

Load Break Switch LBS

Advantages of load break switches LBS

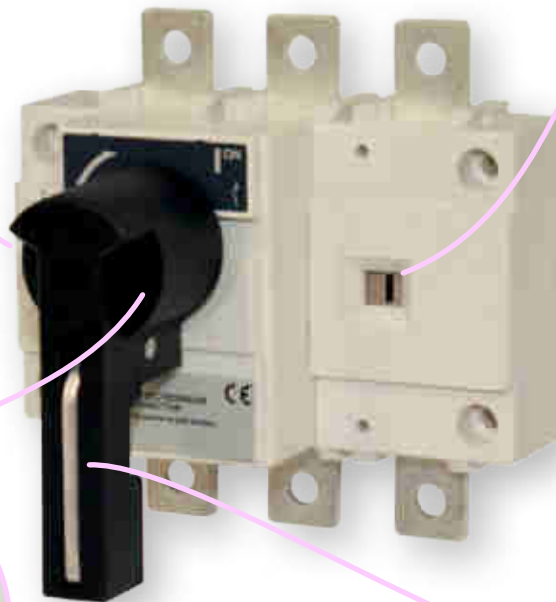
Description

LBS is manually operated 3 pole or 4 pole load break switch in range 160-3200A. It makes and breaks under load conditions and provides safety isolation. LBS is designed for 415 VAC and DC low voltage electrical circuits. LBS switches have been designed, qualified and tested according to the criteria defined by standard IEC 60947-3.

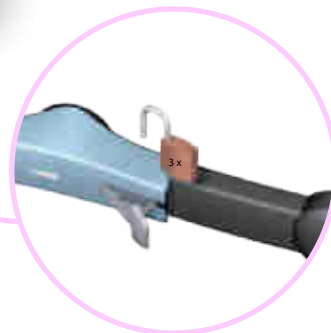
→ Ability to connect auxiliary contacts



→ Double positive break indication given through a position indication window, located directly on the product, and by the operating handle.



→ Position indicator switch power contacts



→ Padlocking external and direct handle

General characteristics

- Double positive break indication given through a position indication window, located directly on the product, and by the operating handle.
- Severe utilisation categories (AC-22 and AC-23).
- High resistance to damp heat (supplied "tropicalised").
- A good centre-to-centre terminal distance (up to 120 mm).
- Connection up to 6x185 mm².

Applications

- Main switchboard.
- Distribution panel.
- Emergency breaking.
- Network coupling.
- Local safety breaking.

Advantages

The LBS's double breaking per pole, achieved through its sliding bar contact system, is a proven design that offers very high durability and short-circuit withstand.

The position indicator is located directly on the sliding bar contact mechanism, ensuring it can be seen in all circumstances.

The use of glass fibre reinforced polyester gives the LBS high mechanical and thermal resistance.

Load Break Switch LBS

Characteristics according to IEC 60947-3

Type			LBS 160	LBS 250	LBS 400	LBS 630	LBS 800	LBS 1000	LBS 1250	LBS 1600	LBS 2000	LBS 2500	LBS 3200
Current	(I _n)		160A	250A	400A	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A
Rated insulation voltage	(U _i)	(V)	800	800	1000	1000	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage	(U _{imp})	(kV)	8	8	12	12	12	12	12	12	12	12	12
Thermal current 40°C	(I _{th})	(A)	160	250	400	630	800	1000	1250	1600	2000	2500	3200
Rated operational currents (I _ε)	AC-20 A/B ⁽¹⁾	415V AC	(A) 160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600	2000/2000	2500/2500	3200/3200
	AC-21 A/B ⁽¹⁾	415V AC	(A) 160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600	2000/2000	2500/2500	3200/3200
	AC-22 A/B ⁽¹⁾	415V AC	(A) 160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600	2000/2000	2500/2500	2500/3200
	AC-23 A/B ⁽¹⁾	415V AC	(A) 160/160	250/250	400/400	500/500	800/800	1000/1000	1250/1250	1250/1250	1600/1600	1600/1600	1600/1600
	DC-20 A/B ⁽¹⁾	220V DC	(A) 160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600	2000/2000	2500/2500	3200/3200
	DC-21 A/B ⁽¹⁾	220V DC	(A) 160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1250/1600	2000/2000	2000/2500	2000/2500
	DC-22 A/B ⁽¹⁾	220V DC	(A) 160/160	250/250	400/400	500/500	800/800	1000/1000	1250/1250	1250/1250	1250/1600	1250/1600	1250/1600
	DC-23 A/B ⁽¹⁾	220V DC	(A) 125/125	200/200	400/400	500/500	800/800	1000/1000	1250/1250	1250/1250	1250/1250	1250/1250	1250/1250
	DC-20 A/B ⁽¹⁾	440V DC	(A) 160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600	2000/2000	2500/2500	3200/3200
	DC-21 A/B ⁽¹⁾	440V DC	(A) 160 ⁽³⁾ /160 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	400 ⁽³⁾ /400 ⁽³⁾	500 ⁽³⁾ /500 ⁽³⁾	800 ⁽³⁾ /800 ⁽³⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1600 ⁽⁴⁾	2000 ⁽⁴⁾ /2000 ⁽⁴⁾	2000 ⁽⁴⁾ /2500 ⁽⁴⁾	2500 ⁽⁴⁾ /3200 ⁽⁴⁾
	DC-22 A/B ⁽¹⁾	440V DC	(A) 125 ⁽³⁾ /125 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	400 ⁽³⁾ /400 ⁽³⁾	500 ⁽³⁾ /500 ⁽³⁾	800 ⁽³⁾ /800 ⁽³⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾
	DC-23 A/B ⁽¹⁾	440V DC	(A) 125 ⁽⁴⁾ /125 ⁽⁴⁾	200 ⁽⁴⁾ /200 ⁽⁴⁾	400 ⁽⁴⁾ /400 ⁽⁴⁾	500/500	800 ⁽⁴⁾ /800 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾
	DC-20 A/B ⁽¹⁾	500V DC	(A) 160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600	2000/2000	2500/2500	3250/3250
	DC-21 A/B ⁽¹⁾	500V DC	(A) 125 ⁽³⁾ /125 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	400 ⁽³⁾ /400 ⁽³⁾	500 ⁽³⁾ /500 ⁽³⁾	800 ⁽³⁾ /800 ⁽³⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1600 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾
	DC-22 A/B ⁽¹⁾	500V DC	(A) 125 ⁽⁴⁾ /125 ⁽⁴⁾	200 ⁽⁴⁾ /200 ⁽⁴⁾	315 ⁽⁴⁾ /400 ⁽⁴⁾	500 ⁽⁴⁾ /500 ⁽⁴⁾	800 ⁽⁴⁾ /800 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾
DC-23 A/B ⁽¹⁾	500V DC	(A) 125 ⁽⁴⁾ /125 ⁽⁴⁾	200 ⁽⁴⁾ /200 ⁽⁴⁾	315 ⁽⁴⁾ /400 ⁽⁴⁾	500 ⁽⁴⁾ /500 ⁽⁴⁾	800 ⁽⁴⁾ /800 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	
Operational power in AC 23 ⁽¹⁾⁽⁵⁾	415V AC	(kW)	80/80	132/132	220/220	280/280	450/450	560/560	710/710	710/710	710/710	710/710	710/710
Reactive power ⁽⁵⁾	400 V	(kVAr)	75	115	185	290	365	460	-	-	-	-	-
Short-circuit capacity I _{cw}	1 s.	(kA)	7	9	13	13	35	35	35	50	50	50	50
	0,25 s.	(kA)	11,9	15,3	26	26	73,5	73,5	73,5	75	80	80	80
Fuse protected short-circuit withstand (kA rms prospective)													
Associated fuse rating ⁽⁶⁾		(A)	160	250	400	630	800	1000	1250	2x800	2x1000	2x1250	-
Prospective short-circuit current		(kA)	100	50	100	70	50	100	100	100	100	100	-
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s													
Rated short-time withstand current I _{cw}	0,3 s.	(kA)	15	17	25	25	50	65	65	100	100	100	100
Connection													
Minimum Cu cable cross-section	mm ²		50	95	185	2x150	2x185	2x240	-	-	-	-	-
Maximum Cu cable cross-section	mm ²		95	150	240	2x300	2x300	4x185	4x185	4x185	-	-	-
Minimum Cu busbar cross-section	mm		-	-	-	2x30x5	2x40x5	2x50x5	2x60x5	2x80x5	3x100x5	4x100x5	4x100x5
Maximum Cu busbar width	mm		25	32	40	50	63	63	63	100	100	100	100
Tightening torque min/max	Nm		9/-	20/-	20/-	20/-	40/45	40/45	40/45	40/45	40/45	40/-	40/-
Operating effort	Nm		6,5	10	14,5	14,5	37	37	37	56	75	75	75
Durability (number of operating cycles)	cycles		10 000	10 000	10 000	10 000	3 000	3 000	3 000	4 000	3 000	3 000	3 000
Power dissipation	W/pole		3	5,8	10,8	30,9	39,7	42	80	122	140	205	340

⁽¹⁾ Category with index A = frequent operation - Category with index B = infrequent operation.

⁽²⁾ With terminal shrouds or phase barrier.

⁽³⁾ 3-pole device with 2 pole in series for the «+» and 1 pole for the «-».

⁽⁴⁾ 4-pole device with 2 poles in series per polarity.

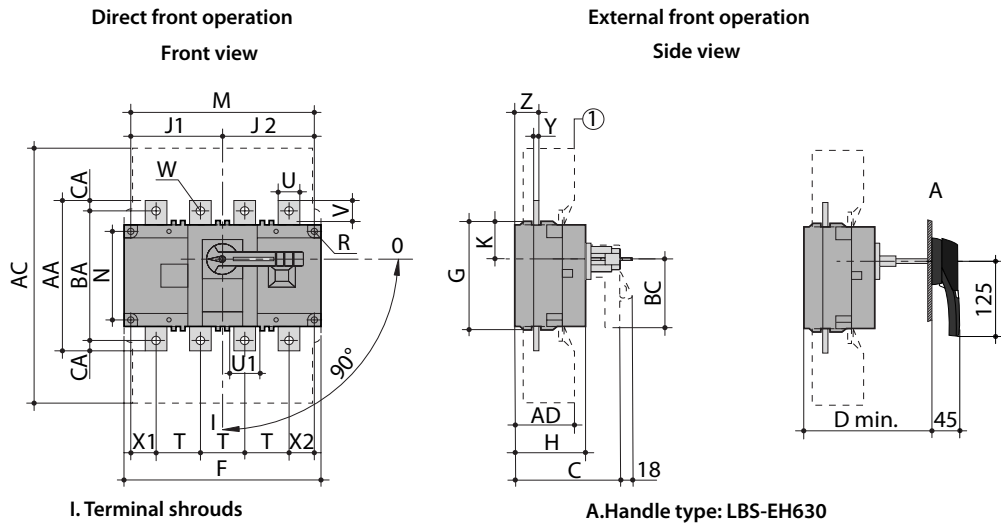
⁽⁵⁾ The power value is given for information only, the current values vary from one manufacturer to another.

⁽⁶⁾ For a rated operational voltage U_e = 415 VAC.

Technical data

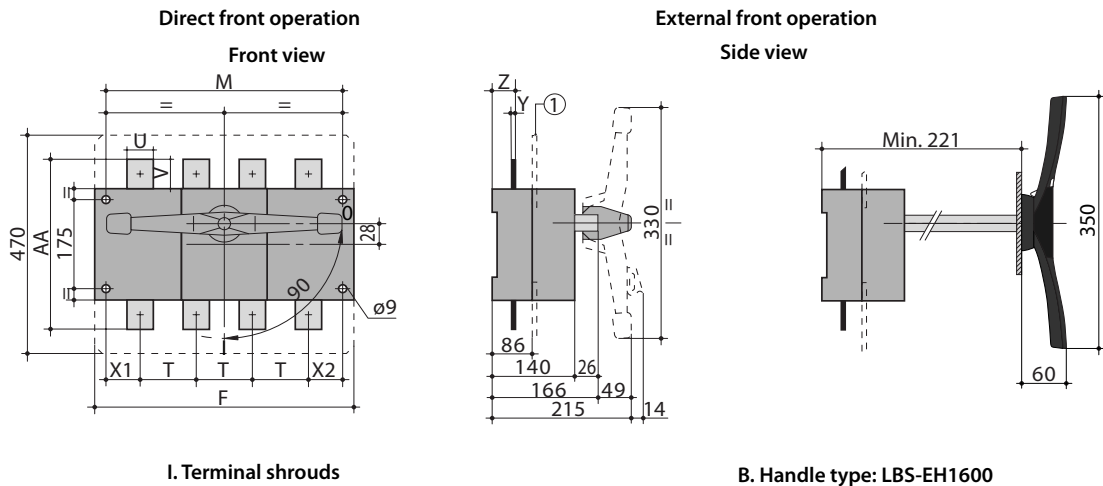
Dimensions

LBS 160 - LBS 630



Rating (A)	Overall dimensions (mm)		Terminal shrouds, (mm)		Switch body, (mm)								Switch mounting, (mm)				Connection, (mm)													
	C	D min	AC	AD	F (3p)	F (4p)	G	H	J1 (3p)	J1 (4p)	J2	K	BC	M (3p)	M (4p)	N	R	T	U	U1	V	W	X1 (3p)	X1 (4p)	X2	Y	Z	AA	BA	CA
160	115	125	235	50	140	170	93	65	45	75	75	31.5	80	120	150	65	5.5	36	20	20.5	25	9	28	22	20	3.5	20.5	135	115	10
250			280	60	180	230	108	75	55	105	105	34	115	160	210	80	5.5	50	20	25.5	21.5	11	33	33	27	3.5	22.5	160	130	15
400	160	165	401	89	230	290	170	110	75	135	135	55	115	210	270	140	7	65	32	45.5	29	11	42.5	37.5	37.5	5	36	235	205	15
630			45	41.5	13	5	36	260	220	20																				

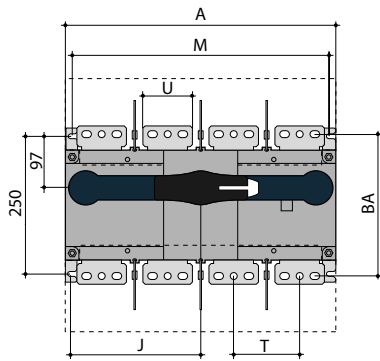
LBS 800 - LBS 1600



Rating (A)	Switch body, (mm)		Switch mounting, (mm)		Connection, (mm)							
	F (3p)	F (4p)	M (3p)	M (4p)	T	U	V	Y	X1	X2	Z	AA
800 - 1000	280	360	255	335	80	50	60.5	7	47.5	47.5	46.5	321
1250												330
1600	372	492	492	467	120	90	44	8	53.5	53.5	47.5	288

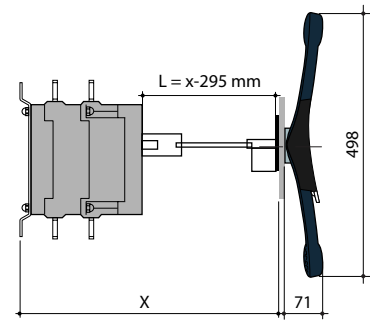
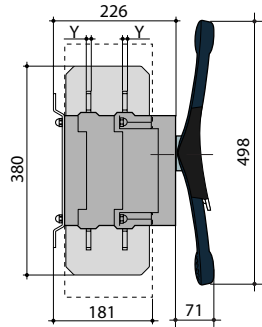
LBS 2000 - LBS 3200

Direct front operation



External front operation

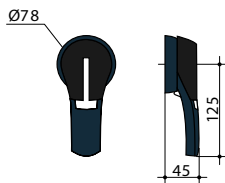
Side view



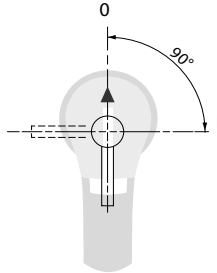
Handle type: LBS-EH3200

Rating (A)	Overall dimensions, (mm)		Switch body, (mm)		Switch mounting, (mm)		Connection, (mm)			
	A (3p)	A (4p)	J (3p)	J (4p)	M (3p)	M (4p)	T	U	Y	BA
2000-3200	372	492	173.5	233.5	347	367	120	90	8	258

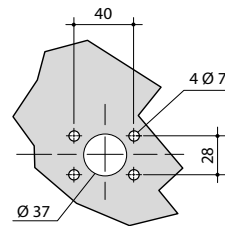
Handle type LBS-EH630



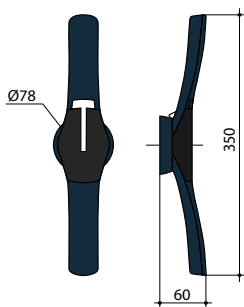
Direct front operation



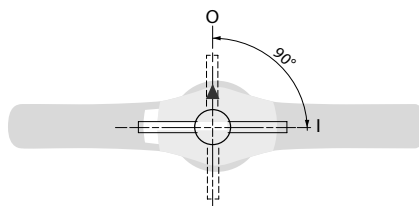
Door drilling



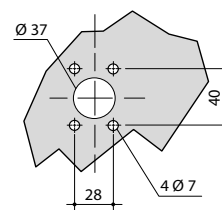
Handle type LBS-EH1600



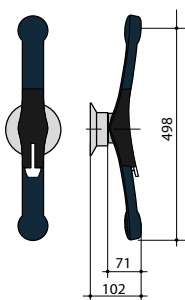
Direct front operation



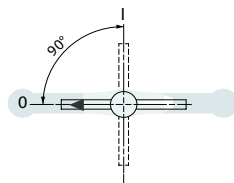
Door drilling



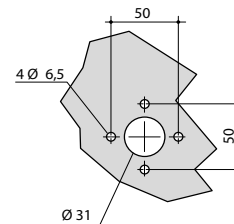
Handle type LBS-EH3200



Direct front operation

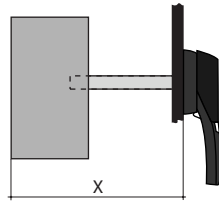


Door drilling



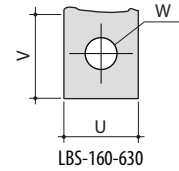
Technical data

Rating (A)	Dimension X (mm)	Shaft length (mm)
LBS 160	125 - 250	200
	125 - 370	320
	125 - 550	500
LBS 250	135 - 265	200
	135 - 385	320
LBS 400-630	165 - 295	200
	165 - 415	320
	165 - 595	500
LBS 800-1600	221 - 343	200
	221 - 463	320
	221 - 543	400
LBS 2000-3200	415 - 570	200
	415 - 690	320
	415 - 820	450

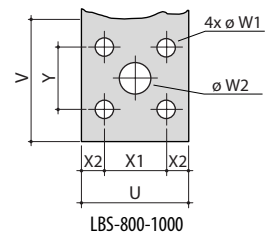


Rating (A)	U, (mm)	V, (mm)	W, (mm)
160	20	25	9
250	25	21.5	11
400	32	29	11
630	45	41.5	13

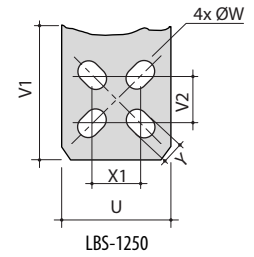
Connection terminal dimensions:



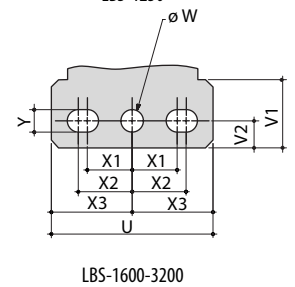
Rating (A)	U, (mm)	V, (mm)	W1, (mm)	W2, (mm)	X1, (mm)	X2, (mm)	Y, (mm)
800 - 1000	50	60.5	9	16	28.5	11	33



Rating (A)	U, (mm)	V1, (mm)	V2, (mm)	W, (mm)	X1, (mm)	Y, (mm)
1250	60	65	28.5	16	28.5	11



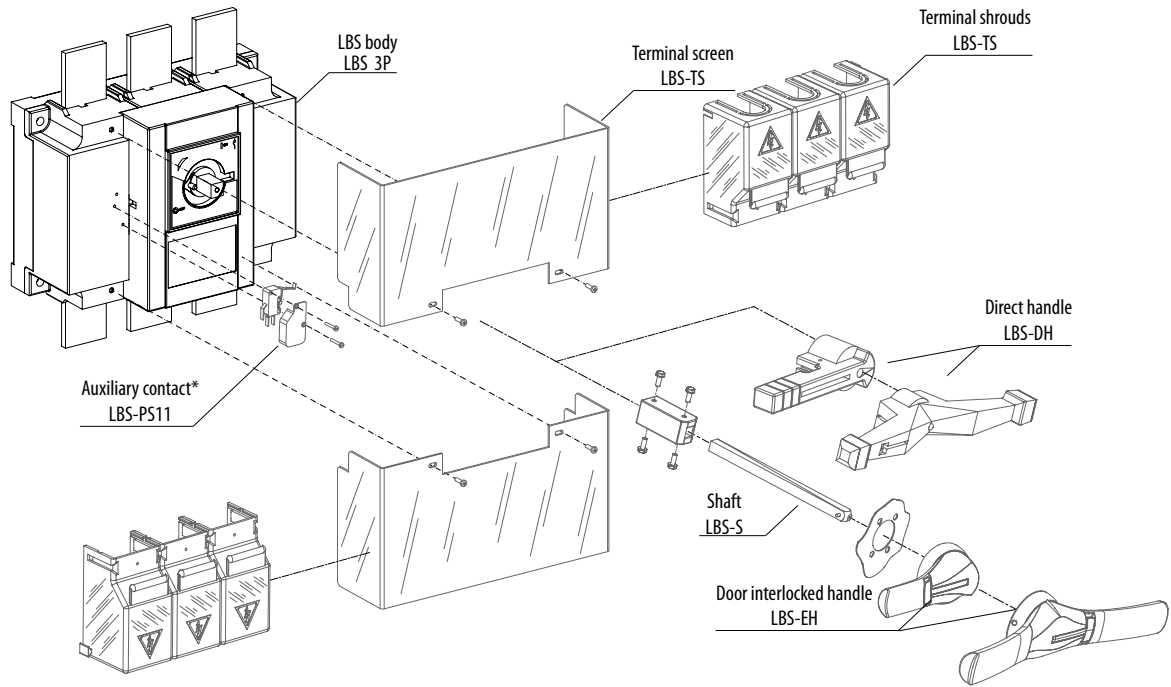
Rating (A)	U, (mm)	V1, (mm)	V2, (mm)	W, (mm)	X1, (mm)	X2, (mm)	X3, (mm)	Y, (mm)
1600-3200	90	35.8	15	12.5	25	30	45	12.5



LBS-PS11 Auxiliary contact (change over NO/NC)

Rating (A)	Contact type	Current nominal (A)	Operating current I _e (A)									
			230 V AC		400 V AC		24 V DC			48 V DC		
			AC-12	AC-13/15	AC-12	AC-13/15	DC-12	DC-13	DC-14	DC-12	DC-13	DC-14
160-3200	C0	16	16	4	12	3	2,5	2,5	1	2,5	1,2	0,2

Installation of accessories



*Only one auxiliary contact can be mounted to each switch body