

# MOTOR PROTECTION SWITCHES, CONTACTORS, OVERLOAD RELAYS

## TOP-TECHNIC



MOTOR PROTECTION SWITCHES UP TO 100A

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CONTACTORS

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OVERLOAD RELAYS

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SEMICONDUCTOR CONTACTORS

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1-PHASE ELECTRONIC ANALOGUE CONTROLLER

## TOP-TECHNIC



3-PHASE ELECTRONIC MOTOR CONTACTOR

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SOFT STARTERS

TOP-TECHNIC



MODULAR CONTACTORS

# MOTOR PROTECTION SWITCHES, CONTACTORS, OVERLOAD RELAYS

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3-PHASE ELECTRONIC MOTOR CONTACTOR

SOFT STARTERS

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# MOTOR PROTECTION SWITCHES UP TO 100A

## MOTOR PROTECTION SWITCH



BESD0063



BES00400



BES2....



BES3....

### SCHRACK-INFO

ALEA motor starter protectors are compact, current limiting motor starter protectors which are optimized for load feeders. The motor starter protectors are used for switching and protecting induction motors of up to 45 kW at 400 V AC and for other loads with rated currents of up to 100A.

TYPE	BESD / BES0 / BES2 / BES3			
APPLICATIONS				
System protection	1)			
Motor protection				
Motor protection with overload relay function	--			
Starter combinations	--			
Transformer protection	--			
Fuse monitoring	--			
Voltage transformer circuit breakers for distance protection	--			
SIZE	S00, S0, S2, S3			
RATED CURRENT $I_n$				
SIZE S00	up to 12A			
SIZE S0	up to 25A			
SIZE S2	up to 50A			
SIZE S3	up to 100A			
RATED OPERATIONAL VOLTAGE $U_e$ ACCORDING TO IEC	690 VAC <sup>2)</sup>			
RATED FREQUENCY	50/60 Hz			
TRIP CLASS	Class 10			
THERMAL OVERLOAD RELEASE	0.11 ... 0.16A up to 80 ... 100A			
ELECTRONIC TRIP UNIT	Multiple of the rated current 13 Times			
SHORT-CIRCUIT BREAKING CAPACITY $I_{cu}$ at 400 VAC	50/100 kA			
ACCESSORIES FOR SIZES	S00	S0	S2	S3
Auxiliary switches				
Signaling switches	--			
Undervoltage releases				
Shunt trip units				
Insulated three-phase busbar systems				--
Busbar adapters				
Door-coupling rotary operating mechanisms	--			
Link modules				
Enclosures for surface mounting				--
Infeed terminal			--	--

<sup>1)</sup> For symmetrical loading of the three phases.

<sup>2)</sup> 500 V AC with moulded-plastic enclosure.

# MOTOR PROTECTION SWITCHES UP TO 100A

## MOTOR PROTECTION SWITCH, SIZE 00



BESD0063

DESCRIPTION	*SHORT CIRCUIT BRAKING CAPACITY	SIZE	ORDER NO.
ALEA MOTOR PROTECTION SWITCH SIZE 00			
Motor protection switch 0,16A, Class 10	100kA	00	BESD0016
Motor protection switch 0,20A, Class 10	100kA	00	BESD0020
Motor protection switch 0,25A, Class 10	100kA	00	BESD0025
Motor protection switch 0,32A, Class 10	100kA	00	BESD0032
Motor protection switch 0,40A, Class 10	100kA	00	BESD0040
Motor protection switch 0,50A, Class 10	100kA	00	BESD0050
Motor protection switch 0,63A, Class 10	100kA	00	BESD0063
Motor protection switch 0,80A, Class 10	100kA	00	BESD0080
Motor protection switch 1,00A, Class 10	100kA	00	BESD0100
Motor protection switch 1,25A, Class 10	100kA	00	BESD0125
Motor protection switch 1,60A, Class 10	100kA	00	BESD0160
Motor protection switch 2,00A, Class 10	100kA	00	BESD0200
Motor protection switch 2,50A, Class 10	100kA	00	BESD0250
Motor protection switch 3,20A, Class 10	100kA	00	BESD0320
Motor protection switch 4,00A, Class 10	100kA	00	BESD0400
Motor protection switch 5,00A, Class 10	100kA	00	BESD0500
Motor protection switch 6,30A, Class 10	100kA	00	BESD0630
Motor protection switch 8,00A, Class 10	50kA	00	BESD0800
Motor protection switch 10A, Class 10	50kA	00	BESD1000
Motor protection switch 12A, Class 10	50kA	00	BESD1200

# MOTOR PROTECTION SWITCHES UP TO 100A

## MOTOR PROTECTION SWITCH, SIZE 0



BES00400

DESCRIPTION	*SHORT CIRCUIT BRAKING CAPACITY	SIZE	ORDER NO.
<b>ALEA MOTOR PROTECTION SWITCH SIZE 0</b>			
Motor protection switch 0,16A, Class 10	100kA	0	BES00016
Motor protection switch 0,20A, Class 10	100kA	0	BES00020
Motor protection switch 0,25A, Class 10	100kA	0	BES00025
Motor protection switch 0,32A, Class 10	100kA	0	BES00032
Motor protection switch 0,40A, Class 10	100kA	0	BES00040
Motor protection switch 0,50A, Class 10	100kA	0	BES00050
Motor protection switch 0,63A, Class 10	100kA	0	BES00063
Motor protection switch 0,80A, Class 10	100kA	0	BES00080
Motor protection switch 1,00A, Class 10	100kA	0	BES00100
Motor protection switch 1,25A, Class 10	100kA	0	BES00125
Motor protection switch 1,60A, Class 10	100kA	0	BES00160
Motor protection switch 2,00A, Class 10	100kA	0	BES00200
Motor protection switch 2,50A, Class 10	100kA	0	BES00250
Motor protection switch 3,20A, Class 10	100kA	0	BES00320
Motor protection switch 4,00A, Class 10	100kA	0	BES00400
Motor protection switch 5,00A, Class 10	100kA	0	BES00500
Motor protection switch 6,30A, Class 10	100kA	0	BES00630
Motor protection switch 8,00A, Class 10	100kA	0	BES00800
Motor protection switch 10A, Class 10	100kA	0	BES01000
Motor protection switch 12,5A, Class 10	100kA	0	BES01200
Motor protection switch 16A, Class 10	50kA	0	BES01600
Motor protection switch 20A, Class 10	50kA	0	BES02000
Motor protection switch 22A, Class 10	50kA	0	BES02200
Motor protection switch 25A, Class 10	50kA	0	BES02500

# MOTOR PROTECTION SWITCHES UP TO 100A

## MOTOR PROTECTION SWITCH, SIZE 2



BES2...

DESCRIPTION	*SHORT CIRCUIT BRAKING CAPACITY	SIZE	ORDER NO.
ALEA MOTOR PROTECTION SWITCH SIZE 2			
Motor protection switch 25A, Class 10	50kA	2	BES22500
Motor protection switch 32A, Class 10	50kA	2	BES23200
Motor protection switch 40A, Class 10	50kA	2	BES24000
Motor protection switch 45A, Class 10	50kA	2	BES24500
Motor protection switch 50A, Class 10	50kA	2	BES25000

## MOTOR PROTECTION SWITCH, SIZE 3



BES3...

DESCRIPTION	*SHORT CIRCUIT BRAKING CAPACITY	SIZE	ORDER NO.
ALEA MOTOR PROTECTION SWITCH SIZE 3			
Motor protection switch 63A, Class 10	50kA	3	BES36300
Motor protection switch 75A, Class 10	50kA	3	BES37500
Motor protection switch 90A, Class 10	50kA	3	BES39000
Motor protection switch 100A, Class 10	50kA	3	BES39999

# MOTOR PROTECTION SWITCHES UP TO 100A

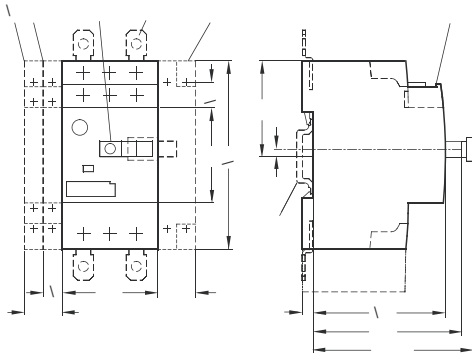
## MOTOR PROTECTION ACCESSORIES

DESCRIPTION	SIZE	ORDER NO.
<b>AUXILLIARY SWITCH</b>		
Auxilliary switch side mounted 1 NO + 1 NC	00/0/2/3	BEZ00001
Auxilliary switch front mounted 1 NO + 1 NC	00/0/2/3	BEZ00003
Auxilliary switch side mounted 2 NO	00/0/2/3	BEZ00002
Auxilliary switch front mounted 2 NO	00/0/2/3	BEZ00004
<b>ALARM-SWITCH</b>		
Alarm switch 1 NO + 1 NC	0/2/3	BEZ00005
<b>UNDERVOLTAGE RELEASE</b>		
Undervoltage release side mounted AC 230V/50HZ, AC 240V/60HZ	00/0/2/3	BEZ00006
Undervoltage release side mounted AC 400V/50HZ, AC 440V/60HZ	00/0/2/3	BEZ00007
<b>SHUNT TRIP</b>		
Shunt trip side mounted AC 20...24V, 50/60HZ, 100% ED	00/0/2/3	BEZ00008
Shunt trip side mounted AC 210...240V, 50/60HZ, 100% ED	00/0/2/3	BEZ00009
<b>HOUSINGS</b>		
Moulded plastic housing, membran IP55	00	BEZ00012
Moulded plastic housing, emergency stop, mushroom head	00	BEZ00013
Moulded plastic housing, rotary handle IP55	0	BEZ00112
Moulded plastic housing, emergency stop IP55	0	BEZ00113
Moulded plastic housing, rotary handle IP55	2	BEZ00212
Moulded plastic housing, emergency stop IP55	2	BEZ00213
Locking plate for 3 padlocks	00	BEZ00014
<b>BUSBARS/COVERS FOR SPARE-PLACE</b>		
3-pole busbar for 2 motor protection switches	00/0	BEZ00017
3-pole busbar for 3 motor protection switches	00/0	BEZ00018
3-pole busbar for 4 motor protection switches	00/0	BEZ00020
3-pole busbar for 5 motor protection switches	00/0	BEZ00021
3-pole busbar for 2 motor protection switches	2	BEZ00217
3-pole busbar for 3 motor protection switches	2	BEZ00218
Cover for spare-place, blank plate	00/0	BEZ00019
Cover for spare-place, blank plate	2	BEZ00219
<b>ACCESSORIES</b>		
Rotary operating (door coupling)	0/2/3	BEZ00010
Rotary operating, emergency stop (door coupling)	0/2/3	BEZ00011
<b>3 PHASE INFEEED TERMINAL</b>		
3 Phase Infeed Terminal Size 00 for 3-phase-busbar	00	BEZ00016
3 Phase Infeed Terminal Size 0 for 3-phase-busbar	0	BEZ00116
3 Phase Infeed Terminal Size 2 for 3-phase-busbar	2	BEZ00216

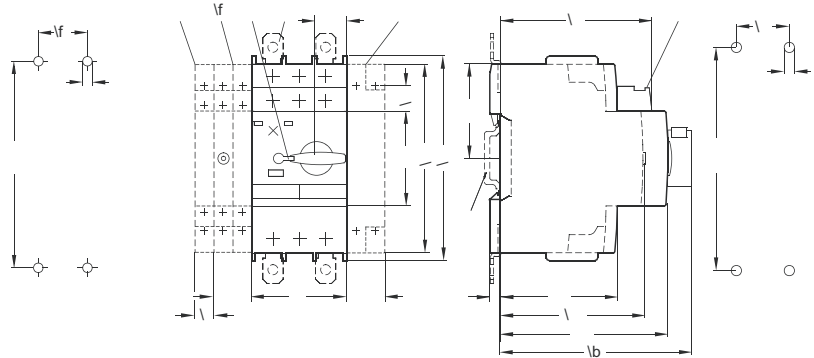
# MOTOR PROTECTION SWITCHES UP TO 100A

## DIMENSIONS

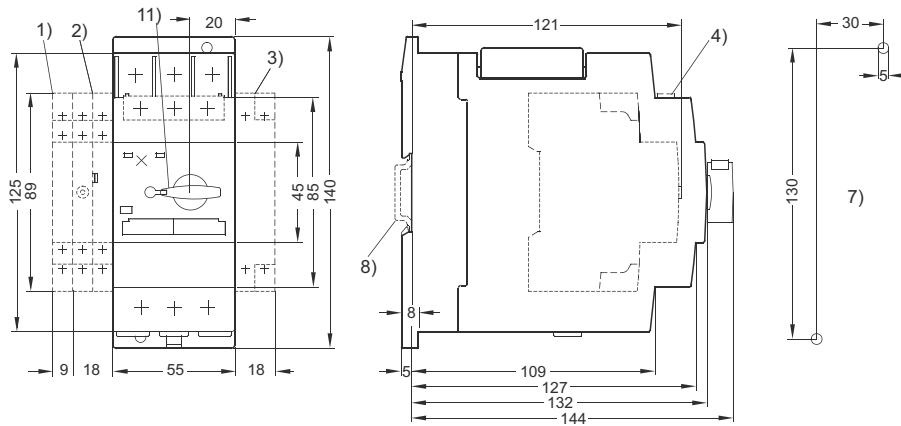
MOTOR PROTECTION SWITCH, SIZE 00  
BESD



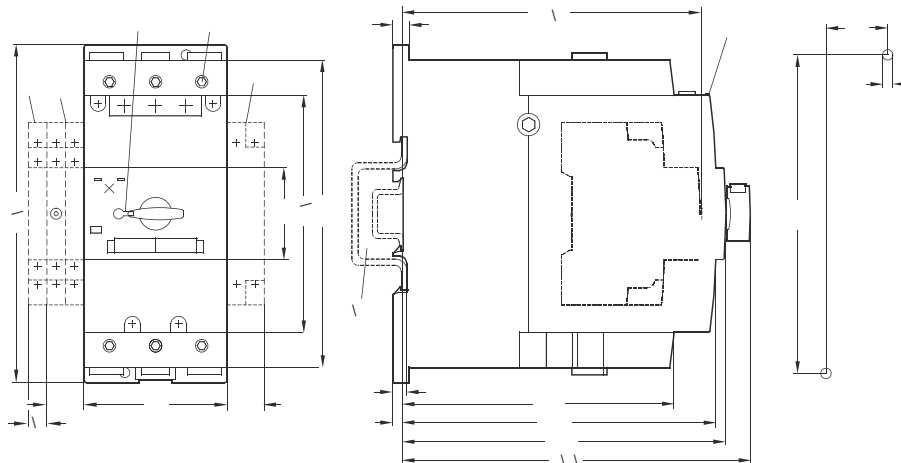
MOTOR PROTECTION SWITCH, SIZE 0  
BES0



MOTOR PROTECTION SWITCH, SIZE 2  
BES2



MOTOR PROTECTION SWITCH, SIZE 3  
BES3

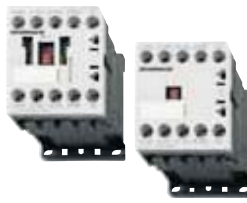





- 1) Side mounted auxiliary switch, 2-pole
- 2) Signaling switch (S0 ... S3) side mounted
- 3) Auxiliary trip unit
- 4) Front mounted auxiliary switch
- 5) Push-in lugs for screw mounting
- 6) With leading auxiliary switch only for undervoltage release
- 7) Drilling pattern
- 8) Standard mounting rail TH 35 according to EN 60715
- 9) For mounting according to EN 60715 on TH 35 standard mounting rail, 15 mm deep, or TH 75 standard mounting rail
- 10) Allen screw 4 mm
- 11) Lockable in neutral position with 3.5 ... 4.5 mm shackle diameter



# CONTACTORS






## CONTACTORS AND CONTACTOR ASSEMBLIES 3-POLE / INTRODUCTION

											
LSHD / LSHD-PLC*		LSDD / LSSD-PLC*			LSD0 / LSS0				LSD2		
SIZE	S00	S00			S0				S2		
TYPE	LSHD	LSDD / LSSD*			LSD0 / LSS0				LSD2		
CONTACTORS AND VACUUM CONTACTORS											
TYPE / AC, DC OPERATION	06	07	09	12	09	12	17	25	32	40	50
AC-3											
Ie/AC-3/400 V	6A	7A	9A	12A	9A	12A	17A	25A	32A	40A	50A
400V	3A	3kW	4kW	5.5kW	4kW	5.5kW	7.5kW	11kW	15kW	18.5kW	22kW
230V	--	2.2kW	3kW	3kW	3kW	3kW	4kW	5.5kW	7.5kW	11kW	15kW
500V	2A	3.5kW	4.5kW	5.5kW	4.5kW	7.5kW	10kW	11kW	18.5kW	22kW	30kW
690V	1A	4kW	5.5kW	5.5kW	5.5kW	7.5kW	11kW	11kW	18.5kW	22kW	22kW
00V	--	--	--	--	--	--	--	--	--	--	--
AC-4 (FOR IA = 6 X IE)											
400V	--	3kW	4kW	4kW	4kW	5.5kW	7.5kW	7.5kW	15kW	18.5kW	22kW
400 V (200 000 operating cycles)	--	1.15kW	2kW	2kW	2kW	2.6kW	3.5kW	4.4kW		8.2kW	9.5kW
AC-1 (40 °C, 690 V)											
Ie	10A	18A	22A	22A	40A	40A	40A	40A	50A	60A	60A
ACCESSORIES FOR CONTACTORS											
AUXILIARY SWITCH BLOCKS	LSZDH5..	LSZDH.../LSZDD			LSZD0...				LSZD0...		
lateral	--	LSZDD			LSZD07..				LSZD07..		
TERMINAL COVERS	--	--			--				LSZ2D...		
SURGE SUPPRESSORS	LSZH0...	LSZD....			LSZ0....				LSZ2D....		
OVERLOAD RELAYS (PROTECTION EQUIPMENT: OVERLOAD RELAYS)											
LST,thermal, Class 10	--	LSTD.... 0.1 ... 12 A			LST0.... 2.5 ... 25 A				LST2.... 10 ... 50 A		
		LST0.... 2.5 ... 12 A									
MOTOR STARTER PROTECTORS (PROTECTION EQUIPMENT: MOTOR STARTER PROTECTORS)											
TYPE BES	--	BESD 0.16 ... 12 A Size 00			BES0 0.16 ... 25 A				BES2 25 ... 50 A		
		BESD 0.16 ... 12 A Size 0									
LINK MODULES LSZ	--	LSZDD005, LSZDD006			LSZD0002 (AC), LSZD0004 (DC)				LSZ2D004 (AC), LSZ2D005 (DC)		
REVERSING CONTACTOR ASSEMBLIES											
COMPLETE UNITS TYPE LSW	--	LSWD07.. LSWD09.. LSWD12..			LSW012.. LSW017.. LSW025..				LSW232.. LSW240.. LSW250..		
400 V	--	3kW 4kW 5.5kW			5.5kW 7.5kW 12kW 15kW				18.5kW 22kW		
INSTALLATION KITS/WIRING MODULES	--	LSZDW001			LSZDW001				LSZ2W001		
MECHANICAL INTERLOCKS	--	in installation kit included			LSZOW002				LSZOW002		
CONTACTOR ASSEMBLIES FOR WYE-DELTA STARTING											
COMPLETE UNITS TYPE LSY	--	LSYD17..			LSY032..				LSY25033		
400 V	--	7.5kW			15kW				22kW		
INSTALLATION KITS/WIRING MODULES	--	LSZDW001			LSZ0Y001				LSZ2Y003		

\* no further auxiliary contacts for PLC-use types possible

# CONTACTORS

## CONTACTORS AND CONTACTOR ASSEMBLIES 3-POLE / INTRODUCTION

				
LSD3	LSD6	LSDE	LSDG	LSDH
S3 LSD3	S6 LSD6	S10 LSDE	S12 LSDG	S14 LSDH
65 80 95	11 15 19	22 26 30	41 51	63/64 82/83
65A 80A 95A 30kW 37kW 45kW 18.5kW 22kW 22kW 37kW 45kW 55kW 45kW 55kW 55kW 30kW 37kW 37kW	115A 150A 185A 55kW 75kW 90kW 110kW 37kW 45kW 55kW 75kW 90kW 110kW 110kW 132kW 160kW 75kW 90kW 90kW	225A 265A 300A 132kW 160kW 200kW 55kW 75kW 90kW 160kW 160kW 200kW 200kW 250kW 250kW 90/315kW 132/355kW 132/400kW	400A 500A 250kW 335kW 132kW 160kW 250kW 355kW 400kW 400/500kW 250/560kW 250/710kW	630A 820A 450kW 200kW 260kW 434kW 600kW 600kW 800kW 600kW 800kW
30kW 37kW 45kW 15.1kW 17.9kW 22kW	55kW 75kW 90kW 110kW 29kW 38kW 45kW	132kW 160kW 200kW 54/78kW 66/93kW 71/112kW	250kW 335kW 84/140kW 98/161kW	450kW 168kW 191kW
100A 120A 120A	150A 185A 215A 275/330A	330A 330A 430/610A	610A	700A 910A
LSZ0D... LSZ0D7..., LSZ3D8.. LSZ3D... LSZ2....	LSZ0D... LSZ0D7..., LSZ3D8.. LSZ6D... LSZ6....	LSZ0D... LSZ0D7..., LSZ3D8.. LSZED... LSZ6....	LSZ0D... LSZ0D7..., LSZ3D8.. -- LSZ6....	-- -- -- --
LST3 25 ... 100 A	--	--	--	--
BES3 63 ... 100 A LS3D003 (AC), LS3D004 (DC)	--	--	--	--
LSW365.. LSW380.. LSW395.. 30kW 37kW 45kW LSZ3W001 LSZ0W002	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--

# CONTACTORS

## CONTACTORS AC3 – 3POLE, SIZE 00



LSDD....



LSDD....-PLC

DESCRIPTION	COIL VOLTAGE	FREQU/REMARK	ORDER NO.
<b>SIZE 00 – TYPE LSDD</b>			
Contactor AC3:3KW/400V, 1NO	AC24V	50HZ	LSDD0710
Contactor AC3:3KW/400V, 1NC*	AC24V	50HZ	LSDD0720
Contactor AC3:3KW/400V, 1NO	AC110V	50HZ	LSDD0712
Contactor AC3:3KW/400V, 1NC*	AC110V	50HZ	LSDD0722
Contactor AC3:3KW/400V, 1NO	AC230V	50/60HZ	LSDD0713
Contactor AC3:3KW/400V, 1NC*	AC230V	50/60HZ	LSDD0723
Contactor AC3:3KW/400V, 1NO	DC24V		LSDD0715
Contactor AC3:3KW/400V, 1NC*	DC24V		LSDD0725
Contactor AC3:4KW/400V, 1NO	AC24V	50HZ	LSDD0910
Contactor AC3:4KW/400V, 1NC*	AC24V	50HZ	LSDD0920
Contactor AC3:4KW/400V, 1NO	AC110V	50HZ	LSDD0912
Contactor AC3:4KW/400V, 1NC*	AC110V	50HZ	LSDD0922
Contactor AC3:4KW/400V, 1NO	AC230V	50/60HZ	LSDD0913
Contactor AC3:4KW/400V, 1NC*	AC230V	50/60HZ	LSDD0923
Contactor AC3:4KW/400V, 1NO	DC24V		LSDD0915
Contactor AC3:4KW/400V, 1NC*	DC24V		LSDD0925
Contactor AC3:5,5KW/400V, 1NO	AC24V	50HZ	LSDD1210
Contactor AC3:5,5KW/400V, 1NC*	AC24V	50HZ	LSDD1220
Contactor AC3:5,5KW/400V, 1NO	AC110V	50HZ	LSDD1212
Contactor AC3:5,5KW/400V, 1NC*	AC110V	50HZ	LSDD1222
Contactor AC3:5,5KW/400V, 1NO	AC230V	50/60HZ	LSDD1213
Contactor AC3:5,5KW/400V, 1NC*	AC230V	50/60HZ	LSDD1223
Contactor AC3:5,5KW/400V, 1NO	DC24V		LSDD1215
Contactor AC3:5,5KW/400V, 1NC*	DC24V		LSDD1225
<b>SIZE 00 – TYPE LSDD FOR PLC</b>			
Contactor AC3:3KW/400V, 1NO	DC17-30V	no further aux. contacts	LSDD071G
Contactor AC3:3KW/400V, 1NC	DC17-30V	no further aux. contacts	LSDD072G
Contactor AC3:4KW/400V, 1NO	DC17-30V	no further aux. contacts	LSDD091G
Contactor AC3:4KW/400V, 1NC	DC17-30V	no further aux. contacts	LSDD092G
Contactor AC3:5,5KW/400V, 1NO	DC17-30V	no further aux. contacts	LSDD121G
Contactor AC3:5,5KW/400V, 1NC	DC17-30V	no further aux. contacts	LSDD122G

\* Only Auxiliary block type LSZDH5.. possible

## CONTACTORS AC3 – 3POLE, SIZE 0



LSD0....-PLC

DESCRIPTION	COIL VOLTAGE	FREQU/REMARK	ORDER NO.
SIZE 0 – TYPE LSD0			
Contactora AC3:4KW/400V	AC24V	50HZ	LSD00930
Contactora AC3:4KW/400V	DC24V		LSD00935
Contactora AC3:4KW/400V	AC110V	50HZ	LSD00932
Contactora AC3:4KW/400V	AC230V	50/60HZ	LSD00933
Contactora AC3:5,5KW/400V	AC24V	50HZ	LSD01230
Contactora AC3:5,5KW/400V	DC24V		LSD01235
Contactora AC3:5,5KW/400V	AC110V	50HZ	LSD01232
Contactora AC3:5,5KW/400V	AC230V	50/60HZ	LSD01233
Contactora AC3:7,5KW/400V	AC24V	50HZ	LSD01730
Contactora AC3:7,5KW/400V	DC24V		LSD01735
Contactora AC3:7,5KW/400V	AC110V	50HZ	LSD01732
Contactora AC3:7,5KW/400V	AC230V	50/60HZ	LSD01733
Contactora AC3:7,5KW/400V	AC400V	50HZ	LSD01734
Contactora AC3:11KW/400V	AC24V	50HZ	LSD02530
Contactora AC3:11KW/400V	DC24V		LSD02535
Contactora AC3:11KW/400V	AC110V	50HZ	LSD02532
Contactora AC3:11KW/400V	AC230V	50/60HZ	LSD02533
SIZE 0 – TYPE LSS0 FOR PLC			
Contactora AC3:5,5KW/400V	DC17-30V		LSS0123H
Contactora AC3:7,5KW/400V	DC17-30V		LSS0173H
Contactora AC3:11KW/400V	DC17-30V		LSS0253H

# CONTACTORS

## CONTACTORS AC3 – 3POLE, SIZE 2



LSD2....

DESCRIPTION	COIL VOLTAGE	FREQU/REMARK	ORDER NO.
SIZE 2 – TYPE LSD2			
Contactora AC3:15KW/400V	AC24V	50HZ	LSD23230
Contactora AC3:15KW/400V	DC24V		LSD23235
Contactora AC3:15KW/400V	AC110V	50HZ	LSD23232
Contactora AC3:15KW/400V	AC230V	50/60HZ	LSD23233
Contactora AC3:18,5KW/400V	AC24V	50HZ	LSD24030
Contactora AC3:18,5KW/400V	DC24V		LSD24035
Contactora AC3:18,5KW/400V	AC110V	50HZ	LSD24032
Contactora AC3:18,5KW/400V	AC230V	50/60HZ	LSD24033
Contactora AC3:22KW/400V	AC24V	50HZ	LSD25030
Contactora AC3:22KW/400V	DC24V		LSD25035
Contactora AC3:22KW/400V	AC110V	50HZ	LSD25032
Contactora AC3:22KW/400V	AC230V	50/60HZ	LSD25033

## CONTACTORS AC3 – 3POLE, SIZE 3



LSD3....

DESCRIPTION	COIL VOLTAGE	FREQU/REMARK	ORDER NO.
SIZE 3 – TYPE LSD3			
Contactora AC3:30KW/400V	AC24V	50HZ	LSD36530
Contactora AC3:30KW/400V	DC24V		LSD36535
Contactora AC3:30KW/400V	AC110V	50HZ	LSD36532
Contactora AC3:30KW/400V	AC230V	50/60HZ	LSD36533
Contactora AC3:30KW/400V, 2NO+2NC	AC230V	50HZ	LSD36553
Contactora AC3:37KW/400V	AC24V	50HZ	LSD38030
Contactora AC3:37KW/400V	DC24V		LSD38035
Contactora AC3:37KW/400V, 2NO+2NC	AC24V	50HZ	LSD38050
Contactora AC3:37KW/400V	AC110V	50HZ	LSD38032
Contactora AC3:37KW/400V, 2NO+2NC	AC110V	50HZ	LSD38052
Contactora AC3:37KW/400V	AC230V	50/60HZ	LSD38033
Contactora AC3:45KW/400V	AC24V	50HZ	LSD39530
Contactora AC3:45KW/400V	DC24V		LSD39535
Contactora AC3:45KW/400V	AC230V	50/60HZ	LSD39533
Contactora AC3:45KW/400V, 2NO+2NC	AC230V	50/60HZ	LSD39553

## CONTACTORS AC3 – 3POLE, SIZE 6/10/12/14



LSD6...



LSDE... / LSDG...



LSDH...

DESCRIPTION	COIL VOLTAGE	FREQU/REMARK	ORDER NO.
<b>SIZE 6 – TYPE LSD6</b>			
Contactor AC3:55KW/400V, 2NO+2NC	UC220-240V	40-60HZ	LSD6115F
Contactor AC3:75KW/400V, 2NO+2NC	UC220-240V	40-60HZ	LSD6155F
Contactor AC3:90KW/400V, 2NO+2NC	UC220-240V	40-60HZ	LSD6195F
<b>SIZE 10 – TYPE LSDE</b>			
Contactor AC3:110KW/400V, 2NO+2NC	UC220-240V	40-60HZ	LSDE225F
Contactor AC3:132KW/400V, 2NO+2NC	UC220-240V	40-60HZ	LSDE265F
Contactor AC3:160KW/400V, 2NO+2NC	UC220-240V	40-60HZ	LSDE305F
<b>SIZE 12 – TYPE LSDG</b>			
Contactor AC3:200KW/400V, 2NO+2NC	UC220-240V	40-60HZ	LSDG415F
Contactor AC3:250KW/400V, 2NO+2NC	UC220-240V	40-60HZ	LSDG515F
<b>SIZE 14 – TYPE LSDH</b>			
Contactor AC3:335KW/400V, 4NO+4NC	UC200-240V	50HZ	LSDH63G3
Contactor AC3:335KW/1000V, 4NO+4NC	UC200-240V	50HZ	LSDH64G3
Contactor AC3:450KW/400V, 4NO+4NC	UC200-240V	50HZ	LSDH82G3
Contactor AC3:450KW/1000V, 4NO+4NC	UC200-240V	50HZ	LSDH83G3

## CONTACTORS AC1 – 4POLE, SIZE 00/0



LSR0...

DESCRIPTION	COIL VOLTAGE	FREQU/REMARK	ORDER NO.
<b>SIZE 00 – TYPE LSRD</b>			
Contactor AC1:18A/690V	AC24V	50/60HZ	LSRD1840
Contactor AC1:18A/690V	DC24V		LSRD1845
Contactor AC1:18A/690V	AC230V	50/60HZ	LSRD1843
Contactor AC1:22A/690V	AC24V	50/60HZ	LSRD2240
Contactor AC1:22A/690V	DC24V		LSRD2245
Contactor AC1:22A/690V	AC230V	50/60HZ	LSRD2243
<b>SIZE 0 – TYPE LSR0</b>			
Contactor AC1:35A/690V	AC24V	50HZ	LSR03540
Contactor AC1:35A/690V	DC24V		LSR03545
Contactor AC1:35A/690V	AC230V	50/60HZ	LSR03543
Contactor AC1:40A/690V	AC24V	50HZ	LSR04040
Contactor AC1:40A/690V	DC24V		LSR04045
Contactor AC1:40A/690V	AC230V	50/60HZ	LSR04043

# CONTACTORS

## CONTACTORS AC1 – 4POLE, SIZE 2/3



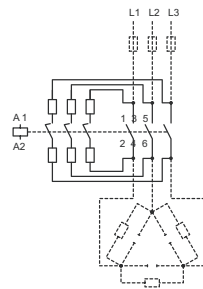
LSR3....

DESCRIPTION	COIL VOLTAGE	FREQU/REMARK	ORDER NO.
<b>SIZE 2 – TYPE LSR2</b>			
Contactora AC1:60A/690V	AC24V	50HZ	LSR26040
Contactora AC1:60A/690V	DC24V		LSR26045
Contactora AC1:60A/690V	AC230V	50/60HZ	LSR26043
<b>SIZE 3 – TYPE LSR3</b>			
Contactora AC1:110A/690V	AC24V	50HZ	LSR31140
Contactora AC1:110A/690V	DC24V		LSR31145
Contactora AC1:110A/690V	AC230V	50/60HZ	LSR31143
Contactora AC1:140A/690V	AC24V	50HZ	LSR31440
Contactora AC1:140A/690V	DC24V		LSR31445
Contactora AC1:140A/690V	AC230V	50/60HZ	LSR31443

## CAPACITOR SWITCHING CONTACTORS



LA3K181



### SCHRACK-INFO

- For use in detuned or non-detuned capacitor units.
- Technical data according to EN 60 947-4-1; EN 60 947-5-1; VDE 0660

### TECHNICAL DATA

Specification: The capacitor switching contactors K3-..K are suitable for switching low-inductive and lowloss capacitors in capacitor banks (IEC70 & 831, VDE 0560) with and without reactors. Capacitor switching contactors are fitted with early make contacts and damping resistors to reduce the value of the make current to  $<70 \times I_e$ .

Operating conditions: Capacitor switching contactors are protected against contact welding for a prospective make current of  $200 \times I_e$ . Fuse rating approx.  $1,6$  to  $2,5 \times I_e$ , type gL gG9.

CAPACITOR RATING 400V/AUXILLARY CONTACTS	COIL VOLTAGE	FREQU/REMARK	ORDER NO.
12,5 kVA <sub>r</sub> /1 NO	AC220-240V	50Hz	LA3K1813
12,5 kVA <sub>r</sub> /1 NC	AC220-240V	50Hz	LA3K1823
20 kVA <sub>r</sub> / 0	AC220-240V	50Hz	LA3K2433
25 kVA <sub>r</sub> / 0	AC220-240V	50Hz	LA3K3233
33,3 kVA <sub>r</sub> / 0	AC220-240V	50Hz	LA3K5033
50 kVA <sub>r</sub> / 0	AC220-240V	50Hz	LA3K6233
75 kVA <sub>r</sub> / 0	AC220-240V	50Hz	LA3K7433

## AUXILIARY CONTACTORS AC15 – 4POLE, SIZE 00



LSHD...



LSHD...-PLC

DESCRIPTION	COIL VOLTAGE	FREQU/REMARK	ORDER NO.
SIZE 00 – TYPE LSHD			
Contactora AC15: 6A/230V, 4NO	AC24V	50HZ	LSHD0670
Contactora AC15: 6A/230V, 4NO	DC24V		LSHD0675
Contactora AC15: 6A/230V, 4NO	AC230V	50/60HZ	LSHD0673
Contactora AC15: 6A/230V, 3NO+1NC	AC24V	50HZ	LSHD0680
Contactora AC15: 6A/230V, 3NO+1NC	DC24V		LSHD0685
Contactora AC15: 6A/230V, 3NO+1NC	AC230V	50/60HZ	LSHD0683
Contactora AC15: 6A/230V, 2NO+2NC	AC24V	50HZ	LSHD0690
Contactora AC15: 6A/230V, 2NO+2NC	DC24V		LSHD0695
Contactora AC15: 6A/230V, 2NO+2NC	AC230V	50/60HZ	LSHD0693
SIZE 00 – TYPE LSHD FOR PLC			
Contactora, plug for RC, AC15: 6A/230V, 4NO	DC17-30V	no further aux. contacts	LSHD067N
Contactora with diode assembly, AC15: 6A/230V, 4NO	DC17-30V	no further aux. contacts	LSHD067G
Contactora, plug for RC, AC15: 6A/230V, 3NO+1NC	DC17-30V	no further aux. contacts	LSHD068N
Contactora with diode assembly, AC15: 6A/230V, 3NO+1NC	DC17-30V	no further aux. contacts	LSHD068G
Contactora, plug for RC, AC15: 6A/230V, 2NO+2NC	DC17-30V	no further aux. contacts	LSHD069N
Contactora with diode assembly, AC15: 6A/230V, 2NO+2NC	DC17-30V	no further aux. contacts	LSHD069G

## ACCESSORIES FOR CONTACTORS, SIZE 00

DESCRIPTION	COIL VOLTAGE	FREQU/REMARK	ORDER NO.
ACCESSORIES FOR SIZE 00 – TYPE LSDD			
Auxiliary Contact Block for size 00, 1NC*			LSZDD201
Auxiliary Contact Block for size 00, 1NO+2NC*			LSZDD212
Auxiliary Contact Block for size 00, 1NO+3NC*			LSZDD213
Auxiliary Contact Block for size 00, 2NO+2NC*			LSZDD222
Parallel connector, 25mm <sup>2</sup> for size 00, 3pol.+terminal			LSZDD003
Parallel connector, 25mm <sup>2</sup> for size 00, 4pol.+terminal			LSZDD004
Reversing contactor assemblies for size 00, mech.interlock, connection clips, wiring set			LSZDW001
Wye-Delta starting assemblies for size 00, mech.interlock, connection clips, wiring set			LSZDY001
YD-timer, 0,5-20s for size 00, timedelay -20s			LSZD0101
YD-timer, 60s heavy duty for size 00, timedelay -60s			LSZD0102
Connection link for motor protection switch BESD, size 00, and contactor size 00	AC-DC operated		LSZDD005
Connection link for motor protection switch BES0, size 00, and contactor size 00	AC-DC operated		LSZDD006
Solder pin connection for size 00			LSZDD002
Varistor for size 00	AC24-48V; DC24-70V		LSZD0001
Varistor for size 00	AC127-240V; DC150-250V		LSZD0002
Surge supressor for size 00	AC127-240V; DC150-250V		LSZD0003
Surge supressor diode for size 00	DC12-250V		LSZD0004

\* Auxiliary contact blocks only for use with contactors type LSDD... with one NO included

for contactors type LSDD... with one NC included use auxiliary contact blocks type LSZDH5.. (see page 206)



# CONTACTORS

## ACCESSORIES FOR CONTACTORS, SIZE 00

DESCRIPTION	COIL VOLTAGE	FREQU/REMARK	ORDER NO.
ACCESSORIES FOR SIZE 00 – TYPE LSHD/LSDD WITH 1NC			
Auxiliary Contact Block for size 00, 4NO			LSZDH540
Auxiliary Contact Block for size 00, 3NO+1NC			LSZDH531
Auxiliary Contact Block for size 00, 2NO+2NC			LSZDH522
Auxiliary Contact Block for size 00, 1NO+3NC			LSZDH513
Auxiliary Contact Block for size 00, 4NC			LSZDH504

## ACCESSORIES FOR CONTACTORS, SIZE 0-12

DESCRIPTION		ORDER NO.
ACCESSORIES FOR SIZE 0 – 12		
Auxiliary Contact for size 0-12, 1NC		LSZ0D001
Auxiliary Contact for size 0-12, 1NO		LSZ0D010
Auxiliary Contact for size 0-12, 1NC-delayed		LSZ0D901
Auxiliary Contact for size 0-12, 1NO-early make		LSZ0D910
Auxiliary Contact, sidemounted for size 0-12, 1NO+1NC, fist position		LSZ0D711
Auxiliary Contact, sidemounted for size 3-12, 1NO+1NC, second position		LSZ3D811
Auxiliary Contact Block for size 0-12, 1NO+3NC		LSZ0D113
Auxiliary Contact Block for size 0-12, 2NO+2NC		LSZ0D122
Auxiliary Contact Block for size 0-12, 3NO+1NC		LSZ0D131
Parallel connector, 35mm <sup>2</sup> for size 0, 3pol.+terminal		LSZ0D003
Parallel connector; 95mm <sup>2</sup> for size 2, 3pol.+terminal		LSZ2D003
Reversing contactor assemblies for size 0, connection clips, wiring set		LSZ0W001
Reversing contactor assemblies for size 2, wiring set		LSZ2W001
Reversing contactor assemblies for size 3, wiring set		LSZ3W001
Reversing contactor assemblies for size 6, wiring set		LSZ6W002
Reversing contactor assemblies for size 10, wiring set		LSZEW001
Reversing contactor assemblies for size 12, wiring set		LSZGW001
Mechanical interlock for size 0-3		LSZ0W002
Mechanical interlock for size 6-12		LSZ6W001
YD starting assemblies for size 0, mech.interlock, connection clips, wiring set		LSZ0Y001
Parallel connector, star link for size 0, 3pol.		LSZ0Y002
YD starting assemblies for size 2-2-0, wiring set		LSZ2Y004
YD starting assemblies for size 2-2-2, wiring set		LSZ2Y003
YD-timer, 0,5-20s for size 0-12, timedelay -20s		LSZD0101
YD-timer, 60s heavy duty for size 0-12, timedelay -60s		LSZD0102
YD-connection clips for size 2-3		LSZ2D001
Feed terminal, 1phase for size 3		LSZ3D001
YD-Mountingplate for size S2-S2-S0		LSZ2Y001
YD-Mountingplate for size S2-S2-S2		LSZ2Y002
Connection link for motor protection switch BES0, size 0, and contactor size 0	AC-operating	LSZ0D002
Connection link for motor protection switch BES0, size 0, and contactor size 0	DC-operating	LSZ0D004
Surge supsressor, diode assemblies for size 0, top mounted	DC24V, DC-operating	LSZD0005
Surge supsressor, diode assemblies for size 0, bottom mounted	DC24V, DC-operating	LSZD0006
Varistor for size 0	AC24-48V; DC24-70V	LSZ00001
Varistor for size 0	AC127-240V; DC150-250V	LSZ00002
Surge supsressor, RC for size 0	AC127-240V; DC150-250V	LSZ00003
Surge supsressor, RC for size 2-3	AC127-240V; DC150-250V	LSZ20001
Surge supsressor, RC for size 6-12	AC127-240V; DC150-250V	LSZ60001

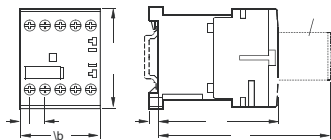
## ACCESSORIES FOR CONTACTORS, SIZE 0-12 – continued

DESCRIPTION	COIL VOLTAGE	FREQU/REMARK	ORDER NO.
ACCESSORIES FOR SIZE 0 – 12			
Connection link for motor protection switch BES2, size 2, and contactor size 2	for AC-use		LSZ2D004
Connection link for motor protection switch BES2, size 2, and contactor size 2	for DC-use		LSZ2D005
Connection link for motor protection switch BES3, size 3, and contactor size 3	for DC-use		LSZ3D003
Connection link for motor protection switch BES3, size 3, and contactor size 3	for AC-use		LSZ3D004
Connection link, 4pole for size 2 to S2			LSZ2W002
Connection link, 4pole for size 3 to S3			LSZ3W002
Connection link, 3pole for size 2/3/6 to 2/3/6			LSZ2W003
Mechanical latching block for size 0-2, remains "ON" if voltage fails	24VACDC		LSZ00113
Terminal Cover for size 2*			LSZ2D002
Terminal Cover for size 3*			LSZ3D002
Terminal Cover for size 6*			LSZ6D001
Terminal Cover - short version for size 6*			LSZ6D002
Terminal Cover for size 10*			LSZED001
Terminal Cover - short version for size 10*			LSZED002

\* Order 2 pcs. for one complete contactor, order 1 pc. just for one side (up side or bottom side) of contactor

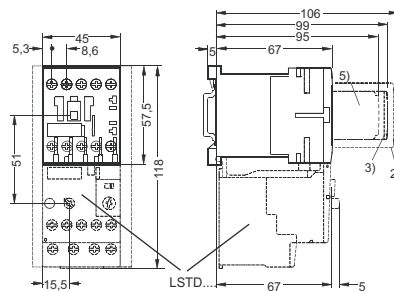
### DIMENSIONS

LSHD.... size S00 | LSDD.... size S00



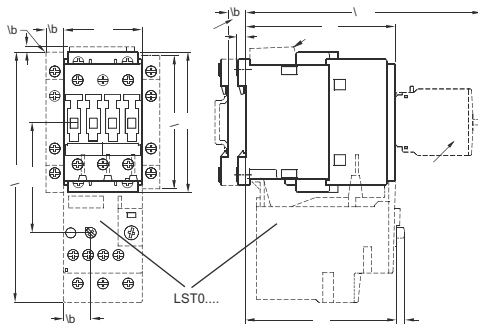
3) Surge suppressor

LSDD.... size S00



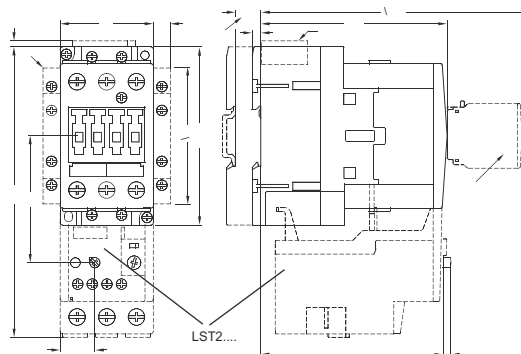
- 2) Auxiliary switch block (LSZDD2...)
- 3) Surge suppressor (LSZD000)
- 5) Auxiliary switch block 1-pole

LSD0.... size S0



- a = 3 mm at < 240 V, a = 7 mm at > 240 V, b = DC 10 mm deeper than AC
- 1) Auxiliary switch block, laterally mountable
  - 2) Auxiliary switch block, mountable on the front, LSZ0D...
  - 3) Surge suppressor

LS2.... size S2

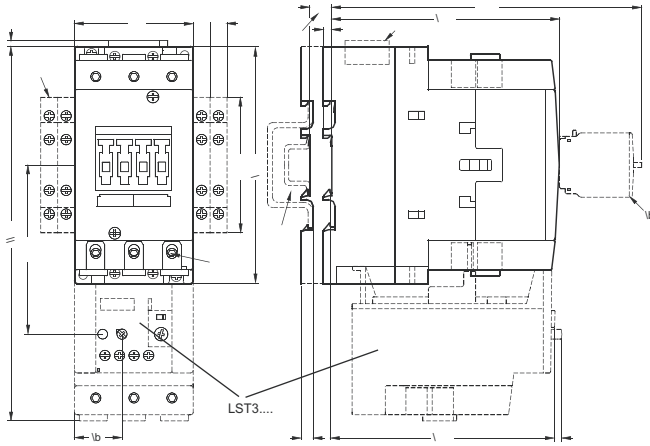


- a = 0 mm with varistor < 240 V, diode assembly  
a = 3.5 mm with varistor > 240 V  
a = 17 mm with RC element  
b = DC 15 mm deeper than AC
- 1) Auxiliary switch block, laterally mountable
  - 2) Auxiliary switch block, mountable on the front, LSZ0D...
  - 3) Surge suppressor

# CONTACTORS

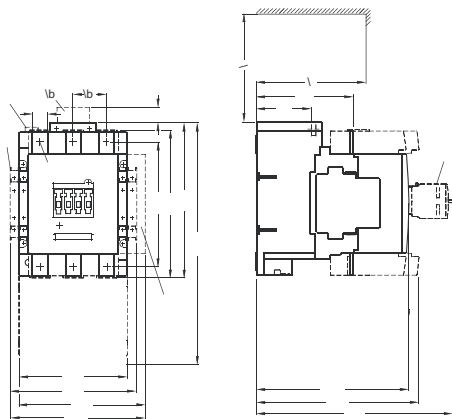
## DIMENSIONS

LSD3.... size S3



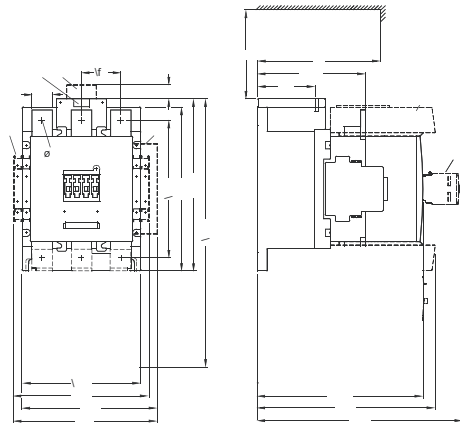
- a = 0 mm with varistor, diode assembly and < 240 V, a = 3.5 mm with varistor and > 240 V, a = 17 mm with RC element,  
 b = DC 13 mm deeper than AC  
 1) Auxiliary switch block, laterally mountable  
 2) Auxiliary switch block, mountable on the front (1-, 2- and 4-pole), LSZ0D7..., LSZ3D8..., LSZ0D9...  
 3) Surge suppressor  
 5) For mounting on TH 35 or TH 75 standard mounting rail according to EN 60715 (15 mm deep)  
 6) Allen screw 4 mm

LSD6.... size S6



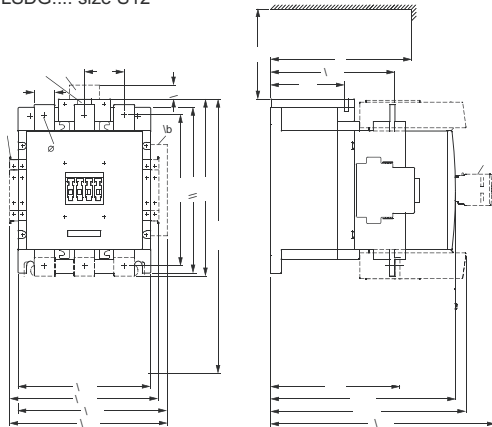
- k = 120 mm (minimum clearance for removing the withdrawable coil)  
 1) 2nd auxiliary switch block, lateral LSZ3D8...  
 2) Auxiliary switch block, mountable on the front LSZ0D...  
 3) RC element

LSDE.... size S10



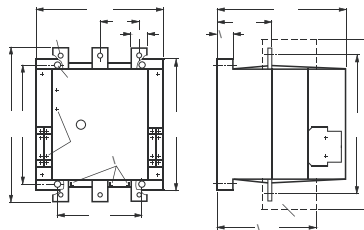
- k = 150 mm (minimum clearance for removing the withdrawable coil)  
 1) 2nd auxiliary switch block, lateral LSZ3D8...  
 2) Auxiliary switch block, mountable on the front LSZ0D...  
 3) RC element

LSDG.... size S12

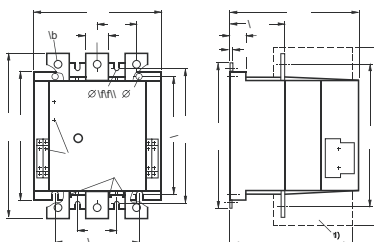


- k = 150 mm (minimum clearance for removing the withdrawable coil)  
 1) 2nd auxiliary switch block, lateral LSZ3D8...  
 2) Auxiliary switch block, mountable on the front LSZ0D...  
 3) RC element

LSDH6.... size S14

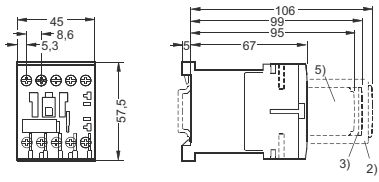


LSDH8.... size S14



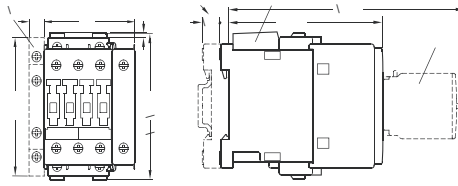
## DIMENSIONS

LSRD.... size S00



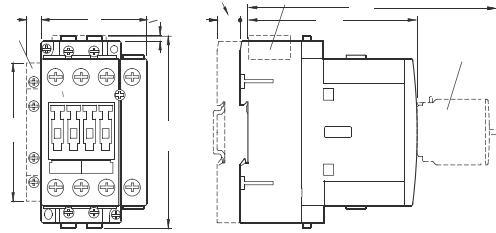
- 2) Auxiliary switch block
- 3) Surge suppressor
- 5) Auxiliary switch block 1-pole

LSR0.... size S0

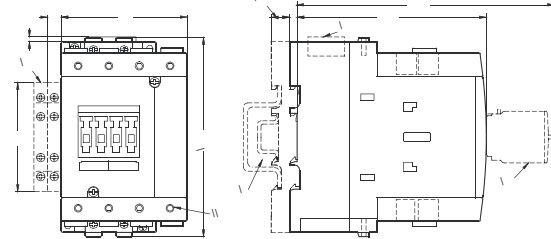


- a = 3 mm at < 250 V and mounting of surge suppressor; a = 7 mm at > 250 V and mounting of surge suppressor,
- b = DC 10 mm deeper than AC
- 1) Auxiliary switch block, laterally mountable (left)
- 2) Auxiliary switch block, mountable on the front
- 3) Surge suppressor

LSR2.... size S2



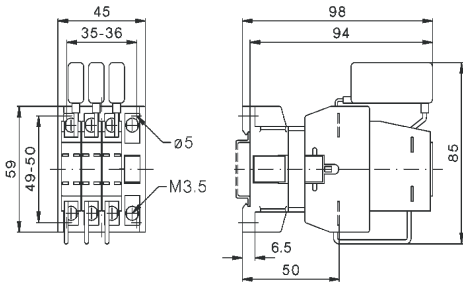
LSR3.... size S3



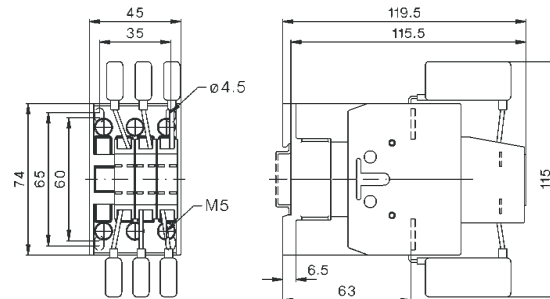
For sizes S2 and S3:

- a = 0 mm with varistor < 240 V, a = 3.5 mm with varistor > 240 V, a = 17 mm with RC element and diode assembly, b = S2: DC 15 mm deeper than AC, S3: DC 13 mm deeper than AC
- 1) Auxiliary switch block, laterally mountable (right or left)
- 2) Auxiliary switch block, mountable on the front, (1-, 2- and 4-pole, also 3RH19 21-1FE22 solid-state compatible version)
- 3) Surge suppressor
- 4) For mounting on TH 35 standard mounting rail according to EN 60715 (15 mm deep) or for size S3 also to TH 75 standard mounting rail according to EN 60715
- 5) Allen screw 4 mm

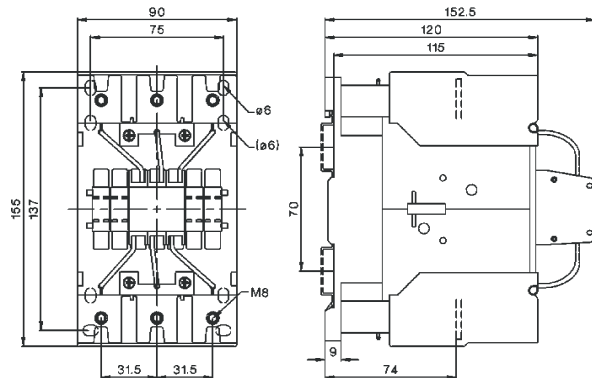
LA3K18..



LA3K24.. / LA3K32..



LA3K05.. / LA3K62.. / LA3K74..



# OVERLOAD RELAYS

## OVERLOAD RELAYS



LSTD



LST0



LST2



LST3

FEATURES	BENEFITS	LST
<b>GENERAL DATA</b>		
SIZES	<ul style="list-style-type: none"> <li>• Are coordinated with the dimensions, connections and technical characteristics of the other devices in the ALEA modular system</li> <li>• Permit the mounting of slim and compact load feeders in widths of 45 mm (S00), 45 mm (S0), 55 mm (S2), 70 mm (S3), 120 mm (S6) and 145 mm (S10/S12)</li> <li>• Simplify configuration</li> </ul>	S00 ... S3
SEAMLESS CURRENT RANGE	<ul style="list-style-type: none"> <li>• Allows easy and consistent configuration with one series of overload relays (for small to large loads)</li> </ul>	0.11 ... 100 A
<b>PROTECTION FUNCTIONS</b>		
TRIPPING IN THE EVENT OF OVERLOAD	<ul style="list-style-type: none"> <li>• Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to overload</li> </ul>	
TRIPPING IN THE EVENT OF PHASE UNBALANCE	<ul style="list-style-type: none"> <li>• Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to phase unbalance</li> </ul>	
TRIPPING IN THE EVENT OF PHASE FAILURE	<ul style="list-style-type: none"> <li>• Minimizes heating of induction motors during phase failure</li> </ul>	
PROTECTION OF SINGLE-PHASE LOADS	<ul style="list-style-type: none"> <li>• Enables the protection of single-phase loads</li> </ul>	
<b>FEATURES</b>		
RESET FUNCTION	<ul style="list-style-type: none"> <li>• Allows manual or automatic resetting of the relay</li> </ul>	(by means of separate module)
REMOTE RESET FUNCTION	<ul style="list-style-type: none"> <li>• Allows the remote resetting of the relay</li> </ul>	
TEST FUNCTION FOR AUXILIARY CONTACTS	<ul style="list-style-type: none"> <li>• Allows easy checking of the function and wiring</li> </ul>	
STATUS DISPLAYS	<ul style="list-style-type: none"> <li>• Displays the current operating state</li> </ul>	
LARGE CURRENT ADJUSTMENT BUTTON	<ul style="list-style-type: none"> <li>• Makes it easier to set the relay exactly to the correct current value</li> </ul>	
INTEGRATED AUXILIARY CONTACTS (1 NO + 1 NC)	<ul style="list-style-type: none"> <li>• Allows the load to be switched off if necessary</li> <li>• Can be used to signal output</li> </ul>	
<b>DESIGN OF LOAD FEEDERS</b>		
SHORT-CIRCUIT STRENGTH UP TO 100 KA AT 690 V (in conjunction with the corresponding fuses or the corresponding motor starter protector)	<ul style="list-style-type: none"> <li>• Provides optimum protection of the loads and operating personnel in the event of short-circuits due to insulation faults or faulty switching operations</li> </ul>	
ELECTRICAL AND MECHANICAL MATCHING TO CONTACTORS LSSD, LSDD, LSD0, LSD2, LSD3	<ul style="list-style-type: none"> <li>• Simplifies configuration</li> <li>• Reduces wiring outlay and costs</li> <li>• Enables stand-alone installation as well as space-saving direct mounting</li> </ul>	
<b>OTHER FEATURES</b>		
TEMPERATURE COMPENSATION	<ul style="list-style-type: none"> <li>• Allows the use of the relays at high temperatures without derating</li> <li>• Prevents premature tripping</li> <li>• Allows compact installation of the control cabinet without distance between the devices/load feeders</li> <li>• Simplifies configuration</li> </ul>	
VERY HIGH LONG-TERM STABILITY	<ul style="list-style-type: none"> <li>• Enables space to be saved in the control cabinet</li> <li>• Provides safe protection for the loads even after years of use in severe operating conditions</li> </ul>	

## THERMAL OVERLOAD RELAY, SIZE 00



LSTD...

DESCRIPTION	ORDER NO.
THERMAL OVERLOAD RELAY SIZE 00	
Thermal overload relay 0,11...0,16 A	LSTD0016
Thermal overload relay 0,14...0,2 A	LSTD0020
Thermal overload relay 0,18...0,25 A	LSTD0025
Thermal overload relay 0,22...0,32 A	LSTD0032
Thermal overload relay 0,28...0,4 A	LSTD0040
Thermal overload relay 0,35...0,5 A	LSTD0050
Thermal overload relay 0,45...0,63 A	LSTD0063
Thermal overload relay 0,55...0,8 A	LSTD0080
Thermal overload relay 0,7...1 A	LSTD0100
Thermal overload relay 0,9...1,25 A	LSTD0125
Thermal overload relay 1,1...1,6 A	LSTD0160
Thermal overload relay 1,4...2 A	LSTD0200
Thermal overload relay 1,8...2,5 A	LSTD0250
Thermal overload relay 2,2...3,2 A	LSTD0320
Thermal overload relay 2,8...4 A	LSTD0400
Thermal overload relay 3,5...5 A	LSTD0500
Thermal overload relay 4,5...6,3 A	LSTD0630
Thermal overload relay 5,5...8 A	LSTD0800
Thermal overload relay 7...10 A	LSTD1000
Thermal overload relay 9...12 A	LSTD1200

## THERMAL OVERLOAD RELAY, SIZE 0



LST0...

DESCRIPTION	ORDER NO.
THERMAL OVERLOAD RELAY SIZE 0	
Thermal overload relay 1,8...2,5 A	LST00250
Thermal overload relay 2,2...3,2 A	LST00320
Thermal overload relay 2,8...4 A	LST00040
Thermal overload relay 3,5...5 A	LST00050
Thermal overload relay 4,5...6,3 A	LST00630
Thermal overload relay 5,5...8 A	LST00800
Thermal overload relay 7...10 A	LST01000
Thermal overload relay 9...12,5 A	LST01250
Thermal overload relay 11...16 A	LST01600
Thermal overload relay 14...20 A	LST02000
Thermal overload relay 17...22 A	LST02200
Thermal overload relay 20...25 A	LST02500

# OVERLOAD RELAYS

## THERMAL OVERLOAD RELAY, SIZE 2



LST2....

DESCRIPTION	ORDER NO.
THERMAL OVERLOAD RELAY SIZE 2	
Thermal overload relay 5,5...8 A	LST20800
Thermal overload relay 7...10 A	LST21000
Thermal overload relay 9...12,5 A	LST21250
Thermal overload relay 11...16 A	LST21600
Thermal overload relay 14...20 A	LST22000
Thermal overload relay 18...25 A	LST22500
Thermal overload relay 22...32 A	LST23200
Thermal overload relay 28...40 A	LST24000
Thermal overload relay 36...45 A	LST24500
Thermal overload relay 40...50 A	LST25000

## THERMAL OVERLOAD RELAY, SIZE 3



LST3....

DESCRIPTION	ORDER NO.
THERMAL OVERLOAD RELAY SIZE 3	
Overload relay thermal 18...25 A	LST32500
Overload relay thermal 22...32 A	LST33200
Overload relay thermal 28...40 A	LST34000
Overload relay thermal 36...50 A	LST35000
Overload relay thermal 45...63 A	LST36300
Overload relay thermal 57...75 A	LST37500
Overload relay thermal 70...90 A	LST39000
Overload relay thermal 80...100 A	LST39999

## HOLDER



LSZ....

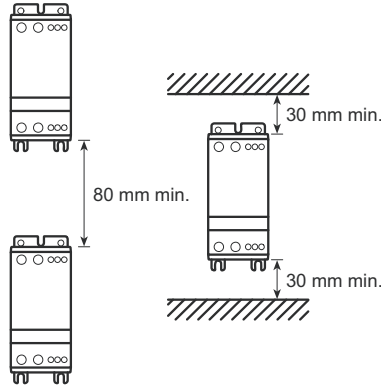
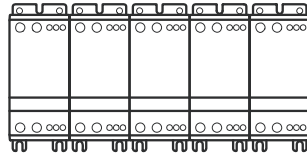
DESCRIPTION	SIZE	ORDER NO.
Holder for stand-alone install	00	LSZDTE01
Holder for stand-alone install	0	LSZ0TE01
Holder for stand-alone install	2	LSZ2TE01
Holder for stand-alone install	3	LSZ3TE01

# SEMICONDUCTOR CONTACTORS

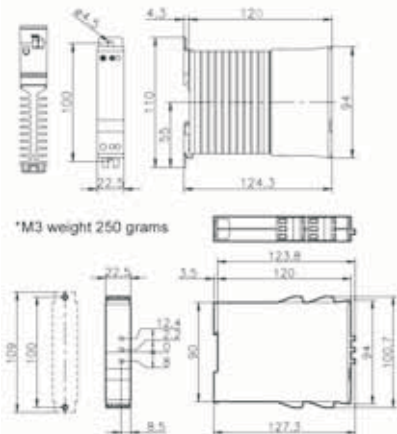
## SINGLE-PHASE/ TWO-PHASE/ THREE-PHASE



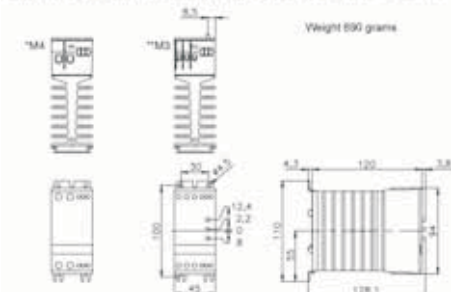
SEMICONDUCTOR CONTACTORS SINGE-, TWO-, THREE-PHASE



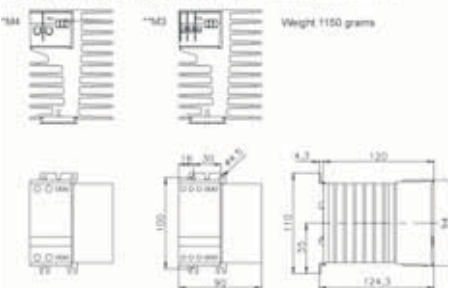
Dimensions for the 22.5 mm module (LAS1 10 A/15 A und LAK3,5 A)



Dimensions for the 45 mm module (LAB1/LAW1/LAK15A/LAD1AA 30A)



Dimensions for the 90 mm module (LAS2 60A/83A /LAA 50A)



### SCHRACK-INFO

- Rated operating voltage up to 600V AC, 50/60 Hz
- Control voltage 5-24 V DC or 24-230 V AC/DC
- Meets requirements of EN 60947-4-3
- Modular design with an overall width of 45 mm on DIN rails
- LED operating status indicator
- IP 20 degree of protection
- AC and DC control voltage
- Built-in varistor protection

### RANGE OF APPLICATION

#### Heater controls:

- Soldering machines
- Plastic processing industry
- Galvanic industry
- Photo/film developers
- Film packaging
- Rubber industry

#### Lighting:

- Traffic lights
- Streetlights
- Floodlights in stadiums
- Outside factory lighting

### TECHNICAL DATA, SINGLE-PHASE:

- Rated operating current up to 63 A AC-1

### TECHNICAL DATA, TWO-PHASE:

- Rated operating current up to 50 A AC-1/2x15 A AC-3
- 2 autonomous 1-pole contactors in a single housing

### TECHNICAL DATA, THREE-PHASE:

- Rated operating current up to 3x20 A AC-1/ 10 A AC-3

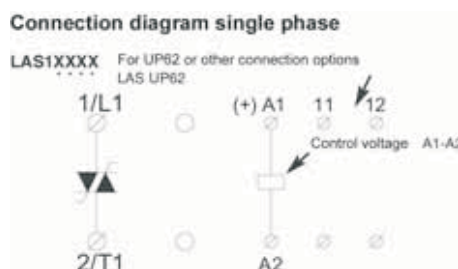


# SEMICONDUCTOR CONTACTORS

## SINGLE-PHASE



LAS12301



### SCHRACK-INFO

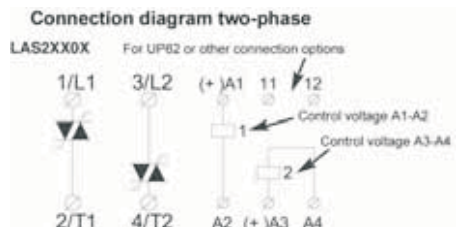
- Rated operating current up to 63 A AC-1
- Rated operating voltage up to 600 V AC, 50/60 Hz
- Control voltage 5-24 V DC or 24-230 V AC/DC
- Meets requirements of EN 60947-4-3
- Modular design with following widths 22.5 mm, 45 mm and 90 mm on DIN rail
- LED operating status indicator
- IP 20 degree of protection
- AC and DC control voltage
- Integrated varistor protection

RATED CURRENT	RATED VOLTAGE	CONTROL VOLTAGE	DIM. (WxHxD) mm	ORDER NO.
15 A	24-480 V AC 50/60 Hz	24-230 V AC/DC	22,5x110x124,3	LAS14152
30 A	12-240 V AC 50/60 Hz	5-24 V DC	45x110x124,3	LAS12301
30 A	12-240 V AC 50/60 Hz	24-230 V AC/DC	45x110x124,3	LAS12302
30 A	24-480 V AC 50/60 Hz	5-24 V DC	45x110x124,3	LAS14301
30 A	24-480 V AC 50/60 Hz	24-230 V AC/DC	45x110x124,3	LAS14302
50 A	12-240 V AC 50/60 Hz	5-24 V DC	90x110x124,3	LAS12501
50 A	12-240 V AC 50/60 Hz	24-230 V AC/DC	90x110x124,3	LAS12502
50 A	24-480 V AC 50/60 Hz	5-24 V DC	90x110x124,3	LAS14501
50 A	24-480 V AC 50/60 Hz	24-230 V AC/DC	90x110x124,3	LAS14502

## TWO-PHASE



LAS22302



### SCHRACK-INFO

- 2 autonomous 1-pole contactors in a single housing
- Rated operating current up to 50 A AC-1/2x15 A AC-3

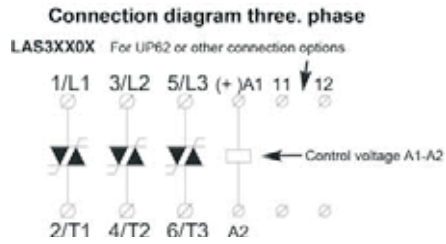
RATED CURRENT	RATED VOLTAGE	CONTROL VOLTAGE	DIM. (WxHxD) mm	ORDER NO.
30 A	12-240 V AC 50/60 Hz	5-24 V DC	45x110x124,3	LAS22301
30 A	12-240 V AC 50/60 Hz	24-230 V AC/DC	45x110x124,3	LAS22302
30 A	24-480 V AC 50/60 Hz	5-24 V DC	45x110x124,3	LAS24301
30 A	24-480 V AC 50/60 Hz	24-230 V AC/DC	45x110x124,3	LAS24302
50 A	24-480 V AC 50/60 Hz	5-24 V DC	90x110x124,3	LAS24501
50 A	24-480 V AC 50/60 Hz	24-230 V AC/DC	90x110x124,3	LAS24502

# SEMICONDUCTOR CONTACTORS

## THREE-PHASE



LAS32102



### SCHRACK-INFO

- Rated operating current up to 3x20 A  
 AC-1/ 10 A AC-3

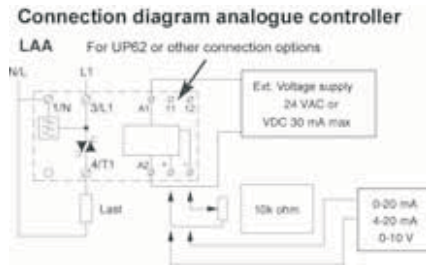
RATED CURRENT	RATED VOLTAGE	CONTROL VOLTAGE	DIM. (WxHxD) mm	ORDER NO.
10 A	12-240 V AC 50/60 Hz	5-24 V DC	45x110x124,3	LAS32101
10 A	12-240 V AC 50/60 Hz	24-230 V AC/DC	45x110x124,3	LAS32102
10 A	24-480 V AC 50/60 Hz	5-24 V DC	45x110x124,3	LAS34101
10 A	24-480 V AC 50/60 Hz	24-230 V AC/DC	45x110x124,3	LAS34102
20 A	12-240 V AC 50/60 Hz	5-24 V DC	90x110x124,3	LAS32201
20 A	12-240 V AC 50/60 Hz	24-230 V AC/DC	90x110x124,3	LAS32202
20 A	24-480 V AC 50/60 Hz	5-24 V DC	90x110x124,3	LAS34201
20 A	24-480 V AC 50/60 Hz	24-230 V AC/DC	90x110x124,3	LAS34202

# ELECTRONIC CONTROLLER / MOTOR CONTACTOR

## 1-PHASE ELECTRONIC ANALOGUE CONTROLLER



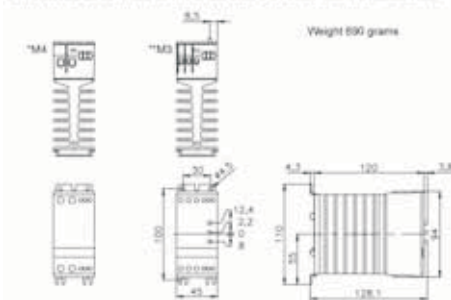
LAA14306



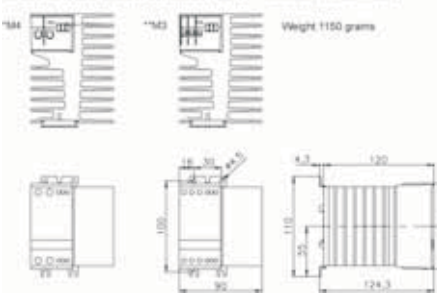
### SCHRACK-INFO

- Analogue controller for accurate process temperature control
- Heating element control with phase angle or burst firing control
- Current loop control: 0-20 mA, 4-20 mA
- Voltage control: 0-10 V DC
- Manual control 10 k1 potentiometer
- Reverse action possible
- Rated voltage: 230 or 400 V AC
- Rated current: up to 30 or 50 A AC-51 (AC 1)
- Integrated EMC filter

Dimensions for the 45 mm module (LAA1, LAA2, LAA3, LAA4, LAA5, LAA6)



Dimensions for the 90 mm module (LAA7, LAA8, LAA9, LAA10)

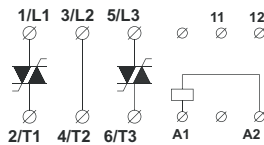


DESCRIPTION	DIM. (WxHxD) mm	ORDER NO.
Analogue controller 30 A/380-480 V	45x110x128,1	LAA14306
Analogue controller 50 A/380-480 V	90x110x128,1	LAA14506

## MOTOR CONTACTORS



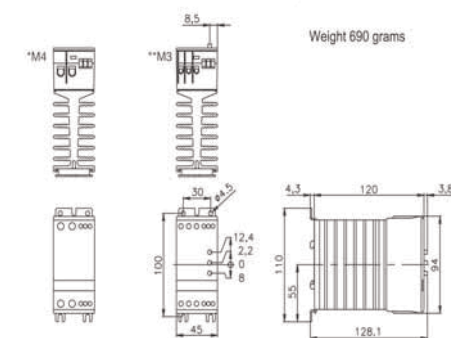
LAM32154



### SCHRACK-INFO

- Designed for direct start-up of 3-phase motors
- Rated operating current: 15 A AC-3 (10 HP at 400 V 3 Phase)
- Operating voltage range: from 24 to 600 V AC 50 or 60 Hz
- Control voltage range: from 24 to 480 V AC or 24-60 V DC
- LED operating status indicator
- Degree of protection IP 20
- Compact modular design, 45 mm installation width on DIN rail
- Meets requirements of standard EN 6047-4-2
- Genuine contact-free motor contactor for extremely long service life
- Unlimited number of start/stop cycles possible per hour

Dimensions for the 45 mm module (LAM)



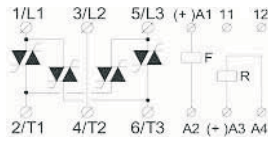
RATED CURRENT	RATED VOLTAGE	CONTROL VOLTAGE	DIM. (WxHxD) mm	ORDER NO.
15 A	208-240 VAC 50/60 Hz	24-480 V AC 24-60 V DC	45x110x124,3	LAM32154
15 A	400-480 VAC 50/60 Hz	24-480 V AC 24-60 V DC	45x110x124,3	LAM34154
15 A	550-600 VAC 50/60 Hz	24-480 V AC 24-60 V DC	45x110x124,3	LAM36154

# 3-PHASE ELECTRONIC MOTOR CONTACTOR

## REVERSING CONTACTOR



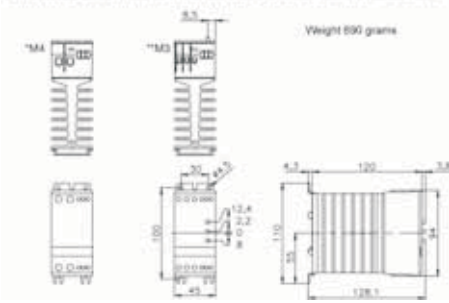
LAW34101



### SCHRACK-INFO

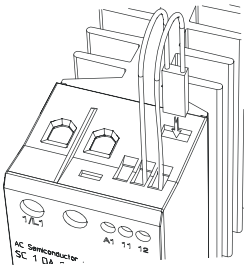
- Electronic contactor for reverse motor control
- Rated operating current up to 10 A AC-3/8 A AC-4
- Rated operating voltage up to 480V AC
- Control voltage 5-24 V DC or 24-230 V AC
- 2 separate potential-free control voltage inputs
- Meets requirements of EN 60947-4-2
- Modular design with an overall width of 45 mm on DIN rail
- LED operating status indicator
- IP 20 shock protection
- AC and DC control voltage
- Integrated interlock circuit

Dimensions for the 45 mm module (LAB1/LAW1/LAK1/SAL1/AD1/LAA 3SA)



RATED CURRENT	RATED VOLTAGE	CONTROL VOLTAGE	DIM. (WxHxD) mm	ORDER NO.
10 A	24-480 V AC 50/60 Hz	5-24 V DC	45x110x124,3	LAW34101
10 A	24-480 V AC 50/60 HZ	24-230 V AC/DC	45x110x124,3	LAW34102

## ELECTRONIC/MOTOR CONTACTOR ACCESSORIES



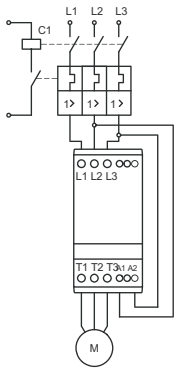
DESCRIPTION	ORDER NO.
Thermal overload protection	LASUP62

# SOFT STARTERS

## MOTOR CONTROLLER



lak32155



### RANGE OF APPLICATION

Motor drive:

- Packaging industry
- Printing presses
- Valve control in power stations
- Bell controls

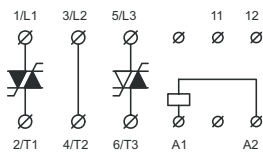
In general:

- Compressor systems
- Machine tools
- Conveyor systems
- Looms
- Fans and ventilation systems
- Woodworking machines

### SUPPLEMENTAL TECHNICAL DATA

- Soft starter, three controlled phases
- Soft starter, two controlled phases
- Soft starters with break system
- Initial torque limiting system, 1 or 3 controlled phases

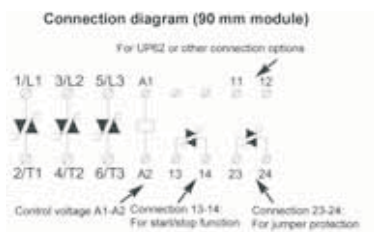
#### 2 controlled phases, LAK



Benefits:

- Easy, rapid mounting
- Immediately ready for use
- Very easy to adjust
- Contact-protected
- More compact than standard soft starters
- Standardized module widths

#### 3 controlled phases, LAT

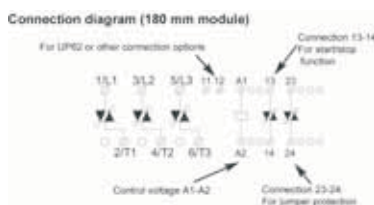


### APPLICATIONS

Used to delay the start and stop of 3-phase motors:

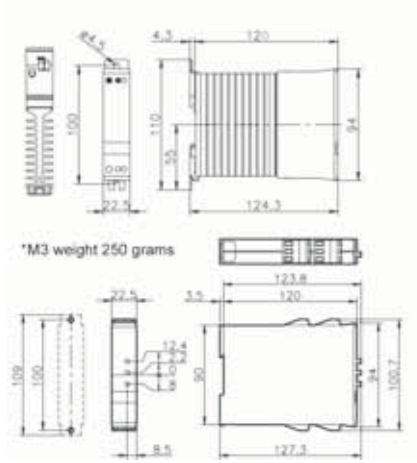
- Compressor systems
- Machine tools
- Conveyor systems
- Looms
- Fans and ventilation systems
- Woodworking machines
- Can be used instead of Star/Delta starters
- Packaging industry
- Printing presses

#### 3 controlled phases, LAT B/D

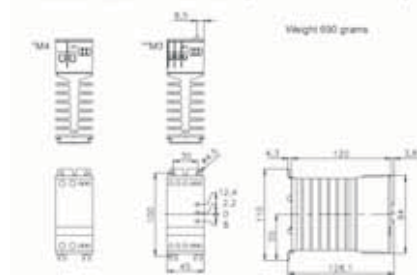


## MOTOR CONTROLLER – continued

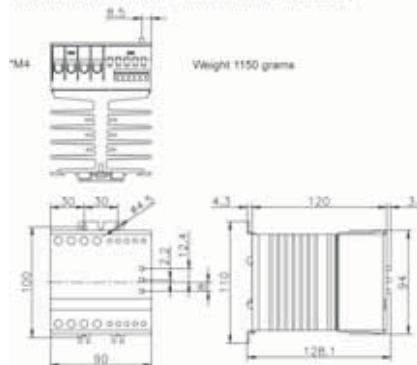
Dimensions for the 22.5 mm module (LAK1,10 A/15 A and LAK3,5 A)



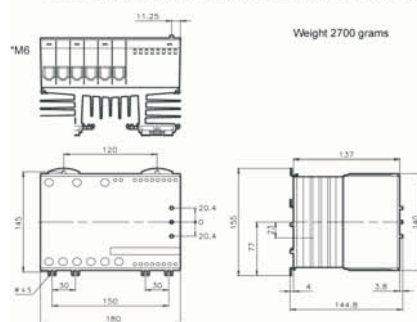
Dimensions for the 45 mm module (LAK1/LAK1AK1SA/LAD/LAA 30A)



Dimensions for the 90 mm module (LAK/LAB)



Dimensions for the 180 mm module (LAT/LATB/LATD)



### SOFT STARTER UP TO 45 kW/400 VAC

- AC electronic motor controller with soft start and soft stop or with by-pass function (from 30A)
- Rated operating current:
  - LAK type up to 25 A AC-3, AC-53a, AC-58a (11 kW 400-480 V AC) or up to 30 A AC 53b (15kW with jumper)
  - LAT type up to 86 A \*Root 3\* switch with 3 controlled phases (see Special Catalogue)
- Rated operating voltage up to 600V AC, 50/60 Hz
- Meets requirements of EN 60947-4-2
- Includes integrated microcomputer for optimal performance
- Start and stop times can be regulated between 0.5 s and 10 s (20 s)
- Initial torque can be adjusted up to 85% of nominal torque, Kick start option available
- LED operating status indicator
- Potential-free control inputs
- Control voltage range 24 V AC/DC to 480 V AC/DC
- Degree of protection IP 20
- Compact modular structure, 45 mm and 90 mm installation width on DIN rail

### SOFT STARTER WITH DYNAMIC BREAK

Rated operating voltage up to 480 V AC 50/60 Hz

- Rated operating current from 1 A up to 25 A AC-3, AC-53a, AC-58a (15PS, 400-480 V AC)
- Start time can be set between 0.5 to 10 secs.
- Initial torque can be set to between 0% - 85% of nominal torque. Kickstart option available.
- Control voltage range 24 V to 480 V AC/DC
- Braking current adjustable between 0-50 A DC
- Super-rapid brake function with automatic motor magnetic field reduction.
- Slow speed function: The motor operates at only 7.5 to 10% of the nominal speed
- Automatic down-time detection
- Output signal for full control (by-pass) and for the control of a mechanical

RATED CURRENT	RATED VOLTAGE	CONTROL VOLTAGE	DIM. (WxHxD) mm	ORDER NO.
3 A	208-240 VAC 50/60 Hz	24-230 V AC/DC	22,5x110x128,1	LAK32035
3 A	400-480 VAC 50/60 Hz	24-480 V AC/DC	22,5x110x128,1	LAK34035
15 A	208-240 VAC 50/60 Hz	24-230 V AC/DC	45x110x128,1	LAK32155
15 A	400-480 VAC 50/60 Hz	24-480 V AC/DC	45x110x128,1	LAK34155
15 A	550-600 VAC 50/60 Hz	24-480 V AC/DC	45x110x128,1	LAK36155
25 A	208-240 VAC 50/60 Hz	24-230 V AC/DC	90x110x128,1	LAK32255
25 A	400-480 VAC 50/60 Hz	24-480 V AC/DC	90x110x128,1	LAK34255
25 A	550-600 VAC 50/60 Hz	24-480 V AC/DC	90x110x128,1	LAK36255

# SOFT STARTERS

## MOTOR CONTROLLER WITH BY-PASS

WITHOUT BY-PASS	WITH BY-PASS	RATED VOLTAGE	DIM. (WxHxD) mm	ORDER NO.
25 A AC-53a	30 A AC-53b	400–480 V	90x110x128,1	LAKB4255
35 A AC-53a	50 A AC-53b	400–480 V	180x145x144,8	LATB4355
60 A AC-53a	86 A AC-53b	400–480 V	180x145x144,8	LATD4605

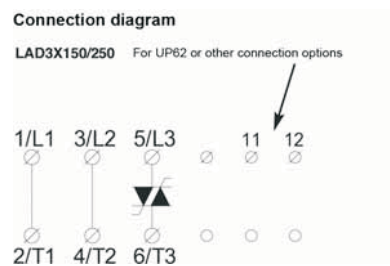
## SOFT STARTER WITH DYNAMIC BREAK

WITHOUT BY-PASS	WITH BY-PASS	RATED VOLTAGE	DIM. (WxHxD) mm	ORDER NO.
25 A AC-53a	30 A AC-53b	400–480 V	90x110x128,1	LAB34255

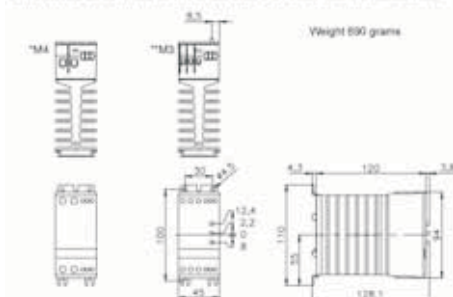
## TORQUE LIMITER



LAD34150



Dimensions for the 45 mm module (LAD31/LAD32/LAK15A/LAD3AA 30A)



## SCHRACK-INFO

- Unit used to soft start three-phase and single-phase motors with rated operating voltages of 230 to 600 V, 50 or 60 Hz
- Rated operating current up to 25 A AC-3 (11 kW 400 V 3 phases)
- Operating voltage range: 230 to 600 V AC, 50 or 60 Hz
- Adjustable ramp-up time 0.5 s to 5 s
- Initial torque can be set to between 0% - 85% of nominal torque.
- LED operating status indicator
- Degree of protection IP 20
- Compact modular structure, 45 mm installation width on DIN rail
- Genuine contact-free motor contactor for extremely long service life
- Unlimited number of start/stop operations per hour.

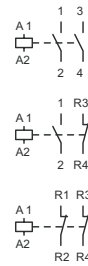
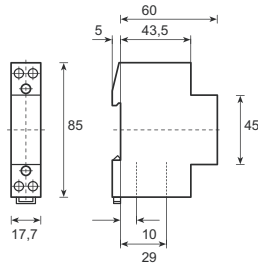
RATED CURRENT	RATED VOLTAGE	DIM. (WxHxD) mm	ORDER NO.
15 A	208-480 V AC	45x110x128,1	LAD34150
25 A	208-480 V AC	45x110x128,1	LAD34250
25 A	550-600 V AC	45x110x128,1	LAD36250

# MODULAR CONTACTORS

## 1/2-POLE



BZ326437



### SCHRACK-INFO

- Modular 1 module wide
- Technical data according to EN 60 947-4-1; EN 60 947-5-1; VDE 0660
- Terminal labels according to EN 50011
- Degree of protection IP 20
- AC1/230 V: 4,6 kW (20 A)
- Low-hum (ultra-quiet)

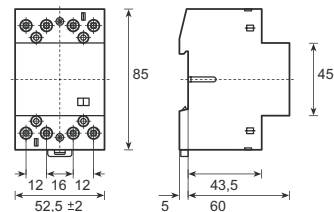
DESCRIPTION	DIM. (WxHxD) mm	ORDER NO.
1 NO / 230 V	17,7x85x65	BZ326471
2 NO / 24 V	17,7x85x65	BZ326453
2 NO / 230 V	17,7x85x65	BZ326437
1 NO + 1 NC / 24 V	17,7x85x65	BZ326421
1 NO + 1 NC / 230 V	17,7x85x65	BZ326438
2 NC / 230 V	17,7x85x65	BZ326439

## 4-POLE

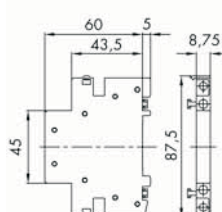


bz326442

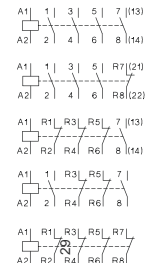
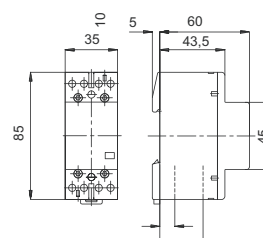
### R40-..., R63-..



### Auxiliary contact RH11



### R25-..



### SCHRACK-INFO

- Rated current: 25/40/63 A
- Technical data according to EN 60 947-4-1; EN 60 947-5-1; VDE 0660
- Terminal labels according to EN 50011
- Degree of protection IP 20
- AC1/230 V: 5,7 (25 A) / 9 (40 A) / 14,3 (63 A) kW
- AC1/400 V: 17 (25 A) / 27.5 (40 A) / 43 (63 A) kW
- Low-hum (ultra-quiet)

RATED CURRENT/DESCRIPTION	DIM. (WxHxD) mm	ORDER NO.
25 A, 4 NO / 24 V	35x60,5x64	BZ326460
25 A, 4 NO / 230 V	35x60,5x64	BZ326461
25 A, 3 NO + 1 NC / 24 V	35x60,5x64	BZ326462
25 A, 3 NO + 1 NC / 230 V	35x60,5x64	BZ326463
25 A, 1 NO + 3 NC / 24 V	35x60,5x64	BZ326464
25 A, 1 NO + 3 NC / 230 V	35x60,5x64	BZ326465
40 A, 2 NC + 2 NO / 230 V	52,5x85x65	BZ326466
25 A, 4 NC / 230 V	35x60,5x64	BZ326467
40 A, 3 NO / 230 V	52,5x85x65	BZ326468
63 A, 4 NC / 230 V	52,5x85x65	BZ326469
40 A, 4 NO / 24 V	52,5x85x65	BZ326443
40 A, 4 NO / 230 V	52,5x85x65	BZ326442
63 A, 4 NO / 24 V	52,5x85x65	BZ326445
63 A, 4 NO / 230 V	52,5x85x65	BZ326444
63 A, 3 NO + 1 NC / 230 V	52,5x85x65	BZ326452
Auxillary contact block 10 A	8,75x85x65	BZ326470