UL 98 Non-Fusible

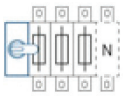
Disconnect Switches

LOW VOLTAGE SWITCHES

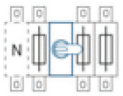
Mersen's non-fusible disconnect switches are listed to UL 98 and bear the CE mark as conformance to IEC 60947-3. They are "service entrance" devices that are capable of fully rated load-break and load-make. All switches over 100A have windows to provide visual indication of the contact status. Engineered 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** **M =** Mersen AC Switch	**200** **Ampacity** **16-1200**	**U** **Type** **U =** non-fused UL 98	**3** **Number of Poles/Left of handle** **1-3**	**0** **Number of Poles/Right of handle** **Blank =** < 200A non-fused, 0, 2, 3	**—** **Revision** **Blank =** 0	**—** **Special Configuration** **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
- 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

UL 98 DISCONNECT SWITCHES

M100U3

M200U30 with HD250 Direct Handle

M200U30

Switch Body	Ampere Rating	30	60	100	200
	Base Part #	M30U3	M60U3	M100U3	M200U
	3-pole configurations				12, 30
	For Door-mounting	M30U3DM	M60U3DM	M100U3DM	
Handles and Shafts	**Direct Front Operation Locking Handle**				
		HD125	HD125	HD125	HD250
	External Front Operation				
	Minimum recommended handle length	45 mm			
	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**				
	Base-mounted switch Fourth Poles	4P60	4P60	4P125	4P250
	Door-mounted switch Fourth Poles	4P60DM	4P60DM	4P125DM	
	Neutral Poles				
	Base-mounted switch Neutral Poles	NP60	NP60	NP125	
	Door-mounted switch Neutral Poles	NP125DM	NP125DM	NP125DM	
	Terminal Shrouds				
	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
	NO+NC	OA2G11	OA2G11	OA2G11	
	Module for 8 aux. contacts	N/A	N/A	N/A	OEA28
	*Rated 2A max continous @690VAC				
	Flange Operation				
	Flange bracket assembly	N/A	N/A	N/A	FOM4
	Rod Flange handle NEMA 12	N/A	N/A	N/A	N/A
	Rod Flange handle NEMA 4X	N/A	N/A	N/A	N/A
	Rod, 16 inch	N/A	N/A	N/A	N/A
	Rod, 24 inch	N/A	N/A	N/A	N/A
	Cable Flange Handle, NEMA 12	N/A	N/A	N/A	FHC12
	Cable Flange Handle, NEMA 4X	N/A	N/A	N/A	FHC4X
	Cable for FHC handles	N/A	N/A	N/A	CABLE36*

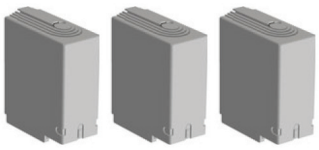
HSBX

HD250

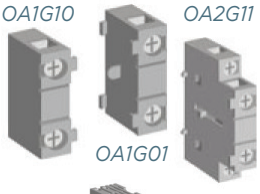
HB65

4P125

4P250



TS250-13



OA1G10 OA2G11 OA1G01

OEA28

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

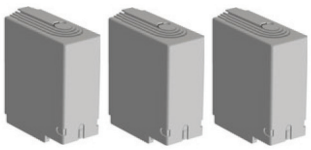
M200U30

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				
	Minimum recommended handle length	95 mm	125 mm	125 mm	274 mm
	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)	ALRX10			
	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				
	1-pole	TS400-13	TS800-13	TS1600-13	TS1600-13
	3-pole	TS400-3	TS600-3	TS800-3	TS1200-3
	4-pole	TS400-14	TS800-14	TS1600-14	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 switch. Single pole shrouds are not compatible with the UL Lugs listed above.				
	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 continous @690VAC				

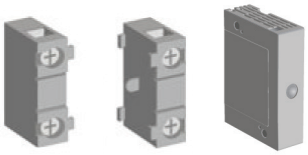
SFB185

HD800

4P400



TS250-13



OA1G10 OA3G01 OEA28

TEMPERATURE DERATING

Amb. °C (Min)	Amb. °C (Max)	Thermal current (Ith) derating
35	40	1.00
40	45	0.96
45	50	0.93
50	55	0.89
55	60	0.85

Amb. °C (Min)	Amb. °C (Max)	Thermal current (Ith) derating
60	65	0.80
65	70	0.76
70	75	0.71
75	80	0.65
80	85	0.60

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	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		
	Fuse type	L	kA		100	100	100
	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 $\hat{i}_c$. The cut-off current $\hat{i}_c$ 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.