SONTHEIMER

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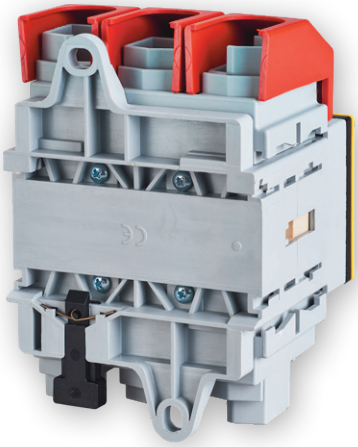
Switch disconnectors according to UL 489 for industrial machines: LX series 30-160 A



Our LX switches are the only disconnectors worldwide that comply with the UL 489 norm. This makes them especially suitable for machines and industrial lines intended for the North American market, because the U.S. panel-builder standard requires that main switches (circuit breakers) must comply with either UL 489 or UL 98. In contrast, UL 508A switches can't be used as main switches. UL 489 switches, however, can also be installed as disconnectors in the feeder or branch circuit.

Advantages:
- very compact (smaller than UL 98)
- versatile use
- extremely high short-circuit resistance (SCCR)
- improved clearance and creepage distances
- variety of designs available

FAQs

Why can't I use a UL 508A switch as the main switch?
The UL 508A standard only applies to motor disconnects. In contrast, UL 489 addresses circuit breakers and molded case switches. UL 489 switches are tested more rigorously, must show twice the clearance and creepage distances to the outside, and have significantly higher short-circuit ratings (SCCR) than UL 508A switches. This makes our UL 489 switches suitable as main switches.

Are your UL 489 switches certified as molded case switches?
The UL 489 standard covers both circuit breakers and molded case switches. Our switches in the LX series fall into the category "molded case switches" (WJAZ) and are therefore properly certified.

What should I use, a UL 489 or a UL 98 switch?
You should definitely choose a UL 489 switch, because UL 489 switches are more compact than UL 98 components. In addition, UL 98 primarily addresses the infrastructure market in the U.S., while UL 489 focuses on machinery and industrial lines.

Our switches in the LX series

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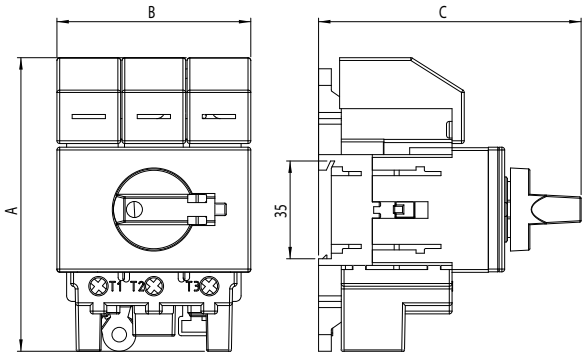
Technical data for the LX series

Main switches and emergency-stop switches

IEC 60947	LX80	LX125	LX160	LX180	LX250
Insulation voltage (rated value)	690 V	690 V	690 V	690 V	690 V
Operating current at AC (rated value)	32 A	63 A	100 A	125 A	160 A
Surge voltage strength (rated value)	6 kV	6 kV	6 kV	6 kV	6 kV
Conditional short-circuit current, line-side fuse protection (440 V)	50 kA	50 kA	50 kA	50 kA	50 kA
Conditional short-circuit current, line-side fuse protection (690 V)	50 kA	50 kA	50 kA	50 kA	50 kA
Short-circuit fuse in the main circuit (max.)	40 A (gG)	63 A (gG)	125 A (gG)	125 A (gG)	160 A (gG)
Operating current					
AC-23 A (400 V)	32 A	63 A	100 A	125 A	160 A
AC-21 A (440 V)	32 A	63 A	100 A	125 A	160 A
Operating performance					
AC-23 A (440 V)	15 kW	30 kW	45 kW	55 kW	75 kW
AC-23 A (690 V)	18.5 kW	37 kW	37 kW	45 kW	55 kW
AC-3 (400 V)	15 kW	30 kW	45 kW	55 kW	75 kW
AC-3 (690 V)	15 kW	30 kW	30 kW	37 kW	45 kW
According to UL	**LX80**	**LX125**	**LX160**	**LX180**	**LX250**
Operating current at AC (nominal value according to UL 489/UL 508/UL 60947-4-1)	30 A	60 A	100 A	125 A	160 A
Operating voltage at AC with 50-60 Hz (rated value according to UL 489/UL 508)	480 V	480 V	480 V	480 V	480 V
Permanent current of the upstream fuse	30 A	60 A	100 A	125 A	160 A
Fuse type	CC, J	J	J	J	J
Effective power at AC with 480 V (according to UL 508/UL 60947-4-1)	20 hp	30 hp	60 hp	75 hp	100 hp
Short-circuit current rating (SCCR) at 480 V	50 kA	50 kA	65 kA	65 kA	50 kA
Connections (Cu conductors only)	**LX80**	**LX125**	**LX160**	**LX180**	**LX250**
IEC					
Solid-core	2.5–35 mm²	4–50 mm²	16–185 mm²	16–185 mm²	16–185 mm²
Fine stranded with wire end treatment	2.5–16 mm²	4–35 mm²	16–150 mm²	16–150 mm²	16–150 mm²
Stranded	2.5–35 mm²	4–50 mm²	16–185 mm²	16–185 mm²	16–185 mm²
UL	14-6 AWG	12-1 AWG	3-400 kcmil	1-400 kcmil	1-400 kcmil
CSA	12-8 AWG	10-4 AWG	3-2/0 AWG	3-2/0 AWG	3-2/0 AWG
Other	**LX80**	**LX125**	**LX160**	**LX180**	**LX250**
Ambient temperature during operation	-25 to +55° C	-25 to +55° C	-25 to +55° C	-25 to +55° C	-25 to +55° C
Electrical life (switching cycles) at AC with 23 A and 690 V	6,000 hp	6,000 hp	6,000 hp	6,000 hp	6,000 hp
Maximum i^2t value (with switch closed, 690 V, and combination of switch plus gG fuse)	12 kA²s	24 kA²s	223 kA²s	223 kA²s	223 kA²s
Maximum let-through i^2t value (with switch closed, 440 V, and combination switch plus gG fuse)	12 kA²s	30 kA²s	223 kA²s	223 kA²s	223 kA²s
Power dissipation per track at AC	4.5 W	7.5 W	36 W	36 W	36 W
Dimensions					
Height (A)	96 mm	106 mm	178 mm	178 mm	178 mm
Width (B)	60 mm	70 mm	113 mm	113 mm	113 mm
Depth (C)	92 mm	95 mm	158 mm	158 mm	158 mm
Weight	270 g	800 g	1,650 g	1,650 g	1,650 g

Other designs available:
Floor-mounted with door coupling (Design V),
DIN standard distribution (Design T),
Front-mounted, for example, door installation (Design E)



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