

# AC Main & Disconnect Switches

Series LTS20 to LT160 (20A to 200A)



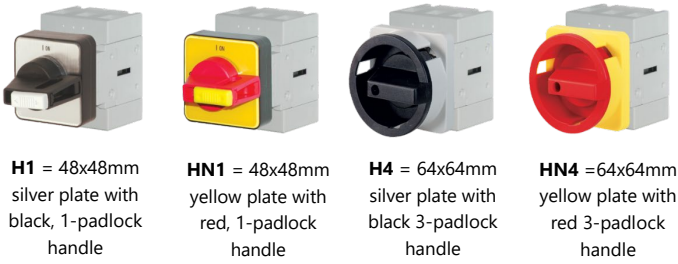
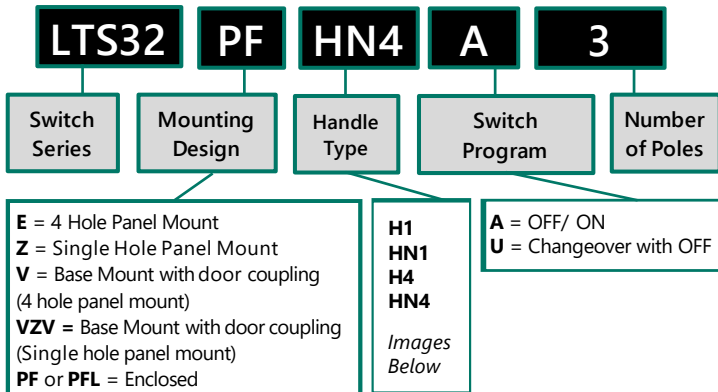
	4-Hole Panel Mount	Single-Hole Mount (22.5mm)	Base Mount w/ Door Coupling (Handle 22.5mm Single Hole Mount)	Base Mount w/ DoorCoupling (Handle 4-Hole Mount)	Modular Switch (Base Mount)	Plastic Enclosed
	IP66	IP66	IP66	IP66	IP40	IP66



Series	UL	20A	LTS20 E..	LTS20 Z..	LTS20 VZV..	LTS20 V..	LTS20 SMA..	LTS20 PF(L) <sup>1)</sup> ..
LTS20	20A	LTS20 E..	LTS20 Z..	LTS20 VZV..	LTS20 V..	LTS20 SMA..	LTS20 PF(L) <sup>1)</sup> ..	
LTS25	25A	LTS25 E..	LTS25 Z..	LTS25 VZV..	LTS25 V..	LTS25 SMA..	LTS25 PF(L) <sup>1)</sup> ..	
LTS32	32A	LTS32 E..	LTS32 Z..	LTS32 VZV..	LTS32 V..	LTS32 SMA..	LTS32 PF(L) <sup>1)</sup> ..	
LTS40	40A	LTS40 E..	LTS40 Z..	LTS40 VZV..	LTS40 V..	LTS40 SMA..	LTS40 PF(L) <sup>1)</sup> ..	
LTS63	63A	LTS63 E..	-	LTS63 VZV..	LTS63 V..	LTS63 SMA..	LTS63 PFL..	
LTS80	80A	LTS80 E..	-	LTS80 VZV..	LTS80 V..	LTS80 SMA..	LTS80 PFL..	
LTS85	85A	LTS85 E..	-	LTS85 VZV..	LTS85 V..	LTS85 SMA..	LTS85 PFL..	
LTS100	100A	LTS100 E..	-	LTS100 VZV..	LTS100 V..	LTS100 SMA..	LTS100 PFL..	
LTS125	125A	LTS125 E..	-	LTS125 VZV..	LTS125 V..	LTS125 SMA..	LTS125 PFL..	
LT160	200A	LTS160 E..	-	-	LT160 V..	-	LT160 PF..	

1) PFL... Larger Enclosure

### Ordering Code Example:



**H1** = 48x48mm silver plate with black, 1-padlock handle  
**HN1** = 48x48mm yellow plate with red, 1-padlock handle  
**H4** = 64x64mm silver plate with black 3-padlock handle  
**HN4** = 64x64mm yellow plate with red 3-padlock handle

### Switching Programs:

- On-Off Switch 3-pole ····· **A3**
- On-Off Switch 4-pole ····· **A4**
- On-Off Switch 6-pole ····· **A6**
- On-Off Switch 8-pole ····· **A8**
- Changeover Switches 3-pole ····· **U3**
- Changeover Switches 4-pole ····· **U4**
- On-Off Switch 3-pole ····· **T300** (for LT160)
- On-Off Switch 4-pole ····· **T400** (for LT160)

### Accessories Include:

- 4<sup>th</sup> Add-on Neutral Switching Pole
- Auxiliary Contact Blocks
- PE-Terminal
- N-Terminal
- Terminal Covers
- Additional Escutcheon Plate Tab
- Terminal

# Technical Data

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

Type	LTS20	LTS25	LTS32	LTS40	LTS63	LTS80	LTS85	LTS100	LTS125	LT160	
<b>Main contacts</b>											
Rated thermal current $I_{th}$ open	A	20	25	32	40	63	80	85	100	125	160
Rated thermal current $I_{the}$ enclosed	A	20	25	32	40	63	80	85	100	110	160
Rated insulation voltage $U_i$ <sup>1)</sup>	V	690	690	690	690	690	690	1000 <sup>3)</sup>	1000 <sup>3)</sup>	1000 <sup>3)</sup>	1000 <sup>3)</sup>
Rated operational current $I_e$ AC21A	A	20	25	32	40	63	80	85	100	125	160
Rated operational voltage $U_e$ max. AC21A	V	690	690	690	690	690	690	1000	1000	1000	690
Making capacity $I_{eff}$ 3x380-440V	A	160	190	220	300	370	440	600	725	850	1050
Breaking capacity 3x220-240V	A	160	180	200	250	330	380	480	580	680	900
3x380-440V	A	160	180	200	250	330	380	480	580	680	850
3x660-690V	A	80	110	140	170	190	220	250	330	420	340
Disconnection property performed up to	V	690	690	690	690	690	690	1000	1000	1000	1000
Motor Switch AC3 3x400V	A	12	16	23	30	37	37	45	60	72	85
Motor Switch AC3 3x220-240V	kW	3	4	5,5	7,5	11	11	15	18,5	22	30
Direct switching of single motors 3x380-440V	kW	5,5	7,5	11	15	18,5	18,5	22	30	37	45
3x660-690V	kW	5,5	7,5	11	15	18,5	18,5	18,5	22	30	37
Main Switch AC23 3x400V	A	16	20	25	32	45	45	60	72	85	110
Motor Switch, AC23A, 3x220-240V	kW	4	5,5	7,5	9	15	15	18,5	22	30	30
Main Switch, AC23B 3x380-440V	kW	7,5	10	12,5	16	22	22	30	37	45	55
Safety Switch 3x660-690V	kW	5,5	7,5	11	15	18,5	18,5	22	30	37	37
Rated conditional short-circuit current 400V	kA <sub>eff</sub>	10	10	10	10	10	10	10	10	5	30
Max. fuse size gL (gG) 400V	A	25	35	40	40	63	80	100	100	125	160
Rated conditional short-circuit current 690V	kA <sub>eff</sub>	10	5	3	1	5	1,5	10	10	5	30
Max. fuse size gL (gG) 690V	A	20	25	32	40	63	80	85	100	125	-
Mechanical life $\times 10^3$		200	200	200	200	100	100	100	100	100	100
Electrical life $\times 10^3$		5	5	5	5	4	4	3	3	3	2
Rated short-time withstand current (1sec. current) A		250	300	400	500	600	850	1000	1200	1500	3000
Power loss per pole AC21 = $I_{th}$	P/pole [W]	E, Z	0,322	0,503	0,824	1,288	2,739	4,416	3,851	5,330	8,328
	V, SMA, PF		0,364	0,569	0,933	1,458	2,739	4,416	3,851	5,330	8,328
	R/pole [mOhm]	E, Z	0,805	0,805	0,805	0,805	0,690	0,690	0,533	0,533	0,533
	V, SMA, PF		0,911	0,911	0,911	0,911	0,690	0,690	0,533	0,533	0,533
<b>Maximum ambient temperature</b> Operation open		-40°C to +60°C (90°C) <sup>5)</sup>									+60°C
	enclosed	-40°C to +40°C									+40°C
Storage		-50°C to +90°C <sup>6)</sup>									+90°C <sup>6)</sup>
<b>Cable cross sections</b>	mm <sup>2</sup>	0,5 - 10				1 - 25 <sup>4)</sup>		4 - 50		max.95	
solid or stranded	AWG	20 - 8 (10)				16 - 3 (10)		10 - 00 (10)		max.3/0	
flexible	mm <sup>2</sup>	0,5 - 6				4 - 16 <sup>4)</sup>		10 - 35		max.70	
	AWG	20 - 10				16 - 6		8 - 2		max.2/0	
flexible (+ multicore cable end)	mm <sup>2</sup>	0,5 - 6				0,75 - 16 <sup>4)</sup>		6 - 35		max.50	
	AWG	20 - 10				16 - 6		8 - 2		max.1/0	
Size of terminal screw		M3,5				M5		M6		M10	
Tightening torque	Nm	1,7 - 2,3				2,8 - 4		1,7 - 4,5		14	
<b>Auxiliary contacts</b>											
Rated insulation voltage $U_i$ <sup>1)</sup>	V	690				690		690		690	
Rated thermal current $I_{th}$ , $I_{the}$	A	10				10		10		16	
Switching capacity AC15 380-450V	A	2,5/1,5				2,5/1,5		2,5/1,5		6/4	
DC13 60-110V	A	2/0,4				2/0,4		2/0,4		-	
Rated conditional short-circuit current	kA <sub>eff</sub>	3				3		3		3	
Max. short circuit protection gL (gG)	A	10				10		10		16	
<b>Cable cross sections</b>	mm <sup>2</sup>	0,75 - 2,5				0,75 - 2,5		0,75 - 2,5		max.12	
solid or stranded	AWG	14 - 12				14 - 12		14 - 12		max.12	
flexible (+ multicore cable end)	mm <sup>2</sup>	0,75 - 2,5 (1,5)				0,75 - 2,5 (1,5)		0,75 - 2,5 (1,5)		max.2,5	
	AWG	18 - 14				18 - 14		18 - 14		max.14	
<b>Data according to UL and cUL</b>											
Type	LTS20	LTS25	LTS32	LTS40	LTS63	LTS80	LTS85	LTS100	LTS125	LT160	
Rated voltage	V	600	600	600	600	600	600	600	600	600	
Ampere-Rating "General use"	A	20	25	32	40	63	80	85	100	125	
DOL-Rating 3-phase 110-120V	HP	1	1,5	2	2	3	5	7,5	10	15	
220-240V	HP	3	5	5	5	10	10	20	25	30	
440-480V	HP	7,5	10	10	10	20	20	40	50	60	
550-600V	HP	10	10	15	15	25	25	50	60	60	
DOL-Rating 1-phase 110-120V	HP	1	1	1	1	2	2	3	5	7,5	
200-208V	HP	1	2	2	2	3	3	7,5	10	10	
220-240V	HP	2	2	3	3	5	5	10	15	15	
Fuse size (RK5) Manual Motor Contoller	A	40	50	50	70	90	110	125	125	125	
5kA / 600V Motor Disconnect	A	40	50	50	50	70	70	125	125	125	
Tightening torque	Nm	1,7-2,3	1,7-2,3	1,7-2,3	1,7-2,3	2,8-4	2,8-4	1,7-4,5	1,7-4,5	1,7-4,5	
	lb.inch	15-20	15-20	15-20	15-20	24-35	24-35	15-40	15-40	15-40	

1) suitable for: earthed-neutral systems, overvoltage category I to III, pollution degree 3 (standard-industry):  $U_{imp} = 6kV$ .

2) Fuse RK1 / 10kA / 600V

3)  $U_{imp} = 8kV$

5) Derating acc. to cable cross sectio

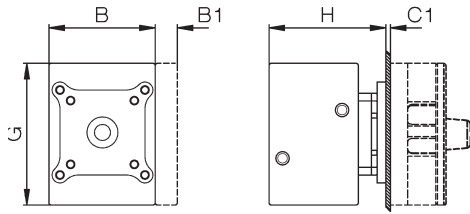
6) for switches with transparent plates 48 □ max. +65°C

4) LTS63..U. stranded 16mm<sup>2</sup>, flexible 10mm<sup>2</sup>

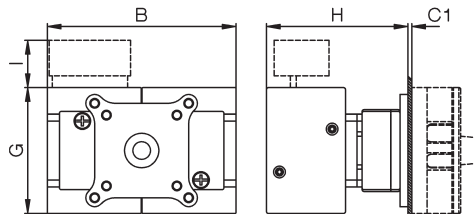
# Dimensions (mm)

## Main Switches, Switch Disconnectors LT(S)..

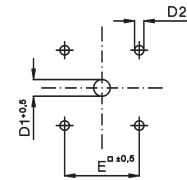
**Panel mounting LT(S).. E(HN)..**  
ON-OFF Switches 3-pole, 4-pole



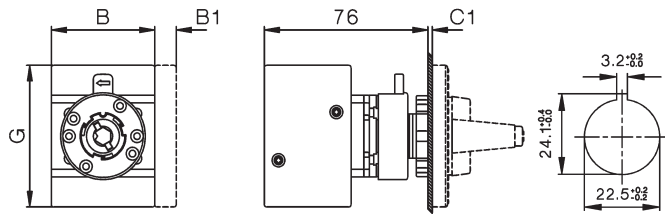
ON-OFF Switches 6-pole, 8-pole  
Changeover Switches 3-pole, 4-pole



Mounting holes  
Mounting screw: J3631N M=1,2-1,4 Nm

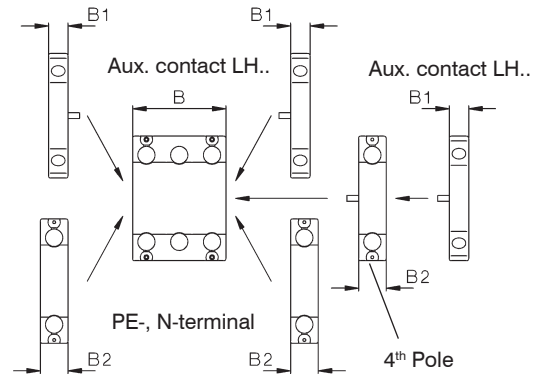


**Single hole mounting LTS.. Z(HN)..**  
ON-OFF Switches 3-pole, 4-pole



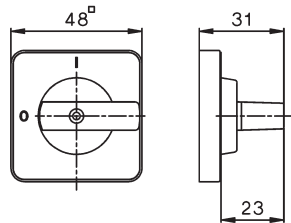
Mounting holes

**Mounting of add-on modules LTS20 - LTS80**  
Panel mounting, Single hole mounting

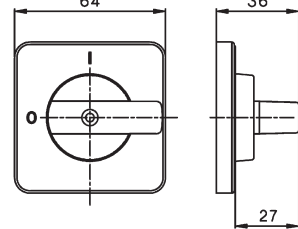


Type	Esc. plate	Changeover ON-OFF padlock dev	Changeover ON-OFF		3-pole		4-pole		aux. contact	4. Pole PE		3,4-pole		3,4-pole		3,4-pole	
			3-pole	4-pole	6-pole	8-pole	B2	C1		D1	D2	E	F	G	H	I	
LTS20-80..	48 □, SV1		A	B	B	B	B	B1	B2	C1	D1	D2	E	F	G	H	I
LTS20-80..	64 □, SV4, SV164		48	48	62,5	-	-	10	14,5	1-5	9	5	36	-	64	49	24
LTS20-80..			64	48	62,5	97	126	10	14,5	1-5	9	5	48	-	64	49	74
LTS85-125..	64 □, SV4		64	78	78	-	-	10	-	1-5	9	5	48	-	85	55	-
LTS85-125..	88 □, SV488		88	78	78	-	-	10	-	1-5	9	6	68	-	85	55	-
LT160	88 □, SV34		88	112	150	224	-	-	-	1-4	13-17	6	68	49,3	108	96	98

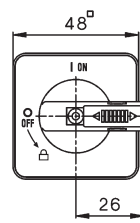
**Escutcheon plate**  
48 □



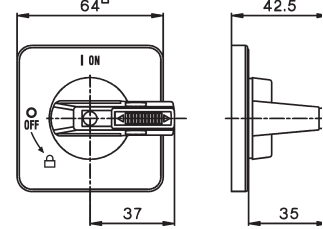
64 □



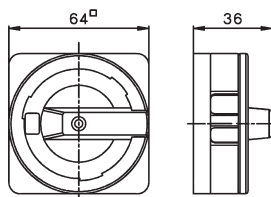
**Padlock devices**  
SV1



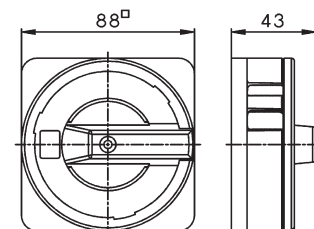
SV164



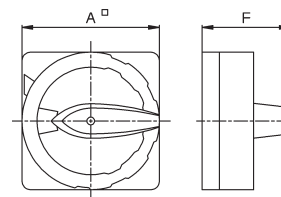
**Padlock devices**  
SV4



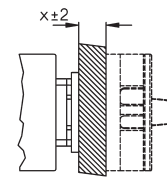
SV488



SV34



**Extended Switch Shaft**  
+VW"x"



# Dimensions (mm)

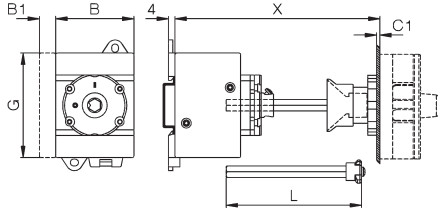
## Main Switches, Switch Disconnectors LT(S)..

### Base mounting LTS.. VZV(HN)..

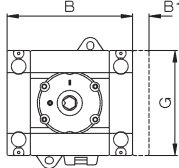
ON-OFF Switches 3-pole, 4-pole

$L = X - 40 \pm 3$  for LTS20 - 80

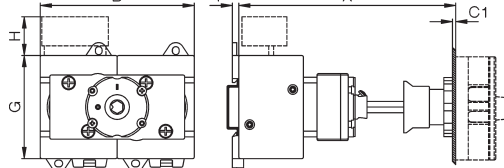
$L = X - 44 \pm 3$  for LTS85 - 125



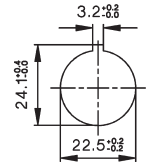
6-pole  
for LTS20 - 40 only  
 $L = X - 40 \pm 3$



ON-OFF Switches 6-pole, 8-pole  
Changeover Switches 3-pole, 4-pole  
 $L = X - 60 \pm 3$



Mounting holes

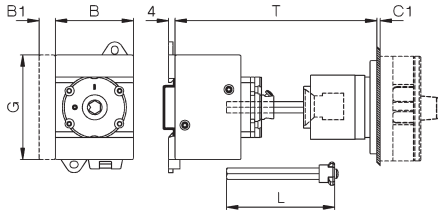


### Base mounting LT(S).. V(HN)..

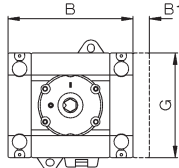
ON-OFF Switches 3-pole, 4-pole

$L = T - 60 \pm 3$  for LTS20 - 80

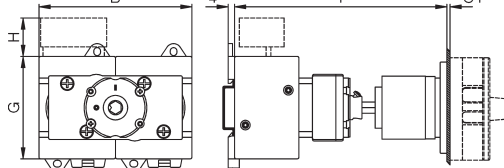
$L = T - 64 \pm 3$  for LTS85 - 125



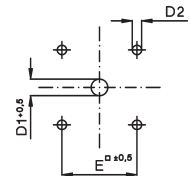
6-pole  
for LTS20 - 40 only  
 $L = T - 60 \pm 3$



ON-OFF Switches 6-pole, 8-pole  
Changeover Switches 3-pole, 4-pole  
 $L = T - 80 \pm 3$  for LTS20 - 80 only



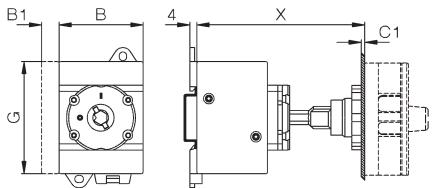
Mounting holes



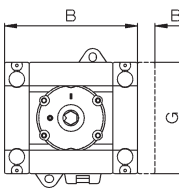
### Base mounting LTS.. VZ(HN)..

ON-OFF Switches 3-pole, 4-pole

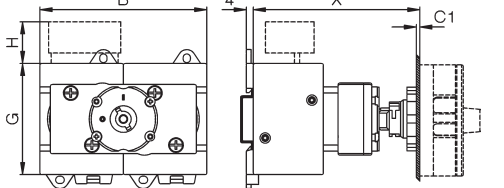
Preference values for X: 80, 85, 104, 129



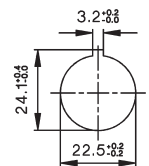
6-pole  
for LTS20 - 40 only



ON-OFF Switches 6-pole, 8-pole  
Changeover Switches 3-pole, 4-pole



Mounting holes



Type	Changeover ON-OFF Escutch. plate or padlock device	3-pole				4-pole		6-pole		3,4-pole 8-pole		aux. contact			4 Pole			K	K1	J
		A	B	B	B	B	B	B1	B2	H	C1	D1	D2	D3	E	G				
LTS20 - 40	64 □, SV4, SV164	64	48	48	77	97	10	14,5	-	-	1-5	9	5	M4	48	64	25	48	70	
LTS63, 80	64 □, SV4, SV164	64	48	62,5	97	126	10	14,5	-	-	1-5	9	5	M4	48	64	25	48	70	
LTS85-125..	64 □, SV4	64	78	78	-	-	10	-	-	-	1-5	9	5	M4	48	85	38	-	90	
LT125/160	88 □, SV34	88	112	150	224	-	-	-	-	-	1-4	13/27 <sup>2)</sup>	6	M6	68	108	36	-	120	

### Base mounting

ON-OFF Switches LTS20 - LTS80

3-pole, 4-pole

6-pole LTS20 - 40

Changeover Switches

6-pole, 8-pole

Changeover Switches

3-pole, 4-pole

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

LTS85-125, LT160

3-pole, 4-pole

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

Changeover Switches

### Mounting of Accessories LTS20 - LTS80

Base mounting, for distribution boards

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

Aux. contact LH..

- 1) Ø 22-25 for T80(100) VH(N)34 .. only
- 2) Ø 26-30 for T125(160) VH(N)34 .. only

# Dimensions (mm)

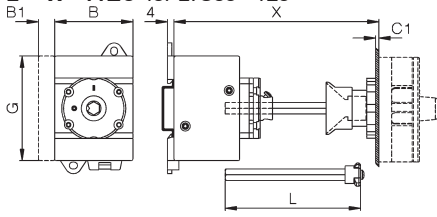
## Main Switches, Switch Disconnectors LT(S)..

### Base mounting LTS.. VZV(HN)..

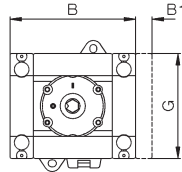
ON-OFF Switches 3-pole, 4-pole

$L = X - 40 \pm 3$  for LTS20 - 80

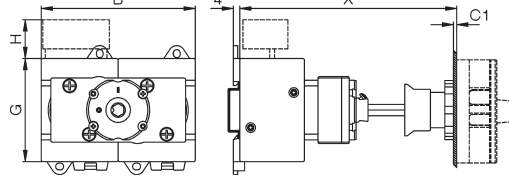
$L = X - 44 \pm 3$  for LTS85 - 125



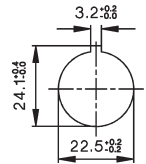
6-pole  
for LTS20 - 40 only  
 $L = X - 40 \pm 3$



ON-OFF Switches 6-pole, 8-pole  
Changeover Switches 3-pole, 4-pole  
 $L = X - 60 \pm 3$



Mounting holes

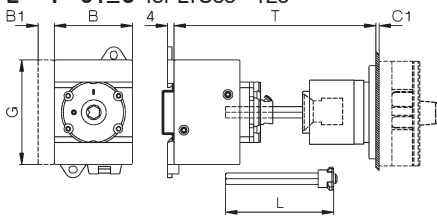


### Base mounting LT(S).. V(HN)..

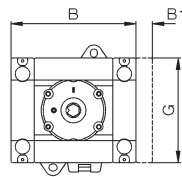
ON-OFF Switches 3-pole, 4-pole

$L = T - 60 \pm 3$  for LTS20 - 80

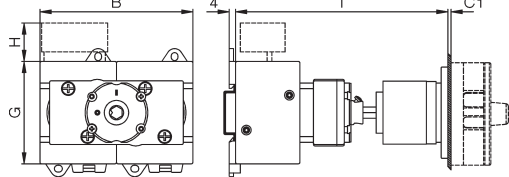
$L = T - 64 \pm 3$  for LTS85 - 125



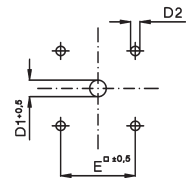
6-pole  
for LTS20 - 40 only  
 $L = T - 60 \pm 3$



ON-OFF Switches 6-pole, 8-pole  
Changeover Switches 3-pole, 4-pole  
 $L = T - 80 \pm 3$  for LTS20 - 80 only



Mounting holes



### Base mounting LTS.. VZ(HN)..

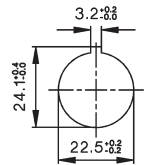
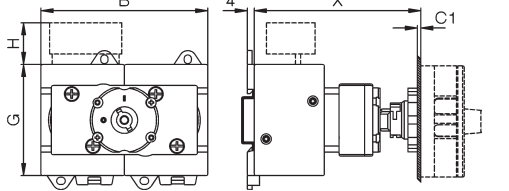
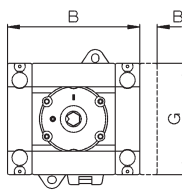
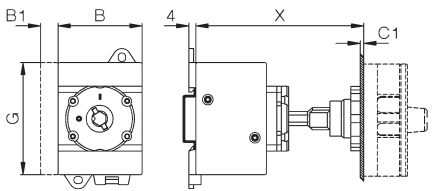
ON-OFF Switches 3-pole, 4-pole

Preference values for X: 80, 85, 104, 129

6-pole  
for LTS20 - 40 only

ON-OFF Switches 6-pole, 8-pole  
Changeover Switches 3-pole, 4-pole

Mounting holes

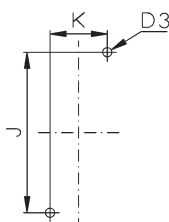


Type	Changeover ON-OFF Escutch. plate or padlock device	3-pole		4-pole	6-pole	3,4-pole 8-pole	aux. contact										
		A	B	B	B	B	B1	B2	H	C1	D1	D2	D3	E	G	K	K1
LTS20 - 40	64 □, SV4, SV164	64	48	48	77	97	10	14,5	1-5	9	5	M4	48	64	25	48	70
LTS63, 80	64 □, SV4, SV164	64	48	62,5	97	126	10	14,5	1-5	9	5	M4	48	64	25	48	70
LTS85-125..	64 □, SV4	64	78	78	-	-	10	-	1-5	9	5	M4	48	85	38	-	90
LT125/160	88 □, SV34	88	112	150	224	-	-	-	1-4	13/27 <sup>1)</sup>	6	M6	68	108	36	-	120

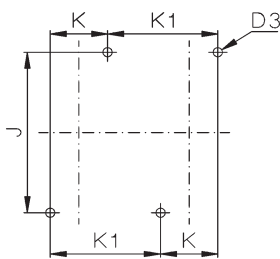
### Base mounting

ON-OFF Switches LTS20 - LTS80

3-pole, 4-pole  
6-pole LTS20 - 40

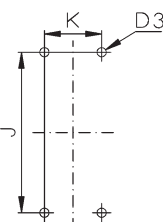


6-pole, 8-pole  
Changeover Switches



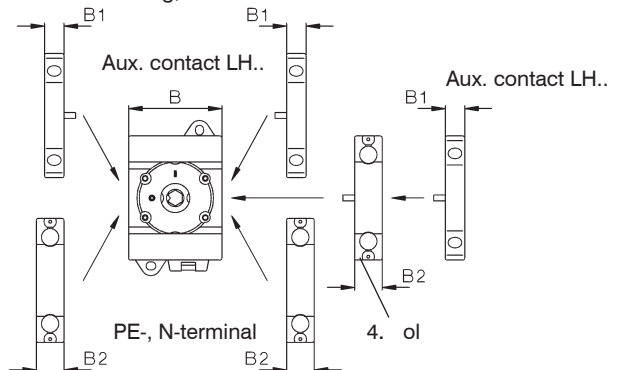
LTS85-125, LT160

3-pole, 4-pole



### Mounting of Accessories LTS20 - LTS80

Base mounting, for distribution boards



- 1) Ø 22-25 for T80(100) VH(N)34 .. only
- 2) Ø 26-30 for T125(160) VH(N)34 .. only