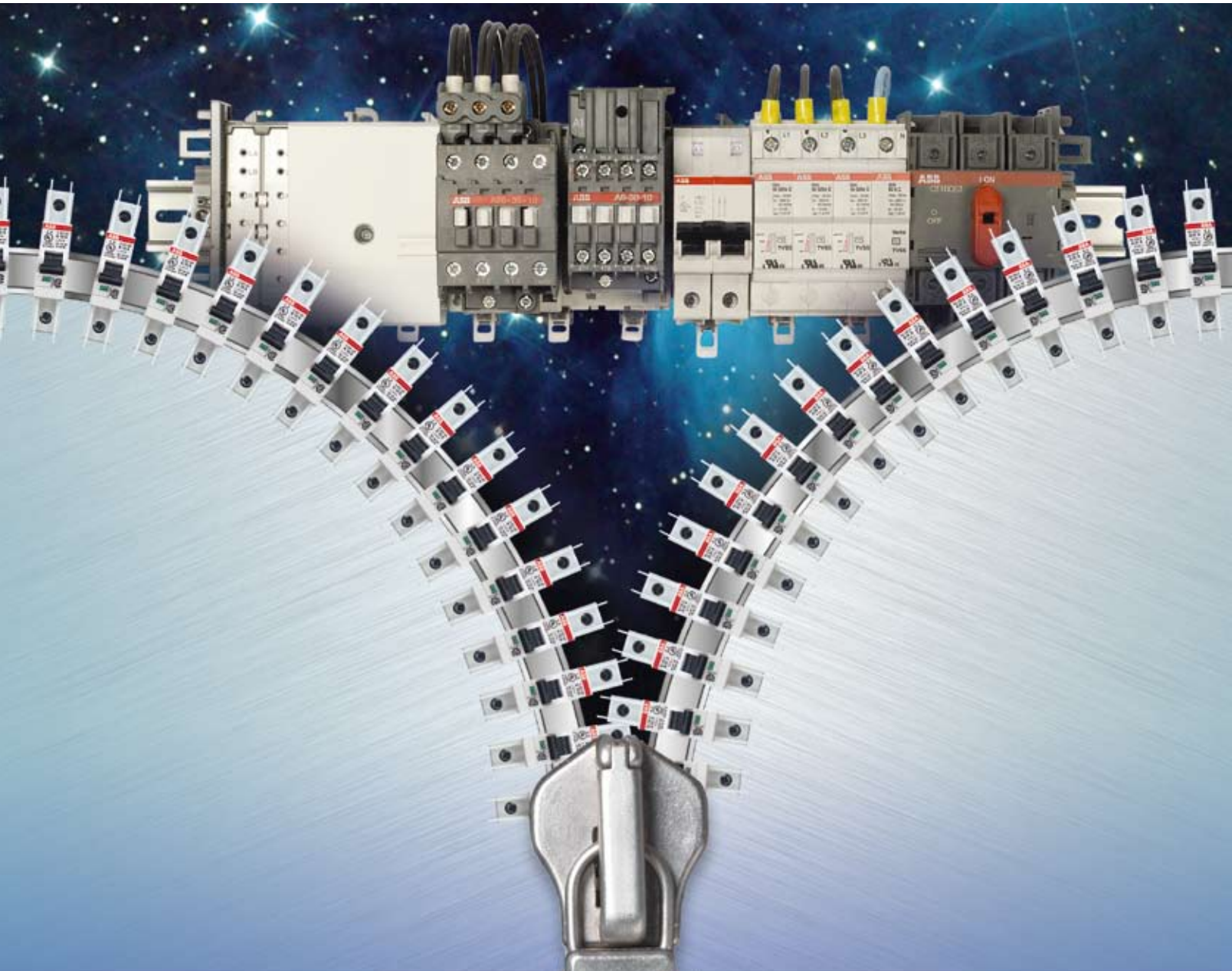


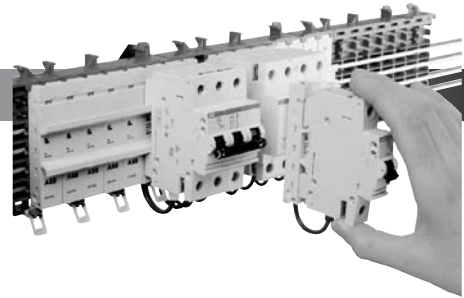
Smisline

Power distribution bus system



ABB

Smisline



Smisline modular bus system1 - 26

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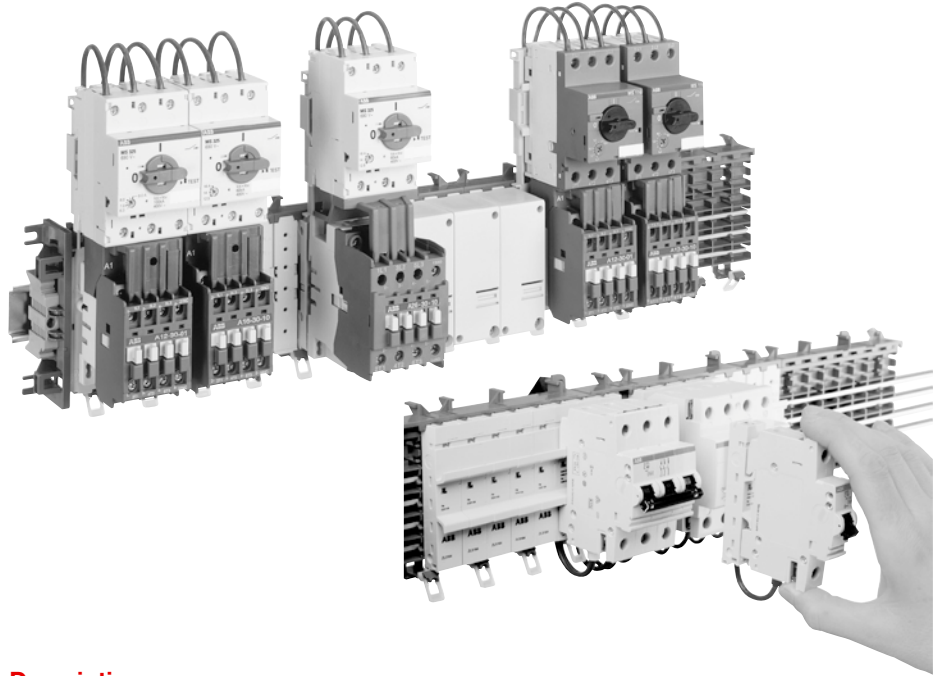
Modular power distribution bus system

Smissline



Smissline

Modular power distribution bus system



Description

- The Smissline power distribution bus system provides a versatile and flexible means of distributing power to a wide variety of electrical devices. Ideal for group motor installations and ABB modular DIN rail products
- Hot swappable socket mounted components.
- Individual devices may be turned off and safely removed without turning off power to the whole bus.
- Bus system "Starter kits" available in various lengths, can also be easily cut down for custom installations.
- Busbar rated 100A when end fed and up to 200A when center fed. Main power feed terminals may be installed anywhere along the bus system.
- Individual bus stab adapters are available in L1, L2, L3 and N phase connections; they can be connected together to form multi-pole units. Unwired modules are available where bus connection is not required. 18mm width.
- Snap-on installation. No tools required to install or remove bus mounted components.
- System can be DIN rail or base mounted.
- Bus covers protect unused portions of the bus from accidental contact providing total bus isolation and IP20 finger safe protection.
- Reputable history of performance and reliability.
- UL508 Recognized, UL File #E222110.
- UL489 UL File #312425
- UL508 UL File #257901

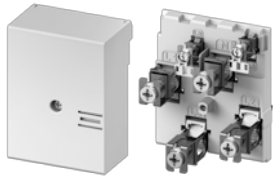
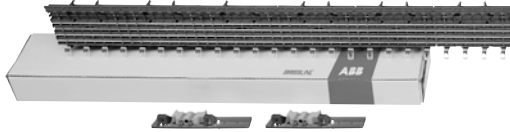
Building a Smisline assembly

Step 1: Select Base Module Starter Pack

Preassembled bases with bus bar components



ZLS808



ZLS224

Step 2: Select Main Incoming

Main Lugs



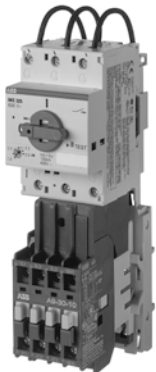
ZLS224

Step 3: Select Components

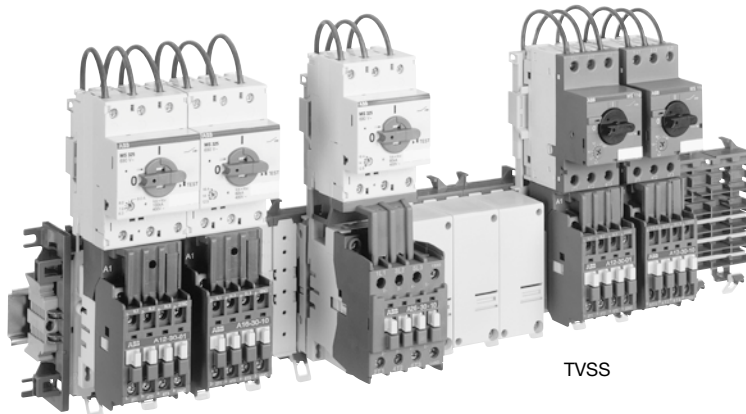
Breakers
Contactors
Combo Starters
Miscellaneous Din rail devices



S401U-K10



ZLS325

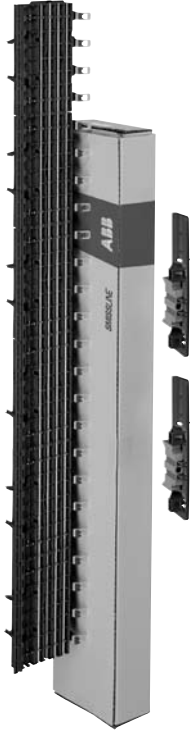


TVSS

Step 1: Select Base Modules according to UL508 and UL489

Base Module Starter Packs

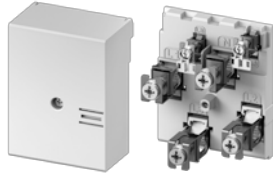
Starter packs are available with socket bases, bus bar and end pieces installed.



Smissline
Starter Pack

Number of poles	Number of 8 pole modules	Number of 6 pole modules	Phase	Catalog number
20	1	2	3L	ZLS782
20	1	2	3LN	ZLS783
22	2	1	3L	ZLS760
22	2	1	3LN	ZLS761
24	3	—	3L	ZLS750
24	3	—	3LN	ZLS751
26	1	3	3L	ZLS785
26	1	3	3LN	ZLS786
30	3	1	3L	ZLS762
30	3	1	3LN	ZLS763
32	4	—	3L	ZLS752
32	4	—	3LN	ZLS753
34	2	3	3L	ZLS776
34	2	3	3LN	ZLS777
38	4	1	3L	ZLS764
38	4	1	3LN	ZLS765
40	5	—	3L	ZLS754
40	5	—	3LN	ZLS755
44	4	2	3L	ZLS778
44	4	2	3LN	ZLS779
48	6	—	3L	ZLS756
48	6	—	3LN	ZLS757
62	7	1	3L	ZLS780
62	7	1	3LN	ZLS781
64	8	—	3L	ZLS766
64	8	—	3LN	ZLS767
80	10	—	3L	ZLS758
80	10	—	3LN	ZLS759

Step 2: Select Main Incoming



ZLS224



ZLS251

Standard incoming terminal blocks according to UL508 and UL489

Description	Number of poles	Phase	Catalog number
100A	4	3LN left	ZLS224
100A	4	3LN right	ZLS224R
100A	4	3L left	ZLS225
100A	4	3L right	ZLS225R

Incoming terminal component according to UL508 and UL489

Description	Number of poles	Phase	Catalog number
200A	2	L1 terminal	ZLS251
200A	2	L2 terminal	ZLS252
200A	2	L3 Terminal	ZLS253

Step 3: Select Components according to UL508

Combination Motor Starters

All modules include: Combi module, contactor, MS325 Manual Motor protector, MS325 coupler, and brass pin connector.



ZLS325-480-0.5



ZLS325-480-0.5

480V – AC Coils, Combo starters

Description	Number of poles	Catalog number
1/2HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-480-0.5
3/4HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-480-7.5
1HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-480-1
2HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-480-2
3HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-480-3
5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-480-5
7.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-480-7.5
10HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-480-10
15HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-480-15

240V – AC Coils, Combo starters

Description	Number of poles	Catalog number
1/2HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-240-0.5
1HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-240-1
1.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-240-1.5
2.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-240-2.5
3HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-240-3
5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-240-5
7.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325-240-7.5

480V – DC Coils, Combo starters

Description	Number of poles	Catalog number
1/2HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-480-0.5
3/4HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-480-7.5
1HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-480-1
2HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-480-2
3HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-480-3
5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-480-5
7.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-480-7.5
10HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-480-10
15HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-480-15

240V – DC Coils, Combo starters

Description	Number of poles	Catalog number
1/2HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-240-0.5
1HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-240-1
1.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-240-1.5
2.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-240-2.5
3HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-240-3
5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-240-5
7.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	3	ZLS325D-240-7.5

480V – Reversing combo starters

Description	Number of poles	Catalog number
1/2HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325-R-480-0.5
3/4HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325-R-480-7.5
1HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325-R-480-1
2HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325-R-480-2
3HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325-R-480-3
5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325-R-480-5
7.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325-R-480-7.5

240V – Reversing combo starters

Description	Number of poles	Catalog number
1/2HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325-R-240-0.5
1HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325-R-240-1
1.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325-R-240-1.5
2.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325-R-240-2.5
3HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325-R-240-3
5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325-R-240-5
7.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325-R-240-7.5

Step 3: Select (MCB) Components according to UL489



S401U-K5



S402U-K10



S403U-K20

Rated current Amps	Number of poles	Catalog number
2	1	S401U-K2
5	1	S401U-K5
8	1	S401U-K8
10	1	S401U-K10
15	1	S401U-K15
20	1	S401U-K20
25	1	S401U-K25
30	1	S401U-K30
40	1	S401U-K40
50	1	S401U-K50
60	1	S401U-K60
2	2	S402U-K2
5	2	S402U-K5
8	2	S402U-K8
10	2	S402U-K10
15	2	S402U-K15
20	2	S402U-K20
25	2	S402U-K25
30	2	S402U-K30
40	2	S402U-K40
50	2	S402U-K50
60	2	S402U-K60
2	3	S403U-K2
5	3	S403U-K5
8	3	S403U-K8
10	3	S403U-K10
15	3	S403U-K15
20	3	S403U-K20
25	3	S403U-K25
30	3	S403U-K30
40	3	S403U-K40
50	3	S403U-K50
60	3	S403U-K60

Tripping characteristics K

UL 489
240 VAC
10 kA

Inductive loads

- K Curve
- Designed for allowing higher in-rush currents during system start up
- Example: motors, transformers

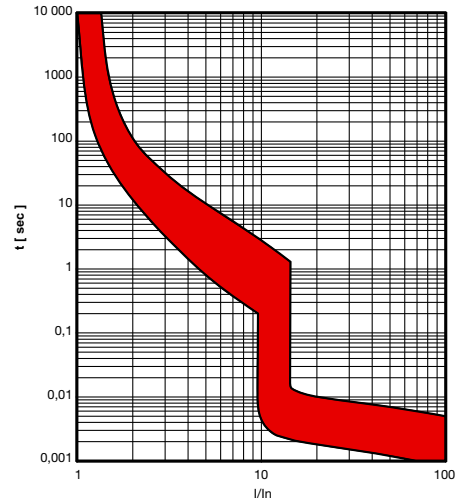


ABB Sockets, starter pack UL508, UL489



ZLS808



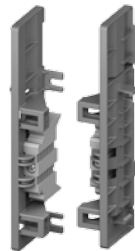
ZLS806



Base Module Starter Pack



ZLS200



ZLS730

Socket bases

Description	Number of poles	Catalog number
8-module socket, Length 144 mm	8	ZLS808
6-module socket, Length 108 mm	6	ZLS806

The 6 or 8 pole socket bases are installed either by screwing them to any flat surface or by snapping them into a 35 mm DIN rail.

Starter pack

Solutions available	Catalog number
20 Poles 3L (1x8-module+2x6-module sockets)	ZLS782
20 Poles 3LN (1x8-module+2x6-module sockets)	ZLS783
22 Poles 3L (2x8-module+1x6-module sockets)	ZLS760
22 Poles 3LN (2x8-module+1x6-module sockets)	ZLS761
24 Poles 3L (3x8-module sockets)	ZLS750
24 Poles 3LN (3x8-module sockets)	ZLS751
26 Poles 3L (1x8-module+3x6-module sockets)	ZLS785
26 Poles 3LN (1x8-module+3x6-module sockets)	ZLS786
30 Poles 3L (3x8-module+1x6-module sockets)	ZLS762
30 Poles 3LN (3x8-module+1x6-module sockets)	ZLS763
32 Poles 3L (4x8-module sockets)	ZLS752
32 Poles 3LN (4x8-module sockets)	ZLS753
34 Poles 3L (2x8-module+3x6-module sockets)	ZLS776
34 Poles 3LN (2x8-module+3x6-module sockets)	ZLS777
38 Poles 3L (4x8-module+1x6-module sockets)	ZLS764
38 Poles 3LN (4x8-module+1x6-module sockets)	ZLS765
40 Poles 3L (5x8-module sockets)	ZLS754
40 Poles 3LN (5x8-module sockets)	ZLS755
44 Poles 3L (4x8-module+2x6-module sockets)	ZLS778
44 Poles 3LN (4x8-module+2x6-module sockets)	ZLS779
48 Poles 3L (6x8-module sockets)	ZLS756
48 Poles 3LN (6x8-module sockets)	ZLS757
62 Poles 3L (7x8-module+1x6-module sockets)	ZLS780
62 Poles 3LN (7x8-module+1x6-module sockets)	ZLS781
64 Poles 3L (7x8-module+1x6-module sockets)	ZLS766
64 Poles 3LN (7x8-module+1x6-module sockets)	ZLS767
80 Poles 3L (10x8-module sockets)	ZLS758
80 Poles 3LN (10x8-module sockets)	ZLS759

Contains socket bases with 3 or 4 main busbars already inserted and two end pieces.

Busbars for the sockets

Description	Number of poles	Catalog number
100 A busbar plated, 10 x 3 mm, for L1, L2, L3, N and PE - Delivery length 1979 mm	110	ZLS200

Busbars are sized as 10 mm x 3 mm and rated for 100 A. They are electroplated for contact with stab adaptors. Maximum length is 2 meters (6'-5"). Busbar snaps easily into socket bases from front.

Socket end piece

To prevent movement of socket bases or busbars, end pieces are used on both sides of the assembly.

Description	Number of poles	Catalog number
Socket end piece (2 pieces, left and right)	—	ZLS730

Busbars ①

UL 508, UL 489

Precut 100A busbar kits/cut to specified module length



ZLS200

Number of ZLS808 8 module sockets	Number of ZLS806 6 module sockets	Number of modules	Busbar length in inch and mm	Catalog number 100A busbar
-	1	6	4 (104)	ZLS201E6
1	-	8	5 1/2 (140)	ZLS201E8
-	2	12	8 1/4 (212)	ZLS201E12
1	1	14	9 3/4 (248)	ZLS201E14
2	-	16	11 1/8 (284)	ZLS201E16
-	3	18	12 1/2 (320)	ZLS201E18
1	2	20	14 (357)	ZLS201E20
2	1	22	15 1/2 (393)	ZLS201E22
3	-	24	16 7/8 (429)	ZLS201E24
1	3	26	18 1/4 (465)	ZLS201E26
2	2	28	19 3/4 (501)	ZLS201E28
3	1	30	21 1/8 (537)	ZLS201E30
4	-	32	32 1/2 (573)	ZLS201E32
2	3	34	24 (609)	ZLS201E34
3	2	36	25 3/8 (645)	ZLS201E36
4	1	38	26 3/4 (681)	ZLS201E38
5	-	40	28 1/4 (717)	ZLS201E40
3	3	42	29 5/8 (753)	ZLS201E42
4	2	44	331 (789)	ZLS201E44
5	1	46	32 1/2 (825)	ZLS201E46
6	-	48	33 7/8 (861)	ZLS201E48
4	3	50	35 5/16 (897)	ZLS201E50
5	2	52	36 3/4 (933)	ZLS201E52
6	1	54	38 1/8 (969)	ZLS201E54
7	-	56	39 1/2 (1005)	ZLS201E56
5	3	58	41 (1041)	ZLS201E58
6	2	60	42 3/8 (1078)	ZLS201E60
7	1	62	43 7/8 (1114)	ZLS201E62
8	-	64	45 1/4 (1150)	ZLS201E64
6	3	66	46 5/8 (1186)	ZLS201E66
7	2	68	48 1/8 (1222)	ZLS201E68
8	1	70	49 1/2 (1258)	ZLS201E70
9	-	72	50 7/8 (1294)	ZLS201E72
7	3	74	52 3/8 (1330)	ZLS201E74
8	2	76	53 3/4 (1366)	ZLS201E76
9	1	78	55 1/8 (1402)	ZLS201E78
10	-	80	56 5/8 (1438)	ZLS201E80
8	3	82	58 (1474)	ZLS201E82
9	2	84	59 3/8 (1510)	ZLS201E84
10	1	86	60 7/8 (1546)	ZLS201E86
11	-	88	62 1/4 (1582)	ZLS201E88
9	3	90	63 3/4 (1618)	ZLS201E90
10	2	92	65 1/8 (1654)	ZLS201E92
11	1	94	66 1/2 (1690)	ZLS201E94
12	-	96	67 7/8 (1726)	ZLS201E96
10	3	98	69 3/8 (1762)	ZLS201E98
11	2	100	70 3/4 (1799)	ZLS201E100
12	1	102	72 1/4 (1835)	ZLS201E102
13	-	104	73 5/8 (1871)	ZLS201E104
11	3	106	75 1/8 (1907)	ZLS201E106
12	2	108	76 1/2 (1943)	ZLS201E108

① Each catalog number is a quantity of one (1) busbar.

Incoming terminal block and components

Socket accessories

UL 508, UL 489



ZLS224



ZLS224



ZLS251



ZLS238



ZLS100

Incoming terminal block

Description	Module	Catalog number
3LN Left	4	ZLS224
3LN Right	4	ZLS224R
3L Left	4	ZLS225
3L Right	4	ZLS225R

Incoming terminal blocks are used to connect cables directly to the busbar. Terminal block can accept up to 4 main terminals L1, L2, L3 and N. Each lug will accommodate 10 - 1/0 AWG wire.

Incoming terminal block

Description	Module	Catalog number
Incoming component Line terminal L1	2	ZLS251
Incoming component Line terminal L2	2	ZLS252
Incoming component Line terminal L3	2	ZLS253
Incoming component Neutral	2	ZLS250

Incoming terminal component used to connect feeder cable to busbars. These are single pole components for line terminals L1, L2 and L3. Each lug will accommodate 10 - 1/0 AWG wire.

Socket accessories

Busbar Insulator

Description	Module	Catalog number
Dark grey, for isolation and spacing of separate busbar sections, 18mm	1	ZLS238

This dark gray insulator electrically isolates the interrupted busbar ends from each other.

Busbar cover

Description	Module	Catalog number
Electrically protected covering of main and auxiliary busbars. Covers come in 4 module pieces and can be divided. Suitable to accept extension adapter ZLS 101, 4x18mm	4	ZLS100

Busbar cover ensures protection by covering main busbars. Covers come in 4 module pieces and can be divided. The openings are marked and allow voltage measurements on the busbars without removing.

30A and 60A universal adapters UL 508



ZLS177 ZLS167



ZLS184



ZLS171

30A and 60A universal adapters

Bus stab adapters are designed for top or bottom feed for complete flexibility. No matter how the socket bases are mounted. Clip side of the ZLS808 or Z1S806 on top or bottom.

Description	Module	Catalog number
Single adaptor 30A bottom feed with clip on bottom side of ZLS806, ZLS808 socket base		
N	1	ZLS160
L1	1	ZLS161
L2	1	ZLS162
L3	1	ZLS163
Single adaptor 60A bottom feed with clip on bottom side of ZLS806, ZLS808 socket base		
N	1	ZLS170
L1	1	ZLS171
L2	1	ZLS172
L3	1	ZLS173
Combination adaptor 30A clip on top side of ZLS806, ZLS808 with top feed		
L1, L2	2	ZLS185TT12
L2, L3	2	ZLS185TT23
L1, L3	2	ZLS185TT13
L1, L2, L3	3	ZLS183TT
Combination adaptor 60A clip on top side of ZLS806, ZLS808 with top feed		
L1, L2	2	ZLS186TT12
L2, L3	2	ZLS186TT23
L1, L3	2	ZLS186TT13
L1, L2, L3	3	ZLS189TT
Single adaptor 30A top feed with clip on bottom side of ZLS806, ZLS808 socket base		
N	1	ZLS176
L1	1	ZLS177
L2	1	ZLS178
L3	1	ZLS179
Single adaptor 60A top feed with clip on bottom side of ZLS806, ZLS808 socket base		
N	1	ZLS166
L1	1	ZLS167
L2	1	ZLS168
L3	1	ZLS169
Combination adaptor 30A clip on top side of ZLS806, ZLS808 socket base and bottom feed		
L1, L2	2	ZLS187TB12
L2, L3	2	ZLS187TB23
L1, L3	2	ZLS187TB13
L1, L2, L3	3	ZLS183TB
Combination adaptor 60A clip on top side of ZLS806, ZLS808 socket base and bottom feed		
L1, L2	2	ZLS188TB12
L2, L3	2	ZLS188TB23
L1, L3	2	ZLS188TB13
L1, L2, L3	3	ZLS188TB
Single adaptor, wire length, 300mm, 30A top feed. Wire opposite clip side of ZLS806, ZLS808		
N	1	ZLS176L300
L1	1	ZLS177L300
L2	1	ZLS178L300
L3	1	ZLS179L300
Single adaptor, wire length, 300mm, 60A top feed. Wire opposite clip side of ZLS806, ZLS808		
N	1	ZLS166L300
L1	1	ZLS167L300
L2	1	ZLS168L300
L3	1	ZLS169L300
Single adaptor, wire length, 300mm, 30A bottom feed. Wire on clip side of ZLS806, ZLS808		
N	1	ZLS160L300
L1	1	ZLS161L300
L2	1	ZLS162L300
L3	1	ZLS163L300
Single adaptor, wire length, 300mm, 60A bottom feed. Wire on clip side of ZLS806, ZLS808		
N	1	ZLS170L300
L1	1	ZLS171L300
L2	1	ZLS172L300
L3	1	ZLS173L300

25A and 45A bus stab adapters UL 489

25A and 45A bus stab adapters

These UL489 bus stab adaptors are designed for using with the S200U & S200UP ABB minibreakers.

Description	Module	Catalog number
Single adaptor 25A bottom feed, Clip on bottom side of ZLS808, ZLS806 SOCKET BASE		
L1	1	ZLS161U
L2	1	ZLS162U
L3	1	ZLS163U
Single adaptor 25A top feed, Clip on bottom side of ZLS808, ZLS806 SOCKET BASE		
L1	1	ZLS177U
L2	1	ZLS178U
L3	1	ZLS179U
Single adaptor 45A top feed, Clip on bottom side of ZLS808, ZLS806 SOCKET BASE		
L1	1	ZLS167U
L2	1	ZLS168U
L3	1	ZLS169U
Single adaptor 45A bottom feed, Clip on bottom side of ZLS808, ZLS806 SOCKET BASE		
L1	1	ZLS171U
L2	1	ZLS172U
L3	1	ZLS173U



ZLS161U

ZLS177U



ZLS171U

ZLS167U



ZLS164U

Combi module UL 508

Combi module, wire top feed



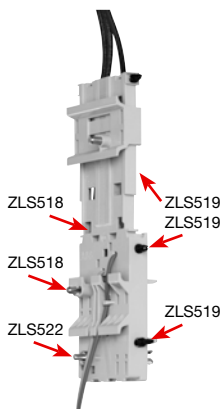
ZLS8403LABWT-S
Wire at top



ZLS8403LWB-S
Wire at bottom



ZLS840
No wire



Description	Module	Catalog number
L1, L2, L3 feed top	3	ZLS8403LWT-S
L1, L2, L3, N feed top	3	ZLS8403LNWT-S
L1, L2, L3 top feed, LA	3	ZLS8403LAWT-S
L1, L2, L3 top feed, LA, LB	3	ZLS8403LABWT-S
L1, L2, L3, N top feed, LA	3	ZLS8403LNAWT-S
L1, L2, L3, N top feed, LA, LB	3	ZLS8403LNABWT-S

These modules are designed for ABB A-Line (A9-A26) contactors coupled with the MS325 manual motor protector. For complete unit kitted by horsepower.

Combi module, wire bottom feed

Description	Module	Catalog number
L1, L2, L3 bottom feed	3	ZLS8403LWB-S
L1, L2, L3, N bottom feed	3	ZLS8403LNWB-S
L1, L2, L3 bottom feed, LA	3	ZLS8403LAWB-S
L1, L2, L3 bottom feed, LA, LB	3	ZLS8403LABWB-S
L1, L2, L3, N bottom feed, LA	3	ZLS8403LNAWB-S
L1, L2, L3, N bottom feed, LA, LB	3	ZLS8403LNABWB-S

Motor control applications with reverse feed option..

Combi module without plug-in contacts

Description	Module	Catalog number
Combi module	—	ZLS840

Used for motor controls in same panel but not plugged into Smisline bus network.

Combi module accessories

Description	Module	Catalog number
Connection element for combi module (3 connectors per module) Bag containing 12 items	—	ZLS519
Fixing pins for contactor and manual motor starter Bag containing 10 items	—	ZLS518
Fixing pins for contactor Bag containing 10 items	—	ZLS522

These accessories are designed exclusively for the A-Line contactor and MS325 manual motor protector to give stability from vibrations and sliding while mounted on the combi-module.

Miniature circuit breaker

S400U

UL 489 Current limiting

S400 Series



S401U-K5



S401U-K10



S403U-K20



S2C-H6RU



ZLS502



ZLS501

Rated current I_N A	Number of poles	Catalog number
2	1	S401U-K2
5	1	S401U-K5
8	1	S401U-K8
10	1	S401U-K10
15	1	S401U-K15
20	1	S401U-K20
25	1	S401U-K25
30	1	S401U-K30
50	1	S401U-K50
60	1	S401U-K60
2	2	S402U-K2
5	2	S402U-K5
8	2	S402U-K8
10	2	S402U-K10
15	2	S402U-K15
20	2	S402U-K20
25	2	S402U-K25
30	2	S402U-K30
40	2	S402U-K40
50	2	S402U-K50
2	3	S403U-K2
5	3	S403U-K5
8	3	S403U-K8
10	3	S403U-K10
20	3	S403U-K20
25	3	S403U-K25
30	3	S403U-K30
40	3	S403U-K40
50	3	S403U-K50
60	3	S403U-K60

Made exclusively for use on the Smisline distribution bus system, the S400 series is a UL 489 branch rated device. The S400 offers movable tabs on the bottom of the unit for fast, easy selection of L1, L2 or L3. The indication window on the top of the unit clearly identifies breaker phasing.

Auxiliary contact, Locking device, "Blank" housing

Description	Catalog number
Auxiliary contact	S2C-H6RU
Blank housing	ZLS502
Locking device	ZLS501

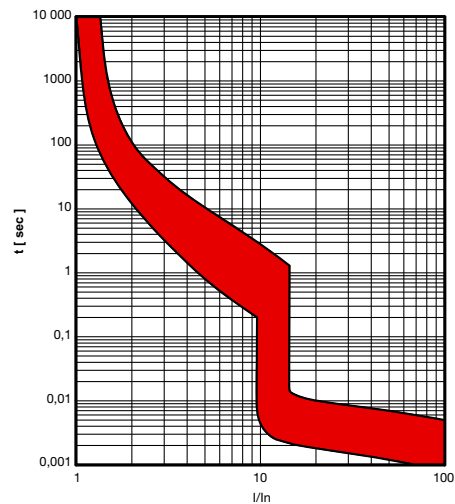
These accessories are simply snapped in place for easy field mounting. The auxiliary unit takes only 1/2 pole space on Smisline. To complete the full pole spacing, add a ZLS502 blank unit.

Tripping characteristics K

UL 489
240 VAC
10 kA

Inductive loads

- K Curve
- Designed for allowing higher in-rush currents during system start up
- Example: motors, transformers



Technical data**S400 circuit breaker UL489,****Auxiliary contact UL489, Power losses, internal resistances**

S400	
Certifications:	UL 489 listed Circuit Breaker (E file 312425)
Rated voltage:	240 VAC
Rated current:	2...60 A
Trip characteristics:	K
Number of poles:	1...3
Rated frequency:	50/60 Hz
Rated Interrupting:	10 kA
UL Current limiting:	E file # E312425
Terminal at load side S400 U:	Opposing action stroke clamp on cylinder. finger-safe (front)
Conductor Type:	Single conductor-copper only
Wire Range:	14-4AWG, solid or stranded (mm ²)
Tightening torque:	25 lbs in (2.8 Nm)
Degree of protection:	IP40 front (6000 electrical, 4000 mechanical)
Mounting position:	any
Storage temperature:	-40 °F...158 °F (-40 °C...70 °C)
Ambient temperature:	-13 °F...131 °F (-25 °C...55 °C)
Vibration resistance acc. to DIN EN 60 068-2-6: Resistance to vibrations	5 g, 20 Cycles 5...150...5Hz at 0.8 In, IEC 60068-2-6
Plastic material:	halogen-free
Contacts:	cadmium-free
Auxiliary contact, S2C-H6RU	
Rated current A:	1A, 480 VAC; 2A, 277 VAC
Contact	1 Alteration
Wire Range	18...14AWG (0.75...2.5mm ²)
Tightening torque	10,6 lbs (1,2 Nm)
Contact security by vibration resistance according to DIN IEC 68-2-6:	5g, 20 frequency cycles 5...150...5 Hz by 24 VAC, 5 mA short break < 10 ms
Mechanical device endurance	10.000 cycles
Dimension in mm	68 x 74 x 99

Internal resistances at rated voltage and power losses

Internal resistances and power loss per pole (20° C - valve) (68° F)

Rated current A	mΩ	P _v W
2	0.415	1.7
5	0.150	2.4
8	0.043	2.7
10	0.0165	1.7
15	0.0095	2.4
20	0.0073	2.9
25	0.0053	3.3
39	0.0034	3.4
40	0.0028	4.5
50	0.0021	5.3
60	0.0015	5.9

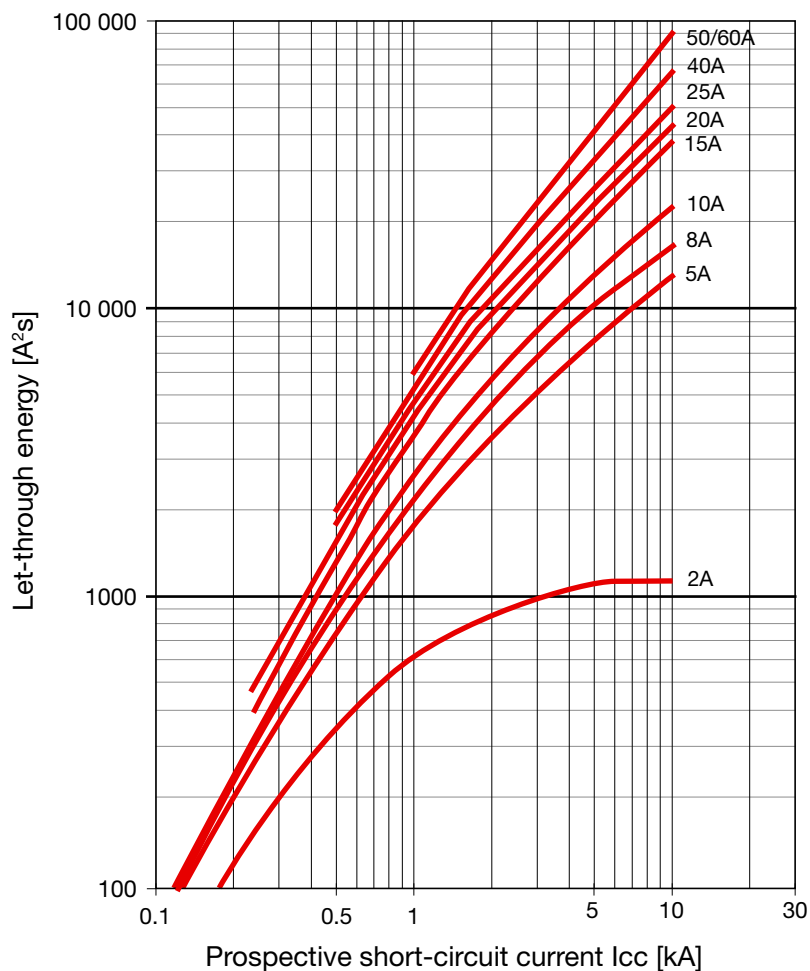
Technical data

S400 U circuit breaker UL 489

Let through energies I^2t



S400 U characteristics at 240 VAC



S400U-K Maximum I_{peak} and I^2t Values

Type	Ampere Ratings (A)	Voltage (V)	Freq.	Phase	Current (A)	Maximum Values I_{peak} (kA)	I^2t (kA²s)
S401U-K	0.2-15	240	60 Hz	1	4095	2.5	8
S401U-K	0.2-15	240	60 Hz	1	7500	3.5	20
S401U-K	0.2-15	240	60 Hz	1	10000	6	40
S401U-K	16-30	240	60 Hz	1	4095	4	35
S401U-K	16-30	240	60 Hz	1	7500	5	45
S401U-K	16-30	240	60 Hz	1	10000	6.8	80
S401U-K	40-60	240	60 Hz	1	4095	4.6	56
S401U-K	40-60	240	60 Hz	1	7500	6.8	75
S401U-K	40-60	240	60 Hz	1	10000	7.5	90
S403U-K	0.2-15	240	60 Hz	3	4095	2.3	6
S403U-K	0.2-15	240	60 Hz	3	7500	2.8	10
S403U-K	0.2-15	240	60 Hz	3	10000	5.5	30
S403U-K	16-30	240	60 Hz	3	4095	3.3	15
S403U-K	16-30	240	60 Hz	3	7500	4	22
S403U-K	16-30	240	60 Hz	3	10000	6	35
S403U-K	40-60	240	60 Hz	3	4095	4.4	35
S403U-K	40-60	240	60 Hz	3	7500	6.6	56
S403U-K	40-60	240	60 Hz	3	10000	7	60

Threshold Current Rating: 4095 A
 Intermediate Current Rating: 7500 A
 Maximum Interrupting Current Rating: 10000 A

Technical data

Busbar system

Technical data UL489, UL508 (E257901)

Incoming terminal block / incoming terminal block components

	Busbar	Incoming terminal block ZLS224, 224R, 225, 225R	Incoming terminal component ZLS250, 251, 252, 253
Maximum nominal voltage:	240V	240V	240V
Maximum nominal current:	100A	100A	200A
Nominal current for supply, side feed:	100A	100A	100A
Nominal current for supply, center feed:	100A	150A	200A
Resistance to short circuits:		50kA when protected by a 150A fuse all types except 10kA when protected by a 200A fuse all types except	
Supply cable size:		14 to 1/0 AWG	8AWG to 3/0 AWG

Technical data UL508 (E222110)

Busbar system accessories

	Busbar	Incoming terminal block	Incoming terminal component	Universal adapter 30A	Universal adapter 60A	Combi module	Adaptor MS325 ZLS8403
Maximum nominal voltage			600V AC				
Maximum nominal current	100A	150A	200A	30A	60A	32A	25A
Nominal current for supply, left or right	100A	100A	100A	—	—	—	—
Nominal current for supply, center	100A	150A	200A	—	—	—	—
Resistance to short circuits			50kA with 200A back-up fuse				
Supply cable size			14 to 8AWG 1/0AWG to 3/0AWG				

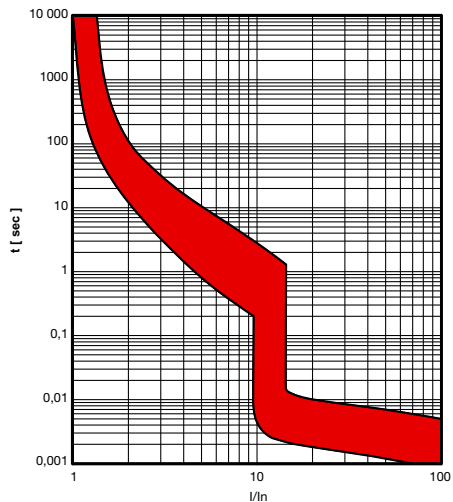
Technical data

S400 U circuit breaker UL 489

Trip characteristics, Influence of ambient temperature

Trip characteristics: K

Calibration temperature 77 °F (25 °C)



Temperature Derating

Rated Current Amps	50 °F (10 °C)	59 °F (15 °C)	68 °F (20 °C)	77 °F (25 °C)	86 °F (30 °C)	95 °F (35 °C)	104 °F (40 °C)	113 °F (45 °C)	122 °F (50 °C)	131 °F (55 °C)
2	2.21	2.14	2.07	2	1.93	1.86	1.79	1.72	1.65	1.57
5	5.65	5.43	5.22	5	4.78	4.56	4.34	4.12	3.91	3.69
8	8.8	8.6	8.3	8	7.7	7.4	7.2	6.9	6.6	6.3
10	11.1	10.7	10.4	10	9.7	9.3	9.0	8.6	8.3	7.9
15	16.7	16.1	15.6	15	14.4	13.9	13.3	12.7	12.2	11.6
20	22.1	21.4	20.7	20	19.3	18.6	17.9	17.2	16.5	15.8
25	27.6	26.8	25.9	25	24.1	23.3	22.4	21.5	20.6	19.7
30	33.4	32.3	31.1	30	28.9	27.8	26.6	25.5	24.4	23.2
40	43.8	42.5	41.3	40	38.7	37.4	36.2	34.9	33.6	32.3
50	55.3	53.5	51.8	50	48.2	46.5	44.7	43.0	41.2	39.5
60	66.7	64.4	62.2	60	57.8	55.6	53.3	51.1	48.9	46.7

Max. operating currents depending on ambient temperature for S400 miniature circuit breakers trip characteristic K.
S400 Calibrated at 77° F (25° C)

Technical data**S400 U circuit breaker UL 489****Series rating with Tmax T3, T4****Class J Fuse - S400 U @ 240V AC**

		L	Fuse
I.		I_n [A]	Max. 200S
S400 U	K	2...60	50 I_{cu} [kA]

Sace Tmax - S400 U @ 240V AC

		Up-stream	T3	T3	T4	T4	T4	T4	T4
Downstream	Version	Version	N	S	N	S	H	L	U
		I_n [A]	I_{cu} [kA]						
S400 U	K	2...60	25	25	50	50	50	50	50

I. = Upstream

L. = Downstream

A. = version

Back-up limit values are specified in kA

Technical data

Miniature circuit breaker S400 U

Selectivity to Sace Tmax T3, T4

Tmax T3 - S400 U @ 240V

		I.	T3						
		Version	N, S						
		Release	TM, M						
		Frame size	250						
L.	Char.	I _n [A]	60	80	100	125	150	175	200
S400 U	K	2	10	10	10	10	10	10	10
		5	10	10	10	10	10	10	10
		10	10	8.5	10	10	10	10	10
		15	4.5	7.5	10	10	10	10	10
		20	4.5	5.5	6.5	10	10	10	10
		25	3.5	5.5	6	9.5	10	10	10
		30		4.5	6	9.5	10	10	10
		40			5	8	10	10	10
		50			3	6	9.5	10	10
		60			3	5.5	9.5	10	10

Tmax T4 - S400 U @ 240V

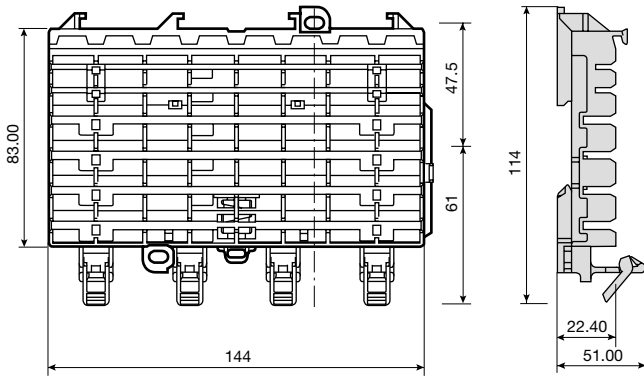
		I.	T4											
		Version	N, S, H, L, V											
		Release	TM, M								EL			
		Frame size	200								200			
L.	Char.	I _n [A]	20	25	30	50	80	100	125	160	200	100	160	200
S400 U	K	2	50	50	50	50	50	50	50	50	50	50	50	50
		5	10	10	10	10	10	10	10	10	10	10	10	10
		10		5	5	5	9	10	10	10	10	10	10	10
		15		5		5	8	10	10	10	10	10	10	10
		20				5	6	10	10	10	10	10	10	10
		25				5	6	10	10	10	10	10	10	10
		30				5	6	10	10	10	10	10	10	10
		40					5.5	10	10	10	10	10	10	10
		50					5	10	10	10	10	10	10	10
		60						10	10	10	10	10	10	10

Approximate dimensions

Module base sockets; incoming terminal blocks

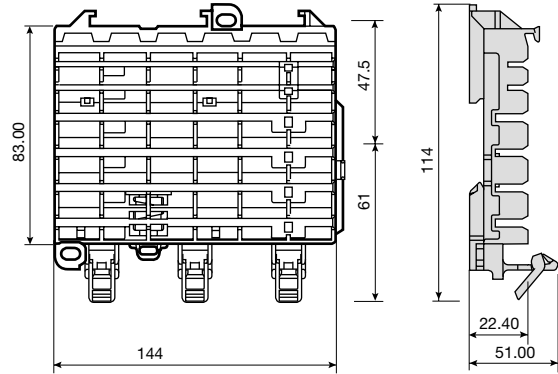
Main power module

ZLS808 8 module base socket



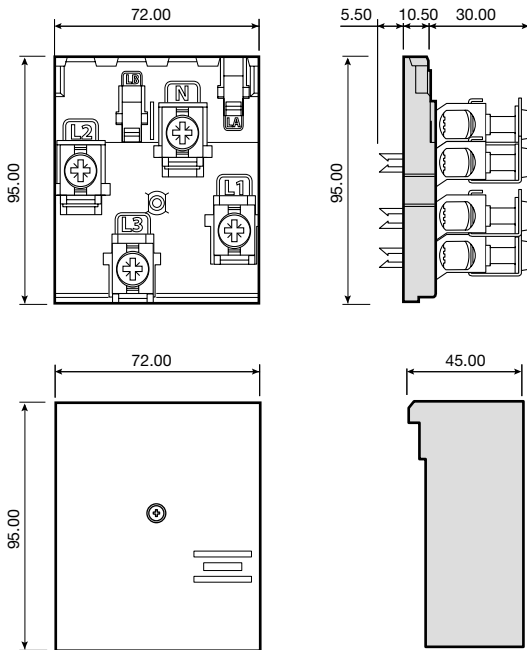
The base consists of eight (8) 18 mm poles designed to stand alone or to be combined with other bases to accommodate: bus bar, bus adaptors, main lugs, main breakers, main fused and non-fused switches, combination starters, feeder breakers, feeder switches, or contactors. The base may be fixed mounted, DIN rail mounted, or assembled on a panel inner door.

ZLS806 6 module base socket



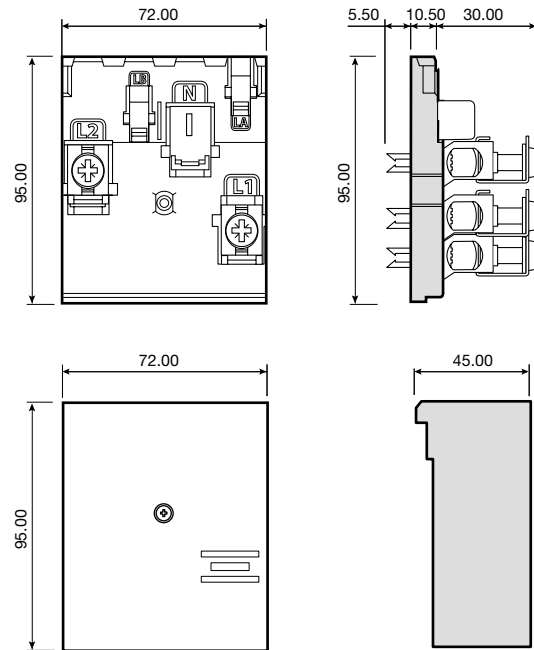
The base consists of six (6) 18 mm poles designed to stand alone or to be combined with other bases to accommodate: bus bar, bus adaptors, main lugs, main breakers, main fused and non-fused switches, combination starters, feeder breakers, feeder switches, or contactors. The base may be fixed mounted, DIN rail mounted, or assembled on a panel inner door.

ZLS224 Incoming terminal blocks



The ZLS224 is a 100 A rated module if feeding the end of a Smisline line-up or 150 A rated module if feeding the center of a Smisline line-up. The module is designed to allow wire to be connected to the system bus. The ZLS224 may be used as an incoming or outgoing device and has four (4) lugs (L1, L2, L3, N) designed to accommodate 10-1/0 AWG wire.

ZLS225 Main power module



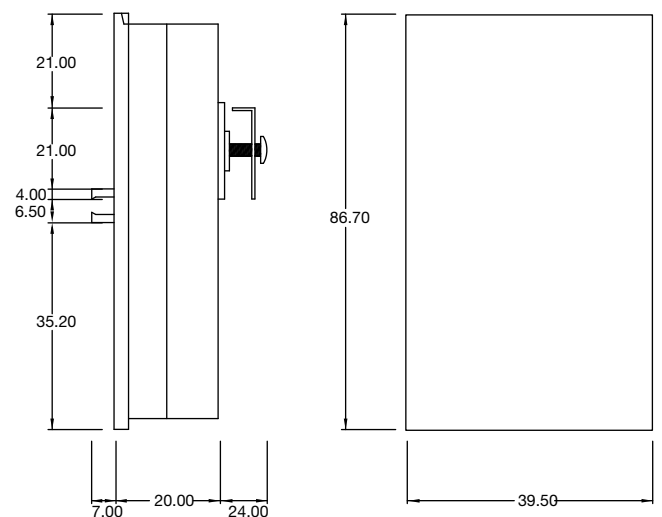
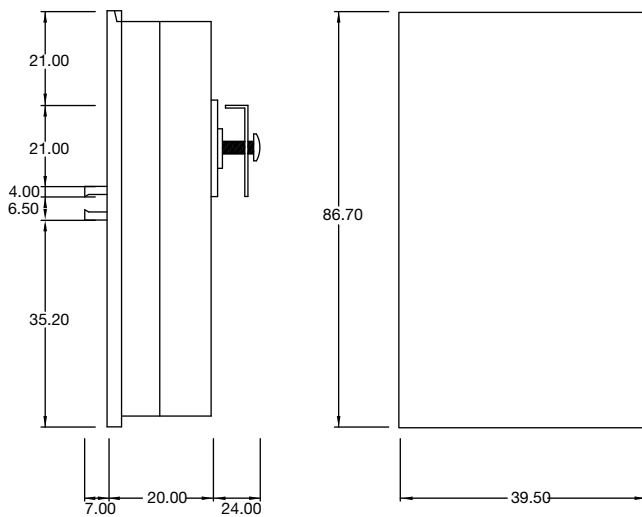
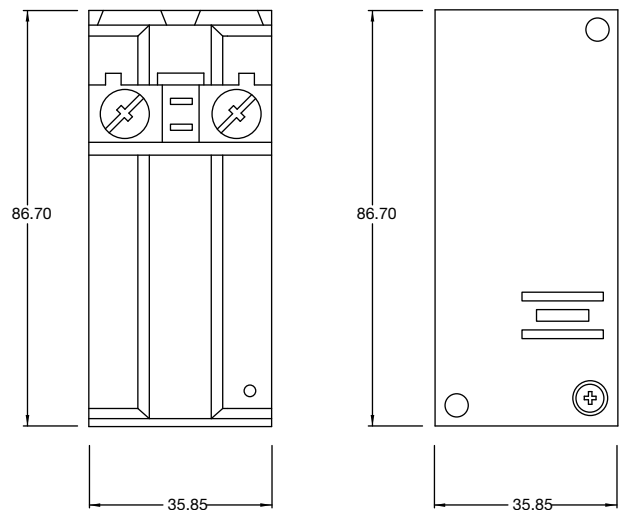
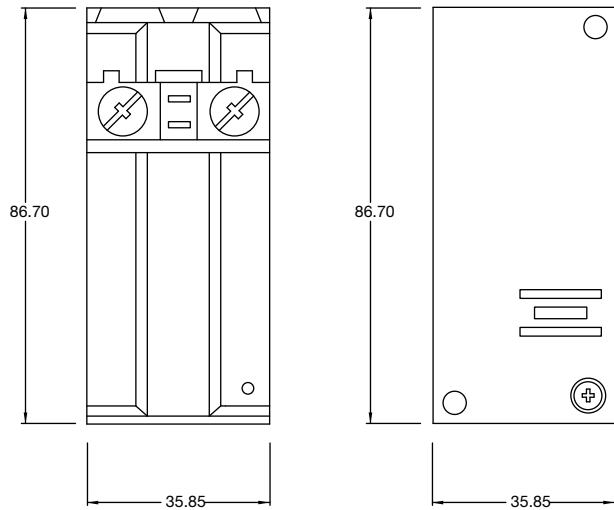
The ZLS225 is a 100 A rated module if feeding the end of a Smisline line-up or 150 A rated module if feeding the center of a Smisline line-up. The module is designed to allow wire to be connected to the system bus. The ZLS225 may be used as an incoming or outgoing device and has three (3) lugs (L1, L2, L3) designed to accommodate 10-1/0 AWG wire.

Approximate dimensions Main power modules



ZLS250 Main power module

ZLS251 Main power module

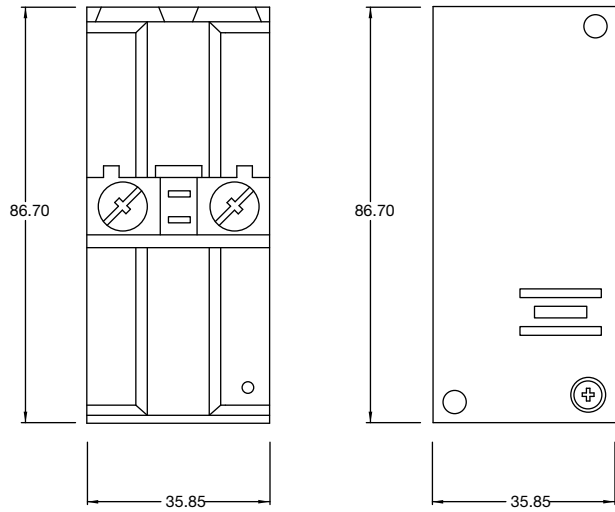


The ZLS250 is a 200A rated module if feeding the center of a Smisline line-up. The module is designed to allow wire to be connected to the system bus. The ZLS250 may be used as an incoming or outgoing device and has one lug (N) designed to accommodate 8-4/0 AWG wire.

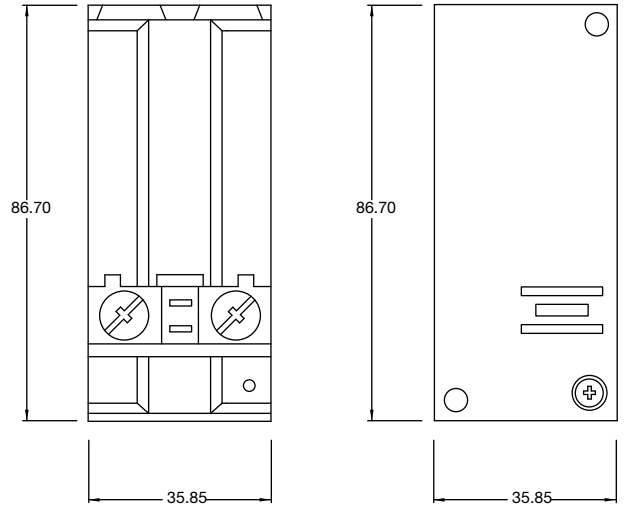
The ZLS251 is a 200A rated module if feeding the center of a Smisline line-up. The module is designed to allow wire to be connected to the system bus. The ZLS251 may be used as an incoming or outgoing device and has one lug (L1) designed to accommodate 8-4/0 AWG wire.

Approximate dimensions Main power modules

ZLS252 Main power module



ZLS253 Main power module



The ZLS252 is a 100A from either side of incoming module. The module is designed to allow wire to be connected to the system bus. The ZLS252 may be used as an incoming or outgoing device and has one lug (L2) designed to accommodate 8-4/0 AWG wire.

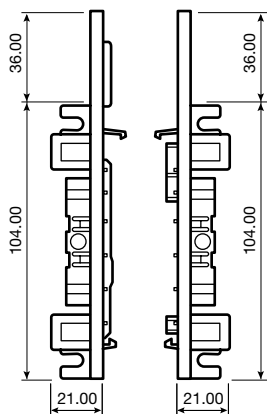
The ZLS253 is a 100A from either side of incoming module. The module is designed to allow wire to be connected to the system bus. The ZLS253 may be used as an incoming or outgoing device and has one lug (L3) designed to accommodate 8-4/0 AWG wire.

Approximate dimensions

Base end stop

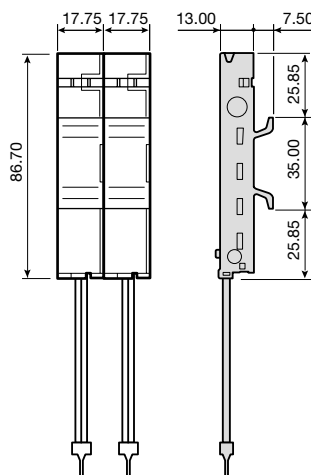
Bus stab adaptor

ZLS730 Base end stop



The ZLS30 end stop is designed to insulate and secure the ends of a Smisline assembly. The module electrically isolates the bus bars of the main socket bases and the sockets of the neutral and ground assemblies.

60A 2P Bus stab adaptor

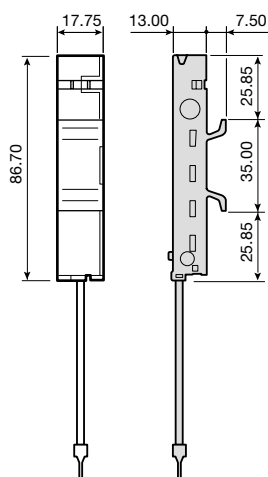


The bus stab adaptor is designed to connect the assembly bus bar to DIN rail mounted electrical components. Smisline bus stab can be joined together in any configuration.

2 Pole combination adaptor; 60A clip on top side of ZLS806
 L1, L2 ZLS186TT12
 L1, L3 ZLS186TT23
 L1, L3 ZLS186TT13

2 Pole combination adaptor; 60A clip on top side ZLS806, ZLS808 socket base and bottom fed
 L1, L2 ZLS188TB12
 L1, L3 ZLS188TB23
 L1, L3 ZLS188TB13

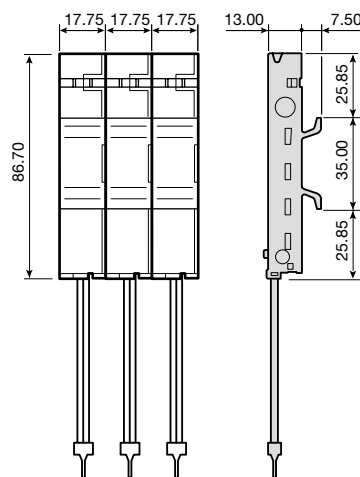
60A 1P Bus stab adaptor



The bus stab adaptor is designed to connect the assembly bus bar to DIN rail mounted electrical components. Smisline bus stab can be joined together in any configuration.

Bus stab adaptors:
 ZS170 (N), ZLS171 (L1), ZLS172 (L2), ZLS173 (L3)
 ZLS166 (N), ZLS167 (L1), ZLS168 (L2), ZLS169 (L3)

60A 3P Bus stab adaptor

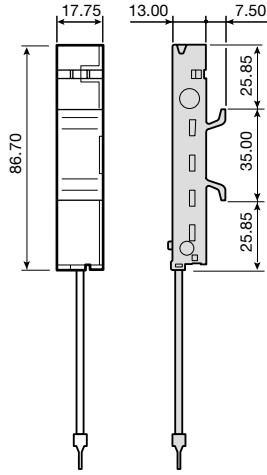


The bus stab adaptor is designed to connect the assembly bus bar to DIN rail mounted electrical components. Smisline bus stab can be joined together in any configuration.

3 Pole combination adaptor; 60A clip on top side of ZLS806, ZLS808 socket base and bottom fed
 L1, L2, L3 ZLS183TB

3 Pole combination adaptor; 60A clip on top side ZLS806, ZLS808 with top feed
 L1, L2, L3 ZLS183TT

30A 1P Bus stab adaptor

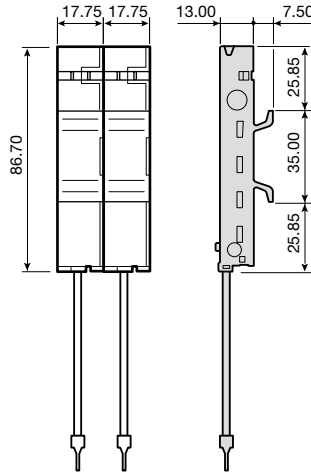


The bus stab adaptor is designed to connect the assembly bus bar to DIN rail mounted electrical components. Smisline bus stab can be joined together in any configuration.

Bus stab adaptors:

ZS160 (N), ZLS161 (L1), ZLS162 (L2), ZLS163 (L3)
ZLS176 (N), ZLS177 (L1), ZLS178 (L2), ZLS179 (L3)

30A 2P Bus stab adaptor



The bus stab adaptor is designed to connect the assembly bus bar to DIN rail mounted electrical components. Smisline bus stab can be joined together in any configuration.

Bus stab adaptors:

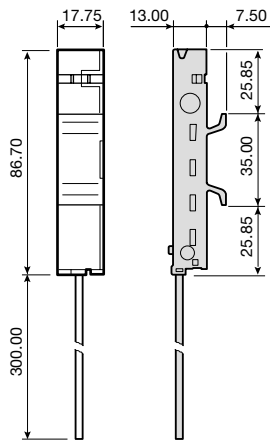
ZLS185TT12 [Wire on clip side of]
ZLS185TT23 [ZLS808, ZLS806]
ZLS185TT13 [socket base]

ZLS187TB12 [Wire on opposite]
ZLS187TB23 [clip side of ZLS808,]
ZLS187TB13 [ZLS806 socket base]

ZLS187BT12 [Wire on opposite]
ZLS187BT23 [clip side of ZLS808,]
ZLS187BT13 [ZLS806 socket base]

ZLS185BB12 [Wire on clip side of]
ZLS185BB23 [ZLS808, ZLS806]
ZLS185BB13 [socket base]

30A 1P 300mm Bus stab adaptor

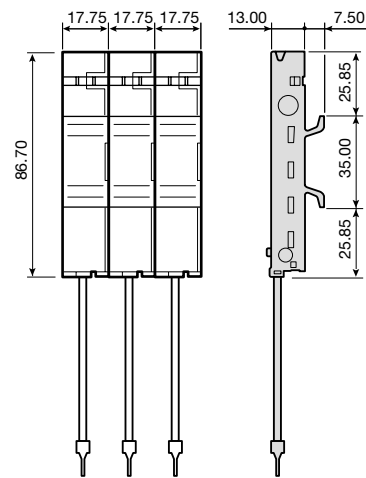


The bus stab adaptor is designed to connect the assembly bus bar to DIN rail mounted electrical components. Smisline bus stab can be joined together in any configuration.

Bus stab adaptors:

ZS161L300 (L1), ZLS162L300 (L2), ZLS163L300 (L3)
ZLS177L300 (L1), ZLS178L300 (L2), ZLS179L300 (L3)

30A 3P Bus stab adaptor



The bus stab adaptor is designed to connect the assembly bus bar to DIN rail mounted electrical components. Smisline bus stab can be joined together in any configuration.

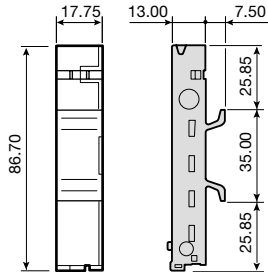
Bus stab adaptors:

ZLS183TT (Wire on clip side of ZLS808, ZLS806 socket base)
ZLS183TB (Wire on opposite clip side of ZLS808, ZLS806 socket base)
ZLS183BT (Wire on opposite clip side of ZLS808, ZLS806 socket base)
ZLS183BB (Wire on clip side of ZLS808, ZLS806 socket base)

Approximate dimensions

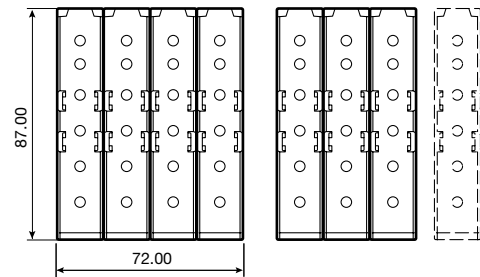
Smisline

Blank adaptor – ZLS164



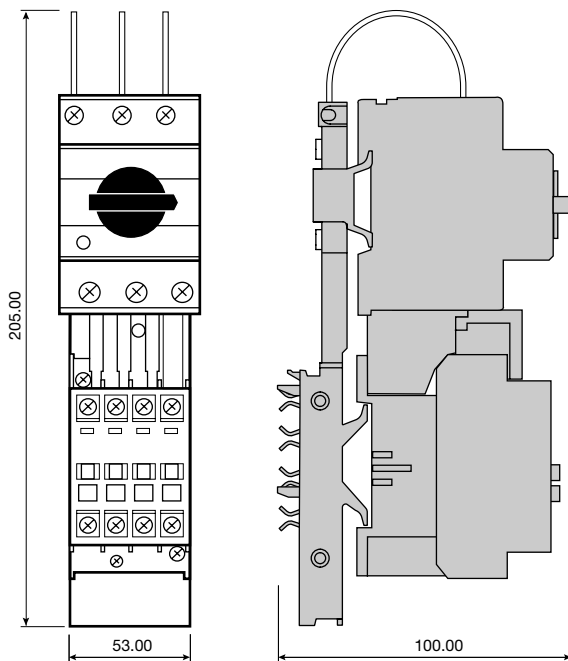
The ZLS164 blank adaptor is designed to connect DIN Rail mounted components to the Smisline base assembly. The blank adaptor does not have a bus stab or wiring and may be combined with any other bus stab adaptor.

Bus covers – ZLS100



The ZLS100 bus covers are designed to insulate all energized components by “plugging” into ZLS808 or ZLS806 socket base. The covers are finger safe and can be customized to create a 1 pole, 2 pole, or 4 pole device. The six (6) holes in the covers allow maintenance personnel to test the assembly bus without exposure to energized parts.

Combination motor starter – ZLS-MS325



The ZLS-MS325 is a combination motor starter assembly that is integrated into Smisline. The combo-starter provides a disconnect means, short circuit protection, and overload protection in one compact package. The ZLA-MS325 range is available between 5HP through 15HP at 480VAC and .5HP through 7.5HP at 240VAC.

Motor starter assemblies:

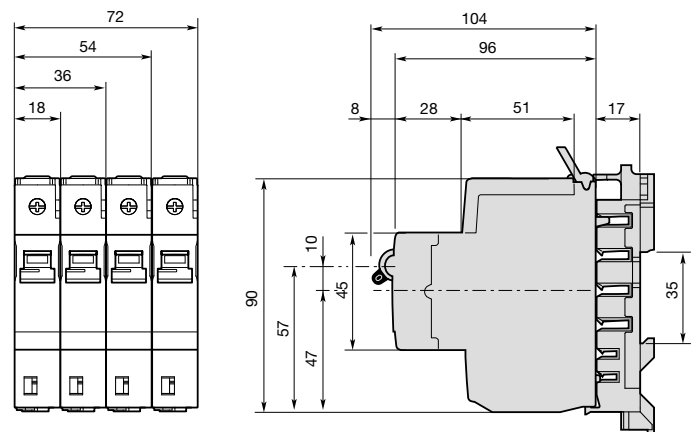
480VAC







ZLS325-480-0.5
ZLS325-480-1
ZLS325-480-2
ZLS325-480-3
ZLS325-480-5
ZLS325-480-7.5
ZLS325-480-10
ZLS325-480-15

240VAC



ZLS325-240-0.5
ZLS325-240-1
ZLS325-240-2
ZLS325-240-3
ZLS325-240-5
ZLS325-240-7.5

1, 2 and 3 pole miniature circuit breakers – S400



IEC							EN60947-2	EN60898-1	EN61008-1	EN61009-1	EN61643-11	EN60947-3	EN60439-1	EN60439-2	EN60898-2	EN62019
Miniature circuit breaker 10kA B S400 M	■	■		■	■	■	■	■								
Miniature circuit breaker 10kA C S400 M	■	■		■	■	■	■	■								
Miniature circuit breaker 10kA D S400 M	■	■		■	■	■	■	■								
Miniature circuit breaker 10kA K S400 M	■			■	■	■	■	■								
Miniature circuit breaker 10kA S400 UC, C, Z	■			■	■	■	■	■								
2-pole residual current operated circuit breaker F402	■	■			■	■	■		■							
2-pole short time delayed residual current operated circuit breaker F402 K	■	■			■	■	■		■							
2-pole residual current operated circuit breaker with overcurrent protection FS401	■	■			■	■	■		■							
2-pole short time delayed residual current operated circuit breaker with overcurrent protection FS401 K	■	■			■	■	■		■							
4-pole residual current operated circuit breaker F404	■	■			□	■	■		■							
4-pole short time delayed residual current operated circuit breaker F404 K	■	■			□	■	■		■							
4-pole selective residual current operated circuit breaker F404 S	■	■			□	■	■		■							
4-pole residual current operated circuit breaker, special design 16 2/3 Hz F404 LF	■					■	■		■							
High performance manual motor starter MS325			■				■									
Switch disconnecter IS404	■										■	■				
Surge arrester OVR 404											■					
Auxiliary switch and signal contacts (1NO, 1NC)	■			■	■	■										■
Socket bases ZLS806/808	■			■	■	■						■	■			
Incoming terminal blocks ZLS224/225	■			■	■	■						■	■			
Incoming terminal component ZLS250-255	■			■	■	■						■	■			
Universal adapter 30A (UR 30A)	■			■	■	■						■	■			
Universal adapter 60A (UR 60A)	■			■	■	■						■	■			
Universal adapter 100A ZLS240, 241	■			■	■	■						■	■			
Terminals for additional socket ZLS812, ZLS815				■	■	■						■	■			
Terminals for additional socket ZLS813, ZLS816				■	■	■						■	■			
Combi module				■	■	■						■	■			
2MS 915,923 adapter for MS325																

UL

			UL508 E222110	UL489 E312425
Miniature circuit breaker S400 U		■		■
Auxilliary Switch S2C-H6RU		■		■
Locking device ZLS501		■		■
Dummy housing ZLS502		■		■
Socket bases ZLS806/808	■		■	■
Bus Bar ZLS200	■		■	■
Bus Bar Cover ZLS100	■		■	■
Extension Adapter ZLS101	■		■	■
Socket End Piece ZLS730	■		■	■
Incoming terminal blocks ZLS224/225	■		■	■
Incoming terminal component ZLS250-253	■		■	■
Bus Bar insulator ZLS239	■		■	■
Universal adapter 25A ZLS177-179U		■		■
Universal adapter 45A167-169U		■		■
Dummy adapter ZLS164		■		■
Connecton ZLS174		■		■
Combi module ZLS840	■		■	

■ Approved
 □ Device is submitted for approval

Notes



Notes





ABB Inc.
1206 Hatton Road
Wichita Falls, TX 76302
Telephone 888-385-1221; 940-397-7000
Fax 940-397-7085

USA Technical help:
888-385-1221, Option 4
8AM to 5PM, CST, Monday - Friday

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ABB Inc.
2117 32 Avenue
Lachine, Quebec, Canada
H8T 3J1
Telephone: 800-567-0283 Atlantic & Quebec
866-222-8368 Mid-West & Pacific Region
866-460-3300 Ontario