

Contactors

[BACK](#)

POWER CONTACTORS



MNX 9 to MNX 32

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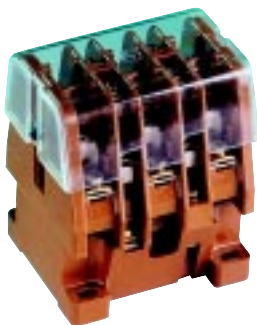
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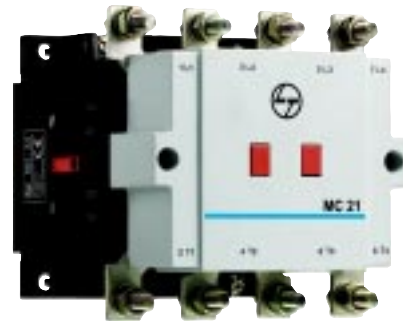
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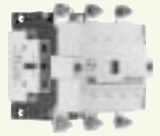
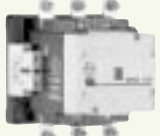
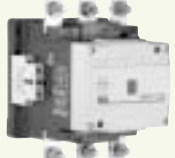


SALIENT FEATURES OF MNX CONTACTORS

- ◆ Conform to standards IEC 60947-4-1, BS EN 60947-4-1, IS 13947-4-1
- ◆ Compartment Construction ensures Complete Safety
- ◆ High aesthetic standards.
- ◆ Suitable for tropical conditions, ensures reliable performance in high ambient temperature, humidity etc.
- ◆ Enclosed construction ensures protection of contact & magnet pole faces from dust and foreign particles.
- ◆ Alphanumeric terminal marking eliminates wiring error.
- ◆ Coil voltage indication on coil terminals makes identification easy.
- ◆ Suitable for snap-fit mounting on 35mm din rail upto 80 Amps.
- ◆ Front ON/OFF mechanical indication provides visual inspection of the state of the contactor.
- ◆ Main terminals are suitable for aluminium busbars & lugs so as to give higher terminal capacity.
- ◆ Common accessories for multiple ratings of contactors.
- ◆ Easy contact/coil accessibility and replacement.
- ◆ Build-in protection to coil against overvoltage & undervoltage conditions.

CONTACTORS - TYPE MNX

POWER CONTACTORS

Conformance to IS 13947 (Part 4/Sec.1) and IEC:60947-4-1

Contactor Type	Ie AC-3	Ie AC-1	Motor rating at 50Hz			Built in auxiliary contacts		Qty per Packing	Wt approx.per Contactor	Catalogue No. *
			220V 240V	380V 415V	500V					
AC operation										
	[A]	[A]	[KW]	[KW]	[KW]	NO	NC	[No.]	[Kg]	
 MNX 9/12/18	9	25	2.2	4	5.5	1	—	10	0.37	CS94106....
	9	25	2.2	4	5.5	—	1	10	0.37	CS94107....
	12	30	3	4	7.5	1	—	10	0.37	CS94108....
	12	30	3	4	7.5	—	1	10	0.37	CS94109....
	18	30	4	7.5	9.3	1	—	10	0.37	CS94100....
	18	30	4	7.5	9.3	—	1	10	0.37	CS94101....
 MNX 25/32/40	25	45	6.5	11	15	1	1	10	0.37	CS94218....
	32	55	7.5	17	18.6	1	1	10	0.37	CS94219....
	40	55	11	22.5	22.5	1	1	10	0.37	CS94190....
	45	85	12.5	25	25	2	2	1	1.20	ST19000....
 MNX 45/50/70/80	50	85	12.5	25	25	2	2	1	1.20	ST19001....
	70	100	18.6	33.5	37	2	2	1	1.20	ST19002....
	80	100	22	40	51	2	2	1	1.20	ST19003....
	95	160	25	45	59	2	2	1	3.10	CS94136....
 MNX 95/110/140	110	160	30	55	75	2	2	1	3.10	CS94137....
	140	160	40	75	90	2	2	1	3.10	CS94138....
	185	250	55	90	110	2	2	1	5.30	CS94139....
 MNX 185/225	225	300	63	110	132	2	2	1	5.30	CS94140....
	265	350	80	147	180	2	2	1	9.80	CS94142....
 MNX 265/325/400/550	325	400	90	180	200	2	2	1	9.80	CS94143....
	400	425	110	200	250	2	2	1	9.80	CS94144....
	550	650	160	315	1) ¹⁾	2	2	1	10.00	CS94145....
	DC operation									
 MN 16dc	16	30	7.5			1	—	1	0.68	SS94649....
	16	30	7.5			—	1	1	0.68	SS94650....



* For Voltage suffix refer page 6/7

1) Data available on request

CONTACTORS - TYPE MN WIDE BAND CONTACTORS

Conformance to IS 13947 (Part 4/Sec.1) and IEC:60947-4-1

- ◆ Suitable for applications where wide fluctuations in control supply voltage are observed.
- ◆ Wide band operation 55-110%



Contactor Type	Ie AC-3	Ie AC-1	Motor rating at 50Hz,415V	Built in auxiliary contacts		Qty per Packing	Wt approx. per Contactor	Catalogue No. *
 MN 9/12/16W  MN 25W	AC operation							
	[A]	[A]	[KW]	NO	NC	[No.]	[Kg]	
	9	25	4	1	—	10	0.37	SS94771....
	9	25	4	—	1	10	0.37	SS94772....
	12	30	5.5	1	—	10	0.37	SS94773....
	12	30	5.5	—	1	10	0.37	SS94774....
	16	30	7.5	1	—	10	0.37	SS94679....
	16	30	7.5	—	1	10	0.37	SS94680....
	25	45	11	1	1	10	0.60	SS94655....

* For Voltage suffix refer page 6/7

CONTACTORS - TYPE MN CONTACTORS FOR CAPACITOR SWITCHING

Conformance to IS 13947 (Part 4/Sec.1) and IEC:60947-4-1

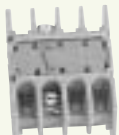
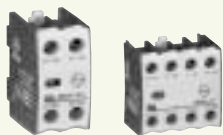



- ◆ Suitable for capacitor switching of single capacitor as well as auto-switching of a bank of capacitors.
- ◆ Increases the life of capacitors by reducing the switching surge.
- ◆ 2-auxillary contacts built-in.

Contactor Type	AC-6b	Ie AC-1	Built in auxiliary contacts		Qty per Packing	Wt approx. per Cont.	Catalogue No. *
 MN 16C  MN 32C	AC operation						
	kVAR	[A]	NO	NC	[No.]	[Kg]	
	10	25	1	1	1	0.62	SS94624....
25	50	1	2	1	1.00	SS94652....	

* For Voltage suffix refer page 6/7

ACCESSORIES

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Auxiliary Contact Block	le AC-15 at 415V	le AC-12	Auxiliary contact combinations		Qty	Wt	Catalogue No.
	[A]	[A]	NO	NC	[No.]	[Kg]	
 MN A1	4	10	1	—	10	0.03	CS941200000
			—	1	10		CS941210000
 MNX-A12T-2 MNX-A12T-4	4	—	10	—	10	0.03	CS941120000
	4	10	3	1	10		CS941130000
	4	—	2	2	10	CS941140000	
	4	10	1	3	10	CS941150000	
	4	—	—	4	10	CS941160000	
 MNX-A33S-2	4	—	10	0.03	10	0.05	CS941200000
	4	10	—	1	10		CS941210000
	4	—	2	—	10	CS941170000	
	4	10	1	1	10	CS941180000	
 MNX-A46S-2	4	—	—	2	10	0.03	CS941190000
	4	10	10	1	10		CS941120000
	4	—	3	1	10	CS941130000	
	4	10	2	2	10	CS941140000	
 MN S1/S2/S4/S6 MNX-S12D-0 MNX-S33B-0 MNX-S45B-0 MNX-S66B-0	4	10	1	1	1	0.05	SS942010000 ¹⁾
	4	—	1	1	1		SS942020000 ¹⁾
	4	10	1	1	1	SS942030000 ²⁾	
	4	—	1	1	1	SS942040000 ²⁾	
Surge Suppressor	For Contactor type		Rated control voltage		Qty	Wt	Catalogue No.
			Us		[No.]	[Kg]	
	MNX 9 - MNX 18 MNX 25, MNX 32		24 - 48V 110 - 240V 360-415V		5	0.025	CS94166 J000 CS94166 B000 CS94166 D000
	MN 16C, MN 32C MN16dc		24 - 48V 110 - 240V 360-415V		5	0.022	SS94623 J000 SS94623 B000 SS94623 D000
	MNX 45 - MNX 80		24 - 48Vdc 110 - 220Vdc		5	0.022	SS947815000 SS947812000
	MNX 95 MNX 110, MNX 140 MNX 185, MNX 225		110V 220-240V 360-525V		5	0.15	CS94164A000 CS94164B000 CS94164D000
	MNX 265 MNX 325 MNX 400		110V 220-240V 360-525V		5	0.15	CS94165A000 CS94165B000 CS94165D000

* No Surge Suppressor required for MNX 550 Contactor.

1) Provided along with Contactor


2) Additional auxiliary contact block to make 4NO+4NC combination

ACCESSORIES

Mechanical Interlock	For Contactor type	Qty per Packing	Wt approx. per accessory	Catalogue No.
		[No.]	[Kg]	
 MNX-M12S-0	MNX 9, MNX 12, MNX 18, MNX 25, MNX 32	5	0.04	CS941660000
	MN 9W, MN 12W, MN 16W MN 25W MN 16C, MN 32C	5	0.04	SS940710000
 MN-M1	MN 16dc	1	—	SS947660000
	MN 45 / MNX 45 / MNX 50 MN 65 / MNX 70 / MNX 80	1	0.45	CS941970000
 MNX-M33B-0	MN 95 / MNX 95 MN 110 / MNX 110 MN 140 / MNX 140	1	2.90	CS941930000
	MN 185 / MNX185 MN 225 / MNX 225	1	—	CS941940000
 MNX-M44B-0	MN 265 / MNX 265 MN 325 / MNX 325 MN 400 / MNX 400	1	5.50	CS941950000
	MN 550 / MNX 550	1	5.50	CS941960000
 MNX-M55B-0				
 MNX-M66B-0				

SPARES

SPARE COILS	For Contactor type	Qty per Packing [No.]	Wt approx.per coil [Kg]	Catalogue No. *
	AC operation			
MNX 9, 12, 18, 25, 32	MNX 9, MNX 12, MNX 18, MNX 25, MNX32	10	0.09	CS94105....
MN 9W, 12W, 16W, 16C	MN 9W, MN 12W, MN 16W MN 16C	10	0.09	SS94191....
MN 25W, MN 32C	MN 25W, MN 32C	10	0.12	SS94192....
MNX 45, MNX 50	MNX 45, MNX 50	10	0.12	CS94192....
MNX 70, MNX 80	MNX 70, MNX 80	10	0.12	CS94192....
MNX 95	MNX 95	1	0.20	CS94196....
MNX 110	MNX 110	1	0.20	CS94196....
MNX 140	MNX 140	1	0.20	CS94196....
MNX 45-80	MNX 185 MNX 225	1	0.20	CS94194....
MNX 95-140	MNX 265 MNX 325 MNX 400	1	0.64	CS94195....
MNX 265-400	MNX 550	1	0.70	CS94193....
DC operation				
MNX 550	MN16dc	1	—7	SS94651....

SPARE KITS	Contacts with mounting parts					
	For Contactor type	Contents	Qty [No.]	Wt [Kg]	Catalogue No.	
	MNX 9	Set of 3 moving contacts and 6 fixed contacts with hardware.	25sets	0.04	CS941230000	
	MN 9W		25sets	0.04	SS947020000	
	MNX 12		25sets	0.04	CS941240000	
	MN 12W		25sets	0.04	SS946250000	
	MNX18		25sets	0.04	CS941250000	
	MN 16dc		25sets	0.04	SS947030000	
	MN 16C, MN 16W					
	MNX 25		25sets	0.05	CS941270000	
	MN 25W		25sets	0.05	SS946780000	
	MN 32, MN 32C		25sets	0.05	SS946260000	
	MNX 45		10sets	0.12	CS941490000	
	MNX 50		10sets	0.12	CS941500000	
	MNX 70		10sets	0.12	CS941510000	
	MNX 80		1set	0.3	CS941520000	
	MNX 95		1set	0.3	CS941530000	
	MNX 110		1set	0.34	CS941540000	
	MNX 140		1set	0.4	CS941550000	
	MNX 185		1set	—	CS941560000	
	MNX 225		1set	—	CS941570000	
	MNX 265		1set	1	CS941590000	
	MNX 325		1set	1.1	CS941600000	
MNX 400	1set	1.1	CS941610000			
MNX 550	1set	—	CS941620000			

* For Voltage suffix refer page 6/7

Catalogue No. suffixes for rated control voltages

ORDERING INFORMATION:

Example for Contactor : MNX 9 Contactor - 240V, 50Hz, 1No
Ordering Information - **CS94106B000**

Example for Spare Coil : MNX 18 Spare Coil - 360V, 50Hz
Ordering Information - **CS94105C000**

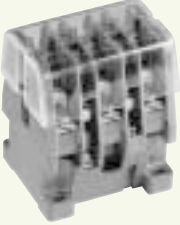
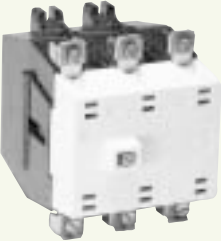
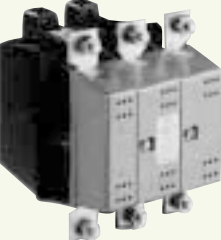

AC operation	Contactor type							
Rated control voltage (Us) V _{AC}	MNX 9, MNX 12, MNX 18 MNX 25, MNX 32, MN 9W, MN 12W, MN 16W, MN 16C	MN 25W MN 32C	MNX 45 MNX 50 MNX 70 MNX 80	MNX 95 MNX 110 MNX 140	MNX 185 MNX 225	MNX 265 MNX 325 MNX 400	MNX 550	
Coils at 50 Hz								
24	G000	G000	G000	G000	—	—	—	—
42	H000	H000	H000	H000	—	—	—	—
110	A000	A000	A000	A000	A000	A000	A000	A000
220	K000	K000	K000	K000	K000	K000	K000	K000
240	B000	B000	B000	B000	B000	B000	B000	B000
360	C000	C000	C000	—	—	—	—	—
380	L000	L000	L000	—	—	—	—	—
415	D000	D000	D000	D000	D000	D000	D000	D000
525	M000	M000	M000	M000	M000	M000	M000	—
DC operation	Contactor type							
Rated control voltage (Us) V _{DC}	MN16dc							
24	4000							
42	6000							
48	5000							
110	1000							
220	2000							

Note : 60Hz coils available on request.

POWER CONTACTORS - TYPE ML



Conformance to IS 13947 (Part 4/Sec.1) and IEC:60947-4-1

- ◆ Rugged construction for reliable operating in high ambients, humidity, undervoltage conditions.
- ◆ Built in 2NO+2NC auxiliary contacts.

Contactor Type	Ie AC-3	Ie AC-1	Motor rating at 50Hz, 415V	Built in auxiliary contacts		Qty per Packing	Wt approx. per Contactor	Catalogue No. *
 ML0/1/1.5	AC operation							
	[A]	[A]	[KW]	NO	NC	[No.]	[Kg]	
	12	16	5.5	2	2	10	0.50	SS90975....
	16	25	7.5	2	2	10	0.50	SS90851....
	25	25	11	2	2	10	0.50	SS91851....
 ML2/3	32	40	15	2	2	10	0.95	SS90701....
	40	45	22	2	2	10	0.95	SS90721....
 ML4/6	70	100	37	2	2	1	2.90	SS90910....
	110	125	55	2	2	1	3.00	SS90921....
 ML10/12	200	250	110	2	2	1	9.00	SS90935....
	300	400	168	2	2	1	9.2	SS91010....

* For voltage suffix refer page 6/11

ACCESSORIES

Auxiliary Contact Block	le AC-15 at 415V	le AC-12	Auxiliary contact combinations		Qty per Packing	Wt approx.per accessory	Catalogue No.
	[A]	[A]	NO	NC	[No.]	[Kg]	
 <p>For contactor type ML4/6 (Side mounted)</p>	4	10	1	1	10	0.10	SS914940000
 <p>For contactor type ML10/12 (Side mounted)</p>	4	10	1	1	10	0.10	SS914740000

- ◆ ML4/6/10/12 contactors are available with built in 2NO+2NC auxiliary contact block. Additional 1NO+1NC block can be fitted on either side ,providing 4NO+4NC auxiliary contacts.

SPARES

SPARE COILS		For Contactor type	Qty per Packing [No.]	Wt approx.per coil [Kg]	Catalogue No. *	
AC operation						
 ML1-1.5	ML0	10	0.076	SS90873....		
	ML1					
	ML1.5					
 ML2-3	ML2	10	0.22	SS90545....		
	ML3					
 ML4-6	ML4	1	0.31	SS91258....		
	ML6					
	ML10	1	1.20	SS91011....		
	ML12					
SPARE KITS		Contacts with mounting parts				
		For Contactor type	Contents	Qty per Packing [No.]	Wt approx.per set [Kg]	Catalogue No.
 ML1-1.5	ML0	Set of 3 moving contacts and 6 fixed contacts with hardware.	50sets	0.04	SS909780000	
	ML1		50sets	0.05	SS908960000	
	ML1.5		50sets	0.05	SS914670000	
 ML2-3	ML2		50sets	0.05	SS905440000	
	ML3		50sets	0.06	SS908480000	
	ML4		25sets	0.18	SS916600000	
 ML4-6	ML6		25sets	0.24	SS916700000	
	ML10		1set	1.10	SS909360000	
	ML12		1set	1.20	SS911270000	

* For voltage suffix refer page 6/11

Catalogue No. suffixes for rated control voltages

ORDERING INFORMATION:

Example for Contactor : ML2 Contactor - 240V, 50Hz
Ordering Information - **SS90701B000**


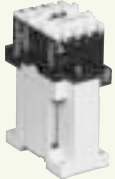
Example for Spare Coil : ML4 Spare Coil - 110V, 50Hz
Ordering Information - **SS91258A000**

AC operation	Contactor type			
Rated control voltage U_s V_{AC}	ML0 ML1 ML1.5	ML2 ML3	ML4 ML6	ML10 ML12
Coils at 50 Hz				
12	F000	—	—	—
24	G000	—	—	—
42	H000	H000	—	—
110	A000	A000	A000	A000
220	—	K000	K000	K000
220/230	K000	—	—	—
240	—	B000	B000	B000
240/250	B000	—	—	—
320	R000	R000	—	—
360	C000	C000	—	—
380	L000	L000	—	—
415	—	—	D000	D000
415/440	P000	P000	—	—
525	M000	M000	M000	M000

CONTROL CONTACTORS - TYPE MN

Conformance to IS 13947 (Part 5/Sec.1) and IEC:60947-5-1

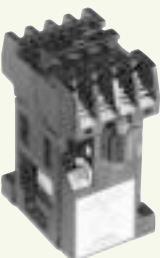
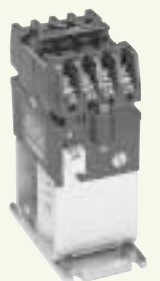
- ◆ Suitable to have maximum 8 NO to 8 NC Contact combinations.
- ◆ Suitable for snap fit mounting on 35mm Din rail.
- ◆ Alphanumeric terminal marking eliminates wiring error.

Contactor Type	Ie AC-1	Ie AC-15	Built in auxiliary contacts		Qty per Packing	Wt approx.per Contactor	Catalogue No. *
 MNO AC	AC operation						
	[A]		NO	NC	[No.]	[Kg]	
10	4	4 3 2 1 —	— 1 2 3 4	10	0.39	SS94660.... SS94661.... SS94662.... SS94663.... SS94664....	
 MNO DC	DC operation						
	[A]		NO	NC	[No.]	[Kg]	
10	4	4 3 2 1 —	— 1 2 3 4	10	0.68	SS94665.... SS94666.... SS94667.... SS94668.... SS94669....	

* For Voltage suffix refer page 6/15

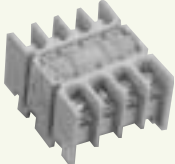

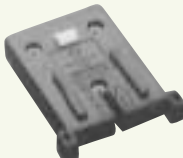

CONTROL CONTACTORS - TYPE MM

- ◆ Suitable to have as many as 25 convertible contact combinations using addon blocks.
- ◆ Ergonomical design gives mounting of contactors side by side with ease of inspection of contacts.
- ◆ Clear distinction between NO and NC contacts from front by a red dot on NC contact.




Contactor Type	Ie AC-3	Ie AC-1	Ie AC-15	Built in auxiliary contacts		Qty per Packing	Wt approx.per Contactor	Catalogue No. *
 MM00/01 AC	AC operation							
	[A]	[A]		NO	NC	[No.]	[Kg]	
7.5	10	4	2	2	10	0.43	SS92002....	
7.5	10	4	8	—	10	0.48	SS92010.... SS92011.... SS92012.... SS92013.... SS92014....	
 MM00/01 DC	DC operation							
	[A]	[A]		NO	NC	[No.]	[Kg]	
—	10	4	2	2	10	0.65	SS92007....	
—	10	4	8	—	10	0.65	SS92820.... SS92821.... SS92822.... SS92823.... SS92824....	

* For Voltage suffix refer page 6/15

ACCESSORIES

Auxiliary Contact Block	le AC-15 at 415V	le AC-12	Auxiliary contact combinations		Qty per Packing	Wt approx.per accessory	Catalogue No.
 <p>MNA1 For contactor type MN0ac,MN0dc (Top mounted)</p>	[A]	[A]	NO	NC	[No.]	[Kg]	
	4	10	1	—	10	0.10	SS947150000
			—	1	10		SS947160000
			2	—	10		SS940800000
			1	1	10		SS940810000
			—	2	10		SS940820000
			4	—	10		SS940830000
			3	1	10		SS940840000
			2	2	10		SS940850000
			1	3	10		SS940860000
		—	4	10		SS940870000	
Surge Suppressor	For Contactor type	Rated control voltage		Qty per Packing	Wt approx. per accessory	Catalogue No.	
 <p>MNS1/S2</p>	MN0 ac	Us		[No.]	[Kg]		
		24 - 48V 110 - 240V 360 - 415V		5	0.022	SS94623 J000 SS94623 B000 SS94623 D000	
		MN0 dc	24 - 48Vdc 110 - 220Vdc				SS947815000 SS947812000
Mechanical Interlock	For Contactor type			Qty per Packing	Wt approx. per accessory	Catalogue No.	
				[No.]	[Kg]		
	MN0ac			5	0.04	SS940710000	
	MN0dc			1	—	SS947660000	
Auxiliary Contact Block	le AC-15 415V,50Hz	Auxiliary contact combinations		Qty per Packing	Wt approx.per accessory	Catalogue No.	
 <p>For contactor type MM00AC,MM00DC</p>	[A]	NO		[No.]	[Kg]		
	4	1		10	0.005	SS92020000	
Rail mounting kit	For Contactor type	Version		Qty per Packing	Wt approx. per accessory	Catalogue No.	
	MM00 ac MM01 ac	with mounting screws and washers.		[No.]	[Kg]		
				10	0.032	SS913550000	

SPARES

SPARE COILS		For Contactor type	Qty per Packing [No.]	Wt approx.per coil [Kg]	Catalogue No. *	
AC operation						
 MNO	MM00	10	0.09	SS91353....		
	MM01					
	MNO	10	0.09	SS94191....		
DC operation						
 MN0DC	MM00	10	0.30	SS91354....		
	MM01					
	MNO	10	—	SS94651....		
SPARE KITS		Contacts with mounting parts				
		For Contactor type	Contents	Qty per Packing [No.]	Wt approx.per set [Kg]	Catalogue No.
	MM00AC	Set of 3 moving contacts and 6 fixed contacts with hardware.	1 set	0.04	SS913520000	
	MM01AC					
	MNO					1)
MNO DC	1)					

* For voltage suffix refer page 6/15

1) Available on request.

Catalogue No. suffixes for rated control voltages

ORDERING INFORMATION:


Example for Contactor : MN0 Contactor - 240V, 50Hz
 Ordering Information - **SS94660B000**

Example for Spare Coil : MN0 Spare Coil - 360V, 50Hz
 Ordering Information - **SS94191C000**

AC operation	Contactor type		
Rated control voltage U_s V_{AC}	MM00	MM01	MN0
Coils at 50 Hz			
24	G000	G000	G000
42	H000	H000	H000
110	A000	A000	A000
220	—	—	K000
240	B000	B000	B000
360	—	—	C000
415	D000	D000	D000
525	—	—	M000
DC operation	Contactor type		
Rated control voltage U_s V_{DC7}	MM00	MM01	MN0
24	4000	4000	4000
42	6000	6000	6000
48	5000	5000	5000
110	1000	1000	1000
220	2000	2000	2000

CONTACTORS - TYPE MR SINGLE POLE CONTACTORS



Conformance to IS 13947 (Part 4/Sec.1) and IEC:60947-4-1

Contactor Type	Ie AC-3	Ie AC-1	Motor rating at 50Hz			Built in auxiliary contacts	Qty per Packing	Wt approx.per Contactor	Catalogue No. *	
			220V 240V	380V 415V	500V					
 MR1	AC operation									
	[A]	[A]	[KW]	[KW]	[KW]	NO	NC	[No.]	[Kg]	
	25	40	3.7	—	—	—	—	1	0.25	CS 94052....

6



CONTACTORS - TYPE MU RUGGED POWER CONTACTORS

Conformance to IS 13947 (Part 4/Sec.1) and IEC:60947-4-1

Contactor Type	Ie AC-3	Ie AC-1	Motor rating at 50Hz			Built in auxiliary contacts	Qty per Packing	Wt approx.per Contactor	Catalogue No. *	
			220V 240V	380V 415V	500V					
 MU1	AC operation									
	[A]	[A]	[KW]	[KW]	[KW]	NO	NC	[No.]	[Kg]	
	16	32	—	10hp	—	—	—	1	0.8	CS94007....
 MU2	AC operation									
	[A]	[A]	[KW]	[KW]	[KW]	NO	NC	[No.]	[Kg]	
	25	40	—	15hp	—	—	—	1	0.8	CS94008....

* For Voltage suffix refer page 6/7

SPARES


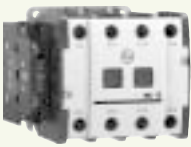
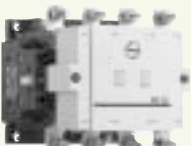
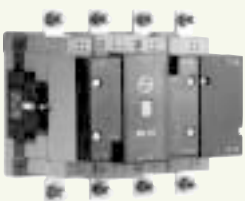
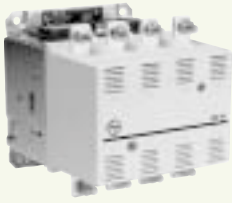
SPARE COILS	For Contactor type	Qty per Packing [No.]	Wt approx.per coil [Kg]	Catalogue No. *
 <p>MU1/MU2</p>	AC operation			
	MU1 / MU2	1	0.15	CS94009
SPARE KITS	Contacts with mounting parts			
	For Contactor type	Qty per Packing [No.]	Wt approx.per coil [Kg]	Catalogue No. *
	MU1	1	0.05	CS94010
	MU2	1	0.05	CS94011

* For voltage suffix refer page 6/11

CONTACTORS - TYPE MC

FOUR POLE CONTACTORS

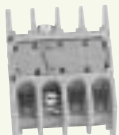





Conformance to IS 13947 (Part 4/Sec.1) and IEC:60947-4-1

Contactor Type	Ie AC-3	Ie AC-1	Motor rating at 50Hz			Built in auxiliary contacts		Qty per Packing	Wt approx.per Contactor	Catalogue No. *
			220V 240V	380V 415V	500V					
 MC 01/02/03	AC operation									
	[A]	[A]	4			NO	NC	[No.]	[Kg]	
	9	16		7.5		—	—	10	0.38	SS94970....
	12	25	1)	15	1)	—	—	10	0.38	SS94971....
16	32		20		—	—	10	0.38	SS94972....	
 MC 11/12	25	50	1)	30	1)	1	1	1	0.84	CS94047....
	35	63		40		1	1	1	0.84	CS94048....
 MC 21/22	45	80	1)	50	1)	1	1	1	1.24	SS94977....
	65	100		62.5		1	1	1	1.24	SS94978....
 MC 31/32/33	80	130		82.5		1	1	1	3.63	SS94980....
	100	160	1)	100	1)	1	1	1	3.63	SS94981....
	120	200		125		1	1	1	3.63	SS94982....
 MC 88/99	185	250	1)	1)	1)	-	-	1	6.10	ST40095....
	320	450	1)	1)	1)	-	-	1	10.80	ST40096....

* For Voltage suffix refer page 6/7

1) Data available on request

ACCESSORIES


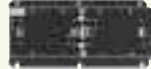
Auxillary Contact Block	le AC-15 at 415V	le AC-12	Auxiliary contact combinations		Qty	Wt	Catalogue No.
	[A]	[A]	NO	NC	[No.]	[Kg]	
 000000	4	10	1	—	10	0.03	SS947150000
			—	1	10		SS947160000
			2	—	10		SS940800000
			1	1	10		SS940810000
			—	2	10		SS940820000
			4	10	4		—
 MC 01, MC02, MC03	4	10	3	1	10	0.05	SS940840000
			2	2	10		SS940850000
			1	3	10		SS940860000
			—	4	10		SS940870000
			1	1	1		SS940720000
			1	1	1		SS940730000
1	1	1	SS940900000				
1	1	1	SS940920000				
Mechanical Interlock	For Contactor type				Qty per Packing	Wt approx. per accessory	Catalogue No.
 MC 01, MC 02, MC 03	MC 01, MC 02, MC 03				5	0.04	SS940710000
 MC 11, MC 12	MC 11, MC 12				1	0.4	CS940490000
 MC 21, MC 22	MC 21, MC 22				1	0.45	SS949900000
 MC 31, MC 32, MC 33	MC 31, MC 32, MC 33				1	2.8	SS949920000

* No Surge Supressor required for MNX 550 Contactor.

1) Provided along with Contactor

2) Additional auxiliary contact block to make 4NO+4NC combination

ACCESSORIES


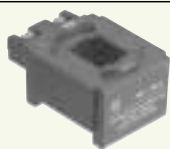


Auxiliary Contact Block	le AC-15 at 415V	le AC-12	Auxiliary contact combinations		Qty	Wt	Catalogue No.
	[A]	[A]	NO	NC	[No.]	[Kg]	
 MU - A1	4	10	1	1	1	0.01	SS940720000 SS940730000
		1	1				
	4	10	-	1	1	0.01	SS940740000 SS940750000
Mechanical Interlock	For Contactor type				Qty per Packing	Wt approx. per accessory	Catalogue No.
 MU 1, MU 2	MU 1, MU 2				1	0.45	CS941970000











* No Surge Suppressor required for MNX 550 Contactor.

1) Provided along with Contactor

2) Additional auxiliary contact block to make 4NO+4NC combination

SPARES

SPARE COILS	For Contactor type	Qty per Packing [No.]	Wt approx.per coil [Kg]	Catalogue No. *
	AC operation			
 <p>MC 01/02/03</p>	MC 01/02/03	10	0.09	SS94191...
 <p>MC 11/12</p>	MC 11/12	10	0.12	CS94009...
 <p>MC 21/22</p>	MC 21/22	10	0.12	SS94193...
 <p>MC 31/32/33</p>	MC 31/32/33	1	0.20	SS94196...

SPARE KITS	Contacts with mounting parts				
	For Contactor type	Contents	Qty per Packing [No.]	Wt approx.per set [Kg]	Catalogue No.
         	MC 01	Set of 4 moving contacts and 8 fixed contacts with hardware	25 Sets	0.04	SS 947020000
	MC 02		25 Sets	0.04	SS 946250000
	MC 03		25 Sets	0.04	SS 947030000
	MC 11		1 Set	0.1	CS 940570000
	MC 12		1 Set	0.1	CS 941040000
	MC 21		1 Set	0.3	SS 949930000
	MC 22		1 Set	0.3	SS 949940000
	MC 31		1 Set	0.4	SS 949950000
	MC 32		1 Set	0.4	SS 949960000
	MC 33		1 Set	0.4	SS 949970000

* For Voltage suffix refer page 6/7

TECHNICAL DATA - TYPE MNX

MNX 9/12/18/25/32 CONTACTORS

		MNX 9	MNX 12	MNX 18	MNX 25	MNX 32
Mechanical Life	Opns.	15x10 ⁶	15x10 ⁶	15x10 ⁶	10x10 ⁶	10x10 ⁶
Rated insulation voltage	U _i	690V	690V	690V	690V	690V
Rated impulse withstand	U _{imp}	8KV	8KV	8KV	8KV	8KV
Service temperature	°C	-20 to +55	-20 to +55	-20 to +55	-20 to +55	-20 to +55
Utilisation category 3ph,415V,50Hz						
	AC-1	25A	30A	30A	45A	55A7
	AC-2	9A	12A	16A	25A	32A
	AC-3	4kw/5.5hp/9A	5.5kw/7.5hp/12A	9.3kw/12.5hp/18A	11kw/15hp/25A	17kw/22.5hp/32A
	AC-4	4kw/5.5hp/9A	5.5kw/7.5hp/12A	9.3kw/12.5hp/18A	11kw/15hp/25A	17kw/22.5hp/32A
Operational current, I _e , for AC-4 at 415V,50Hz for 200,000 cycles.	A	5.5	7.1	8	13.5	16
Making capacity	A	450	450	450	480	550
Breaking capacity	A	200	250	250	400	500
Capacitor switching delta connected,415V,50Hz	kVAR	6	7.5	9	15	20
Max. frequency of operating op.cycles/hr	Mechanical AC1 AC2 AC3 AC4	7200 3000 750 750 300	7200 3000 750 750 300	7200 3000 750 750 300	7200 3000 750 750 300	7200 3000 750 750 300
Stator duty-415V,50Hz - Duty factor -	20% 40% 60%	14.5A 14.5A 11A	18A 18A 15A	24A 24A 20A	38A 38A 31A	48A 48A 40A
Rotor duty-delta connected-Duty factor -	20% 40% 60%	22A 22A 16A	27A 27A 22A	36A 36A 30A	57A 57A 46A	72A 72A 66A
Main terminal capacity	Lug(mm ²) Wires(mm ²)	1x6 2x4	1x6 2x4	1x6 2x4	1x10 2x6	1x10 2x6
Aux.terminal capacity	Wires(mm ²)	2x2.5	2x2.5	2x2.5	—	—
Pick up time	msec	10-12	10-12	10-12	10-12	10-12
Drop off time	msec	7-18	7-18	7-18	7-18	7-18
Operating limits	(%U _c)	80-110	80-110	80-110	80-110	80-110
Coil Consumption at 50Hz						
Pick-up	VA	68	68	68	100	100
Hold-on	VA	11	11	11	15	15

TECHNICAL DATA - TYPE MNX

MNX 45/50/70/80 CONTACTORS

		MNX 45	MNX 50	MNX 70	MNX 80
Mechanical Life	Opns.	10x10 ⁶	10x10 ⁶	10x10 ⁶	10x10 ⁶
Rated insulation voltage	<i>U_i</i>	690V	690V	690V	690V
Rated impulse withstand	<i>U_{imp}</i>	8KV	8KV	8KV	8KV
Service temperature	°C	-20 to +55	-20 to +55	-20 to +55	-20 to +55
Utilisation category 3ph,415V,50Hz					
	AC-1	80A	80A	100A	100A
	AC-2	45A	50A	70A	80A
	AC-3	25kw/34hp/45A	26kw/35hp/50A	37kw/50hp/70A	40kw/54hp/80A
	AC-4	25kw/34hp/45A	26kw/35hp/50A	30kw/40hp/63A	37kw/50hp/70A
Operational current, <i>I_e</i> , for AC-4 at 415V,50Hz for 200,000 cycles.	A	24	24	28.5	43
Making capacity	A	900	900	900	900
Breaking capacity	A	750	750	750	750
Capacitor switching delta connected,415V,50Hz	kVAR	30	30	35	40
Max. frequency of operating op.cycles/hr	Mechanical AC1 AC2 AC3 AC4	3600 3000 750 750 300	3600 3000 750 750 300	3600 3000 750 750 300	3600 3000 750 750 300
Stator duty-415V,50Hz - Duty factor -	20% 40% 60%	68A 68A 56A	98A 98A 81A	— — —	— — —
Rotor duty-delta connected-Duty factor -	20% 40% 60%	102A 102A 84A	147A 147A 121A	— — —	— — —
Main terminal capacity	Lug(mm ²) Wires(mm ²)	1x35 —	1x35 —	1x35 —	1x35 —z
Aux.terminal capacity	Wires(mm ²)	2x2.5	2x2.5	2x2.5	2x2.5
Pick up time	msec	15-35	15-35	15-35	15-35
Drop off time	msec	10-25	10-25	10-25	10-25
Operating limits	(% <i>U_c</i>)	80-110	80-110	80-110	80-110
Coil Consumption at 50Hz					
	Pick-up VA	190	190	190	190
	Hold-on VA	21	21	21	21

TECHNICAL DATA - TYPE MNX

MNX 95/110/140 CONTACTORS

		MNX 95	MNX 110	MNX 140
Mechanical Life	Opns.	10x10 ⁶	10x10 ⁶	10x10 ⁶
Rated insulation voltage	U _i	1000V	1000V	1000V
Rated impulse withstand	U _{imp}	8KV	8KV	8KV
Service temperature	°C	-20 to +55	-20 to +55	-20 to +55
Utilisation category 3ph,415V,50Hz				
	AC-1	160A	160A	160A
	AC-2	95A	110A	140A
	AC-3	45kw/60hp/95A	55kw/75hp/110A	75kw/100hp/140A
	AC-4	45kw/60hp/95A	55kw/75hp/110A	75kw/100hp/140A
Operational current, I _e , for AC-4 at 415V,50Hz for 200,000 cycles.	A	53	58	66
Making capacity	A	1680	1680	1800
Breaking capacity	A	1400	1400	1600
Capacitor switching delta connected,415V,50Hz	kVAR	65	65	70
Max. frequency of operating op.cycles/hr	Mechanical AC1 AC2 AC3 AC4	3600 3000 750 750 300	3600 3000 750 750 300	3600 3000 750 750 300
Stator duty-415V,50Hz - Duty factor -	20% 40% 60%	143A 143A 120A	165A 165A 135A	210A 210A 175A
Rotor duty-delta connected-Duty factor -	20% 40% 60%	214A 214A 180A	250A 250A 203A	315A 315A 262A
Main terminal capacity	Lug(mm ²) Wires(mm ²)	1x120 —	1x120 —	1x120 —
Aux.terminal capacity	Wires(mm ²)	2x2.5	2x2.5	2x2.5
Pick up time	msec	20-40	20-40	20-40
Drop off time	msec	10-25	10-25	10-25
Operating limits	(%U _c)	80-110	80-110	80-110
Coil Consumption at 50Hz				
Pick-up	VA	550	550	550
Hold-on	VA	36	36	36

TECHNICAL DATA - TYPE MNX

MNX 185/225 CONTACTORS

		MNX 185	MNX 225
Mechanical Life	Opns.	10x10 ⁶	10x10 ⁶
Rated insulation voltage	U _i	1000 V	1000 V
Rated impulse withstand	U _{imp}	8KV	8KV
Service temperature	°C	-20 to +55	-20 to +55
Utilisation category 3ph,415V,50Hz			
	AC-1	250A	300A
	AC-2	185 A	225 A
	AC-3	90kw/125 hp/185A	110kw/150hp/225A
	AC-4	90kw/125 hp/160 A	100kw/136hp/200 A
Operational current, I _e , for AC-4 at 415V,50Hz for 200,000 cycles.	A	90	100
Making capacity		2220	2400
Breaking capacity		1850	2000
Capacitor switching delta connected, 415V,50Hz	kVAR	100	125
Max. frequency of operating op.cycles/hr	Mechanical AC1 AC2 AC3 AC4	3600 3000 750 750 250	3600 3000 750 750 250
Stator duty-415V,50Hz - Duty factor -	20% 40% 60%	1)	1)
Rotor duty-delta connected-Duty factor -	20% 40% 60%	1)	1)
Main terminal capacity	Lug(mm ²) Wires(mm ²)	1x185 —	1x185 —
Aux.terminal capacity	Wires(mm ²)	2 x 2.5	2 x 2.5
Pick up time	msec	20-45	20-45
Drop off time	msec	10-25	10-25
Operating limits	(%U _c)	80-110	80-110
Coil Consumption at 50Hz			
	Pick-up VA	960	960
	Hold-on VA	56	56

Note : 1) Data available on request.

TECHNICAL DATA - TYPE MNX

MNX 265/325/400/550 CONTACTORS

		MNX 265	MNX 325	MNX 400	MNX 550
Mechanical Life	Opns.	10x10 ⁶	10x10 ⁶	10x10 ⁶	10x10 ⁶
Rated insulation voltage	U _i	1000V	1000V	1000V	1000V
Rated impulse withstand	U _{imp}	8KV	8KV	8KV	8KV
Service temperature	°C	-20 to +55	-20 to +55	-20 to +55	-5 to +55
Utilisation category 3ph,415V,50Hz					
	AC-1	350A	400A	425A	650A
	AC-2	265A	325A	400A	550A
	AC-3	147kw/265A	180kw/245hp/325A	200kw/270hp/400A	315kw/425hp/ 550A
	AC-4	130kw/175hp/235A	140kw/190hp/250A	150kw/200hp/275A	200kw/270hp/550A
Operational current, I _e , for AC-4 at 415V,50Hz for 200,000 cycles.	A	120	140	150	150
Making capacity	A	4000	4500	4500	5500
Breaking capacity	A	3200	4000	4000	4500
Capacitor switching delta connected,415V,50Hz	kVAR	150	175	175	250
Max. frequency of operating op.cycles/hr	Mechanical AC1 AC2 AC3 AC4	3600 3000 750 750 150	3600 3000 750 750 150	3600 3000 750 750 150	1200 750 750 150 150
Stator duty-415V,50Hz - Duty factor -	20% 40% 60%	332A 332A 282A	407A 407A 340A	500A 500A 425A	1) 1)
Rotor duty-delta connected-Duty factor -	20% 40% 60%	498A 498A 423A	610A 610A 510A	750A 750A 635A	1) 1)
Main terminal capacity	Lug(mm ²) Wires(mm ²)	2x240/1x300 —	2x240/1x300 —	2x240/1x300 —	2x240/1x300 —
Aux.terminal capacity	Wires(mm ²)	2x2.5	2x2.5	2x2.5	2x2.5
Pick up time	msec	20-45	20-45	20-45	50-60
Drop off time	msec	10-25	10-25	10-25	150-170
Operating limits	(%U _c)	80-110	80-110	80-110	80-110
Coil Consumption at 50Hz					
	Pick-up VA	2100	2100	2100	1000
	Hold-on VA	95	95	95	25

Note : 1) Data available on request.

TECHNICAL DATA - TYPE MN (WIDE - BAND)

MN 9W/12W/16W/25W CONTACTORS

		MN 9W	MN 12W	MN 16W	MN 25W
Mechanical Life	Opns.	10x10 ⁶	10x10 ⁶	10x10 ⁶	10x10 ⁶
Rated insulation voltage	U_i	690V	690V	690V	690V
Rated impulse withstand	U_{imp}	8KV	8KV	8KV	8KV
Service temperature	°C	-20 to +55	-20 to +55	-20 to +55	-20 to +55
Utilisation category 3ph,415V,50Hz					
	AC-1	25A	30A	30A	45A
	AC-2	9A	12A	16A	25A
	AC-3	4kw/5.5hp/9A	5.5kw/7.5hp/12A	7.5kw/10hp/16A	11kw/15hp/25A
	AC-4	4kw/5.5hp/9A	5.5kw/7.5hp/12A	7.5kw/10hp/16A	11kw/15hp/25A
Making capacity	A	450	450	450	480
Breaking capacity	A	200	250	250	400
Capacitor switching delta connected,415V,50Hz	kVAR	6	7.5	9	15
Max. frequency of operating op.cycles/hr	Mechanical	7200	7200	7200	7200
	AC1	3000	3000	3000	3000
	AC2	750	750	750	750
	AC3	750	750	750	750
	AC4	300	300	300	300
Stator duty-415V,50Hz - Duty factor -					
	20%	14.5A	18A	24A	38A
	40%	14.5A	18A	24A	38A
	60%	11A	15A	20A	31A
Rotor duty-delta connected-Duty factor -					
	20%	22A	27A	36A	57A
	40%	22A	27A	36A	57A
	60%	16A	22A	30A	46A
Main terminal capacity	Lug(mm ²)	1x6	1x6	1x6	1x10
	Wires(mm ²)	2x2.5	2x2.5	2x2.5	2x4
Aux.terminal capacity	Wires(mm ²)	2x2.5	2x2.5	2x2.5	2x2.5
Pick up time	msec	10-22	10-22	10-22	13-25
Drop off time	msec	7-18	7-18	7-18	8-18
Operating limits	(%Uc)	55-110	55-110	55-110	55-110
Coil Consumption at 50Hz					
	Pick-up VA	68	68	68	100
	Hold-on VA	11	11	11	15

TECHNICAL DATA - TYPE MN (CAPACITOR DUTY)

MN 16C/32C CONTACTORS

		MN 16C	MN 32C
Mechanical Life	Opns.	10x10 ⁶	10x10 ⁶
Rated insulation voltage	<i>U_i</i>	690V	690V
Rated impulse withstand	<i>U_{imp}</i>	8KV	8KV
Service temperature	°C	-20 to +55	-20 to +55
Utilisation category 3ph,415V,50Hz AC-6b		10kVAR	25kVAR
Operating limits (% <i>U_c</i>)		80-110	80-110
Coil Consumption at 50 Hz pick-up	VA	68	100
Coil Consumption at 50 Hz hold-on	VA	11	15

TECHNICAL DATA - TYPE ML

ML0/1/1.5/2/3 CONTACTORS

		ML0	ML1	ML1.5	ML2	ML3
Mechanical Life	Opns.	15x10 ⁶	15x10 ⁶	15x10 ⁶	10x10 ⁶	10x10 ⁶
Rated insulation voltage	U _i	500V	500V	500V	500V	500V
Rated impulse withstand	U _{imp}	8KV	8KV	8KV	8KV	8KV
Service temperature	°C	-20 to +55	-20 to +55	-20 to +55	-20 to +55	-20 to +55
Utilisation category 3ph,415V,50Hz						
	AC-1	16A	25A	25A	40A	45A
	AC-2	12A	16A	25A	32A	40A
	AC-3	5.5kw/7.5hp/12A	7.5kw/10hp/16A	11kw/15hp/25A	15kw/20hp/32A	22kw/30hp/40A
	AC-4	4.5kw/6hp/10A	7.5Kw/10hp/16A	9kw/12.5hp/21A	15kw/20hp/32A	22kw/30hp/40A
Operational current, I _e , for AC-4 at 415V,50Hz for 300,000 cycles.	A	6.3	10	13.5	17	22
Making capacity	A	120	192	252	400	480
Breaking capacity	A	100	160	210	320	400
Capacitor switching delta connected,415V,50Hz	kVAR	3	8	13	20	20
Max. frequency of operating op.cycles/hr	Mechanical AC1 AC2 AC3 AC4	3000 3000 750 750 250	3000 3000 750 750 250	3000 3000 750 750 250	2000 750 750 750 250	2000 750 750 750 250
Stator duty-415V,50Hz - Duty factor -	20% 40% 60%	15.5A 15.5A 12.5A	24A 24A 20A	37A 37A 30A	48A 48A 40A	60A 60A 50A
Rotor duty-delta connected-Duty factor -	20% 40% 60%	23A 23A 19A	36A 36A 30A	56A 56A 44A	72A 72A 60A	90A 90A 75A
Main terminal capacity	Lug(mm ²) Wires(mm ²)	16 2x10	16 2x10	16 2x10	50 2x25	50 2x25
Aux.terminal capacity	Wires(mm ²)	2x2.5	2x2.5	2x2.5	2x2.5	2x2.5
Pick up time	msec	5-35	5-35	5-35	10-35	10-35
Drop off time	msec	5-20	5-20	5-20	5-25	5-25
Operating limits	(%U _c)	80-110	80-110	80-110	80-110	80-110
Coil Consumption at 50Hz						
	Pick-up VA	60	60	60	120	120
	Hold-on VA	15	15	15	20	20

TECHNICAL DATA - TYPE ML

ML4/6/10/12 CONTACTORS

		ML4	ML6	ML10	ML12
Mechanical Life	Opns.	10x10 ⁶	10x10 ⁶	10x10 ⁶	10x10 ⁶
Rated insulation voltage	U _i	660V	660V	660V	660V
Rated impulse withstand	U _{imp}	8KV	8KV	8KV	8KV
Service temperature	°C	-20 to +55	-20 to +55	-20 to +55	-20 to +55
Utilisation category 3ph,415V,50Hz					
	AC-1	100A	125A	250A	400A
	AC-2	70A	110A	200A	300A
	AC-3	37kw/50hp/70A	55kw/75hp/110A	110kw/150hp/200A	168kw/225hp/300A
	AC-4	37kw/50hp/70A	45kw/60hp/85A	110kw/150hp/200A	140kw/190hp/250A
Operational current, I _e , for AC-4 at 415V,50Hz for 300,000 cycles.	A	35	46	90	112
Making capacity	A	840	1200	2500	3000
Breaking capacity	A	700	1000	2000	2500
Capacitor switching delta connected,415V,50Hz	kVAR	50	65	125	175
Max. frequency of operating op.cycles/hr	Mechanical AC1 AC2 AC3 AC4	1200 1000 500 750 250	1200 750 500 750 250	1200 750 500 500 250	1200 750 500 500 250
Stator duty-415V,50Hz - Duty factor -	20% 40% 60%	95A 95A 78A	165A 165A 135A	250A 250A 206A	375A 375A 310A
Rotor duty-delta connected-Duty factor -	20% 40% 60%	157A 157A 118A	270A 270A 206A	370A 370A 310A	560A 560A 465A
Main terminal capacity	Lug(mm ²) Wires(mm ²)	50 —	95 —	240 —	240 —
Aux.terminal capacity	Wires(mm ²)	2x2.5	2x2.5	2x2.5	2x2.5
Pick up time	msec	10-35	10-35	15-45	15-45
Drop off time	msec	10-40	10-40	5-25	5-25
Operating limits	(%U _c)	80-110	80-110	80-110	80-110
Coil Consumption at 50Hz					
	Pick-up VA	450	450	1450	1450
	Hold-on VA	50	50	85	85

TECHNICAL DATA - TYPE MM

MM CONTACTORS

		MM00-AC	MM01-AC	MM00-DC	MM01-DC
Mechanical Life	Opns.	10x10 ⁶	10x10 ⁶	10x10 ⁶	10x10 ⁶
Rated insulation voltage	<i>U_i</i>	690V	690V	690V	690V
Rated impulse withstand	<i>U_{imp}</i>	8KV	8KV	8KV	8KV
Service temperature	°C	-20 to +55	-20 to +55	-20 to +55	-20 to +55
Utilisation category 3ph,415V,50Hz	AC-1	10A	10A	10A	10A
	AC-15	4A	4A	4A	4A
Main terminal capacity	Lug(mm ²)				
	Wires(mm ²)	2x2.5	2x2.5	2x2.5	2x2.5
Operating limits	(%U _c)	80-110	80-110	80-110	80-110
Coil Consumption at 50Hz	Pick-up	85VA	85VA	8W	8W
	Hold-on	16VA	16VA	—	—

TECHNICAL DATA - TYPE MN

MN 0 CONTACTORS

		MN0 ac	MN0 dc
Mechanical Life	Opns.	10x10 ⁶	10x10 ⁶
Rated insulation voltage,	<i>U_i</i>	690V	690V
Rated impulse withstand,	<i>U_{imp}</i>	8KV	8KV
Service temperature	°C	-20 to +55	-20 to +55
Utilisation category 3ph,415V,50Hz			
	AC-1	10A	10A
	AC-15	4A	4A
Operating limits (% U _c)		80-110	80-110
Coil Consumption at 50 Hz			
	pick-up	68VA	8W
	hold-on	11VA	8W

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TECHNICAL DATA - TYPE MU

MU1/2 CONTACTORS

		MU1	MU2
Mechanical Life	Opns.	10x10 ⁶	10x10 ⁶
Rated insulation voltage	U _i	690V	690V
Rated impulse withstand	U _{imp}	—	—
Service temperature	°C	-5 to + 55	-5 to + 55
Utilisation category 3ph, 415V, 50Hz			
	AC-1	32A	40A
	AC-2	16A	25A
	AC-3	7.5kw/10hp/16A	11kw/15hp/25A
	AC-4	16A	25A
Operational current, I _e , for AC-4 at 415V, 50Hz for 200,000 cycles.	A	12A	16A
Making capacity	A	192	300
Breaking capacity	A	160	250
Capacitor switching delta connected, 415V, 50Hz	kVAR	7.5	9
Max. frequency of operating op.cycles/hr	Mechanical AC1 AC2 AC3 AC4	7200 3000 750 750 300	7200 3000 750 750 300
Stator duty-415V, 50Hz - Duty factor -	20% 40% 60%	24A 24A 20A	38A 38A 31A
Rotor duty-delta connected-Duty factor -	20% 40% 60%	36A 36A 30A	57A 57A 46A
Main terminal capacity	Lug(mm ²) Wires(mm ²)	16 2x10	16 2x10
Aux.terminal capacity	Wires(mm ²)	—	—
Pick up time	msec	10-25	10-25
Drop off time	msec	9-21	9-21
Operating limits	(%U _c)	50-110	50-110
Coil Consumption at 50Hz			
Pick-up	VA	180	180
Hold-on	VA	22	22

TECHNICAL DATA - TYPE MC

MC 01/02/03/11/12 CONTACTORS

		MC01	MC02	MC03	MC11	MC12
Mechanical Life	Opns.	15x10 ⁶	15x10 ⁶	15x10 ⁶	15x10 ⁶	15x10 ⁶
Rated insulation voltage	U _i	690V	690V	690V	690V	690V
Rated impulse withstand	U _{imp}	8KV	8KV	8KV	8KV	8KV
Service temperature	°C	-20° to 55°	-20° to 55°	-20° to 55°	-20° to 55°	-20° to 55°
Utilisation category 3ph, 415V, 50Hz						
	AC-1	16A	25A	32A	50A	63A
	AC-2	-	-	-	-	-
	AC-3	9A	12A	16A	25A	35A
	AC-4	-	-	-	-	-
Operational current, I _e , for AC-4 at 415V, 50Hz for 200,000 cycles.	A	*	*	*	*	*
Making capacity	A	10X I _e (AC-3)				
Breaking capacity	A	10X I _e (AC-3)				
Capacitor switching delta connected, 415V, 50Hz	kVAR	-	-	-	-	-
Max. frequency of operating op.cycles/hr	Mechanical AC1 AC3	7200 3000 750	7200 3000 750	7200 3000 750	7200 3000 750	7200 3000 750
Stator duty-415V, 50Hz - Duty factor -	20% 40% 60%	* * *	* * *	* * *	* * *	* * *
Rotor duty-delta connected-Duty factor -	20% 40% 60%	* * *	* * *	* * *	* * *	* * *
Main terminal capacity	Lug(mm ²) Wires(mm ²)	1x6	1x6	1x16	1x16	1x16
Aux.terminal capacity	Wires(mm ²)	-	-	-	-	-
Pick up time	msec	10-22	10-22	10-25	10-25	10-25
Drop off time	msec	7-18	7-18	7-18	9-21	9-21
Operating limits	(%U _c)	80-110	80-110	80-110	80-110	80-110
Coil Consumption at 50Hz						
	Pick-up VA	68	68	180	180	180
	Hold-on VA	11	11	22	22	22

* Data available on request

TECHNICAL DATA - TYPE MC

MC 21/22/31/32/33 CONTACTORS

		MC21	MC22	MC31	MC32	MC33
Mechanical Life	Opns.	10x10 ⁶	10x10 ⁶	10x10 ⁶	10x10 ⁶	10x10 ⁶
Rated insulation voltage	U _i	690V	690V	690V	690V	690V
Rated impulse withstand	U _{imp}	8KV	8KV	8KV	8KV	8KV
Service temperature	°C	-20° to 55°	-20° to 55°	-20° to 55°	-20° to 55°	-20° to 55°
Utilisation category 3ph, 415V, 50Hz						
	AC-1	80A	100A	130A	160A	200A
	AC-2	–	–	–	–	–
	AC-3	45A	65A	80A	100A	120A
	AC-4	–	–	–	–	–
Operational current, I _e , for AC-4 at 415V, 50Hz for 200,000 cycles.	A	*	*	*	*	*
Making capacity	A	10X I _e (AC-3)				
Breaking capacity	A	10X I _e (AC-3)				
Capacitor switching delta connected, 415V, 50Hz	kVAR	–	–	–	–	–
Max. frequency of operating op.cycles/hr	Mechanical AC1 AC3	7200 3000 750	7200 3000 750	2400 2400 750	2400 2400 750	2400 2400 750
Stator duty-415V, 50Hz - Duty factor -	20% 40% 60%	* * *	* * *	* * *	* * *	* * *
Rotor duty-delta connected-Duty factor -	20% 40% 60%	* * *	* * *	* * *	* * *	* * *
Main terminal capacity	Lug(mm ²) Wires(mm ²)	1x35	1x35	1x120	1x120	1x120
Aux.terminal capacity	Wires(mm ²)	–	–	–	–	–
Pick up time	msec	15-35	15-35	20-40	20-40	20-40
Drop off time	msec	10-25	10-25	10-25	10-25	10-25
Operating limits	(%U _c)	80-110	80-110	80-110	80-110	80-110
Coil Consumption at 50Hz						
Pick-up	VA	190	190	550	550	550
Hold-on	VA	22	22	36	36	36

* Data available on request

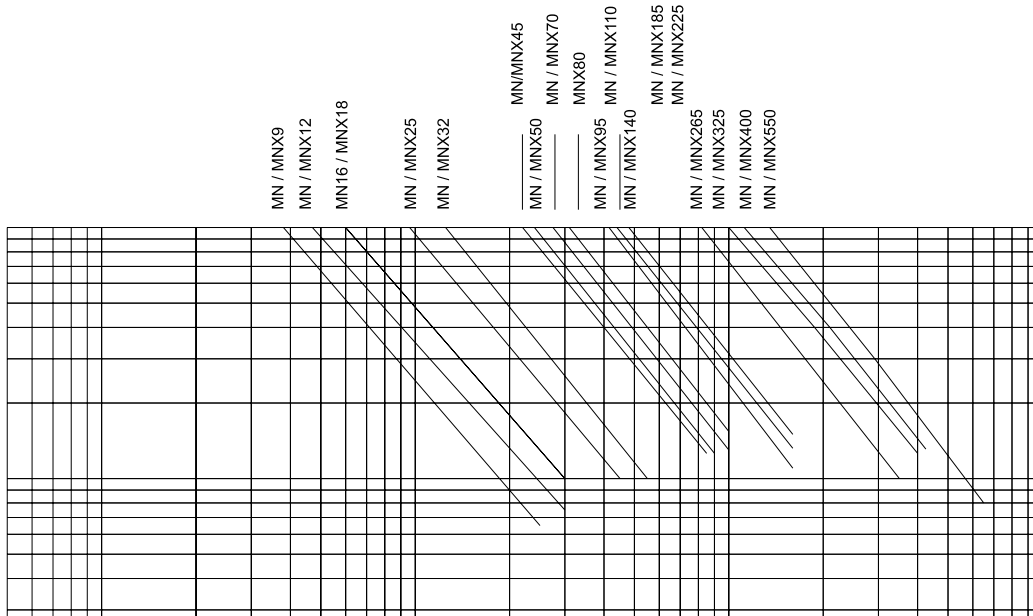
TECHNICAL DATA - SINGLE POLE

MR1 CONTACTORS

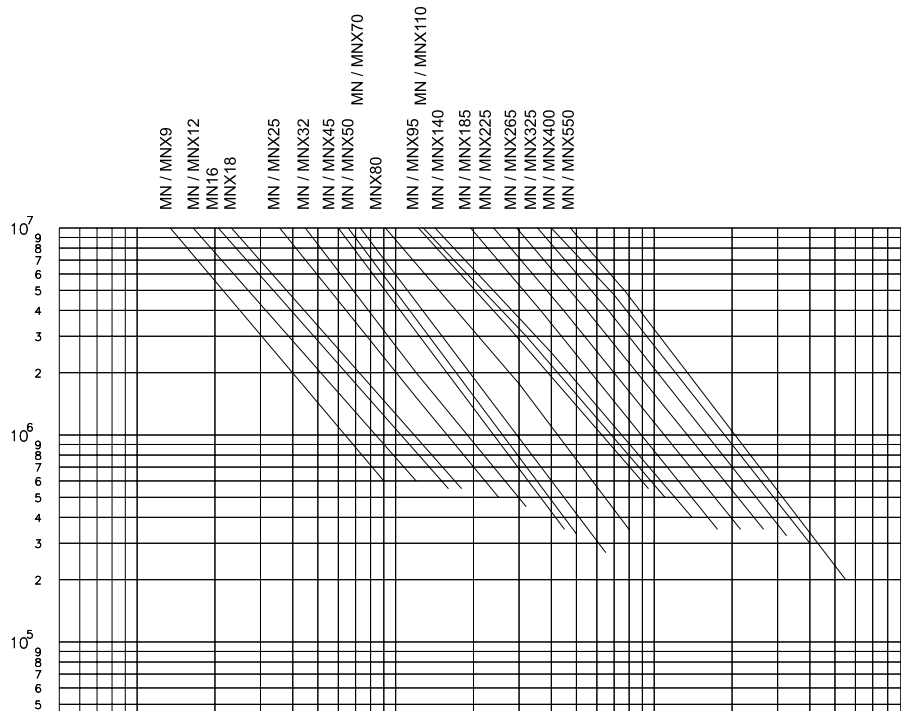
		MR1
Mechanical Life	Opns.	10x10 ⁶
Rated insulation voltage	U _i	690V
Rated impulse withstand	U _{imp}	8KV
Service temperature	°C	-5 to 55
Utilisation category 3ph,415V,50Hz		
	AC-1	40A
	AC-2	3.7kw, 5hp, 25A
	AC-3	3.7kw, 5hp, 25A
	AC-4	3.7kw, 5hp, 25A
Operational current, I _e , for AC-4 at 415V,50Hz for 200,000 cycles.	A	12
Making capacity	A	250
Breaking capacity	A	200
Capacitor switching delta connected,415V,50Hz	kVAR	15
Max. frequency of operating op.cycles/hr	Mechanical AC1 AC2 AC3 AC4	7200 3000 750 750 300
Stator duty-415V,50Hz - Duty factor -	20% 40% 60%	38A 38A 31A
Rotor duty-delta connected-Duty factor -	20% 40% 60%	57A 57A 46A
Main terminal capacity	Lug(mm ²) Wires(mm ²)	1x10 2x10
Aux.terminal capacity	Wires(mm ²)	—
Pick up time	msec	13-25
Drop off time	msec	6-15
Operating limits	(%U _c)	85-110
Coil Consumption at 50Hz		
Pick-up	VA	50
Hold-on	VA	9

ELECTRICAL LIFE CURVES - TYPE MNX

MNX CONTACTORS



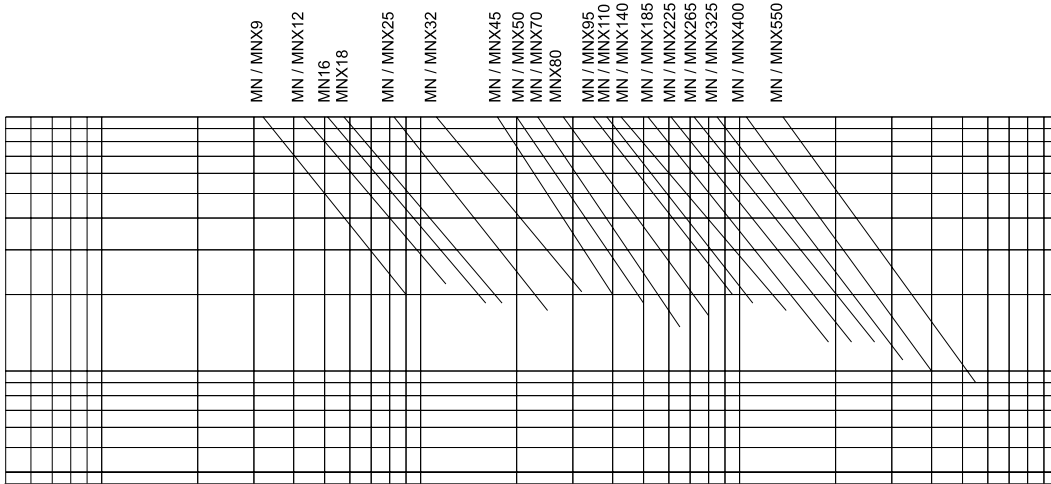
UTILISATION CATEGORY AC-1



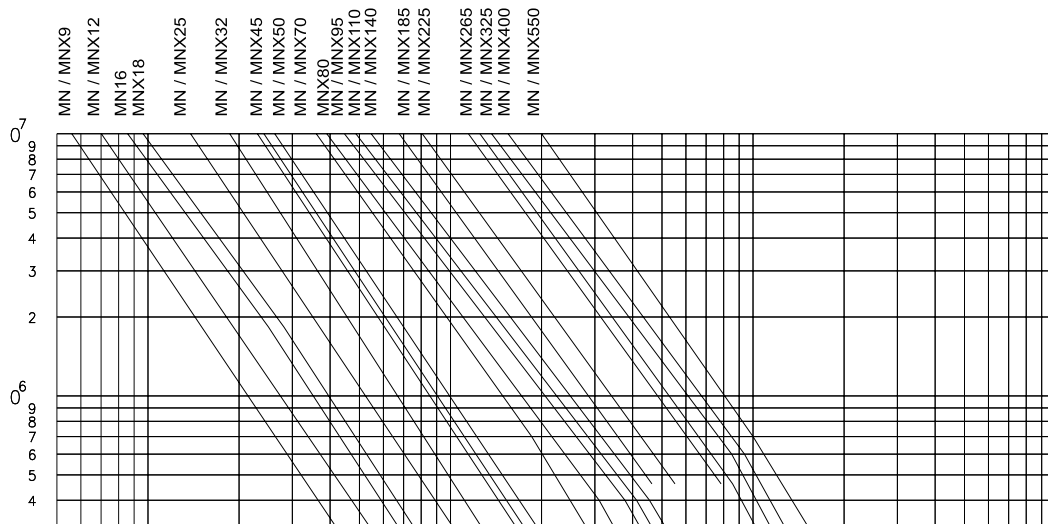
UTILISATION CATEGORY AC-2

ELECTRICAL LIFE CURVES - TYPE MNX

MNX CONTACTORS



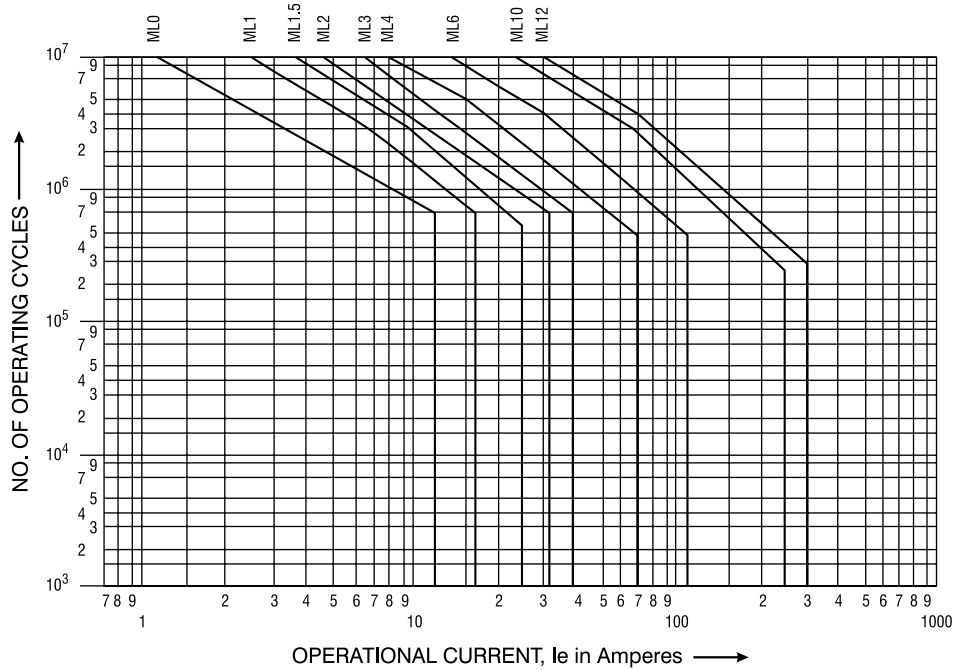
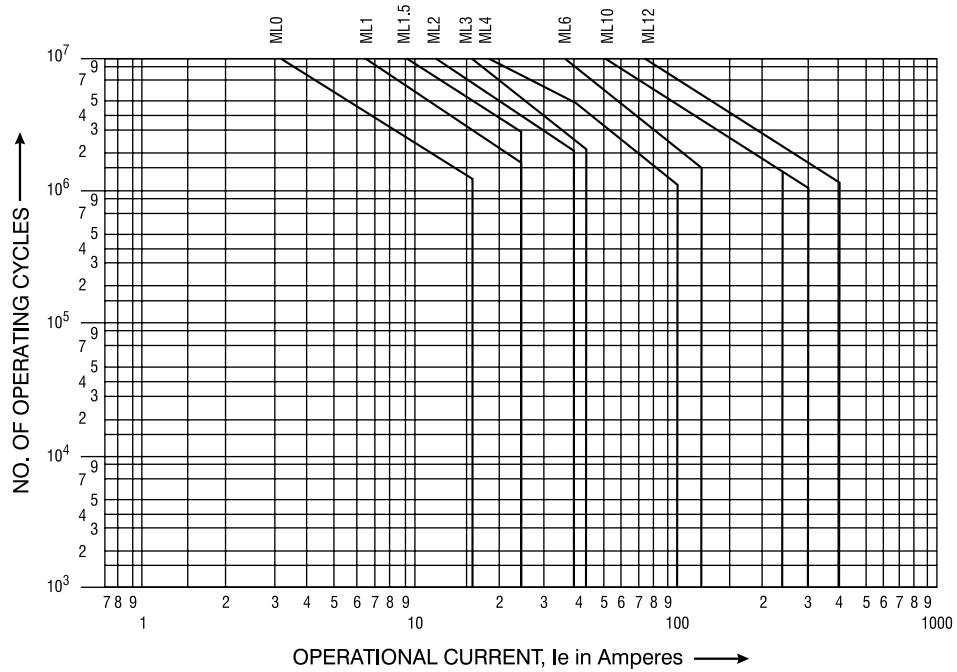
UTILISATION CATEGORY AC-3



UTILISATION CATEGORY AC-4

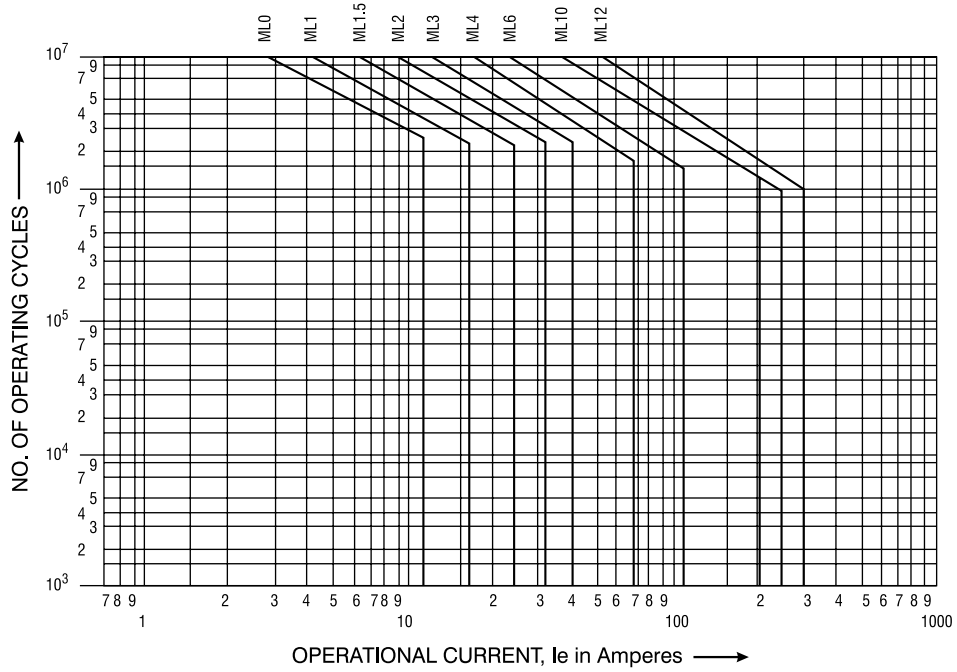
ELECTRICAL LIFE CURVES - TYPE ML

ML CONTACTORS

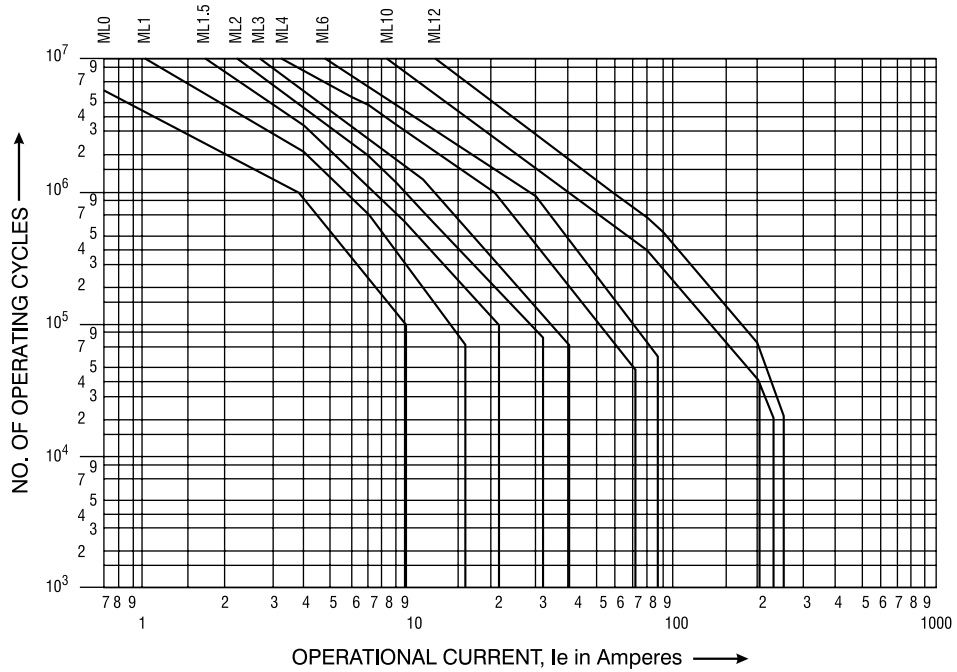


ELECTRICAL LIFE CURVES - TYPE ML

ML CONTACTORS



UTILISATION CATEGORY AC-3

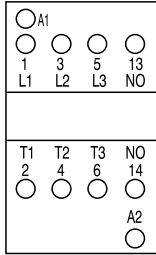


UTILISATION CATEGORY AC-4

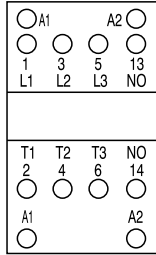
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TERMINAL ARRANGEMENTS - TYPE MNX

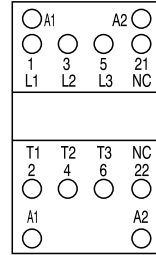
POWER CONTACTORS



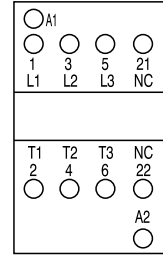
MN9W-MN16W / 16DC-1NO



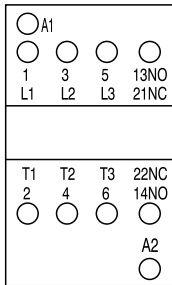
MNX9-MNX18-1NO



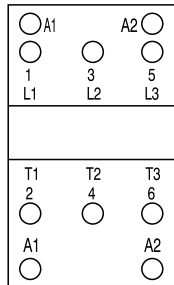
MNX9-MNX18-1NC



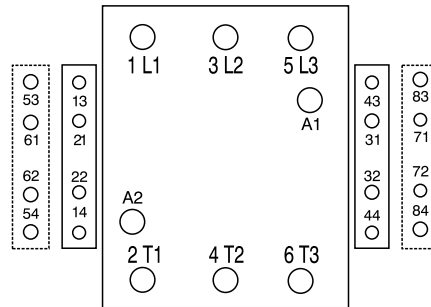
MN9W-MN16W / 16DC-1NC



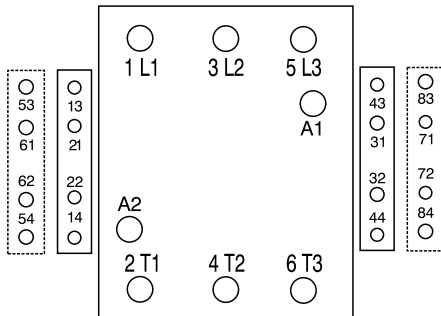
MN25W-1NO+1NC



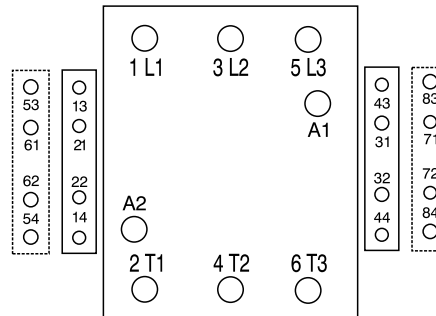
MNX25-MNX32-1NO+1NC



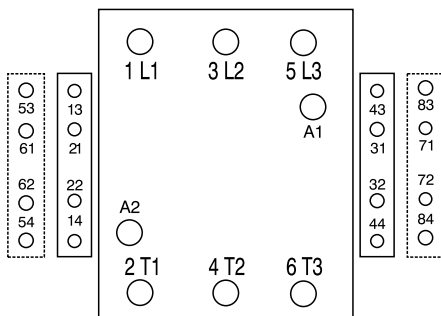
MNX45-80-2NO+2NC
(With provision of Additional 2NO+2NC
Auxiliary Contact Blocks)



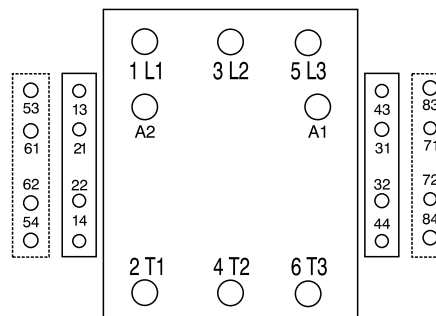
MNX95-MNX140-2NO+2NC
(With provision of Additional 2NO+2NC
Auxiliary Contact Blocks)



MNX185-MNX225-2NO+2NC
(With provision of Additional 2NO+2NC
Auxiliary Contact Blocks)



MNX265-MNX400-2NO+2NC
(With provision of Additional 2NO+2NC
Auxiliary Contact Blocks)

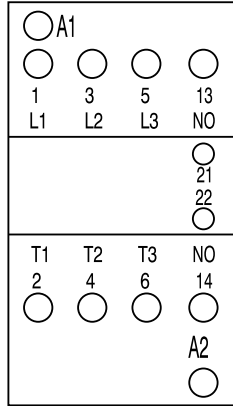


MNX550-2NO+2NC
(With provision of Additional 2NO+2NC
Auxiliary Contact Blocks)

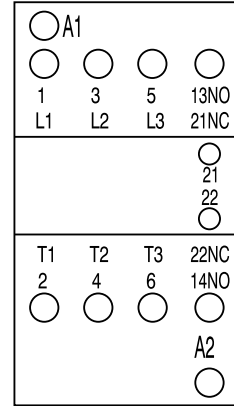
Note: For ML, MC, MU and MR contactors the terminal arrangements available on request.

TERMINAL ARRANGEMENTS - TYPE MN

CAPACITOR CONTACTORS

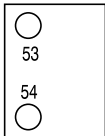


MN16C - 1NO+1NC

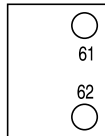


MN32C - 1NO+2NC

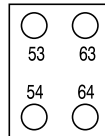
AUXILIARY CONTACT BLOCKS - TYPE MNX A1



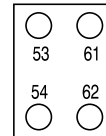
MNX-A12T-2-1NO



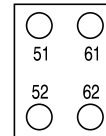
MNX-A12T-2-1NC



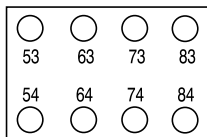
MNX-A12T-2-2NO



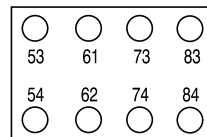
MNX-A12T-2-1NO+1NC



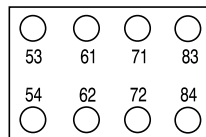
MNX-A12T-2-2NC



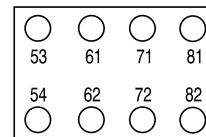
MNX-A12T-4-4NO



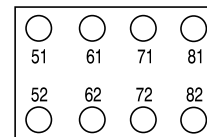
MNX-A12T-4-3NO+1NC



MNX-A12T-4-2NO+2NC



MNX-A12T-4-1NO+3NC



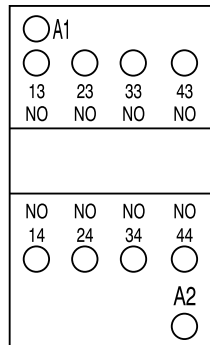
MNX-A12T-4-4NC

Note: For MNX-A33S-2 and MNX-A46S-2 auxiliary contact block terminal arrangements refer page 6/31 shown adjacent to contactor terminal adjustments.

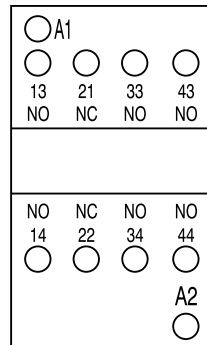
i.e. for 1NO+1NC left - 13, 21, 22, 14
 1NO+1NC right - 43, 31, 32, 44
 1NO+1NC second left - 53, 61, 62, 54
 1NO+1NC second right - 83, 71, 72, 84

TERMINAL ARRANGEMENTS

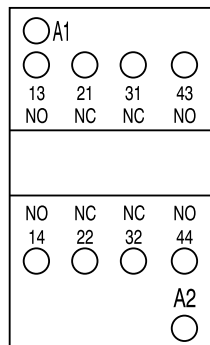
CONTROL CONTACTORS



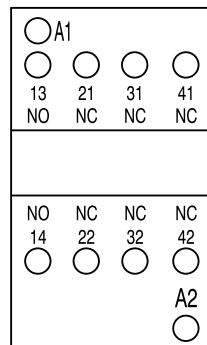
MN0/MN0DC-40E



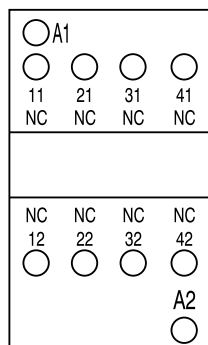
MN0/MN0DC-31E



MN0/MN0DC-22E



MN0/MN0DC-13E

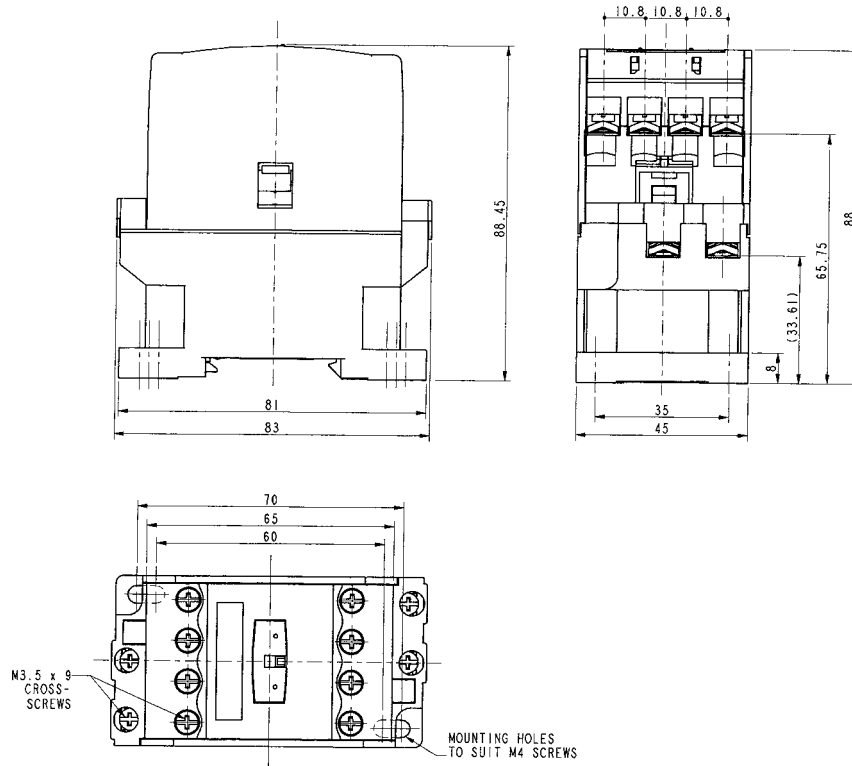


MN0/MN0DC-04E

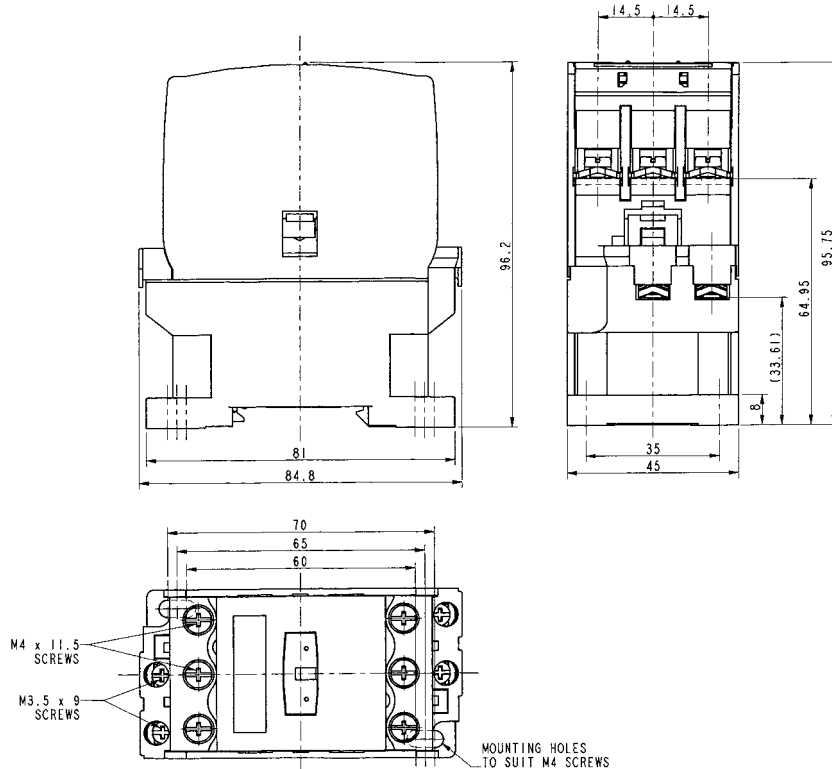
Note: For control contactors MM00 and MM01 (AC/DC) terminal arrangements available on request.

OVERALL DIMENSIONS

MNX 9, 12, 18 CONTACTORS



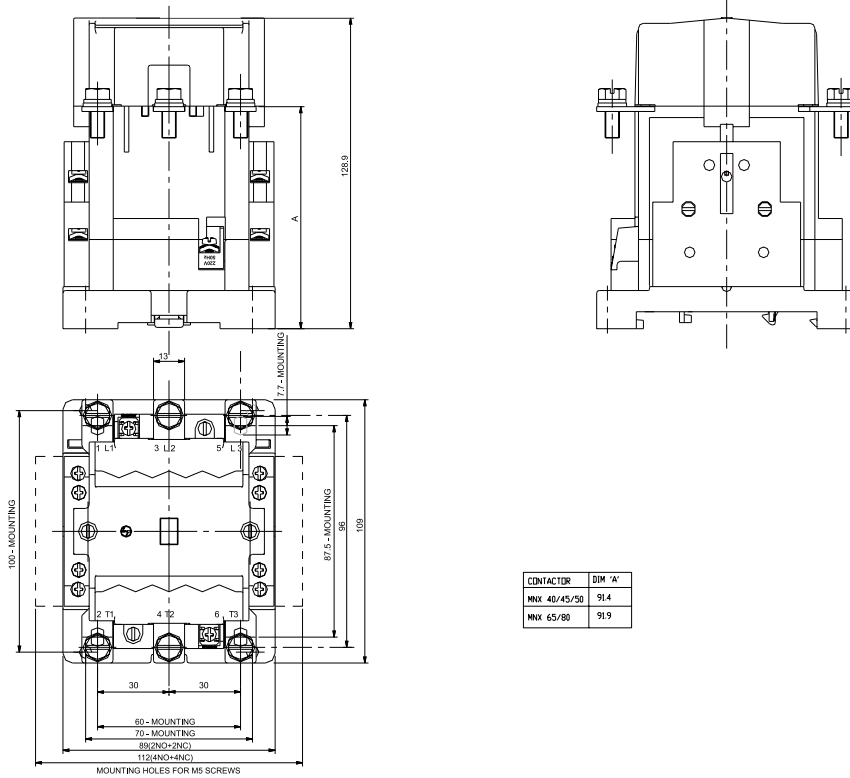
MNX 25, 32 CONTACTORS



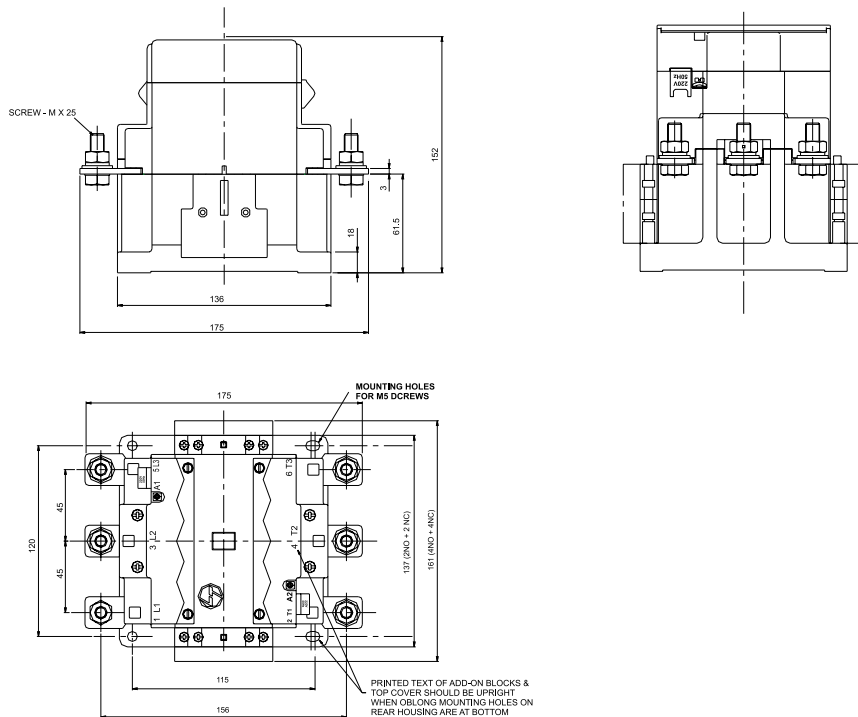
Note: All dimensions are in mm.

OVERALL DIMENSIONS

MNX 45, MNX 50, MNX 70, MNX 80 CONTACTORS



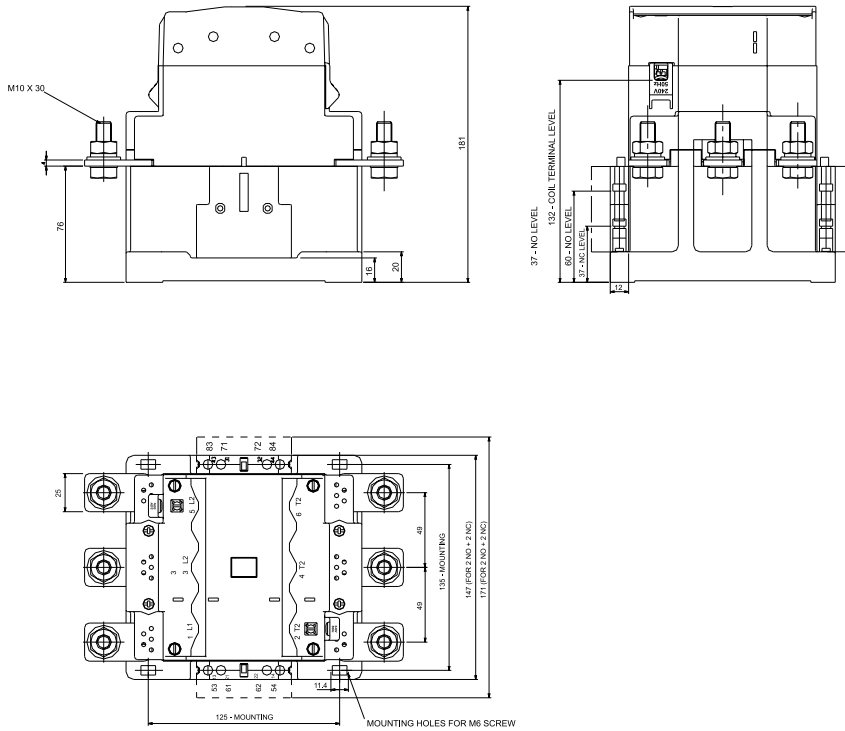
MNX 95, MNX 110, MNX 140 CONTACTORS



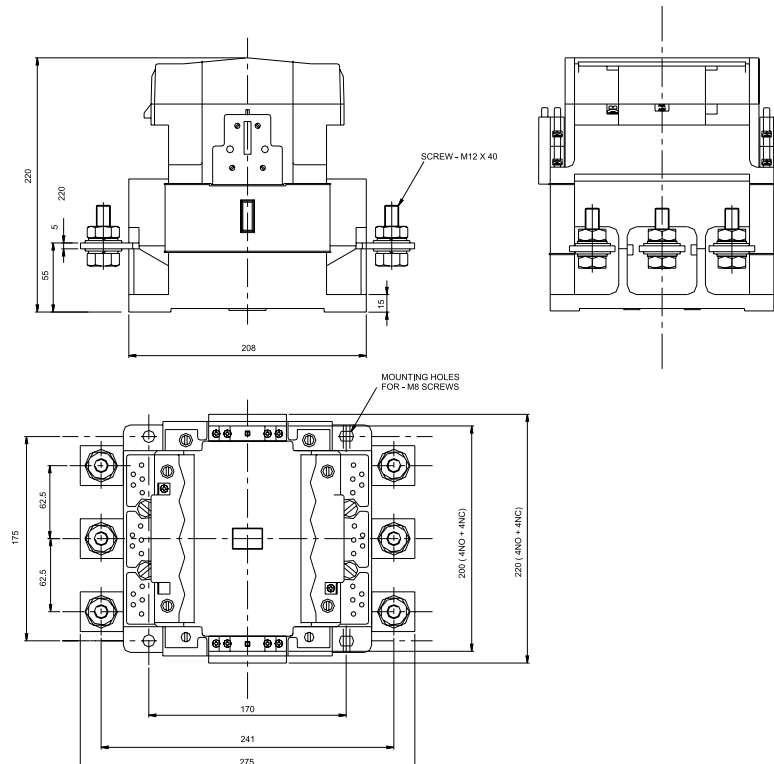
Note: All dimensions are in mm.

OVERALL DIMENSIONS

MXN 185, MXN 225 CONTACTORS



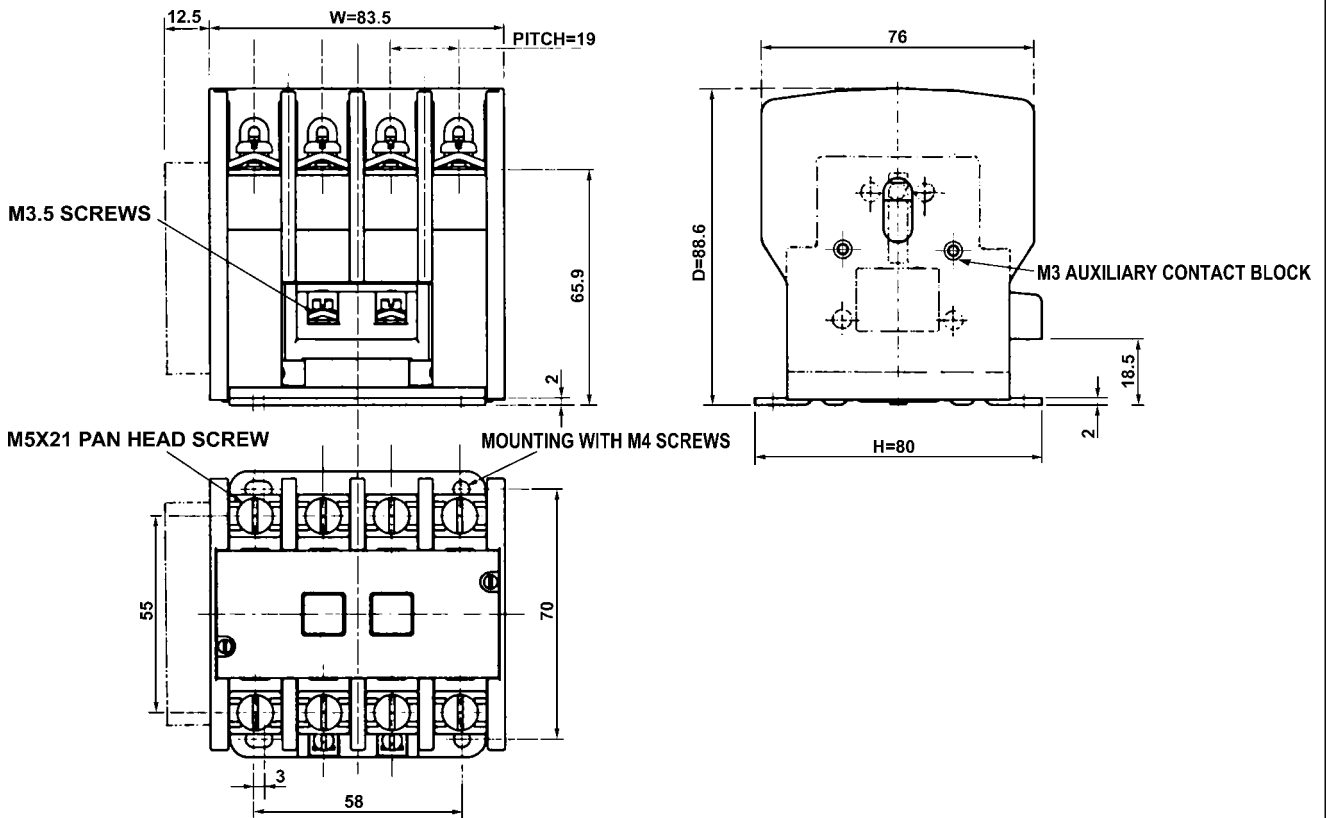
MXN 265, MXN 325, MXN 400, MXN 550 CONTACTORS



Note: All dimensions are in mm.

OVERALL DIMENSIONS

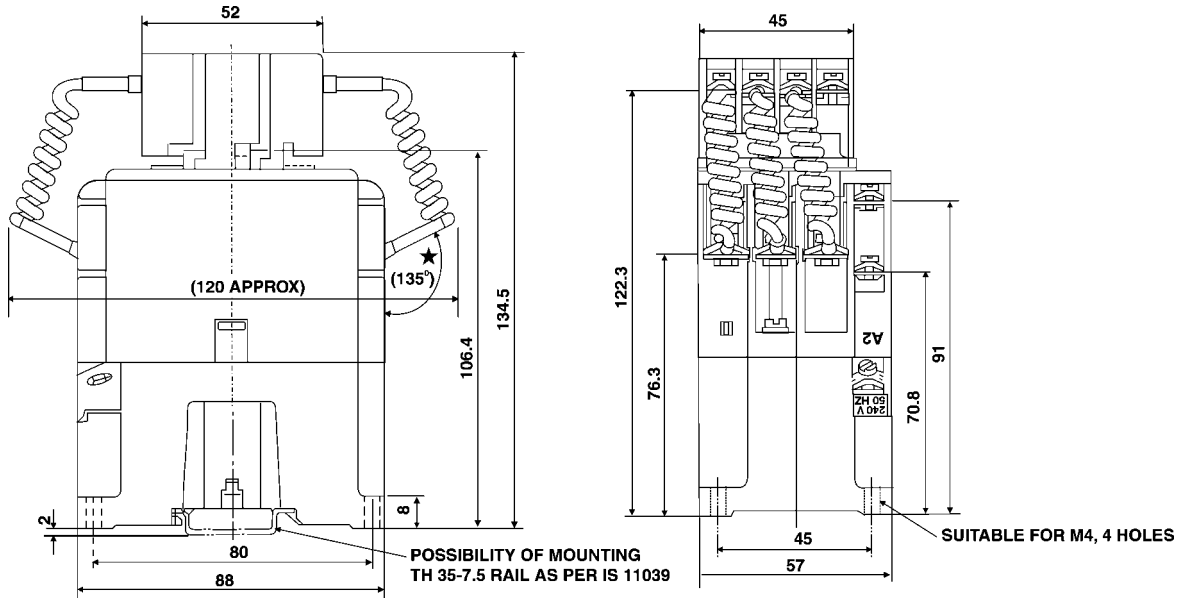
MU 1, MU 2 CONTACTORS



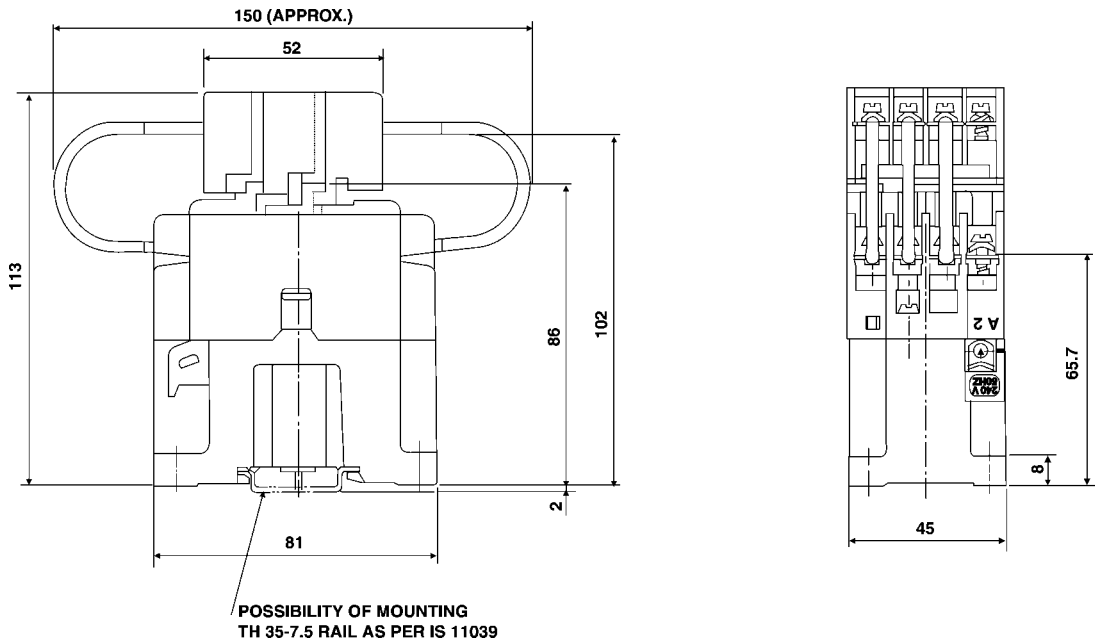
Note: All dimensions are in mm.

OVERALL DIMENSIONS

MN 16C CONTACTORS



MN 32C CONTACTORS

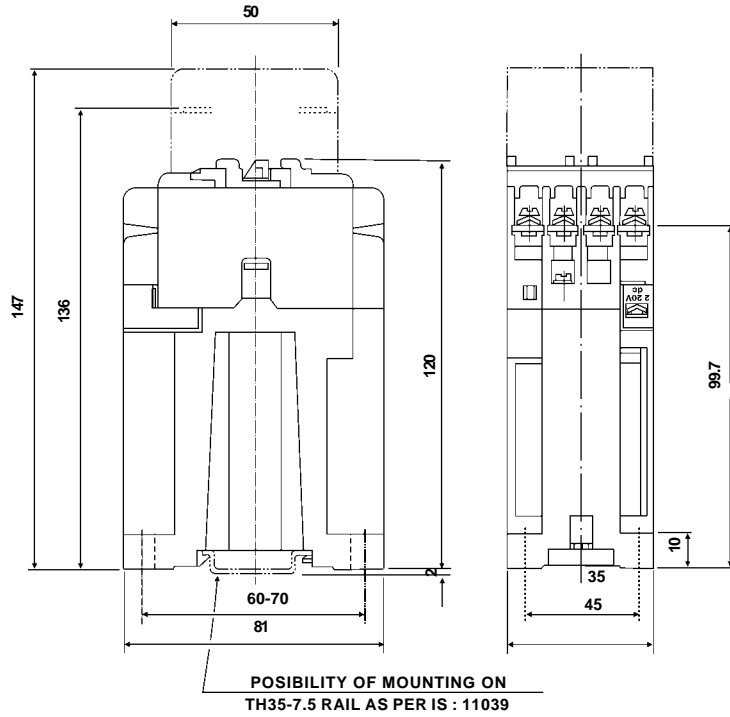


Note: All dimensions are in mm.

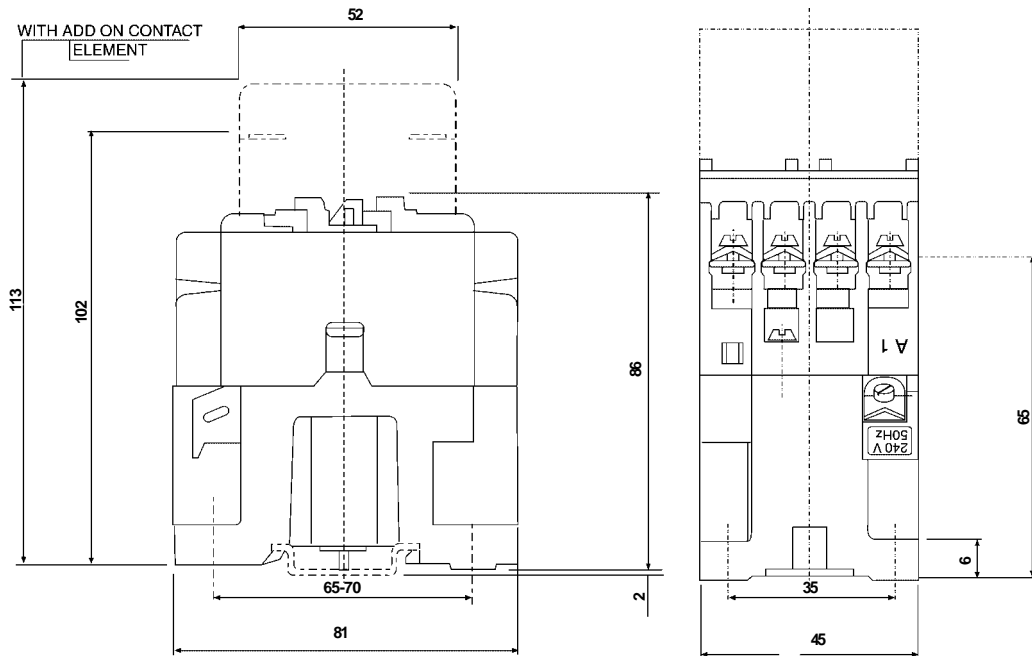
6

OVERALL DIMENSIONS

MN 0 dc, MN 16 dc CONTACTORS



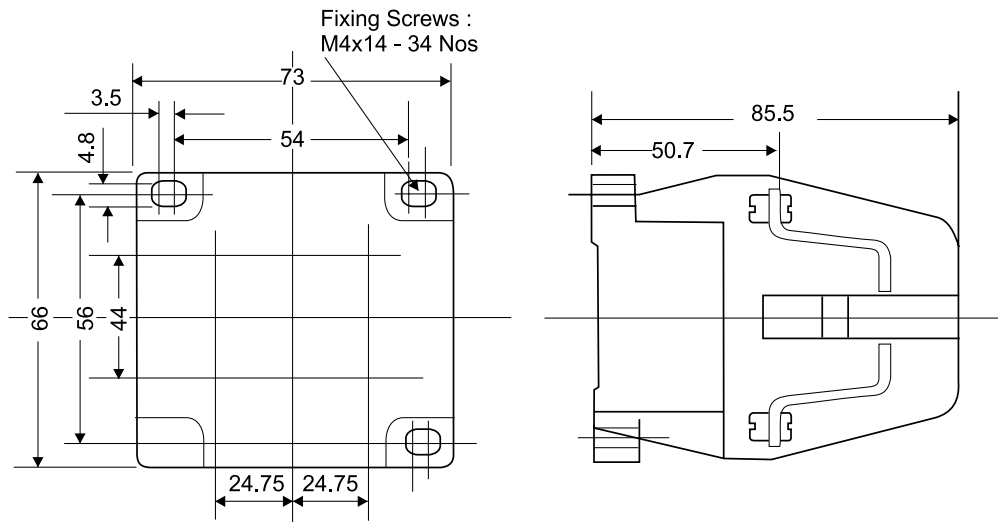
MN 0 ac CONTACTORS



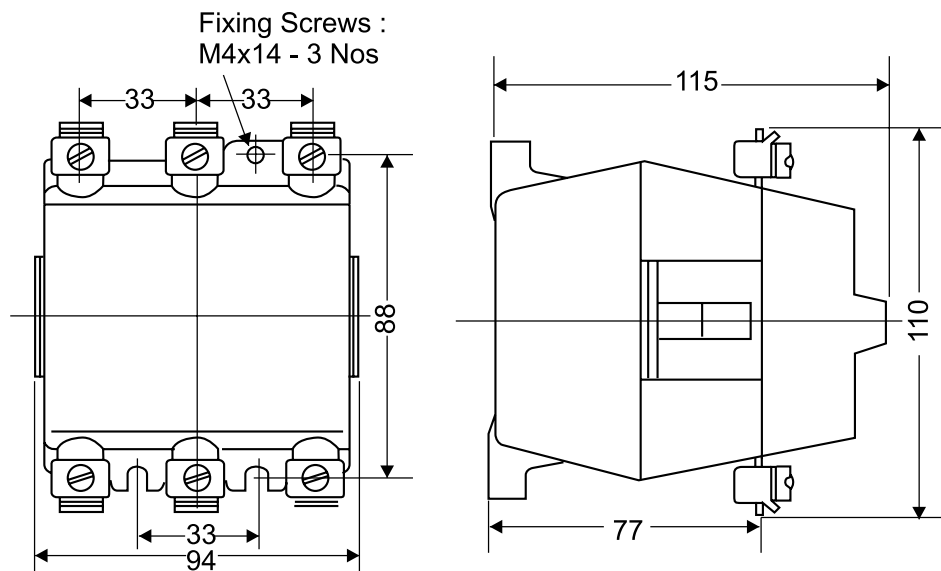
Note: All dimensions are in mm.

OVERALL DIMENSIONS

ML0, ML1, ML1.5 CONTACTORS



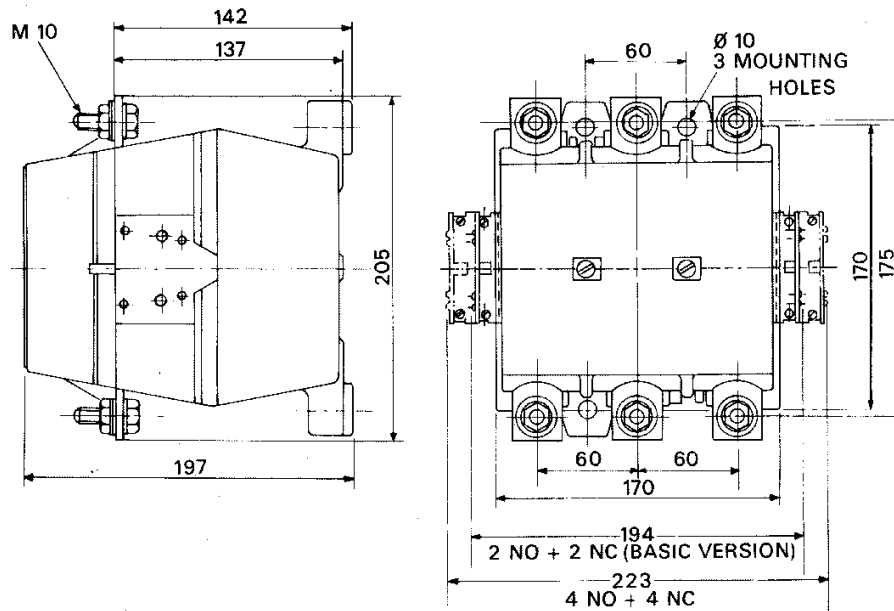
ML2, ML3 CONTACTORS



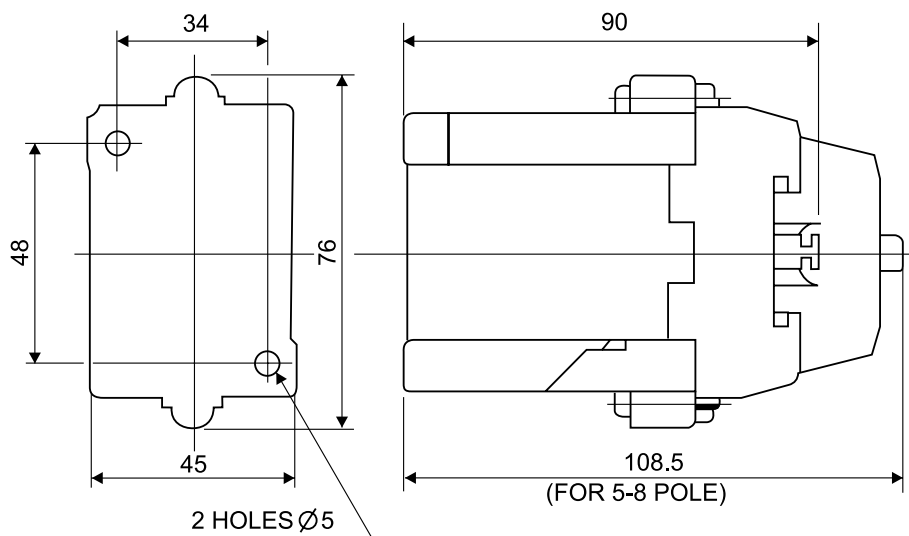
Note: All dimensions are in mm.

OVERALL DIMENSIONS

ML10, ML12 CONTACTORS



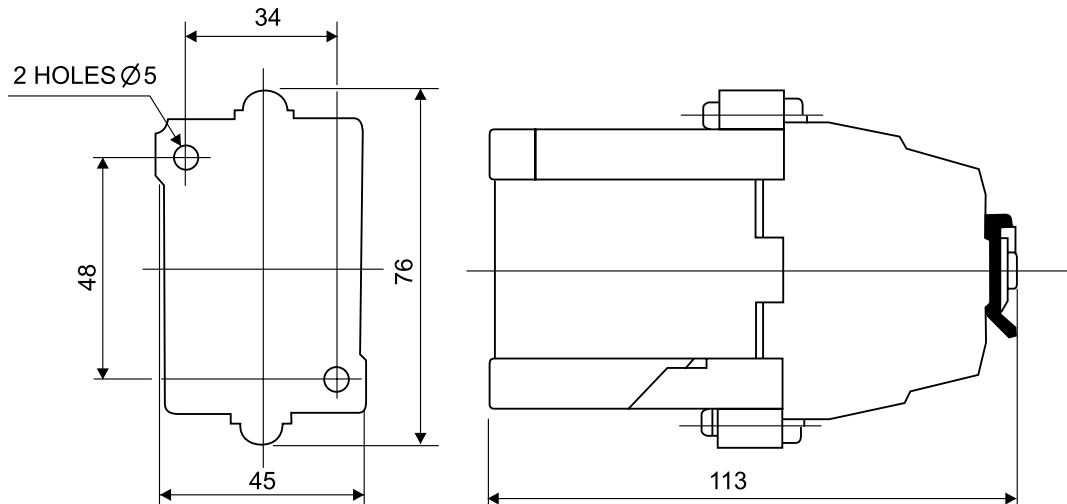
MM00 CONTACTORS



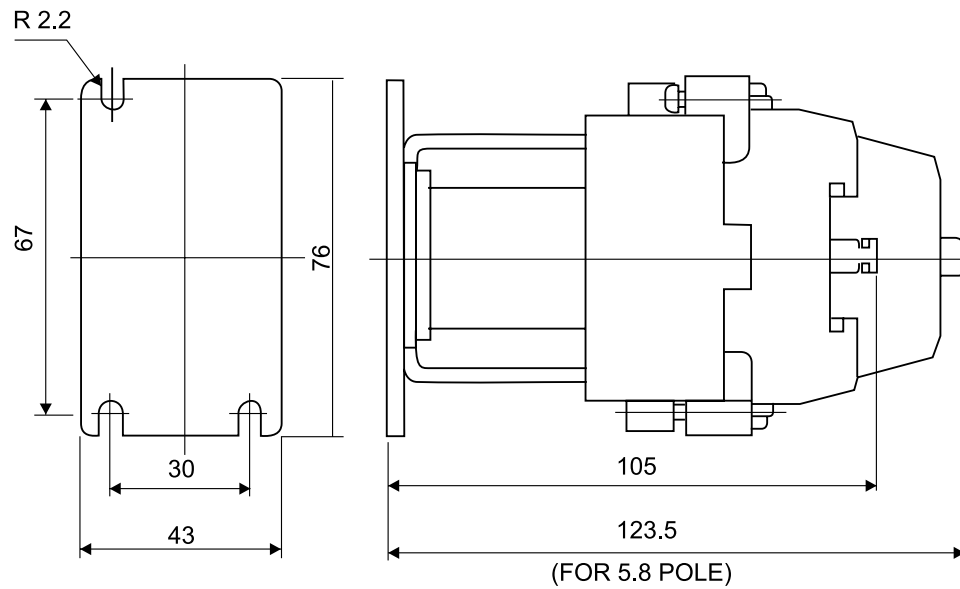
Note: All dimensions are in mm.

OVERALL DIMENSIONS

MM01 CONTACTORS



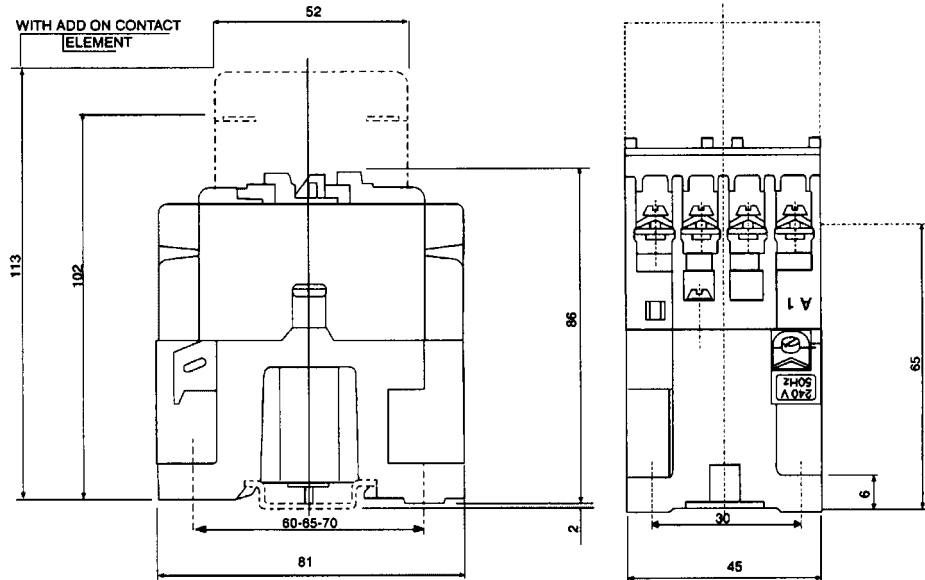
MM0 odc CONTACTORS



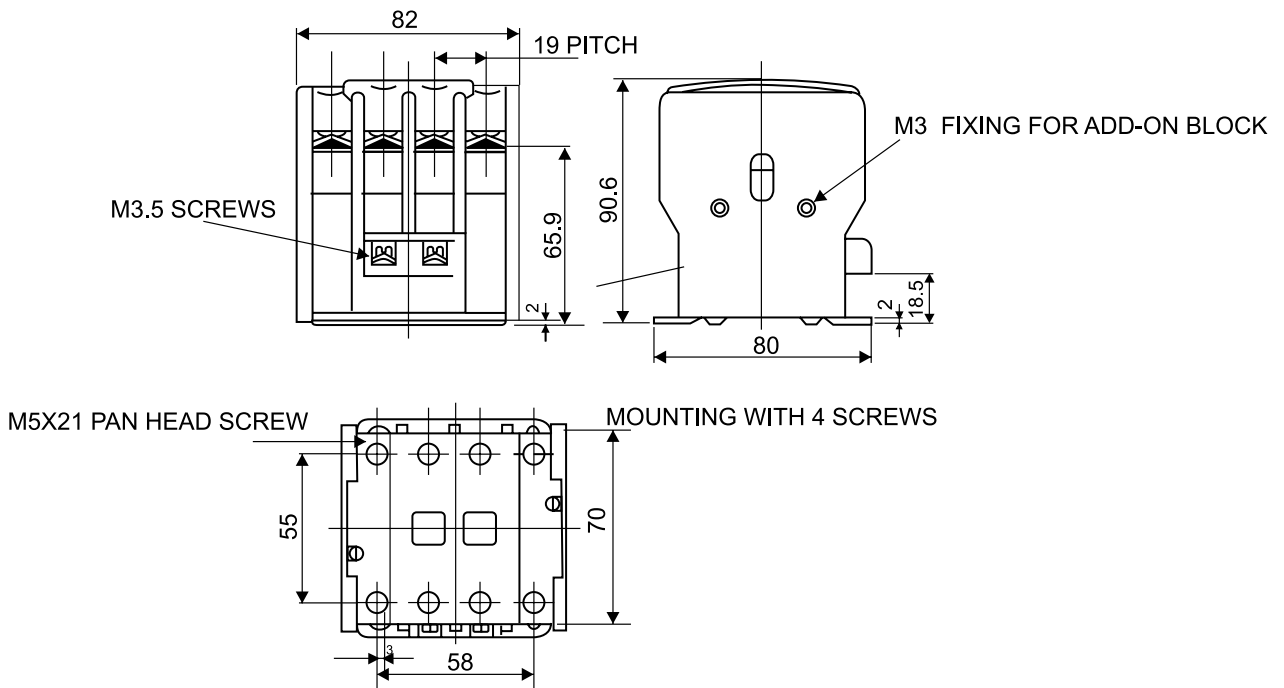
Note: All dimensions are in mm.

OVERALL DIMENSIONS

MC 01, MC 02, MC 03 CONTACTORS



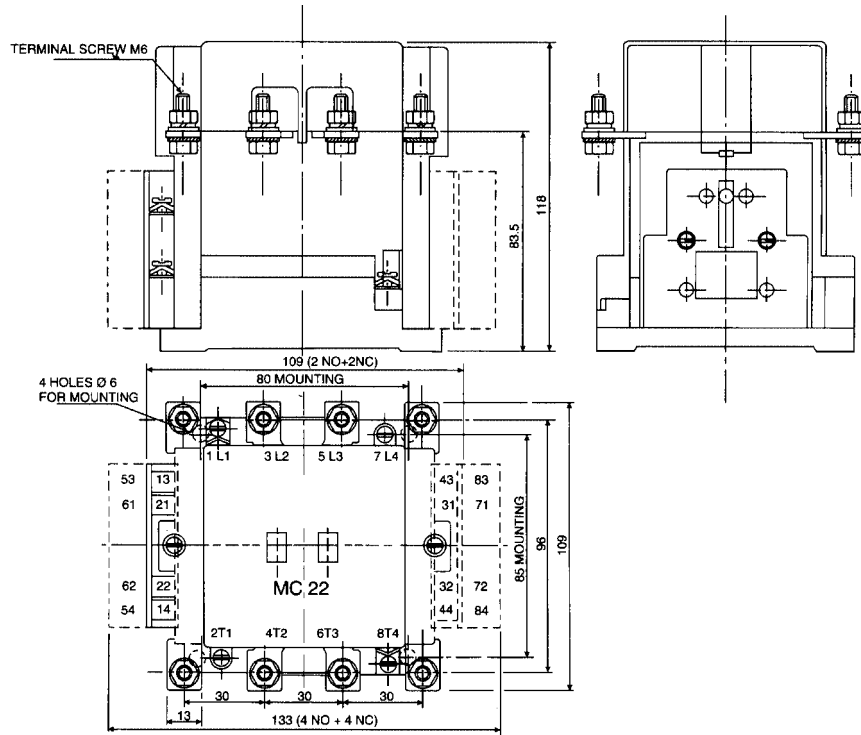
MC 11, MC 12 CONTACTORS



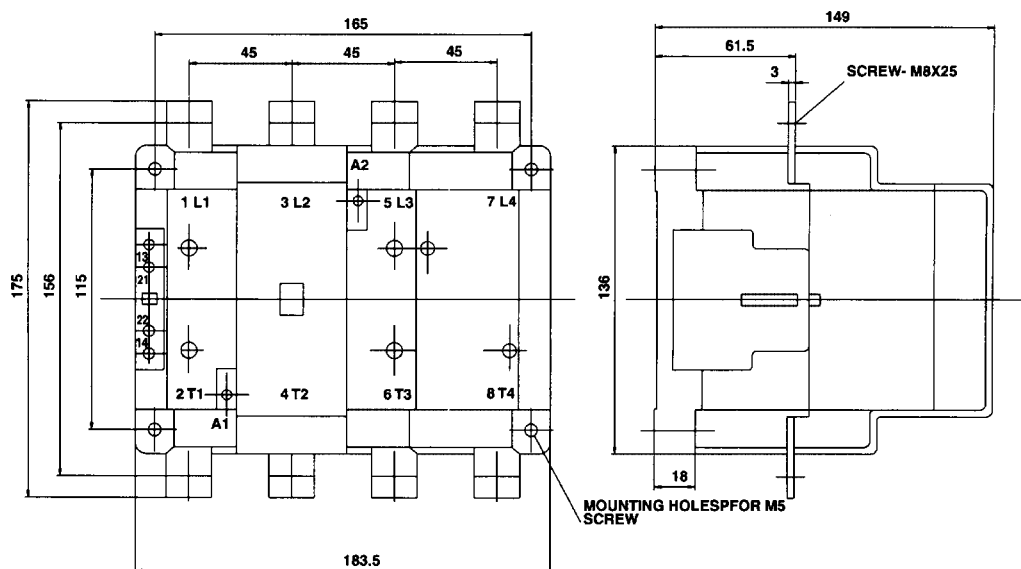
Note: All dimensions are in mm.

OVERALL DIMENSIONS

MC 21, MC 22 CONTACTORS



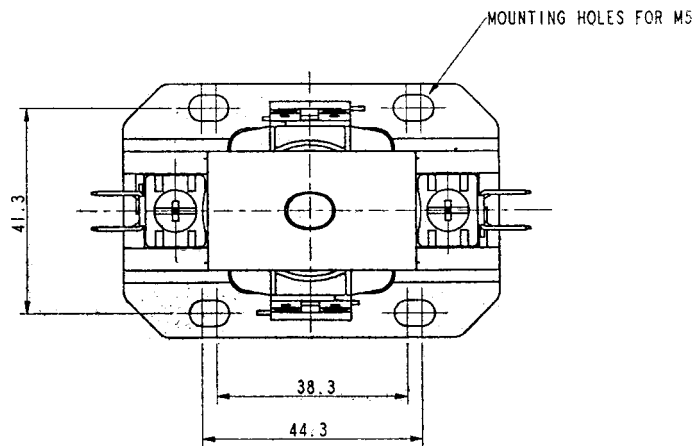
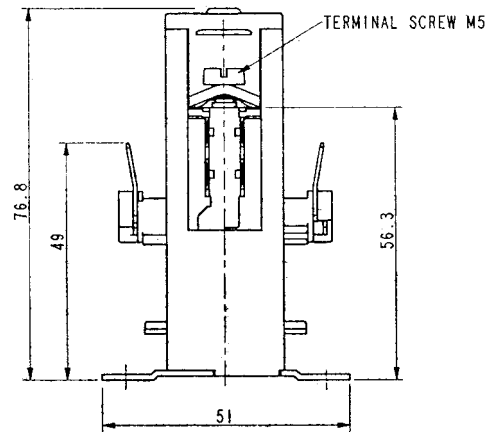
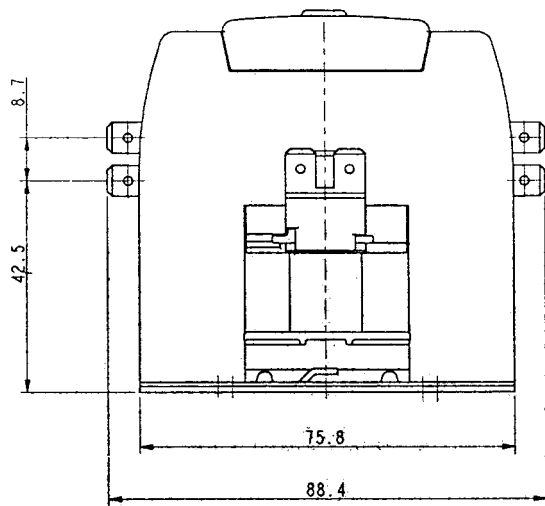
MC 31, MC 32, MC 33 CONTACTORS



Note: All dimensions are in mm.

OVERALL DIMENSIONS

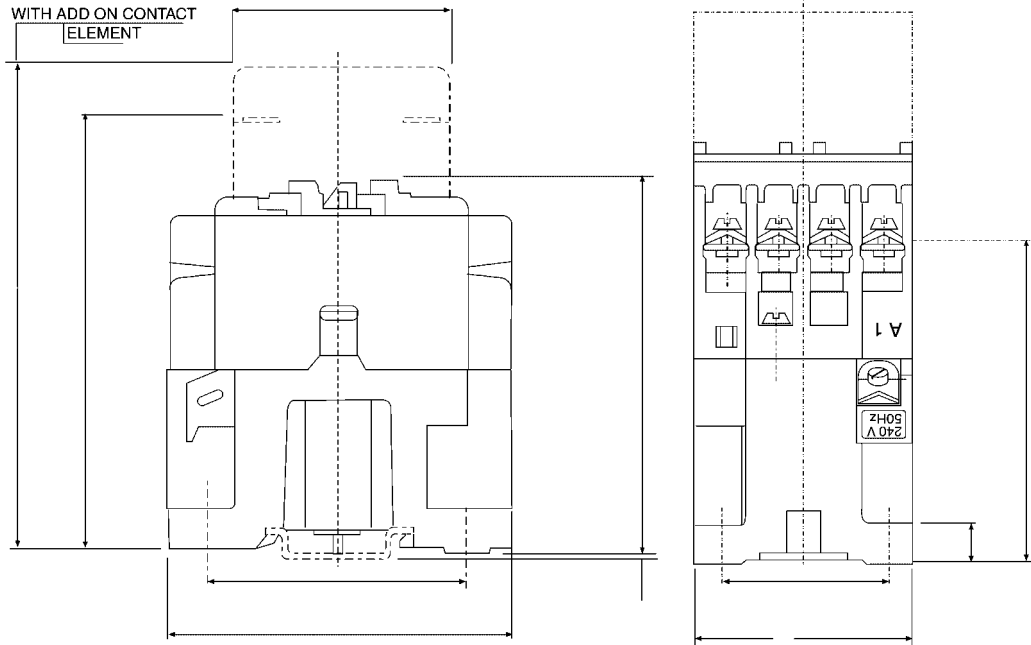
MR 1 CONTACTORS



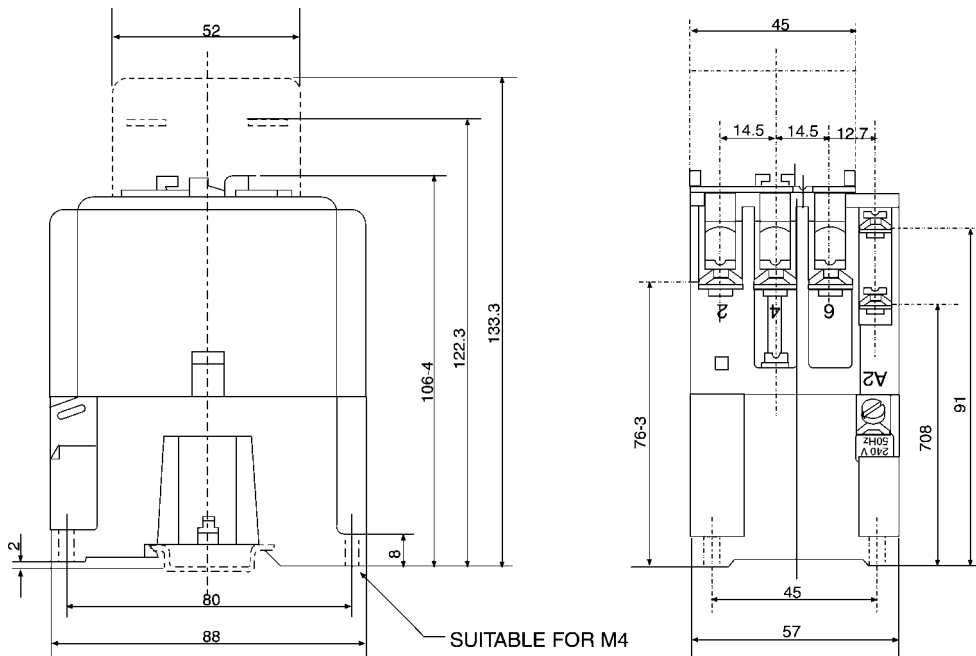
Note: All dimensions are in mm.

OVERALL DIMENSIONS

MN 9W, MN 12W, MN 16W CONTACTORS



MN 25W CONTACTORS



Note: All dimensions are in mm.