

Load Break Switch LBS

Advantages of load break switches LBS

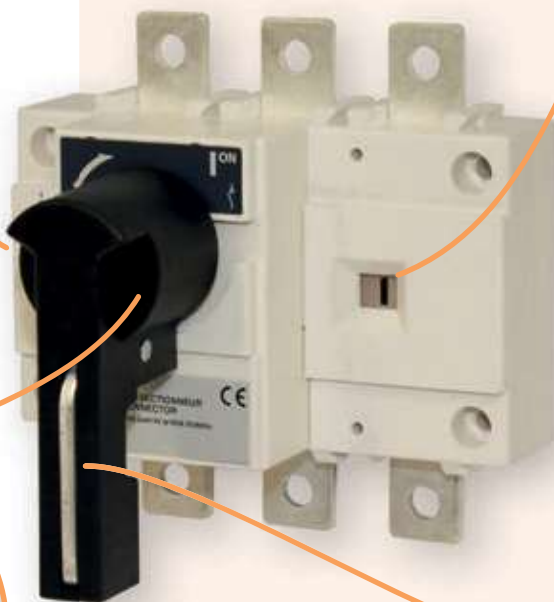
Description

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

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LBS body (no handle included) 3/4 POLES

Type	Code No.	I _n [A]	Number of poles	Weight [kg]	Packaging [pcs]
LBS 160 3P	004661450	160	3	1,11	1
LBS 250 3P	004661451	250	3	1,71	1
LBS 400 3P	004661452	400	3	4,00	1
LBS 630 3P	004661453	630	3	4,36	1
LBS 800 3P	004661454	800	3	8,63	1
LBS 1000 3P	004661455	1000	3	9,70	1
LBS 1250 3P	004661456	1250	3	9,15	1
LBS 1600 3P	004661457	1600	3	12,70	1
LBS 2000 3P	004661458	2000	3	22,08	1
LBS 2500 3P	004661459	2500	3	22,37	1
LBS 3200 3P	004661460	3200	3	27,54	1
LBS 160 4P	004661461	160	4	1,25	1
LBS 250 4P	004661462	250	4	2,07	1
LBS 400 4P	004661463	400	4	4,87	1
LBS 630 4P	004661464	630	4	5,39	1
LBS 800 4P	004661465	800	4	11,75	1
LBS 1250 4P	004661466	1250	4	12,32	1
LBS 1600 4P	004661467	1600	4	15,89	1
LBS 2500 4P	004661468	2500	4	28,85	1
LBS 3200 4P	004661469	3200	4	33,80	1

In front direct or external front operation



LBS 160 3P



LBS 2000A-3200A 3P

ETISWITCH

Accessories

Direct handle for direct operation

Type	Description	Code No.	For use with	Weight [g]	Packaging [pcs]
LBS-DH160/B	Direct handle, black	004661480	LBS 160A	91	1/25
LBS-DH630/B	Direct handle, black	004661481	LBS 250-630A	100	1/25
LBS-DH3200/B (CO)	Direct handle, black	004661482	LBS 800-3200A	295	1/20

Type definition: Handle type / color initials



LBS-DH160/B

LBS-DH630/B

LBS-DH3200/B (CO)

Door interlocked handle IP65 (shaft not included).

Type	Description	Code No.	For use with	Weight [g]	Packaging [pcs]
LBS-EH630/G...400/G FLBS	Door interlocked handle, grey front	004661483	LBS 160-630A	250	1/20
LBS-EH1600/G	Door interlocked handle, grey front	004661484	LBS 800-1600A	340	1/10
LBS-EH3200/BL	Door interlocked handle, blue front	004661485	LBS 2000-3200A	1.500	1

Type definition: Handle type / color initials



LBS-EH630/G...400/G FLBS

LBS-EH1600/G

LBS-EH3200/BL

Door interlocked handle IP65 (shaft not included).

Type	Description	Code No.	For use with	Weight [g]	Packaging [pcs]
LBS-EH630/YR	Door interlocked handle, red front	004661486	LBS 160-630A	250	1/20
LBS-EH1600/YR	Door interlocked handle, red front	004661487	LBS 800-1600A	340	1/10
LBS-EH3200/YR	Door interlocked handle, red front	004661488	LBS 2000-3200A	1.500	1

Type definition: Handle type / color initials



LBS-EH630/YR

LBS-EH1600/YR

LBS-EH3200/YR



LBS-S320/1600 (CO)



LBS-GC (CLBS-EH80, 125)



LBS-PS11



LBS-TS160 3P (CO)



LBS-TS1250 3P

Shaft for door interlocked handle

Type	Description	Code No.	For use with	Weight [g]	Packaging [pcs]
LBS-S200/630 (CO).../400 FLBS	Shaft, 200mm, 10x10mm	004661490	LBS-EH630A	160	1/25
LBS-S200/1600 (CO)	Shaft, 200mm, 15x12mm	004661491	LBS-EH1600A	360	1/25
LBS-S200/3200 (CO)	Shaft, 200mm, 15x15mm	004661492	LBS-EH3200A	350	1/10
LBS-S320/630 (CO).../400 FLBS	Shaft, 320mm, 10x10mm	004661493	LBS-EH630A	250	1/50
LBS-S320/1600 (CO)	Shaft, 320mm, 15x12mm	004661494	LBS-EH1600A	490	1/25
LBS-S320/3200 (CO)	Shaft, 320mm, 15x15mm	004661495	LBS-EH3200A	376	1/15
LBS-S500/630 (CO).../400 FLBS	Shaft, 500mm, 10x10mm	004661496	LBS-EH630A	390	1/20
LBS-S400/1600(CO)	Shaft, 400mm, 15x12mm	004661497	LBS-EH1600A	580	1/20
LBS-S450/3200(CO)	Shaft, 450mm, 15x15mm	004661498	LBS-EH3200A	971	1/20

15x12mm: one side with 12x12mm, second side with 15x15mm.

Guiding cone

Type	Description	Code No.	For use with	Weight [g]	Packaging [pcs]
LBS-GC (CLBS-EH125/01)	Guiding cone	004661489	LBS-EH630-3200	29	1/25

To guide the shaft extension into the external handle. This accessory enables the handle to engage the extension shaft with a misalignment of up to 15 mm. Required for shaft lengths over 320 mm.

Auxiliary contact

Type	I [A]	Description	Code No.	For use with	Weight [g]	Packaging [pcs]
LBS-PS11	16	Auxiliary contact (CO)	004661499	LBS 160-3200A	26	1/30

Pre-break and signalling of positions 0 and I. Connection to the control circuit 6.35 mm fast-on terminal.

Electrical characteristics 30 000 operations. Only one auxiliary contact can be mounted to each switch body

Terminal shrouds (covers)

Type	Description	Code No.	For use with	Weight [g]	Packaging [pcs]
LBS-TS160 3P (CO)	Terminal shrouds, 3P	004661500	LBS 160A 3P	79	1/20
LBS-TS250 3P (CO)	Terminal shrouds, 3P	004661501	LBS 250A 3P	121	1/10
LBS-TS630 3P (CO)	Terminal shrouds, 3P	004661502	LBS 400-630A 3P	242	1/5
LBS-TS4P/160 (CO)	Terminal shrouds, 4P	004661506	LBS 160A 4P	100	1/15
LBS-TS4P/250 (CO)	Terminal shrouds, 4P	004661507	LBS 250A 4P	157	1/8
LBS-TS4P/630 (CO)	Terminal shrouds, 4P	004661508	LBS 400-630A 4P	311	1/4

Perforations allow remote thermographic inspection without the need to remove the shrouds.

The terminal shrouds also provide phase separation for LBS 160 to 630 A.

Terminal covers assure top and bottom protection against direct contact with terminals or connection parts.

One reference includes 3 pcs (3pole)/ 4 pcs (4pole) for top or bottom contacts , to protect all 2 references shall be ordered

Terminal screen

Type	Description	Code No.	For use with	Weight [g]	Packaging [pcs]
LBS-TS1250 3P	Terminal screen, 3P	004661503	LBS 800-1250A 3P	127	1/25
LBS-TS1600 3P	Terminal screen, 3P	004661504	LBS 1600A 3P	163	1/20
LBS-TS3200 3P	Terminal screen, 3P	004661505	LBS 2000-3200A 3P	266	1/1
LBS-TS4P/1250	Terminal screen, 4P	004661509	LBS 800-1250A 4P	161	1/20
LBS-TS4P/1600	Terminal screen, 4P	004661510	LBS 1600A 4P	223	1/30
LBS-TS4P/3200	Terminal screen, 4P	004661511	LBS 2000-3200A 4P	350	1/1

Top or bottom, to protect all 2 references shall be ordered

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 _e)	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	3200/3200
	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 ⁽⁴⁾ /800 ⁽⁴⁾	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 ⁽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⁾	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 ⁽⁴⁾ /800 ⁽⁴⁾	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.

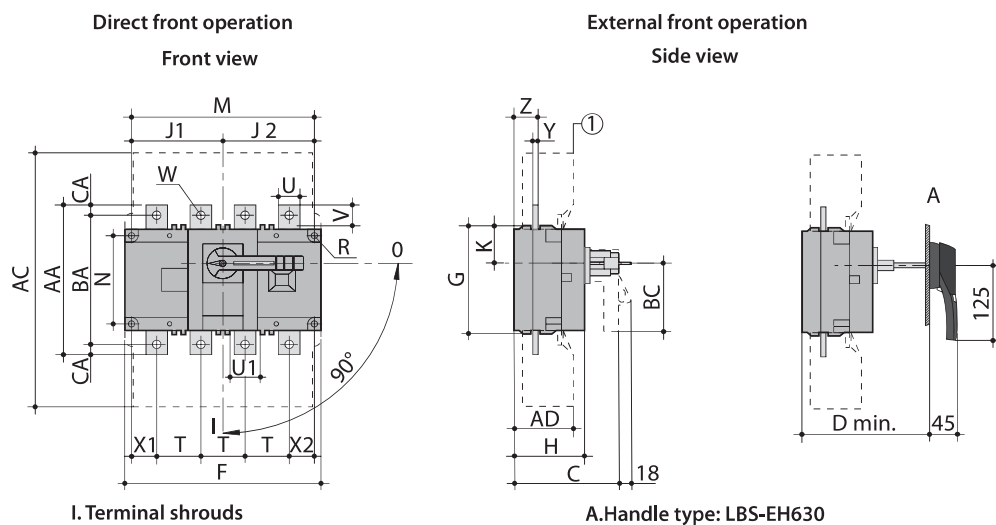
⁽⁵⁾ The power value is given for information only, the current values vary from one manufacturer to another.

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

Technical data

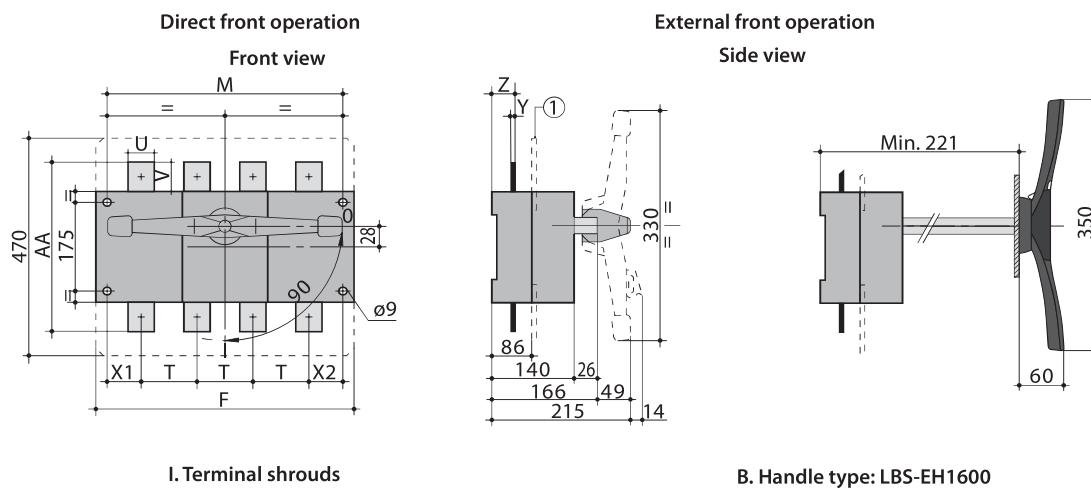
Dimensions

LBS 160 - LBS 630



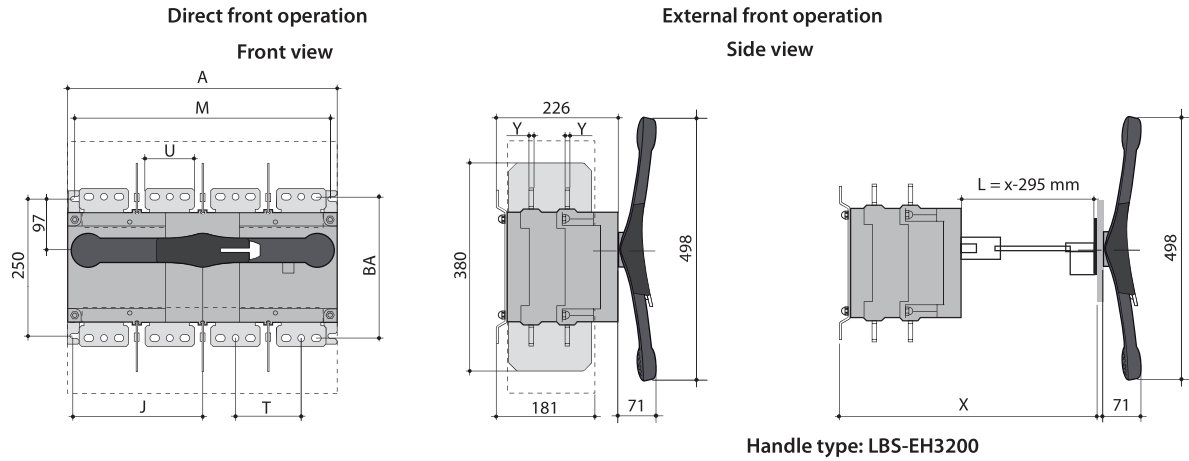
Rating (A)	Overall dimensions (mm)		Terminal shrouds, (mm)		Switch body, (mm)								Switch mounting, (mm)				Connection, (mm)													
	C	Dmin	AC	AD	F (3p)	F (4p)	G	H	J1 (3p)	J1 (4p)	J2	K	BC	M (3p)	M (4p)	N	R	T	U	U1	V	W	X1 (3p)	X1 (4p)	X2	Y	Z	AA	BA	CA
160	115	125	235	50	140	170	93	65	45	75	75	31.5	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						260	220	20

LBS 800 - LBS 1600



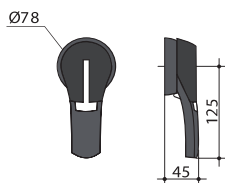
Rating (A)	Switch body, (mm)		Switch mounting, (mm)		Connection, (mm)							
	F (3p)	F (4p)	M (3p)	M (4p)	T	U	V	Y	X1	X2	Z	AA
800 - 1000	280	360	255	335	80	50	60.5	7	47.5	47.5	46.5	321
1250						60	65					330
1600	372	492	347	467	120	90	44	8	53.5	53.5	47.5	288

LBS 2000 - LBS 3200

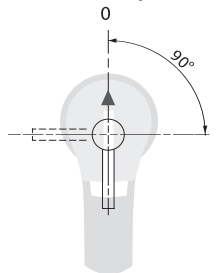


Rating (A)	Overall dimensions, (mm)		Switch body, (mm)		Switch mounting, (mm)		Connection, (mm)			
	A (3p)	A (4p)	J (3p)	J (4p)	M (3p)	M (4p)	T	U	Y	BA
2000-3200	372	492	173.5	233.5	347	367	120	90	8	258

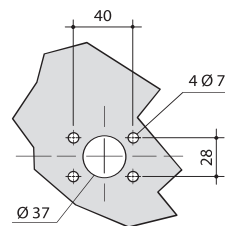
Handle type LBS-EH630



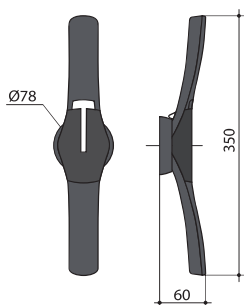
Direct front operation



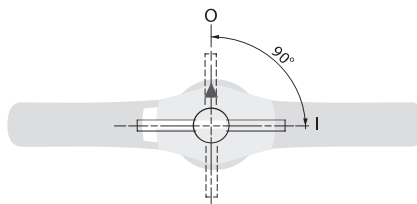
Door drilling



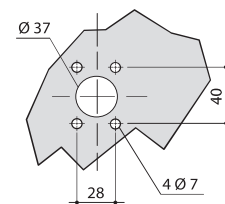
Handle type LBS-EH1600



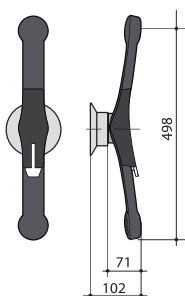
Direct front operation



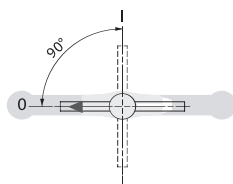
Door drilling



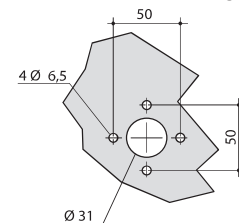
Handle type LBS-EH3200



Direct front operation

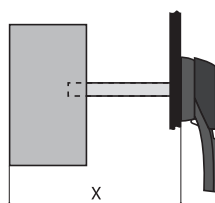


Door drilling



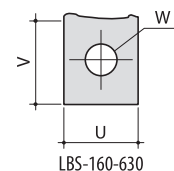
Technical data

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
	135 - 565	500
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

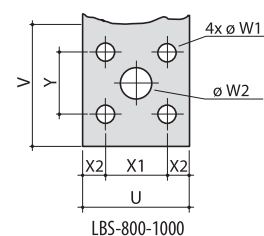


Rating (A)	U, (mm)	V, (mm)	W, (mm)
160	20	25	9
250	25	21.5	11
400	32	29	11
630	45	41.5	13

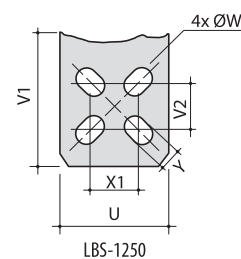
Connection terminal dimensions:



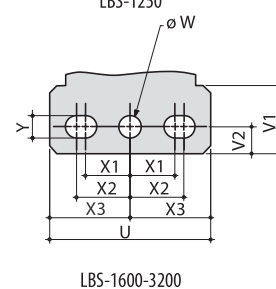
Rating (A)	U, (mm)	V, (mm)	W1, (mm)	W2, (mm)	X1, (mm)	X2, (mm)	Y, (mm)
800 - 1000	50	60.5	9	16	28.5	11	33



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



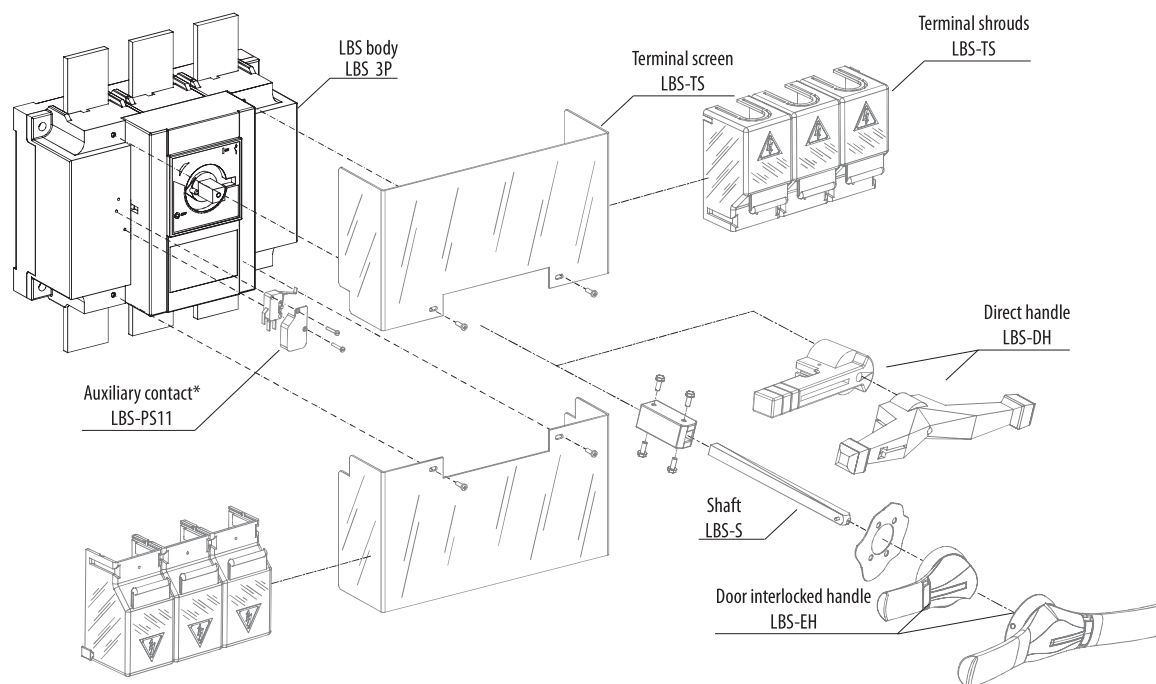
Rating (A)	U, (mm)	V1, (mm)	V2, (mm)	W, (mm)	X1, (mm)	X2, (mm)	X3, (mm)	Y, (mm)
1600-3200	90	35.8	15	12.5	25	30	45	12.5



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		
160-3200	C0	16	AC-12	AC-13/15	AC-12	AC-13/15	DC-12	DC-13	DC-14	DC-12	DC-13	DC-14
			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