



M3 & M21 SERIES
Fuse switch-disconnectors



Fuse switch-disconnectors

What is a fuse switch-disconnectors?

A combination of a switch to disconnect the circuit and a fuse to shut the circuit off the event of a problem. When installing or maintaining equipment on the circuit, or the circuit itself, the switch provides a method to manually shut off the power.

This load break switches have a fuse provision in the switch and enclosure assembly, enabling you to open and close the circuit while providing overcurrent and short-circuit protection.



M3 SERIES
32A-250A
Compact solution



M21 SERIES
400A-800A



CIF SERIES
Enclosed solutions
(metal & polyester)



ON LOAD make and break applications. Double break contacts



Finger protected switches and shrouds



Test position available up to 250 A.



Padlockable panel handle in OFF position. Defeatable panel handle.



Fixed and detachable neutral versions.



Up to 200 kA short circuit rating.



Cage connection up to 100A
Lug connection up to 800A.



Front or lateral operation (only in M3 series). Easy to install.



Available for NFC, DIN, BS and Class J fuses.



IP65 / NEMA 4X handles.

APPLICATIONS

Temporary power distribution panels



Photovoltaics (SSVT)



HVAC



Switchboards



Motor control centers



Festival sites

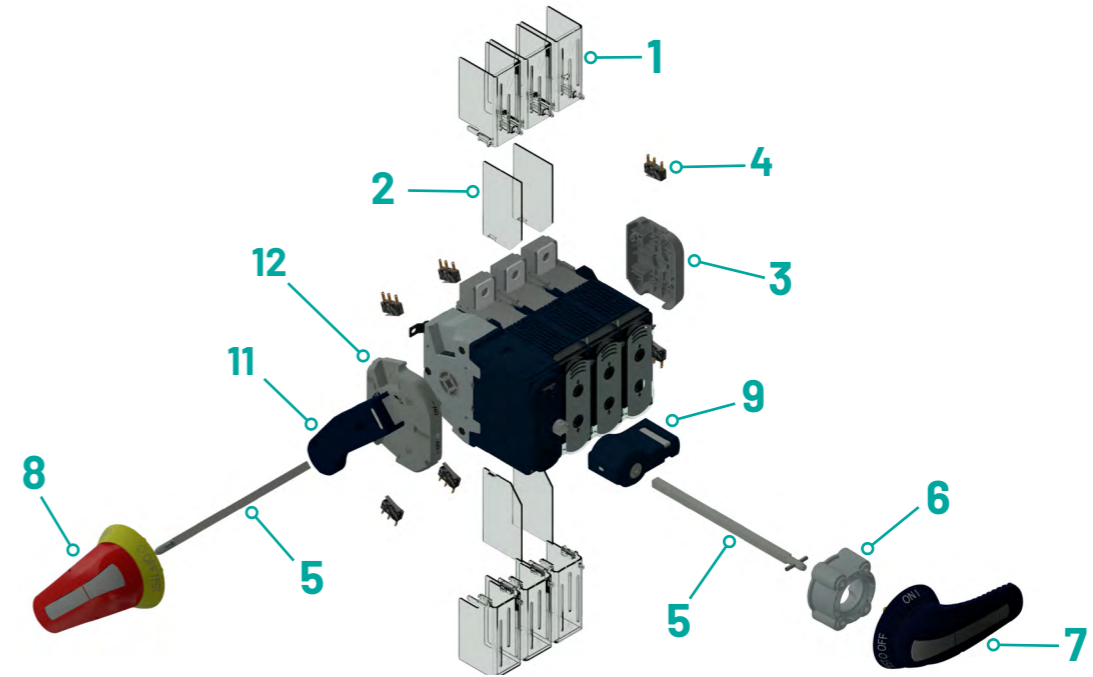


Power electronics

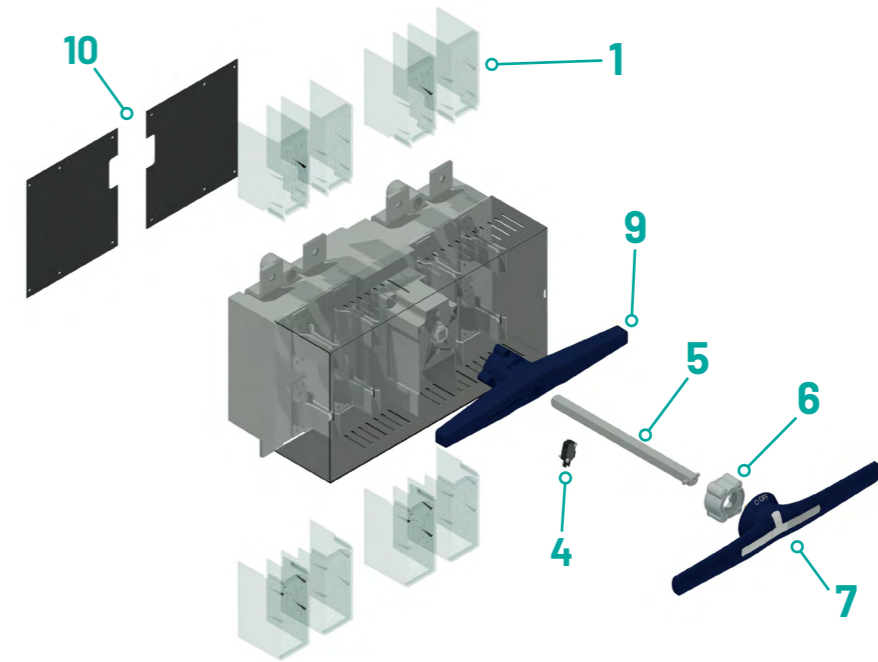


Voltage Stabilizers
Drives/soft starters
UPS

SERIES M3

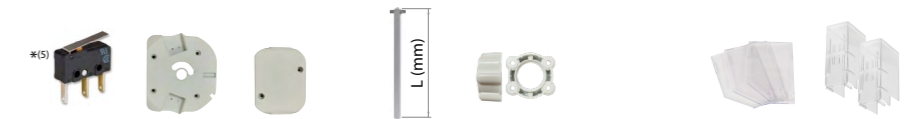


SERIES M21



- | | | |
|--------------------------------------|---|--|
| 1 Terminal shroud | 5 Shaft extension | 9 Direct handle |
| 2 Phase barrier | 6 Shaft guide | 10 Rear protective plate |
| 3 Simultaneous contact holder | 7 External handle | 11 Side operation direct handle |
| 4 Auxiliary contact | 8 Side operation external handle | 12 Front contact holder |

► M3 SERIES | 2P, 3P, 3P+N & 3P+DN | 32A-250A



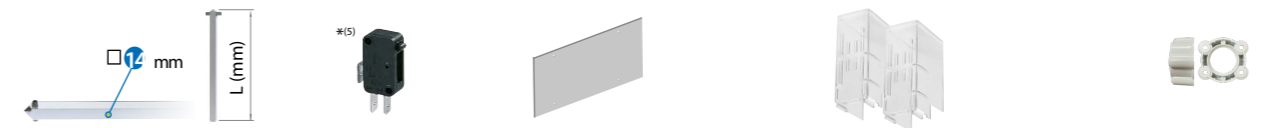
Amp.	Fuse	Size	Connection	2P	3P	3P+N ⁽¹⁾	3P+DN (fixed detachable neutral)	Front operation			
								Direct handle	External handle (shaft included)		Emergency
									Standard	ON-OFF	
Code	Code	Code	Code	Code	L (mm)	Code	Code	Code			
32	BS-A1-A2	00	00	M3-00322PBB10	M3-00323PBB10	M3-00323NBB10	M3-00323DBB10	DM3SIB1	177	DM3SAB2	DM3SAB1
50	14x51			M3-00502PBC20	M3-00503PBC20	M3-00503NBC20	M3-00503DBC20				
63	BS-A2-A3			M3-00632PBB20	M3-00633PBB20	M3-00633NBB20	M3-00633DBB20				
	NH000			M3-00632PBD20	M3-00633PBD20	M3-00633NBD20	M3-00633DBD20				
80	BS-A3			M3-00802PBB30	M3-00803PBB30	M3-00803NBB30	M3-00803DBB30				
100	22x58			M3-01002PBC30	M3-01003PBC30	M3-01003NBC30	M3-01003DBC30				
	NH000			M3-01002PBD30	M3-01003PBD30	M3-01003NBD30	M3-01003DBD30				
100	BS-A3			M3-01002PTB30	M3-01003PTB30	M3-01003NTB30	M3-01003DTB30				
	BS-A3			M3-01252PTB30	M3-01253PTB30	M3-01253NTB30	M3-01253DTB30				
125	22x58			M3-01252PTC30	M3-01253PTC30	M3-01253NTC30	M3-01253DTC30				
	NH00			M3-01252PTD40	M3-01253PTD40	M3-01253NTD40	M3-01253DTD40				
160	NH00			M3-01602PTD40	M3-01603PTD40	M3-01603NTD40	M3-01603DTD40				
160	BS-A4	M3-01602PSB50	M3-01603PSB50	M3-01603NSB50	M3-01603DSB50						
	NH0	M3-01602PSD90	M3-01603PSD90	M3-01603NSD90	M3-01603DSD90						
200	BS-B1-B2	M3-02002PSB60	M3-02003PSB60	M3-02003NSB60	M3-02003DSB60						
250	NH1	M3-02502PSD50	M3-02503PSD50	M3-02503NSD50	M3-02503DSD50						
	BS-B3	M3-02502PSB80	M3-02503PSB80	M3-02503NSB80	M3-02503DSB80						

Size	Direct handle ⁽²⁾	Side operation		Auxiliary contacts ⁽³⁾	Auxiliary contacts holder ⁽⁷⁾		Shaft extensions		Shaft guide	Fuse type	Poles	Phase barriers	Terminal shrouds ⁽⁴⁾
		Standard	Emergency		Early make contacts	Simultaneous contacts							
		Code	L (mm)		ON-OFF	ON-OFF-TEST	Code	Code					
00	DM3SSB1	177	DM3SBB2	DM3SBB1	DM3AUB1	DM3AMB1	DM3ASB1	250	DM3EP01	DS-EC00	-	-	-
			DM3SEB2	DM3SEB1				387	DM3EP02				
0	DM3SSB1	177	DM3SBB2	DM3SBB1	DM3AUB1	DM3AMB1	DM3ASB1	250	DM3EP01	DS-EC00	2P	-	DM3CU010L
			DM3SEB2	DM3SEB1				387	DM3EP02		3P	-	DM3CU020L
1	DM3SS11	177	DM3SB12	DM3SB11	DM3AUB1	DM3AM11	DM3AS11	375	DM3EP11	DS-EC00	3P+N	-	DM3CU030L
			DM3SE12	DM3SE11				536	DM3EP12		2P	DM3SF01 ⁽⁶⁾	DM3CU01
											3P	DM3SF02 ⁽⁶⁾	DM3CU02
											3P+N	DM3SF03 ⁽⁶⁾	DM3CU03
										DN	-	DM3CU04 ⁽⁸⁾	

► M21 SERIES | 3P, 3P+N & 3P+FN | 400A-800A



Amp.	Fuse	Size	Connection	3P	3P+N ⁽¹⁾	3P+FN	Manual handle	
							Direct handle	External handle (shaft included)
							Code	Code
400	NH2	2	00	M2104003PSD20	M2104003NSD20	M2104003FSD20	DM2SI21	DS-LA22
400	BSB1...BSB4			M2104003PSB50	M2104003NSB50	M2104003FSB50		DS-LR22
630	NH3	3	00	M2106303PSD30	M2106303NSD30	M2106303FSD30	DM2SI31	DS-LA31
800	NH3			M2108003PSD30	M2108003NSD30	M2108003FSD30		DS-LR31
630	BSC1...BSC2			M2106303PSB70	M2106303NSB70	M2106303FSB70		
800	BSC1...BSC3			M2108003PSB80	M2108003NSB80	M2108003FSB80		



Size	Shaft extensions		Auxiliary contacts ⁽⁵⁾		Rear protective plate	Terminal shrouds ⁽⁴⁾			Shaft guide	
	L (mm)	Code	1NO+1NC	2NO+2NC		3P input	3P output	3P+N input / output		
	Code	Code	Code	Code		Code	Code	Code		
2	14	345	DS-EP23	D5LAU01	D5LAU02	3P	DM2CU21	DM2CU22	DM2CU23	DS-EC00
						DM2PP21				
3	14	345	DS-EP23	D5LAU01	D5LAU02	3P	DM2CU31	DM2CU32	DM2CU33	DS-EC00
						DM2PP31				
						3P+N				
						DM2PP32				

⁽¹⁾ Neutral pole early make & late break. Also available 4P.

⁽²⁾ With the side handle code, the auxiliary contacts holder is included (DM3AMB1/DM3AM11), as it is required for installation.

⁽³⁾ To be used as signaling or control contacts. I_e = 0.1A at 125 VAC and 0.1A at 30 VDC (resistive loads) (M3) This code includes just an individual auxiliary contact (1 pc per package), so it is necessary to order as many pcs as it would be needed of any type of contact.

⁽⁴⁾ One set for input or output.

⁽⁵⁾ To be used as signaling or control contacts - I_e = 16A (resistive loads) 4A (inductive loads) at 250 Vac. (M21)

⁽⁶⁾ In 22x58 and BS size the device includes directly the phase barriers.

⁽⁷⁾ With the switch 1NO+1NC early make contact (ON-OFF position) and 1NO+1NL early make contact (TEST position) can be fixed. Maximum capacity with holders: 3NO+3NC for OFF position (2 early make contacts and 1 simultaneous) 2NO+2NC for TEST position (2 early make contacts)

TECHNICAL DATA



IEC-EN-UNE 60947-1 IEC-EN-UNE 60947-3			00					0		1		2		3			
			32 A	50 A	63 A	80 A	100 A	100 A	125 A	160 A	160 A	200 A	250 A	400 A	630 A	800 A	
Fuse type			BS-A1-A2	NFC 14x51	NH000 BS-A2-A3	BS-A3	NH000 NFC 22x58	BS A3	NH00 BS-A3 NFC 22x58	NH00	NH0 BS-A4	BS-B1-B2	NH1 BS-B3	NH2 BSB4	NH3 BSC1...BSC2	NH3 BSC1...BSC3	
Electrical features	Thermal current in ambient at 35°C (and temporarily 40 °C) ^{*(1)}	I _{th}	A	32	50	63	80	100	100	125	160	160	200	250	400	630	800
	Rated insulation voltage	U _i	Vac	1.000				1.000	1.000	1.000		1.000	1.000	1.000	1.000	1.000	
	Rated impulse withstand voltage	U _{imp}	kV	8				8	8	12		12	12	12	12	12	
	AC rated operational current ^{*(2)} (Rated frequency 50 / 60 Hz)	Ue 415 V AC21A	A	32	50	63	80	100	100	125	160	160	200	250	400	630	800
		Ue 415 V AC22A	A	32	50	63	80	100	100	125	160	160	200	250	400	630	800
		Ue 415 V AC23A/AC23B	A	32	50	63	80	80	100	125	160*	160	200	250	400	630	630
	Power losses in fuses ^{*(3)}	NH/DIN	W	-	-	5,8	-	6,6	-	9	11,2	12,9	-	17	30	48	57
BS		W	2,9	-	5,6	6,5	-	8,5	11,3	-	14	14	18	29	44	63	
NFC		W	-	5	-	-	9	-	11,4	-	-	-	-	-	-	-	
Rated breaking capacity	400 V; cos φ = 0,35÷0,45	A	256	400	504	640	640	800	1.000	1.280	1.280	1.600	2.000	3.200	5.040	5.040	
Rated making capacity	400 V; cos φ = 0,45	A	320	500	630	800	800	1.000	1.250	1.600	1.600	2.000	2.500	4.000	6.300	6.300	
Short circuit behaviour	Conditional short-circuit current ^{*(4)}	NH/DIN/NFC	kA rms	-	100	100	-	100	-	100	100	-	-	100	100	100	
		BS	kA rms	80	-	80	80	-	80	80	-	80	80	80	100	100	
	Maximum cut - off current	kA (peak)	4,2	9,5	10,5	14	14	16,5	16,5	19,5	29	29	32	43	60,8	60,8	
Mechanical data	Durability, number of operating cycles ^{*(5)}	Cycles	10.000				8.000		8.000		5.000		3.000				
	Maximum weight	2P	kg	0,6	0,6	0,6	0,7	0,7	1	1	2,6	-	-	-			
		3P	kg	0,85	0,85	0,85	1	1	1,3	1,3	3,4	6,6	13	13			
		3P+N	kg	1,1	1,1	1,1	1,3	1,3	1,6	1,6	4,2	8	15	15			

*Category of operation B.

^{*(1)} According to IEC 60947-1, section 7.1.1. Minimum ambient temperature -5 °C.

^{*(2)} Other voltages and / or utilization categories. Please consult.

^{*(3)} Power dissipation values of fuse - links used in type tests. Please consult for fuse - links with higher power dissipation.

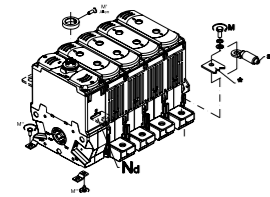
^{*(4)} With a protective device limiting the cut - off current and the joule integral to the indicated values.

^{*(5)} According to the standards, for other values please consult.

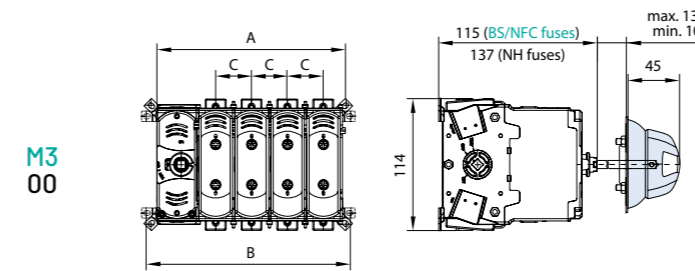
CONNECTION CAPACITY



Size	I _{th}	S min. (Cu)		S max. (Cu)		H max (Cu)		L max (Cu)		M	M	
		mm ²	AWG	mm ²	AWG	mm	In	mm	in		Nxm	lbf-in
M3 00	32A	6	10	1x25	1x4	-	-	-	-	-	2	17.7
	50A	10	8									
	63A	16	6									
	80A	25	4									
	100A	35	3									
M3 0	100A	35	3	50	1	3	1/8	25	1	M8	6	53
	125A	50	1	70	00							
	160A	70	00	185	350							
	160A	70	00									
M3 1	200A	95	000	185	350	7	3/32	30	1 3/16	M10	18	159
	250A	120	250 kmil									
	250A	120	250 kmil									
M21 2	400A	240	500	240	500	6	1 3/64	40	1 37/64	M10	24	212
	630A	2x185	2x400	2x185	2x400	2x7	2 3/32	50	1 33/32	M12	45	398
		800A	2x240	2x500	2x240							
M21 3	800A	2x240	2x500	2x240	2x500	2x7	2 3/32	50	1 33/32	M8	13	115
		2x240	2x500	2x240	2x500							

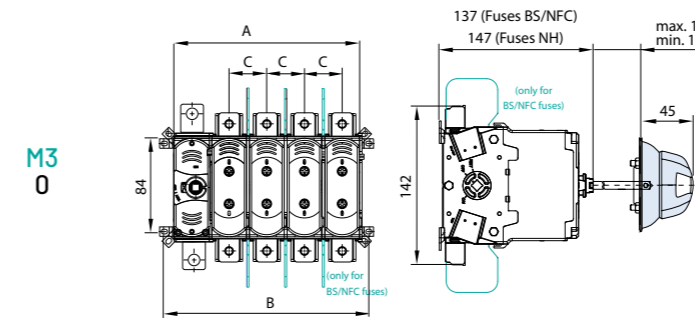


DIMENSIONAL DRAWINGS (mm)



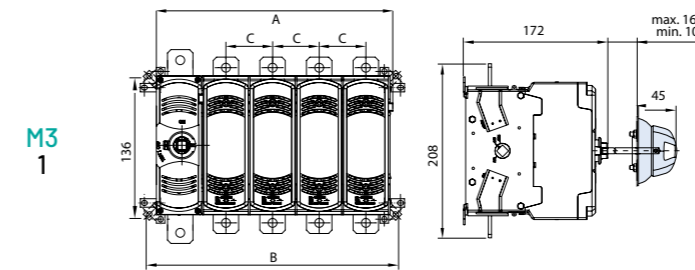
M3
00

		A			B			C
		2P	3P	3P+N	2P	3P	3P+N	
NH BS NFC	32A	93	120	147	106	133	160	27
	50A							
	63A							
	80A 100A	101	132	163	114	145	176	31



M3
0

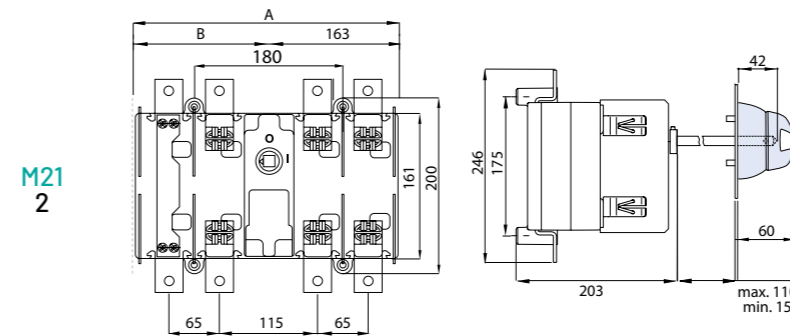
		A			B			C
		2P	3P	3P+N	2P	3P	3P+N	
NH	125A 160A	109	144	179	123	158	193	35
	BS NFC	100A 125A 160A	110	146	182	124	160	196



M3
1

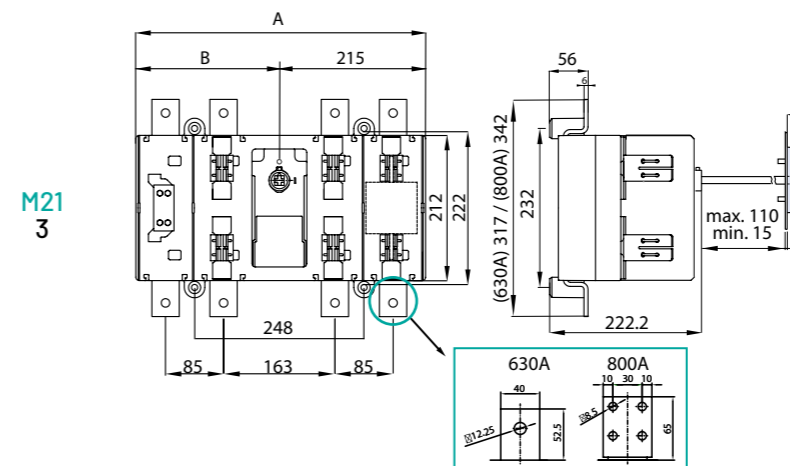
		A			B			C
		2P	3P	3P+N	2P	3P	3P+N	
BS NH	160A 200A 250A	168	223	278	192	247	302	55

* 3P+DN dimensions are the same as the 3P



M21
2

BS NH	400A	A		B	
		3P	3P+N	3P	3P+N
		274	329	111	166



M21
3

BS NH	630A 800A	A		B	
		3P	3P+N	3P	3P+N
		381	426	166	211

* 3P+FN dimensions are the same as the 3P+N

► M3 SERIES | 3P, 3P+N & 3P+DN | 30A-200A



UL	Amp.	Fuse	Size	Connection	Front operation			Front operation				
					3P	3P+N ^(*)	3P+DN (detachable neutral)	Direct handle	Standard		Emergency	
									External handle (shaft included)		ON-OFF TEST	
					Code	Code	Code	Code	L	ON-OFF Code	ON-OFF TEST Code	
30	J21x57	00	0	M3-00303PBJ300L	M3-00303NB300L	M3-00303DBJ300L	DM3SIB1	177 (mm) 6.96 (inch)	DM3SAB2	DM3SAB1	DM3SRB2	DM3SRB1
									DM3SAB2	DM3SAB1	DM3SRB2	DM3SRB1
									DM3SAB2	DM3SAB1	DM3SRB2	DM3SRB1
									DM3SAB2	DM3SAB1	DM3SRB2	DM3SRB1
60	J27x60	0	0	M3-00603PTJ400L	M3-00603NTJ400L	M3-00603DTJ400L	DM3SIB1	177 (mm) 6.96 (inch)	DM3SAB2	DM3SAB1	DM3SRB2	DM3SRB1
									DM3SAB2	DM3SAB1	DM3SRB2	DM3SRB1
									DM3SAB2	DM3SAB1	DM3SRB2	DM3SRB1
									DM3SAB2	DM3SAB1	DM3SRB2	DM3SRB1
100	J29x117	1	0	M3-01003PSJ500L	M3-01003NSJ500L	M3-01003DSJ500L	DM3SI11	227 (mm) 8.93 (inch)	DM3SA12	DM3SA11	DM3SR12	DM3SR11
									DM3SA12	DM3SA11	DM3SR12	DM3SR11
200	J41x146	1	0	M3-02003PSJ600L	M3-02003NSJ600L	M3-02003DSJ600L	DM3SI11	227 (mm) 8.93 (inch)	DM3SA12	DM3SA11	DM3SR12	DM3SR11

- ^(*) Neutral pole early make & late break.
 - ⁽²⁾ With the side handle code, the auxiliary contacts holder is included (DM3AMB1/DM3AM11), as it is required for installation.
 - ⁽³⁾ To be used as signaling or control contacts. Ie = 0.1A at 125 VAC and 0.1A at 30 VDC (resistive loads)
- This code includes just an individual auxiliary contact (1 pc per package), so it is necessary to order as many pcs as it would be needed of any type of contact.

► TECHNICAL DATA

UL98, Guide WHTY, File E363652 CSA 22.2 NO.4 File E363652				00	0	1			
				30 A	60 A	100 A	200 A		
Fuse type				J 21x57	J 27x60	J 29x117	J 41x146		
Ratings	Rated Thermal current			A	30	60	100	200	
	General purpose amp rating			600Vac	A	30	60	100	200
	Max. Operating voltage			Vac	600				
	Max. HP rating / motor FLA current			3 Phase	240Vac HP/A	7,5/22	15/42	30/80	50/130
Mechanical endurance	Minimum number of mechanical operations			10000					
	Number of electrical operations			6000					

► CONNECTION RANGE

Size	lth	Wire range	Busbar (Max)	Tightening torque
		Flange	Terminal	
		AWG	mm	lb-inch
00	30A	#10-2	-	17.7
0	60A	#6 %	20	53
1	100A	#3AWG-300kcmil	30	159
	200A	#3/0AWG-300kcmil	30	159

Size	Side operation ⁽²⁾				Auxiliary contacts ⁽³⁾ (1 unit)	Auxiliary contacts holder		Shaft extensions		Phase barriers		Terminal shrouds ⁽⁴⁾
	Direct handle	L	External handle (shaft included)			Early make contacts	Simultaneous contacts	L mm inch	Code	P	Code	Code
			Standard	Emergency								
	Code	L	ON-OFF Code	ON-OFF TEST Code		Code	Code	Code	L mm inch	Code	P	Code
00	DM3SSB1	177 (mm) 6.96 (inch)	DM3SBB2	DM3SBB1	DM3AUB1	DM3AMB1	DM3ASB1	250	DM3EP01	-	-	-
			DM3SEB2	DM3SEB1				9.84				
0	DM3SSB1	177 (mm) 6.96 (inch)	DM3SBB2	DM3SBB1	DM3AUB1	DM3AMB1	DM3ASB1	250	DM3EP01	3P	* ⁽⁵⁾	DM3CU020L
			DM3SEB2	DM3SEB1				9.84				DM3CU030L
1	DM3SS11	177 (mm) 6.96 (inch)	DM3SB12	DM3SB11	DM3AUB1	DM3AM11	DM3AS11	375	DM3EP11	3P	DM3SF12	DM3CU12
			DM3SE12	DM3SE11				14.76				DM3CU13
							536	DM3EP12	3P+N	DM3SF13	DM3CU13	
							21.10	DM3EP12	DN	-	DM3CU14 ⁽⁶⁾	

- ⁽⁴⁾ One set for input or output.
- ⁽⁵⁾ In this size the device (UL) includes directly the phase barriers.
- ⁽⁶⁾ This code only includes the terminal shrouds for the detachable neutral pole, it is necessary to order the code for 3P terminal shrouds as well: DM3CU020L or DM3CU12.

► DIMENSIONAL DRAWINGS

J	30A	mm	A		B		C
			3P	3P+N	3P	3P+N	
		inch	132	163	145	176	31
			5.19"	6.41"	5.73"	6.95"	1.23"

J	60A	mm	A		B		C
			3P	3P+N	3P	3P+N	
		inch	146	182	160	196	36
			5.74"	7.15"	6.31"	7.73"	1.42"

J	100A 200A	mm	A		B		C
			3P	3P+N	3P	3P+N	
		inch	223	278	247	302	55
			8.81"	10.97"	9.72"	11.89"	2.57"

* 3P+DN dimensions are the same as the 3P

► CIF SERIES | METAL SHEET ENCLOSED | 50 A - 800 A



GENERAL CHARACTERISTICS

- DIN, NFC and BS fuses.
- IP65 protection degree.
- Wall mounting.
- RAL 7035.
- 3P & 3P+N versions.



Amp.	Fuse	Size	Connection	Series	3P	3P+N ^{*(1)}	Enclosure dimensions	Auxiliary contacts ^{*(2)} 1NO+1NC	Cable entry	Fixing brackets	Terminal shrouds ^{*(3)}	
					Code	Code					3P	3P+N
					Code	Code					Code	Code
50	14x51	00	M3	M3	CIF23C00503PBC2	CIF23C00503NBC2	300x300x200	DM3AUB1	125x215	20105079	-	-
63	NH000			M3	CIF23C00633PBD2	CIF23C00633NBD2	300x300x200	DM3AUB1	125x215	20105079	-	-
100	22x58			M3	CIF23C01003PBC3	CIF23C01003NBC3	300x300x200	DM3AUB1	125x215	20105079	-	-
100	NH000			M3	CIF23C01003PBD3	CIF23C01003NBD3	300x300x200	DM3AUB1	125x215	20105079	-	-
125	22x58	0	M3	M3	CIF23C01253PTC3	CIF23C01253NTC3	400x400x200	DM3AUB1	125x285	20105079	DM3CU02	DM3CU03
125	NH00			M3	CIF23C01253PTD4	CIF23C01253NTD4	400x400x200	DM3AUB1	125x285	20105079	DM3CU02	DM3CU03
160	NH00			M3	CIF23C01603PTD4	CIF23C01603NTD4	400x400x200	DM3AUB1	125x285	20105079	DM3CU02	DM3CU03
250	NH1			M3	CIF23C02503PSD5	CIF23C02503NSD5	600x400x250	D5LAU01	125x285	20105079	DM3CU12	DM2CU13
400	NH2	3	M21	M21	CIF22C04003PSD2	CIF22C04003NSD2	800x600x260	D5LAU01	485x125	20105079	DM3CU22 ^{*(4)}	DM2CU23
630	NH3			M21	CIF22C06303PSD3	CIF22C06303NSD3	1000x600x260	D5LAU01	485x125	20105079	DM3CU32 ^{*(4)}	DM2CU33
800	NH3			M21	CIF22C08003PSD3	CIF22C08003NSD3	1000x600x260	D5LAU01	485x125	20105079	DM3CU32 ^{*(4)}	DM2CU33

^{*(1)} Neutral pole early make & late break. Also available (M3) 4P & 3P+DN / (M21)- 4P & 3P+FN under request.

^{*(2)} To be used as signaling or control contacts – I_e = 0.1A at 125 VAC and 0.1A at 30 VDC (resistive loads) (M3) / I_e = 16A (resistive loads) 4A (inductive loads) at 250 Vac (M21). Whilst closing, it closes after the main contacts. Whilst opening, it opens before the main contacts.

^{*(3)} One set for input or output.

^{*(4)} Output.

► CIF SERIES | POLYESTER ENCLOSED | 50 A - 250 A



Amp.	Fuse	Size	Connection	Series	3P	3P+N ^{*(1)}	Enclosure dimensions	Auxiliary contacts ^{*(2)} 1NO+1NC	Fixing brackets	Terminal shrouds ^{*(3)}	
					Code	Code				3P	3P+N
					Code	Code				Code	Code
50	14x51	00	M3	M3	CIF23P00503PBC2	CIF23P00503NBC2	400x300x200	DM3AUB1	20105085	-	-
63	NH000			M3	CIF23P00633PBD2	CIF23P00633NBD2	400x300x200	DM3AUB1	20105085	-	-
100	22x58			M3	CIF23P01003PBC3	CIF23P01003NBC3	400x300x200	DM3AUB1	20105085	-	-
100	NH000			M3	CIF23P01003PBD3	CIF23P01003NBD3	400x300x200	DM3AUB1	20105085	-	-
125	22x58	0	M3	M3	CIF23P01253PTC3	CIF23P01253NTC3	400x400x200	DM3AUB1	20105085	DM3CU02	DM3CU03
125	NH00			M3	CIF23P01253PTD4	CIF23P01253NTD4	400x400x200	DM3AUB1	20105085	DM3CU02	DM3CU03
160	NH00			M3	CIF23P01603PTD4	CIF23P01603NTD4	400x400x200	DM3AUB1	20105085	DM3CU02	DM3CU03
250	NH1			M3	CIF23P02503PSD5	CIF23P02503NSD5	600x400x230	DM3AUB1	20105085	DM3CU12	DM2CU13



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