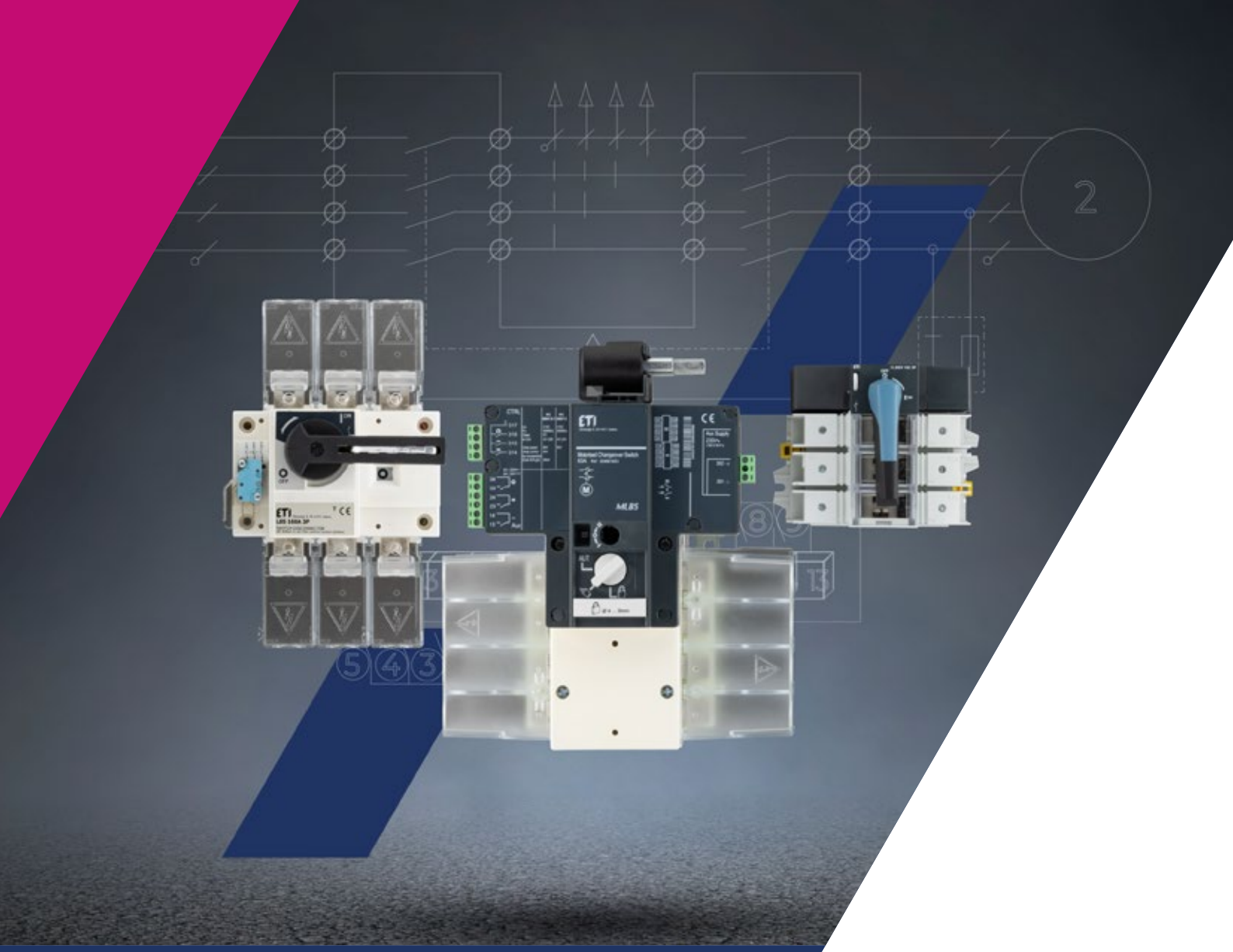


ETISWITCH

Switch Disconnectors

/etigroup

SWITCH TO
A SAFE FUTURE

ETISWITCH Compact Load Break Switch CLBS

Compact Load Break Switch CLBS

Possibility of direct, remote front and side control

Special type of mounting on the TH 35 busbar (no tools required)

Terminal covers provide protection against accidental contact and phase separation of the switch, while perforation allows temperature monitoring of the contacts without removing the covers

Compact load break switch CLBS 100-125A have sealing option terminal covers

Handle position in load-break switches indicates the status of the contact group

Padlocking the handle

Possibility of self-assembly of 1-0-2 load disconnectors using two CLBS load disconnectors and CLBS-CK conversion kit.

Load disconnectors/switches have the option of installing optional accessories, such as

Additional pole, 4th pole

Auxiliary contact

Neutral pole N

Protective earth module PE

Characteristics according to IEC 60947-3

Type				CLBS 16	CLBS 25	CLBS 40	CLBS 63	CLBS 80	CLBS 100	CLBS 125
Current		(In)		16A	25A	40A	63A	80A	100A	125A
Rated insulation voltage		(Ui)	(V)	800	800	800	800	800	800	800
Rated impulse withstand voltage		(Uimp)	(kV)	8	8	8	8	8	8	8
Thermal current 40°C		(Ith)	(A)	16	25	40	63	80	100	125
Rated operational currents (Ie)	AC-20 A/B	415V AC	(A)							
	AC-21 A/B	415V AC	(A)							
	AC-22 A/B	415V AC	(A)							
	AC-23 A/B	415V AC	(A)			40		80	100	125
	AC-20 A/B	500V AC	(A)				63			
	AC-21 A/B	500V AC	(A)							
	AC-22 A/B	500V AC	(A)							
	AC-23 A/B	500V AC	(A)			25		63	80	100
	AC-20 A/B	690V AC	(A)							
	AC-21 A/B	690V AC	(A)	16	25	40		80	100	125
	AC-22 A/B	690V AC	(A)			32/40	40/63	63/80	80/100	100/125
	AC-23 A/B	690V AC	(A)			25	40	40	63	63
	DC-20 A/B	110V DC	(A)							
	DC-21 A/B[1]	110V DC	(A)							
	DC-20 A/B	250V DC	(A)			40	63	80	100	125
	DC-21 A/B[2]	250V DC	(A)							
	DC-20 A/B	400V DC	(A)							
	DC-21 A/B[3]	400V DC	(A)			25	40	40	63	63
Operational power in AC 23 [4]		400V AC	(kW)	7,5	11	18,5	30	37	45	55
		500V AC	(kW)	7,5	11	18,5	30	37	45	55
		690V AC	(kW)	7,5	15	15	30	37	45	55
Short-circuit capacity Icw		1 s.	(kA)	1,26	1,26	1,26	1,5	1,5	2,75	2,75
		0,25 s.	(kA)	1,8	1,8	1,8	2,1	2,1	3,9	3,9
Fuse protected short-circuit withstand (kA rms prospective) [5]										
Associated fuse rating			(A)	16	25	40	63	80	100	125
Prospective short-circuit current			(kA)	50	50	50	50	50	25	25
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s										
Rated short-time withstand current		0,3 s.	(kA)	2,5	2,5	2,5	3	3	5	5
Connection										
Minimum Cu cable cross-section		mm^2		1,5	1,5	1,5	2,5	2,5	10	10
Maximum Cu cable cross-section		mm^2		16	16	16	35	35	70	70
Tightening torque min/max		Nm		2/2,2	2/2,2	2/2,2	3,5/3,85	3,5/3,85	4/4,4	4/4,4
Durability (number of operating cycles)		cycles		100 000	100 000	100 000	100 000	100 000	100 000	100 000
Operating effort - 3 pole device		Nm		1	1	1	1,4	1,4	1,6	1,6
Operating effort - 4 pole device		Nm		1,2	1,2	1,2	1,6	1,6	2	2
Power dissipation		W/pole		0,15	0,4	0,9	1,5	2,4	4,3	7,1

Category with index A = frequent operation
Category with index B = infrequent operation.
[1] - one pole per polarity.
[2] - 3-pole device with 2 poles in series for the "+" and 1 pole for the "-".
[3] - 4-pole device with 2 poles in series per polarity.
[4] - The power value is given for information only, the current values vary from one manufacturer to another.
[5] - For a rated operational voltage Ue = 415 VAC.

Description
CLBS are manually operated and modular multipolar load break switches in range 16A-125A. They make and break under load conditions and provide safety isolation for any low voltage circuit, particularly for machine control circuits. Through the use of accessories, CLBS can be transformed into multipolar load break or 3/4 pole changeover switches. CLBS change over switches provide on load changeover switching between two sources or two low voltage power circuits, as well as their safety isolation. CLBS switches have been designed, qualified and tested according to the criteria defined by standard IEC 60947-3.

CLBS body (no handle included) 3 POLES 16 - 125 A

Type	Code No.	I_n [A]	Number of poles	g	
CLBS 16 3P	004661400	16	3	230	1/24
CLBS 25 3P	004661401	25	3	228	1/24
CLBS 40 3P	004661402	40	3	228	1/24
CLBS 63 3P	004661403	63	3	320	1/24
CLBS 80 3P	004661404	80	3	322	1/24
CLBS 100 3P	004661405	100	3	600	1/12
CLBS 125 3P	004661406	125	3	624	1/12

Front(direct and external) and right side operation

CLBS 16 3p

CLBS 125 3p

Technical data

Type				CLBSCD 63 3P	CLBSCD 100 3P
Thermal current 40°C		(Ith)	(A)	63	100
Rated insulation voltage		(Ui)	(V)	800	800
Rated impulse withstand voltage		(U imp)	(kV)	8	8
Rated operational currents (Ie)	AC-21A/B	415V	(A)	63/63	100/100
	AC-22A/B	415V	(A)	63/63	100/100
	AC-23A/B	415V	(A)	63/63	100/100
	AC-21A/B	690V	(A)	63/63	100/100
Rated short-time withstand current Icw		1 s.	(kA)	-	1,5
Rated short-circuit making capacity Icm			(kA)	-	2,1
Rated conditional short-circuit					
Associated gG fuse rating			(A)	-	100
Prospective short-circuit			(kA)	-	25
Limited cut off current			(kA)	-	8,6

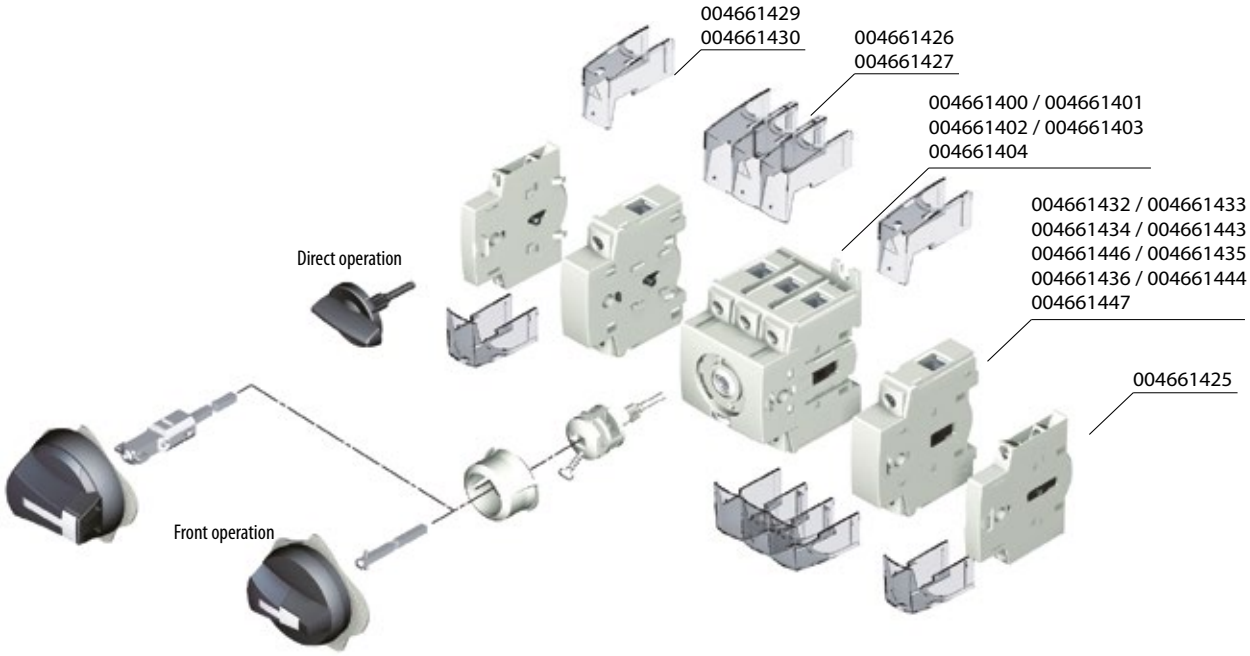
WATCH THE VIDEO

CLBSCD series (CLBS switch with reduced short circuit current capability)

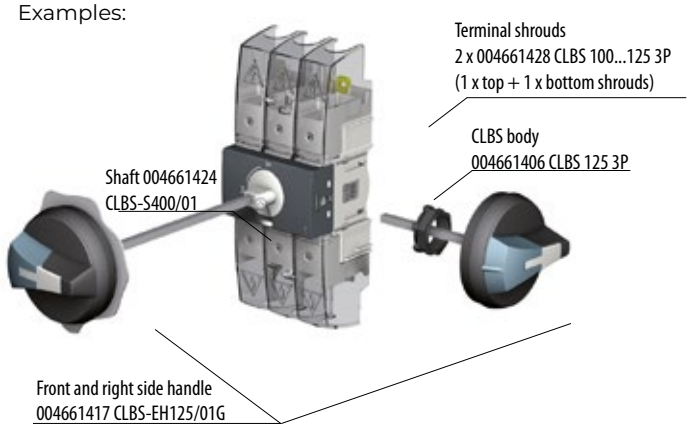
Type	Code No.	I_n [A]	Number of poles	g	
CLBSCD 63 3P	004661910	63	3	210	1/24
CLBSCD 100 3P	004661911	100	3	310	1/24

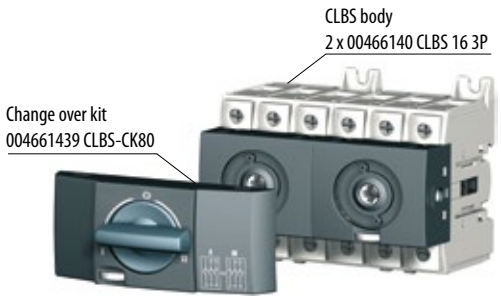
With CLBSCD 63 3P can be applied with the same accessories as with CLBS 40 3P (CLBS40 body)
With CLBSCD 100 3P can be applied with the same accessories as with CLBS 80 3P (CLBS 80 body)

Accessories



Examples:





Direct handle for direct operation

Type	Description	Code No.	For use with	g	
CLBS-DH80/B	Direct handle, black	004661410	CLBS 16-80A 3P	10	1/200
CLBS-DH125/B	Direct handle, black	004661411	CLBS 100-125A 3P	8	1/200
CLBS-DH80/YR	Direct handle, red	004661412	CLBS 16-80A 3P	10	1/200

Type definition: Handle type / color initials

CLBS-DH80/B CLBS-DH125/B CLBS-DH80Y/R

The products' colour or shape may be different as on picture

Door interlocked front and right side handle IP65 (shaft not included)

Type	Description	Code No.	For use with	g	
CLBS-EH80/G	Door interlocked handle, grey front	004661415	CLBS 16-80A 3P	101	1/45
CLBS-EH125/G	Door interlocked handle, grey front	004661416	CLBS 100-125A 3P	103	1/45
CLBS-EH125/01G	Door interlocked handle, grey front	004661417	CLBS 16-125A 3P	190	1/25

Type definition: Handle type / color initials

CLBS-EH80/G CLBS-EH125/G CLBS-EH125/01G

Door interlocked front and right side handle IP65 (shaft not included).

Type	Description	Code No.	For use with	g	
CLBS-EH80/YR	Door interlocked handle, red front	004661418	CLBS 16-80A 3P	102	1/45
CLBS-EH125/YR	Door interlocked handle, red front	004661419	CLBS 100-125A 3P	104	1/45
CLBS-EH125/01YR	Door interlocked handle, red front	004661420	CLBS 16-125A 3P	200	1/25

Type definition: Handle type / color initials

CLBS-EH80/YR CLBS-EH125/YR CLBS-EH125/01YR

Shaft for door interlocked front and right side handle

Type	Description	Code No.	For use with	g	
CLBS-S200	Shaft, 200 mm	004661422	CLBS-EH80 CLBS-EH125	60	1/110
CLBS-S320	Shaft, 320 mm	004661423	CLBS-EH80 CLBS-EH125	80	1/90
CLBS-S400/01	Shaft, 400 mm	004661424	CLBS-EH125/01	125	1/25

For 3/4 pole switches, shaft extensions are for external front and side operation.
Not for use with Change over kit and handles

CLBS-S

Guiding cone

Type	Description	Code No.	For use with	g	
CLBS-GC EH80, 125	Guiding cone	004661421	CLBS-EH80 CLBS-EH125	130	1/240
LBS-GC (CLBS-EH125/01)	Guiding cone	004661489	CLB-EH125/01	29	1/25

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

CLBS-GC EH125/01

Door mounting kit (handle not included)

Type	Description	Code No.	For use with	g	
CLBS-DMK80	Compact version	004661413	CLBS 16-80A 3P	60	1/50
CLBS-DMK125	Steel support	004661414	CLBS 100-125A 3P	120	1/20

This kit enables the direct mounting of the switch on the panel door, or on the left or right side of the panel. The connection clamps of the switch are always accessible. The external handle is quick and easy to install with the supplied locking nut mounted on the inside of the enclosure.
Not compatible with CLBS-EH125/01 handles

CLBS-DMK80 CLBS-DMK125

Additional pole, 4th pole CLBS-4P

Type	Description	Code No.	For use with	g	
CLBS-4P/16	Additional pole	004661432	CLBS 16A 3P	72	1/36
CLBS-4P/25	Additional pole	004661433	CLBS 25A3P	72	1/36
CLBS-4P/40	Additional pole	004661434	CLBS 40A 3P	72	1/36
CLBS-4P/63	Additional pole	004661435	CLBS 63A 3P	100	1/36
CLBS-4P/80	Additional pole	004661436	CLBS 80A 3P	102	1/36
CLBS-4P/100	Additional pole	004661437	CLBS 100 A 3P	200	1/16
CLBS-4P/125	Additional pole	004661438	CLBS 125 A 3P	205	1/16

Installation of 4th pole converts 3 pole CLBS to 4 pole load break switch or 3 pole CLBS changeover switch into a 4 pole changeover switch.


CLBS-4P 16..80


CLBS-4P 100-125

Solid neutral pole CLBS-N

Type	Description	Code No.	For use with	g	
CLBS-N/40	Solid neutral pole	004661443	CLBS 16-40A 3P	200	1/36
CLBS-N/80	Solid neutral pole	004661444	CLBS 63-80A 3P	200	1/36
CLBS-N/125	Solid neutral pole	004661445	CLBS 100-125A 3P	200	1/16

Neutral pole is fixed and can not be switched.


CLBS-N 100-125


CLBS-N 16..80

Protective earth pole CLBS-PE

Type	Description	Code No.	For use with	g	
CLBS-PE/40	Protective earth pole	004661446	CLBS 16-40A 3P	200	1/36
CLBS-PE/80	Protective earth pole	004661447	CLBS 63-80A 3P	200	1/36
CLBS-PE/125	Protective earth pole	004661448	CLBS 100-125A 3P	200	1/16

Protective earth pole is fixed and can not be switched.


CLBS-PE 16..80


CLBS-PE 100-125

Auxiliary contact

Type	I [A]	Description	Code No.	For use with	g	
CLBS-PS11	10	Auxiliary contact NO+NC	004661425	CLBS 16-125A	44	1/52

Pre-break and signalisation of positions 0 and 1 by NO+NC. Auxiliary switch allows to anticipate switching of the main poles. It can be mounted on the left or on the right side of the device.


CLBS-PS11

Change over kit (direct handle included) I-0-II

Type	Description	Code No.	For use with	g	
CLBS-CK80	Change over kit, black handle 1-0-2	004661439	2xCLBS 16-80A 3P	74	1/42
CLBS-CK125	Change over kit, black handle 1-0-2	004661440	2xCLBS 100-125A 3P	240	1/10

Two CLBS bodies must be ordered separetely for one Change over kit


CLBS-CK80


CLBS-CK125

The products' colour or shape may be different as on picture

Change over kit (direct handle included) I-I+II-II

Type	Description	Code No.	For use with	g	
CLBS-CKI+II80	Change over kit, black handle 1-1+2-2	004661522	2xCLBS 16-80A 3P	90	1/42
CLBS-CKI+II125	Change over kit, black handle 1-1+2-2	004661523	2xCLBS 100-125A 3P	240	1/10

Two CLBS bodies must be ordered separetely for one Change over kit

Door interlocked front handle IP65 (shaft not included) for change over switch - External front operation

Type	Description	Code No.	For use with	g	
CLBS-EH80/G CO	Door interlocked front handle, grey front 1-0-2	004661441	CLBS-CK80	101	1/45
CLBS-EH125/G CO	Door interlocked front handle, grey front 1-0-2	004661442	CLBS-CK125	101	1/45

Type definition: Handle type / color initials

CLBS-EH80/G CO

CLBS-EH125/G CO

Shafts for door interlocked front handle on change over switches

Type	Description	Code No.	For use with	g	
CLBSV-S200	Shaft, 200mm	004661886	CLBS-EH125/G CO	0,05	1/100
CLBS-S200		004661422	CLBS-EH80/G CO		
CLBS-S320	Shaft, 320mm	004661423	CLBS-EH80/G CO		

For front operation only.

CLBSV-S200

Applications

Top and bottom protection against direct contact with the terminals or connection parts. An opening on each terminal cover makes it possible to insert a temperature measurement probe.

Terminal shrouds (covers)

Type	Description	Code No.	For use with	g	
CLBS-TS40 3P	Terminal shroud 3P 16-40A	004661426	CLBS 16-40A	20	1/110
CLBS-TS80 3P	Terminal shroud 3P 63-80A	004661427	CLBS 63-80A	20	1/125
CLBS-TS125 3P	Terminal shroud 3P 100-125A	004661428	CLBS 100-125A	63	1/22
CLBS-TS40 1P	Terminal shroud 1P 16-40A	004661429	CLBS 16-40A	8	1/200
CLBS-TS80 1P	Terminal shroud 1P 63-80A	004661430	CLBS 63-80A	6	1/200
CLBS-TS125 1P	Terminal shroud 1P 100-125A	004661431	CLBS 100-125A	22	1/120

One reference code includes 2 pcs 1 for top and 1 for bottom contacts.

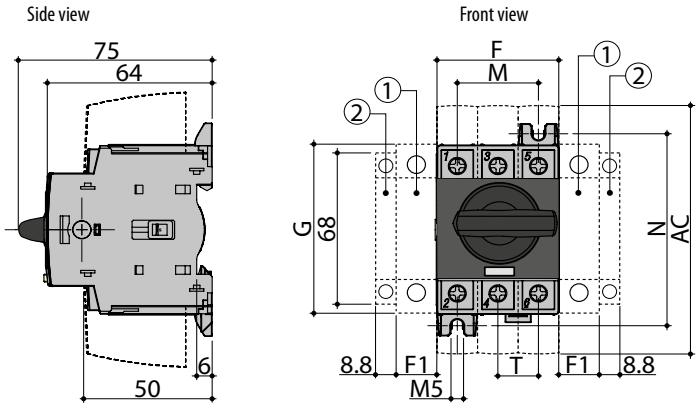
CLBS-TS80 3P

CLBS-TS80 1P

The products' colour or shape may be different as on picture

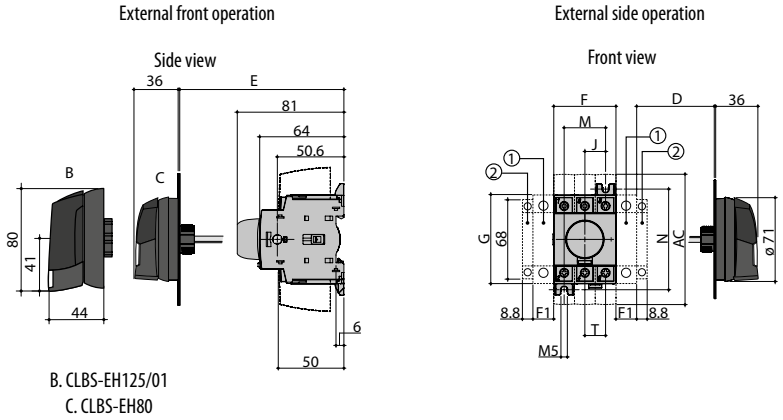
Dimensions

CLBS 16 - CLBS 80 3P, CLBSCD 63 3P, CLBSCD 100 3P - direct operation with handle



1. Location for: 1 switched fourth pole module (1 per device max.)
or 1 unswitched neutral pole
or 1 protective earth module
or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.
Note: max 2 additional blocks.
More information about acceptable combinations of auxiliary switches and additional poles on the following page.

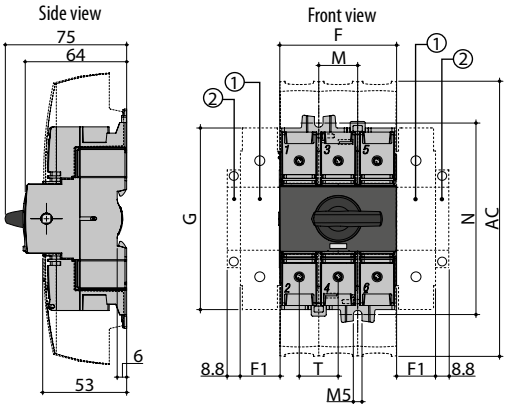
CLBS 16 - CLBS 80 3P, CLBSCD 63 3P, CLBSCD 100 3P



1. Location for: 1 switched fourth pole module (1 per device max.)
or 1 unswitched neutral pole
or 1 protective earth module
or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.
Note: max 2 additional blocks.
More information about acceptable combinations of auxiliary switches and additional poles on the following page.

Rating	Overall dimensions, (mm)				Terminal shrouds, (mm)	Switch body, (mm)				Switch mounting, (mm)		Connection, (mm)
[A]	D min	D max	E min	E max	AC	F	F1	G	J	M	N	T
16-40	30	235	100	372	110	45	15	68	15	30	75	15
63-80	30	235	100	372	110	52.5	17.5	76	17.5	35	85	17.5

CLBS 100-CLBS 125 3P - direct operation with handle

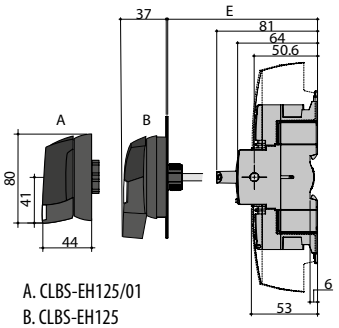


1. Location for: 1 switched fourth pole module (1 per device max.)
or 1 unswitched neutral pole
or 1 protective earth module
or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.
Note: max 2 additional blocks.
More information about acceptable combinations of auxiliary switches and additional poles on the following page.

CLBS 100-CLBS 125

External front operation

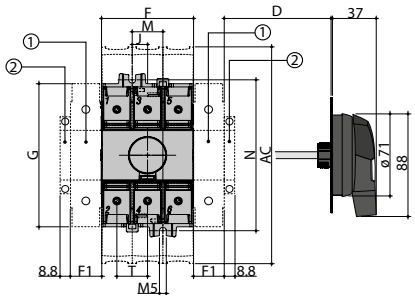
Side view



A. CLBS-EH125/01
B. CLBS-EH125

External side operation

Front view



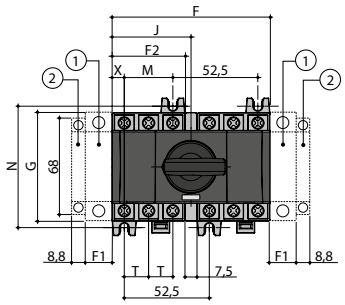
1. Location for: 1 switched fourth pole module (1 per device max.)
or 1 unswitched neutral pole
or 1 protective earth module
or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.
Note: max 2 additional blocks.
More information about acceptable combinations of auxiliary switches and additional poles below.

Rating	Overall dimensions, (mm)				Terminal shrouds, (mm)	Switch body, (mm)				Switch mounting, (mm)		Connection, (mm)
[A]	D min	D max	E min	E max	AC	F	F1	G	J	M	N	T
100-125	30	201	100	372	189	78	26	124.6	13	26	131.4	26

Direct operation

CLBS 16 - CLBS 80 3P, CLBSCD 63 3P, CLBSCD 100 3P - with change over kit

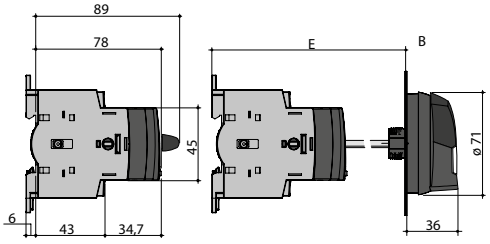
Side view



External front operation

CLBS 16 - CLBS 80 3P, CLBSCD 63 3P, CLBSCD 100 3P - with change over kit

Front view



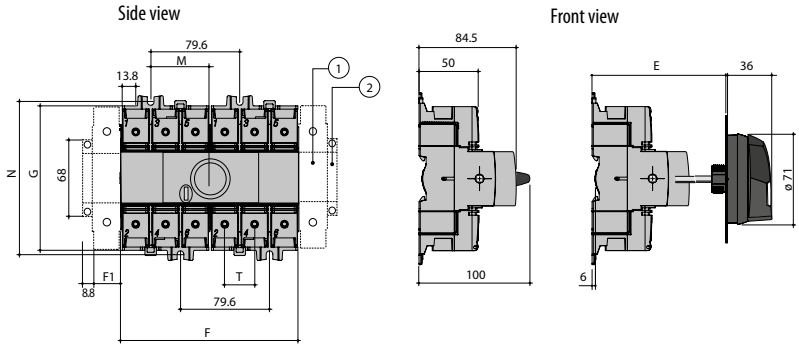
Rating	Overall dimensions, (mm)		Switch body, (mm)					Switch mounting, (mm)		Connection, (mm)	
[A]	E min	E max	F	F1	F2	G	J	M	N	T	X
16-40	105	372	97.5	15	45	68	48.75	30	75	15	7.5
63-80	105	372	105	17.5	52.5	76	52.5	35	85	17.5	8.75

Direct front operation

CLBS 100 - CLBS 125 -with change over kit

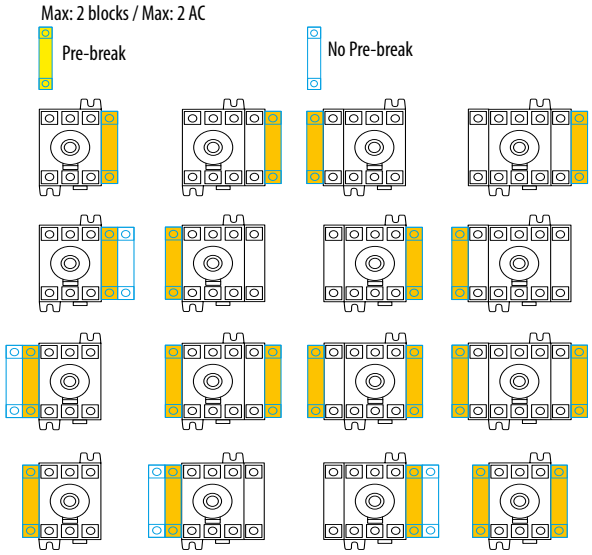
External front operation

CLBS 100 - CLBS 125 -with change over kit



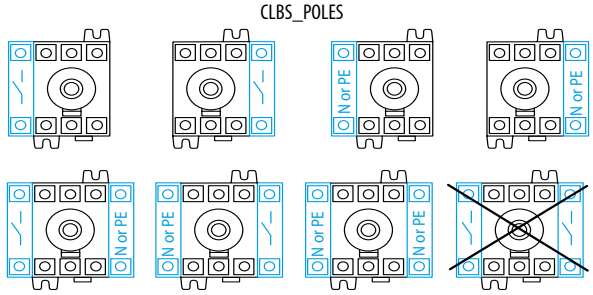
Rating	Overall dimensions, (mm)		Switch body, (mm)			Switch mounting, (mm)		Connection, (mm)
(A)	E min	E max	F	F1	G	M	N	T
100-125	105	372	159	26	124.5	52.8	131.5	26

Auxiliary contact configurations CLBS-PS11 (NO+NC)

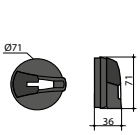


Contact type	Nominal current	Operating current Ie (A), 230V AC	
	(A)	AC-13	AC-15
NO+NC	10	10	6

Configuration additional pole, solid neutral pole and protective earth pole

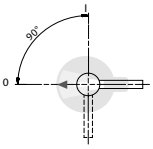


CLBS-EH80
(16-80A)

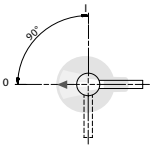


CLBS_EH

Direct front operation

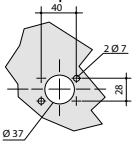


Right side operation

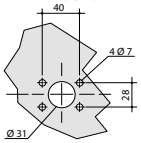


Door drilling

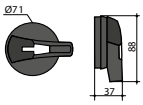
IP55 with 2 fixing clips



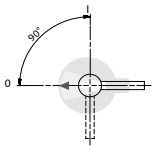
IP65 with 4 fixing screws



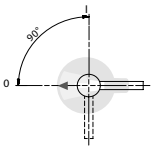
CLBS-EH125
(100-125A)



Direct front operation

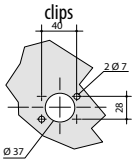


Right side operation

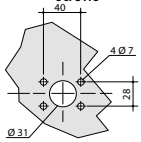


Door drilling

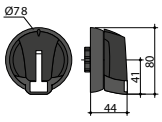
IP55 with 2 fixing clips



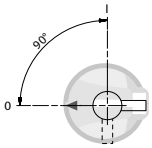
IP65 with 4 fixing screws



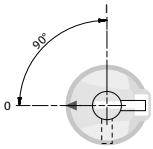
CLBS-EH125/01
(16-125A)



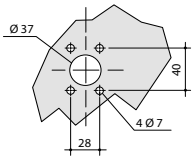
Direct front operation



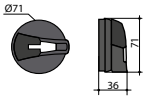
Right side operation



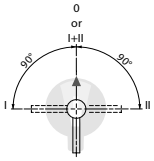
Door drilling



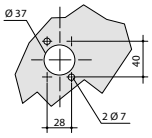
CLBS-EH80/G CO
CLBS-EH125/G CO



Direct front operation

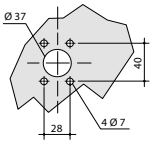


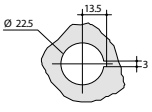
IP55 with 2 fixing clips



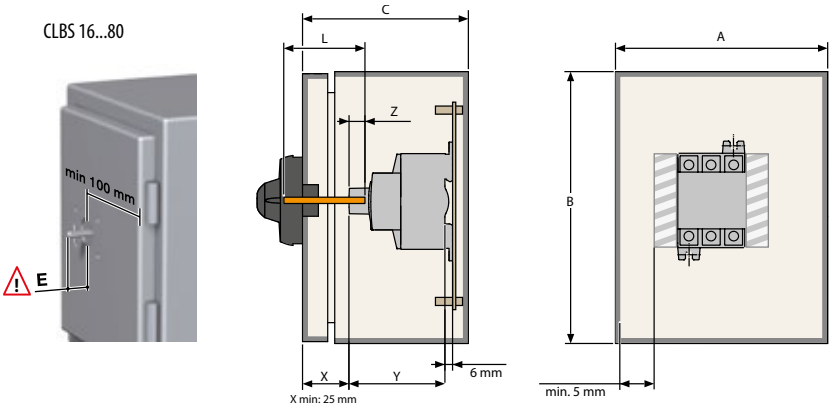
Door drilling

IP65 with 4 fixing screws





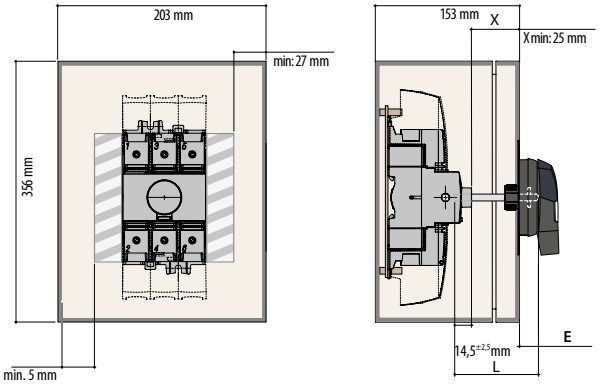
CLBS 16...80



	16A - 40A	60A - 80A
	mm	mm
A	152	203
B	203	254
C	102	102
Y	75	75

		E	
	16-125A	min.	max.
CLB-EH80, CLBS-EH125	L=X+32 mm	13 mm	15mm
CLBS-EH125/01	L=X+38,5 mm	17,5 mm	21,5 mm

CLBS 100...125



Shafts and GT enclosures (ETIBOX)		Default shaft length used with handle(mm)	
Z (depth of enclosure, mm)	X(mm)	CLB-EH80, CLBS-EH125	CBLS-EH125/01
150mm	49	200	400
200mm	99	200	400
250mm	149	200	400
300mm	199	320	400

CLBS and ETIBOX, DIDO-E COMPATIBILITY:
CLBS 0-1 up to 125A + CO (changeover kits CLBS-CK I-0-II, I-I+II-II): SOLID GT, GSX, HXS, DIDO ECH (IP65)
CLBS 0-1 up to 125A: DIDO ECT, ECM, ACT (IP40), ECG

ETISWITCH Compact Load Break Switch with Visible Break - CLBSV

Possibility to connect additional contacts with pre-break function

Double-visible chain break ensures safe maintenance

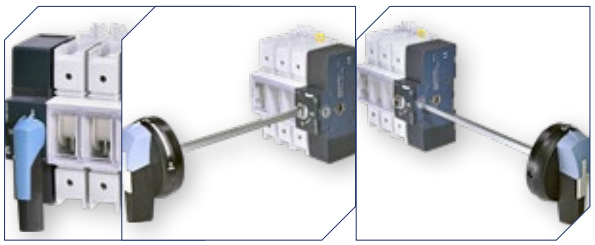
Special type of mounting on the TH 35 rail (does not require special tools)

Handle can be locked with a padlock

Ability to seal terminal covers

Terminal covers ensure accidental contact protection, phase separation, and allow contact temperature monitoring through perforated holes.

The position of the handle indicates the status of the contact group



Possibility of direct, external front and side control

Universal mounting system allows mounting on the TH-35 bus and mounting plate

Compact Load Break Switch with Visible Break - CLBSV (0-1)

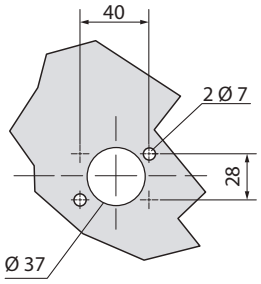
Characteristics according to IEC 60947-3

Type				CLBSV 100	CLBSV 125	CLBSV 160
Rated Current		(In)		100A	125A	160A
Rated insulation voltage		(Ui)	(V)	800	800	800
Rated impulse withstand voltage		(Uimp)	(kV)	8	8	8
Thermal current 40°C		(Ith)	(A)	100	125	160
Rated operational currents (Ie)	AC-20 A/B	415V AC	(A)	100	125	160
	AC-21 A/B	415V AC	(A)			160
	AC-22 A/B	415V AC	(A)			160
	AC-23 A/B	415V AC	(A)			125/160
	AC-20 A/B	500V AC	(A)			160
	AC-21 A/B	500V AC	(A)			160
	AC-22 A/B	500V AC	(A)			125/160
	AC-23 A/B	500V AC	(A)	80	100	100
	AC-20 A/B	690V AC	(A)	100	125	160
	AC-21 A/B	690V AC	(A)			
	AC-22 A/B	690V AC	(A)	63/80	80/100	100/125
	AC-23 A/B	690V AC	(A)	63	80	80
	DC-20 A/B	110V DC	(A)	100	125	160
	DC-21 A/B(1)	110V DC	(A)	100/100(1)	125/125(1)	160/160(1)
	DC-20 A/B	250V DC	(A)	100	125	160
	DC-21 A/B(2)	250V DC	(A)	100/100(2)	125/125(2)	160/160(2)
	DC-20 A/B	400V DC	(A)	100	125	160
	DC-21 A/B(3)	400V DC	(A)	100/100(3)	125/125(3)	160/160(3)
Operational power in AC 23 (4)		400V AC	(kW)	45	55	75
		500V AC	(kW)	45	55	75
		690V AC	(kW)	45	55	75
Short-circuit capacity Icw		1 s.	(kA)		4	
		0,25 s.	(kA)		4	
Fuse protected short-circuit withstand (kA rms prospective) (5)						
Associated fuse rating			(A)	100	65	50
Prospective short-circuit current			(kA)	100	125	160
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s						
Rated short-time withstand current		0,3 s.	(kA)		7	
Connection						
Minimum Cu cable cross-section		mm^2		10	10	10
Maximum Cu cable cross-section		mm^2		70	70	70
Tightening torque min/max		Nm		4/4,4	4/4,4	4/4,4
Mechanical life		cycles		50 000	50 000	50 000
Operating effort - 3 pole device		Nm			4	
Operating effort - 4 pole device		Nm			4,2	

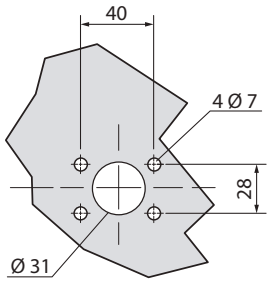
Category with index A = frequent operation
Category with index B = infrequent operation.
(1) - one pole per polarity.
(2) - 3-pole device with 2 poles in series for the "+" and 1 pole for the "-".
(3) - 4-pole device with 2 poles in series per polarity.
(4) - The power value is given for information only, the current values vary from one manufacturer to another.
(5) - For a rated operational voltage Ue = 415 VAC.

Mounting hole

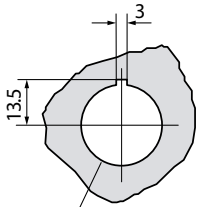
IP55 with two mounting clips

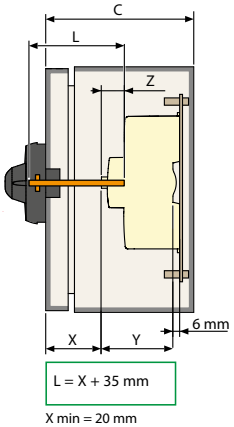


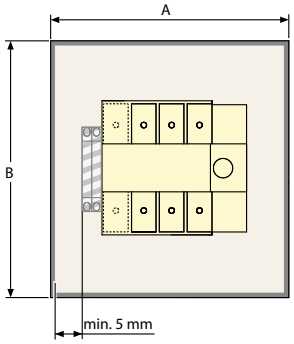
IP65 with 4 fixing screws



With fastening nut







Applications - CLBSV are manually operated multi-pole devices for switching low voltage electrical circuits with currents up to 160A. The CLBSV line of load switches has been designed and tested in full compliance with the criteria defined in IEC 60947-3.

0-1 load break switch with visible break CLBSV 100 - 160 A

Type	Code No	Description	I_n [A]	Number of poles	g	
CLBSV 100 3P	004661880	Load break switch 0-1	100	3	840	1/28
CLBSV 125 3P	004661881	Load break switch 0-1	125	3	820	1/28
CLBSV 160 3P	004661882	Load break switch 0-1	160	3	820	1/28

Front (direct or external) and side (external) operation. Handle not included.

CLBSV 100 3P

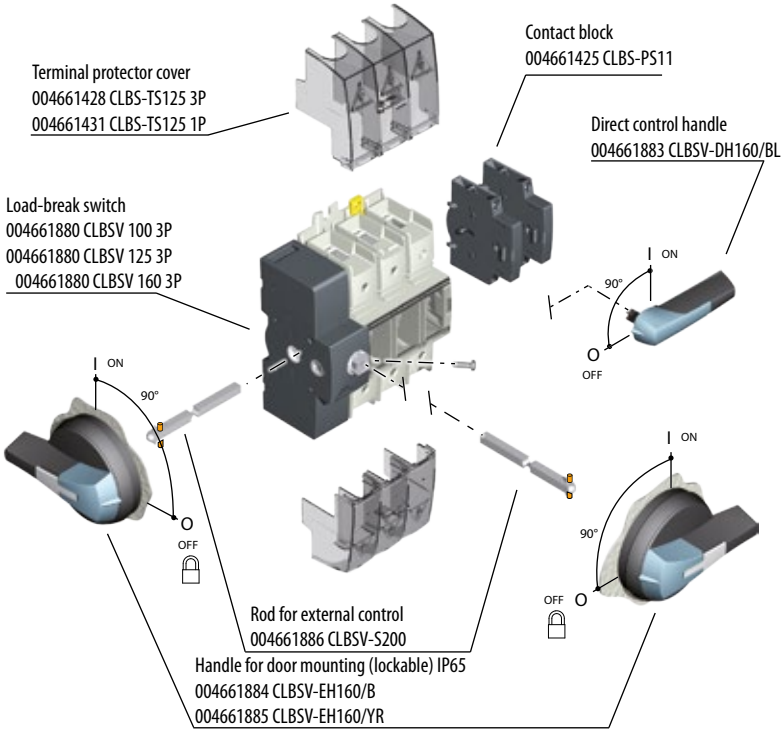
0-1 load break switch with visible break CLBSV 100 - 160 A

Type	Code No	Description	I_n [A]	Number of poles	g	
CLBSV 100 4P	004661989	Load break switch 0-1	100	4	1000	1/28
CLBSV 125 4P	004661990	Load break switch 0-1	125	4	1000	1/28
CLBSV 160 4P	004661991	Load break switch 0-1	160	4	1000	1/28

CLBSV 100 4P

Accessories

Mounting example:



Direct control knobs for mounting on switches CLBSV

Type	Code No	Description	For use with	g	
CLBSV-DH160/BL	004661883	Handle on switch body, blue	CLBSV 100-160A 3P	20	1/25

Direct front control

CLBSV-DH160/BL

Door interlocked front handle IP65 (shaft not included). IP65

Type	Code No	Description	For use with	g	
CLBSV-EH160/B	004661884	Remote handle, black	CLBSV 100-160A 3P	90	1/45
CLBSV-EH160/YR	004661885	Remote handle, red	CLBSV 100-160A 3P	90	1/45

External front and side operation. Shaft not included.
Allows door opening in the ON position.

CLBSV-EH160/B CLBSV-EH160/YR

External control shaft

Type	Code No	Description	For use with	g	
CLBSV-S200	004661886	Shaft, 200mm	CLBSV-EH160/B, CLBSV-EH160/YR	50	1/100

The shaft is used for external front and side operation.

CLBSV-S200

Contact block

Type	Code No	Description	I_n [A]	For use with	g	
CLBS-PS11	004661425	Contact block, 1NO+1NC	10	CLBS 16-125A	44	1/52

Application: Pre-breaking and position signaling (0 and I) via NO+NC auxiliary contacts. Up to two auxiliary contact blocks can be installed.

CLBS-PS11

Terminal cover for CLBSV

Type	Code No	Description	For use with	g	
CLBS-TS125 3P	004661428	Terminal cover 3P	CLBSV 100-160A	63	1/22
CLBS-TS125 1P	004661431	Terminal cover 1P		22	1/120

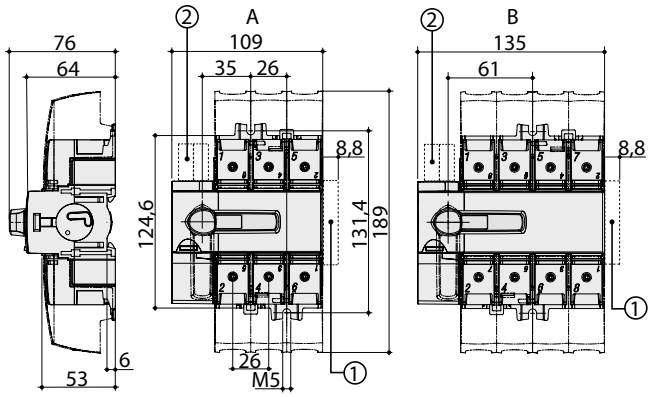
Note: One set is required to protect both upper and lower terminals.

Application - Protection against direct contact with upper and lower terminals.
The cover includes openings for temperature sensor installation.

CLBS-TS125 3P CLBS-TS125 1P

Dimensions

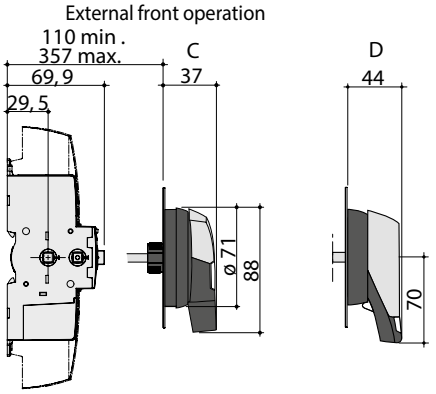
Direct front operation



A. 3 poles
B. 4 poles

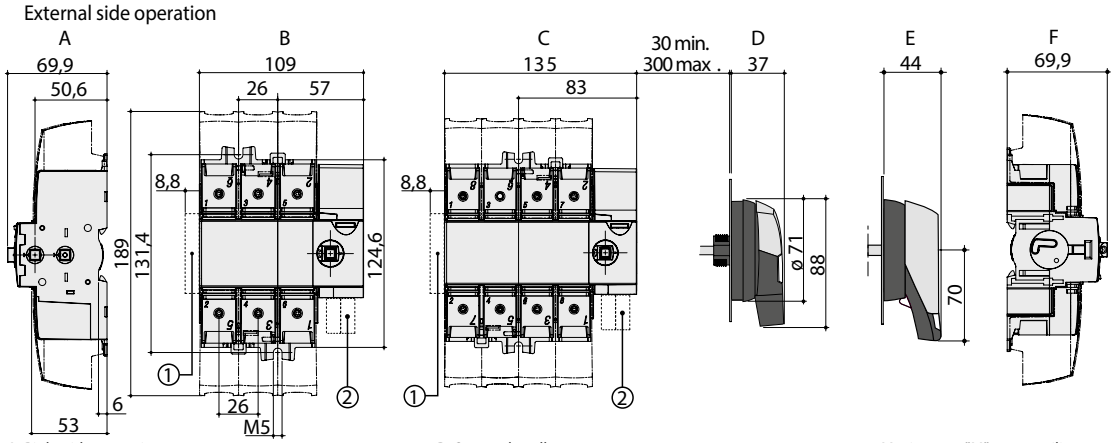
C. S0 type handle
D. S1 type handle

External front operation



1. Maximum 4 "M" type auxiliary contacts
2. Maximum 2 "U" type auxiliary contacts

External side operation



A. Right side operation
B. 3 poles
C. 4 poles

D. S0 type handle
E. S1 type handle
F. Left side operation

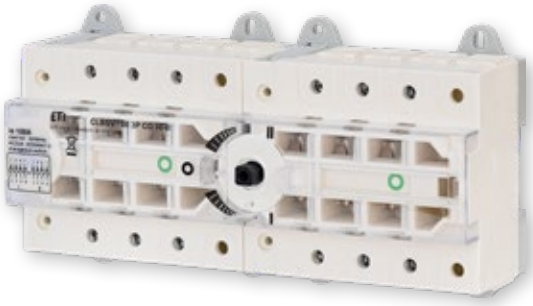
1. Maximum 4 "M" type auxiliary contacts
2. Maximum 2 "U" type auxiliary contacts

ETISWITCH Compact Load Break Change Over Switch with Visible Break CLBSV..CO

The clamping terminal screws are locked in the housing (when fully unscrewed, they remain in the terminal)

Universal mounting system allows mounting on the TH-35 busbar and mounting plate

Special type of mounting on the TH 35 busbar (no special tools required)



Option to connect auxiliary contacts with pre-breaking function

Double visible circuit break ensures safe maintenance

Possibility to lock the handle with a padlock

The connection bar allows the switch outputs to be interconnected

Possibility of direct and external front control

Indicator of the breaker's power contact position

Compact Load Break Change Over Switch with Visible Break CLBSV..CO

Characteristics according to IEC 60947-3

Type				CLBSV 63 CO	CLBSV 100 CO	CLBSV 125 CO
Rated Current		(In)		63A	100A	125A
Rated insulation voltage		(Ui)	(V)	800	800	800
Rated impulse withstand voltage		(Uimp)	(kV)	8	8	8
Thermal current 40°C		(Ith)	(A)	63	100	125
Rated operational currents (Ie)	AC-20 A/B	415V AC	(A)	63	100	125
	AC-21 A/B	415V AC	(A)			
	AC-22 A/B	415V AC	(A)			
	AC-23 A/B	415V AC	(A)			
	AC-20 A/B	690V AC(1)	(A)		100	125
	AC-21 A/B	690V AC(1)	(A)			
	AC-22 A/B	690V AC(1)	(A)	40/63	80/100	100/125
	AC-23 A/B	690V AC(1)	(A)	40	63	63
Operational power in AC 23		400V AC	(kW)	30	45	55
		500V AC	(kW)	30	45	55
		690V AC	(kVAr)	30	45	55
Reactive power		400V AC	(kA)	1,5	2,75	2,75
Short-circuit capacity Icw		1 s.	(kA)	1,5	2,75	2,75
		0,25 s.	(kA)	2,1	3,9	3,9
Fuse protected short-circuit withstand (kA rms prospective)						
Associated fuse rating			(A)	63	100	125
Prospective short-circuit current			(kA)	50	25	25
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s						
Rated short-time withstand current		0,3 s.	(kA)	3	5	5
Connection						
Minimum Cu cable cross-section		mm^2		2,5	10	10
Maximum Cu cable cross-section		mm^2		35	70	70
Tightening torque min/max		Nm		3,5/3,85	4/4,4	4/4,4
Durability (number of operating cycles)		cycles		100 000	100 000	100 000
Operating effort - 3 pole device		Nm		1,4	1,6	1,6

Category with index A = frequent operation
Category with index B = infrequent operation.
(1) Available with terminal covers or phase barriers

Load disconnectors 1-0-2 with visible break CLBSV..CO 63 - 125 A

Type	Code No	Description	I_n [A]	Number of poles	g	
CLBSV 63 3P CO I-0-II	004661890	Load-break switch 1-0-2	63	3	1250	1
CLBSV 100 3P CO I-0-II	004661891	Load-break switch 1-0-2	100	3	1360	1
CLBSV 125 3P CO I-0-II	004661892	Load-break switch 1-0-2	125	3	1360	1

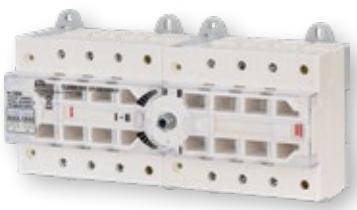
Front (direct or external) control. The handle is not included


CLBSV 63 3P CO I-0-II

Load disconnectors 1-1+2-2 with visible break CLBSV..CO 63 - 125 A

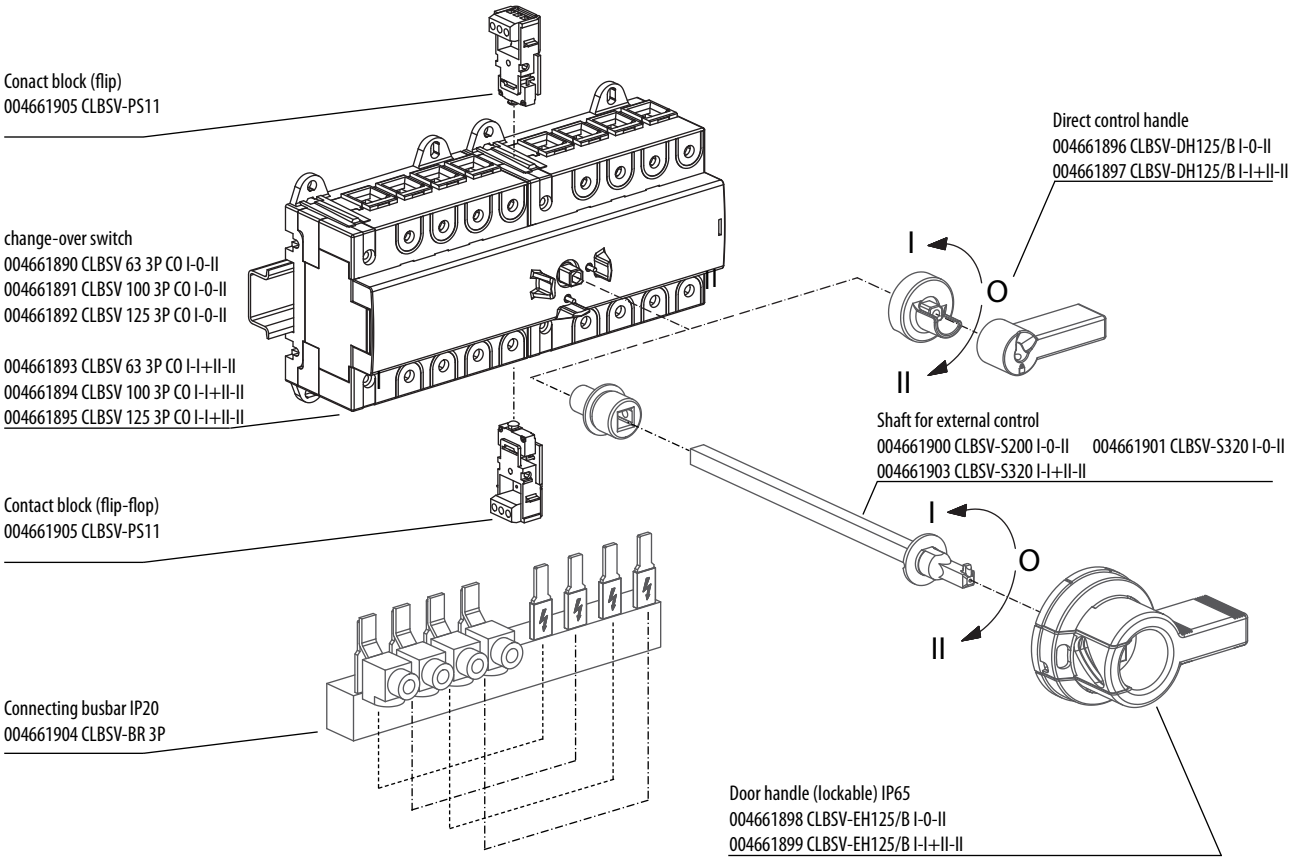
Type	Code No	Description	I_n [A]	Number of poles	g	
CLBSV 63 3P CO I-I+II-II	004661893	Load switch 1-1+2-2	63	3	1360	1
CLBSV 100 3P CO I-I+II-II	004661894	Load switch 1-1+2-2	100	3	1360	1
CLBSV 125 3P CO I-I+II-II	004661895	Load switch 1-1+2-2	125	3	1360	1

Front (direct or external) control. The handle is not included


CLBSV 125 3P CO I-I+II-II

Accessories

Mounting example:



Direct handle for direct operation CLBSV..CO

Type	Code No	Description	For use with	g	
CLBSV-DH125/B I-0-II	004661896	Handle on switch housing I-0-II, black	CLBSV..CO I-0-II	30	1/50
CLBSV-DH125/B I-I+II-II	004661897	Handle on switch housing I-I+II-II, black	CLBSV..CO I-I+II-II	40	1/50

Direct front control

CLBSV-DH125/B I-0-II

Door interlocked front handle IP65 (shaft not included). IP65

Type	Code No	Description	For use with	g	
CLBSV-EH125/B I-0-II	004661898	Handle remote I-0-II, black	CLBSV..CO I-0-II	220	1/20

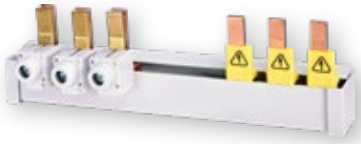
External front operation. Shaft not included.
Allows door opening in the ON position.

CLBSV-EH125/B I-0-II

Connecting busbar IP20

Type	Code No	Description	For use with	g	
CLBSV-BR 3P	004661904	Connection busbar IP20, 3p	CLBSV..CO	30	1/100

Application: To create a common connection between devices I and II at the top or bottom of the switch.



CLBSV-BR 3P

External control shaft

Type	Code No	Description	For use with	g	
CLBSV-S200 I-0-II	004661900	Shaft, 200mm	CLBSV..CO I-0-II	190	1/30
CLBSV-S320 I-0-II	004661901	Shaft, 320mm		250	1/25
CLBSV-S320 I-I+II-II	004661903	Shaft, 320mm	CLBSV..CO I-I+II-II	214	1

The shaft is used for external front operation.

CLBSV-S200 I-0-II

Contact block (flip-flop)

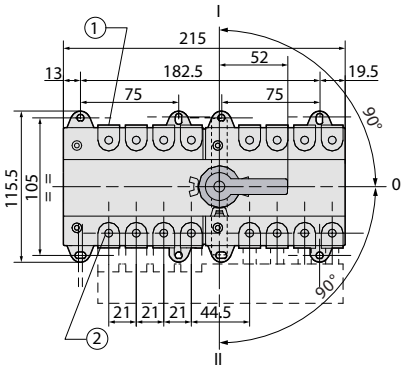
Type	Code No	Description	For use with	g	
CLBSV-PS11	004661905	Contact block, 1NO/NC (change-over)	CLBSV..CO I-0-II	30	1/25

Application: Pre-breaking and signaling of positions I and II, with a CO auxiliary contact for each position.

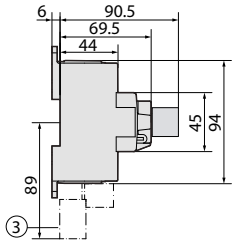
CLBSV-PS11

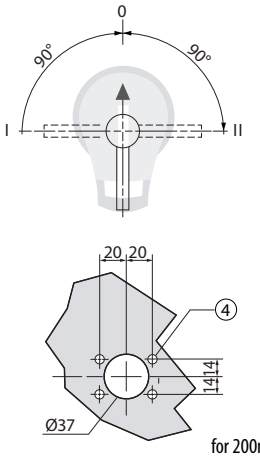
Dimensions

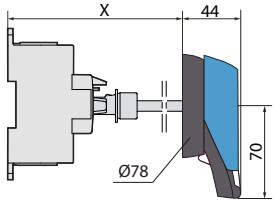
Direct control



External control

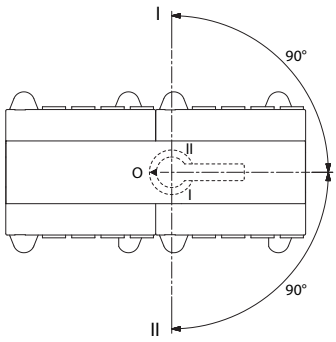






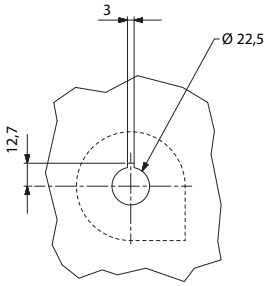
1. Max. connection
   - solid conductor: 50 mm²;
   - Stranded conductor: 35 mm²
2. Hexagon socket No. 5 1 4.5 mm
3. Connecting busbar
4. Mounting with 2 or 4 7 mm screws

for 200mm stem - X = Min. 128mm, Max. 290mm
for 320mm rod - X = Min. 128mm, Max. 410mm

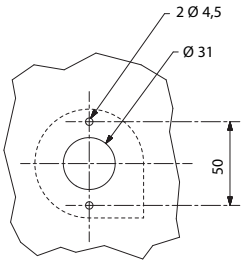


Mounting hole

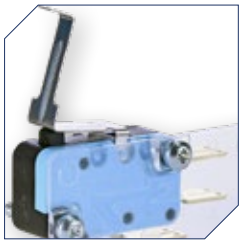
With fastening nut



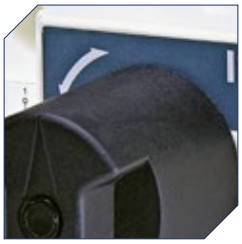
With fixing screws



ETISWITCH Load Break Switch LBS



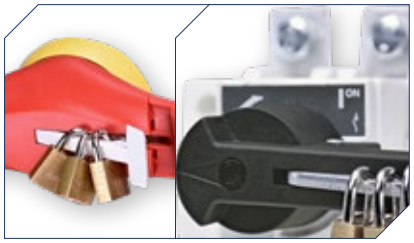
Ability to connect auxiliary contacts



Position of the handle indicates the status of the contact group

Terminal covers ensure accidental contact protection, phase separation, and allow contact temperature monitoring through perforated holes.

The use of glass fibre reinforced polyester provides high mechanical and temperature resistance of the LBS load disconnector enclosure



Possibility to lock the handle with a padlock

Load disconnectors up to 630A are supplied with screws for connection

Indicator of the breaker's power contact position

Load Break Switch LBS

Characteristics according to IEC 60947-3

Type				LBS 160	LBS 250	LBS 400	LBS 630	LBS 800	LBS 1000
Current		(In)	(A)	160	250	400	630	800	1000
Rated insulation voltage		(Ui)	(V)	800	800	1000	1000	1000	1000
Rated impulse withstand voltage		(U imp)	(kV)	8	8	12	12	12	12
Thermal current 40°C		(Ith)	(A)	160	250	400	630	800	1000
Rated operational currents (Ie)	AC-20 A/B	415V AC	(A)	160/160	250/250	400/400	630/630	800/800	1000/1000
	AC-21 A/B	415V AC	(A)	160/160	250/250	400/400	630/630	800/800	1000/1000
	AC-22 A/B	415V AC	(A)	160/160	250/250	400/400	630/630	800/800	1000/1000
	AC-23 A/B	415V AC	(A)	160/160	250/250	400/400	500/500	800/800	1000/1000
	DC-20 A/B	220V DC	(A)	160/160	250/250	400/400	630/630	800/800	1000/1000
	DC-21 A/B	220V DC	(A)	160/160	250/250	400/400	630/630	800/800	1000/1000
	DC-22 A/B	220V DC	(A)	160/160	250/250	400/400	500/500	800/800	1000/1000
	DC-23 A/B	220V DC	(A)	125/125	200/200	400/400	500/500	800/800	1000/1000
	DC-20 A/B	440V DC	(A)	160/160	250/250	400/400	630/630	800/800	1000/1000
	DC-21 A/B(2)	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)
	DC-22 A/B(2)	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)
	DC-23 A/B(3)	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)
	DC-20 A/B	500V DC	(A)	160/160	250/250	400/400	630/630	800/800	1000/1000
	DC-21 A/B(2)	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)
	DC-22 A/B(3)	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)
	DC-23 A/B(3)	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)
Operational power in AC 23 (1) (5)		415V AC	(kW)	80/80	132/132	220/220	280/280	450/450	560/560
Reactive power(5)		400 V	(kVAr)	75	115	185	290	365	460
Short-circuit capacity Icw		1 s.	(kA)	7	9	13	13	35	35
		0,25 s.	(kA)	11,9	15,3	26	26	73,5	73,5
Fuse protected short-circuit withstand (kA rms prospective)									
Associated fuse rating(6)			(A)	160	250	400	630	800	1000
Prospective short-circuit current			(kA)	100	50	100	70	50	100
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s									
Rated short-time withstand current Icw		0,3 s.	(kA)	15	17	25	25	50	65
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
Minimum Cu busbar cross-section		mm		-	-	-	2x30x5	2x40x5	2x50x5
Maximum Cu busbar width		mm		25	32	40	50	63	63
Tightening torque min/max		Nm		9/-	20/-	20/-	20/-	40/45	40/45
Operating effort		Nm		6,5	10	14,5	14,5	37	37
Durability (number of operating cycles)		cycles		10 000	10 000	10 000	10 000	3 000	3 000
Power dissipation		W/pole		3	5,8	10,8	30,9	39,7	42

(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 Ue = 415 VAC.

Characteristics according to IEC 60947-3

Type				LBS 1250	LBS 1600	LBS 2000	LBS 2500	LBS 3200
Current		(In)	(A)	1250	1600	2000	2500	3200
Rated insulation voltage		(Ui)	(V)	1000	1000	1000	1000	1000
Rated impulse withstand voltage		(U imp)	(kV)	12	12	12	12	12
Thermal current 40°C		(Ith)	(A)	1250	1600	2000	2500	3200
Rated operational currents (Ie)	AC-20 A/B	415V AC	(A)	1250/1250	1600/1600	2000/2000	2500/2500	3200/3200
	AC-21 A/B	415V AC	(A)	1250/1250	1600/1600	2000/2000	2500/2500	3200/3200
	AC-22 A/B	415V AC	(A)	1250/1250	1600/1600	2000/2000	2500/2500	2500/3200
	AC-23 A/B	415V AC	(A)	1250/1250	1250/1250	1600/1600	1600/1600	1600/1600
	DC-20 A/B	220V DC	(A)	1250/1250	1600/1600	2000/2000	2500/2500	3200/3200
	DC-21 A/B	220V DC	(A)	1250/1250	1250/1600	2000/2000	2000/2500	2000/2500
	DC-22 A/B	220V DC	(A)	1250/1250	1250/1250	1250/1600	1250/1600	1250/1600
	DC-23 A/B	220V DC	(A)	1250/1250	1250/1250	1250/1250	1250/1250	1250/1250
	DC-20 A/B	440V DC	(A)	1250/1250	1600/1600	2000/2000	2500/2500	3200/3200
	DC-21 A/B[2]	440V DC	(A)	1250[4]/1250[4]	1250[4]/1600[4]	2000[4]/2000[4]	2000[4]/2500[4]	2500[4]/3200[4]
	DC-22 A/B[2]	440V DC	(A)	1250[4]/1250[4]	1250[4]/1250[4]	1250[4]/1250[4]	1250[4]/1250[4]	1250[4]/1250[4]
	DC-23 A/B[3]	440V DC	(A)	1250[4]/1250[4]	1250[4]/1250[4]	1250[4]/1250[4]	1250[4]/1250[4]	1250[4]/1250[4]
	DC-20 A/B	500V DC	(A)	1250/1250	1600/1600	2000/2000	2500/2500	3250/3250
	DC-21 A/B[2]	500V DC	(A)	1250[4]/1250[4]	1250[4]/1600[4]	1250[4]/1250[4]	1250[4]/1250[4]	1250[4]/1250[4]
	DC-22 A/B[3]	500V DC	(A)	1250[4]/1250[4]	1250[4]/1250[4]	1250[4]/1250[4]	1250[4]/1250[4]	1250[4]/1250[4]
	DC-23 A/B[3]	500V DC	(A)	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)	710/710	710/710	710/710	710/710	710/710
Reactive power[5]		400 V	(kVAr)	-	-	-	-	-
Short-circuit capacity Icw		1 s.	(kA)	35	50	50	50	50
		0,25 s.	(kA)	73,5	75	80	80	80
Fuse protected short-circuit withstand (kA rms prospective)								
Associated fuse rating[6]			(A)	1250	2x800	2x1000	2x1250	-
Prospective short-circuit current			(kA)	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 Icw		0,3 s.	(kA)	65	100	100	100	100
Connection								
Minimum Cu cable cross-section		mm^2		-	-	-	-	-
Maximum Cu cable cross-section		mm^2		4x185	4x185	-	-	-
Minimum Cu busbar cross-section		mm		2x60x5	2x80x5	3x100x5	4x100x5	4x100x5
Maximum Cu busbar width		mm		63	100	100	100	100
Tightening torque min/max		Nm		40/45	40/45	40/45	40/-	40/-
Operating effort		Nm		37	56	75	75	75
Durability (number of operating cycles)		cycles		3 000	4 000	3 000	3 000	3 000
Power dissipation		W/pole		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 Ue = 415 VAC.

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.

LBS body (no handle included) 3/4 POLES

Type	Code No.	I_n [A]	Number of poles	g	
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 160A 3P / LBSCD 200A 3P

LBS 800A - 1000A 3P

LBS 2000A-3200A 3P

Characteristics according to IEC 60947-3

Type				LBSCD 200	LBSCD 315	LBSCD 400
Current		(In)	(A)	200	315	400
Rated insulation voltage		(Ui)	(V)	800	800	800
Rated impulse withstand voltage		(U imp)	(kV)	8	8	8
Thermal current 40°C		(Ith)	(A)	200	315	400
Rated operational currents (Ie)	AC-21 A/B[1]	400V AC	(A)	200/200	315/315	400/400
	AC-22 A/B[1]	400V AC	(A)	200/200	315/315	400/400
	AC-23 A/B[1]	400V AC	(A)	160/160	250/250	250/250
	AC-21 A/B[1]	500V AC	(A)	160/160	250/250	250/250
	AC-22 A/B[1]	500V AC	(A)	125/125	250/250	250/250
	AC-23 A/B[1]	500V AC	(A)	100/100	200/250	200/250
	AC-20 A/B[1]	690V AC	(A)	200/200	315/315	400/400
	AC-21 A/B[1]	690V AC	(A)	160/160	200/250	200/250
	AC-22 A/B[1]	690V AC	(A)	125/125	125/160	125/160
	AC-23 A/B[1]	690V AC	(A)	63/80	100/125	100/125
	DC-20 A/B[1]	220V DC	(A)	200/200	315/315	400/400
	DC-21 A/B[1]	220V DC	(A)	160/160	250/250	250/250
	DC-22 A/B[1]	220V DC	(A)	160/160	250/250	250/250
	DC-23 A/B[1]	220V DC	(A)	125/125	200/200	200/200
	DC-20 A/B[1]	400V DC	(A)	200/200	315/315	400/400
	DC-21 A/B[1]	400V DC	(A)	160/160	250/250	250/250
	DC-22 A/B[1]	400V DC	(A)	125[3]/125[3]	200[3]/200[3]	200[3]/200[3]
	DC-23 A/B[1]	400V DC	(A)	125[3]/125[3]	200[3]/200[3]	200[3]/200[3]
	DC-20 A/B[1]	500V DC	(A)	200/200	315/315	400/400
	DC-21 A/B[1]	500V DC	(A)	125[3]/125[3]	200[3]/200[3]	200[3]/200[3]
	DC-22 A/B[1]	500V DC	(A)	125[3]/125[3]	200[3]/200[3]	200[3]/200[3]
	DC-23 A/B[1]	500V DC	(A)	125[3]/125[3]	200[3]/200[3]	200[3]/200[3]
Operational power in AC 23 [1] [5]		400V AC	(kW)	80/80	132/132	132/132
		500V AC	(kW)	63/63	140/160	140/160
		690V AC	(kW)	55/75	150/185	150/185
Reactive power[5]		400V AC	(kVAr)	75	115	145
Fuse protected short-circuit withstand (kA rms prospective)						
Associated fuse rating[6]			(A)	200	315	400
Prospective short-circuit current			(kA)	50	30	18
Short-circuit operation						
Rated short-time withstand current Icw		1 s	(kA)	7	9	9
Dynamic short-circuit withstand current			(kA)	18	23	23
Connection						
Minimum Cu cable cross-section		mm^2		50	95	185
Maximum Cu cable cross-section		mm^2		95	185	240
Minimum Cu busbar cross-section		mm		-	-	-
Maximum Cu busbar width		mm		25	32	32
Tightening torque min/max		Nm		9	20	20
Operating effort		Nm		6,5	10	14,5
Durability (number of operating cycles)		cycles		10 000	10 000	5 000

(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 Ue = 415 VAC.

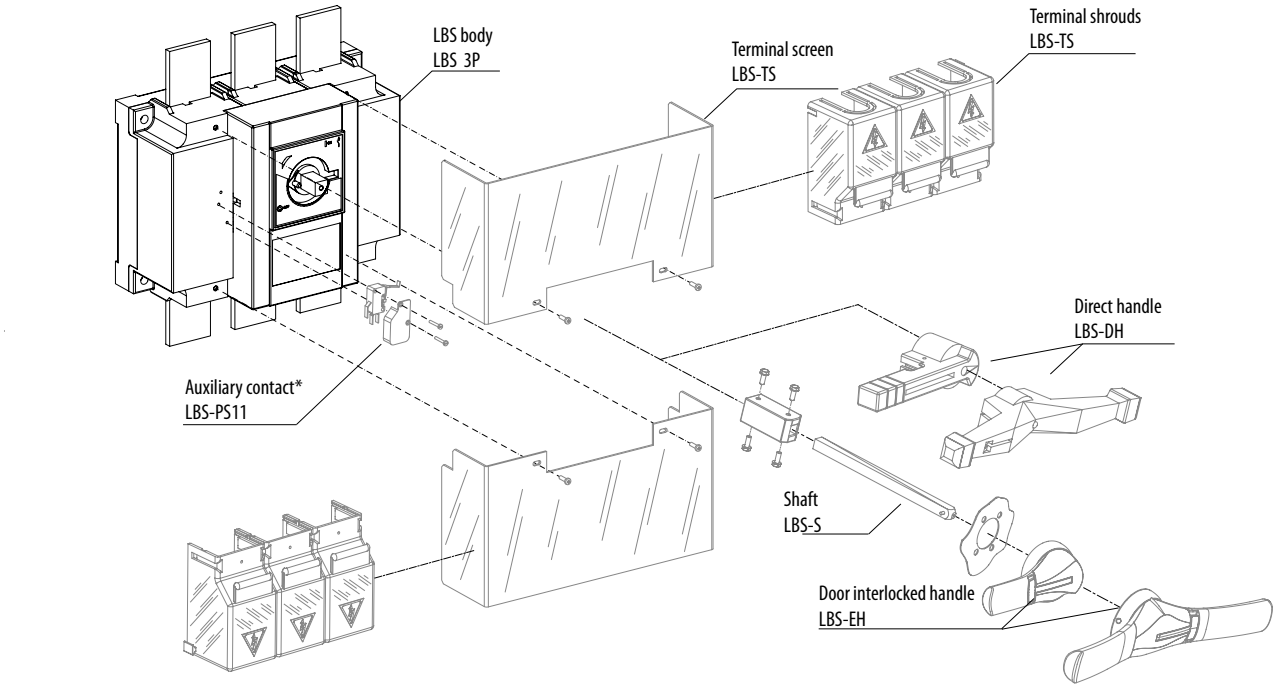
LBSCD series (LBS switch with reduced short circuit current capability) 3/4 POLES

Type	Code No.	I_n [A]	Number of poles	g	
LBSCD 200 3P	004661912	200	3	0,47	1
LBSCD 315 3P	004661913	315	3	1,76	1
LBSCD 400 3P	004661914	400	3	1,85	1
LBSCD 200 4P	004661915	200	4	1,2	1
LBSCD 315 4P	004661916	315	4	2,2	1
LBSCD 400 4P	004661917	400	4	2,28	1

With LBSCD 200 can be applied the same accessories as with LBS 160 (LBS 160 body)
With LBSCD 315 can be applied the same accessories as with LBS 250 (LBS 250 body)
With LBSCD 400 can be applied the same accessories as with LBS 250 (LBS 250 body)

LBSCD 200A 3P

Accessories



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

Direct handle for direct operation

Type	Description	Code No	For use with	g	
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

Door interlocked handle IP65 (shaft not included).

Type	Description	Code No	For use with	g	
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	g	
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

Shaft for door interlocked handle

Type	Description	Code No	For use with	g	
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.

LBS-S320/1600 (CO)

Guiding cone

Type	Description	Code No	For use with	g	
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.

LBS-GC (CLBS-EH80, 125)

Auxiliary contact

Type	I [A]	Description	Code No	For use with	g	
LBS-PS11	16	Auxiliary contact (CO)	004661499	LBS 160-3200A	26	1/30
LBS-2PS11	16	2nd auxiliary contact (CO)	004661918	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

LBS-PS11

Terminal shrouds (covers)

Type	Description	Code No	For use with	g	
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

LBS-TS160 3P (CO)

Terminal screen

Type	Description	Code No	For use with	g	
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

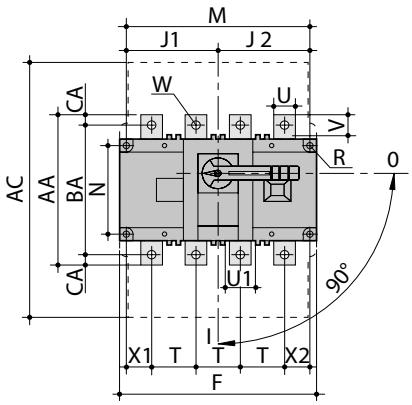
LBS-TS1250 3P

Dimensions

LBS 160 - LBS 630
LBS CD

Direct front operation

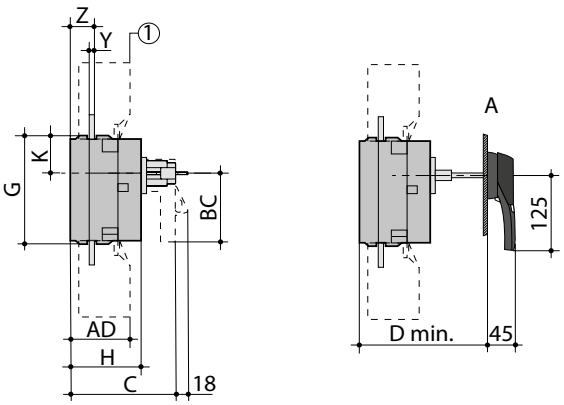
Front view



I. Terminal shrouds

External front operation

Side view



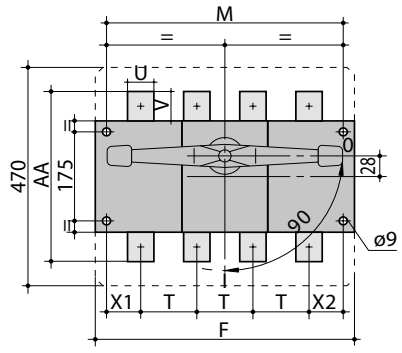
A.Handle type: LBS-EH630

Rating	Overall dimensions (mm)		Terminal shrouds, (mm)	Switch body, (mm)									Switch mounting, (mm)						Connection, (mm)											
(A)	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, CD 200	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, CD 315, CD 400			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

Direct front operation

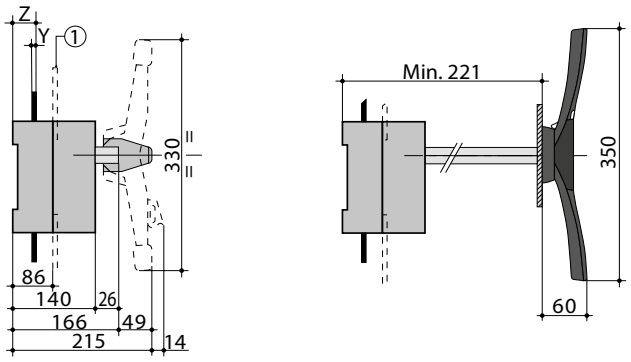
Front view



I. Terminal shrouds

External front operation

Side view



B. Handle type: LBS-EH1600

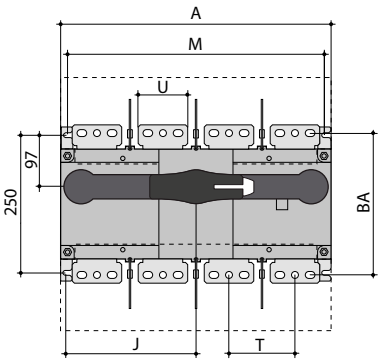
Rating	Switch body, (mm)		Switch mounting, (mm)		Connection, (mm)							
(A)	F (3p)	F (4p)	M (3p)	M (4p)	T	U	V	Y	X1	X2	Z	AA
800 - 1000	280	360	255	335	80	50	60.5	7	47.5	47.5	46.5	321
1250						60	65					330
1600	372	492	347	467	120	90	44	8	53.5	53.5	47.5	288

ETISWITCH / Load Break Switch LBS

LBS 2000 - LBS 3200

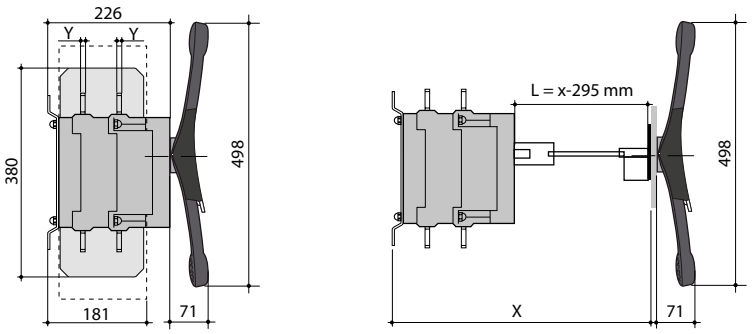
Direct front operation

Front view



External front operation

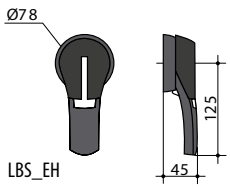
Side view



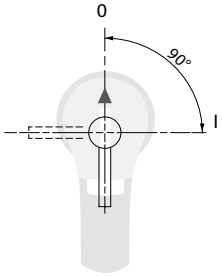
Handle type: LBS-EH3200

Rating	Overall dimensions, (mm)		Switch body, (mm)		Switch mounting, (mm)		Connection, (mm)			
(A)	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

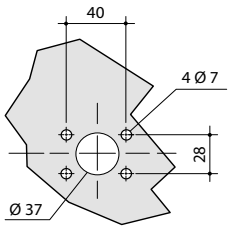
Handle type LBS-EH630



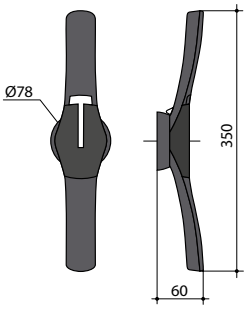
Direct front operation



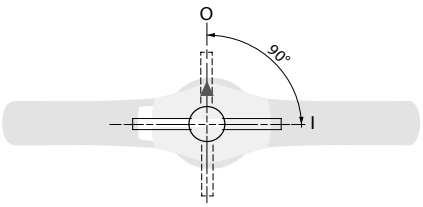
Door drilling



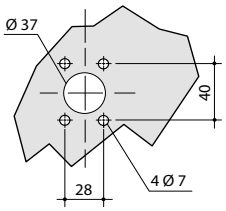
Handle type LBS-EH1600



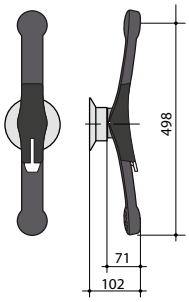
Direct front operation



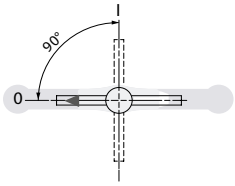
Door drilling



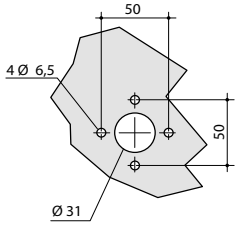
Handle type LBS-EH3200



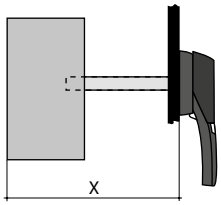
Direct front operation



Door drilling

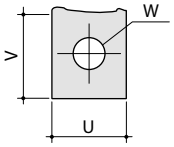


Rating (A)	Dimension X (mm)	Shaft length (mm)
LBS 160	125 - 250	200
	125 - 370	320
	125 - 550	500
LBS 250	135 - 265	200
	135 - 385	320
	135 - 565	500
LBS 400-630	165 - 295	200
	165 - 415	320
	165 - 595	500
LBS 800-1600	221 - 343	200
	221 - 463	320
	221 - 543	400
LBS 2000-3200	415 - 570	200
	415 - 690	320
	415 - 820	450



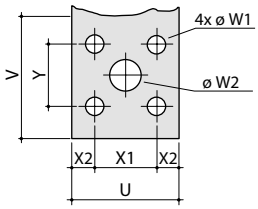
Rating (A)	U (mm)	V (mm)	W (mm)
160	20	25	9
250	25	21.5	11
400	32	29	11
630	45	41.5	13

Connection terminal dimensions:



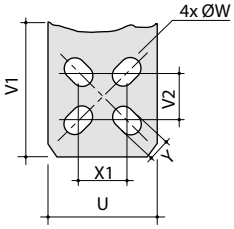
LBS-160-630

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



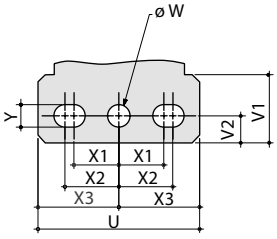
LBS-800-1000

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



LBS-1250

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

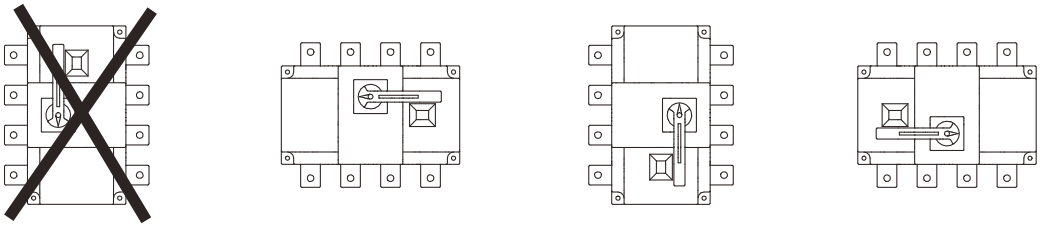


LBS-1600-3200

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

Rating (A)	Contact type	Current nominal (A)	Operating current Ie (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	CO	16	16	4	12	3	2,5	2,5	1	2,5	1,2	0,2

LBS 160...3200 mounting positions:



Connection

Current (A)	Piece	Quantity to order per pole (1)	Code No.
3200	Bridging bar part A		included
3200	Bar - piece E	1	004661602
3200	T piece - part C	1	004661599

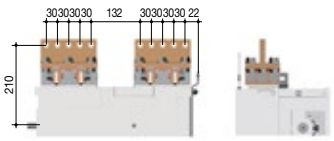
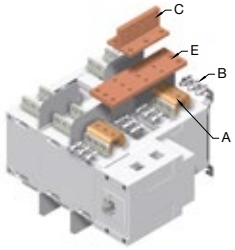


Fig. 2



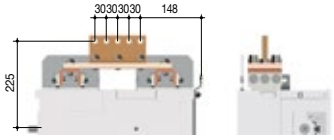


Fig. 3

ETISWITCH Load Break Change Over Switch LBS..CO

Description

LBS CO is manual 3 pole or 4 pole changeover switch with positive break indication in range 160-3200A. It provides changeover under load for two low voltage power circuits, as well as it's safety isolation by double breaking per pole. LBS CO switches have been designed, qualified and tested according to the criteria defined by standard IEC 60947-3 and IEC 60947-6-1. It can be utilised with a direct front or external operation handle.

Advantages

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.

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.
- Connection accessories which facilitate connection, both flat and edgewise connections.

Applications

- Generator manufacturers
- Heating
- Air conditioning
- Ventilation
- Power distribution
- Telecommunications

Load Break Change Over Switch LBS..CO

LBS CO body (no handle included) 3/4 POLES

Type	Code No.	I_n [A]	Number of poles	g	
LBS 160 3P CO	004661550	160	3	3,19	1
LBS 250 3P CO	004661551	250	3	4,68	1
LBS 400 3P CO	004661552	400	3	4,87	1
LBS 630 3P CO	004661553	630	3	10,89	1
LBS 800 3P CO	004661554	800	3	28,20	1
LBS 1000 3P CO	004661555	1000	3	20,00	1
LBS 1250 3P CO	004661556	1250	3	34,25	1
LBS 1600 3P CO	004661557	1600	3	38,80	1
LBS 2000 3P CO	004661558	2000	3	54,30	1
LBS 2500 3P CO	004661559	2500	3	45,00	1
LBS 3200 3P CO	004661560	3200	3	69,00	1
LBS 160 4P CO	004661561	160	4	3,73	1
LBS 250 4P CO	004661562	250	4	5,60	1
LBS 400 4P CO	004661563	400	4	5,87	1
LBS 630 4P CO	004661564	630	4	13,12	1
LBS 800 4P CO	004661565	800	4	36,60	1
LBS 1250 4P CO	004661566	1250	4	38,15	1
LBS 1600 4P CO	004661567	1600	4	43,85	1
LBS 2500 4P CO	004661568	2500	4	66,00	1
LBS 3200 4P CO	004661569	3200	4	82,00	1

In front direct or external front operation

LBS 160A 3P CO

LBS 630A 3P CO

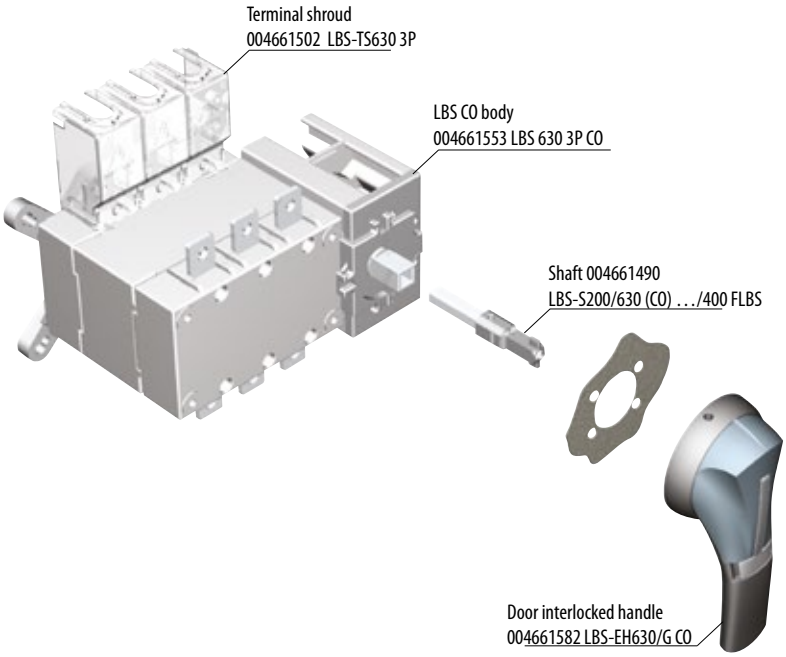
LBS 1600A 3P CO

Characteristics according to IEC 60947-3, IEC 60947-6-1

Type				LBS 160	LBS 250	LBS 400	LBS 630	LBS 800	LBS 1000	LBS 1250	LBS 1600	LBS 2000	LBS 2500	LBS 3200
Current		(In)		160A	250A	400A	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A
Rated insulation voltage		(Ui)	(V)	800	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage		(Uimp)	(kV)	8	12	12	12	12	12	12	12	12	12	12
Thermal current 40°C		(Ith)	(A)	160	250	400	630	800	1000	1250	1600	2000	2500	3200
Rated operational currents (Ie) IEC 60947-3	AC-20 A/B	415V AC	(A)	160	250	400	630	800	1000	1250	1600	2000	2500	3200
	AC-21 A/B	415V AC	(A)											
	AC-22 A/B	415V AC	(A)		200						1250	1600	1600	1600
	AC-23 A/B	415V AC	(A)											
	AC-20 A/B	500V AC	(A)		250						1600	2000	2500	3200
	AC-21 A/B	500V AC	(A)											
	AC-22 A/B	500V AC	(A)		200/250	200/400	500	630	800	1000		-	-	-
	AC-23 A/B	500V AC	(A)	80	200	200	400	400	630	800	1000	-	-	-
	AC-20 A/B	690V AC	(A)	160	250	400	630	800	1000	1250	1600	2000	2500	3200
	AC-21 A/B	690V AC	(A)		200	200	500							
	AC-22 A/B	690V AC	(A)	125	160	160	400	630	800	1000	1000	-	-	-
	AC-23 A/B	690V AC	(A)	63/80	125	125		400	630	800	800	-	-	-
	DC-20 A/B[1]	220V DC	(A)	160	250	400	630	800	1000	1250	1600	-	-	-
	DC-21 A/B[1]	220V DC	(A)			250						-	-	-
	DC-22 A/B[1]	220V DC	(A)								1250	-	-	-
	DC-23 A/B[1]	220V DC	(A)	125	200	200						-	-	-
	DC-20 A/B[1]	440V DC	(A)	160	250	400					1600	-	-	-
	DC-21 A/B[1]	440V DC	(A)	125	200	200					1250	-	-	-
	DC-22 A/B[1]	440V DC	(A)									-	-	-
	DC-23 A/B[1]	440V DC	(A)				500					-	-	-
Rated operational currents (Ie) IEC 60947-6-1	AC-31 A/B	415V AC	(A)	160	250	400	630	800	1000	1250	1600	2000	2500	3200
	AC-32 A/B	415V AC	(A)		200	400	500	800	1000	1250	1600	2000	2000	2000
	AC-33 A/B	415V AC	(A)		200	200	400	800	800	800	1000	1250	1250	1250
Short-circuit capacity Icw, 690 V AC		1 s.(4)	(kA)	7	8	8	10	26	35	35	50	50	50	50
		0,25 s.	(kA)	11,9	22	22	17	48	73,5	73,5	110	110	110	110
Icw, 415 V AC according to IEC 60947-6-1		0,06 s.(5)	(kA)		10	10	12,6	16	20	25	32	40	50	50
Operational power in AC 23(2)		(400V)	(kW)	80	132	280	450	450	560	710	710	710	-	-
		(690V)	(kW)	55/75	90/110	150/185	185/220	185/220	475	475	750	750	-	-
Reactive power		400 V	(kVAr)	75	115	185	290	365	460	575	-	-	-	-
Fuse protected short-circuit withstand (kA rms prospective), 690 V AC														
Associated fuse rating			(A)	160	250	400	630	800	1000	1250	2x800	-	-	-
Prospective short-circuit current			(kA)	100	50	50	50	50	100	100	100	100	100	-
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s (3)														
Rated short-time withstand current Icw		0,3 s.	(kA)	12	15	15	17	47	64	64	78	78	78	78
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	2x100x10	2x100x10	4x100x10
Maximum Cu busbar width (Cu)		mm		25	32	32	50	63	63	63	100	100	100	100
Tightening torque min/max		Nm		9/13	20/26	20/26	20/26	20/26	20/26	20/26	40/45	40/45	40/45	40/45
Durability (number of operating cycles)		cycles		10 000	8 000	5 000	5 000	4 000	4 000	4 000	3 000	3 000	3 000	3 000
Power dissipation		W/pole		3,2	6	15,5	35	40	52,2	80	95	-	-	-

Category with index A = frequent operation
Category with index B = infrequent operation.
(1) 3-pole device with 2 poles in series for the „+" and 1 pole for the „-", 4-pole device with 2 poles in series per polarity.
(2) The power value is given for information only, the current values vary from one manufacturer to another.
(3) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s.
(4) Data at 415 VAC
(5) Data at 30 ms

Accessories



Direct handle for direct operation

Type	Description	Code No	For use with	g	
LBS-DH630/B (CO)	Direct handle, black	004661580	LBS 160-630A CO	153	1/25
LBS-DH1600/B (CO)	Direct handle, black	004661581	LBS 800-1600A CO	238	1/15
LBS-DH3200/B (CO)	Direct handle, black	004661482	LBS 2000-3200A CO	295	1/20

Type definition: Handle type / color initials

LBS-DH630/B CO

Door interlocked handle IP65 (shaft not included)

Type	Description	Code No	For use with	g	
LBS-EH630/G CO	Door interlocked handle, grey front	004661582	LBS 160-630A CO	250	1/20
LBS-EH1600/G CO	Door interlocked handle, grey front	004661583	LBS 800-1600A CO	340	1/10
LBS-EH3200/BL CO	Door interlocked handle, blue front	004661584	LBS 2000-3200A CO	1.500	1

Type definition: Handle type / color initials

LBS-EH630/G CO LBS-EH1600/G CO LBS-EH3200/BL

Shaft for door interlocked handle

Type	Description	Code No	For use with	g	
LBS-S200/630 (C0).../400 FLBS	Shaft, 200mm, 10x10mm	004661490	LBS-EH630/G C0	160	1/25
LBS-S200/1600 (C0)	Shaft, 200mm, 15x12mm	004661491	LBS-EH1600/G C0	360	1/25
LBS-S200/3200 (C0)	Shaft, 200mm, 15x15mm	004661492	LBS-EH3200/BL C0	350	1/10
LBS-S320/630 (C0).../400 FLBS	Shaft, 320mm, 10x10mm	004661493	LBS-EH630/G C0	250	1/50
LBS-S320/1600 (C0)	Shaft, 320mm, 15x12mm	004661494	LBS-EH1600/G C0	490	1/25
LBS-S320/3200 (C0)	Shaft, 320mm, 15x15mm	004661495	LBS-EH3200/BL C0	376	1/15
LBS-S500/630 (C0).../400 FLBS	Shaft, 500mm, 10x10mm	004661496	LBS-EH630/G C0	390	1/20
LBS-S400/1600(C0)	Shaft, 400mm, 15x12mm	004661497	LBS-EH1600/G C0	580	1/20
LBS-S450/3200(C0)	Shaft, 450mm, 15x15mm	004661498	LBS-EH3200/BL C0	971	1/20

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

LBS-S320/1600 (C0)

Guiding cone

Type	Description	Code No	For use with	g	
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.

LBS-GC (CLBS-EH80, 125)

Auxiliary contact

Type	I [A]	Description	Code No.	For use with	g	
LBS-PS11 C0	16	Auxiliary contact (C0)	004661585	LBS 160-1600A C0	25	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. One reference code includes 1 set of aux. contacts (one for position 1 + one for position 2), max 2 sets can be mounted in switch body. At LBS2000...3200 C0 2 sets of auxiliary contacts are included 2 pcs for position 1 and 2 pcs for position 2.

LBS-PS11 C0

Terminal shrouds (covers)

Type	Description	Code No	For use with	g	
LBS-TS160 3P (C0)	Terminal shroud	004661500	LBS 160 3P C0	79	1/20
LBS-TS250 3P (C0)	Terminal shroud	004661501	LBS 250-400A 3P C0	121	1/10
LBS-TS630 3P (C0)	Terminal shroud	004661502	LBS 630A 3P C0	242	1/5
LBS-TS4P/160 (C0)	Terminal shroud	004661506	LBS 160A 4P C0	100	1/15
LBS-TS4P/250 (C0)	Terminal shroud	004661507	LBS 250-400A 4P C0	157	1/8
LBS-TS4P/630 (C0)	Terminal shroud	004661508	LBS 630A 4P C0	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...630 C0.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.

LBS-TS160 3P (C0)

Terminal screens

Type	Description	Code No	For use with	g	
LBS-TS1250 3P CO	Terminal screen	004661586	LBS 800-1250A CO, MLBS 800 -1250 3P	257	1
LBS-TS1600 3P CO	Terminal screen	004661587	LBS 1600A CO	520	1
LBS-TS1250 4P CO	Terminal screen	004661588	LBS 800-1250A CO, MLBS 800 -1250 4P	328	1
LBS-TS1600 4P CO	Terminal screen	004661589	LBS 1660A CO	632	1

At LBS2000…3200A terminal screens are included

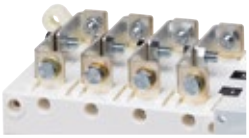
One reference includes 1pc for top or bottom contacts , to protect all, 2 references shall be ordered.

LBS-TS1250 3P CO

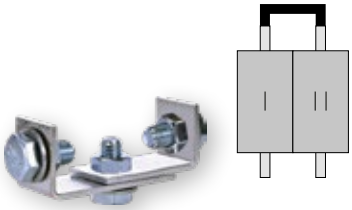
Bridging bars

Type	I_n [A]	Description	Code No.	For use with	Section [mm]	g	
LBS-BR160 1P CO	160A	Bridging bar	004661590	LBS 160 CO 3P/4P	20x2,5	187	1/50
LBS-BR250 1P CO	250A	Bridging bar	004661591	LBS 250 CO 3P/4P	25x25	173	1/25
LBS-BR400 1P CO	400A	Bridging bar	004661592	LBS 400 CO 3P/4P	32x5	296	1/25
LBS-BR630 1P CO	630A	Bridging bar	004661593	LBS 630 CO 3P/4P	50x5	644	1/25
LBS-BR1000 1P CO	800-1000A	Bridging bar	004661594	LBS 800-1000 CO 3P/4P, MLBS 800 3P/4P	50x6	429	1
LBS-BR1250 1P CO	1250A	Bridging bar	004661595	LBS 1250 CO 3P/4P, MLBS 800 3P/4P	60x8	730	1/5
LBS-BR1600 1P CO	1600A	Bridging bar	004661596	LBS 1600 CO 3P/4P	90x10	2.778	1

One reference code includes 1 pc of item, order for each pole separately



LBS-BR160 1P CO

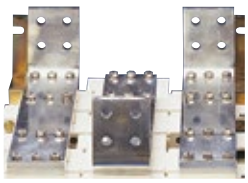


LBS-BR250 1P CO

Bridging bars

Type	Description	Code No	For use with	g	
LBS-BR2000-2500 CO (con. A)	Bridging bar part A	004661597	LBS 2000-2500 CO 3P/4P	863	1
LBS-BRC2000-3200 CO (T-pc C)	T piece - part C	004661599	LBS 2000-3200 CO 3P/4P	2.523	1
LBS-BRD2000-3200 CO (brack. D)	Right angle - part D	004661600	LBS 2000-3200 CO 3P/4P	943	1
LBS-BRE2000-2500 CO (bar E)	Bar - piece E	004661601	LBS 2000-2500A CO	3.500	1
LBS-BRE3200 CO (bar E)	Bar - piece E	004661602	LBS 3200A CO	3.500	1

One reference code includes 1 pc of item, for correct qty see technical data, page 619



LBS-BR1600 1P CO

Use

Enables:

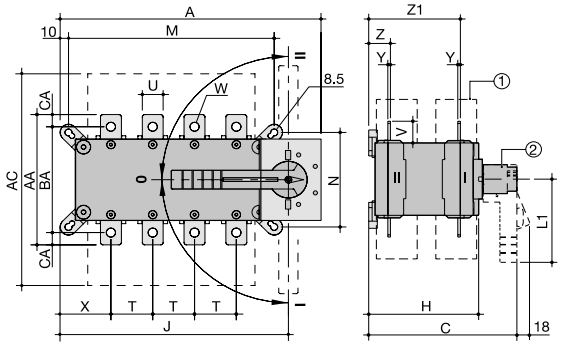
- To allow connection between the two power terminals from a same pole for 2000 to 3200A ratings (Fig. 1 and Fig. 2 on page 619). ;
- Top or bottom bridging connection (Fig. 3 on page 619).

For 3200 A rating, the connection pieces (part A) are delivered bridged from factory. Bolt sets must be ordered separately.

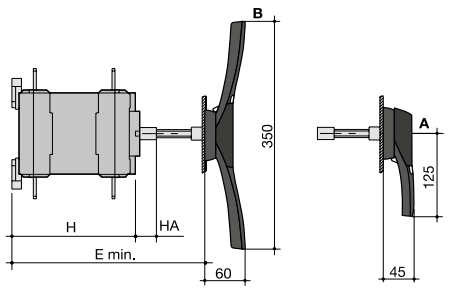
Dimensions

LBS 160 CO - LBS 1600 CO 3/4 p

Direct front operation
Front view



External front operation
Side view



A. Handle type LBS-EH630 CO for external operation: 160 to 630 A

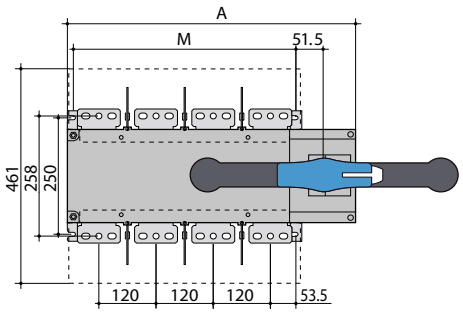
B. Handle type LBS-EH1600 CO for external operation: 800 to 1600 A

I. Terminal shrouds
II. Direct handle operation:
- L1 = 140 mm: 160 to 630 A;
- L1 = 210 mm: 800 to 1600 A;

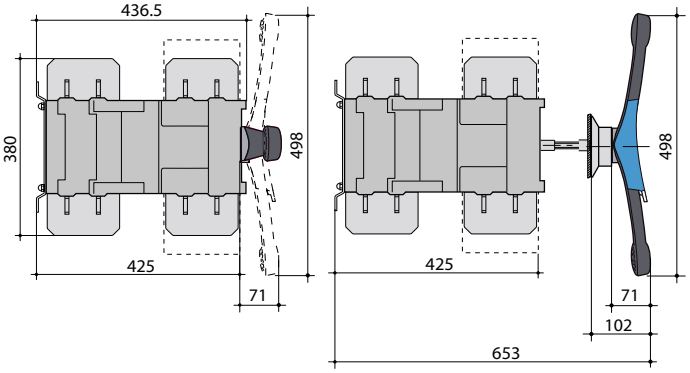
Rating	Overall dimensions, (mm)				Terminal shrouds, (mm)	Switch body, (mm)				Switch mounting, (mm)		Connection, (mm)											
(A)	A (3p)	A (4p)	C	E min	AC	H	HA	J (3p)	J (4p)	M (3p)	M (4p)	N	T	U	V	W	X (3p)	X (4p)	Y	Z	Z1	AA	BA	CA
160	221	251	218	208 - 436	235	148	25	182	212	156	186	101	36	20	25	8.5	56	50	3.5	28	124	135	115	10
250	262	312	218	208 - 436	280	148	25	223	273	196	246	116	50	25	30	11	61	61	3.5	30	124	160	130	15
400	262	312	218	208 - 436	280	148	25	223	273	196	246	116	50	35	35	11	61	61	3.5	30	124	170	140	15
630	319	379	295	285 - 513	400	225	25	272	332	246	306	176	65	45	50	13	70.5	65.5	5	43	180	260	220	20
800	386	466	375	425 - 577	459	298	29	306.5	386.5	255	336	250	80	50	60.5	15	48	48	7	66.5	253.5	321		26.5
1000	386	466	375	425 - 577	459	298	29	306.5	386.5	255	336	250	80	50	60.5	15	48	48	7	66.5	253.5	321		26.5
1250	386	466	375	425 - 577	459	298	29	306.5	386.5	255	336	250	80	60	65	16x11	48	48	7	66.5	255.5	330		29.5
1600	478	598	375	425 - 577	461	298	29	388.5	518.5	347	467	250	120	90	43.5	12.5x5	54	54	8	66.5	255.5	288		15

LBS 2000 CO - LBS 3200 CO 3/4 P

Direct front operation
Front view



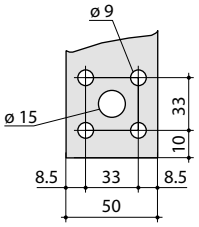
Side view



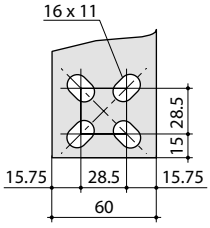
Rating (A)	A (mm) (3p)	A (mm) (4p)	M (mm) (3p)	M (mm) (4p)
2000-3200	478	598	347	467

Connection terminals

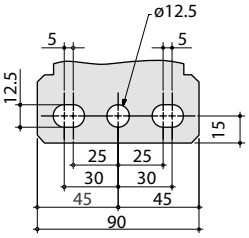
LBS 800 3/4 P CO



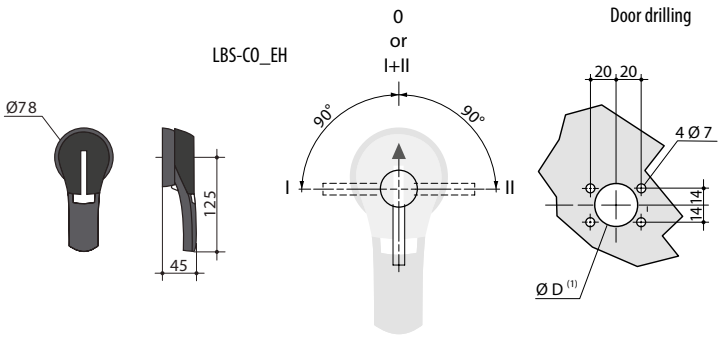
LBS 1250 3/4 P CO



LBS 1600 - 3200 3/4 P CO

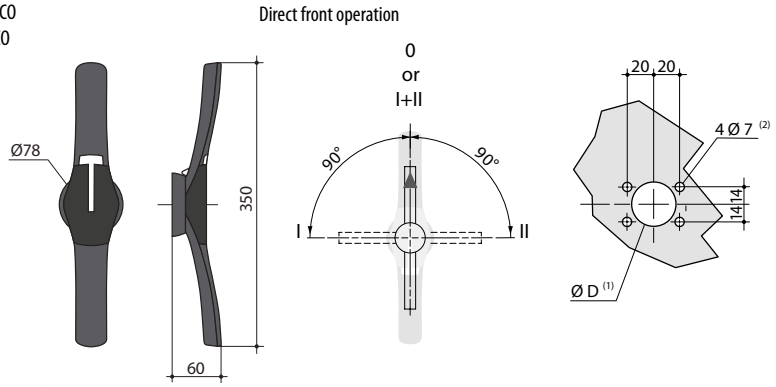


Handle type LBS-EH630 CO
for LBS 160 - 630 3/4P CO



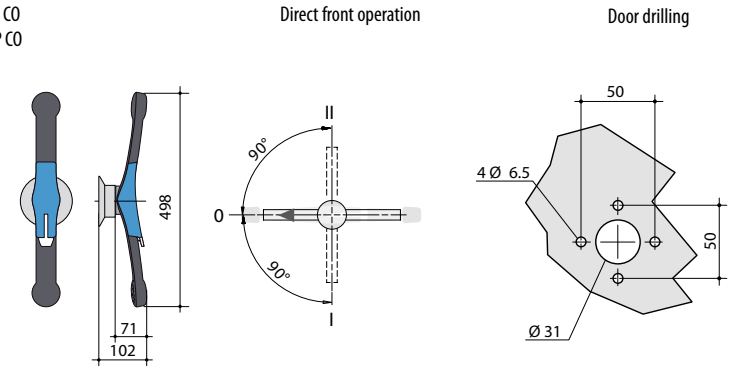
(1) Ø31 to Ø37: rear screw mounting Ø37: front clip mounting

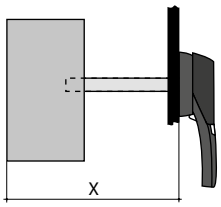
Handle type LBS-EH1600 CO
for LBS 800 - 1600 3/4P CO



(1) Ø31 to Ø37: rear screw mounting Ø37: front clip mounting
(2) Ø6 to Ø7: clip mounting

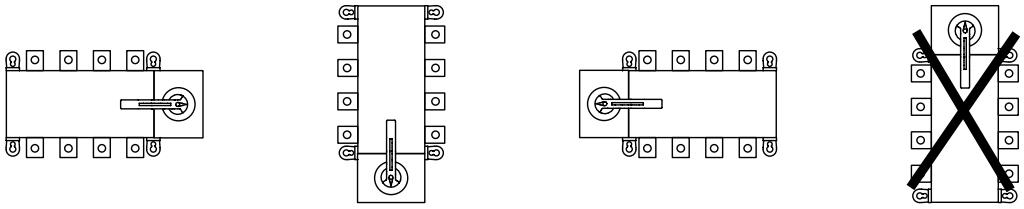
Handle type LBS-EH3200 CO
for LBS 2000 - 3200 3/4P CO



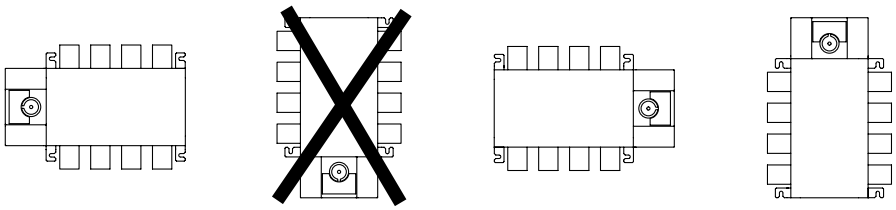


Rating (A)	Dimension X (mm)	Length (mm)
160 - 400	210 - 310	200
	210 - 430	320
500 - 630	280 - 390	200
	280 - 510	320
800 - 1800	425 - 577	200
	425 - 697	320
2000 - 3200	653 - 803	320
	653 - 923	320
	653 - 1053	450

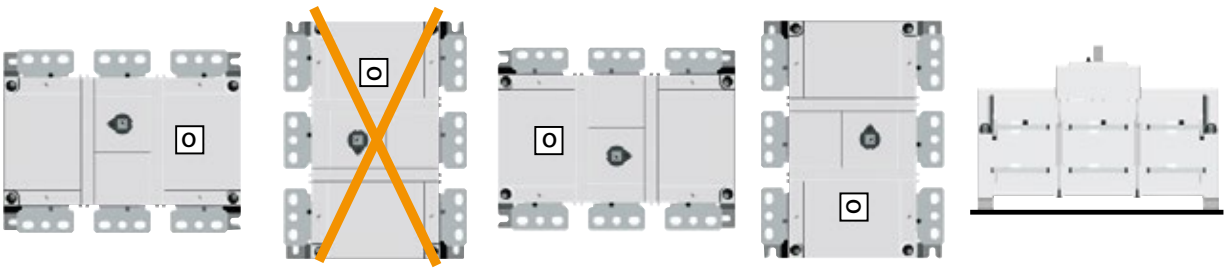
LBS 160…630 CO mounting positions



LBS 800…1600 CO mounting positions



LBS 2000…3200 CO mounting positions



Connection LBS 2000-3200A CO

Enables:

- To allow connection between the two power terminals from a same pole for 2000 to 3200A ratings (Fig. 1 and Fig 2)
- Top or bottom bridging connection (Fig. 3).

For 3200 A rating, the connection pieces (part A) are delivered bridged from factory. Bolt sets must be ordered separately.

Current (A)	Piece	Quantity to order per pole [1]	Code No.
2000 - 2500	Bridging bar part A	2	004661597
3200	Bridging bar part A		included

Current (A)	Piece	Quantity to order per pole [1]	Code No.
2000 - 2500	Bridging bar part A	2	004661597
2000 - 2500	T piece - part C	2	004661599
2000 - 2500	Right angle - part D	2	004661600
3200	Bridging bar part A		included
3200	T piece - part C	2	004661599
3200	Right angle - part D	2	004661600

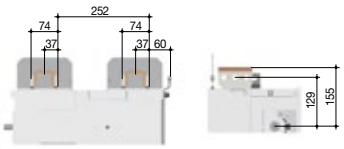
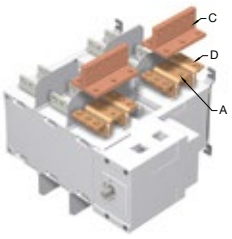


Fig. 1

Current (A)	Piece	Quantity to order per pole [1]	Code No.
2000 - 2500	Bridging bar part A	2	004661597
2000 - 2500	Bar - piece E	1	004661601
2000 - 2500	T piece - part C	1	004661599
3200	Bridging bar part A		included
3200	Bar - piece E	1	004661602
3200	T piece - part C	1	004661599



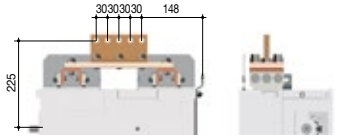
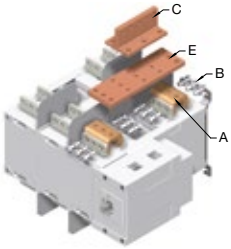


Fig. 3



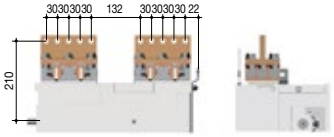


Fig. 2

ETISWITCH Motorised Change Over Load Break Switch MLBS..CO (1-0-2)

Description

MLBS CO is motorised changeover switch with positive break indication in range 63 to 125A (4 pole) and 250 to 630A (3 pole). It enables the on load transfer of two three-phase supplies via remote volt-free contacts, from either an external automatic controller, using pulse logic, or a switch. It is intended for use in low voltage power systems where interruption of the load supply is acceptable during transfer. MLBS CO switches have been designed, qualified and tested according to the criteria defined by standard IEC 60947-3 and IEC 60947-6-1. It can be utilised with a direct front or external operation handle.

Advantages

MLBS CO uses stable position technology, ensuring constant pressure on the contacts and preventing premature faults. In addition, they do not require a power supply to maintain position, thus protecting their loads from voltage fluctuations. The control and motorisation section can be replaced simply by removing 4 screws, with no work required on the installation cabling.Their design and compact size, enables integration within most 200 mm deep enclosures. Maintenance can be carried out easily under load, with manual operation still available. The MLBS CO is available in two supply versions, each with a broad range (+/-30%):

- 230 VAC single power supply
- 12 VDC power supply

Applications

- Generator manufacturers
- Heating
- Air conditioning
- Ventilation
- Telecommunications

Motorised Change Over Load Break Switch MLBS..CO (1-0-2)

4p Motorised Change Over Load Break Switch MLBS..CO 63 A - 125 A

Type	Description	Code No.	I_n [A]	g	
MLBS 63 4P CO 12VDC	1-0-2 (12V DC)	004661650	63	3.240	1
MLBS 100 4P CO 12VDC	1-0-2 (12V DC)	004661651	100	3.250	1
MLBS 125 4P CO 12VDC	1-0-2 (12V DC)	004661652	125	3.250	1
MLBS 63 4P CO 230VAC	1-0-2 (230V AC)	004661653	63	3.340	1
MLBS 100 4P CO 230VAC	1-0-2 (230V AC)	004661654	100	3.350	1
MLBS 125 4P CO 230VAC	1-0-2 (230V AC)	004661655	125	3.350	1
MLBS 250 4P CO 230VAC	1-0-2 (230V AC)	004661919	250	9,720	1
MLBS 400 4P CO 230VAC	1-0-2 (230V AC)	004661920	400	10,200	1
MLBS 630 4P CO 230VAC	1-0-2 (230V AC)	004661921	630	17,980	1
MLBS 800 4P CO 230VAC	1-0-2 (230 VAC)	004661982	800	47,6	1
MLBS 1250 4P CO 230VAC	1-0-2 (230 VAC)	004661983	1250	49,5	1

3p Motorised Change Over Load Break Switch MLBS..CO 250 - 630 A

Type	Description	Code No.	I_n [A]	g	
MLBS 250 3P CO 230VAC	1-0-2 (230 VAC)	004661870	250	8,93	1
MLBS 400 3P CO 230VAC	1-0-2 (230 VAC)	004661871	400	9,16	1
MLBS 630 3P CO 230VAC	1-0-2 (230 VAC)	004661872	630	15,56	1
MLBS 800 3P CO 230VAC	1-0-2 (230 VAC)	004661980	800	43	1
MLBS 1250 3P CO 230VAC	1-0-2 (230 VAC)	004661981	1250	44,5	1

For additional accessories (bridging bars and terminal screens) see page 615

Characteristics according to IEC 60947-3, IEC 60947-6-1

Type				MLBS 63 CO	MLBS 100 CO	MLBS 125 CO
Current		(In)	(A)	63A	100A	125A
Rated insulation voltage (power circuit)		(Ui)	(V)	800	800	800
Rated insulation voltage (operation circuit)		(Ui)	(V)	300	300	300
Rated impulse withstand voltage (power circuit)		(U imp)	(kV)	6	6	6
Rated impulse withstand voltage (operation circuit)		(U imp)	(kV)	4	4	4
Thermal current 40°C		(Ith)	(A)	63	100	125
Rated operational currents (Ie) according to IEC 60947-3	AC-20A/B	415V	(A)	63	100	125
	AC-21A/B	415V	(A)			100/125
	AC-22A/B	415V	(A)			100
	AC-23A/B	415V	(A)	-/63	-/63	-/63
Rated operational currents (Ie) according to IEC 60947-6-1	AC-31B	415V	(A)	63	100	125
	AC-32B	415V	(A)	63	80	80
Short-circuit capacity Icw		1 s.	(kA)	2,5	2,5	2,5
		0,25 s.	(kA)	4,5	4,5	4,5
Fuse protected short-circuit withstand (kA rms prospective)						
Associated fuse rating			(A)	63	100	125
Prospective short-circuit current			(kA)	50	25	15
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s(1)						
Rated short-time withstand current Icw		0,3 s.	(kA)	3,5	3,5	3,5
Connection						
Maximum Cu cable cross-section		mm^2		50	50	50
Tightening torque min/max		Nm		1,2/3	1,2/3	1,2/3
Switching time (Standard setting)						
1-0 or 2-0		(ms)		500	500	500
1-2 or 2-1		(ms)		1000	1000	1000
Duration of '"electrical blackout' 1-2 minimum		(ms)		500	500	500
Power supply						
Power supply 12 V DC min/max		(V)		9/15	9/15	9/15
Power supply 230 V AC min/max		(V)		160/310	160/310	160/310
Control supply power demand						
Power supply 12 V DC inrush/nominal		(VA)		200/40	200/40	200/40
Power supply 230 V AC inrush/nominal		(VA)		200/40	200/40	200/40
Durability (number of operating cycles)		cycles		10 000	10 000	10 000
Power dissipation		W/pole		1,7	4,5	6

(1) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s.

Characteristics according to IEC 60947-3, IEC 60947-6-1

Type				MLBS 250 CO	MLBS 400 CO	MLBS 630 CO
Current	(In)	(A)		250	400	630
Rated insulation voltage (power circuit)	(Ui)	(V)		1000		
Rated insulation voltage (operation circuit)	(Ui)	(V)		300		
Rated impulse withstand voltage (power circuit)	(U imp)	(kV)		12		
Rated impulse withstand voltage (operation circuit)	(U imp)	(kV)		4		
Thermal current 40°C	(Ith)	(A)		250	400	630
Rated operational currents (Ie) according to IEC 60947-3	AC-21 A / AC-21 B	415 VAC	(A)	250/250	400/400	630/630
	AC-22 A / AC-22 B	415 VAC	(A)	250/250	400/400	630/630
	AC-23 A / AC-23 B	415 VAC	(A)	200/200	400/400	500 /630
	AC-21 A / AC-21 B	500 VAC	(A)	250/250	400/400	630/630
	AC-22 A / AC-22 B	500 VAC	(A)	200/250	200/400	500/500
	AC-23 A / AC-23 B	500 VAC	(A)	200/200	200/200	400/400
	AC-21 A / AC-21 B	690 VAC[3]	(A)	200/200	200/200	500/500
	AC-22 A / AC-22 B	690 VAC[3]	(A)	160/160	160/160	400/400
	AC-23 A / AC-23 B	690 VAC[3]	(A)	125/125	125/125	400/400
	DC-21 A / DC-21 B	220 VDC	(A)	250/250	250/250	630/630
	DC-22 A / DC-22 B	220 VDC	(A)	250/250	250/250	630/630
	DC-23 A / DC-23 B	220 VDC	(A)	200/200	200/200	630/630
	DC-21 A / DC-21 B	440 VDC [2]	(A)	200/200	200/200	630/630
	DC-22 A / DC-22 B	440 VDC [2]	(A)	200/200	200/200	630/630
	DC-23 A / DC-23 B	440 VDC [2]	(A)	200/200	200/200	630/630
Rated operational currents (Ie) according to IEC 60947-6-1	AC-31 B	415 VAC	(A)	250	400	630
	AC-32 B	415 VAC	(A)	200	400	500
	AC-33 B	415 VAC	(A)	200	200	400
Current rated as conditional short-circuit with fuse gG DIN, according to IEC 60947-3						
Prospective fuse protected short-circuit withstand		415 VAC	(kA)		50	
Prospective fuse protected short-circuit withstand		690 VAC	(kA)		50	
Associated fuse rating			(A)	250	400	630
Short-circuit withstand without protection as per IEC 60947-3						
Rated short-time withstand current Icw at 415 VAC		0,3 s	(kA)		15(4)	17(4)
Rated short-time withstand current Icw at 415 VAC		1s	(kA)		8(4)	10(4)
Rated peak withstand current at 415 VAC			(kA)		30	45
Short-circuit withstand without protection as per IEC 60947-6-1						
Rated short-time withstand current Icw at 415 VAC		30 ms	(kA)		10	
Rated short-time withstand current Icw at 415 VAC		60 ms	(kA)			12,6
Connection						
Minimum Cu cable cross-section as per IEC 60947-1			(mm^2)	95	185	2x120
Recommended Cu busbar cross-section			(mm^2)			2x40x5
Maximum Cu cable cross-section			(mm^2)	150	240	2x300
Maximum Cu busbar width			(mm)		32	50
Min./max. tightening torque			Nm		20/26	40/45
Switching time (rated voltage, after receiving command)						
Transfer time I-II or II-I			(s)		0,9	0,95
I-0 or II-0			(s)		0,5	0,55
Contact transfer time ("black-out" I-II) minimum			(s)		0,4	
Power supply						
Min./max. power		VAC			166/332	
Control supply power demand						
Demand/rated power		(VA)			276/115	276/150
Durability (number of operating cycles)		cycles			8.000	5.000

(1) Category with index A = frequent operation - Category with index B = infrequent operation.
(2) 3-pole device with 2 pole in series for the "+" an 1 pole for the "-".
(3) Interphase barriers must be installed on the products.
(4) Values given at 690 VAC.

Technical data

Type		MLBS 800 CO	MLBS 1250 CO
Thermal current Ith at 40°C		800 A	1250 A
Frame size		B6	B6
Rated insulation voltage Ui (V) (power circuit)		1000	1000
Rated impulse withstand voltage Uimp (kV) (power circuit)		12	12
Rated insulation voltage Ui (V) (control circuit)		300	300
Rated impulse withstand voltage Uimp (kV) (control circuit)		4	4
Rated operational currents Ie (A) according to IEC 60947-6-1			
Rated voltage	Utilisation category		
415 VAC	AC-31 B	800	1250
415 VAC	AC-32 B	800	1250
415 VAC	AC-33 B	800	1000
Rated operational currents Ie (A) according to IEC 60947-3			
Rated voltage	Utilisation category	A/B(1)	A/B(1)
415 VAC	AC-21 A / AC-21 B	800/800	1250/1250
415 VAC	AC-22 A / AC-22 B	800/800	1250/1250
415 VAC	AC-23 A / AC-23 B	800/800	1250/1250
500 VAC	AC-21 A / AC-21 B	800/800	1250/1250
500 VAC	AC-22 A / AC-22 B	630/630	1000/1000
500 VAC	AC-23 A / AC-23 B	630/630	800/800
690 VAC(3)	AC-21 A / AC-21 B	800/800	1250/1250
690 VAC(3)	AC-22 A / AC-22 B	630/630	1000/1000
690 VAC(3)	AC-23 A / AC-23 B	630/630	800/800
220 VDC	DC-21 A / DC-21 B	800/800	1250/1250
220 VDC	DC-22 A / DC-22 B	800/800	1250/1250
220 VDC	DC-23 A / DC-23 B	800/800	1250/1250
440 VDC (2)	DC-21 A / DC-21 B	800/800	1250/1250
440 VDC (2)	DC-22 A / DC-22 B	800/800	1250/1250
440 VDC (2)	DC-23 A / DC-23 B	800/800	1250/1250
Current rated as conditional short-circuit with fuse gG DIN, according to IEC 60947-3			
Prospective fuse protected short-circuit withstand at 415 VAC(kA rms)		50	100
Prospective fuse protected short-circuit withstand at 690 VAC(kA rms)		50	50
Associated fuse rating (A)		800	1250
Short-circuit withstand without protection as per IEC 60947-3			
Rated short-time withstand current 0.3s Icw at 415 VAC (kA rms)		64	64
Rated short-time withstand current 1s Icw at 415 VAC (kA rms)		35	35
Rated peak withstand current at 415 VAC (kA peak)		55	80
Connection			
Minimum Cu cable cross-section as per IEC 60947-1 (mm^2)		2 x 185	
Recommended Cu busbar cross-section (mm^2)		2 x 50 x 5	2 x 60 x7
Maximum Cu cable cross-section (mm^2)		4 x 185	4 x 185
Maximum Cu busbar width (mm)		63	63
Min./max. tightening torque (Nm)		9/13	20/26
Power dissipation (W/pole)		41.7	93.3
Switching time (rated voltage, after receiving command)			
Transfer time I-II or II-I (s)		2.8	2.8
I-0 or II-0 (s)		1.4	1.4
Contact transfer time ("black-out" I-II) minimum (s)		1.4	1.4
Power supply			
Min./max. auxiliary power supply (VAC)		166/332	166/332
Control supply power demand			
Inrush / nominal power (VA) - ATyS r,		460/184	460/184
Inrush / nominal power (VA) - ATyS g , p		482/206	482/206
Mechanical specifications			
Durability (number of operating cycles)		4,000	4,000
Weight ATyS r 3 P / 4 P (kg)		27.9/ 32.2	28.9/ 33.6
Weight ATyS g, p 3 P / 4 P (kg)		29.0/ 33.3	30.0/ 34.7

(1) Category with index A = frequent operation - Category with index B = infrequent operation.
(2) 3-pole device with 2 pole in series for the "+" an 1 pole for the "-". 4-pole device with 2 poles in series by polarity.
(3) Interphase barriers must be installed on the products.
(4) Values given at 690 VAC.

Accessories for 4 pole MLBS..CO 63 - 630A

Bridging bars

Type	Description	Code No.	For use with	g	
MLBS-BR125 4P CO	Bridging bars	004661700	MLBS 63-125A 4P	160	1/100

For bridging power terminals on the top or bottom side of the switch, one reference code includes complete set of 4 pcs

MLBS-BR125 4P CO

Terminal shrouds for source side

Type	Description	Code No.	For use with	g	
MLBS-TSIN 4P CO	Terminal shrouds for source side	004661701	MLBS 63-125A 4P	120	1/50

IP2X protection against direct contact with terminals or connecting parts. Under one reference code 2 pcs are included for source or for load side

Terminal shrouds for load side

Type	Description	Code No.	For use with	g	
MLBS-TSOUT 4P CO	Terminal shrouds for load side	004661702	MLBS 63-125A 4P	140	1/40

IP2X protection against direct contact with terminals or connecting parts. Under one reference code 2 pcs are included for source or for load side

MLBS-TSIN 4P CO

Bridging bars

Type	I [A]	Description	Code No.	For use with	Section [mm]	g	
LBS-BR250 1P CO	250	Bridging bar	004661591	MLBS 250 4P	25x25	173	1/25
LBS-BR400 1P CO	400	Bridging bar	004661592	MLBS 400 4P	32x5	296	1/25
LBS-BR630 1P CO	630	Bridging bar	004661593	MLBS 630 4P	50x5	644	1/25

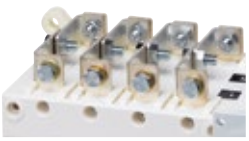
One reference code includes 1 pc of item, order for each pole separately

LBS-TS160 3P (CO)

Terminal shrouds (covers)

Type	Description	Code No.	For use with	g	
LBS-TS4P/250 (CO)	Terminal shroud	004661507	MLBS 250-400 4P	157	1/8
LBS-TS4P/630 (CO)	Terminal shroud	004661508	MLBS 630 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...630 CO.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.



LBS-BR160 1P CO

Auxiliary contacts

Type	I_n [A]	Description	Code No.	For use with	g	
MLBS-PS11	16	Auxiliary contact CO	004661873	MLBS 250…630	120	1/100

*MLBS are already supplied with 1 NO aux contact for all three positions as standard.
** Pre-break and signalling of positions I and II: each reference provides 1 NO/NC auxiliary contact for positions I and II.

MLBS-PS11

Accessories for 3 pole MLBS..CO 250 - 630A

Terminal shrouds

Type	Code No.	For use with	g	
LBS-TS250 3P (CO)	004661501	MLBS 250, 400 3P CO 230VAC	121	1/10
LBS-TS630 3P (CO)	004661502	MLBS 630 3P CO 230VAC	242	1/5

To fully shroud: front, rear, top and bottom, 4 pcs shall be ordered. To shroud front top and bottom, 2 pcs shall be ordered.

LBS-TS250 3P CO

Bridging bars

Type	I [A]	Description	Code No.	For use with	Section [mm]	g	
LBS-BR630 1P CO	630	Bridging bar	004661593	MLBS 250...630	50x5	644	1/25

One reference code includes 1 pc of item, order for each pole separately

LBS-BR630 1P CO

Auxiliary contacts

Type	I_n [A]	Description	Code No.	For use with	g	
MLBS-PS11	16	Auxiliary contact CO	004661873	MLBS 250…630	120	1/100

*MLBS are already supplied with 1 NO aux contact for all three positions as standard.

** Pre-break and signalling of positions I and II: each reference provides 1 NO/NC auxiliary contact for positions I and II.

MLBS-PS11

MLBS accessories for wiring

For use with MLBS the voltage sensing tags allow voltage to be tapped directly off of power terminals to provide a supply to, for example, a control circuit or source presence indicator lamps. Voltage sensing tags are equipped with a Faston connector and can be mounted on the top or bottom side of the transfer switch. With MLBS this accessory allows easy connection to an ATSC25 controller via the ATSC25 cable harness.
With MLBS 800A and above, voltage taps are already integrated!

Voltage taps

Type	Code No.	For use with	g	
MLBS-VT400r	004661985	MLBS 250-400 3P/4P	40	40
MLBS-VT630r	004661986	MLBS 630 3P/4P	100	30

S1L1

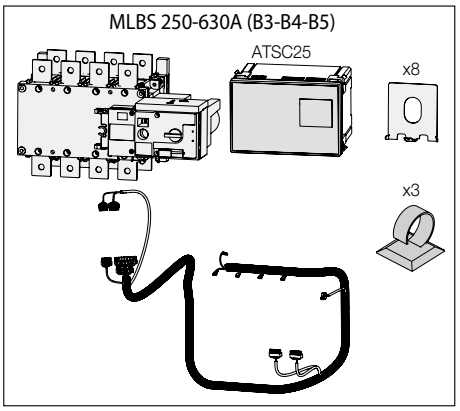
The ATSC25 cable harness is a fast and reliable solution for connecting an MLBS transfer switch to a ATSC25 controller in order to create an Automatic Transfer Switch. It is equipped with Faston voltage tap-offs and provides a safe connection between the controller and changeover switch for:

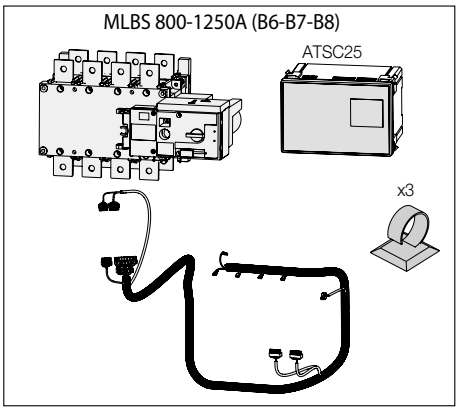
- monitoring availability of the incoming power sources,
- monitoring changeover switch status,
- providing an electrical interlock function,
- automatic control and transfer between power sources.

Provides a DPS auxiliary supply to the MLBS. Cable harness length is approximately 2 metres.
The cable harness is for use with 4 pole MLBS only and requires neutral conductors to be onthe right side of the transfer switch.
For MLBS =< 630A it is necessary to order also Voltage taps!

Wire harness

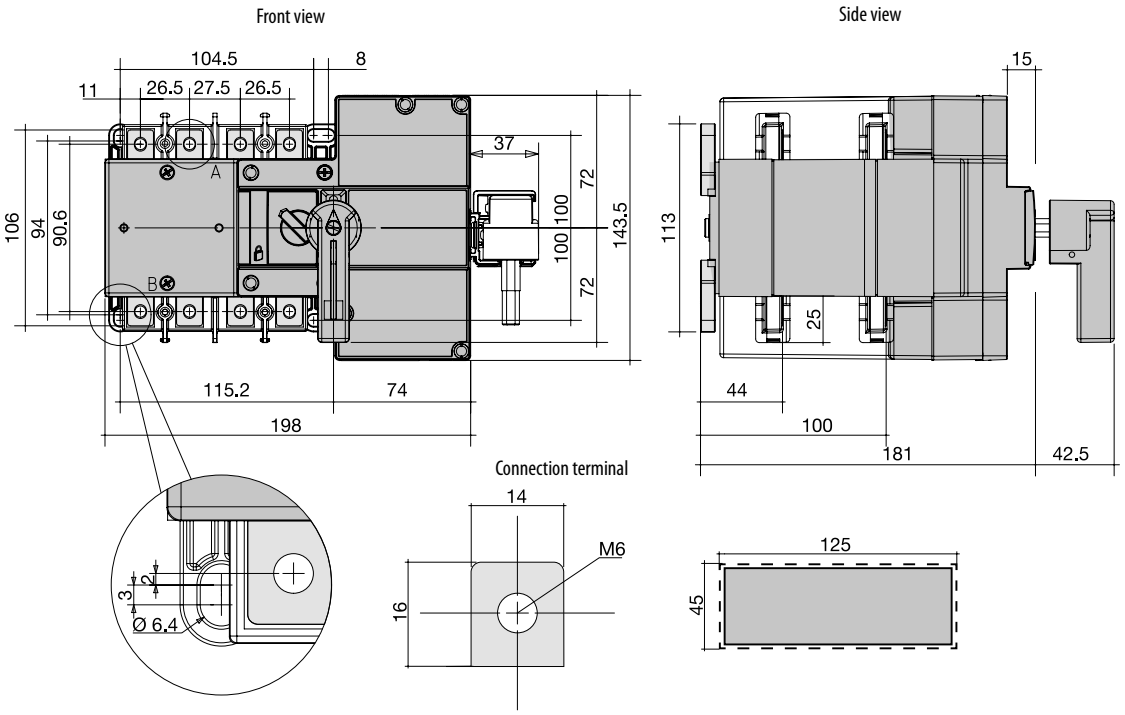
Type	Code No.	For use with	g	
MLBS-WH630r	004661987	MLBS 250-630 4P	800	15
MLBS-WH3250r	004661988	MLBS 800-1250 4P	900	15





Dimensions

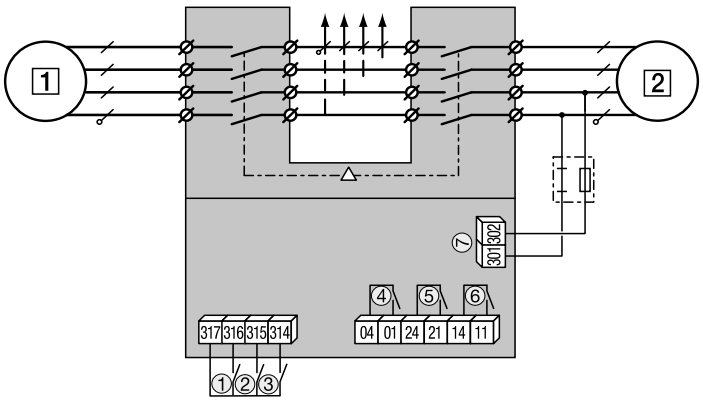
MLBS 63 4P CO - MLBS 125 4P CO



Power supply MLBS 63 - MLBS125 4P CO 230VAC

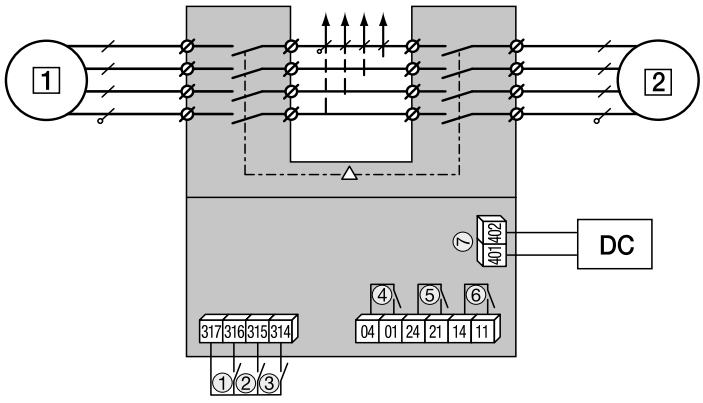
1 - preferred source
2 - alternate source
1 - position 0 control
2 - position I control
3 - position II control
4 - auxiliary contact, closed when the switch is in position 0
5 - auxiliary contact, closed when the switch is in position II
6 - auxiliary contact, closed when the switch is in position I
7 - power supply kit: 230 V AC (160 - 310 V AC)

MLBS 63...125 4P CO 230VAC



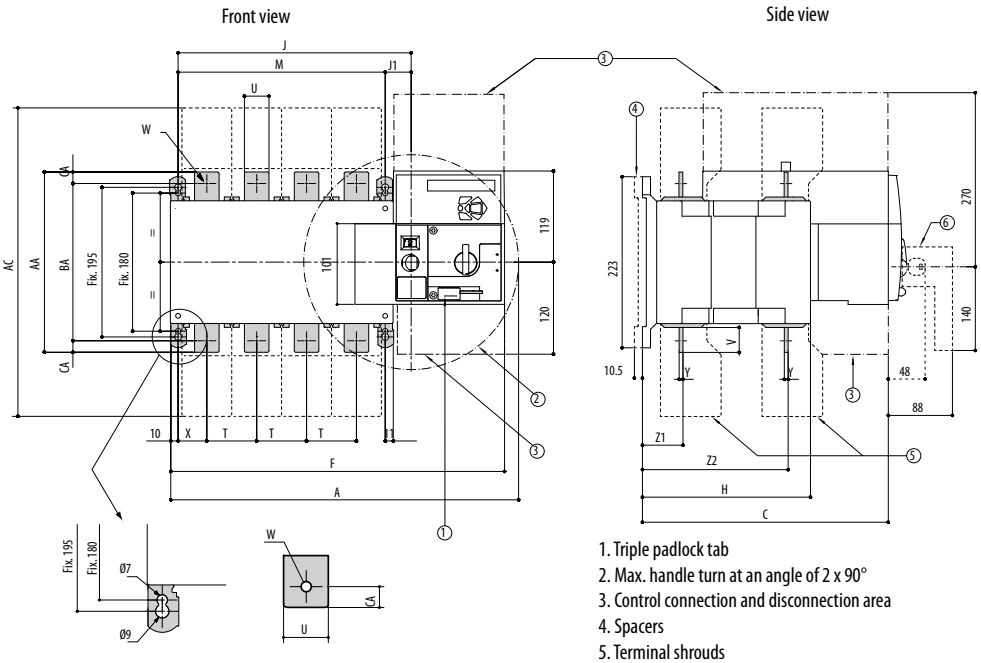
MLBS 63...125 4P CO 12VDC

1 - preferred source
2 - alternate source
1 - position 0 control
2 - position I control
3 - position II control
4 - auxiliary contact, closed when the switch is in position 0
5 - auxiliary contact, closed when the switch is in position II
6 - auxiliary contact, closed when the switch is in position I
7 - power supply kit: 12 V DC (9 - 15 V DC)



Dimensions

MLBS 250 CO - MLBS 630 CO



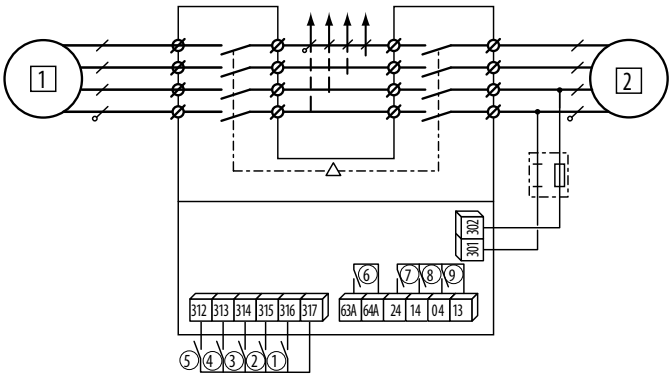
1. Triple padlock tab
2. Max. handle turn at an angle of 2 x 90°
3. Control connection and disconnection area
4. Spacers
5. Terminal shrouds
6. Handle

Rating	Overall dimensions, (mm)			Terminal shrouds, (mm)	Switch body, (mm)						Switch mounting, (mm)						Connection, (mm)							
(A)	A (3p)	A (4p)	C	AC	F (3p)	F (4p)	H	J (3p)	J (4p)	J1	M (3p)	M (4p)	T	U	V	W	X (3p)	X (4p)	Y	Z1	Z2	AA	BA	AC
250	345	395	244	288	328	378	152	195	245	35	160	210	50	25	30	11	33	33	3,5	39,5	133,5	160	130	15
400	345	395	244	288	328	378	152	195	245	35	160	210	50	35	35	11	33	33	3,5	39,5	133,5	170	140	15
630	394	454	320,5	402	377	437	221	244	304	34	210	270	65	45	50	13	42,5	37,5	5	53	190	260	220	20

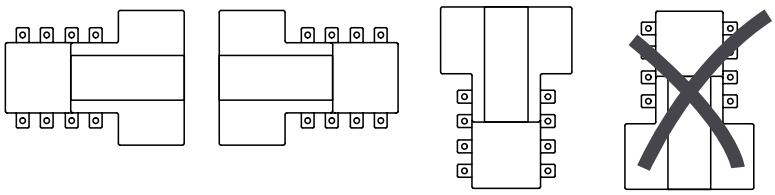
Connections and terminals

1 - primary source (network or genset)
2 - backup source (mains network or genset)
1 - position 0 control (contact or logic if closed)
2 - position I control
3 - position II control
4 - primary control position 0
5 - closing this contact allows position control commands
6 - product availability relay
7 - auxiliary contact - closed when the switch is in position II
8 - auxiliary contact - closed when the switch is in position I
9 - auxiliary contact - closed when the switch is in position 0

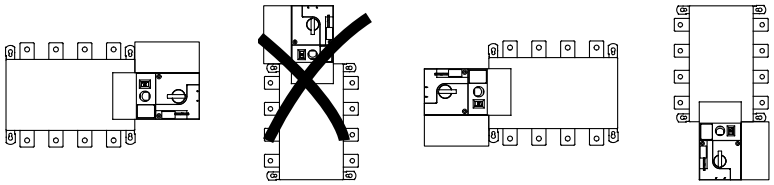
MLBS 250 CO - MLBS 630 CO



MLBS 63…125 CO mounting positions

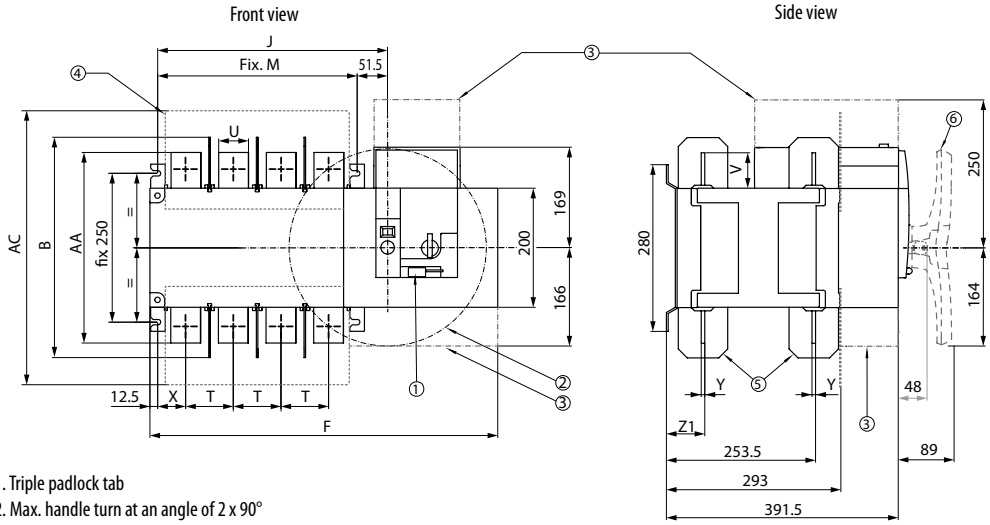


MLBS 250…630 CO mounting positions



Dimensions

MLBS 800 CO - MLBS 1250 CO



1. Triple padlock tab
2. Max. handle turn at an angle of 2 x 90°
3. Control connection and disconnection area
4. Spacers
5. Terminal shrouds
6. Handle

Rating (A) / Frame size	Overall dimensions, (mm)	Terminal shrouds, (mm)	Switch body, (mm)				Switch mounting, (mm)		Connection, (mm)										
	B	AC	F 3p.	F 4p.	J 3p.	J 4p.	M 3p.	M 4p.	T	U	V	X	Y	Z1	AA	Y	Z1	Z2	AA
800	370	584	307	255	335	80	50	60.5	47.5	7	66.5	321	11	33	33	3,5	39,5	133,5	15
1250	370	584	307	255	335	80	60	65	47.5	7	66.5	330	13	42,5	37,5	5	53	190	20

ETISWITCH Fuse Load Break Switch FLBS

Description

FBLS is manually operated 3 pole fuse combination switch in range 125 to 630A. It makes and breaks on load and provides safety isolation and protection against overcurrent for any low voltage electrical circuit. FLBS have been designed, qualified and tested according to the criteria defined by standards: IEC(EN) 60947-3, IEC 60269-1, IEC 60269-2

Advantages

- Complete isolation of the fuse with double breaking per pole (top and bottom of fuse).
- Positive break indication.
- IP2X protection with terminal shrouds front panel.
- High breaking capacity. Protection against overloads and shortcircuits thanks to high breaking capacity fuses (100 kA rms).
- TEST position for testing control circuits without power using auxiliary contacts. In TEST position, the enclosure door can be opened.

Applications

- Motor load break.
- Protection of industrial cabinet.

Fuse Load Break Switch FLBS

FLBS body (no handle included) 3 POLES

Type	Code No.	I_n [A]	Number of poles	Fuse size	g	
FLBS 125 3P	004661800	125	3	NV/NH 00/00C	1.830	1
FLBS 160 3P	004661801	160	3	NV/NH 00/00C	1.830	1
FLBS 250 3P	004661802	250	3	NV/NH 1	3.660	1
FLBS 400 3P	004661803	400	3	NV/NH 2	6.250	1
FLBS 630 3P	004661804	630	3	NV/NH 3	16.760	1

In front direct or external front operation

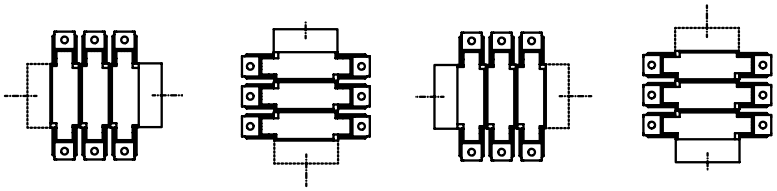
FLBS 160 3P

Characteristics according to IEC 60947-3

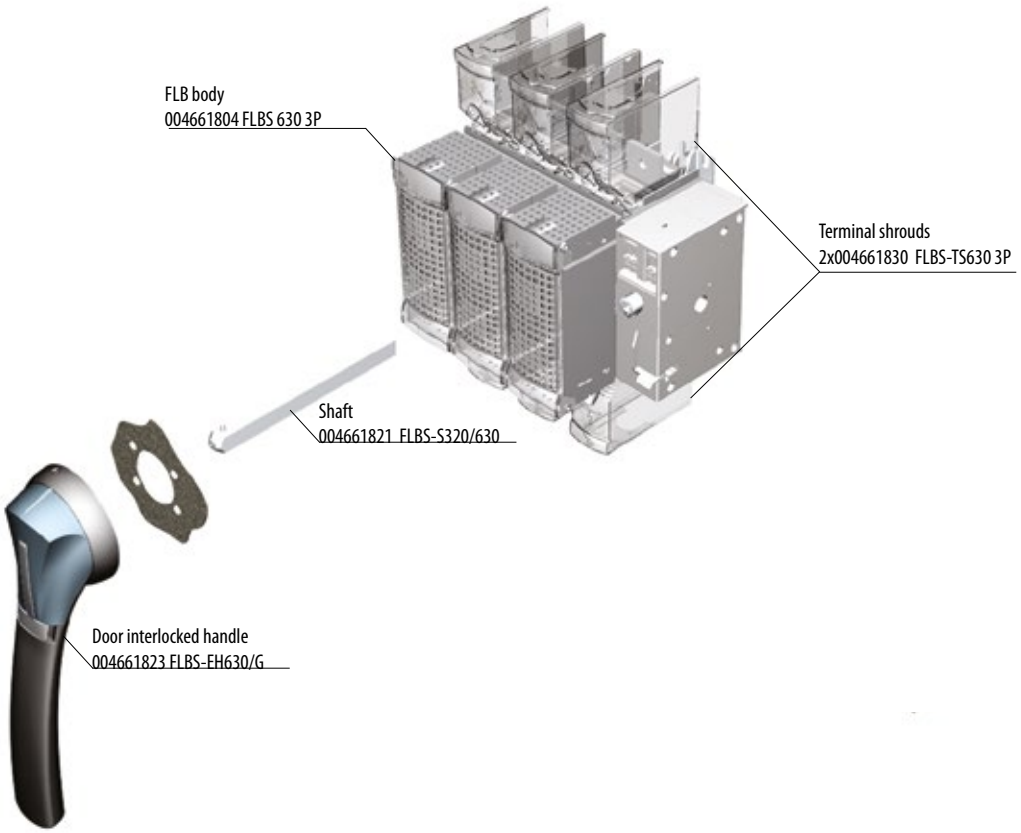
Type				FLBS 125	FLBS 160	FLBS 250	FLBS 400	FLBS 630
Current		(In)	(A)	125A	160A	250A	400A	630A
Rated insulation voltage		(Ui)	(V)	750	750	750	1000	1000
Rated impulse withstand voltage		(U imp)	(kV)	8	8	8	12	12
NFC/DIN fuse size				00/00 C	00/00 C	1	2	3
Thermal current 40°C		(Ith)	(A)	125	160	250	400	630
Rated operational currents (Ie)	AC-22A/B	400V	(A)	125	160	250	400	630
	AC-23A/B	400V	(A)					
	AC-22A/B[1]	690V	(A)					500/630
	AC-23A/B[1]	690V	(A)	100	125		315/400	315/400
	DC-20A/B	220V	(A)	125	160		400	400/630
	DC-21A/B	220V	(A)				315	
	DC-22A/B	220V	(A)					315/630
	DC-23A/B	220V	(A)	100	125	200	200/315	400/630
	DC-20A/B [2] [3]	440V	(A)	125	160	250	400	
	DC-21A/B [2] [3]	440V	(A)				315	
	DC-22A/B [2] [3]	440V	(A)					315/630
	DC-23A/B [2] [3]	440V	(A)	100	125	200	250/315	400/630
Operational power in AC 23(4)		400V AC	kW	63	80	132	220	355
		690V AC	kW	90	110	220	220/295	295/400
Reactive power[4]		400 V AC	(kVAr)	55	75	115	185	290
Fuse protected short-circuit withstand (kA rms prospective)								
Associated fuse rating [5]			(A)	125	160	250	400	630
Prospective short-circuit current[5]			(kA)	100	50	100	100	100
Short-circuit capacity								
Rated peak withstand current		0,3 s.	(kA)	20	20	32,5	40	70
Connection								
Minimum Cu cable cross-section		mm^2		35	35	95	185	2x150
Maximum Cu cable cross-section		mm^2		95	95	240	240	2x300
Maximum Cu busbar width (Cu)		mm		20	20	32	45	63
Tightening torque min/max		Nm		8.3/13	8.3/13	20/26	20/26	40/45
Durability (number of operating cycles)		cycles		10 000	10 000	10 000	10 000	80 000
Power dissipation		W/pole		20,3	21,6	41,1	57,4	122
Frame pitch		(mm)		36	36	60	66	94

Category with index A = frequent operation; Category with index B = infrequent operation.
(1) - With terminal shrouds or terminal screen.
(2) - Poles cannot be juxtaposed.
(3) - 4-pole device with 2 poles in series per polarity.
(4) - The power value is given for information only, the current values vary from one manufacturer to another.
(5) - For a rated operational voltage Ue = 415 VAC.

FLBS 125…630 mounting positions



Accessories



Direct handle for in front direct operation

Type	Description	Code No.	For use with	g	
FLBS-DH400/B	Direct handle, black	004661824	FLBS 125-400A 3P	267	1/25
FLBS-DH630/B	Direct handle, black	004661825	FLBS 630A 3P	471	1

Type definition: Handle type / color initials

FLBS-DH400/B FLBS-DH630-B

Door interlocked handle IP65 (shaft not included).

Type	Description	Code No.	For use with	g	
FLBS-EH630/ G...400/G FLBS	Door interlocked handle, grey front	004661483	FLBS 125 - 400A 3P	253	1/20
FLBS-EH630/G	Door interlocked handle, grey front	004661823	FLBS 630A 3P	280	1/15

Type definition: Handle type / color initials

*With FLBS 124-400A also yellow red external handle »004661486 LBS-EH630/YR« can be used. See page 605 in catalogue.

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

Shaft for door interlocked handle

Type	Description	Code No.	For use with	g	
FLBS-S200/630 (CO)...400 FLBS	Shaft, 200mm, 10x10mm	004661490	FLBS 125 - 400A 3P	160	1/25
FLBS-S320/630 (CO)...400 FLBS	Shaft, 320mm, 10x10mm	004661493	FLBS 125 - 400A 3P	250	1/50
FLBS-S500/630 (CO)...400 FLBS	Shaft, 500mm, 10x10mm	004661496	FLBS 125 - 400A 3P	390	1/20
FLBS-S200/630	Shaft, 200mm, 12x12mm	004661820	FLBS 630A 3P	226	1/25
FLBS-S320/630	Shaft, 320mm, 12x12mm	004661821	FLBS 630A 3P	359	1/50
FLBS-S500/630	Shaft, 500mm, 12x12mm	004661822	FLBS 630A 3P	564	1/20

LBS-S320/630 (CO) .../400 FLBS

Guiding cone

Type	Description	Code No.	For use with	g	
LBS-GC (CLBS-EH125/01)	Guiding cone	004661489	FLBS-EH630	29	1/25

Guiding cone: 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.

LBS-GC (CLBS-EH80, 125)

Shaft holder

Type	Description	Code No.	For use with	g	
FLBS-SH/400	Shaft holder	004661831	shaft > 320mm	293	1

This support maintains shaft position for extension shafts greater than 320 mm in length.

FLBS-SH/400

Auxiliary contact

Type	I_n [A]	Description	Code No.	For use with	g	
FLBS-PS10	16	Auxiliary contact, NO	004661826	FLBS 125-630A	14	1/50
FLBS-PS01	16	Auxiliary contact, NC	004661827	FLBS 125-630A	14	1/50

Compact universal type auxiliary contacts which can be configured for operation in either, or both, ON and TEST positions.
FLBS (125-160A) max. 2 aux. contactcs, FLBS (250-630A) max. 4 aux. contacts can be mounted.
Pre-break and signalling of positions 0, I and TEST. Connection to the control circuit by terminals with max. section 2 x 2.5 mm^2.

FLBS-PS

Terminal shrouds (covers)

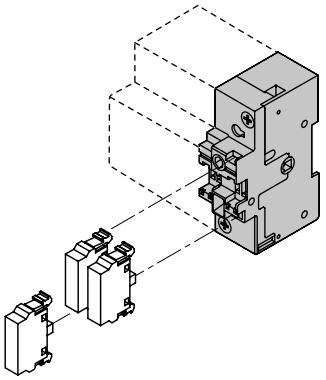
Type	Description	Code No.	For use with	g	
FLBS-TS160 3P	3 pole terminal shroud	004661828	FLBS 125-160A 3P	43	1
FLBS-TS250 3P	3 pole terminal shroud	004661829	FLBS 250 3P	240	1
FLBS-TS400 3P	3 pole terminal shroud	004661832	FLBS 400A 3P	240	1
FLBS-TS630 3P	3 pole terminal shroud	004661830	FLBS 630A 3P	570	1

Top or bottom IP20 protection (on the front) against direct contact with terminals or connection parts.
One reference includes 3 pcs (3pole) for top or bottom contacts , to protect all, 2 references shall be ordered.

FLBS-TS

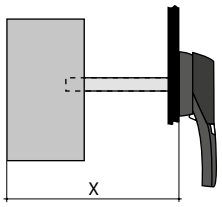
Characteristics FLBS-PS

Rating (A)	Operating current Ie (A) 250 V AC AC-15	400 V AC AC-15	24 V DC DC-13	48 V DC DC-13
125-630	3	1,8	2,8	1,4



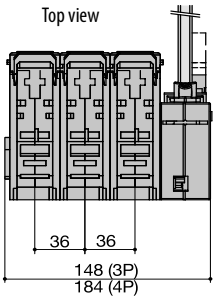
Shaft lenghts

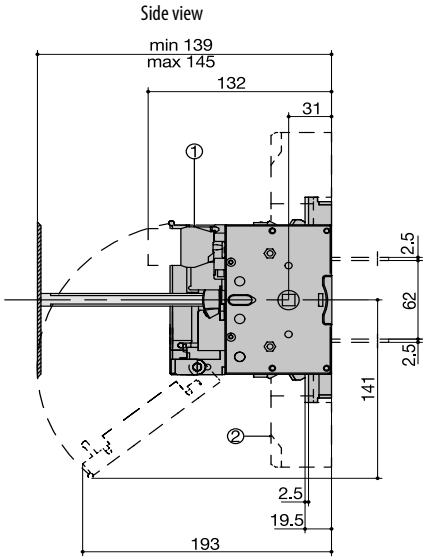
Rating (A)	125-160	250-400	630
Fuse size	00	1/2	3
(mm)	X	X	X
200	135 - 230	160 - 230	270 - 304
320	135 - 350	160 - 350	270 - 424
400	135 - 430	160 - 430	270 - 504
500	135 - 530	160 - 530	270 - 604

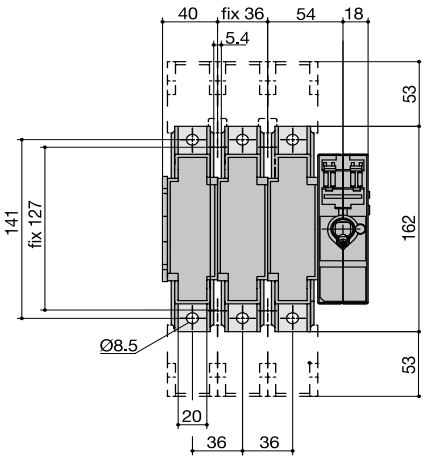


Dimensions

FLBS 125...160 3P



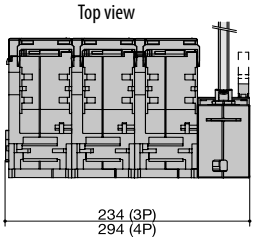




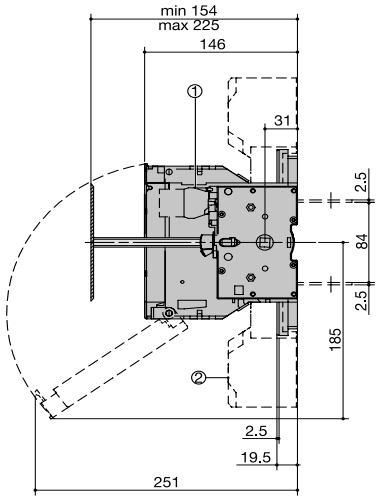
1 - Auxiliary contact
2 - Terminal shrouds

FLBS 250 3P

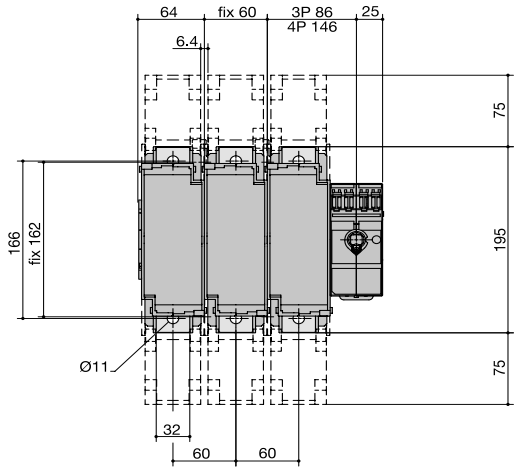
Top view



Side view



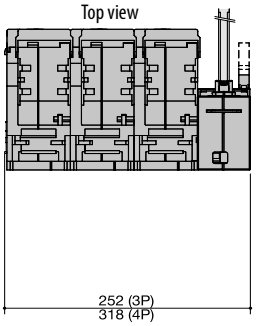
Front view



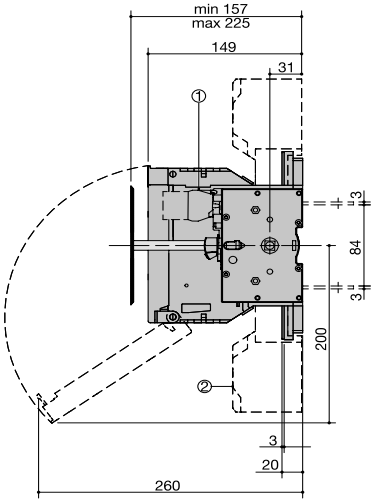
1 - Auxiliary contact
2 - Terminal shrouds

FLBS 400 3P

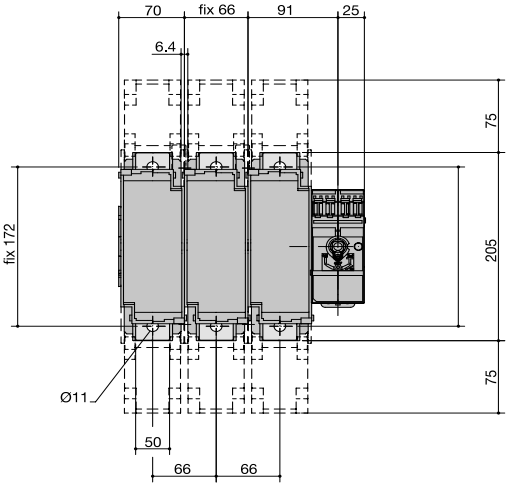
Top view



Side view



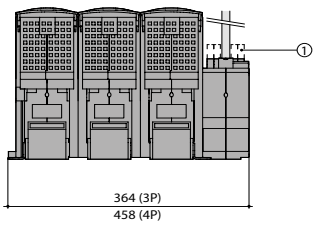
Front view



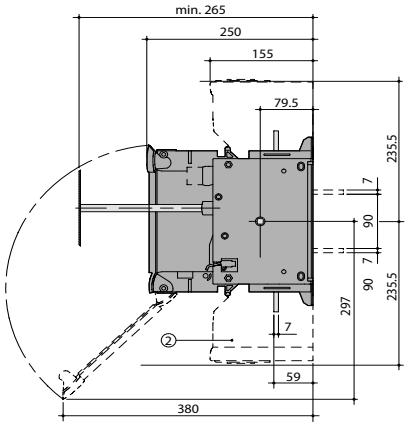
1 - Auxiliary contact
2 - Terminal shrouds

FLBS 630 3P

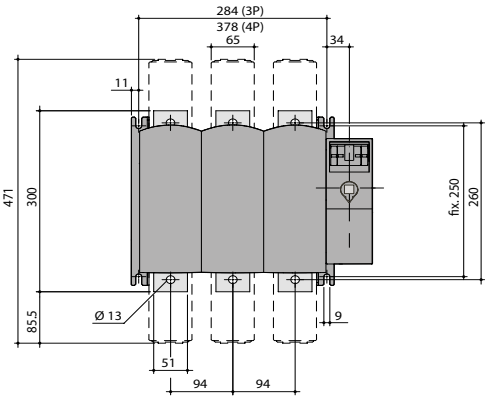
Top view



Side view

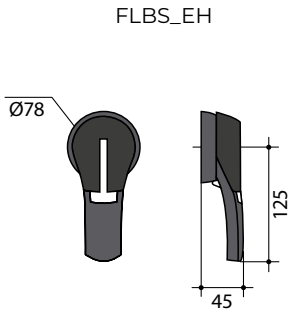


Front view

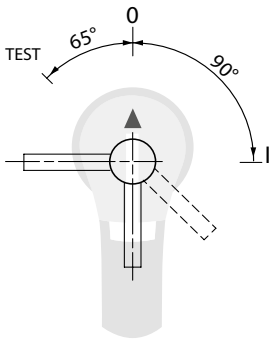


1 -Auxiliary contact
2 - Terminal shrouds

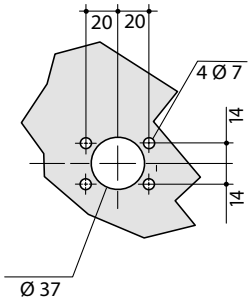
Handle type LBS-EH630/G ...400/G FLBS



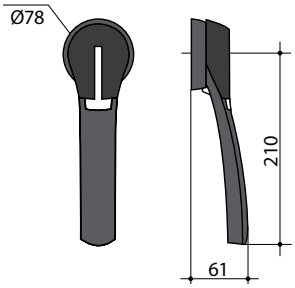
Direct front operation



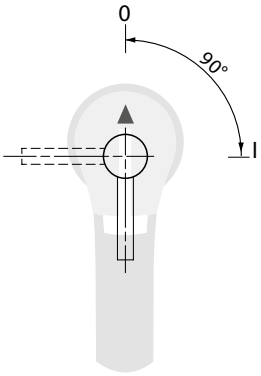
Door drilling



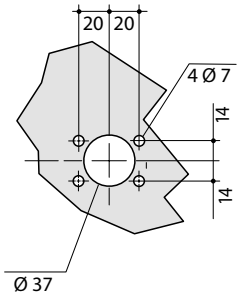
Handle type LBS-EH630/G



Direct front operation



Door drilling



ETISWITCH Rotary Cam Switches

Rotary cam switches series CS are intended for multiple switching operations in main as well as in auxiliary circuits:

- As motor switches they are designed for direct-online starting and stopping of single- phase and three-phase motors. They also come out as star-delta switches, reversing switches, pole-change over motor switches.
- In auxiliary circuits they are assembled in compliance with the switching programme according to preference:
  - switches for control, signalling and measuring circuits.
  - switches, selector switches and step switches e.g. for transformers and welding apparatuses.
  - Group switches e.g. for switching operations of resistors and heaters.
  - Control switch with automatic return

Advantages

- high making and breaking capacities
- electrical and mechanical endurance
- small dimensions.

Rotary cam switches comply with international and national standards such as: IEC/EN 60947-3, VDE 0660,TS EN 60947-3, BS 5419 etc.

Designation

CS XX(Ith[A]) YY(diagram) Z_(design)

Technical data

Type					CS 16	CS 25	CS 32	CS 40	CS 63	CS 80	CS 100
Rated insulation voltage		Ui	V		690	690	690	690	690	690	690
Rated impulse withstand voltage		Uimp	kV		4	6	6	6	6	6	6
Rated thermal current		Ith	A		20	25	32	50	70	85	100
Main switch IEC 60947 (III/3)	Max. value of rated operational voltage		V		400	480	480	480	480	480	480
	Rated impulse withstand voltage		kV		4	4	4	4	4	4	4
Max. fuse size for short-circuit protection gL 10kA			A		20	25	32	40	63	80	100
Rated short-time withstand current Icw	1 sec		A		250	400	600	800	800	1000	1800
	3 sec		A		10	250	400	530	700	800	900
	10 sec		A		80	140	240	290	350	400	450
	30 sec		A		50	90	150	200	250	250	300
	60 sec		A		40	70	120	150	150	160	200
Rated operational current Ie AC1/AC21			A		16	25	32	40	63	80	85
Rated operational current Ie AC15	110/120 V		A		10	20	25	40	50		
	220/230 V		A		8	20	25	30	40		
	380/400 V		A		6	16	20	25	40		
	660/690 V		A			8	8,5	8,5	10		
Motor switch in utilisation category AC3/AC23	3 phase	220/230 V	kW		3/5	5,6/6,5	7,6/8	9/9	11/15	12/18,5	19/22
		380/400 V	kW		5/7,5	7,5/11	11/15	15/18,5	18,5/22	22/32	32/37
		500/690 V	kW			11/11	15/18,5	19/22	22/30	28/45	42/55
	1 phase 2 poles	110/120 V	kW		0,8/0,8	1,5/1,5	2,5/2,5	2,5/3	3/3,5		
		220/230 V	kW		2,2/2,5	3/3,7	4,8/5	5,5/6	6/9		
		380/400 V	kW		3/3,7	5,5/5,5	6,5/7,5	7,5/9	11/15		
Motor switch in utilisation category AC4	3 phase	220/230 V	kW		1,5	2,5	3	5	6	7	9,5
		380/400 V	kW		3	4	5,5	8	11	12	16
		500/690 V	kW			4	7,5	8	11	12	16
Mechanical endurance	switching cycles		106		3	3	3	3	2	2	2
Terminal screw					M3.5	M35	M4	M5	M5	2xM5	2xM5
Screw head					(+,-) PZ2					(-)	
Tightening torque					0,8	0,8	1,2	1,8	2	2	2
Cable cross-section	Rigid		mm^2		2x(1-2,5)	2x(1-4)	2x(2,5-6)	2x(2,5-10)	2x(4-16)	10-25	
	Flexible		mm^2		2x(1-2,5)	2x(1-4)	2x(2,5-6)	2x(2,5-6)	2x(4-16)	6-25, 2x(6-10)	
Protection degree of terminals					IP20					IP00	
Permissible ambient temperature			°C		-25 ... +55						
Standards					IEC 60947-3, VDE 0660, EN 60947 - 3						

ON-OFF switches with 60° switching angle

Thermal current
16 -100 A

1-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 90 U	16A	004773001	0-1	75	
CS 25 90 U	25A	004773002		90	
CS 32 90 U	32A	004773003		115	
CS 40 90 U	40A	004773004		180	1
CS 63 90 U	63A	004773005		290	
CS 80 90 U	80A	004773006		405	
CS 100 90 U	100A	004773007		470	

2-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 91 U	16A	004773009	0-1	80	
CS 25 91 U	25A	004773010		90	
CS 32 91 U	32A	004773011		115	
CS 40 91 U	40A	004773012		180	1
CS 63 91 U	63A	004773013		290	
CS 80 91 U	80A	004773014		405	
CS 100 91 U	100A	004773015		470	

3-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 10 U	16A	004773017	0-1	95	
CS 25 10 U	25A	004773018		115	
CS 32 10 U	32A	004773019		160	
CS 40 10 U	40A	004773020		260	1
CS 63 10 U	63A	004773021		415	
CS 80 10 U	80A	004773022		590	
CS 100 10 U	100A	004773023		685	

4-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 92 U	16A	004773025	0-1	100	
CS 25 92 U	25A	004773026		120	
CS 32 92 U	32A	004773027		175	
CS 40 92 U	40A	004773028		275	1
CS 63 92 U	63A	004773029		435	
CS 80 92 U	80A	004773030		600	
CS 100 92 U	100A	004773031		690	

Multistep Switches With 60° Switching Angle

Thermal current
16 -100 A

1-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 107 U	16A	004773033	0-1-2	80	1
CS 25 107 U	25A	004773034		90	
CS 32 107 U	32A	004773035		115	
CS 40 107 U	40A	004773036		180	
CS 63 107 U	63A	004773037		290	
CS 80 107 U	80A	004773038		405	
CS 100 107 U	100A	004773039		470	

2-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 123 U	16A	004773041	0-1-2	120	1
CS 25 123 U	25A	004773042		150	
CS 32 123 U	32A	004773043		180	
CS 40 123 U	40A	004773044		270	
CS 63 123 U	63A	004773045		430	
CS 80 123 U	80A	004773046		590	
CS 100 123 U	100A	004773047		680	

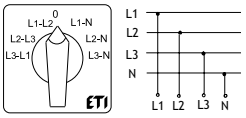
3-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 135 U	16A	004773049	0-1-2	125	1
CS 25 135 U	25A	004773050		155	
CS 32 135 U	32A	004773051		220	
CS 40 135 U	40A	004773052		375	
CS 63 135 U	63A	004773053		500	
CS 80 135 U	80A	004773054		840	
CS 100 135 U	100A	004773055		845	

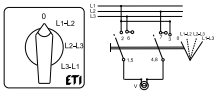
Voltmeter Switches

Thermal current
16 -32 A

3 line and 3 phase

Type	Thermal current I_{th} [A]	Code No.	Type, layout and symbol		
CS 16 66 U	16A	004773089		140	1
CS 25 66 U	25A	004773090		160	
CS 32 66 U	32A	004773091		220	

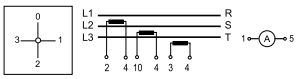
3 line

Type	Thermal current I_{th} [A]	Code No.	Type, layout and symbol		
CS 16 67 U	16A	004773093		120	1
CS 25 67 U	25A	004773094		150	

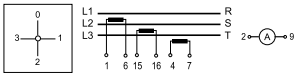
Ammeter Switches

Thermal current
16 - 40 A

1 pole 3 current with transformer

Type	Thermal current I_{th} [A]	Code No.	Type, layout and symbol		
CS 16 98 U	16A	004773095		165	1
CS 25 98 U	25A	004773096		185	
CS 32 98 U	32A	004773097		260	
CS 40 98 U	40A	004773098		455	

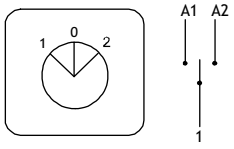
2 pole 3 current with transformer

Type	Thermal current I_{th} [A]	Code No.	Type, layout and symbol		
CS 16 97 U	16A	004773099		200	1
CS 25 97 U	25A	004773100		220	
CS 32 97 U	32A	004773101		295	
CS 40 97 U	40A	004773102		490	

Changeover Switches with 60° Switching Angle

Thermal current
16 -100 A

1-pole

Type	Thermal current I_{th} [A]	Code No.	Type, layout and symbol		
CS 16 51 U	16A	004773104	1-0-2 	80	1
CS 25 51 U	25A	004773105		105	
CS 32 51 U	32A	004773106		140	
CS 40 51 U	40A	004773107		205	
CS 63 51 U	63A	004773108		315	
CS 80 51 U	80A	004773109		430	
CS 100 51 U	100A	004773110		495	

2-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol	[A]	
CS 16 52 U	16A	004773112	1-0-2	100	
CS 25 52 U	25A	004773113		120	
CS 32 52 U	32A	004773114		180	
CS 40 52 U	40A	004773115		275	1
CS 63 52 U	63A	004773116		435	
CS 80 52 U	80A	004773117		600	
CS 100 52 U	100A	004773118		690	

3-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol	[A]	
CS 16 53 U	16A	004773120	1-0-2	140	
CS 25 53 U	25A	004773121		160	
CS 32 53 U	32A	004773122		220	
CS 40 53 U	40A	004773123		375	1
CS 63 53 U	63A	004773124		500	
CS 80 53 U	80A	004773125		840	
CS 100 53 U	100A	004773126		845	

Start and Run Switches - One Phase Motor

Thermal current
16 - 63 A

0-start-1

Type	Thermal current I_{th}	Code No.	Type, layout and symbol	[A]	
CS 16 15 U	16A	004773127		95	
CS 25 15 U	25A	004773128		110	
CS 32 15 U	32A	004773129		160	1
CS 40 15 U	40A	004773130		260	
CS 63 15 U	63A	004773131		415	

Star - Delta Switches

Thermal current
16 -100 A

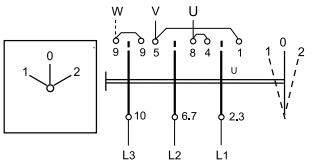
0-star-delta

Type	Thermal current I_{th}	Code No.	Type, layout and symbol	[A]	
CS 16 12 U	16A	004773132		175	
CS 25 12 U	25A	004773133		190	
CS 32 12 U	32A	004773134		300	
CS 40 12 U	40A	004773135		465	1
CS 63 12 U	63A	004773136		650	
CS 80 12 U	80A	004773137		1140	
CS 100 12 U	100A	004773138		1180	

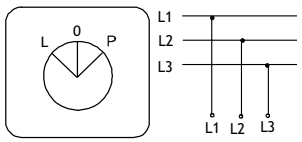
Motor Reversing Switches

Thermal current
16 -100 A

1-0-2

Type	Thermal current I_{th}	Code No.	Type, layout and symbol	[A]	
CS 16 11 U	16A	004773139		140	1
CS 25 11 U	25A	004773140		160	
CS 32 11 U	32A	004773141		220	
CS 40 11 U	40A	004773142		375	
CS 63 11 U	63A	004773143		500	
CS 80 11 U	80A	004773144		840	
CS 100 11 U	100A	004773145		845	

L-0-P

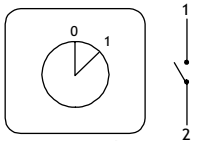
Type	Thermal current I_{th}	Code No.	Type, layout and symbol	[A]	
CS 16 11 U L0P	16A	004773146		145	1
CS 25 11 U L0P	25A	004773147		165	
CS 32 11 U L0P	32A	004773148		225	
CS 40 11 U L0P	40A	004773149		380	
CS 63 11 U L0P	63A	004773150		505	
CS 80 11 U L0P	80A	004773151		845	
CS 100 11 U L0P	100A	004773152		850	

General Emergency ON-OFF switches version LK with padlocking in "0"

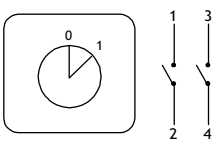
Thermal current
25 -100 A

- Emergency switch makes an electrical separation between electrical supply and electrical equipment
- Control handle is red according to standards, and the plate behind is yellow
- Emergency switch can be locked in open position "0" with up to three padlocks.

1-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol	[A]	
CS 25 90 U LK	25A	004773056	0-1 	130	1
CS 32 90 U LK	32A	004773057		155	
CS 40 90 U LK	40A	004773058		220	
CS 63 90 U LK	63A	004773059		340	
CS 80 90 U LK	80A	004773060		455	
CS 100 90 U LK	100A	004773061		520	

2-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol	[A]	
CS 25 91 U LK	25A	004773062	0-1 	130	1
CS 32 91 U LK	32A	004773063		155	
CS 40 91 U LK	40A	004773064		220	
CS 63 91 U LK	63A	004773065		340	
CS 80 91 U LK	80A	004773066		455	
CS 100 91 U LK	100A	004773067		520	

3-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 32 10 U LK	32A	004773069	0-1	200	
CS 40 10 U LK	40A	004773070		300	1
CS 63 10 U LK	63A	004773071		465	
CS 80 10 U LK	80A	004773072		640	
CS 100 10 U LK	100A	004773073		735	

4-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 25 92 U LK	25A	004773074	0-1	160	
CS 32 92 U LK	32A	004773075		205	
CS 40 92 U LK	40A	004773076		305	1
CS 63 92 U LK	63A	004773077		470	
CS 80 92 U LK	80A	004773078		650	
CS 100 92 U LK	100A	004773079		740	

General Emergency On-Off Switch

Thermal current
16 -100 A

3-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 10 U ES	16A	004773081	0-1	95	
CS 25 10 U ES	25A	004773082		115	
CS 32 10 U ES	32A	004773083		160	
CS 40 10 U ES	40A	004773084		260	1
CS 63 10 U ES	63A	004773085		415	
CS 80 10 U ES	80A	004773086		590	
CS 100 10 U ES	100A	004773087		685	

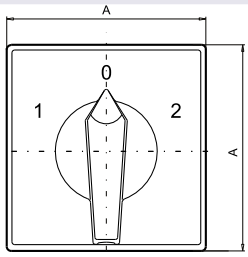
Rotary cam switches for DIN rail mounting

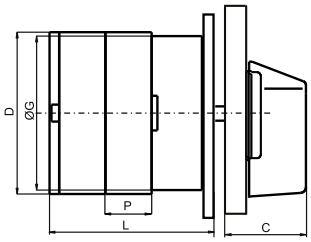
Thermal current
16 A

Rotary cam switches for DIN rail mounting

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 51 L	16	004773250	1-0-2	65	1
CS 16 90 L	16	004773251	0-1		

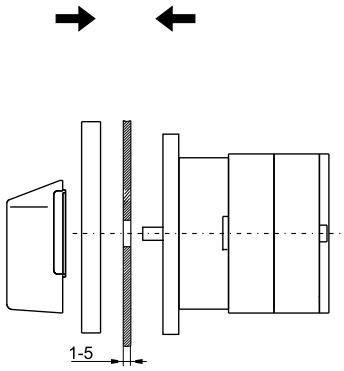
Dimensions

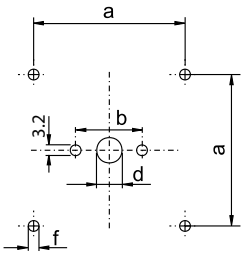




Type	Marking		Number of elements (L/mm)														
	A	C	D	ØG	P	1	2	3	4	5	6	7	8	9	10	11	12
CS 16	48	26	45,2	38,6	12,8	32,5	45,3	58,1	70,9	83,7	96,5	109,3	122,1	134,9	147,7	160,5	173,3
CS 25	48	26	45,2	38,6	12,8	32,5	45,3	58,1	70,9	83,7	96,5	109,3	122,1	134,9	147,7	160,5	173,3
CS 32	65	33	53	38,6	12,8	37	49.8	62.6	75,4	88,2	101	113,8	126,6	139,4	152,2	165	177,8
CS 40	65	33	61	56,4	17,5	50,6	68,1	85,6	103,1	120,6	138,1	155,6	173,1	190,6	208,1	225,6	243,1
CS 63	65	33	61	56,4	17,5	50,6	68,1	85,6	103,1	120,6	138,1	155,6	173,1	190,6	208,1	225,6	243,1
CS 80	90	41	84	80	25	67,5	92,5	117,5	142,5	167,5	192,5	217,5	242,5	267,5	292,5	317,5	342,5
CS 100	90	41	84	80	25	67,5	92,5	117,5	142,5	167,5	192,5	217,5	242,5	267,5	292,5	317,5	342,5

Drilling plan

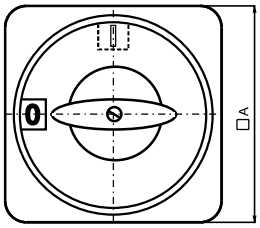


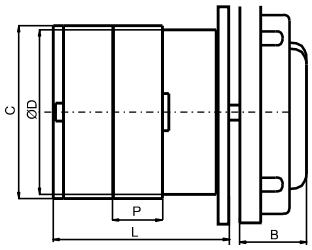


TYPE	a*	b**	d	f
CS 16 CS 25 CS 32	36	30	10	4.2
CS 40 CS 63	48	45	10	4.2
CS 80 CS 100	72	40	14	5.3

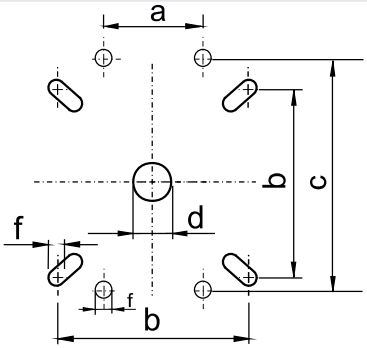
a*- *for 5 and more then 5 elements*
b**- *up to 4 elements*

Dimensions LK (General Emergency)

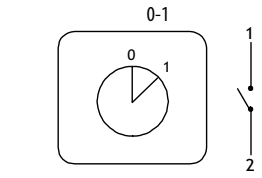
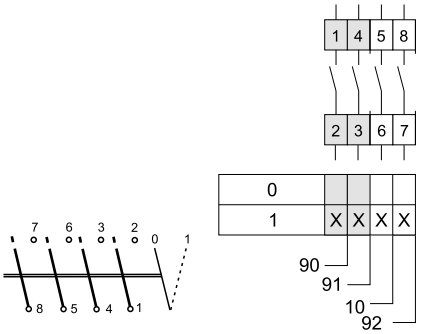
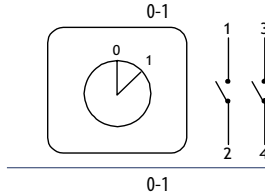
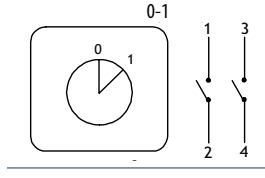
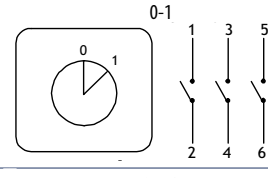
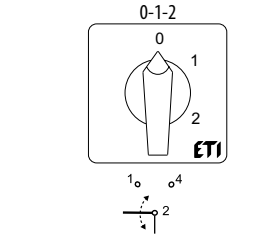
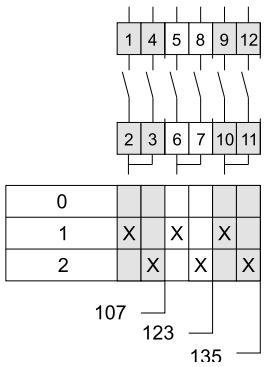
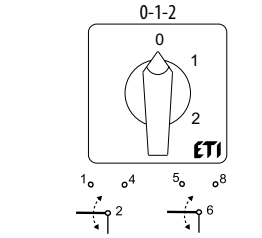
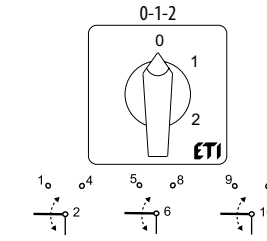


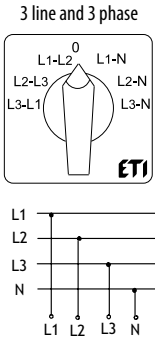
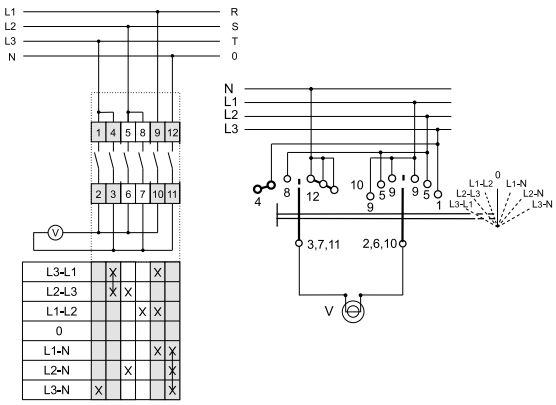
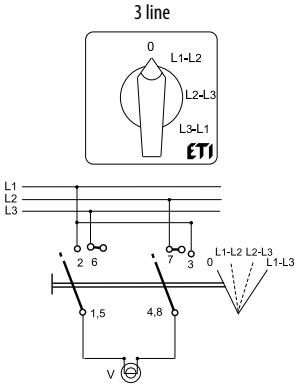
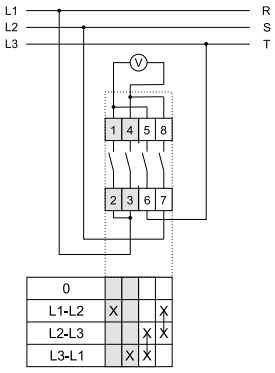
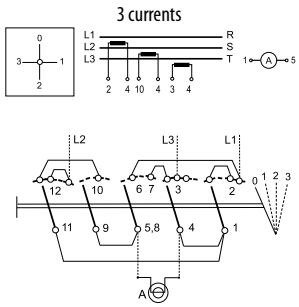
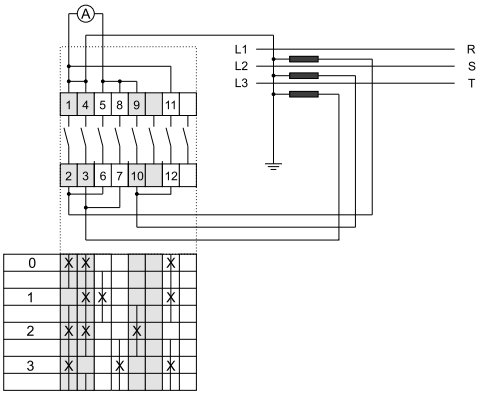
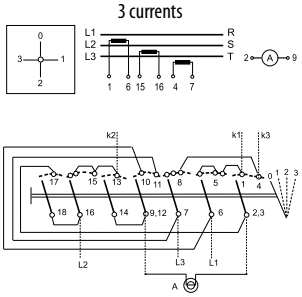
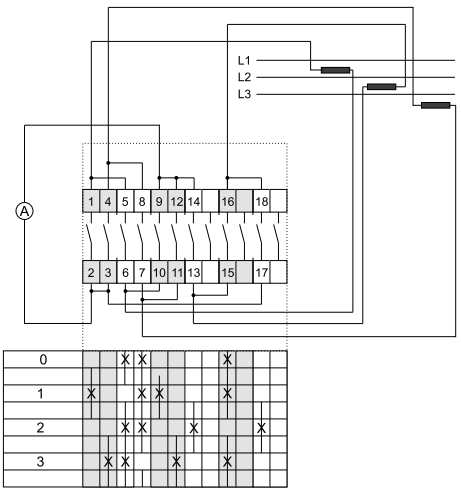


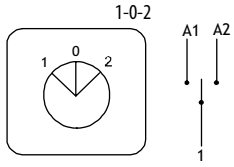
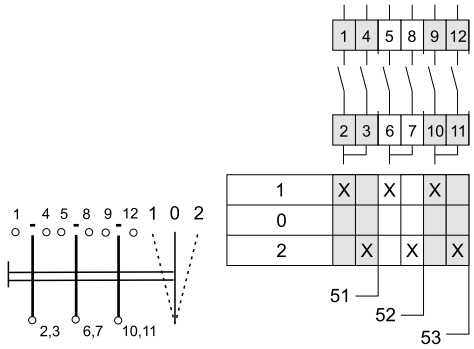
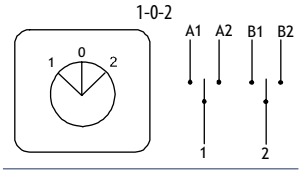
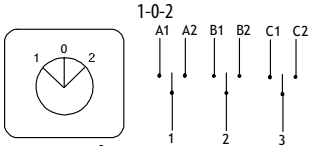
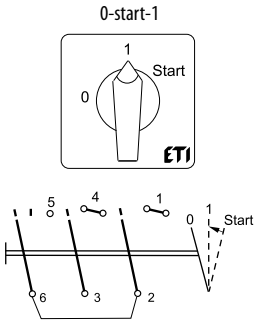
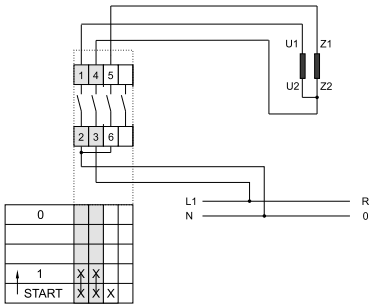
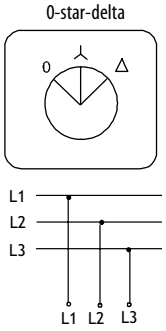
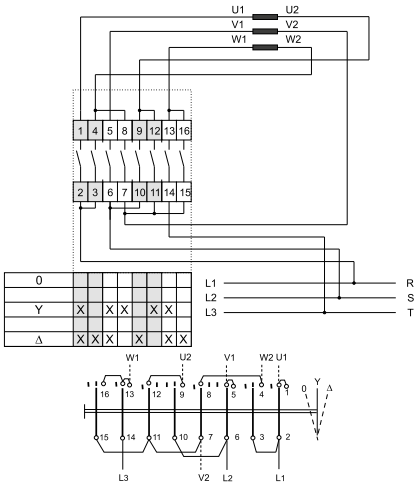
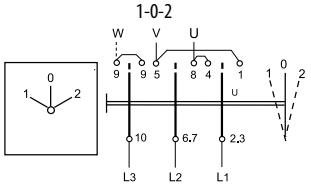
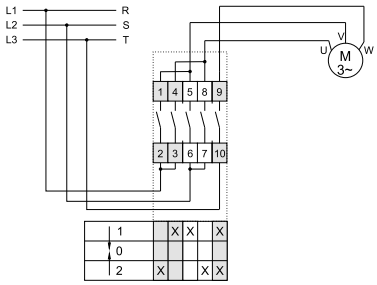
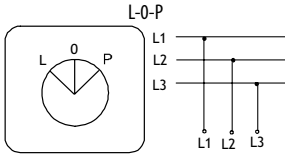
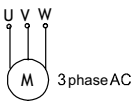
Drilling plan LK (General Emergency)

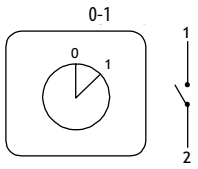
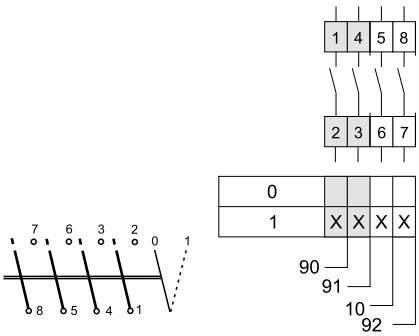
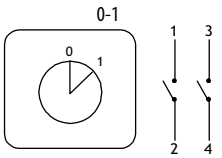
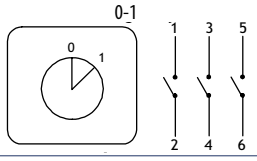
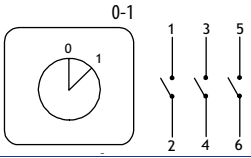
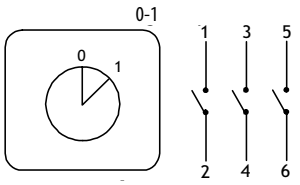


/(mm)	□A	C	ØD	P	B	L/2	b	d	f	a	c
CS 25 LK	49	45,2	38,6	12,8	35	45,3	36	10	3,2		
CS 32 LK	72	53	38,6	12,8	32	49,8	58	10	4,2		
CS 40 LK	72	61	56,4	17,5	32	68,1	58	10	4,2		
CS 50 LK CS 63 LK	72	68,6	56,4	20,5	32	63	58	10	4,2		
CS 80 LK	105	84	80	25	44	92,5	85	14	5,3		
CS 100KLK											
CS 125LK CS 200 LK	130		110	39	62	100		18	5,3	30	90

	Type, layout and symbol	Nr of poles / elements		Connection diagram
ON-OFF switches with 60° switching angle		1 / 1	90	
		2 / 1	91	
		3 / 2	10	
		4 / 2	92	
Multistep Switches With 60° Switching Angle		1 / 1	107	
		2 / 2	123	
		3 / 3	135	

	Type, layout and symbol	Nr of poles / elements		Connection diagram
Voltmeter Switches	3 line and 3 phase 	3 LINE AND 3 PHASE / 3	66	
	3 line 	3 LINE / 2	67	
Ammeter Switches	3 currents 	1 POLE 3 CURRENT WITH TRANSFORMER / 4	98	
	3 currents 	2 POLE 3 CURRENT WITH TRANSFORMER / 6	97	

	Type, layout and symbol	Nr of poles / elements		Connection diagram
Changeover Switches with 60° Switching Angle	1-0-2 	1 / 1	51	
	1-0-2 	2 / 2	52	
	1-0-2 	3 / 3	53	
Start and Run Switches	0-start-1 	2 / 2	15	
Star - Delta Switches	0-star-delta 	4 / 4	12	
Motor Reversing Switches	1-0-2 	3 / 3	11	
	L-0-P 	3 / 3	11	

	Type, layout and symbol	Nr of poles / elements		Connection diagram
General Emergency ON-OFF switches version LK		1	10	
		2	91	
		3	10	
		4	92	
General Emergency On-Off Switch		3	10	

ETISWITCH Rotary Cam Switches in Insulated Enclosures

Rotary cam switches in insulated enclosures with:
- IP65 degree of protection (PN, PNG and PNG LK housing)
- IP55 degree of protection (PN1 and PN2 housing)
- IP54 degree of protection (PN3 and PN4 housing)

Color of enclosures is grey (RAL 7035)

ON-OFF switches in housing with 60° switching angle

Thermal current
16 -40 A

1-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 90 PN	16A	004773154	0-1 1	175	1
CS 25 90 PN	25A	004773155		190	
CS 32 90 PNG	32A	004773156		305	
CS 40 90 PNG	40A	004773157		370	

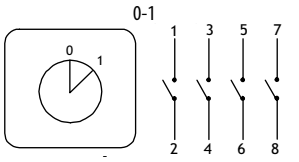
2-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 91 PN	16A	004773159	0-1	180	1
CS 25 91 PN	25A	004773160		190	
CS 32 91 PNG	32A	004773161		210	
CS 40 91 PNG	40A	004773162		370	

3-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 10 PN	16A	004773164	0-1	195	1
CS 25 10 PN	25A	004773165		215	
CS 32 10 PNG	32A	004773166		350	
CS 40 10 PNG	40A	004773167		450	

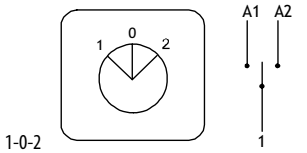
4-pole

Type	Thermal current I_{th} [A]	Code No.	Type, layout and symbol		
CS 16 92 PN	16A	004773169		200	1
CS 25 92 PN	25A	004773170		220	
CS 32 92 PNG	32A	004773171		355	
CS 40 92 PNG	40A	004773172		455	

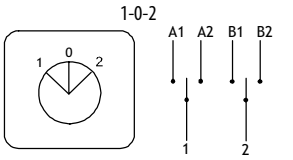
Changeover Switches in Housing with 60° Switching Angle

Thermal current
16 -40 A

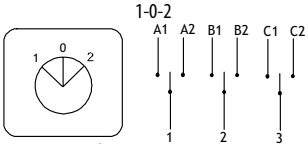
1-pole

Type	Thermal current I_{th} [A]	Code No.	Type, layout and symbol		
CS 16 51 PN	16A	004773186		185	1
CS 25 51 PN	25A	004773187		235	
CS 32 51 PNG	32A	004773188		330	
CS 40 51 PNG	40A	004773189		395	

2-pole

Type	Thermal current I_{th} [A]	Code No.	Type, layout and symbol		
CS 16 52 PN	16A	004773191		200	1
CS 25 52 PN	25A	004773192		220	
CS 32 52 PNG	32A	004773193		375	
CS 40 52 PNG	40A	004773194		455	

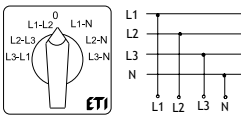
3-pole

Type	Thermal current I_{th} [A]	Code No.	Type, layout and symbol		
CS 16 53 PN	16A	004773196		240	1
CS 25 53 PN	25A	004773197		260	
CS 32 53 PNG	32A	004773198		400	
CS 40 53 PN2	40A	004773199		875	

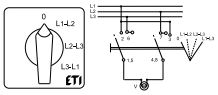
Voltmeter Switches in Housing

Thermal current
16 -32 A

3 line and 3 phase

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 66 PN	16A	004773201		240	1
CS 25 66 PN	25A	004773202		260	
CS 32 66 PNG	32A	004773203		400	

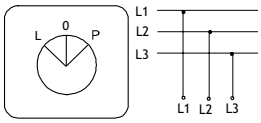
3 line

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 67 PN	16A	004773205		220	1
CS 25 67 PN	25A	004773206		250	

Motor Reversing Switches in Housing

Thermal current
16 -100 A

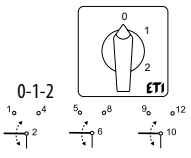
L-0-P

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 11 U LOPPN	16A	004773207		245	1
CS 25 11 U LOPPN	25A	004773208		265	
CS 32 11 U LOPPNG	32A	004773209		405	
CS 40 11 U LPOPN2	40A	004773210		560	

Multistep Switches in Housing with 60º Switching Angle

Thermal current
16 -40 A

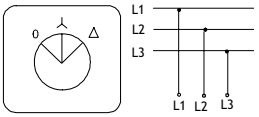
3-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 135 PN	16A	004773212		225	1
CS 25 135 PN	25A	004773213		255	
CS 32 135 PNG	32A	004773214		400	
CS 40 135 PN2	40A	004773215		555	

Star - Delta Switches in Housing

Thermal current
16 -40 A

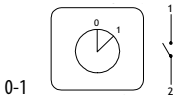
0-star-delta

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 16 12 PN1	16A	004773216		275	1
CS 25 12 PN1	25A	004773217		290	
CS 32 12 PN2	32A	004773218		480	
CS 40 12 PN2	40A	004773219		645	

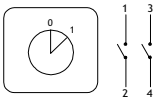
General Emergency ON-OFF switches version LK in housing

Thermal current
25 - 40 A

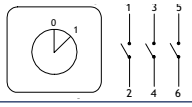
1-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 25 90 PNGLK	25A	004773173		230	1
CS 32 90 PNGLK	32A	004773174		345	
CS 40 90 PNGLK	40A	004773175		410	

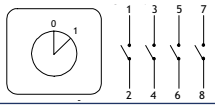
2-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 25 91 PNGLK	25A	004773176		230	1
CS 32 91 PNGLK	32A	004773177		345	
CS 40 91 PNGLK	40A	004773178		410	

3-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 25 10 PNGLK	25A	004773179		255	1
CS 32 10 PNGLK	32A	004773180		390	
CS 40 10 PNGLK	40A	004773181		490	

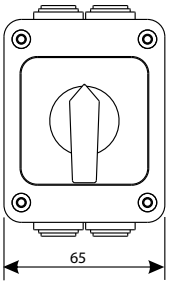
4-pole

Type	Thermal current I_{th}	Code No.	Type, layout and symbol [A]		
CS 25 92 PNGLK	25A	004773182		260	1
CS 32 92 PNGLK	32A	004773183		395	
CS 40 92 PNGLK	40A	004773184		495	

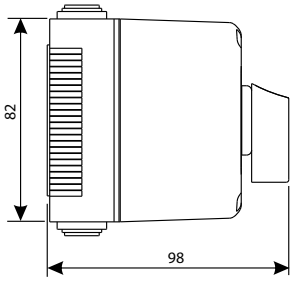
Technical data and connection diagrams for switches in insulated enclosures are the same as for those without enclosures.

Dimensions

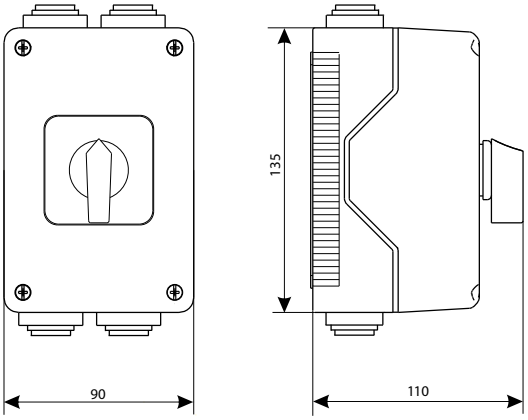
PN



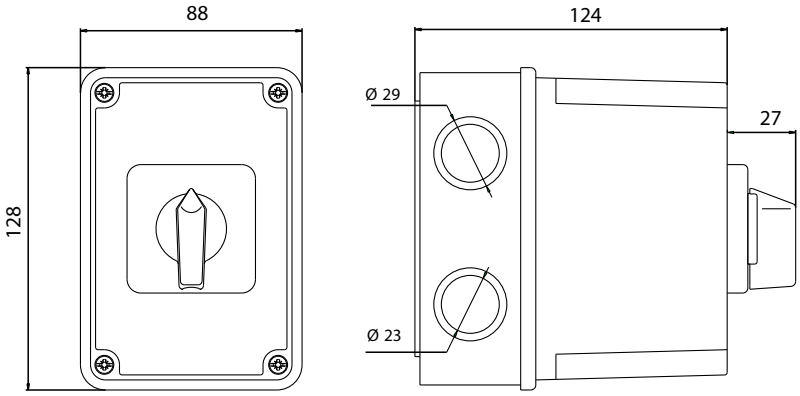
CS PN



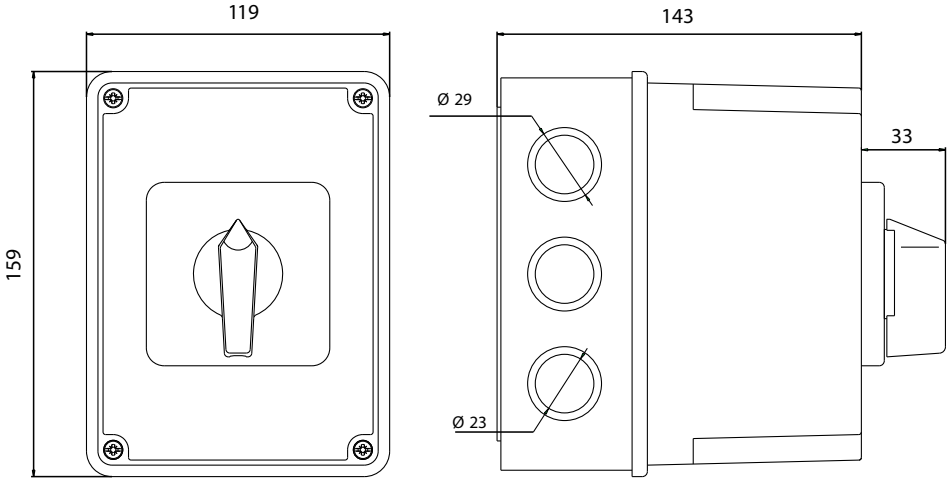
PNG



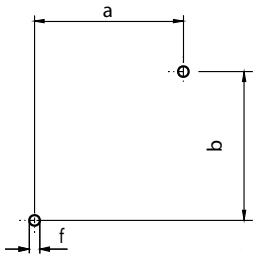
PN1



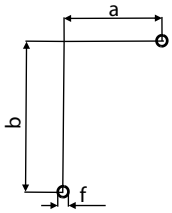
PN2



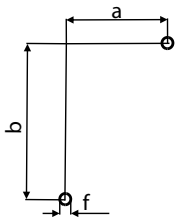
Drilling plan



	a	b	f
PN	44	48	4,3
PNG	48	100	4,3



	a	b	f
PN1	42	82	4,3



	a	b	f
PN2 32	72	112	4,5

ETISWITCH Modular Rotary Cam Switches

ModLBS IP40(front) switches for mounting in modular enclosures with DIN rail. Easy manipulation - low force switching, designed for AC23 category of use.

Modular Rotary Cam Switches ModLBS

Modular rotary cam switch 0-1

Type	Code No.	I_n [A]	Number of poles	g	
ModLBS 16 1p	004664250	16	1	130	1/30
ModLBS 16 3p	004664251	16	3	141	

Modular emergency switch 0-1 with padlocking possibility

Type	Code No.	I_n [A]	Number of poles	g	
ModLBS 40 3p ES	004664252	40	3	173	1/36

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

Type				ModLBS 16 1p / ModLBS 16 3p
Rated thermal current Ith open			A	20
Rated thermal current Ithe enclosed			A	20
Rated operational voltage Ue			V	690*
Disconnection property ** acc. to VDE, IEC up to			V	440
Breaking capacity	3x220-240V		A	160
	3x500V		A	100
	3x660-690V		A	120
Utilization categ. AC21A, AC21B	Switching of resistive loads including moderate overloads			
	Rated operational current Ie		A	20
Utilization categ. AC23A, AC23B	Switching of motor loads or other highly inductive loads			
	Rated current Ie	400V	A	16
	Power rating 3-phase 3-pole	220-240V	kW	4
		380-440V	kW	7,5
		500V	kW	7,5
		660-690V	kW	7,5
Star-Delta-Switches	for squirrel cage motors			
	Power rating 3-phase 3-pole	220-240V	kW	3,7
		380-415V	kW	7,5
Utilization category AC3	Switching of three-phase motors			
	Rated current Ie	400V	A	12
	Power rating 3-phase 3-pole	220-240V	kW	3
		380-440V	kW	5,5
		500V	kW	5,5
		660-690V	kW	5,5
Utilization category AC4	squirrel cage motors, inching			
	Power rating 3-phase 3-pole	220-240V	kW	0,55
		380-440V	kW	1,5
		500V	kW	1,5
		660-690V	kW	1,5
Utilization category AC15	Control of electromagnetic loads, contactors			
	Rated current Ie	≤ 240V	A	6
		380 -440V	A	4
	2-pole in series	500V	A	5
Utilization categ. DC21A, DC21B	Switching of resistive loads Time constant L/R≤1ms			
	Rated current Ie 1-pole	30V	A	20
		60V	A	4
		110V	A	0,6
		220V	A	0,3
		440V	A	-
Utilization category DC3 - DC5	Switching of shunt motors and series motors Time constant L/R≤15ms			
	Rated current Ie 1-pole	30V	A	8
		60V	A	1
		110V	A	0,3
Protection class ot terminals				IP20

* suitable for: earthed-neutral systems, overvoltage category I to III, pollution degree 3 (standard-industry): Uimp = 6kV. Data for other conditions on request

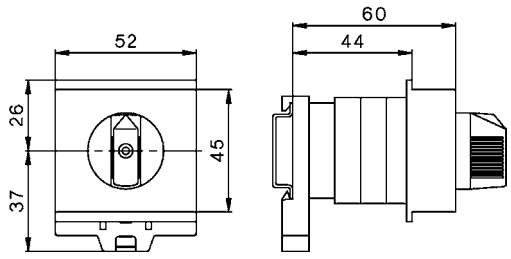
** valid for lines with grounded common neutral termination, overvoltage category III , pollution degree 3.

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

Type				ModLBS 16 1p / ModLBS 16 3p
Cable cross sections	solid or stranded		mm^2	1-2,5*
	flexible		mm^2	0,75-2,5*
	flexible (+ multicore cable end)		mm^2	0,75-1,5
	Conductors to clamp per pole			2
	Size of terminal screw			M3,5
	Tightening torque		Nm	0,8-1,4
			lb.inch	7-12
Short circuit protection	Max. fuse size gL (gG)		A	20
	Rated short-time withstand current (1sec. current)		A	250
	Rated conditional short-circuit current		kAeff	10
Short-time capacity	Load duration Note: Ratings applies to contacts already closed	3s	A	100
		10s	A	60
		30s	A	35
		60s	A	25
Power loss at AC21A per pole			A	20
			W	0,5
Switching of capacitive loads	maximum making capacity up to 500V		A	140

* Maximum cable cross-section with prepared conductor

Dimensions



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

Type					ModLBS 40 3p ES
Main contacts			Rated thermal current Ith open	A	40
			Rated thermal current Ithe enclosed	A	40
Rated insulation voltage Ui *				V	690
Rated operational current Ie			AC21A	A	40
Rated operational voltage Ue max.			AC21A	V	690
Making capacity Ieff			3x380-440V	A	300
Breaking capacity			3x220-240V	A	250
			3x380-440V	A	250
			3x660-690V	A	170
Disconnection property performed up to				V	690
Motor Switch	AC3		3x400V	A	30
Motor Switch	AC3		3x220-240V	kW	7,5
Direct switching of single motors			3x380-440V	kW	15
			3x660-690V	kW	15
Main Switch	AC23		3x400V	A	32
Motor Switch	AC23A		3x220-240V	kW	9
Main Switch	AC23B		3x380-440V	kW	16
Safety Switch			3x660-690V	kW	15
Rated conditional short-circuit current			400V	kAeff	10
Max. fuse size gL (gG)			400V	A	40
Rated conditional short-circuit current			690V	kAeff	1
Max. fuse size gL (gG)			690V	A	40
A Mechanical life				x103	200
Rated short-time withstand current (1sec. current)				A	500
Power loss per pole AC21 = Ith	P/pole		E, Z	W	1,288
			V, SMA, PF	W	1,458
	R/pole		E, Z	mOhm	0,805
			V, SMA, PF	mOhm	0,911
Maximum ambient temperature	Operation		open		-40°C ... +60°C (90°C)**
			enclosed		-40°C ... +40°C
	Storage				-50°C ... +90°C
Cable cross sections	solid or stranded			mm^2	0,5 - 10
				AWG	20 - 8 (10)
	flexible			mm^2	0,5 - 6
				AWG	20 - 10
	flexible (+ multicore cable end)			mm^2	0,5 - 6
				AWG	20 - 10
	Size of terminal screw				M3,5
	Tightening torque			Nm	1,7 - 2,3
Auxiliary contacts	Rated insulation voltage Ui *			V	690
	Rated thermal current Ith , Ithe			A	10
	Switching capacity	AC15	380-450V	A	2,5/1,5
		DC13	60-110V	A	2/0,4
	Rated conditional short-circuit current			kAeff	3
	Max. short circuit protection gL (gG)			A	10
Cable cross sections	solid or stranded			mm^2	0,75 - 2,5
				AWG	14 - 12
	flexible (+ multicore cable end)			mm^2	0,75 - 2,5 (1,5)
				AWG	18 - 14

* suitable for: earthed-neutral systems, overvoltage category I to III, pollution degree 3 (standard-industry): Uimp = 6kV.
** Derating acc. to cable cross sections

Data according to UL and cUL

Type			ModLBS 40 3p ES
Rated voltage		V	600
Ampere-Rating "General use"		A	40
DOL-Rating 3-phase	110-120V	HP	2
	220-240V	HP	5
	440-480V	HP	10
	550-600V	HP	15
DOL-Rating 1-phase	110-120V	HP	1
	200-208V	HP	2
	220-240V	HP	3
Fuse size (RK5)	Manual Motor Controller	A	70
5kA / 600V	Motor Disconnect	A	50
Tightening torque		Nm	1,7-2,3
		lb.inch	15-20

Dimensions