



Your problem: You need a range of disconnect switches for your industrial control requirements ranging from “Service Entrance Rated” to motor isolation. You need DIN-rail and direct mountable disconnect switches that conform to “finger-safe” standards. You need a flexible range of handles, shafts, and accessories to select from.

Our solution: Mersen offers an extensive line of compact UL 98 fusible and non-fusible disconnect switches ranging from 30 to 1200A. We also offer a full range of compact UL 508 disconnect switches ranging from 16 to 80A. In addition, you can find handle, shaft and accessory options that you require for all of your applications.

Want more information fast? For more technical or application-specific information, please call our Disconnect Switch experts at 978-465-4853 or visit our website at ep.mersen.com.

Low Voltage Disconnect Switches

THE SAFEST WAY
TO SWITCH POWER
ON AND OFF IN YOUR
INDUSTRIAL CONTROL
PANELS

- UL 508 Non-Fusible Disconnect Switches. DS 2
- UL 98 Non-Fusible Disconnect Switches. DS 5
- UL 98 Fusible Disconnect Switches. DS 10
- PV-Rated UL and IEC Disconnect Switches. DS 15
- Enclosed Disconnect Switches. DS 19

DS

UL 508 Non-Fusible

Disconnect Switches

DISCONNECT SWITCHES

M163 – M803



The M-series Load Break Switch is the most compact industrial-grade switch on the market. Capable of making or breaking loads up to 600V (UL), it is suitable as a motor disconnect. Extremely compact and robust, these switches have a variety of mounting options including DIN-rail, base, or door-mounting. A wide assortment of handles, shafts and accessories is available to accommodate any installation requirement.

APPLICATIONS:

- Line-of-sight disconnect
- Electrical isolation
- Branch-circuit switch
- Motor disconnect

RATINGS (UL):

- **Volts:** 600VAC
- **Amps:** 20, 30, 40, 63, and 80A. Suitable as motor disconnect up to 40hp.

FEATURES/ BENEFITS:

- Compact
- Robust
- DIN-rail, base, or door mounting
- Choice of handles and shafts
- Padlockable
- Side-mount auxiliary contacts and additional poles
- Double-break, silver-plated, contacts

APPROVALS:





- UL 508 listed E196672
- IEC 60947-3



Catalog number designation

M Switch	80 Ampacity	3 Number of Poles	Special Configurations
M = Mersen AC Switch	16-80		DM: Door Mounting

DS

UL 508 Disconnect Switches—Front Operated						
						
M163	M163DM	M633	M633DM			
Switch Body	Ampere Rating	20	30	40	63	80
	Base Part #	M163	M253	M403	M633	M803
	Door-Mounted Version	M163DM	M253DM	M403DM	M633DM	M803DM
Handles and Shafts	Direct Front Operation Locking Handle					
		HD40	HD40	HD40	HD125	HD125
	External Front Operation					
	Selector Style NEMA Type 1, 3R, 12	HSBX, HSRX				
	Shaft—SAxxx (xxx = length in mm)	SA85, SA105, SA120, SA130, SA180, SA250				
	Door mounted version (no shaft required)	HSBPDM, HSRPDM		HSBWDM, HSRWDM		
	Pistol Style NEMA Type 1, 3R, 12	HB45, HR45, HB65, HR65, HB80, HR80				
	NEMA Type 4, 4X	HB45X, HR45X, HB65X, HR65X, HB80, HB80X				
	NEMA 4X Stainless Steel	HM65X				
	Shaft— SAxxx (xxx = length in mm)	SPA130, SPA210, SPA290, SPA360, SPA430				
	B=Black, R=Black					
Accessories	Fourth Poles					
	Limited to one additional pole per switch	4P40	4P40	4P40	4P80	4P80
	Door mounted switch 4th poles are left-side mounted	4P40DM	4P40DM	4P40DM	4P80DM	4P80DM
	Neutral Poles					
	Limited to one additional pole per switch	NP40	NP40	NP40	NP80	NP80
	Door mounted switch neutral poles	NP40DM	NP40DM	NP40DM	NP80DM	NP80DM
	Terminal Shrouds					
	3-pole	TS40-3	TS40-3	TS40-3	TS63-3	TS63-3
	4-pole (Add this to the 3-pole shroud)	TS40-1	TS40-1	TS40-1	TS63-1	TS63-1
	Auxiliary Contacts*					
	NC Right side mounting	OA1G01	OA1G01	OA1G01	OA1G01	OA1G01
	NO left side mounting	OA1G10	OA1G10	OA1G10	OA1G10	OA1G10
	NO+NC (Mounting on either side)	OA2G11	OA2G11	OA2G11	OA2G11	OA2G11
	*Rated 2A max continuous @690VAC					

DS

TECHNICAL DATA ACCORDING TO UL/cULus													
Part Number	pf= 0.7...0.8	-40° to 40 °C	A	M163		M253		M403		M633		M803	
General Purpose Amp Rating				20	30	40	60	80					
Maximum Operating Voltage			V	600	600	600	600	600	600	600	600	600	600
Max. horsepower rating / motor FLA current	pf= 0.4...0.5 Three phase	240 V	HP/A	5/15.2	7.5/22.0	10/28.0	15/42.0	20/54.0					
		480 V	HP/A	10/14.0	15/21.0	20/27.0	30/40.0	40/52.0					
		600 V	HP/A	11-Oct	20/22.0	25/27.0	30/32.0	40/41.0					
	Single phase	120 V	HP/A	1/16.0	1.5/20.0	2/24.0	2/24.0	2/24.0					
240 V		HP/A	2/13.2	3/18.7	5/30.8	7.5/40.0	10/57.5						
Short circuit rating with fuse	Maximum fuse size		A	30	60 ²⁾	30	60 ²⁾	30	60 ²⁾	100	150	100	150
	Fuse type	CC	kA	10		10		10					
	Fuse type	J	kA	10	10	10	10	10	10	100		100	
	Fuse type	T	kA	10	10	10	10	10	10	100		100	
	Fuse type	RK1	kA	10		10		10		10	5	10	5
	Fuse type	RK5	kA	5	5	5	5	5	5		5		5
	Fuse type	L	kA										
Fuse type	H	kA											
Endurances													
Min. electrical endurance, pf. 0.75...0.8			oper. cycles	6 000	6 000	6 000	6 000	6 000	6 000	6 000	6 000	6 000	6 000
Mechanical endurance			operations	20 000	20 000	20 000	20 000	20 000	20 000	20 000	20 000	20 000	20 000
Terminal lug kits				Integral	Integral	Integral	Integral	Integral	Integral	Integral	Integral	Integral	Integral
Wire range			AWG	18-8	18-8	18-8	14-4	14-4					
Torque		Wire tightening	lb. in	?	?	?	18	18					
		Lug mounting											
TECHNICAL DATA ACCORDING TO IEC 60947-3													
Rated insulation voltage and rated operational voltage AC20/DC20		Pollution degree 3	V	750	750	750	750	750	750	750	750	750	750
Dielectric strength		50 Hz 1min.	kV	6	6	6	6	6	6	6	6	6	6
Rated impulse withstand voltage			kV	8	8	8	8	8	8	8	8	8	8
Rated operational current, AC-22A		up to 415 V	A	16	25	40	63	80					
		440...500 V	A	16	25	40	63	80					
		690 V	A	16	25	40	63	80					
Rated operational current, AC-23A		up to 415 V	A	16	20	23	45	75					
		440 V	A	16	20	23	45	65					
		500 V	A	16	20	23	45	58					
		690 V	A	10	11	12	20	20					
Rated conditional short-circuit current I_p (r.m.s.) and corresponding max. allowed cut-off current i_c . The cut-off current i_c refers to values listed by fuse manufacturers	I_p (r.m.s.)	50 kA	kA	6.5	6.5	6.5	13	13					
	Max. fuse size gG/aM	415 V	A	40/32	40/32	40/32	100/80	100/80					
	I_p (r.m.s.)	10 kA	kA										
	Max. fuse size gG/aM	690 V	A										
[single phase test acc. to IEC60269]	I_p (r.m.s.)	50 kA	kA	4	4	4	11	11					
	Max. fuse size gG/aM	690 V	A	25/16	25/16	25/16	80/63	80/63					
	at prospective SC-current	80 kA	kA										
	Max. fuse size gG/aM	690 V	A										
Rated short-time withstand current	r.m.s. -value I_{cw}	690 V, 1 s	kA	0.5	0.5	0.5	1	1.5					
Rated short circuit making capacity	Peak value I_{cm}	690 V/500 V	A	0.705	0.705	0.705	1.4	2.1					
Power loss / pole	At rated operational current		W	0.3	0.6	1.6	2.8	4.5					
Mechanical endurance	Divide by two for operation cycles		Oper.	20 000	20 000	20 000	20 000	20 000					
Weight without accessories		3-pole	kg	0.11	0.11	0.11	0.27	0.27					
		4-pole	kg	0.15	0.15	0.15	0.35	0.35					

1) UL Listed switches are also CSA Approved. 2) Fuse size 70A for RK5.

DS

UL 98 Non-Fusible

Disconnect Switches

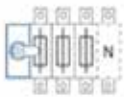
DISCONNECT SWITCHES



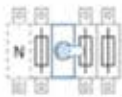
Mersen's non-fusible disconnect switches are listed to UL 98 and bear the CE mark as conformance to IEC 60947-3. They are "service entrance" devices that are capable of fully rated load-break and load-make. All switches over 100A have windows to provide visual indication of the contact status. Engineered to have the smallest footprint, these switches also employ a modular design that enables the handle to be placed amongst the poles or at the ends.

A wide range of ergonomic handles and accessories is available to accommodate multiple applications.

CONFIGURATIONS:



Gearbox on the side



Gearbox in the middle

Catalog number designation						
M Switch	200 Ampacity	U Type	3 Number of Poles/Left of handle	0 Number of Poles/Right of handle	— Revision	— Special Configuration
M = Mersen AC Switch	16-1200	U = non-fused UL 98	1-3	Blank = < 200A non-fused, 0, 2, 3	Blank = 0	F = Flange-mount Actuation DM = Door mounted

*Not all configurations are available.

RATINGS (UL):

- **Volts:** 600VAC
- **Amps:** 30A, 60A, 100A, 200A, 400A, 600A, 800A, 1200A
- **Short-Circuit Current Rating (SCCR):** Up to 200kA with fuses. Suitable as motor disconnect.

FEATURES/ BENEFITS:

- Service entrance rated
- Front operation
- Most compact size
- Internally mounted auxiliary contacts
- Flange mounting accessories
- Flexible mounting
- Adjustable shaft depth













APPROVALS:

- All UL switches meet the requirements of UL and CSA
- UL listed guide WHTY, File E191605 for UL 98 (ratings from 30 A to 1200 A)
- IEC 60947-3






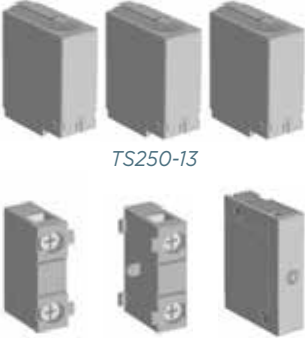


*Not all configurations are available

DS

UL 98 DISCONNECT SWITCHES						
 <p>M100U3</p>		 <p>M200U30 with HD250 Direct Handle</p>		 <p>M200U30</p>		
Switch Body	Ampere Rating	30	60	100	200	
	Base Part #	M30U3	M60U3	M100U3	M200U	
	3-pole configurations				12, 30	
	For Flange-mount Actuation	M30U3F	M60U3F	M100U3F		
	For Door-mounting	M30U3DM	M60U3DM	M100U3DM		
Handles and Shafts	Direct Front Operation Locking Handle	HD125	HD125	HD125	HD250	
 <p>HSBX</p>  <p>HD250</p>  <p>HB65</p>	External Front Operation					
	Selector Style	HSBX, HSRX			N/A	
	Shaft—SAxxx (xxx = length in mm)	SA85, SA105, SA120, SA130, SA180, SA250			N/A	
	Door mounted version [no shaft required]	HSBWDM, HSRWDM			N/A	
	Pistol Style NEMA Type 1, 3R, 12	HB45, HR45, HB65, HR65, HB80, HR80				
	NEMA Type 4, 4X	HB45X, HR45X, HB65X, HR65X, HB80X, HR80X				
NEMA 4X Stainless Steel	HM65X					
Shaft—SAxxx (xxx = length in mm)	SPA130, SPA210, SPA290, SPA360, SPA430					
Alignment Ring	See next page					
B=Black, R=Red						
Accessories	Fourth Poles	4P60	4P60	4P125	4P250	
 <p>4P125</p>  <p>4P250</p>	Base-mounted switch Fourth Poles					
	Door-mounted switch Fourth Poles	4P60DM	4P60DM	4P125DM		
Neutral Poles						
   <p>TS250-13</p>	Base-mounted switch Neutral Poles	NP60	NP60	NP125		
	Door-mounted switch Neutral Poles	NP125DM	NP125DM	NP125DM		
Terminal Shrouds						
   <p>OA1G10</p>    <p>OA1G01</p>  <p>OEA28</p>	3-pole	TS125-3	TS125-3	TS125-3	TS250-13	
	4-pole	TS125-1	TS125-1	TS125-1	TS250-14	
	Shrouds with "-3" suffix are single shrouds that cover all three terminals. Shrouds with "-13" or "-14" are single pole shrouds with 3 or 4 per					
	Auxiliary Contacts*					
	Normally Closed	OA1G01	OA1G01	OA1G01	OA3G01	
	Normally Open	OA1G10	OA1G10	OA1G10	OA1G10	
	N0+NC	OA2G11	OA2G11	OA2G11		
	Module for 8 aux. contacts	N/A	N/A	N/A	OEA28	
*Rated 2A max continuous @690VAC						
Flange Operation						
	Flange bracket assembly	Incl with M30U3F**	Incl with M60U3F**	Incl with M100U3F**	FOM4	
	Rod Flange handle NEMA 12	FHR12	FHR12	FHR12	NA	
	Rod Flange handle NEMA 4X	FHR4X	FHR4X	FHR4X	NA	
	Rod, 16 inch	RODNF16	RODNF16	RODNF16	NA	
	Rod, 24 inch	RODNF24	RODNF24	RODNF24	NA	
	Cable Flange Handle, NEMA 12	NA	NA	NA	FHC12	
	Cable Flange Handle, NEMA 4X	NA	NA	NA	FHC4X	
	Cable for FHC handles	NA	NA	NA	CABLE36*	

Other cable lengths available: 48", 60", 72", 84", 96", 108". For example, CABLE108. **These switches have not been tested to conform to UL standards

UL LISTED FRONT OPERATED					
					
M400U30		M600U30		M200U30	
Switch body	Ampere Rating	400	600	800	1200
	Base Part #	M400U	M600U	M800U	M1200U
	3-pole configurations	30, 12	30, 12	30, 12	30
Handles and Shafts	Direct Front Operation Locking Handle				
		HD400	HD800	HD800	HD1000
	External Front Operation				
	Pistol Style NEMA Type 1, 3R, 12	HB125, HB145, HB274			
	NEMA Type 4, 4X	HB125X, HB145X, HB274X			
	NEMA 4X Stainless Steel	HM125X, HM175X			
	Shaft— SAxxx (xxx = length in mm)	SFB185, SFB280, SFB325, SFB395, SFB535			
Alignment Ring (optional, for pistol-style handle)	ALRJF10				
B=Black. Substitute 'R' for 'B' if a red handle is desired. Ex. HR125					
Accessories	Fourth Poles				
		4P400	4P800	4P800	4P1250
	Terminal Lugs				
	6 per package	LUG400 #2 - 600MCM	LUG800 2 x #2 600MCM	LUG800 2 x #2 600MCM	LUG1200 4 x #2 600MCM
	Terminal Shrouds				
	3-pole	TS400-13	TS600-3	TS800-3	TS1600-13
4-pole	TS400-14			TS1600-14	
Shrouds with "-3" suffix are single shrouds that cover all three terminals. Shrouds with "-13" or "-14" are single pole shrouds with 3 or 4 per					
Auxiliary Contacts*					
	Normally Open	OA1G10	OA1G10	OA1G10	OA1G10
	Normally Closed	OA3G01	OA3G01	OA3G01	OA3G01
	Module for 8 aux. contacts	OEA28	OEA28	OEA28	OEA28
*Rated 2A max continuous @690VAC					

TECHNICAL DATA ACCORDING TO UL/cULus								
Part Number				M30U3	M60U3	M100U3	M200Uxx	
General Purpose Amp Rating	pf= 0.7...0.8	-5° to 40 °C	A	30	60	100	200	
Maximum Operating Voltage			V	600	600	600	600	
Max. horsepower rating / motor FLA current	pf= 0.4...0.5 Three phase	240 V	HP/A	10/28.0	20/54.0	30/80.0	75/192.0	
		480 V	HP/A	20/27.0	40/52.0	50/65.0	150/180.0	
		600 V	HP/A	30/32.0	40/41.0	50/52.0	200/192.0	
	Single phase	120 V	HP/A	2/24.0	3/34.0	5/56.0		
240 V		HP/A	5/28.0	7.5/40.0	15/68.0			
Short circuit rating with fuse	Maximum fuse size		A	60	150	150	200	400
	Fuse type	CC	kA					
	Fuse type	J	kA	50	50	50	200	65
	Fuse type	T	kA	50	50	50		
	Fuse type	RK1	kA					
	Fuse type	RK5	kA					
	Fuse type	L	kA					
	Fuse type	H	kA					
Maximum General Use, DC Ratings								
Current rating		at 250 VDC	A				200	
		at 600 VDC	A				100	
DC horsepower rating for 4-pole switch		at 600 VDC	HP				50	
DC horsepower rating for 2-pole switch	In open air	at 125 VDC	HP				20	
	In enclosure ²⁾	at 250 VDC	HP				-	
DC short circuit rating for 4-pole switch	with circuit breaker		kA				10	
DC short circuit rating for 2-pole switch	with circuit breaker at 250 VDC		kA				14	
	with circuit breaker at 600 VDC		kA				10	
	with class J fuse at 250 VDC		kA				100	
	... with fuse size		A				200	
endurances								
Min. electrical endurance, pf. 0.75...0.8			oper. cycles	6 000	6 000	6 000	6 000	
Mechanical endurance			operations	20 000	20 000	20 000	20 000	
Terminal lug kits				Integral	Integral	Integral	LUG-200	
Wire range			AWG	14-4	14-4	8-1/0	4-300MCM	
Torque		Wire tightening	lb. in	55	55	55	275	
		Lug mounting					72	
TECHNICAL DATA ACCORDING TO IEC 60947-3								
Rated insulation voltage and rated operational voltage AC20/DC20		Pollution degree 3	V	750	750	750	1 000	
Dielectric strength		50 Hz 1min.	kV	6	6	6	10	
Rated impulse withstand voltage			kV	8	8	8	12	
Rated operational current, AC-22A		up to 415 V	A	40	63	100	250	
		440...500 V	A	40	63	100	250	
		690 V	A	40	63	100	250	
Rated operational current, AC-23A		up to 415 V	A	40	63	80	250	
		440 V	A	40	63	65	250	
		500 V	A	40	63	60	250	
		690 V	A	40	63	40	250	
Rated conditional short-circuit current I_p (r.m.s.) and corresponding max. allowed cut-off current i_c . The cut-off current i_c refers to values listed by fuse manufacturers	I_p (r.m.s.)	50 kA	kA	16.5	16.5	16.5		
	Max. fuse size gG/aM	415 V	A	125/125	125/125	125/125		
	I_p (r.m.s.)	10 kA	kA	8.2	8.2	8.2		
	Max. fuse size gG/aM	690 V	A	125/100	125/100	125/100		
(single phase test acc. to IEC60269)	I_p (r.m.s.)	50 kA	kA	10	10	10	35	
	Max. fuse size gG/aM	690 V	A	63/63	63/63	63/63	355/315	
	at prospective SC-current	80 kA	kA				40.5	
	Max. fuse size gG/aM	690 V	A				355/315	
Rated short-time withstand current	r.m.s.-value I_{cw}	690 V, 1 s	kA	2.5	2.5	2.5	8	
Rated short circuit making capacity	Peak value I_{cm}	690 V/500 V	A	3.6	3.6	3.6	30	
Power loss / pole	At rated operational current		W	0.7	1.6	4.0	6.5	
Mechanical endurance	Divide by two for operation cycles		Oper.	20 000	20 000	20 000	20 000	
Weight without accessories		3-pole	kg	0.36	0.36	0.36	1.2	
		4-pole	kg	0.50	0.50	0.50	1.5	
1) UL Listed switches are also CSA Approved. 2) Fuse size 70A for RK5.								

TECHNICAL DATA ACCORDING TO UL/cULus							
Part Number				M400U	M600U	M800U	M1200U
General Purpose Amp Rating	pf= 0.7...0.8	-5° to 40 °C	A	400	600	800	1200
Maximum Operating Voltage			V	600	600	600	600
Max. horsepower rating / motor FLA current	pf= 0.4...0.5 Three phase	240 V	HP/A	125/312.0	200/480.0	200/602	200/602
		480 V	HP/A	250/302.0	450/515.0	500/590	500/590
		600 V	HP/A	350/338.0	500/472.0	500/472	500/472
	Single phase	120 V	HP/A				
240 V		HP/A					
Short circuit rating with fuse	Maximum fuse size		A	600	600 800	800	1200
	Fuse type	CC	kA				
	Fuse type	J	kA	100	100		
	Fuse type	T	kA		100		
	Fuse type	RK1	kA				
	Fuse type	RK5	kA		100	100	100
	Fuse type	L	kA				
Fuse type	H	kA					
Maximum General Use, DC Ratings							
Current rating		at 250 VDC	A	400	600		
		at 600 VDC	A	200	200		
DC horsepower rating for 4-pole switch		at 600 VDC	HP	50	-		
DC horsepower rating for 2-pole switch	In open air	at 125 VDC	HP	40	-		
	In enclosure ²⁾	at 250 VDC	HP	50	50		
DC short circuit rating for 4-pole switch	with circuit breaker		kA	10	10		
DC short circuit rating for 2-pole switch	with circuit breaker at 250 VDC		kA	14	18		
	with circuit breaker at 600 VDC		kA	10	10		
	with class J fuse at 250 VDC		kA	100	100		
	... with fuse size		A	400	500		
Endurances							
Min. electrical endurance, pf. 0.75...0.8			oper. cycles	1 000	1 000	500	500
Mechanical endurance			operations	16 000	10 000	6000	6000
Terminal lug kits				LUG400	LUG800	LUG800	LUG1200
Wire range			AWG	2 - 600MCM	2 x 2 - 600MCM	2 x 2 - 600MCM	4 x 2 - 600MCM
Torque		Wire tightening	lb. in	375	55	500	500
		Lug mounting		240	480	480	450-670
TECHNICAL DATA ACCORDING TO IEC 60947-3							
Rated insulation voltage and rated operational voltage AC20/DC20		Pollution degree 3	V	1 000	1 000	1 000	1 000
Dielectric strength		50 Hz 1min.	kV	10	10	10	10
Rated impulse withstand voltage			kV	12	12	12	12
Rated operational current, AC-22A		up to 415 V	A	400	800	1600	1600
		440...500 V	A	400	800	1600	1600
		690 V	A	400	800	1600	1600
Rated operational current, AC-23A		up to 415 V	A	400	800	1250	1250
		440 V	A	400	800	1250	1250
		500 V	A	400	800	1250	1250
		690 V	A	400	800	1250	1250
Rated conditional short-circuit current I_p (r.m.s.) and corresponding max. allowed cut-off current I_c . The cut-off current I_c refers to values listed by fuse manufacturers	I_p (r.m.s.)	50 kA	kA				
	Max. fuse size gG/aM	415 V	A				
	I_p (r.m.s.)	50 kA	kA				
	Max. fuse size gG/aM	690 V	A				
(single phase test acc. to IEC60269)	I_p (r.m.s.)	50 kA	kA	50.5	71.5		
	Max. fuse size gG/aM	690 V	A	500/500	800/1 000		
	at prospective SC-current	80 kA	kA	59	83.5		
	Max. fuse size gG/aM	690 V	A	500/500	800/1 000		
Rated short-time withstand current	r.m.s. -value I_{cw}	690 V, 1 s	kA	15	20	50	50
Rated short circuit making capacity	Peak value I_{cm}	690 V/500 V	A	65	80	110	110
Power loss / pole	At rated operational current		W	10	40	29	48
Mechanical endurance	Divide by two for operation cycles		Oper.	26 000	10 000		
Weight without accessories		3-pole	kg	2.2	5.2	15.2	15.2
		4-pole	kg	2.8	6.4		

1) UL Listed switches are also CSA Approved. 2) Fuse size 70A for RK5.

DS

UL 98 Fusible

Disconnect Switches

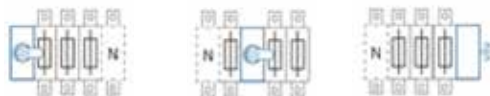
DISCONNECT SWITCHES



Mersen's fusible disconnect switches are listed to UL 98 and bear the CE mark conforming to IEC 60947-3. They are "service entrance" devices capable of fully rated load-break and load-make. While long-term safety, reliability, and functionality are always paramount in the design of our products, these switches are also engineered to have the smallest footprint. The modular design allows placement of the handle anywhere amongst the poles. The fuse doors cannot open when the switch is in the "ON" position, and all switches are double-break, which isolates both fuse clips from voltage during fuse replacement. The switches' "Test" position allows actuation of the auxiliary contacts without main power. Power taps enable energizing a CPT or surge device without the need for a separate terminal block. A wide range of ergonomic handles and accessories is available.

CONFIGURATIONS:

*Not all configurations are available



Gearbox on the side Gearbox in the middle Side operated

Catalog number designation						
M Switch	60 Ampacity	J Type	3 Number of Poles/Left of handle	0 Number of Poles/Right of handle	— Revision	S Special Configuration
M = Mersen AC Switch	30-1200	CC = CC fused J = J fused L = L fused	1, 2, 3, 4, etc. (N = Neutral)	Blank = < 200A non-fused, 0, 2	Blank = 0	S = side-operated N = Non-fused switched Neutral F = Rod-Flange Actuated

RATINGS UL:

- **Volts:** 600VAC
- **Amps:** 30, 60, 100, 200, 400, 600, 800, and 1200A
- **Short-Circuit Current Rating (SCCR):** Up to 200kA with Class CC, J, or L Fuses

FEATURES/ BENEFITS:

- Multiple Configurations
- Power taps
- Adjustable shaft depth
- Fuse monitoring
- Double break, isolating live and load side of fuse
- Interlocked fuse doors

APPROVALS:

- All UL Fusible Disconnect Switches meet UL & CSA requirements
- UL listed guide WHTY, File E191605 for UL 98 (ratings from 30A to 1200A)
- IEC 60947-3



UL LISTED FRONT AND SIDE OPERATED



M30CC12
30A, CC fused, 3-pole with pole on left side of handle and 2 poles on right side

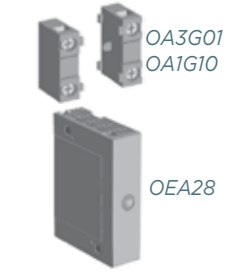


M60J30
60A, J fused, with 3 poles on left side of handle



M200J30 with HDF200
200A, J fused, 3 poles on left side of direct handle

Switch Body	Ampere Rating	30	60	100	200
	Base Part #	M30	M60	M100	M200
	Fuse Type	CC, J	J	J	J
	3- and 4-pole configurations	12, 22, 30F, 30S	12, 22, 22N, 30, 30F, 30S, 40, 40N	12, 22, 22N, 30, 30F, 30S, 40, 40N	30, 40
S = Side operated F = Rod-Flange actuated (Direct Side Operated Handles are included with 'S' option)					
Handles and Shafts	Direct Front Operation	HDF30	HDF200	HDF200	HDF200
	External Front Operation - Pistol style				
	NEMA Type 1, 3R, 12, IP65	HB45		HB65, HB80	
	NEMA Type 4, 4X	HB45X		HB65X, HB80X	
	NEMA 4X Stainless Steel			HM65X	
	B=Black. Substitute 'R' for 'B' if a red handle is desired. Ex. HR45				
	Shafts				
	Shaft— SPAxxx (xxx = length in mm)		SPA130, SPA210, SPA290, SPA360, SPA430		
Accessories	Terminal Lugs	6 per package	Integral	Integral	LUG100 (#14 - 2/0) LUG200 (#6 - 300MCM)
	Terminal Shrouds				
	3-pole (3 single shrouds per package)	Integral	Integral	TSF160-13	TSF200-13
	4-pole (4 single shrouds per package)			TSF160-14	TSF200-14
	Shrouds with "-3" suffix are single shrouds that cover all three terminals. Shrouds with "-13" or "-14" are single pole shrouds with 3 or 4 per				
	Auxiliary Contacts*				
	NO	OA1G10, w/OSZ4	OA1G10	OA1G10	OA1G10
	NC	OA3G01, w/OSZ4	OA3G01	OA3G01	OA3G01
	NO, between poles	OA4B1C	N/A	N/A	N/A
	Mounting plate OA1G10/OA3G01	OSZ4	Not needed	Not needed	Not needed
	Module for 8 aux. contacts	OEA28	OEA28	OEA28	OEA28
	*Rated 2A max continuous @690VAC				
	Flange Operation for Cable Actuation				
	Cable Flange Handle, NEMA 12	FHC12	FHC12	FHC12	FHC12
	Cable Flange Handle, NEMA 4X	FHC4X	FHC4X	FHC4X	FHC4X
	Bracket Assembly	FOM2	FOM3 for M60J12, FOM4 for M60J30	FOM4	FOM4
	Cable for FHC handles	CABLE36*	CABLE36*	CABLE36*	CABLE36*
	*Other cable lengths available: 48", 60", 72", 84", 96", 108". For example, CABLE108.				
	Flange Operation for Rod Actuation*				
	Flange bracket assembly	Incl with M30x30F	Incl with M60J30F	Incl with M100J30F	NA
	Rod Flange handle NEMA 12	FHR12	FHR12	FHR12	NA
	Rod Flange handle NEMA 4X	FHR4X	FHR4X	FHR4X	NA
	Rod, 16, 21, 26 inch [ex. ROD16]	RODxx	RODxx	RODxx	NA
	*These products have not been tested for UL Compliance				



FOM4, FHC12, and CABLE36 with M200J30

DS

UL LISTED FRONT AND SIDE OPERATED

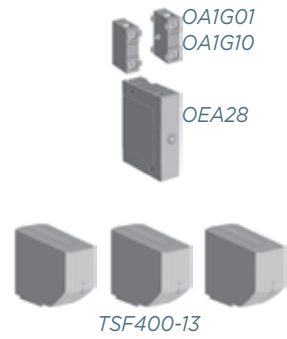
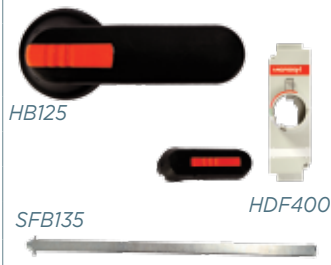


M400J30
400A, J fused, 3-pole with 3 poles on left side of handle



M800L30
800A, L fused, with 3 poles on left side of handle

Switch Body	Ampere Rating	400	600	800	1200
	Base Part #	M400	M600	M800	M1200
	Fuse Type	J	J	L	L
	3- and 4-pole configurations	12, 30, 40	12, 30, 40	12, 30, 40	30, 40
Handles and Shafts	Direct Front Operation				
		HDF400	HDF800T	HDF800T	HD1250T
	External Front Operation				
	NEMA Type 1, 3R, 12		HB125, HB145, HB274		
	NEMA Type 4, 4X		HB125X, HB145X, HB274X		
	NEMA 4X Stainless Steel		HM125X, HM175X		
	B=Black. Substitute 'R' for 'B' if a red handle is desired. Ex. HR125				
	Shafts				
	Shaft—SFBxxx (xxx = length in mm)	SFB185, SFB280, SFB325, SFB395, SFB535			
Accessories	Terminal Lugs				
	6 per package	LUG400 #2 - 600MCM	LUG800 2 x #2 600MCM	LUG800 2 x #2 600MCM	LUG1200 4 x #2 600MCM
	Terminal Shrouds				
	3-pole	TSF400-13	TSF600-3	TSF600-3	TSF1250-13
	Suffix "-3" indicates a single 3-pole shroud; Suffix "-13" indicates 3 single pole shrouds per package				
	Auxiliary Contacts*				
	Normally Open	OA1G10	OA1G10	OA1G10	OA1G10
	Normally Closed	OA3G01	OA3G01	OA3G01	OA3G01
	Module for 8 aux. contacts	OEA28	OEA28	OEA28	OEA28
	*Rated 2A max continuous @690VAC				



DS

TECHNICAL DATA ACCORDING TO UL/cULus							
General Purpose Amp Rating	pf= 0.7...0.8	-5° to 40 °C	A	30	60	100	200
Maximum Operating Voltage			VAC	600	600	600	600
			VDC	250	250	250	250
Max. horsepower rating / motor FLA current	pf= 0.4...0.5 Three phase	240 V	HP/A	7.5/22.0	15/42.0	30/80.0	60/154.0
		480 V	HP/A	15/21.0	30/40.0	60/77.0	125/156.0
		600 V	HP/A	20/22.0	50/52.0	75/77.0	150/144.0
	Single phase	120 V	HP/A	2/24.0			
		240 V	HP/A	3/17.0			
Short circuit rating with fuse, 3- and 4- pole types			kA	200	200	200	200
	UL/CSA fuse size		A	30	60	100	200
	UL/CSA fuse type			J/CC	J	J	J
Endurances							
Min. electrical endurance, pf. 0.75...0.8			oper. cycles	6000	6000	6000	6000
Mechanical endurance			operations	20 000	20 000	20 000	16 000
Terminal lug kits				Integral	Integral	LUG100	LUG200
Wire range			AWG	#18-8	#14-4	#14-2/0	#4-300MCM
Torque		Wire tightening	lb. in	17	30/355	120	275
		Lug mounting	lb. in	N/A	N/A	50	72
TECHNICAL DATA ACCORDING TO IEC 60947-3							
Rated insulation voltage	Pollution degree 3		V	1 000	1 000	1 000	1 000
Dielectric strength		50 Hz 1min.	kV	10	10	10	10
Rated impulse withstand voltage			kV	12			12
Rated thermal current in ambient 40 °C /	In open air		A/W	32/3.5	63/7.5	160/12	200/17
max. fuse power dissipation ¹⁾	In enclosure ²⁾		A/W	32/3.5	63/7.5	160/10, 135/12	200/15
...with minimum cable cross section		Cu	mm ²	6	16	70	95
Rated operational current, AC-23A		up to 500 V	A	32	63	160	200
		690 V	A	32	63	160	200
Rated operational current, AC-23 ³⁾	The kW-ratings are accurate for three-phase 1500 R.P.M. standard asynchronous motors.	230 V	kW	7.5	18.5	45	60
		400 V	kW	15	30	75	110
		415 V	kW	15	30	75	110
		500 V	kW	18.5	37	90	132
		690 V	kW	22	55	132	200
Rated breaking capacity in category AC-23		up to 500 V	A	256	504	1280	1600
		690 V	A	256	504	1280	1600
Rated short-time withstand current, 1 s	r.m.s. -value	690 V, 1 s	kA	1	2.5	5	8
Power loss / pole	With rated current, without fuse		W	2	4	9	8
Weight without accessories	3-pole switch fuses		kg	0.7	1.3	1.5	2.6
	4-pole switch fuses		kg	0.9	1.6	1.8	
Built-in terminal size		Cu	mm ²	0.75...10	2.5...25		
Terminal bolt size (included)	Metric thread diameter x length		mm			M6x20	M8x25
Fuse-links bolts tightening torque			Nm			4	4

*) = Utilization category B

1) Ambient temperature 60°C: derating 20%

2) Mounting on "ceiling": derating 10%. Mounting on wall, horizontal fuses: derating 8%.

3) Some fuses limit these figures further. Starting current characteristics must be considered separately.

4) Approval pending

5) 30 lb.in with cable size #14-10, 35 lb.in with cable size #8-4

TECHNICAL DATA ACCORDING TO UL/cULus							
General Purpose Amp Rating	pf= 0.7...0.8	-5° to 40 °C	A	400	600	800	1200
Maximum Operating Voltage			VAC	600	600	600	600
			VDC	250	250	250	250
Max. horsepower rating / motor FLA current	pf= 0.4...0.5 Three phase	240 V	HP/A	125.0/312.0	200/480.0	250/602.0	250/602.0
		480 V	HP/A	250.0/302.0	400/477.0	500/590.0	500/590.0
		600 V	HP/A	350.0/336.0	500/472.0	500/472.0	500/472.0
	Single phase	120 V	HP/A				
		240 V	HP/A				
Short circuit rating with fuse, 3- and 4- pole types			kA	200	200	200	200
	UL/CSA fuse size		A	400	600	800	1200
	UL/CSA fuse type			J	J	L	L
Endurances							
Min. electrical endurance, pf. 0.75...0.8			oper. cycles	1 000	1 000	500	500
Mechanical endurance			operations	12 000	4 000	3 000	2 000
Terminal lug kits				LUG400	LUG800	LUG800	LUG1200
Wire range			AWG	#2-600MCM	{2}#2-600MCM	{2}#2-600MCM	{4}#2-600MCM
Torque		Wire tightening	lb.in	375	500	500	500
		Lug mounting	lb.in	240	480	480	480
TECHNICAL DATA ACCORDING TO IEC 60947-3							
Rated insulation voltage	Pollution degree 3		V	1 000	1 000	1 000	1 000
Dielectric strength		50 Hz 1min.	kV	10	10	10	10
Rated impulse withstand voltage			kV	12	12	12	12
Rated thermal current in ambient 40 °C /	In open air		A/W	400/45	630/60	800/65	1250/110
max. fuse power dissipation ¹⁾	In enclosure ²⁾		A/W	400/30	570/50	720/55	1000/85
...with minimum cable cross section		Cu	mm ²	240	2x185	2x240	2x400
Rated operational current, AC-23A		up to 500 V	A	400	630	800	1000 ^{*)}
		690 V	A	400	630	800	1000 ^{*)}
Rated operational current, AC-23 ³⁾	The kW-ratings are accurate for three-phase 1500 R.P.M. standard asynchronous motors.	230 V	kW	132	200	250	315 ^{*)}
		400 V	kW	220	355	450	560 ^{*)}
		415 V	kW	230	355	450	560 ^{*)}
		500 V	kW	280	450	560	710 ^{*)}
		690 V	kW	400	630	710	1000 ^{*)}
Rated breaking capacity in category AC-23		up to 500 V	A	3200	6400	6400	8000
		690 V	A	3200	6400	6400	8000
Rated short-time withstand current, 1 s	r.m.s. -value		kA	14	20	20	
Power loss / pole	With rated current, without fuse		W	30	46	75	75
Weight without accessories	3-pole switch fuses		kg	5.7	11.5	11.5	29
	4-pole switch fuses		kg				
Built-in terminal size		Cu	mm ²				
Terminal bolt size (included)	Metric thread diameter x length		mm	M10x30	M12x40	M12x40	M12x50
Fuse-links bolts tightening torque			Nm	20	40	40	40

*) = Utilization category B

1) Ambient temperature 60°C: derating 20%

2) Mounting on "ceiling": derating 10%. Mounting on wall, horizontal fuses: derating 8%.

3) Some fuses limit these figures further. Starting current characteristics must be considered separately.

4) Approval pending

5) 30 lb.in with cable size #14-10, 35 lb.in with cable size #8-4

PV-Rated

Disconnect Switches

DISCONNECT SWITCHES



Mersen offers a range of DC disconnect switches specially designed for PV applications, in one- and two-circuit configurations for both 1000V and 1500V DC applications. The technology inside the switch and the visible contacts allow a quick, safe, and reliable DC breaking at all current levels up to 1500VDC. The product is ready and simple to install independent of the polarity, with limited power losses, and a smaller footprint than competition.

APPLICATIONS:

- Medium and large power photovoltaic installations up to 1500VDC
- “Make and break” on load and provide safety isolation at string combiner box level

RATINGS:

- **Volts:** 1000 and 1500VDC
- **Amps:** IEC: 100 to 500A, UL98: 100 to 400A
- **Short-Circuit Current Rating (SCCR):** 5 to 10kA for higher ratings

FEATURES/ BENEFITS:

- IEC version and UL version
- Visible contacts
- Compact footprint
- Direct installation for floating polarity configuration
- Jumper bar available for grounded configuration

APPROVALS:

- UL98B File #E466972 WHVA
- IEC 60947-3 CE



DS

Catalog number designation

MD Switch	100 Ampacity	E Type	1 Number of Poles/Left of handle	1 Number of Poles/Right of handle	— Revision
MD = Mersen DC Switch	100-500A	E = IEC U = UL-listed V = 1500V	1, 2, 3	1, 2, 3	Blank = 0

UL 98B Listed DC Switches



MD100U11



MD100U22



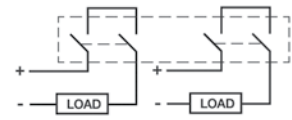
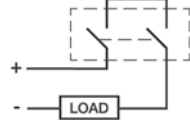
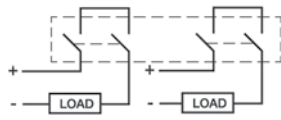
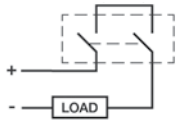
MD250UV12



MD400U11

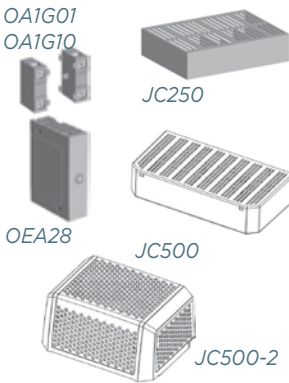





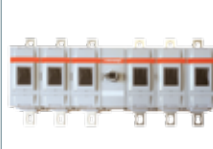
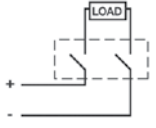

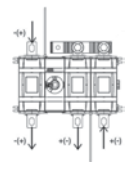





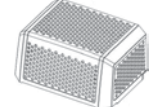
MD400U22



Switch Body	Ampere Rating	100	200	250	320	400
	1000VDC 2-pole Configuration	MD100U11	MD200U11	MD250U11	MD320U11	MD400U11
	1000VDC 2x2-pole Configuration	MD180U22	MD180U22*		MD320U22	MD400U22
	1500VDC 3-pole Configuration			MD250UV12	MD320UV12	MD400UV12
B=Black. Substitute 'R' for 'B' if a red handle is desired. Ex. HR45 *180A Rating						
Handles and Shafts	Direct Front Operation					
	1000VDC	HDD250	HDD250	HDD250	HDD400	HDD400
	1500VDC	HDD400	HDD400	HDD400		
	External Pistol style					
	NEMA Type 1, 3R, 12	HB65, HB80		HB125, HB145		
	NEMA Type 4, 4X	HB65X, HB80X		HB125X, HB145X		
	B=Black. Substitute 'R' for 'B' if a red handle is desired. Ex. HR65					
	Shafts					
	Shaft— SPAxxx (xxx = length in mm), SFBxxx (xxx = length in mm)	SPA130, SPA210, SPA290, SPA360, SPA430		SFB185, SFB280, SFB325, SFB395, SFB535		
Accessories	Auxiliary Contacts*					
	NO Right side mounting	OA1G10	OA1G10	OA1G10	OA1G10	OA1G10
	NC left side mounting	OA3G01	OA3G01	OA3G01	OA3G01	OA3G01
	Module for SF aux. contacts	OEA28	OEA28	OEA28	OEA28	OEA28
	*Rated 2A max continuous @690VAC					
	Terminal Shroud for Short Circuit Link					
	For MDxxxU11, UV12	JC250	JC250	JC500	JC500	JC500
	For MDxxxU22	JC500-2	JC500-2	JC500-2	JC500-2	JC500-2
	Terminal Shroud for Lugs					
	Kit of 4 Terminal Shrouds					
	1 Terminal Shroud	TDS250S	TDS250S	TDS250S	TDS400	TDS400

DS



IEC-RATED DC SWITCHES								
								
MD100E11	MD100E22	MD400EV12	MD400E22	MD400EV12	MD315EV33			
								
Switch Body	Ampere Rating	100	160	200	250	315	400	500
	1000VDC 2-pole Configuration	MD100E11	MD160E11	MD200E11	MD250E11	MD315E11	MD400E11	MD500E11
	1000VDC 2x2-pole Config.	MD100E22	MD160E22	MD200E22	MD250E22	MD315E22	MD400E22	MD500E22
	1500VDC 3-pole Configuration					MD315EV12	MD400EV12	MD500EV12
	1500VDC 2x3-pole Config.					MD315EV33	MD400EV33	MD500EV33
Handles and Shafts	Direct Front Operation							
		HDD250	HDD250	HDD250	HDD250	HDD400	HDD400	HDD400
	External Pistol Style							
	NEMA Type 1, 3R, 12	HB65, HB80				HB125, HB145		
	NEMA Type 4, 4X	HB65X, HB80X				HB125X, HB125X		
	B=Black. Substitute 'R' for 'B' if a red handle is desired. Ex. HR65							
	Shafts							
	Shaft — SPAxxx (xxx = length in mm)	SPA130, SPA210, SPA290, SPA360, SPA430				SFB185, SFB280, SFB325, SFB395, SFB535		
Accessories	Auxiliary Contacts*							
	NO Right side mounting	OA1G10	OA1G10	OA1G10	OA1G10	OA1G10	OA1G10	OA1G10
	NC left side mounting	OA3G01	OA3G01	OA3G01	OA3G01	OA3G01	OA3G01	OA3G01
	Module for SF aux. contacts	OEA28	OEA28	OEA28	OEA28	OEA28	OEA28	OEA28
	*Rated 2A max continuous @690VAC							
	Short Circuit Link							
	For MDxxxE22 and EV33					JUMP500-2	JUMP500-2	JUMP500-2
	For MDxxxE11, E22, EV12**	JUMP250	JUMP250	JUMP250	JUMP250	JUMP500	JUMP500	JUMP500
	**Shipped with one link per circuit							
	Terminal Shroud for Short Circuit Link							
	For JUMP500-2					JC500-2	JC500-2	JC500-2
	For JUMP250, JUMP500	JC250	JC250	JC250	JC250	JC500	JC500	JC500
	Terminal Shrouds for Lugs							
	Kit of 4 Terminal Shrouds	TS250-14	TS250-14	TS250-14	TS250-14			
	1 Terminal Shroud					TDS400	TDS400	TDS400
	A shorter version is available for DC Switches up to 250A. 1 piece per package: TDS250S							

DS

TECHNICAL DATA FOR 1000VDC-RATED SWITCHES

Technical data in accordance to UL 98B for switch-disconnectors
(Suitable for use in photovoltaic systems in accordance with article 690 of the NEC)

Switch Size			MD100U	MD200U	MD250U	MD315U	MD400U	MD250UV12	MD320UV12	MD400UV12
Voltage Rating		VDC	1000	1000	1000	1000	1000	1500	1500	1500
Current Rating		A	100	200 1)	250	320	400	250	320	400
Rated Ambient Temp.		°C	-20...+50	-20...+50	-20...+50	-20...+50	-20...+50	-20...+50	-20...+50	-20...+50
Short Circuit Rating		kA, 1000V	5	5	10	10	10	10	10	10
	Class of Fuse		Circuit breaker	Circuit breaker	Circuit breaker	Circuit breaker	Circuit breaker	Circuit breaker	Circuit breaker	Circuit breaker
Mechanical Endurance (Divide by 2 for operation cycles) Oper.			4000	4000	2000	2000	2000			
Terminal Lugs			LUG200	LUG200	LUG400	LUG400	LUG400	LUG400	LUG400	LUG400
Wire Range		MCM	#4-300	#4-300	#2-600	#2-600	#2-600	#2-600	#2-600	#2-600
Technical data according to IEC		Same as type	MD160E	MD250E	MD315E	MD400E	MD500E	MD315EV12	MD400EV12	MD500EV12

1) For 4 pole switches [double circuit use], the current rating at 1000 VDC is 180 A.

TECHNICAL DATA ACCORDING TO IEC 60947 FOR SWITCH-DISCONNECTORS

Switch Size		A	MD100E	MD160E	MD200E	MD250E	MD315E	MD400E	MD500E
Rated Insulation voltage U_i	Pollution degree 2	V	1500	1500	1500	1500	1500	1500	1500
	Pollution degree 3	V	1500	1500	1500	1500	1500	1500	1500
Rated impulse withstand 50 Hz 1 min		kV							
		kV	12	12	12	12	12	12	12
Rated thermal current I_{th} ...with minimum cable or bar cross section	In open air, normal conditions ¹⁾	A	100	160	200	250	315	400	630
	In enclosure 40°C	A	100	160	200	250	315	400	550
	In enclosure 60°C	A	100	160	200	250	315	400	440
	Cu	mm ²	35	70	95	120	185	240	240
Rated operational current / poles in series DC-21B	1000	V	100 / 2	160 / 2	200 / 2	250 / 2	315 / 2	400 / 2	500 / 2
			100 / 2x2	160 / 2x2	200 / 2x2	250 / 2x2	315 / 2x2	400 / 2x2	500 / 2x2
Rated short-time withstand current, 1000 V, 1 s, R.M.S. -value I_{sc}^{1000}		kA	5	5	5	5	10	10	10
Rated short circuit making capacity, 1000 V, Peak value I_{sm}		kA	5	5	5	5	10	10	10
Power loss / pole	At rated current	W	2	4	6	9,5	6	9,7	15,1
Cable size	Cu	mm ²							
Terminal bolt size	Metric thread diameter x length	mm	M8x25	M8x25	M8x25	M8x25	M10x30	M10x30	M12x40
Terminal tightening torque	Counter torque required	Nm	15-22	15-22	15-22	15-22	30-44	30-44	50-75

1) Normal conditions defined in IEC 60947-1-6.1

TECHNICAL DATA ACCORDING TO IEC 60947 FOR 1500VDC-RATED SWITCHES

Switch Size		A	MD315EV12	MD400EV12	MD500EV12	
Rated Insulation voltage U_i	Pollution degree 2	V	1500	1500	1500	
	Pollution degree 3	V	1500	1500	1500	
		kV	12	12	12	
Rated thermal current I_{th} ...with minimum cable or bar cross section	In open air, normal conditions ¹⁾	A	315	400	630	
	In enclosure 40°C	A	315	400	550	
	In enclosure 60°C	A	315	400	440	
	Cu	mm ²	185	240	240	
Rated operational current / poles in series	1000	1 circuit	V	315 / 2	400 / 2	500 / 2
	1000	2 circuits	V	315 / 2	400 / 2	500 / 2
	1000	3 circuits	V	315 / 2	400 / 2	500 / 2
	1500	1 circuit	V	315 / 3	400 / 3	500 / 3
	1500	1 circuit	V	315 / 4	400 / 4	500 / 4
	1500	2 circuits	V	315 / 3	400 / 3	500 / 3
Rated short-time withstand current, 1500 V, 1 s	R.M.S. -value I_{sc}^{1500}	kA	10	10	10	
Rated short circuit making capacity, 1500 V	Peak value I_{sm}	kA	10	10	10	
Power loss / pole	At rated current	W	6	9,7	15,1	
Terminal bolt size	Metric thread dia. x length	mm	M 10x30	M 10x30	M 12x40	
Terminal tightening torque	Counter torque required	Nm	30-44	30-44	50-75	

1) Normal conditions defined in IEC 60947-1-6.1

Enclosed

Disconnect Switches

DISCONNECT SWITCHES



Mersen enclosed disconnect switches are designed to meet customer's requirements for compact and durable individual disconnecting means. Both fusible and non-fusible versions are available in a variety of enclosure types resulting in one of the largest available ranges in the industry. The enclosed disconnect switch range offers safety, ease of installation, space savings and operational convenience to end-users.

Mersen features NEMA style, Type 4X non-metallic and stainless steel enclosures that are extremely durable and provide the ultimate protection for harsh environments and conditions. These rugged enclosure types are often used in areas where "wash down" applications are required.

APPLICATIONS:

- Load break switching
- Separate disconnect means within sight of all motor loads to comply with NEC® Article 430
- Circuit isolation
- Service entrance ratings available
- Food processing
- Conveyor systems
- Harsh industrial environments

RATINGS:

Fusible

- **Volts:** 600VAC
- **Amps:** 30 to 800A

Non-Fusible

- **Volts:** 600VAC
- **Amps:** 16 to 1200A

- **Volts:** 600VDC

- **Amps:** 100 to 400A

HIGHLIGHTS:

- Suitable for use as motor disconnect
- Meets OSHA lockout/tagout requirements
- NEMA rated enclosures
- Knockouts provided
- Easy screw mounting
- Selector or pistol handles in black or red/yellow
- Clear ON/OFF indication

APPROVALS:

- UL 508A
- UL 508
- UL 98
- CSA
- IEC versions available



PART NUMBERING GUIDELINE (EXAMPLE)

ED	FS	30	3	R	S	0	-
Enclosure Type	Switch Type	Amp Rating	Number of Poles	Color of handle: R = Red/yellow B = Black	Type of handle: S = Selector P = Pistol	Auxiliary contacts: See chart below	Other options

Switch Type		Part Numbers	Auxiliary Contact Suffix				
			0	1	2	3	4
FS	UL 508 Non-Fused	M163 to M803	None	1 NO	1 NC	1 NO + NC	1 NO + NO
FC or SC	UL 98 Non-Fused	M30U to M1200U	None	1 NO	1 NC	1 NO + NC	1 NO + NO
FB	UL 98 Fused	MxxC, J, L	None	1 NO	1 NC	1 NO + NC	1 NO + NO

OTHER OPTIONS

Please consult factory for availability and suffix for any other options including:

- Neutral blocks (N)
- If terminal shrouds are necessary, add a "T" to the end of the part number.
- Special Request
 - Pilot lights
 - Push buttons
 - 2 or 3 position selector switches

ALL ENCLOSED SWITCHES ARE PROVIDED WITH A STANDARD INTEGRAL GROUND LUG

Box type	Switch type	Ground lug wire size
NEMA/UL	16 – 60A	{2} #4 – #14
NEMA/UL	80 – 125A	{2} 1/0 – #14
NEMA/UL	200 – 400A	{2} 600kcmil – #2
NEMA/UL	600A & above	Consult Factory

Note: EDFs 40A, 60A & 80A use grounding stud

ENCLOSURE APPLICATION INFORMATION

Enclosure Type		Intended Use and Description
NEMA	1	Indoor use primarily to provide a degree of protection against contact with the enclosed equipment and against a limited amount of falling dirt.
NEMA	3R	Intended for outdoor use primarily to provide a degree of protection against rain, sleet, and damage from external ice formation.
NEMA	12	Intended for indoor use primarily to provide a degree of protection against circulating dust, falling dirt, and dripping non-corrosive liquids.
NEMA	4	Intended for indoor or outdoor use primarily to provide a degree of protection against windblown dust and rain, splashing water, hose-directed water, and damage from external ice formation.
NEMA	4X	Intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, wind blown dust and rain, splashing water, hose-directed water, and damage from ice formation.
IEC	IP65	Total protection against dust and protected against water jets from any hosed direction.

NEMA ENCLOSURE 3 Pole, 600V 30-1200A, Non-fused		1	3R	12	4	4X Stainless	4X Non-Metallic	
Ampere Rating (A)		Catalog Numbers						
UL 508	16	Special compact polycarbonate enclosures					EJM16BS0S	
	30	Special compact polycarbonate enclosures					EJM30BS0	
	60	Special compact polycarbonate enclosures					EJM60BS0	
	16	EAFS163RS0	EFFS163RS0	ECFS163RS0	EHFS163RS0	EBFS163RS0	EDFS163RS0	
	25	EAFS253RS0	EFFS253RS0	ECFS253RS0	EHFS253RS0	EBFS253RS0	EDFS253RS0	
	30	EAFS303RS0	EFFS303RS0	ECFS303RS0	EHFS303RS0	EBFS303RS0	EDFS303RS0	
	40	Special hinged cover, SS				EBFS403RS0-H		
	40	EAFS403RS0	EFFS403RS0	ECFS403RS0	EHFS403RS0	EBFS403RS0	EDFS403RS0	
	60	EAFS603RPO	EFFS603RPO	ECFS603RPO	EHFS603RPO	EBFS603RPO	EDFS603RPO	
UL 98	80	EAFS803RPO	EFFS803RPO	ECFS803RPO	EHFS803RPO	EBFS803RPO	EGFS803RPO	
	30	E AFC303RPO	EFFC303RPO	ECFC303RPO	EHFC303RPO	EBFC303RPO	EGFC303RPO	
	60	E AFC603RPO	EFFC603RPO	ECFC603RPO	EHFC603RPO	EBFC603RPO	EGFC603RPO	
	100 50	E AFC1003RPO	EFFC1003RPO	ECFC1003RPO	EHFC1003RPO	EBFC1003RPO	EGFC1003RPO	
	200	E AFC2003RPO	EFFC2003RPO	ECFC2003RPO	EHFC2003RPO	EBFC2003RPO	EGFC2003RPO	
	400	E AFC4003RPO	EFFC4003RPO	ECFC4003RPO	EHFC4003RPO	EBFC4003RPO	EGFC4003RPO	
	600	E ASC6003RPO	EFSC6003RPO	ECSC6003RPO	EHSC6003RPO	EBSC6003RPO	EGSC6003RPO	
	800	E ASC8003RPO	EFSC8003RPO	ECSC8003RPO	EHSC8003RPO	EBSC8003RPO	EGSC8003RPO	
	1000	E ASC10003RPO	EFSC10003RPO	ECSC10003RPO	EHSC10003RPO	EBSC10003RPO	EGSC10003RPO	
1200	E ASC12003RPO	EFSC12003RPO	ECSC12003RPO	EHSC12003RPO	EBSC12003RPO	EGSC12003RPO		
NEMA ENCLOSURE 3 Pole, 600V 30-800A, Fused		1	3R	12	4	4X Stainless	4X Non-Metallic	
Ampere Rating (A)		Fuse Type	Catalog Numbers					
UL 98	30, compact	CC	EAFBCC303RPO	EFFBCC303RPO	ECFBCC303RPO	EHFBCC303RPO	EBFBCC303RPO	EGFBCC303RPO
	30	J	EAFBX303RPO	EFFBX303RPO	ECFBX303RPO	EHFBX303RPO	EBFBX303RPO	EGFBX303RPO
	60	J	EAFBX603RPO	EFFBX603RPO	ECFBX603RPO	EHFBX603RPO	EBFBX603RPO	EGFBX603RPO
	100	J	EAFBX1003RPO	EFFBX1003RPO	ECFBX1003RPO	EHFBX1003RPO	EBFBX1003RPO	EGFBX1003RPO
	200	J	EAFBX2003RPO	EFFBX2003RPO	ECFBX2003RPO	EHFBX2003RPO	EBFBX2003RPO	EGFBX2003RPO
	400	J	EAFBJ4003RPO	EFFBJ4003RPO	ECFBJ4003RPO	EHFBJ4003RPO	EBFBJ4003RPO	EGFBJ4003RPO
	600	J	EAFBJ6003RPO	EFFBJ6003RPO	ECFBJ6003RPO	EHFBJ6003RPO	EBFBJ6003RPO	EGFBJ6003RPO
	800	L	EAFBL8003RPO	EFFBL8003RPO	ECFBL8003RPO	EHFBL8003RPO	EBFBL8003RPO	EGFBL8003RPO

Notes: Each of the above enclosed switches are listed having a red/yellow handle. Simply replace the "RS" or "RP" with a "BS" or "BP" to receive with a black handle. The non-metallic enclosures are comprised of "ED" polycarbonate and "EG" polyester fiberglass.

Switch Rating	Enclosure Type	H height (in)	W width (in)	D depth (in)	MH mounting height (in)	MW mounting width (in)	Shipping Weight (lbs)	Figure No.
16-40A [M163-M403] UL508	1	8	8	6	5	7	10	2
	3R	8	8	6	9	3	11	1
	12	8	6	6	8.75	4	7	1
	4	5.91	5.91	4.72	5.2	3.35	7	2
	4X Stainless	5.91	5.91	4.72	5.2	3.35	7	2
	4X Non-Metallic	7	5	5	6.18	4.21	2	2
60A [M633] UL508	1	8	8	6	5	7	10	2
	3R	8	8	6	9	3	10	1
	12	8	6	6	8.75	4	7	1
	4	7.87	5.91	4.72	7.17	3.35	7	2
	4X Stainless	7.87	5.91	4.72	7.17	3.35	7	2
	4X Non-Metallic	7	5	5	6.18	4.21	4	2
80A [M803] UL508	1	10	8	6	7	7	10.6	2
	3R	10	8	6	11	3	11.1	1
	12	10	8	6	10.75	6	12.3	1
	4	9.84	7.87	5.91	9.13	5.31	9.8	2
	4X Stainless	9.84	7.87	5.91	9.13	5.31	9.8	2
	4X Non-Metallic	11.3	9.31	5.43	10.75	6	6	1
100A [M100U3] UL98	1	10	8	6	7	7	10.6	2
	3R	10	8	6	11	3	11.1	1
	12	10	8	6	10.75	6	12.3	1
	4	10	8	6	10.75	6	11.8	1
	4X Stainless	9.84	7.87	5.91	9.13	5.31	9.8	2
	4X Non-Metallic	11.31	9.31	5.43	10.75	6.02	7.6	1

DIMENSIONS (IN / MM)

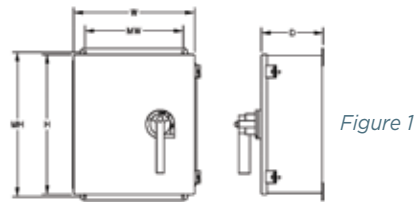


Figure 1

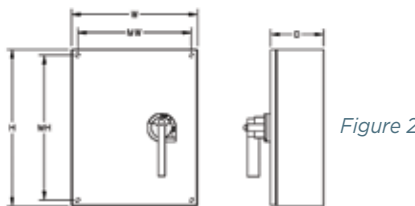
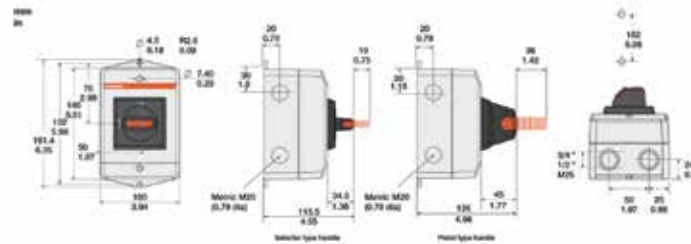
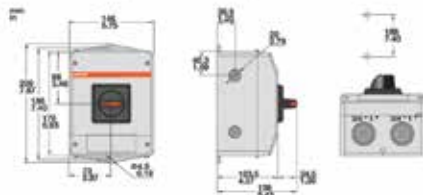


Figure 2

EJM16BS0S & EJM30BSx (enclosure size 1)



EJM60BSx (enclosure size 2)



EJM60BPx (enclosure size 2)



DS

Switch Rating	Enclosure Type	H height (in)	W width (in)	D depth (in)	MH mounting height (in)	MW mounting width (in)	Shipping Weight (lbs)	Figure No.
30A (M30U3) UL98	1	8	8	6	5	5	9.3	2
	3R	8	8	6	9	3	10.2	1
	12	7.87	5.91	4.72	5.2	3.35	7.6	1
	4	7.87	5.91	4.72	5.2	3.35	7.6	1
	4X Stainless	9.844	7.87	5.91	9.13	5.31	10.1	2
	4X Non-Metallic	9.3	7.31	4.96	8.74	4.01	6.2	1
60A (M60U3) UL98	1	12	12	6	9	11	16	2
	3R	12	10	6	13	3	17.6	1
	12	12	12	6	12.75	10	21.6	1
	4	12	12	6	12.75	10	21.9	1
	4X Stainless	11.81	9.84	5.91	11.1	7.28	17.4	2
	4X Non-Metallic	13.3	11.29	7.1	12.75	8.01	12.9	1
200A (M200U3) UL98	1	30	20	8.62	27.5	15	68.6	2
	3R	30	14	8	31	13	88.6	1
	12	30	20	8	28.5	18.5	70.1	2
	4	30	20	8	28.5	18.5	70.1	2
	4X Stainless	30	20	10	28.5	18.5	71	1
	4X Non-Metallic	32.87	25	11.81	34.72	22.91	59.3	1

Note: Dimensions are subject to change! Please consult factory for verification.

Switch Rating	Enclosure Type	H height (in)	W width (in)	D depth (in)	MH mounting height (in)	MW mounting width (in)	Shipping Weight (lbs)	Figure No.
30A (M30CC12) UL 98	1	8	8	6	5	7	9.4	2
	3R	8	8	6	9	3	10.3	1
	12	9.84	7.87	5.91	9.13	5.31	10.8	1
	4	9.84	7.87	5.91	9.13	5.31	10.8	1
	4X Stainless	9.84	7.87	5.91	9.13	5.31	11.3	2
	4X Non-Metallic	11.31	9.31	6.93	10.75	6.02	9.7	1
30A (M30J30) UL 98	1	12	12	8	9	11	18.3	2
	3R	12	12	10	13	3	23.2	1
	12	12	10	8	12.75	8	14.4	1
	4	13.78	11.81	7.87	13.07	9.25	22.4	2
	4X Stainless	13.78	11.81	7.87	13.07	9.25	24.3	2
	4X Non-Metallic	11.31	9.31	6.93	10.75	6.02	9.7	1
60A (M60J30) UL 98	1	12	12	8	9	11	18.2	2
	3R	12	12	10	13	5	23.1	1
	12	12	10	8	12.75	8	14.6	1
	4	13.78	11.81	7.87	13.07	9.25	24.2	2
	4X Stainless	13.78	11.81	7.87	13.07	9.25	24.2	2
	4X Non-Metallic	15.32	13.3	8.19	14.75	10	17.5	1
100A (M100J30) UL 98	1	20	16	8.62	17.88	11	35.2	2
	3R	18	18	10	19	13	41.3	1
	12	20	16	8	21.24	10	35.2	1
	4	20	16	8	18.5	14.5	39	2
	4X Stainless	20	16	8	18.5	14.5	38.1	2
	4X Non-Metallic	19.31	17.31	9.58	18.74	12	25.6	1
200A (M200J30) UL 98	1	24	20	8.62	21.96	12.76	56.6	2
	3R	24	24	10	25	13	61.2	1
	12	24	20	8	25.24	14	51	1
	4	24	20	8	22.5	18.5	49.5	2
	4X Stainless	24	20	8	22.5	18.5	50.5	2
	4X Non-Metallic	28.94	21	10.63	30.79	18.97	46.3	1

Note: Dimensions are subject to change! Please consult factory for verification.

DS

