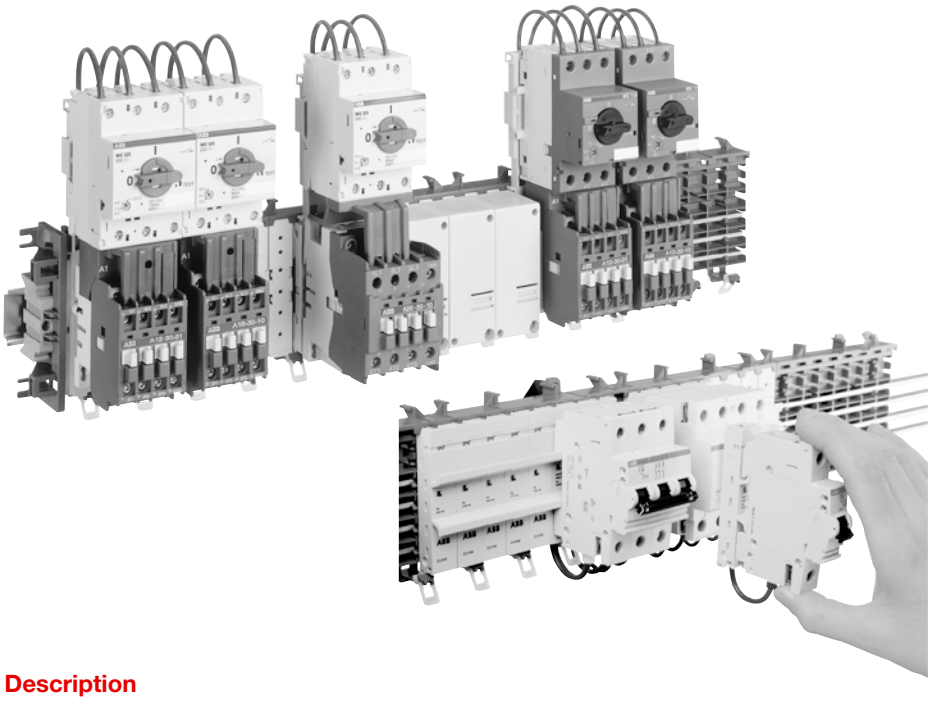
Modular power distribution bus system

Smissline

Smissline
Modular power distribution bus system



Description

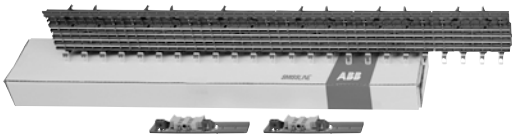
- The Smissline power distribution bus system provides a versatile and flexible means of distributing power to a wide variety of electrical devices. Ideal for group motor installations and ABB modular DIN rail products
- Hot swappable socket mounted components.
- Individual devices may be turned off 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 Smissline assembly

ZLS808

Step 1: Select Base Module Starter Pack

Preassembled bases with bus bar components



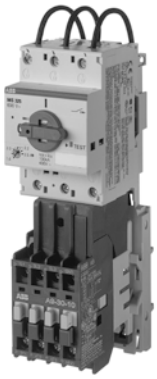
ZLS224

Step 2: Select Main Incoming

Main Lugs

ZLS224

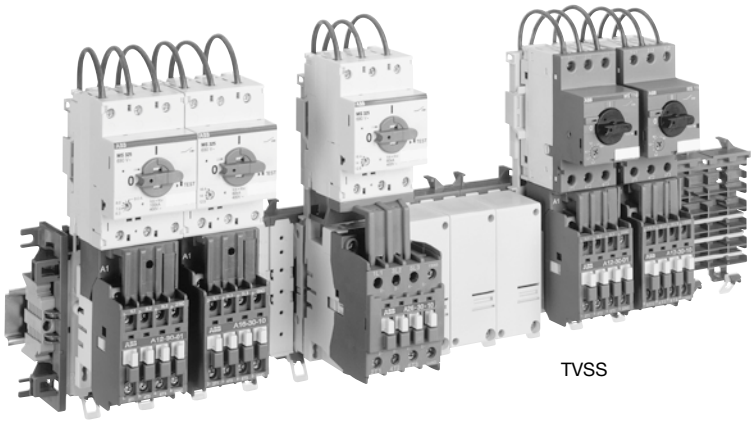
S401U-K10



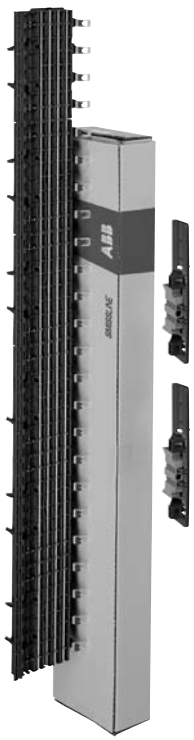
ZLS325

Step 3: Select Components

Breakers
Contactors
Combo Starters
Miscellaneous Din rail devices



TVSS



Smissline
Starter Pack

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.

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-.75
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 – Reversing combo starters

Description	Number of poles	Catalog number
1/2HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325R-480-0.5
3/4HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325R-480-.75
1HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325R-480-1
2HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325R-480-2
3HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325R-480-3
5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325R-480-5
7.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325R-480-7.5

240V – Reversing combo starters

Description	Number of poles	Catalog number
1/2HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325R-240-0.5
1HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325R-240-1
1.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325R-240-1.5
2.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325R-240-2.5
3HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325R-240-3
5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325R-240-5
7.5HP Motor Starter – Disc. w/ Overload and Bus Adaptor	6	ZLS325R-240-7.5

Step 3: Select (MCB) Components according to UL489

S401U-K5

S402U-K10

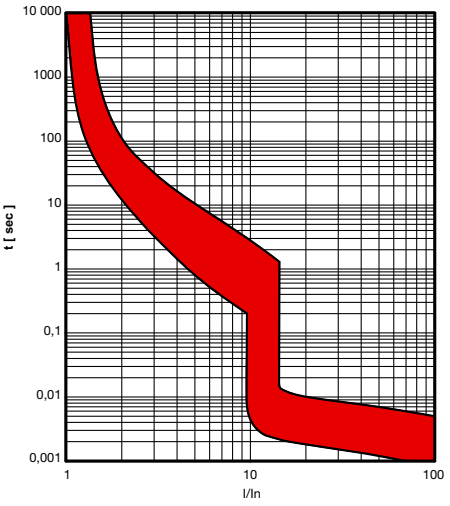
S403U-K20

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

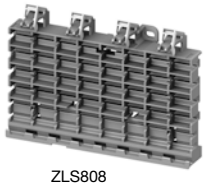
Tripping characteristics K
UL 489
240 VAC
10 kA

Inductive loads

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



Sockets, starter pack
UL508, UL489



ZLS808

ZLS806

Base Module Starter Pack

ZLS200

ZLS730

Socket bases

Description	Number of poles	Catalog number	List price
8-module socket, Length 144 mm	8	ZLS808	**$ 18**
6-module socket, Length 108 mm	6	ZLS806	**16**

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	List price
20 Poles 3L (1x8-module+2x6-module sockets)		ZLS782	**$ 130**
20 Poles 3LN (1x8-module+2x6-module sockets)		ZLS783	**133**
22 Poles 3L (2x8-module+1x6-module sockets)		ZLS760	**133**
22 Poles 3LN (2x8-module+1x6-module sockets)		ZLS761	**145**
24 Poles 3L (3x8-module sockets)		ZLS750	**147**
24 Poles 3LN (3x8-module sockets)		ZLS751	**161**
26 Poles 3L (1x8-module+3x6-module sockets)		ZLS785	**137**
26 Poles 3LN (1x8-module+3x6-module sockets)		ZLS786	**142**
30 Poles 3L (3x8-module+1x6-module sockets)		ZLS762	**165**
30 Poles 3LN (3x8-module+1x6-module sockets)		ZLS763	**184**
32 Poles 3L (4x8-module sockets)		ZLS752	**179**
32 Poles 3LN (4x8-module sockets)		ZLS753	**200**
34 Poles 3L (2x8-module+3x6-module sockets)		ZLS776	**212**
34 Poles 3LN (2x8-module+3x6-module sockets)		ZLS777	**217**
38 Poles 3L (4x8-module+1x6-module sockets)		ZLS764	**195**
38 Poles 3LN (4x8-module+1x6-module sockets)		ZLS765	**215**
40 Poles 3L (5x8-module sockets)		ZLS754	**210**
40 Poles 3LN (5x8-module sockets)		ZLS755	**236**
44 Poles 3L (4x8-module+2x6-module sockets)		ZLS778	**240**
44 Poles 3LN (4x8-module+2x6-module sockets)		ZLS779	**244**
48 Poles 3L (6x8-module sockets)		ZLS756	**245**
48 Poles 3LN (6x8-module sockets)		ZLS757	**248**
62 Poles 3L (7x8-module+1x6-module sockets)		ZLS780	**251**
62 Poles 3LN (7x8-module+1x6-module sockets)		ZLS781	**256**
64 Poles 3L (7x8-module+1x6-module sockets)		ZLS766	**260**
64 Poles 3LN (7x8-module+1x6-module sockets)		ZLS767	**268**
80 Poles 3L (10x8-module sockets)		ZLS758	**383**
80 Poles 3LN (10x8-module sockets)		ZLS759	**393**

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	List price
100 A busbar plated, 10 x 3 mm, for L1, L2, L3, N and PE - Delivery length 1979 mm	110	ZLS200	**$ 55**

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	List price
Socket end piece (2 pieces, left and right)	—	ZLS730	**$ 33**

Notes

Incoming terminal block and components
Socket accessories
UL 508, UL 489

ZLS224

ZLS224

ZLS251

ZLS239

ZLS100

Incoming terminal block

Description	Module	Catalog number	List price
3LN Left	4	ZLS224	**$ 64**
3LN Right	4	ZLS224R	**52**
3L Left	4	ZLS225	**50**
3L Right	4	ZLS225R	**40**

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	List price
Incoming component Line terminal L1	2	ZLS251	**$ 35**
Incoming component Line terminal L2	2	ZLS252	**35**
Incoming component Line terminal L3	2	ZLS253	**35**
Incoming component Neutral	2	ZLS250	**35**

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	List price
Dark grey, for isolation and spacing of separate busbar sections, 18mm	1	ZLS239	**$ 5**

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

Busbar cover

Description	Module	Catalog number	List price
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	**$ 21**

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	List price
Single adaptor 30A bottom feed with clip on bottom side of ZLS806, ZLS808 socket base			
N	1	ZLS160	**$ 11**
L1	1	ZLS161	**11**
L2	1	ZLS162	**11**
L3	1	ZLS163	**11**
Single adaptor 60A bottom feed with clip on bottom side of ZLS806, ZLS808 socket base			
N	1	ZLS170	**13**
L1	1	ZLS171	**13**
L2	1	ZLS172	**13**
L3	1	ZLS173	**13**
Combination adaptor 30A clip on top side of ZLS806, ZLS808 with top feed			
L1, L2	2	ZLS185TT12	**39**
L2, L3	2	ZLS185TT23	**39**
L1, L3	2	ZLS185TT13	**39**
L1, L2, L3	3	ZLS183TT	**40**
Combination adaptor 60A clip on top side of ZLS806, ZLS808 with top feed			
L1, L2	2	ZLS186TT12	**43**
L2, L3	2	ZLS186TT23	**43**
L1, L3	2	ZLS186TT13	**43**
L1, L2, L3	3	ZLS189TT	**50**
Single adaptor 30A top feed with clip on bottom side of ZLS806, ZLS808 socket base			
N	1	ZLS176	**11**
L1	1	ZLS177	**11**
L2	1	ZLS178	**11**
L3	1	ZLS179	**11**
Single adaptor 60A top feed with clip on bottom side of ZLS806, ZLS808 socket base			
N	1	ZLS166	**13**
L1	1	ZLS167	**13**
L2	1	ZLS168	**13**
L3	1	ZLS169	**13**
Combination adaptor 30A clip on top side of ZLS806, ZLS808 socket base and bottom feed			
L1, L2	2	ZLS187TB12	**39**
L2, L3	2	ZLS187TB23	**39**
L1, L3	2	ZLS187TB13	**39**
L1, L2, L3	3	ZLS183TB	**40**
Combination adaptor 60A clip on top side of ZLS806, ZLS808 socket base and bottom feed			
L1, L2	2	ZLS188TB12	**43**
L2, L3	2	ZLS188TB23	**43**
L1, L3	2	ZLS188TB13	**43**
L1, L2, L3	3	ZLS188TB	**50**
Single adaptor, wire length, 300mm, 30A top feed. Wire opposite clip side of ZLS806, ZLS808			
N	1	ZLS176L300	**17**
L1	1	ZLS177L300	**17**
L2	1	ZLS178L300	**17**
L3	1	ZLS179L300	**17**
Single adaptor, wire length, 300mm, 60A top feed. Wire opposite clip side of ZLS806, ZLS808			
N	1	ZLS166L300	**23**
L1	1	ZLS167L300	**18**
L2	1	ZLS168L300	**18**
L3	1	ZLS169L300	**18**
Single adaptor, wire length, 300mm, 30A bottom feed. Wire on clip side of ZLS806, ZLS808			
N	1	ZLS160L300	**23**
L1	1	ZLS161L300	**17**
L2	1	ZLS162L300	**17**
L3	1	ZLS163L300	**17**
Single adaptor, wire length, 300mm, 60A bottom feed. Wire on clip side of ZLS806, ZLS808			
N	1	ZLS170L300	**18**
L1	1	ZLS171L300	**18**
L2	1	ZLS172L300	**18**
L3	1	ZLS173L300	**18**

ZLS161U ZLS177U

ZLS171U ZLS167U

ZLS164U

25A and 45A bus stab adapters

These UL489 bus stab adaptors are designed for using with the S200U 240V ABB minibreakers.

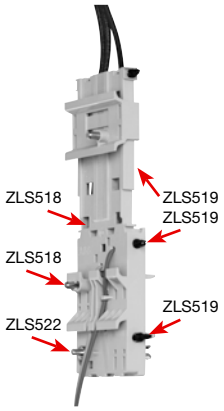
Description	Module	Catalog number	List price
Single adaptor 25A bottom feed, Clip on bottom side of ZLS808, ZLS806 SOCKET BASE			
L1	1	ZLS161U	**$ 12**
L2	1	ZLS162U	**12**
L3	1	ZLS163U	**12**
Single adaptor 25A top feed, Clip on bottom side of ZLS808, ZLS806 SOCKET BASE			
L1	1	ZLS177U	**12**
L2	1	ZLS178U	**12**
L3	1	ZLS179U	**12**
Single adaptor 45A top feed, Clip on bottom side of ZLS808, ZLS806 SOCKET BASE			
L1	1	ZLS167U	**14**
L2	1	ZLS168U	**14**
L3	1	ZLS169U	**14**
Single adaptor 45A bottom feed, Clip on bottom side of ZLS808, ZLS806 SOCKET BASE			
L1	1	ZLS171U	**14**
L2	1	ZLS172U	**14**
L3	1	ZLS173U	**14**

Combi module
UL 508

ZLS8403LABWT-S
Wire at top

ZLS8403LWB-S
Wire at bottom

ZLS840
No wire



Combi module without plug-in contacts

Description	Module	Catalog number	List price
Combi module	—	ZLS840	**$ 40**

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

Combi module accessories

Description	Module	Catalog number	List price
Connection element for combi module (3 connectors per module) Bag containing 12 items	—	ZLS519	**$ 11**
Fixing pins for contactor Bag containing 10 items	—	ZLS522	**13**

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


S401U-K5


S401U-K10


S403U-K20


S2C-H6RU


ZLS502


ZLS501

S400 Series

Rated current I_N A	Number of poles	Catalog number	List price
2	1	S401U-K2	
5	1	S401U-K5	
8	1	S401U-K8	
10	1	S401U-K10	
15	1	S401U-K15	
20	1	S401U-K20	**$ 37**
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	**85**
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	**127**
30	3	S403U-K30	
40	3	S403U-K40	
50	3	S403U-K50	
60	3	S403U-K60	

Made exclusively for use on the Smissline 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.

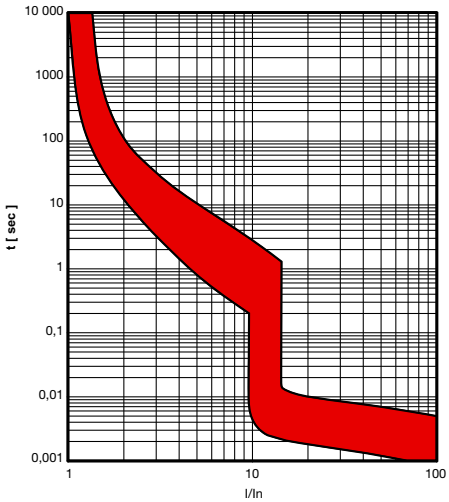
Auxiliary contact, Locking device, “Blank” housing

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 Smissline. 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

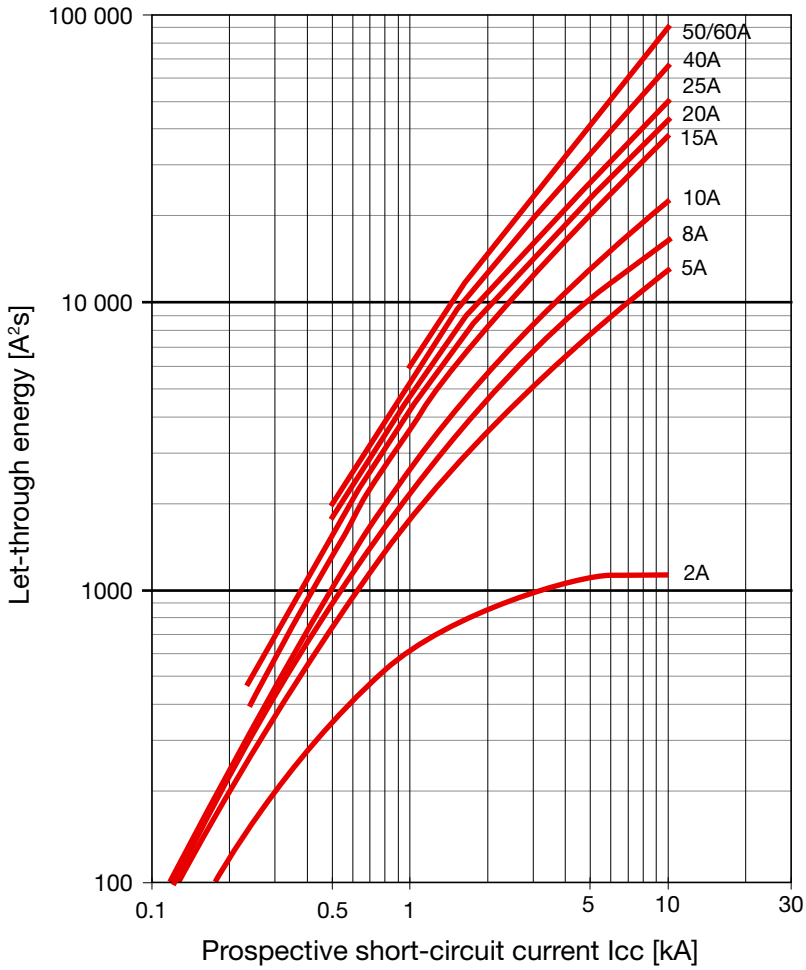
S400	
Certifications:	UL 489 listed Circuit Breaker (E file 312425)
Rated voltage:	240 VAC
Rated current:	2...60 A
Trip characteristics:	K
Number of poles:	1...3
Rated frequency:	50/60 Hz
Rated Interrupting:	10 kA
UL Current limiting:	E file # E312425
Terminal at load side S400 U:	Opposing action stroke 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

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 (kA^2s)
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 UL489, UL508 (E257901)

Incoming terminal block / incoming terminal block components

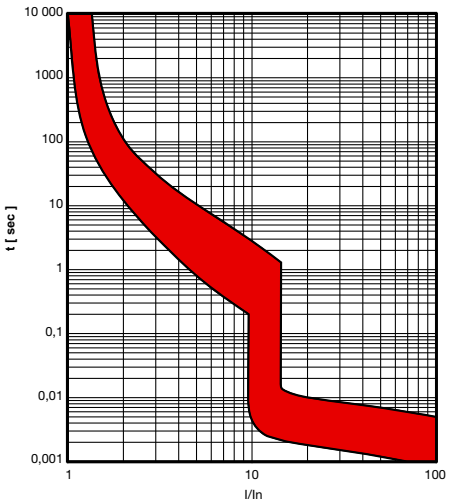
	Busbar	Incoming terminal block ZLS224, 224R, 225, 225R	Incoming terminal component ZLS250, 251, 252, 253
Maximum nominal voltage:	240V	240V	240V
Maximum nominal current:	100A	100A	200A
Nominal current for supply, side feed:	100A	100A	100A
Nominal current for supply, center feed:	100A	150A	200A
Resistance 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			5okA with 200A back-up fuse				
Supply cable size			14 to 8AWG 1/0AWG to 3/0AWG				

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. 200 S
S400 U	K	2…60	50 I_{cu} [kA]

Sace Tmax - S400 U @ 240V AC

			Up-stream	T3	T3	T4	T4	T4	T4	T4
	Version		Version	N	S	N	S	H	L	U
Downstream		I_n [A]	I_{cu} [kA]	50	65	65	100	150	200	200
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

Tmax T3 - S400 U @ 240V

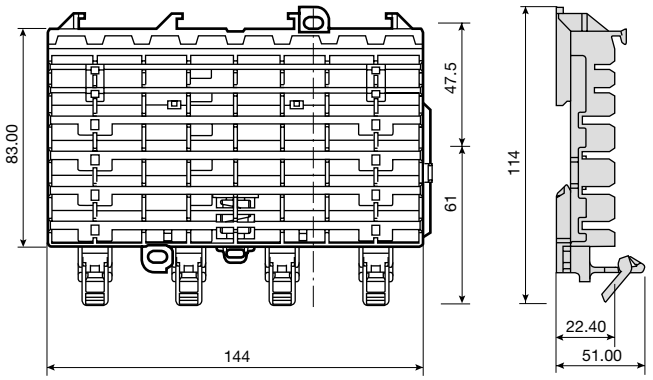
		I.	T3						
		Version	N, S						
		Release	TM, M						
		Frame size	250						
L.	Char.	I_n [A]	60	80	100	125	150	175	200
S400 U	K	2	10	10	10	10	10	10	10
		5	10	10	10	10	10	10	10
		10	10	8.5	10	10	10	10	10
		15	4.5	7.5	10	10	10	10	10
		20	4.5	5.5	6.5	10	10	10	10
		25	3.5	5.5	6	9.5	10	10	10
		30		4.5	6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

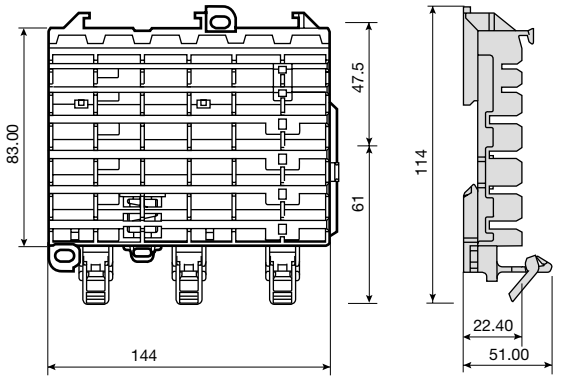
Approximate dimensions
Module base sockets; incoming terminal blocks
Main power module

ZLS808 8 module base socket



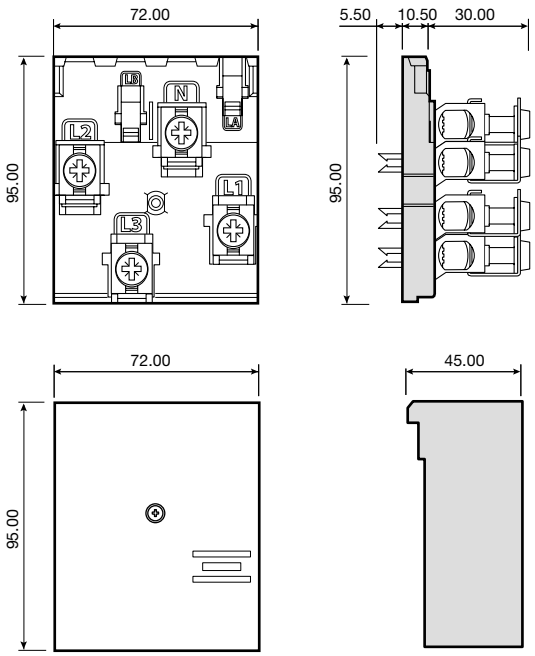
The base consists of eight (8) 18 mm poles designed to stand alone or to be combined with other bases to accommodate: bus bar, bus adaptors, main lugs, main breakers, main fused and non-fused switches, combination starters, feeder breakers, feeder switches, or contactors. The base may be fixed mounted,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

ZLS806 6 module base socket



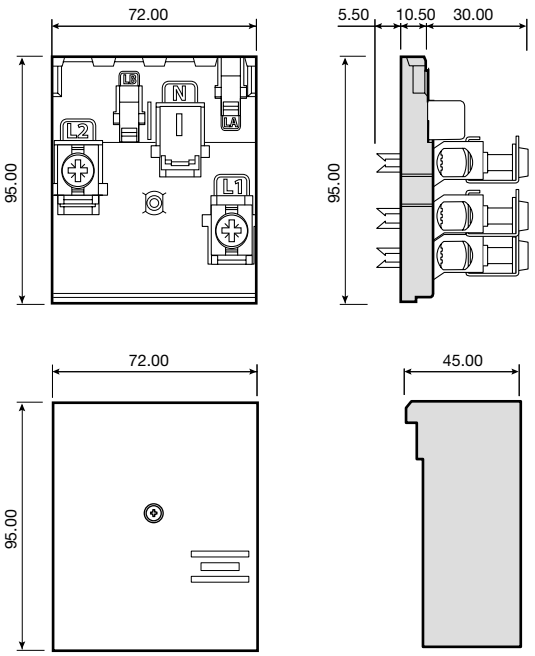
The base consists of six (6) 18 mm poles designed to stand alone or to be combined with other bases to accommodate: bus bar, bus adaptors, main lugs, main breakers, main fused and non-fused switches, combination starters, feeder breakers, feeder switches, or contactors. The base may be fixed mounted, 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 Smissline line-up or 150 A rated module if feeding the center of a Smissline 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.

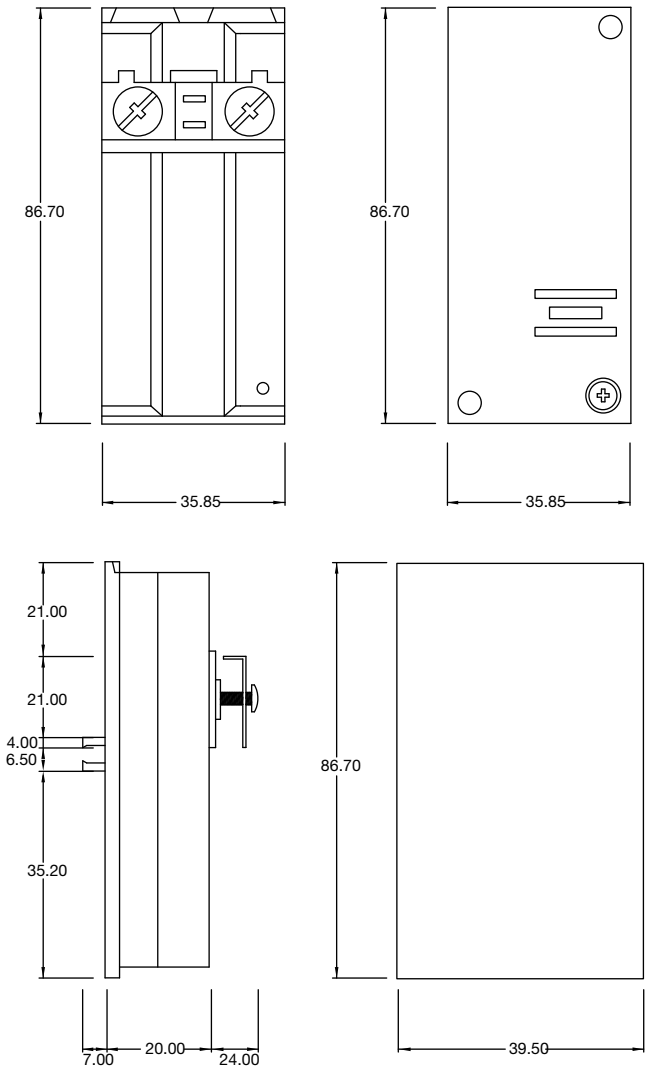
ZLS225 Main power module



The ZLS225 is a 100 A rated module if feeding the end of a Smissline line-up or 150 A rated module if feeding the center of a Smissline 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.

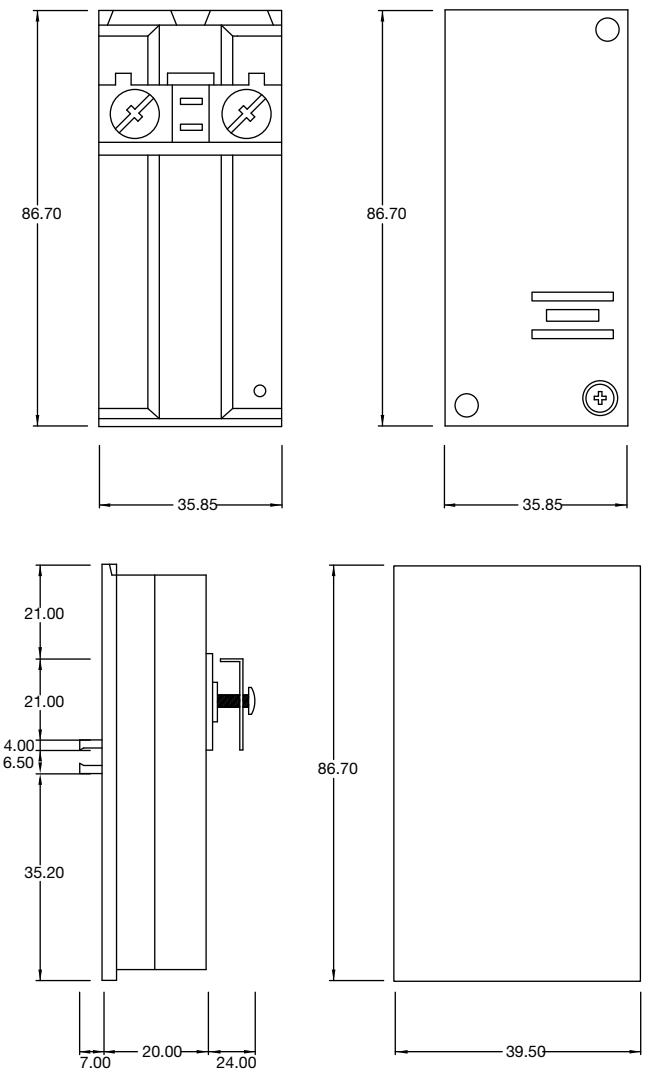
Approximate dimensions
Main power modules

ZLS250 Main power module



The ZLS250 is a 200A rated module if feeding the center of a Smissline line-up. The module is designed to allow wire to be connected to the system bus. The SLS250 may be used as an incoming or outgoing device and has one lug (N) designed to accommodate 8-4/0 AWG wire.

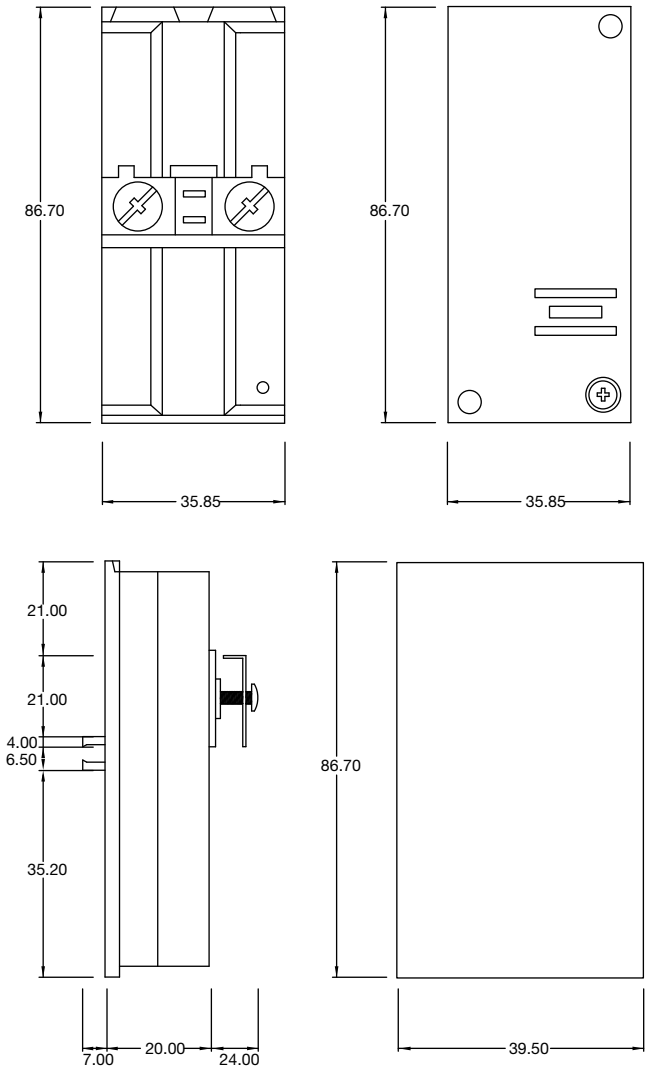
ZLS251 Main power module



The ZLS251 is a 200A rated module if feeding the center of a Smissline 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.

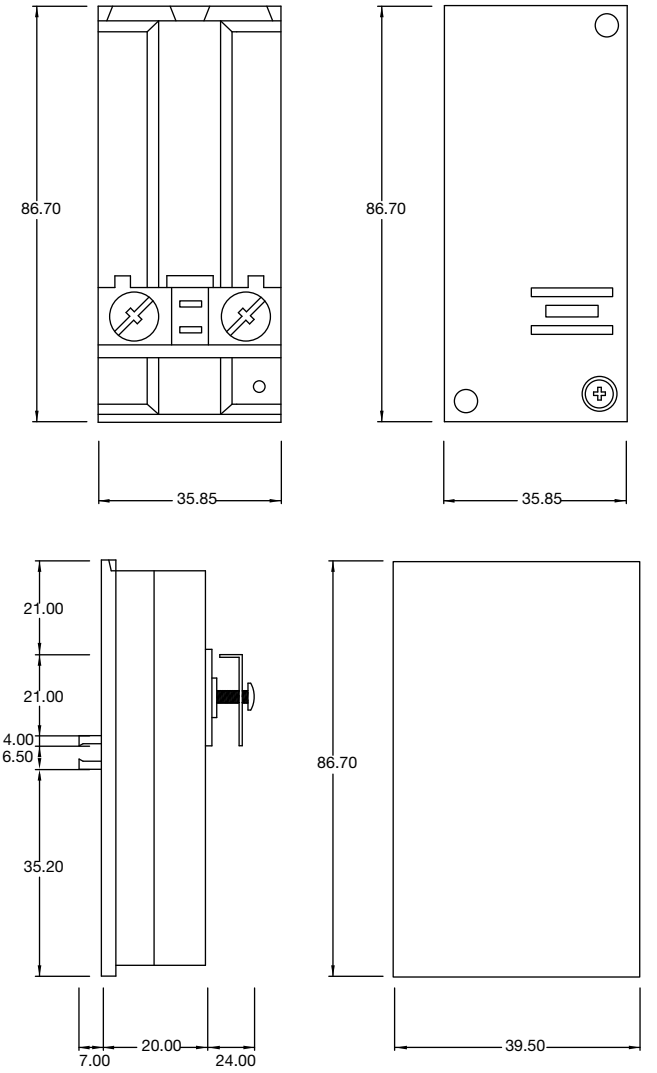
Approximate dimensions
Main power modules

ZLS252 Main power module



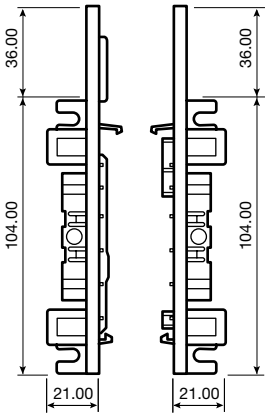
The ZLS252 is a 100A from either side of incoming module. The module is designed to allow wire to be connected to the system bus. The ZLS252 may be used as an incoming or outgoing device and has one lug (L2) designed to accommodate 8-4/0 AWG wire.

ZLS253 Main power module



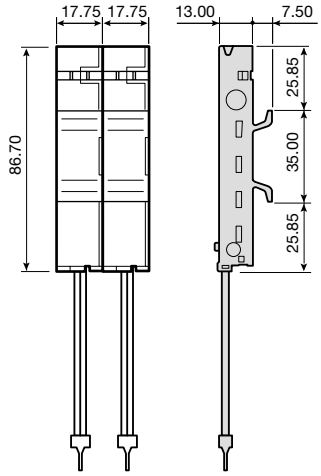
The ZLS253 is a 100A from either side of incoming module. The module is designed to allow wire to be connected to the system bus. The ZLS253 may be used as an incoming or outgoing device and has one lug (L3) designed to accommodate 8-4/0 AWG wire.

ZLS730 Base end stop



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

60 A 2P Bus stab adaptor



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

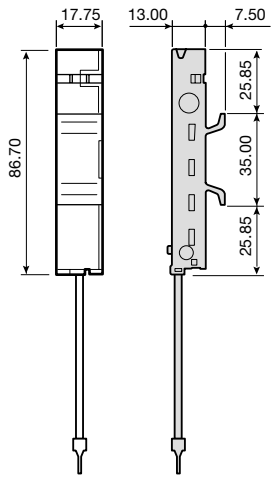
2 Pole combination adaptor; 60A clip on top side of ZLS806

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

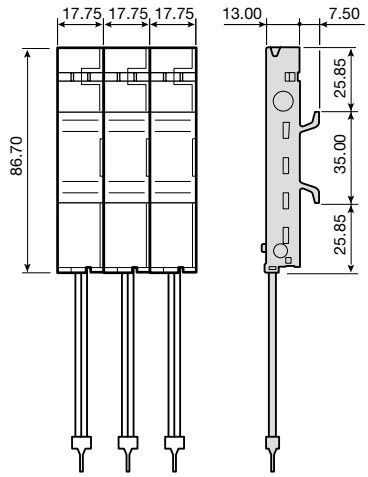
60 A 1P Bus stab adaptor



The bus stab adaptor is designed to connect the assembly bus bar to DIN rail mounted electrical components. Smissline 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)

60 A 3P Bus stab adaptor



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

3 Pole combination adaptor; 60A clip on top side of ZLS806, ZLS808 socket and bottom fed

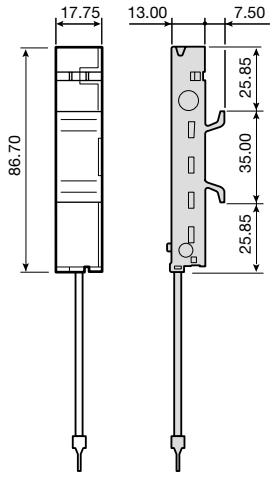
L1, L2, L3	ZLS183TB

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

L1, L2, L3	ZLS183TT

Approximate dimensions

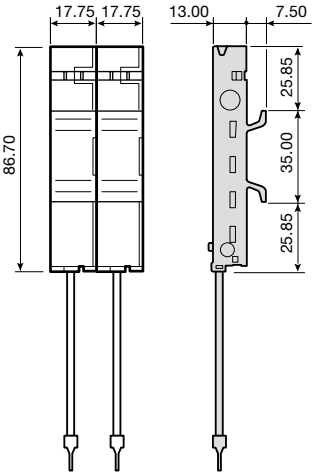
30 A 1P Bus stab adaptor



The bus stab adaptor is designed to connect the assembly bus bar to DIN rail mounted electrical components. Smissline 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)

30 A 2P Bus stab adaptor

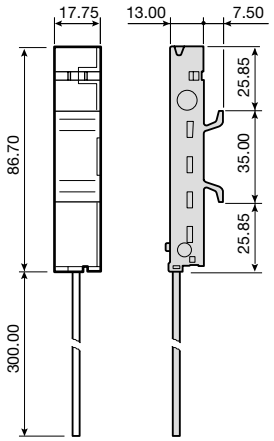


The bus stab adaptor is designed to connect the assembly bus bar to DIN rail mounted electrical components. Smissline bus stab can be joined together in any configuration.

Bus stab adaptors:

ZLS185TT12 ZLS185TT23 ZLS185TT13	Wire on clip side of ZLS808, ZLS806 socket base
ZLS187TB12 ZLS187TB23 ZLS187TB13	Wire on opposite clip side of ZLS808, ZLS806 socket base
ZLS187BT12 ZLS187BT23 ZLS187BT13	Wire on opposite clip side of ZLS808, ZLS806 socket base
ZLS185BB12 ZLS185BB23 ZLS185BB13	Wire on clip side of ZLS808, ZLS806 socket base

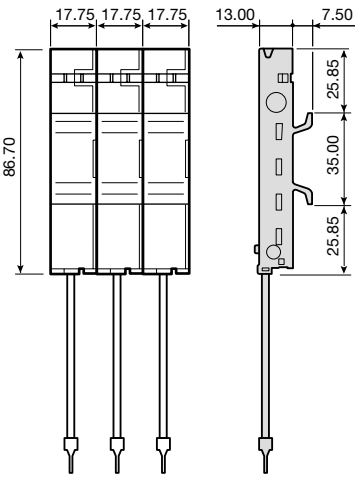
30 A 1P 300 mm Bus stab adaptor



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

Bus stab adaptors:
ZS161L300 (L1), ZLS162L300 (L2), ZLS163L300 (L3)
ZLS177L300 (L1), ZLS178L300 (L2), ZLS179L300 (L3)

30 A 3P Bus stab adaptor

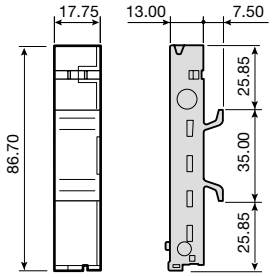


The bus stab adaptor is designed to connect the assembly bus bar to DIN rail mounted electrical components. Smissline bus stab can be joined together in any configuration.

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)

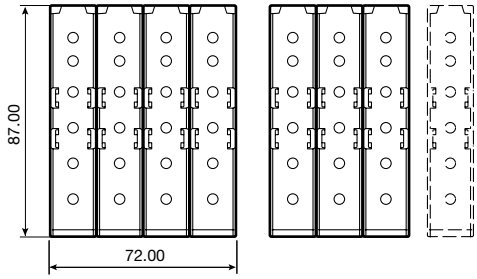
Approximate dimensions

Blank adaptor – ZLS164



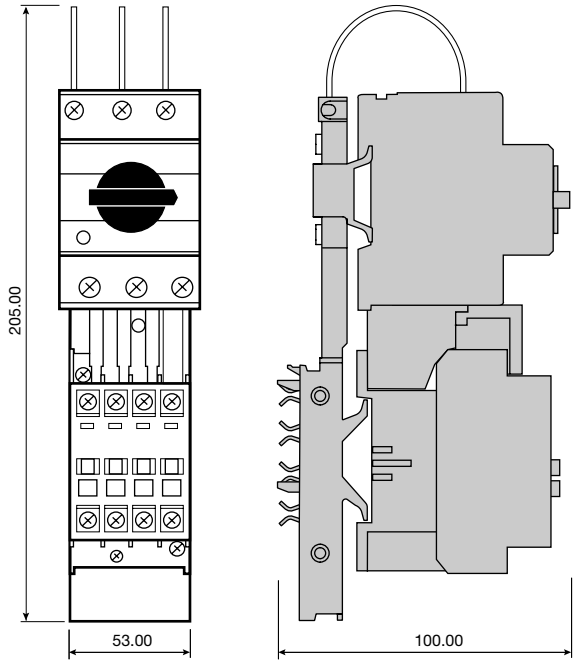
The ZLS164 blank adaptor is designed to connect DIN Rail mounted components to the Smissline base assembly. The blank adaptor does not have a bus stab or wiring and may be combined with any other bus stab adaptor.

Bus covers – ZLS100



The ZLS100 bus covers are designed to insulate all energized components by "pluggin" 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

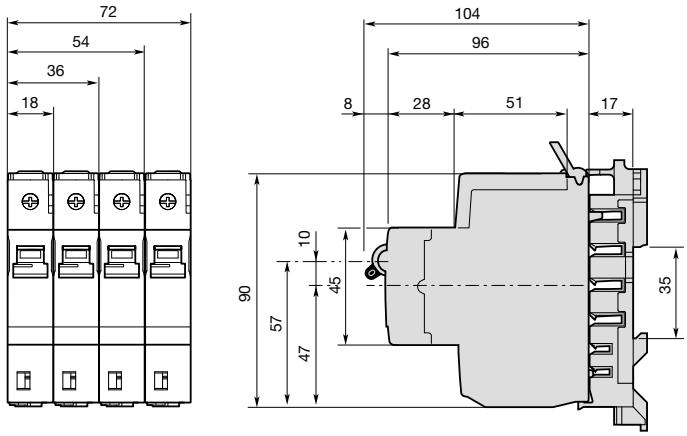


The ZLS-MS325 is a combination motor starter assembly that is integrated into Smissline. The combo-starter provides a disconnect means, short circuit protection, and overload protection in one compact package. The ZLA-MS325 range is available between 5HP through 15HP at 480VAC and .5HP through 7.5HP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

Motor starter assemblies:

480VAC	**240VAC**
ZLS325-480-0.5	ZLS325-240-0.5
ZLS325-480-1	ZLS325-240-1
ZLS325-480-2	ZLS325-240-2
ZLS325-480-3	ZLS325-240-3
ZLS325-480-5	ZLS325-240-5
ZLS325-480-7.5	ZLS325-240-7.5
ZLS325-480-10	
ZLS325-480-15	

1, 2 and 3 pole miniature circuit breakers – S400



Approvals and standards

IEC

	Switzerland SEV	DE - VDE	NL KEMA	Maritime Classification Society		China	GOST RU	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 disconnector 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

	cULus	cULus LISTED	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