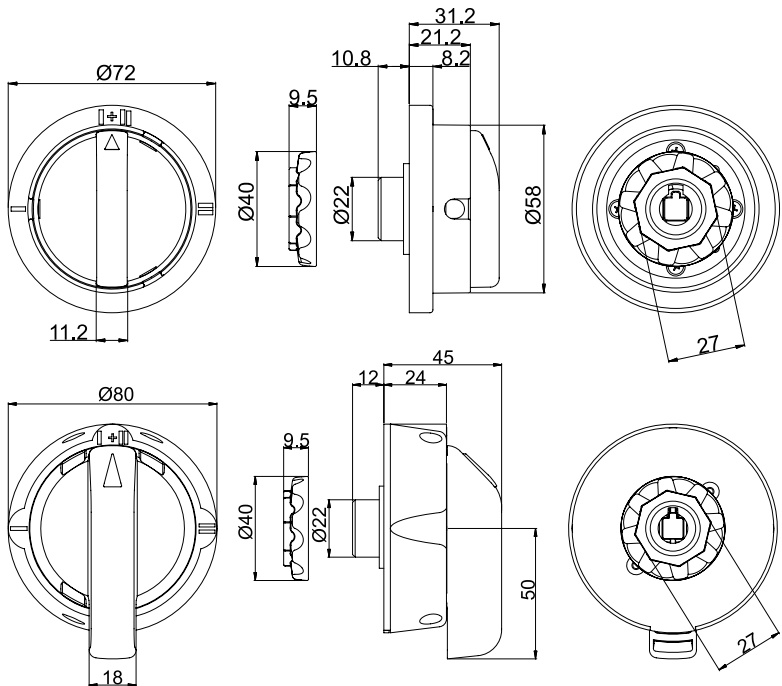
CO SD1 OL | CO SD2 OL | CO SD3 OL



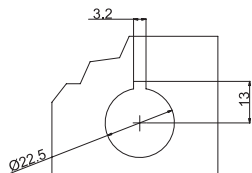
19457



19458



Door drilling

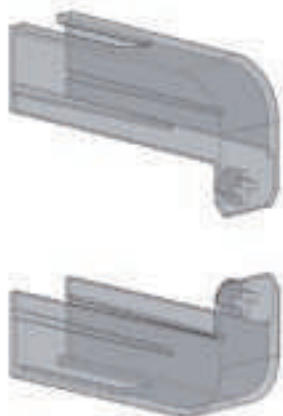


Steel shaft with point



mm	100	200	300
Code	19534-100P	19534-200P	19534-300P

4th neutral pole terminals cover kit



CO SD1 19426



CO SD2 19427



CO SD3 19454

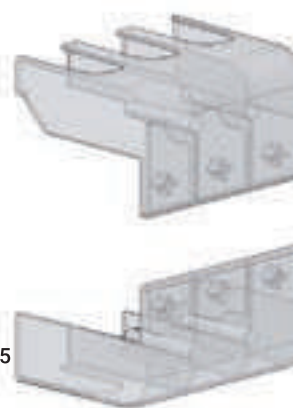
3 poles terminals cover kit



CO SD1 19424



CO SD2 19425



CO SD3 19453

Change over auxiliary contacts 1NO + 1NC

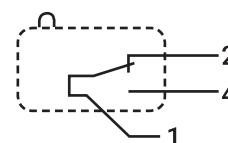
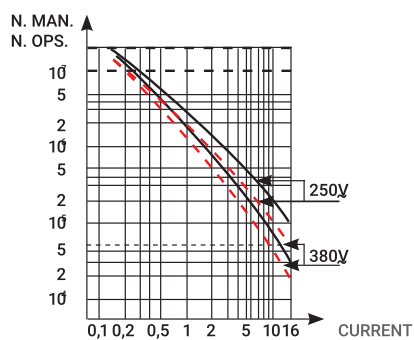


Type	CO SD1	CO SD2	CO SD3
Change over auxiliary contacts screw terminals	Code 19429	19429	19429

Type	CO SD1	CO SD2	CO SD3
Change over auxiliary contacts Faston terminals	Code 19430	19430	19430

To mount the auxiliary contacts placed on 4th pole, please order the set of screw code 11190311

- ▶ Change over auxiliary contact
- ▶ Break before main contacts switches
- ▶ Rated current 16A
- ▶ Thermal current 20A



SYNAGEAR

Lakshmi Electrical Control Systems Limited (LECS) is one of the leading manufacturer of switchgear products from 1982.

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