

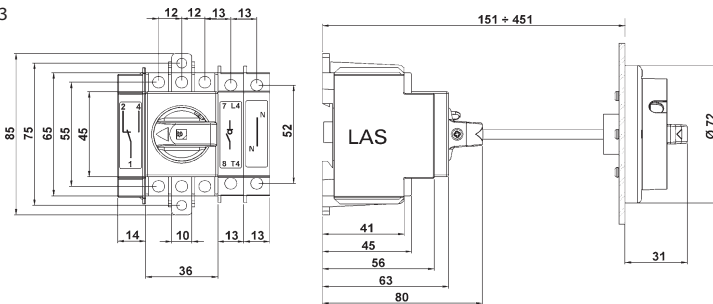
Switch disconnectors LAS

Technical data for switch disconnectors LAS

Type		LAS 16 LAS 25 LAS 32 LAS 40 LAS 63 LAS 80 LAS 100 LAS125							
		16A	25A	32A	40A	63A	80A	100A	125A
Rated insulation voltage	Ui (V)	800	800	800	800	800	800	800	800
Impulse withstand voltage	Uimp (kV)	8	8	8	8	8	8	8	8
Rated thermal current at 40°C	Ith (A)	16	25	32	40	63	80	100	125
Rated current									
AC-21A	415V (A)	16	25	32	40	63	80	100	125
	500V (A)	16	25	32	40	63	80	100	125
	690V (A)	16	25	32	40	63	80	100	125
AC-22A	415V (A)	16	25	32	40	63	80	100	125
	500V (A)	16	25	32	40	63	80	100	100
	690V (A)	16	25	32	40	40	40	40	40
AC-23A	415V (A)	16	25	32	40	40	80	80	80
	500V (A)	16	25	32	40	40	63	63	63
	690V (A)	16	25	25	25	25	32	32	32
Rated making capacity at 415V AC23	(A)	160	250	320	400	400	800	800	800
Rated making capacity at 415V AC23	(A)	128	200	256	320	320	640	640	640
Rated operational power AC23	415V (kW)	7,5	11	14	15	15	37	37	37
	500V (kW)	7,5	11	14	15	18,5	35	35	35
	690V (kW)	7,5	11	14	15	18,5	24	24	24
Short-circuit with stand current 1 sec	(400V) (kA)	1,1	1,1	1,1	1,1	1,1	1,5	1,5	1,5
Back up fuse	(A)	16	25	32	40	63	80	100	125
Short - circuit current (I max)	(kA)	3,8	4,5	5	5,7	5,7	9,9	9,9	9,9
Mechanical endurance	cycles	50000	50000	50000	50000	50000	30000	30000	30000
Electrical endurance	cycles	3000	3000	3000	3000	3000	1500	1500	1000
Power loss per pole	(W)	0,1	0,1	0,2	0,3	0,8	1,3	2,0	3,1
Cable section	mm ²	16	16	16	16	16-25	16-50	25-50	35-50
Auxiliary contacts AC 15/415V	A	3	3	3	3	3	3	3	3
Weight	3P kg	0,13	0,13	0,13	0,13	0,13	0,25	0,25	0,25
Weight	4P kg	0,16	0,16	0,16	0,16	0,16	0,32	0,32	0,32

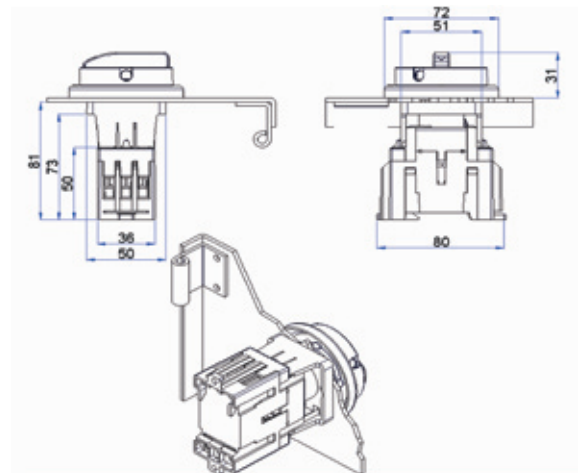
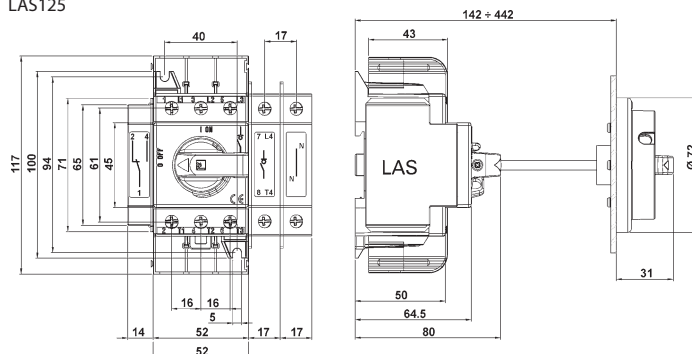
Note: technical data for door mounting switch disconnectors LAS_D are the same, as for LAS16-63

LAS16, LAS25,
LAS32, LAS40,
LAS63



Door mounting switch disconnector LAS_D

LAS80,
LAS100,
LAS125

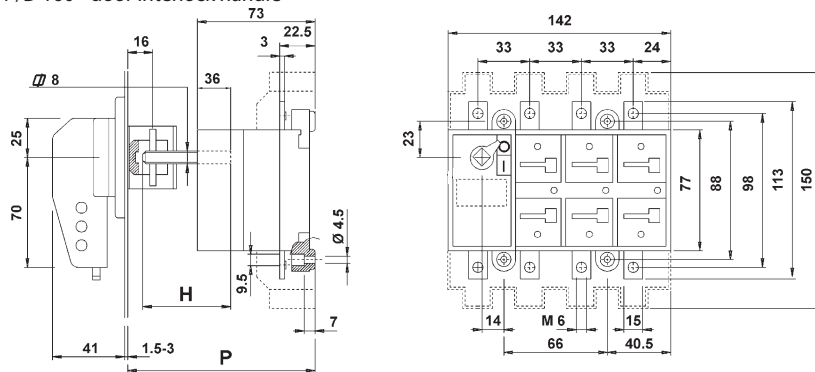


Switch disconnectors LA

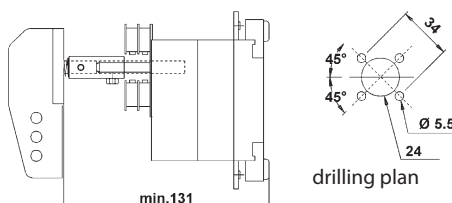
Technical data for LA switch disconnectors				LA1	LA2	LA3	LA4	LA5
Type								
Rated current		(I _n)		160A	250A	400A	630A	1250A
Rated insulation voltage	AC	(U _i)	(V)	1000	1000	1000	1000	1000
	DC	(U _i)	(V)	1500	1500	1500	1500	1500
Impulse withstand voltage		(U _{imp})	(kV)	8	12	12	12	12
Rated thermal current		(I _{th})	(A)	160	250	400	630	1250
Rated current AC-21/A/B	400V		(A)	125/160	250	400	630	1250
	500V		(A)	125/160	250	400	630	1250
Rated current AC-22/A/B	690V		(A)	125/160	250	400	630	1250
	400V		(A)	125/160	250	400	630	1250
Rated current AC-23/A/B	500V		(A)	125/125	250	400	630	1250
	690V		(A)	125/125	250	400	630	1250
Rated current DC-21A/B*	400V		(A)	125/125	250	400	630	1250
	500V		(A)	100/100	200	315	500	800
Rated current DC-22A/B*	690V		(A)	80/80	160	250	400	400
	220V		(A)	125/160	250	400	630	1250
Rated current DC-23A/B*	420V		(A)	-	250	400	630	-
	560V		(A)	-	-	400	630	-
Rated making capacity at 400V AC23	220V		(A)	80/80	250	400	630	800
	420V		(A)	-	250	400	630	-
Rated breaking capacity at 400V AC23	560V		(A)	-	-	400	630	-
			(A)	1250	2500	4000	6300	12500
Short-circuit with stand current			(A)	1000	2000	3200	5040	10000
	1 sec.		(kA)	5	8	13	26,5	35
Short-circuit making capacity	0,25 sec.		(kA)	10	16	26	53	70
	(400V)		(kA)	7,5	13,5	26	30	73,5
Rated operational current AC 23A	(400V)		(kW)	65	130	210	330	630
Rated back up fuse short-circuit current								
Back up fuse			(A)	125	250	400	630	1000
Short - circuit current - R.M.S. value			(kA)	50	50	50	50	100
Mechanical endurance				10000	10000	8000	8000	7000
Electrical endurance				2000	2000	1500	1500	1000
Rated capacitor power at 400 V			kVAR	50	110	180	300	600
Power loss per pole			(W)	2,7	3,8	9,4	15,6	12,7
Cable section (Cu)			mm ²	70	120	240	2x185	-
Bars dimensions (Cu)			mm	16x4	20x5	2x25x5	2x32x6	2x50x8
Operation torque			Nm	8	12	18	34	45
Weight	3P		kg	0,9	1,5	3,5	5,5	11
	4P		kg	1	1,6	3,8	6	12

*Two poles in series

LA1 /D 160 - door interlock handle

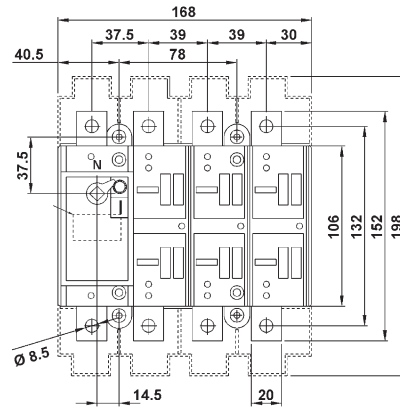
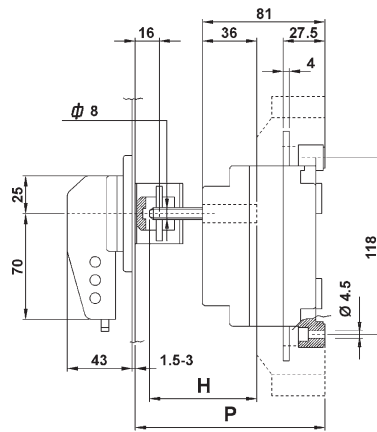


LA1 /R 160 - with direct handle

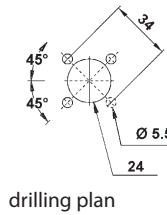
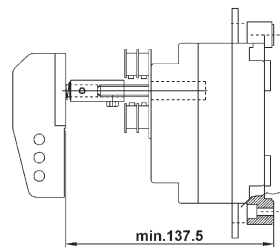


P		C	H
min	max		
116	247	47	P-C

LA2 /D 250 - door interlock handle



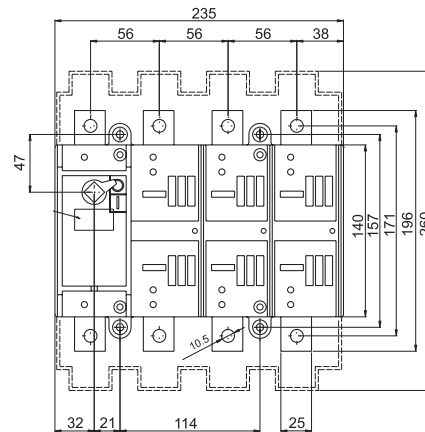
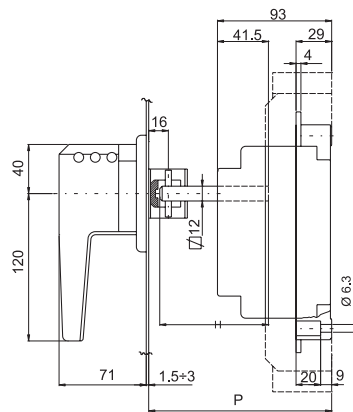
LA2 /R 250 - with direct handle



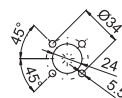
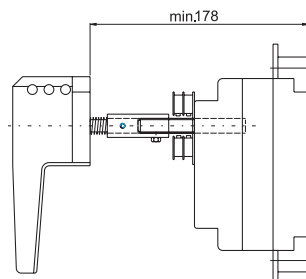
drilling plan

P		C	H
min	max		
124	255	55	P-C

LA3/D 400 A - door interlock handle

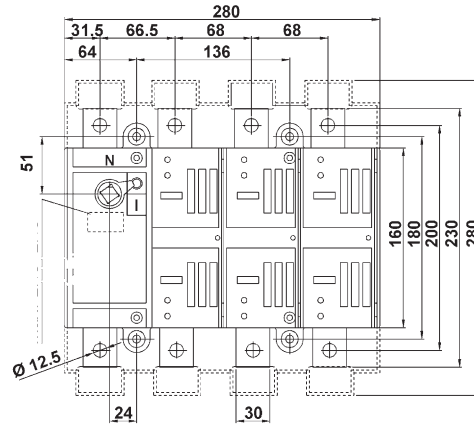
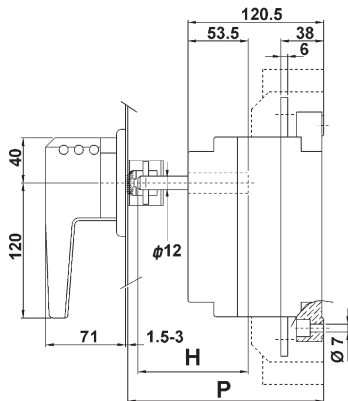


LA3/R 400 A with direct handle

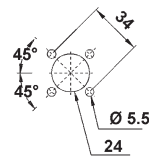
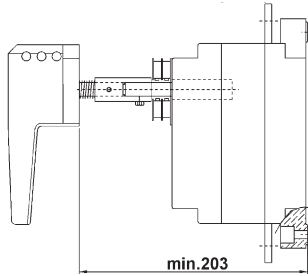


P		C	H
min	max		
148	261,5	51,5	P-C

LA4 /D 630 A - door interlock handle



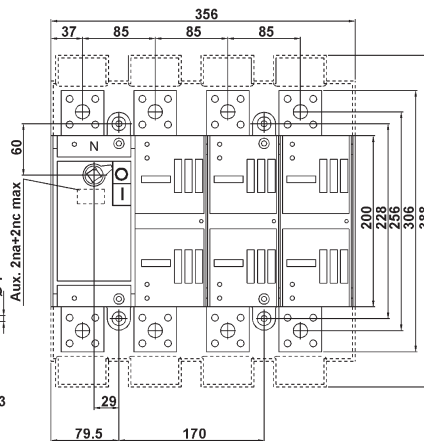
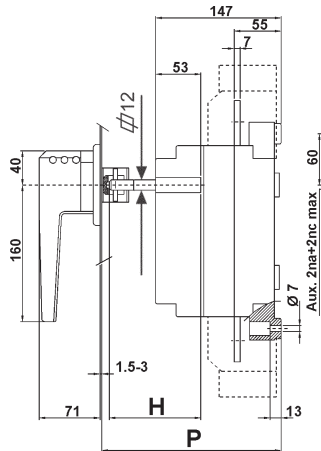
LA4 /R 630 A - with direct handle



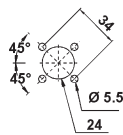
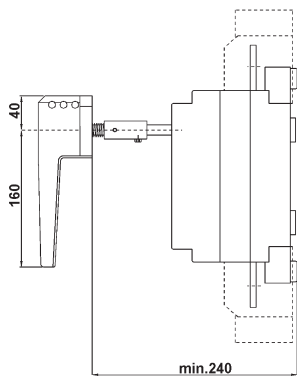
drilling plan

P		C	H
min	max		
174	276	76	P-C

LA5 /D 1250 A - door interlock handle



LA5 /R 1250 A - with direct handle



drilling plan

P		C	H
min	max		
215	296	96	P-C

Switch disconnectors fuses LAF (NV-NH)

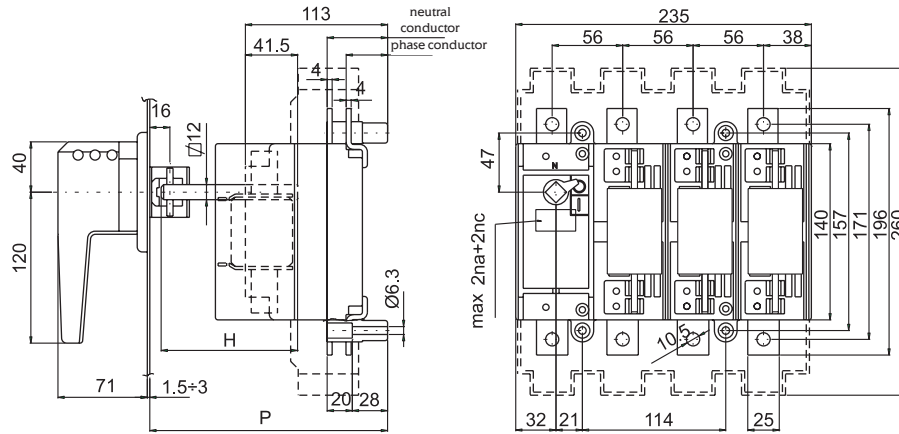
Technical data for Switch disconnectors fuses LAF (NV-NH)				LAF1	LAF2		LAF3	LAF4	LAF5
Type				100A	125A	160A	250A	400A	630A
Rated current		(I _n)							
Rated insulation voltage	AC	(U _i)	(V)	1000	1000	1000	1000	1000	1000
	DC	(U _i)	(V)	1500	1500	1500	1500	1500	1500
Impulse withstand voltage		(U _{imp})	(kV)	8	12	12	12	12	12
Rated thermal current		(I _{th})	(A)	100	125	160	250	400	630
Rated current AC-21/A	400V	(A)		100	125	160	250	400	630
	500V	(A)		100	125	160	250	400	630
	690V	(A)		100	125	160	250	400	630
Rated current AC-22/A	400V	(A)		80	125	160	250	400	630
	500V	(A)		80	125	160	250	400	630
	690V	(A)		80	125	160	250	400	630
Rated current AC-23/A	400V	(A)		80	125	160	250	400	630
	500V	(A)		63	100	125	200	315	500
	690V	(A)		45	80	100	160	250	400
Rated current DC-21A ⁽¹⁾	48V	(A)		100	125	160	250	400	630
	110V	(A)		100	125	160	250	400	630
	220V	(A)		100	125	160	250	400	630
	400V	(A)		-	125	160	250	400	630
	500V	(A)		-	125	160	250	400	630
	600V	(A)		-	-	-	-	400	630
Rated current DC-22A ⁽¹⁾	48V	(A)		80	125	160	250	400	630
	110V	(A)		80	125	160	250	400	630
	220V	(A)		80	125	160	250	400	630
	400V	(A)		-	125	160	250	400	630
	500V	(A)		-	125	160	250	400	630
	600V	(A)		-	-	-	-	400	630
Rated current DC-23A ⁽¹⁾	48V	(A)		80	125	160	250	400	630
	110V	(A)		80	125	160	200	315	500
	220V	(A)		63	125	160	160	250	400
	400V	(A)		-	125	160	-	-	-
Rated operational power at 400V AC-23-A			(kW)	42	65	85	130	210	330
Back up fuse			(A)	80	125	160	250	400	630
Short - circuit current - R.M.S. value			(kA)	100	50	50	50	50	50
Short - circuit current - peak value			(kA)	12	15	15	25	30	40
Rated making capacity at 420V AC cosφ 0,35 (0,45*)			(A)	800*	1250	1600	2500	4000	6300
Rated breaking capacity at 420V AC cosφ 0,35 (0,45*)			(A)	640*	1000	1280	2000	3200	5040
Rated making and breaking capacity at DC (230V L/R=15)			(A)	180	320	400	640	1000	1600
Rated capacitor power at 400 V			(kVAR)	45	50	70	110	180	300
Mechanical endurance			n ⁰	10000	8000	8000	7000	7000	4000
Electrical endurance			n ⁰	1500	1000	1000	1000	1000	1000
Power loss per pole ⁽²⁾			(W)	1,2	4,8	4,8	12	19,2	30
Cable section (Cu)			mm ²	35	70	70	120	240	2 x 185
Bars dimensions (Cu)			mm	16x3	16x4	16x4	25x4	32x5	2x40x6
Operation torque			Nm	8	12	12	18	34	45

(1) two poles in series

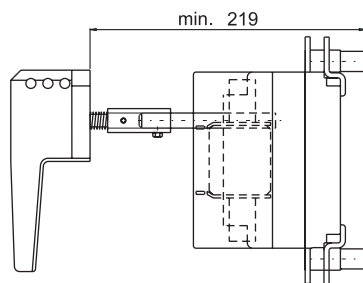
(2) fuse-link not included

Technical data - ETISWITCH

LAF3 - door interlock handle

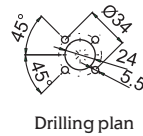


LAF3 - with direct handle

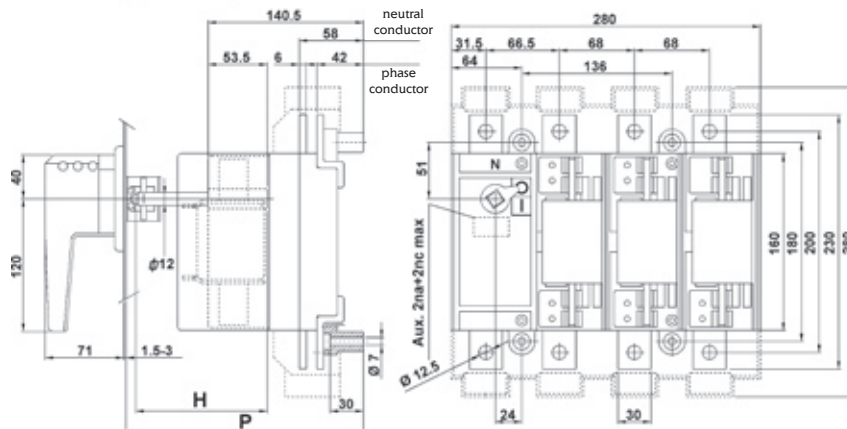


P		C	H
min	max		
189	280,5	71,5	P-C

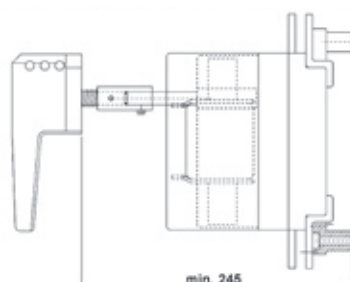
C = constant



LAF4 - door interlock handle

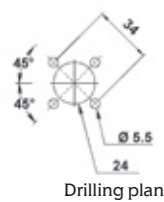


LAF4 - with direct handle

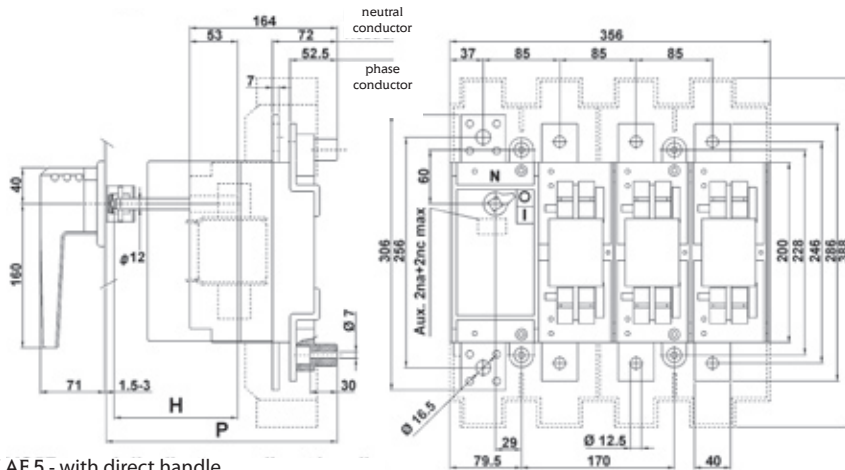


P		C	H
min	max		
215	296	96	P-C

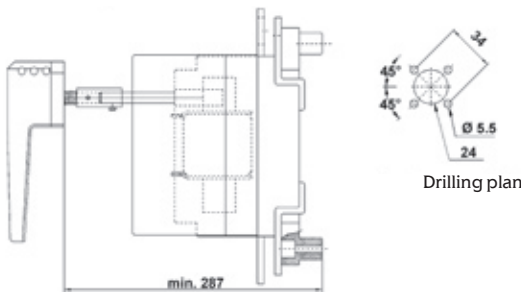
C = constant



LAF 5 - door interlock handle



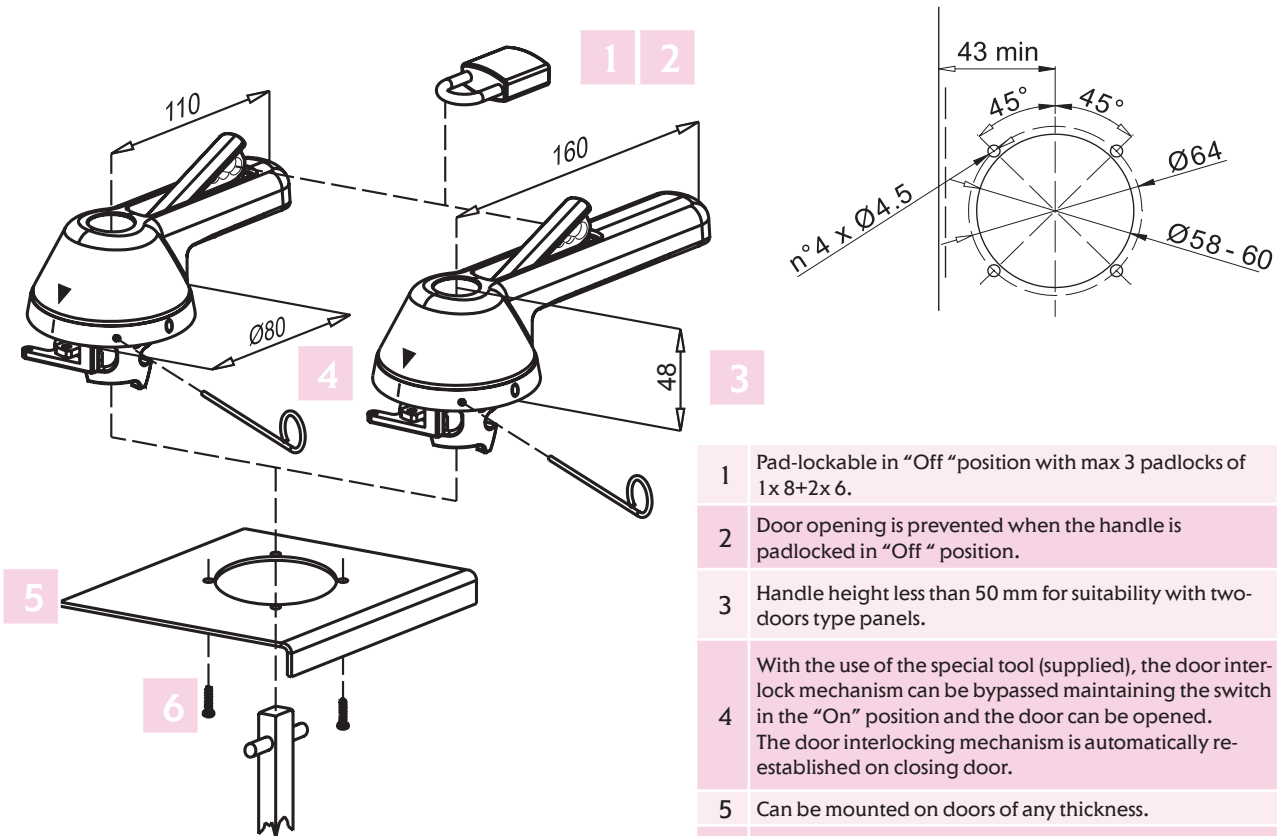
LAF 5 - with direct handle



P		C	H
min	max		
257	320	120	P-C

C = constant

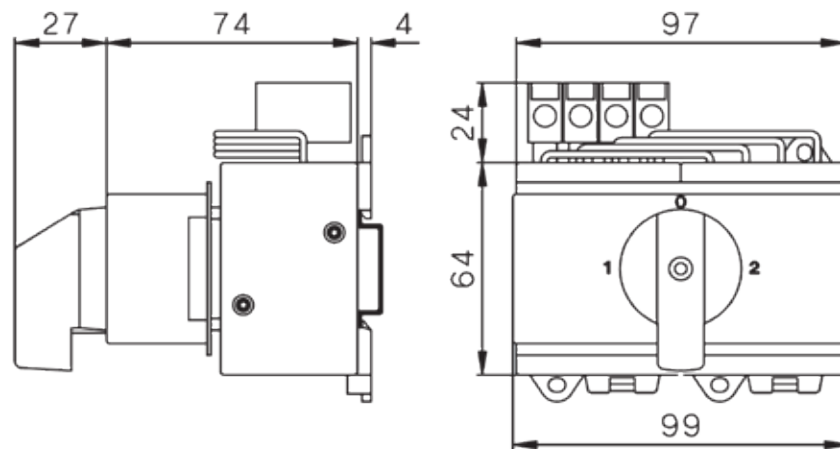
Door interlock handle/emergency with double function of security



Manual change-over switches LAS

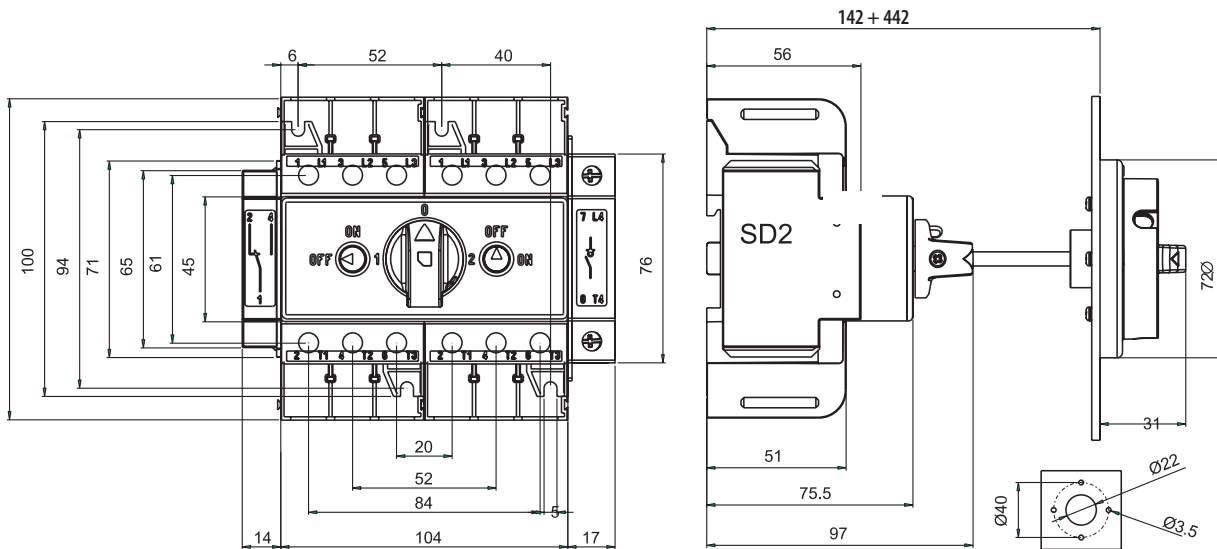
Technical data for manual change-over switches LAS 20-40A				LAS_CO			
Type							
Main contacts							
Rated thermal current		(I _{th})	(A)	20	25	32	40
Rated insulation voltage	AC	(U _i)	(V)	690	690	690	690
Rated operational current AC-21-A		(I _c)	(A)	20	25	32	40
Making capacity	3x380 - 440V		(A)	160	190	220	300
Breaking capacity	3x220 - 240V		(A)	160	180	200	250
	3x380 - 440V		(A)	160	180	200	250
	3x660 - 690V		(A)	80	110	140	170
Motor switch AC3	3x400V		(A)	12	16	23	30
Motor switch AC3	3x220 - 240V		(kW)	3	4	5,5	7,5
Motor switch AC3 direct switching of single motors	3x380 - 440V		(kW)	5,5	7,5	11	15
	3x660 - 690V		(kW)	5,5	7,5	11	15
Main switch AC-23	3x400V		(A)	16	20	25	32
Motor switch AC-23-A	3x220 - 240V		(kW)	4	5,5	7,5	9
Main switch AC-23-B	3x380 - 440V		(kW)	7,5	10	12,5	16
Safety switch	3x660 - 690V		(kW)	5,5	7,5	11	15
Rated conditional short-circuit current			(kA _{eff})	10	10	10	10
Back-up fuse gG			(A)	25	35	40	50
Mechanical life			x10 ³	200	200	200	200
Rated short-time withstand current (1sec.)			(A)	250	300	400	500
Max. cable cross section - solid flexible			mm ²	10	10	10	10
			mm ²	6	6	6	6
Size of terminal screw				M 3,5	M 3,5	M 3,5	M 3,5
Tightening torque			Nm	0,8 - 1,7	0,8 - 1,7	0,8 - 1,7	0,8 - 1,7
Auxiliary contacts							
Rated insulation voltage	AC	(U _i)	(V)	690	690	690	690
Rated thermal current		(I _{th})	(A)	10	10	10	10
Switching capacity AC15	220 - 240V		(A)	2,5	2,5	2,5	2,5
	380 - 440V		(A)	1,5	1,5	1,5	1,5
Rated short-time withstand current			(kA _{eff})	3	3	3	3
Back-up fuse gG			(A)	10	10	10	10
Max. cable cross section - solid flexible			mm ²	2,5	2,5	2,5	2,5
			mm ²	2,5	2,5	2,5	2,5

LAS_CO 20-40A

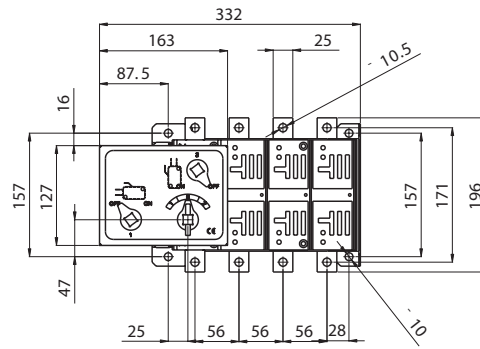
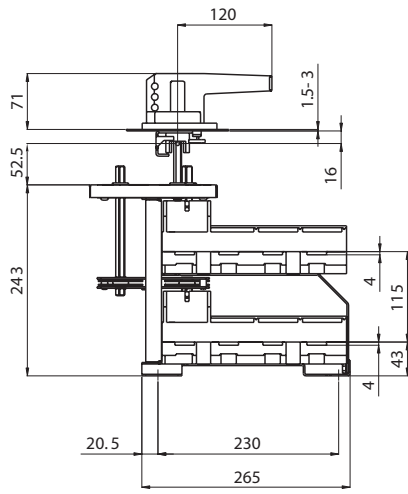


Technical data for manual change-over switches LAS 63-125A				LAS_CO			
Type							
Rated current		(I _n)		63	80	100	125
Rated insulation voltage	AC	(U _i)	(V)	800	800	800	800
Impulse withstand voltage		(U _{imp})	(kV)	8	8	8	8
Rated thermal current		(I _{th})	(A)	63	80	100	125
Rated current AC-21/A	415V	(A)		63	80	100	125
	500V	(A)		63	80	100	125
	690V	(A)		63	80	100	125
Rated current AC-22/A	415V	(A)		63	80	100	125
	500V	(A)		63	80	100	100
	690V	(A)		40	40	40	40
Rated current AC-23/A	415V	(A)		63	80	80	80
	500V	(A)		63	63	63	63
	690V	(A)		32	32	32	32
Rated making capacity at 400V AC23		(A)		630	800	800	800
Rated breaking capacity at 400V AC23		(A)		504	640	640	640
Rated operational current AC 23A	415V	(kW)		29	37	37	37
	500V	(kW)		35	35	35	35
	690V	(kW)		24	24	24	24
Short-circuit with stand current (1 sec)	400V	(kA)		1,5	1,5	1,5	1,5
Back up fuse gG		(A)		63	80	100	125
Short - circuit current - R.M.S. value		(kA)		50	50	30	20
Short - circuit current - peak value		(kA)		8	9,9	9,9	9,9
Mechanical endurance		n ^o		30000	30000	30000	30000
Electrical endurance		n ^o		3000	1500	1500	1000
Power loss per pole		(W)		0,8	1,3	2	3,1
Cable section (Cu)		mm ²		16-50	16-50	25-50	35-50
Operation torque		Nm		2	2	2	2
Auxiliary contact AC 15/ 415V		(A)		3	3	3	3

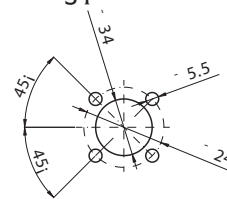
LAS_CO 63-125A



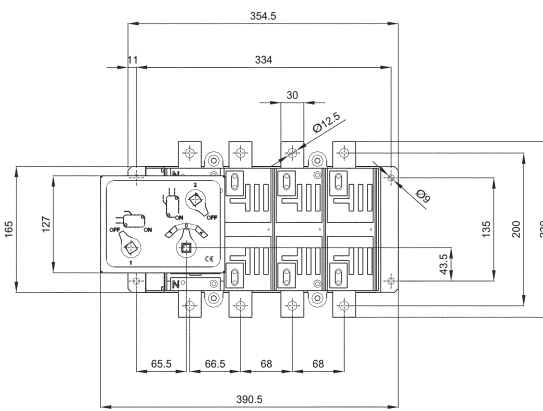
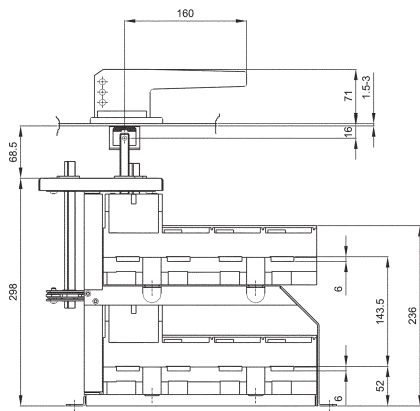
LA3_CO



Drilling plan



LA4_CO

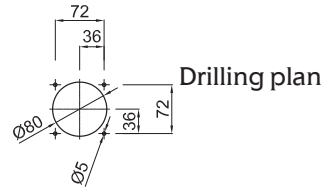
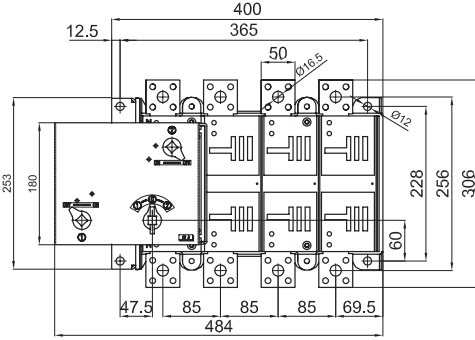
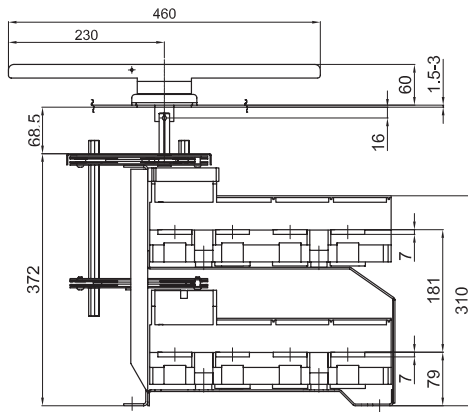


Drilling plan

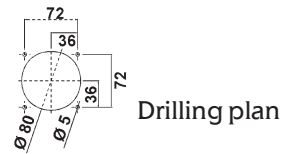
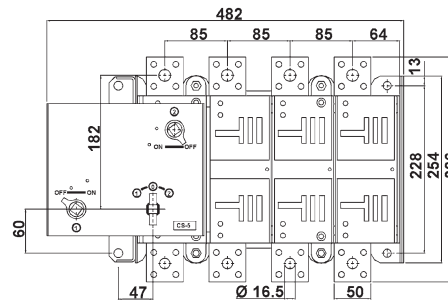
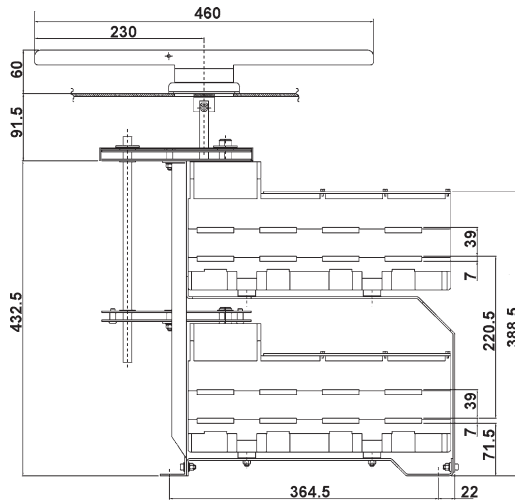


Technical data - ETISWITCH

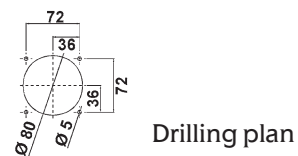
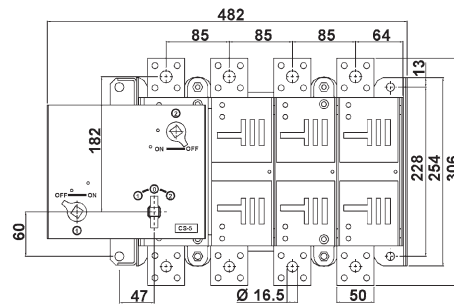
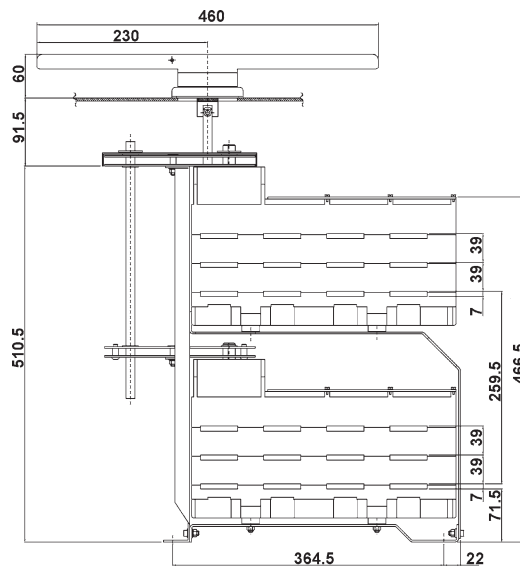
LA5_CO 1250A



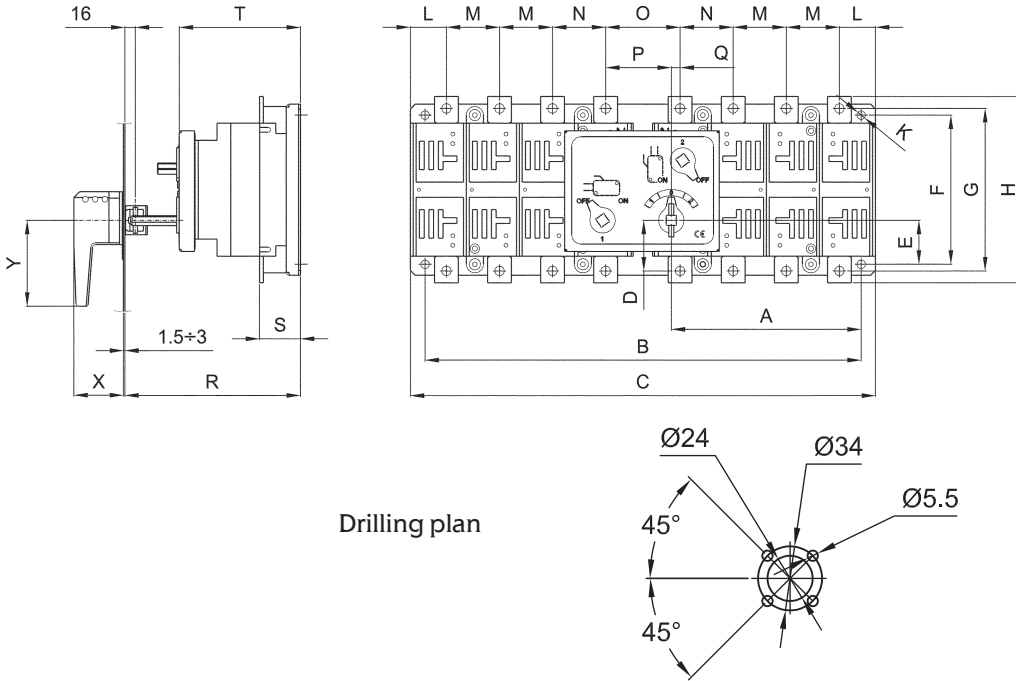
LA5_CO 1600A



LA5_CO 2500A

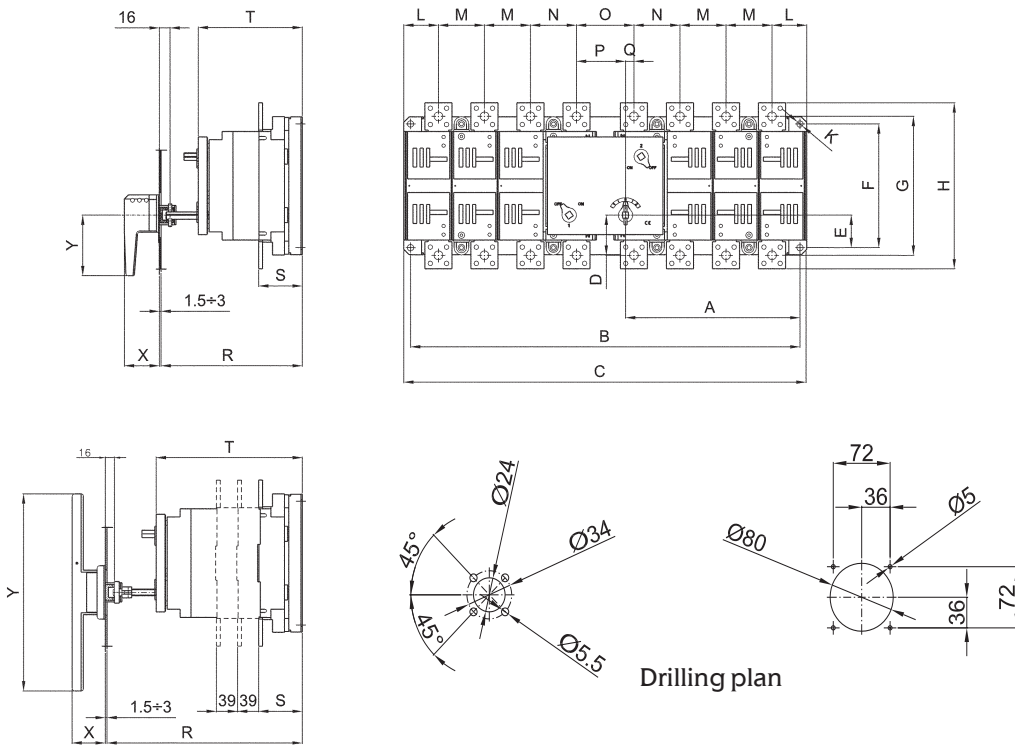


LA1,LA2,LA3_COH



Type	A	B	C	D	E	F	G	H	K	L	M	N	O	P	Q	R	S	T	X	Y
LA1_COH	131	262	316	49,5	43,5	88	98	113	7	24	33	33	70	35	35	169,5	32,5	100	41	70
LA2_COH	157,5	315	360,5	66	59	118	132	152	8	30,5	39	37,5	68,5	34	34,2	177	37,5	107,5	71	120
LA3_COH	200	460	490,5	54	47	157	171	196	9	38	56	56	78,5	69,5	9	197	44	128,5	71	120

LA4,LA5_COH



Type	A	B	C	D	E	F	G	H	K	L	M	N	O	P	Q	R	S	T	X	Y
LA4_COH	304	655	680	61	51	180	200	230	12	46	68	66,5	93	82,5	12,5	232	61	162	71	160
LA5_COH 1250A	322	719	744	74	60	228	256	306	12	64	85	85	106	90,5	15,5	286,5	80,5	193,5	59	460
LA5_COH 1600A	322	719	744	74	60	228	256	306	12	64	85	85	106	90,5	15,5	325,5	80,5	232,5	59	460
LA5_COH 2500A	322	719	744	74	60	228	256	306	12	64	85	85	106	90,5	15,5	364,5	80,5	211,5	59	460

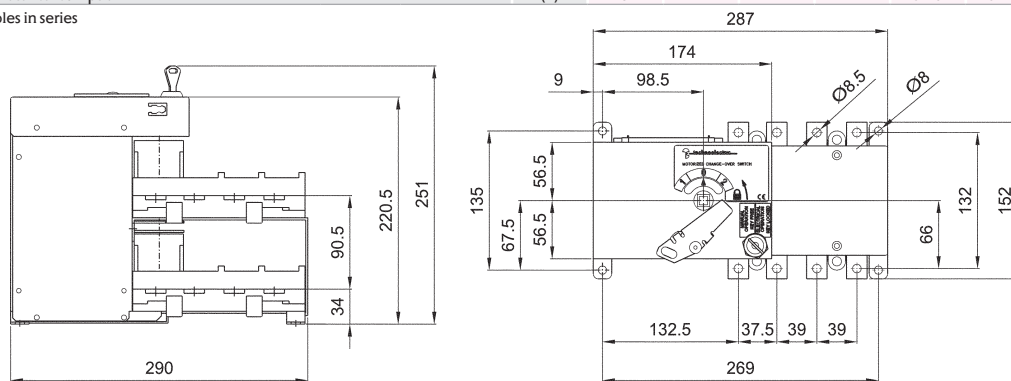
Motorized change-over switches LA (1-0-2)

Technical data motorized change-over switches LA (1-0-2)

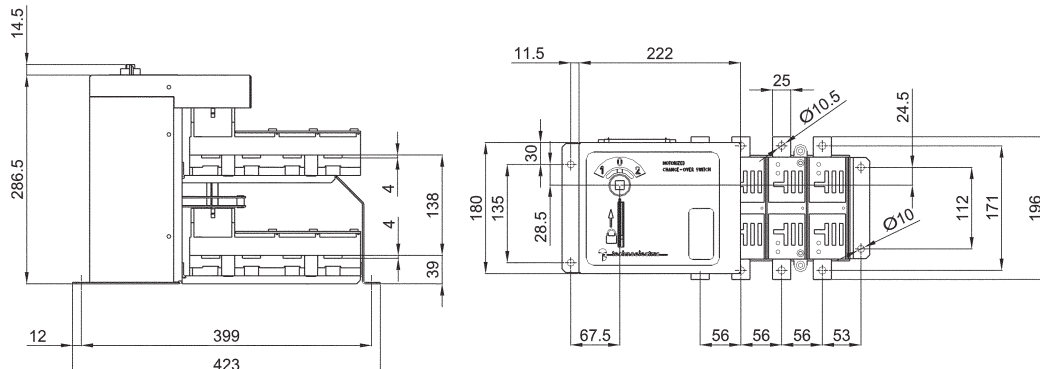
Type			LA2 MO	LA3 MO	LA4 MO		LA5 MO			
Rated current	(I_r)		250A	400A	630A	800A	1250A	1600A	2500A	
Rated insulation voltage	AC	(U_i)	(V)	1000	1000	1000	1000	1000	1000	1000
	DC	(U_i)	(V)	1500	1500	1500	1500	1500	1500	1500
Impulse withstand voltage	(I_{th})		(A)	250	400	630	800	1250	1600	2500
Rated current AC-21/A/B	400V	(A)	250	400	630	630/800	1250	1600	2500	
	500V	(A)	250	400	630	630/800	1250	1250	2000	
	690V	(A)	250	400	630	630/800	1250	1250	1250	
Rated current AC-22/A/B	400V	(A)	250	400	630	630/800	1250	1250	-	
	500V	(A)	250	400	630	630/800	1250	-	-	
	690	(A)	250	400	630	630/800	1250	-	-	
Rated current AC-23/A/B	400V	(A)	250	400	630	630/630	1250	-	-	
	500V	(A)	200	315	500	500/500	800	-	-	
	690V	(A)	160	250	400	400/400	-	-	-	
Rated current DC-21A/B*	220V	(A)	250	400	630	630/800	1250	1600	-	
	420V	(A)	250	400	630	630/800	-	-	-	
	560V	(A)	-	400	630	630/800	-	-	-	
Rated current DC-22A/B*	220V	(A)	250	400	630	630/800	1250	-	-	
	420V	(A)	250	400	630	630/800	-	-	-	
	560V	(A)	-	400	630	630/800	-	-	-	
Rated current DC-23A/B*	220V	(A)	250	400	630	630/630	800	-	-	
	420V	(A)	250	400	630	630/630	-	-	-	
	560V	(A)	-	400	630	630/630	-	-	-	
Rated making capacity at 400V AC23			(A)	2500	4000	6300	6300	12500	-	-
Rated breaking capacity at 400V AC23			(A)	2000	3200	5040	5040	10000	-	-
Short-circuit with stand current	1sek.	(kA)	8	13	26,5	26,5	50	50	50	
	0,25 sek.	(kA)	16	26	53	53	100	100	100	
Short-circuit making capacity	(400V)	(kA)	13,5	26	30	30	105	105	105	
Rated operational current AC 23A	(400V)	(kW)	130	210	330	330	630	630	-	
Rated back up fuse short-circuit current			(A)	250	400	630	630	1000	-	-
Back up fuse gG			(A)	250	400	630	630	1000	-	-
Short - circuit current - R.M.S. value			(kA)	50	50	50	50	100	-	-
Mechanical endurance			(n°)	10000	8000	8000	8000	4000	4000	2500
Electrical endurance			(n°)	2000	1500	1500	1500	1000	500	500
Rated capacitor power at 400 V			(kVAR)	110	180	300	300	600	-	-
Power loss per pole			(W)	3,8	9,4	15,6	25,7	12,7	38,3	91,7
Cable section (Cu)			(mm ²)	120	240	2x185	2x240	-	-	-
Bars dimensions (Cu)			(mm)	20x5	2x25x5	2x32x6	2x40x6	2x50x8	3x50x8	4x50x12
Change over time			(sek.)	1,8	1,8	2,8	2,8	3	3,8	3,8
AC voltage supply	+/- 10%	(V)	220	220	220	220	220	220	220	
DC voltage supply	+/- 10%	(V)	24	24	24	24	24	24	24	
	min.	(V)	18	18	18	18	18	18	18	
Double voltage supply DUO			(V)						24DC and 110/220AC	
Power motor consumption			(A)	3	4+7	4	4	5÷6	5÷6	5÷6

* two poles in series

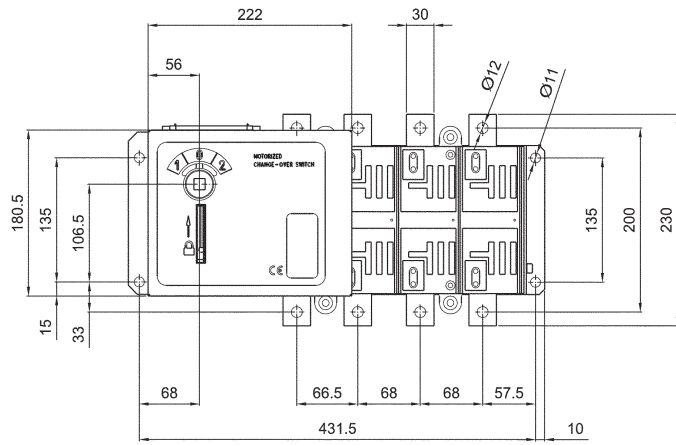
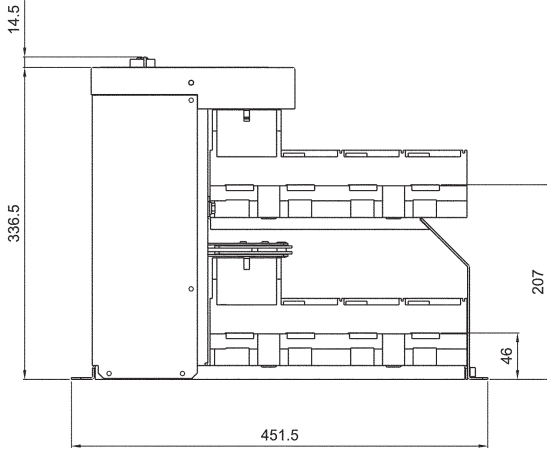
LA 2 MO



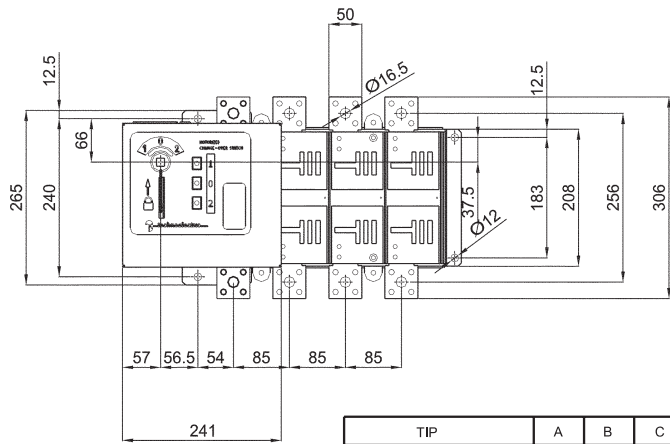
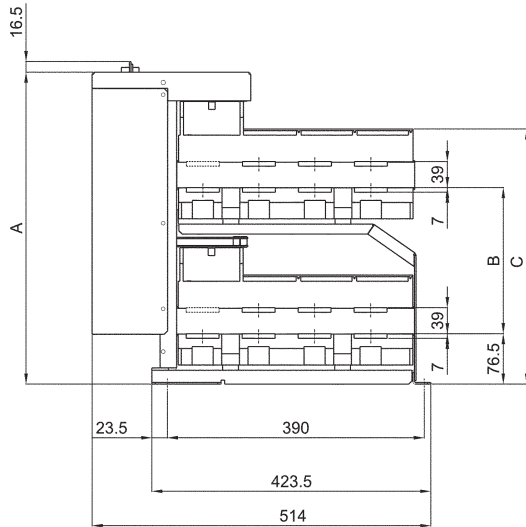
LA 3 MO



LA 4 MO

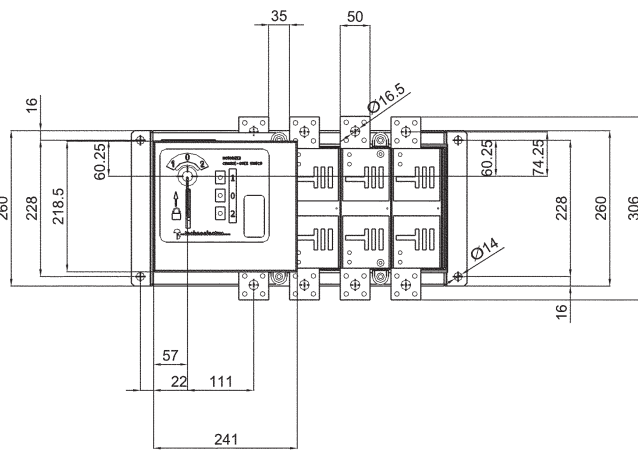
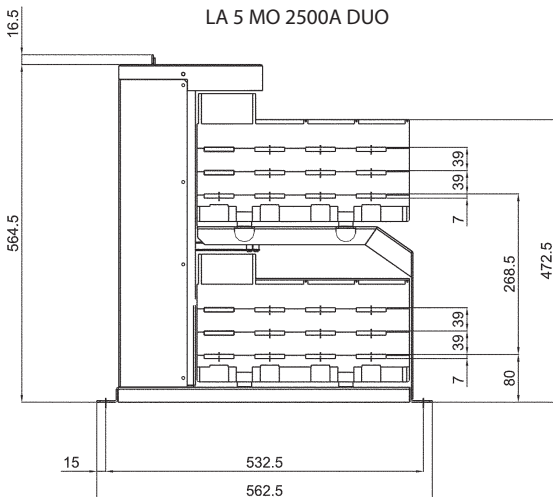


LA 5 MO 1250A 24V DC, 230V AC and LA 5 MO 1600A DUO



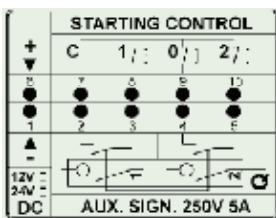
TIP	A	B	C
LA 5 MO 1250A 24V DC, 230V AC	395,5	182,5	309
LA 5 MO 1600A DUO	473,5	221,5	387

LA 5 MO 2500A DUO

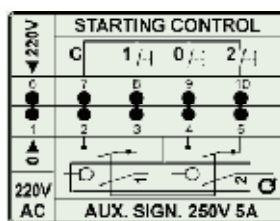


Motorized change-over switches - TERMINAL BOARD DIAGRAMS

LA_MO_CO 24V DC



LA_MO_CO 230V AC



LA5 MO_CO DUO

