

UL 98 Fusible Disconnect Switches

UL 98 Fusible Disconnect Switches

Mersen's fusible disconnect switches are listed to UL 98 and bear the CE mark as conformance 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 are available, as are all manner of accessories.

Highlights:

- Multiple Configurations
- Power taps
- Adjustable shaft depth
- Fuse monitoring
- Interlocked fuse doors

Applications:

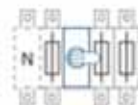
- Main disconnects
- Short circuit protection
- Electrical isolation
- Overcurrent protection
- Safety switch

Configurations

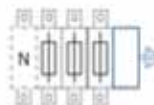


At the end of the switch fuse
Mxxx03, 04, 30, or 40, S, N

Between the poles
Mxxx12, 22, 22N, S



Side operated types Mxxx03, 04, 30, or 40, S, N



Catalog Number Designation

		M	60	J	3	0	S
Switch	M = Mersen AC Switch						
Ampacity	16 to 1200)						
Type	CC = CC fused J = J fused L = L Fused						
Number of Poles/Left side of Handle	AC: 0, 1, 2, 3, 3N, 4, etc. (N = neutral)						
Number of Poles/Right side of Handle	AC: Blank = < 200A non-fused, 0, 1, 2, 3, 3N, 4, etc. (N = neutral)						
Revision	Blank = 0						
Special Configurations	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
SCCR : Up to 200kA with Class CC, J, or L Fuses

Ratings IEC:

Volts : 690VAC
Amps : 25, 50, 63, 125, 160, 200, 250, 400, 630, 800, and 1250A

Approvals:

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



UL 98 Fusible Disconnect Switches

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 Configuration	12, 22, 30S	12, 22, 22N, 30, 30S, 40, 40N	12, 22, 22N, 30, 30S, 40, 40N	30, 40
Rod-Flange Actuation	M30CCF, M30J30F	M60J30F	NA	NA

S = Side operated
(Direct Side Operated Handles are included with 'S' option)

Handles



Switch Body Ampere Rating	30	60	100	200
Direct Front Operation	HDF30	HDF200	HDF200	HDF200

External Front Operation - Pistol Style				
NEMA 1, 3R, 12, IP65	HB45	HB65	HB65	HB65
NEMA 4, 4X	HB45X	HB65X	HB65X	HB65X
NEMA 4X Stainless Steel	HM65X	HM65X	HM65X	HM65X

B=Black. Substitute 'R' for 'B' if a red handle is desired. Ex. HR45

Shafts				
Shaft	SPA__	SPA__	SPA__	SPA__

Lengths: 130, 210, 290, 360, 430 Ex. SPA210

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

Shafts



Accessories



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

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 M100U3F	NA
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



FOM4 with M200J30

UL 98 Fusible Disconnect Switches

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-pole and 4-pole Configuration	30, 40	30, 40	30, 40	30, 40

Direct Front Operation

	HDF400	HDF800T	HDF800T	HDF1250T
--	--------	---------	---------	----------

Handles



External Front Operation - Pistol Style

NEMA Type 1, 3R, 12, IP65	HB125	HB145	HB274	HB274
NEMA Type 4, 4X	HB125X	HB145X	HB274X	HB274X
NEMA 4X Stainless Steel	HM125X	HM125X	HM175X	HM175X

B = Black. Substitute "R" for "B" if red handle is desired. Ex. HR125

Shafts

Shaft	SFB__	SFB__	SFB__	SFB__
Lengths: 135, 280, 325, 395, 535mm Ex. SFB280				

Shafts



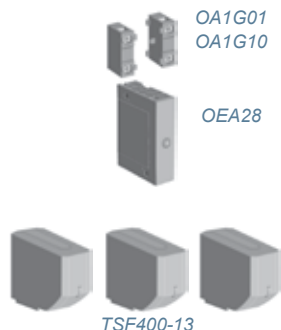
Terminal Lugs

6 per pkg	LUG400 #2 - 600MCM	LUG800 2 x #2 600MCM	LUG800 2 x #2 600MCM	LUG1200 4 x 750MCM
-----------	-----------------------	-------------------------	-------------------------	-----------------------

Terminal Shrouds

3-pole (3 single shrouds per package)	TSF400-13	TSF800-13	TSF800-13	TSF1200-13
4-pole (4 single shrouds per package)	TSF400-14	TSF800-14	TSF800-14	TSF1200-14

Accessories



Auxiliary Contacts

Normally open	OA1G10	OA1G10	OA1G10	OA1G10
Normally closed	OA3G01	OA3G01	OA3G01	OA3G01
Module for 8 aux. contacts	OEA28	OEA28	OEA28	OEA28

UL 98 Fusible Disconnect Switches

Technical Data

Technical data according to UL/cULus							
General purpose amp rating	pf= 0.7...0.8	-40° to 40 °C	A	30	60	100	200
Max. 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
Min. electrical endurance	pf= 0.75...0.8	operation cycles		6000	6000	6000	6000
Mechanical endurance		operation		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 power, AC-233)	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		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 fuse links 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

UL 98 Fusible Disconnect Switches

Technical Data

Technical data according to UL/cULus							
General purpose amp rating	pf= 0.7...0.8	-40° to 40 °C	A	400	600	800	1200
Max. 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
			A	400	600	800	1200
				J	J	L	L
Min. electrical endurance	pf= 0.75...0.8	operation cycles		1000	1000	500	500
Mechanical endurance		operation		12 000	4000	3000	2000
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 power, AC-233)	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 fuse links 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

UL 98 Fusible Disconnect Switches

UL-Listed Fused Switches - Front-Operated

Part #	Description	Ref #	Weight	Pkg
M30CC12	Fused switch, 30A, CC, 1+2 pos.	S1043250	0.7	1
M30CC22	Switch.fus 30A CC 2+2 pos.	J1044231		1
M30J12	Fused switch, 30A, J, 1+2 pos.	V1043252	0.7	1
M30J22	Switch.fus 30A J 2+2 pos.	H1044184		1
M60J12	Fused switch, 60A, J, 1+2 pos.	X1043254		1
M60J22	Switch.fus 60A J 2+2 pos.	J1044185		1
M60J22N	Switch.fus 60A J 2+1+N pos.	K1044186		1
M60J30	Fused switch, 60A, J, 3-p on L	Y1043255		1
M60J40	Switch.fus 60A J R 4+0 pos.	L1044187		1
M60J40N	Switch.fus 60A J R 3+0+N pos.	M1044188		1
M100J22	Switch.fus 100A J 2+2 pos.	P1044190		1
M100J22N	Switch.fus 100A J 2+1+N pos.	Q1044191		1
M100J30	Fused switch, 100A, J, 3-p on L	A1043257	1.5	1
M100J40	Switch.fus 100A J R 4+0 pos.	R1044192		1
M100J40N	Switch.fus 100A J R 3+0+N pos.	S1044193		1
M200J30	Fused switch, 200A, J, 3-p on L	C1043259	3	1
M200J40	Switch.fus 200A J R 4+0 pos.	T1044194		1
M400J30	Fused switch, 400A, J, 3-p on L	D1043260	7.3	1
M400J40	Switch.fus 400A J R 4+0 pos.	V1044195		1
M600J30	Fused switch, 600A, J, 3-p on L	E1043261	13.6	1
M600J40	Switch.fus 600A J R 4+0 pos.	W1044196		1
M800L30	Fused switch, 800A, L, 3-p on L	F1043262	13	1
M800L40	Switch.fus 800A J R 4+0 pos.	X1044197		1
M1200L30	Fused switch, 1200A, L, 3-p on L	G1043263	31	1
M1200L40	Switch.fus 1200A J R 4+0 pos.	Y1044198		1

Other Accessories

Part #	Description	Ref #	Weight	Pkg
CABLE36	Flex cable flange oper 36 inch	W1043414	0.40	1
CABLE48	Flex cable flange oper 48 inch	P1045501		
CABLE60	Flex cable flange oper 60 inch	X1043415	0.60	1
CABLE72	Flex cable flange oper 72 inch	Q1045502		
CABLE84	Flex cable flange oper 84 inch	R1045503		
CABLE96	Flex cable flange oper 96 inch	S1045504		
CABLE108	Flex cable flange oper 108 inch	T1045505		
FOM2	Flange operation M30J12/M30CC12	Q1043409	0.1	1
FOM3	Flange operation M60J12	R1043410	0.1	1
FOM4	Flange operation MxxxJ30	S1043411	0.1	1
FHC4X	Flange handle cable 200A 4X	T1043412	0.3	1
FHC12	Flange hdle cable 200A NEMA 12	V1043413	0.3	1
FHR12	Flange handle rod 200A NEMA 12	Y1043416		
FHR4X	Flange handle rod 200A NEMA 4X	Z1043417		
LUG100	Lugs #14 - 2/0 100A Switch /6	S1043365	0.43	6
LUG200	Lugs #6 300MCM 200A Switch /6	B1043396	0.20	6
LUG400	Lugs #2 600MCM 400A Switch /6	C1043397	0.60	6
LUG800	Lugs 2x#2 600MCM 800A Switch/6	T1043366	1.70	6
LUG1200	Lugs 4x750MCM 1200A Switch/6	V1043367	1.70	6
OA1G10	Auxiliary Contact NO	P1043477	0.03	1
OA3G01	Aux.Contact NC Switch160-2500A	R1043479	0.03	1
OA4B1C	Aux.Contact 1+1 SF 40A	K1043473	0.03	1
OSZ4	Mounting plate OA1G10/OA3G01	L1043474	0.06	1
OEA28	Module for SF aux. contacts	M1043475	0.04	1

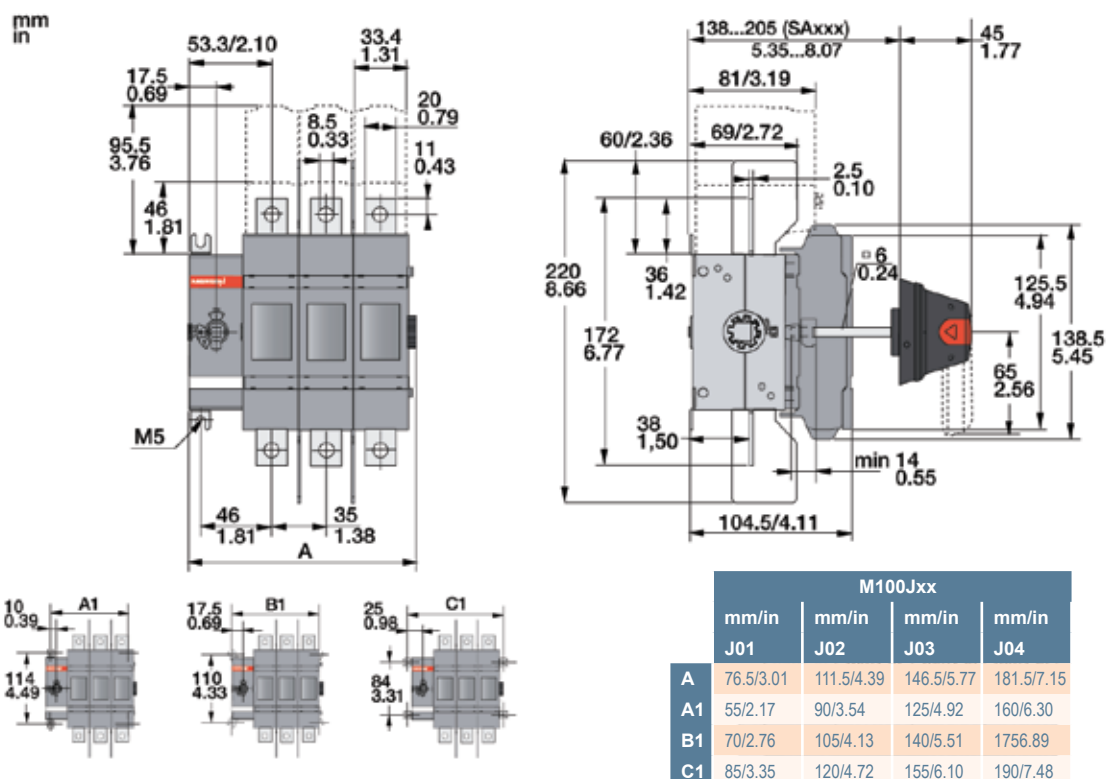
UL-Listed Fused Switches - Side-Operated

Part #	Description	Ref #	Weight	Pkg
M30CC30S	Switch.fus 30A CC R side oper.	T1043251	0.70	1
M30J30S	Switch.fus 30A J R side oper.	W1043253	0.70	1
M60J30S	Switch.fus 60A J R side oper.	Z1043256	1.2	1
M100J30S	Switch.fus 100A J R side oper.	B1043258	1.5	1

Weight in kg without packaging.

UL 98 Fusible Disconnect Switches

M100J30, Front operated



M100J, side operated

