

# Non-Fusible Disconnect Switches

## UL 508 and IEC Non-Fused (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), 690V (IEC), 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 are available to accommodate any installation requirement.



### Highlights:

- 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

### 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

### Ratings IEC:

**Volts** : 690VAC  
**Amps** : 20, 30, 40, 63, and 80A

## Catalog Number Designation

		M	80	3			
Switch	M = Mersen AC Switch MD = Mersen DC Switch						
Ampacity	16 to 1200						
Type	Blank = non-fused UL508 U = non-fused UL98 J = J fused F = NFC fused	E = IEC non-fused CC = CC fused D = DIN fused B = BS-88 fused					
Number of Poles/Left side of Handle	AC: 0, 1, 2, 3, 3N, 4, etc. (N = neutral) DC: 0, 1, 2,3,4						
Number of Poles/Right side of Handle	AC: Blank = < 200A non-fused, 0, 1, 2, 3, 3N, 4, etc. (N = neutral) DC: Blank = < 100A, 0, 1, 2, 3, 4						
Revision	Blank = 0						
Special Configurations	S = side-operated CH = Changeover	DM = door-mounting N = Non-fused switched Neutral					

## Approvals:

- UL 508 listed E196672
- IEC 60947-3



# Non-Fusible Disconnect Switches

## IEC/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-mounting	DM	DM	DM	DM	DM

### Handles and Shafts



#### Direct Front Operation Locking Handle

	HD40	HD40	HD40	HD125	HD125
--	------	------	------	-------	-------

#### External Front Operation

Selector Style NEMA Type 1, 3R, 12	HSBX	HSBX	HSBX	HSBX	HSBX
Door mounted version	HSBPDM	HSBPDM	HSBPDM	HSBPDM	HSBPDM
Shaft—Lengths: 85, 130, 180, 250 Ex. SA130	SA__	SA__	SA__	SA__	SA__
Pistol Style NEMA Type 1, 3R, 12	HB45	HB45	HB45	HB45	HB45
NEMA Type 4, 4X	HB45X	HB45X	HB45X	HB45X	HB45X
Shaft—Lengths: 130, 210, 290, 360, 430 Ex. SPA130	SPA__	SPA__	SPA__	SPA__	SPA__

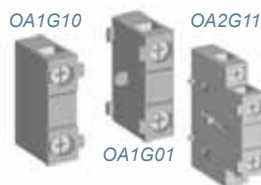
B=Black. Substitute 'R' for 'B' if a red handle is desired. Ex. HR65

### Accessories



4P40

4P80



OA1G10

OA2G11

OA1G01

OEA28

#### Fourth Poles

Limited to one additional pole per switch	4P40	4P40	4P40	4P80	4P80
---	------	------	------	------	------

#### Neutral Poles

Limited to one additional pole per switch	NP40	NP40	NP40	NP80	NP80
---	------	------	------	------	------

#### Terminal Shrouds

3-pole	TS40-3	TS40-3	TS40-3	TS80-3	TS80-3
4-pole	TS40-1	TS40-1	TS40-1	TS80-1	TS80-1

#### 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

# Non-Fusible Disconnect Switches

## Technical Data

		Approvals	2 pole	3 pole	UL508&IEC	UL508&IEC	UL508&IEC	UL508&IEC	UL508&IEC
			4 pole	UL508&IEC	UL508&IEC	UL508&IEC	UL508&IEC	UL508&IEC	UL508&IEC
<b>Technical data according to UL/cULus</b>									
General purpose amp rating	pf= 0.7...0.8	-40° to 40 °C	A	20	30	40	60	80	
Max. operating voltage			V	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	10/11	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 <sup>2)</sup>	30	60 <sup>2)</sup>	30	60 <sup>2)</sup>
	Fuse type	CC	kA	10		10		10	
	Fuse type	J	kA	10	10	10	10	100	100
	Fuse type	T	kA	10	10	10	10	100	100
	Fuse type	RK1	kA	10		10		10	5
	Fuse type	RK5	kA	5	5	5	5	5	5
	Fuse type	L	kA						
	Fuse type	H	kA						
<b>Maximum General Use, DC ratings</b>									
Current rating		at 250 VDC	A						
		at 600 VDC	A						
DC horsepower rating for 4-pole switch		at 600 VDC	HP						
DC horsepower rating for 2-pole switch	In open air	at 125 VDC	HP						
	In enclosure <sup>2)</sup>	at 250 VDC	HP						
DC short circuit rating for 4-pole switch		with circuit breaker	kA						
DC short circuit rating for 2-pole switch		with circuit breaker at 250 VDC	kA						
		with circuit breaker at 600 VDC	kA						
		with class J fuse at 250 VDC	kA						
		... with fuse size	A						
<b>Endurances</b>									
Min. electrical endurance, pf. 0.75...0.8			oper. cycles	6 000	6 000	6 000	6 000	6 000	
Mechanical endurance			operations	20 000	20 000	20 000	20 000	20 000	
Terminal lug kits				integral	integral	integral	integral	integral	
Wire range			AWG	18-8	18-8	18-8	14-4	14-4	
Torque		Wire tightening	lb. in	7	7	7	18	18	
		Lug mounting							
<b>Technical data according to IEC 60947-3</b>									
Rated insulation voltage and rated operational voltage AC20/DC20	Pollution degree 3		V	750	750	750	750	750	
Dielectric strength		50 Hz 1min.	kV	6	6	6	6	6	
Rated impulse withstand voltage			kV	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 <sub>p</sub> (r.m.s.) and corresponding max. allowed cut-off current I <sub>c</sub> . The cut-off current I <sub>c</sub> refers to values listed by fuse manufacturers	I <sub>p</sub> (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 <sub>p</sub> (r.m.s.)	10 kA	kA						
(single phase test acc. to IEC60269)	Max. fuse size gG/aM	690 V	A						
	I <sub>p</sub> (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 <sub>cw</sub>	690 V, 1 s	kA	0.5	0.5	0.5	1	1.5	
Rated short circuit making capacity	Peak value I <sub>sm</sub>	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.

# Non-Fusible Disconnect Switches

## UL 508, IEC Non-Fused switches, front-operated

Part #	Description	Ref #
M163	IEC UL508 Switch 16A 3p	A1043188
M253	IEC UL508 Switch 25A 3p	B1043189
M403	IEC UL508 Switch 40A 3p	C1043190
M633	IEC UL508 Switch 63A 3p	D1043191
M803	IEC UL508 Switch 80A 3p	E1043192
M163DM	IEC UL508 Switch 16A 3p DM	E1043169
M253DM	IEC UL508 Switch 25A 3p DM	F1043170
M403DM	IEC UL508 Switch 40A 3p DM	K1043174
M633DM	IEC UL508 Switch 63A 3p DM	M1043176
M803DM	IEC UL508 Switch 80A 3p DM	N1043177

## Other Accessories

Part #	Description	Ref #
OA1G01	Auxiliary Contact NO Right	N1043476
OA1G10	Auxiliary Contact NC left	P1043477
OA2G11	Aux. Contact NO+NC Switch 125A	Q1043478
4P40	Fourth pole for M40 NF switches	S1043480
4P60	Fourth pole for M60 NF switches	T1043481
4P80	Fourth pole for M80 NF switches	V1043482
NP40	Neutral pole for M40 NF switches	X1043484
NP80	Neutral pole for M80 NF switches	Y1043485

## Handles

Part #	Description	Ref #
HD40	Handle direct Switch 40A	L1043405
HSBX	Handle selector black	M1043406
HSRX	Handle selector red	N1043407
HB45	Handle black 45mm IP65 NEMA 3R	L1043911
HB45X	Handle black 45mm IP65 NEMA 4X	M1043912
HR45	Handle red 45mm IP65 NEMA 3R	Q1043915
H45X	Handle red 45mm IP65 NEMA 4X	R1043916
HSBPDM	Handle Select black snap door	
HSBWDM	Handle Select black screw door	
HDM1	Door-mount adapt pistol handle	

## Shafts

Part #	Description	Ref #
SA85	Shaft selector handle 6x6x85mm	J1043426
SA105	Shaft select. handle 6x6x105mm	K1043427
SA120	Shaft select. handle 6x6x120mm	L1043428
SA130	Shaft select. handle 6x6x130mm	M1043429
SA180	Shaft select. handle 6x6x180mm	N1043430
SA250	Shaft pistol handle 6x6x250mm	R1043433
SPA130	Shaft pistol handle 6x6x130mm	V1043919
SPA210	Shaft pistol handle 6x6x210mm	P1043431
SPA290	Shaft pistol handle 6x6x290mm	Q1043432
SPA360	Shaft pistol handle 6x6x360mm	W1043920
SPA430	Shaft pistol handle 6x6x430mm	X1043921

## Terminal Shrouds

Part #	Description	Ref #
TS40-1	Term.shrd 40A switch 1p S	B1043442
TS40-3	Term.shrd 40A switch 3p L	C1043443
TS63-1	Term.shrd 63A switch 1p S	D1043444
TS63-3	Term.shrd 63A switch 3p L	E1043445
TS125-1	Term.shrd 125A switch 1p S	F1043446
TS125-3	Term.shrd 25A switch 3p L	G1043447