



NHD

MAGNETIC SWITCH CONTROLS



L

1 2 3 4

C
S

10	1a	01	1b
11	1a1b	22	2a2b

Coil for C-06D to C-100D (AC)																
24V	42V	48V	110V	120V	190V	200V	220V	230V	240V	380V	400V	415V	440V	480V	525V	575V
A7	B7	C7	D7	E7	F7	R7	G7	H7	I7	J7	K7	L7	M7	N7	O7	P7
600V																
Q7																
Coil for C-09DC to C-100DC (DC)																
24V	42V	48V	110V	120V	220V											
AD	BD	CD	DD	ED	GD											
Coil for S-C11 to S-C220 (AC)																
24V	42V	48V	110V	120V	220V		230V	240V	380V	415V		440V	525V			
A5	B5	C5	D5	E5	G5		H5	I5	J5	L5		M5	O5			
A6	B6	C6	D6	E6	G6		H6	I6	J6	L6		M6	O6			
G7																
A-R for to Voltage 5 for to 50Hz 6 for to 60Hz 7 for to 50/60Hz																

Three Pole Contactors

"C"- Series 9A to 100A(AC3)

CONTROL CIRCUIT : AC



C-06D10



C-12D10



C-18D10



C-25D10



C-35D10



C-45D11

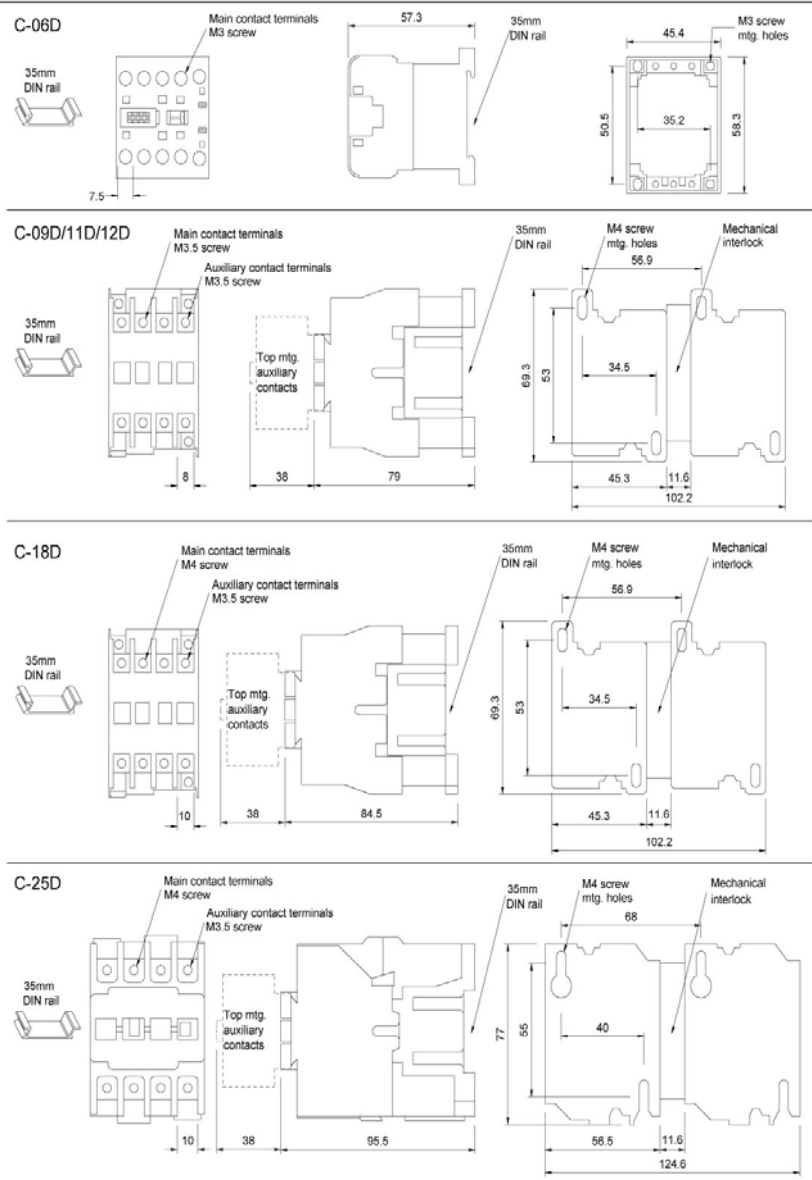


C-80D11

catalogue name	Instantaneous auxiliary contacts		Rated Insulation voltage Ui	AC1 duty Ith @ ≤ 40°C	Ie	AC3 duty 3 phase			AC3 duty 1 phase		weight Kg	Approval
	N/O	N/C				220V	380V	440V	575V	240V		
C-06D10 C-06D01	1 -	- 1	1000V	16A	9A	2.2 3	3.7 5	3.7 5	3.7 5	1.1 1.5	0.177	
C-09D10 C-09D01	1 -	- 1	1000V	20A	9A	2.2 3	3.7 5	3.7 5	3.7 5	1.5 2	0.326	SB CE UL
C-11D10 C-11D01	1 -	- 1	1000V	25A	12A	3 4	5.5 7.5	5.5 7.5	5.5 7.5	1.5 2	0.326	SB CE UL
C-12D10 C-12D01	1 -	- 1	1000V	25A	16A	4 5.5	7.5 10	7.5 10	7.5 10	2.2 3	0.326	SB CE UL
C-18D10 C-18D01	1 -	- 1	1000V	32A	22A	5.5 7.5	10 15	10 15	10 15	3.7 5	0.340	SB CE
C-25D10 C-25D01	1 -	- 1	1000V	40A	32A	7.5 10	15 20	15 20	15 20	4 5.5	0.525	SB CE
C-35D10 C-35D01	1 -	- 1	1000V	50A	42A	11 15	19 25	19 25	19 25		0.550	SB CE
C-45D11	1	1	1000V	60A	55A	15 20	30 40	30 40	30 40		1.100	CE
C-55D11	1	1	1000V	80A	65A	19 25	33 45	33 45	33 45		1.100	CE
C-65D11	1	1	1000V	90A	80A	22 30	37 50	37 50	37 50		1.100	CE
C-80D11	1	1	1000V	125A	105A	25 35	45 60	55 75	55 75		1.430	CE
C-100D11	1	1	1000V	130A	110A	30 40	55 75	55 75	60 80		1.430	CE

"C"-Series Contactors

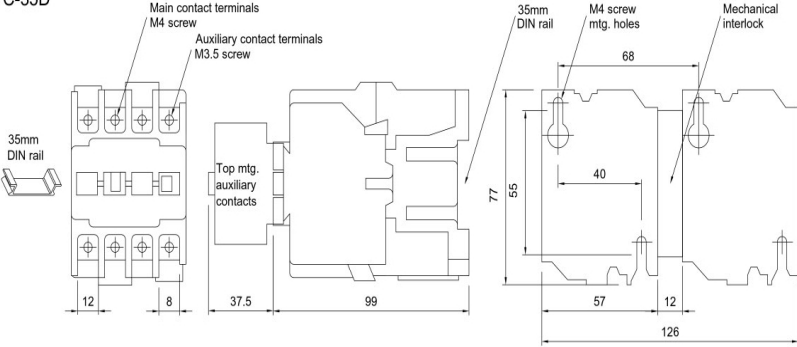
Dimensions(mm)



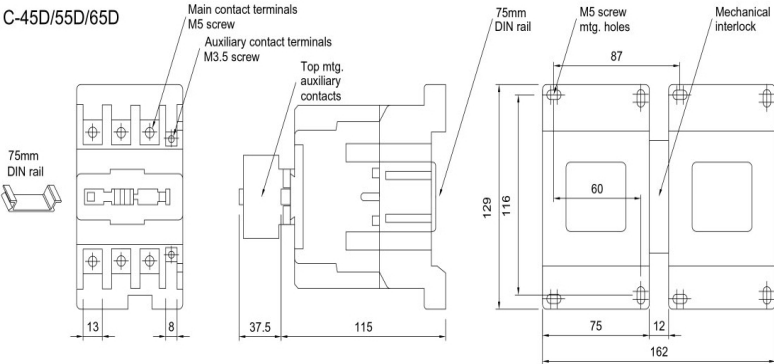
"C"-Series Contactors

Dimensions(mm)

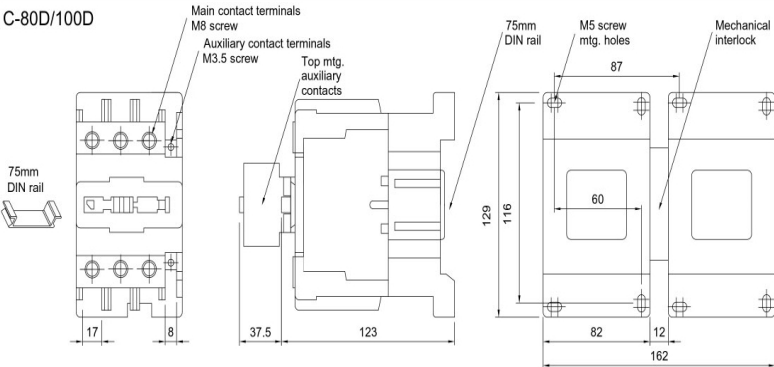
C-35D



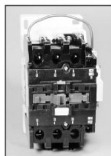
C-45D/55D/65D



C-80D/100D



CONTROL CIRCUIT : DC




C-45DC21

Instantaneous auxiliary contacts			Side.mtg. auxiliary cnctacts blocks	AC1 duty θ ≤ 40°C	AC3 duty 3 phase				AC3 duty 1 phase			
						220V	380V	440V	575V	240V		
catalogue name	N/O	N/C	catalogue number	lth	le	KW HP	KW HP	KW HP	KW HP	KW HP	weight Kg	Approval
C-09DC	-	-	-			2.2	3.7	3.7	3.7	1.5	0.330	
C-09DC	1.1 2.0 0.2	1 2 0	1 0 2	CA8	20A	9A					0.370	☑
C-11DC	-	-	-			3	5.5	5.5	5.5	1.5	0.330	
C-11DC	1.1 2.0 0.2	1 2 0	1 0 2	CA8	25A	12A				2	0.370	☑
C-12DC	-	-	-			4	7.5	7.5	7.5	2.2	0.330	
C-12DC	1.1 2.0 0.2	1 2 0	1 0 2	CA8	25A	16A				3	0.370	☑
C-18DC	-	-	-			5.5	10	10	10	3.7	0.345	☑ ☑
C-18DC	1.1 2.0 0.2	1 2 0	1 0 2	CA8	22A	22A				5	0.455	
C-25DC	1.1 2.0 0.2	1 2 0	1 0 2	CA8	32A	32A				4	0.565	☑
C-35DC	1.1 2.0 0.2	1 2 0	1 0 2	CA8	42A	42A				15	0.590	☑
C-45DC	2.1 1.2	2 1	1 2	CA8	55A	55A				15	1.140	☑
C-55DC	2.1 1.2	2 1	1 2	CA8	65A	65A				19	1.140	☑
C-65DC	2.1 1.2	2 1	1 2	CA8	80A	80A				22	1.140	☑
C-80DC	2.1 1.2	2 1	1 2	CA8	105A	105A				25	1.470	☑
C-100DC	2.1 1.2	2 1	1 2	CA8	110A	110A				30	1.470	☑

"DC"-Series Contactors


According to the utilization category for d.c. operation

1 pole




DC1

$(\frac{L}{R} \leq 1 \text{ ms})$



2 poles in series




Maximum operational current Ie in amps

Voltage Ue	Number of poles to be connected in series	09D	11D	12D	18D	25D	35D	45D	55D	65D	80D	100D
24 V	1	12	15	15	30	30	40	50	50	70	70	80
	2	16	18	18	32	32	55	70	70	100	100	110
	3	18	20	20	32	32	55	70	70	100	100	110
48/75 V	1	10	12	12	25	25	25	25	25	25	25	30
	2	15	17	17	30	30	55	70	70	100	100	110
	3	18	20	20	32	32	55	70	70	100	100	110
125 V	1	5	6	8	8	8	8	8	8	8	8	10
	2	10	12	12	25	25	40	50	60	80	80	85
	3	12	15	15	27	27	45	60	65	85	85	90
225 V	1	3	4	5	5	5	5	5	5	5	5	6
	2	6	8	8	15	15	35	40	40	45	45	50
	3	8	10	10	22	22	40	50	50	55	55	60

DC3, DC5

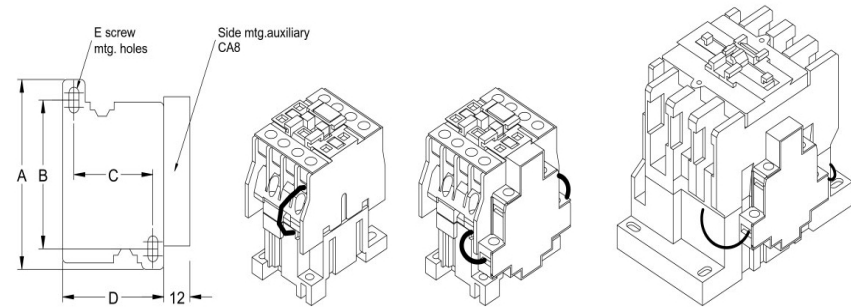
$(\frac{L}{R} \leq 15 \text{ ms})$



Maximum operational current Ie in amps

Voltage Ue	Number of poles to be connected in series	09D	11D	12D	18D	25D	35D	45D	55D	65D	80D	100D
24 V	1	10	12	12	20	20	25	35	35	40	40	45
	2	12	15	15	25	25	30	45	45	60	60	70
	3	15	18	18	30	30	45	55	55	80	80	90
48/75 V	1	8	10	10	15	15	15	15	15	15	15	20
	2	10	12	12	20	20	25	40	40	50	50	55
	3	12	15	15	30	30	40	50	50	70	70	75
125 V	1	1.5	2	2	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3
	2	6	8	8	15	15	20	25	25	40	40	45
	3	8	12	12	20	20	30	35	35	60	60	65
225 V	1	0.5	0.75	0.75	1	1	1	1	1	1	1	1
	2	1	1.5	1.5	3	3	4	5	5	7	7	8
	3	5	6	6	10	10	20	25	25	35	35	40

Dimensions(mm)



Coctactor	Outline Dimensions (mm)					
	A	B	C	D	E	DIN rail
C-09DC~C-18DC	69.3	53	34.5	45.3	M4	35
C-25DC~C-35DC	77	55	40	56.5	M4	35
C-45DC~C-65DC	129	116.5	60	75	M5	75
C-80DC~C-100DC	129	116.5	60	81.7	M5	75

"S-C"-Series 12A to 220A(AC3)

CONTROL CIRCUIT : AC



S-C11



S-C12



S-C16



S-C21



S-C60

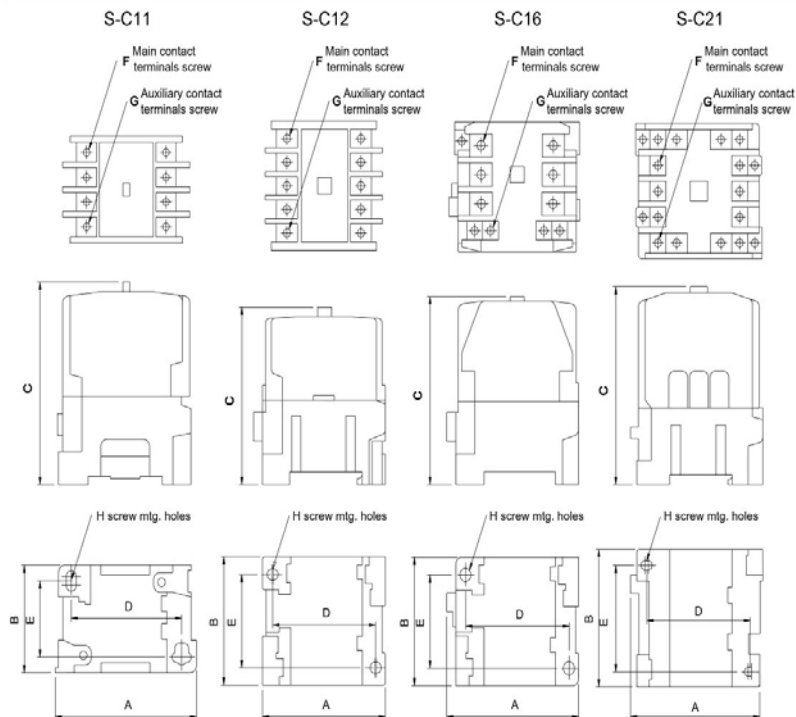


S-C80

catalogue name	Instantaneous auxiliary contacts		AC1 duty 0≤ 40 °C	AC2 & AC3 duty Maximum power rating (50 or 60 HZ)						le	weight Kg
	N/O	N/C	lth	1-phase		3-phase					
				110V	220V	220V	380V	415V	500V		
				KW HP	KW HP	KW HP	KW HP	KW HP	KW HP		
S-C11 4a	1	-	20A	0.55	1.2	3	4	4	4	12A	0.300
S-C11 3a1b	-	1		0.75	1.5	4	5.5	5.5	5.5		
S-C12	1	1	20A	0.55	1.2	3	4	4	4	12A	0.335
				0.75	1.5	4	5.5	5.5	5.5		
S-C16	1	1	30A	0.75	1.5	4	5.5	5.5	5.5	16A	0.345
				1	2	5.5	7.5	7.5	7.5		
S-C21	2	2	36A	1.2	2.2	5.5	11	11	11	24A	0.600
				1.5	3	7.5	15	15	15		
S-C35	2	2	45A	2.2	4	9	15	15	15	35A	0.960
				3	5.5	12.5	20	20	20		
S-C50	2	2	65A	3	5.5	13	24	24	24	50A	1.240
				4	7.5	17.5	32	32	32		
S-C60	2	2	80A	4	7.5	15	30	30	30	58A	1.240
				5.5	10	20	40	40	40		
S-C65	2	2	100A		11	19	37	37	37	67A	2.085
					15	25	50	50	50		
S-C80	2	2	125A		15	22	44	44	44	85A	2.085
					20	30	60	60	60		
S-C100	2	2	145A			30	60	60	60	110A	2.860
						40	80	80	80		
S-C125	2	2	165A			37	75	75	75	135A	2.860
						50	100	100	100		
S-C150	2	2	200A			45	90	90	90	165A	4.920
						60	125	125	125		
S-C220	2	2	250A			65	110	110	110	220A	6.865
						85	150	150	150		

"S-C"-Series Contactors

Dimensions



Contactors Name	Outline Dimensions (mm)								AUX. Contacts	DIN rail
	A	B	C	D	E	F	G	H		
S-C11	63	44	82	50	30	M3.5	M3.5	M4	1NO,1NC	35mm
S-C12	61	56	82	52	41	M3.5	M3.5	M4	1NO+1NC 2NO	35mm
S-C16	61	56	82	52	41	M4	M3.5	M4	1NO+1NC	35mm
S-C21	73	69	100	59	54	M4	M4	M4	2NO+2NC	35mm
S-C35	92	85	108	68	71	M5	M4	M5	2NO+2NC	35mm
S-C50/60	106	101	105	86	90	M6	M4	M5	2NO+2NC	
S-C65/80	121	117	129	100	100	M6	M4	M6	2NO+2NC	
S-C100/125	141	141	143	115	125	M8	M4	M6	2NO+2NC	
S-C150	154	161	163	140	130	M10	M4	M6	2NO+2NC	
S-C220	160	179	192	146	140	M10	M4	M6	2NO+2NC	

Thermal Overload Relays

Model Designation

NTH — 17 2PS
1 2 3

1.Current Rating(max.)

0.5	0.75	1.05	1.45	1.9	2.5	3	4		
5	6.5	8	11	14	17	21	25	28	32

2.Phase-Failure Protect

2P	2 Heaters
3P	Phase-Failure

3.Separate Blocks

none	Normal
S	Install

Model Designation

TH — 12 T3.5O
1 2 3 4

1.Type

12
20
60
120

2.Load Plug

none	Normal
T	Install

3.Current Rating(mean)

12	0.8 1.2 2.1 3.5 5 6.5
	9 11 15
20	2.1 3.5 5 6.5 9 11 15 22 30
60	30 41 54 67 80
120	80 105 130

4.Rear Connector

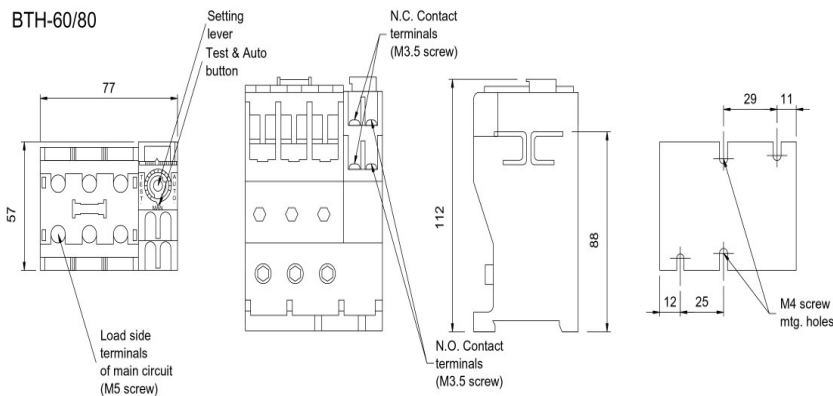
none	S-C Series
O	C-Series

Model Designation

BTH- 60 33 3P

1 2 3

catalogue name	Relay setting range RC(FLC)A	Standard A	Contactors	Weight Kg	Approval
BTH-60	12-18A	15A	C-45D11	0.427	CE
BTH-60	18-26A	22A	C-45D11	0.427	CE
BTH-60	26-40A	33A	C-45D11	0.427	CE
BTH-60	33-50A	41A	C-45D11	0.427	CE
BTH-60	43-65A	54A	C-55D11	0.427	CE
BTH-80	54-80A	67A	C-65D11	0.427	CE
BTH-80	64-96A	80A	C-80D(100D11)	0.427	CE
BTH-80	85-126A	105A	C-100D11	0.427	CE



Thermal Overload Relays

"NTH"-Series 0.35A to 32A



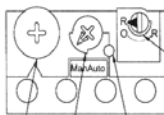
THERMAL OVERLOAD RELAYS

Compensated and differential overload relays

With 1 N/O + 1 N/C electrically separated auxiliary contacts

For direct connection with "C"- series contactors

catalogue name	relay setting range RC (FLC) A	contactors	weight Kg	Approval	Motor Capacity (HP)				
					1 phase		3 phase		
					100-110V	200-220V	200-220V	380-440V	500-550V
NTH-0.5	0.35 - 0.5A	C-09D	0.14	CE				1/8	
NTH-0.75	0.5 - 0.75A	C-09D	0.14	CE			1/8	1/4	
NTH-1.05	0.75 - 1.05A	C-09D	0.14	CE					1/2
NTH-1.45	1.05 - 1.45A	C-09D	0.14	CE			1/4	1/2	1
NTH-1.9	1.4 - 1.9A	C-09D	0.14	CE		1/4			
NTH-2.5	1.8 - 2.5A	C-09D	0.14	CE				1	11/2
NTH-3	2.4 - 3A	C-09D	0.14	CE				11/2	2
NTH-4	2.9 - 4A	C-09D	0.14	CE	1/4	1/2	1	2	
NTH-5	3.8 - 5A	C-09D	0.14	CE		3/4		3	3
NTH-6.5	4.5 - 6.5A	C-09D	0.14	CE	1/2	3/4	11/2		5
NTH-8	6 - 8A	C-09D	0.14	CE	1/2	1	2		6
NTH-11	8 - 11A	C-11D	0.14	CE		11/2	3	5	7 1/2
NTH-14	11 - 14A	C-12D	0.14	CE	3/4	2	4	7 1/2	10
NTH-17	14 - 17A	C-12D	0.14	CE	1		5	10	15
NTH-21	17 - 21A	C-18D	0.15	CE	11/2	3		15	20
NTH-25	21 - 25A	C-25D	0.15	CE	2	4	7 1/2		20
NTH-28	24 - 28A	C-25D	0.15	CE				20	
NTH-32	26 - 32A	C-25D	0.15	CE			5	10	



Setting current button
Setting lever
Switching position Man & Auto button

Button for reset and disconnection -setting O/R or R.
O/R=reset and disconnection
R=reset only

Knob for changing to "reset". Function depends on the position of the reset button.

1.MAN-position

A.MAN-position and reset button on position R.

The blue reset button is for manual reset only. Accidental pushing of the reset button of the untripped relay does not result in any contact function.

B.MAN-position and reset button on position O/R.

The blue reset button is for manual reset and it can be used as a STOP-button as well. Contact 95-96 open while pressing the reset button.

2.AUTO-position

A.AUTO-position and reset button on position R.

The tripped relay will automatically reset itself after approx. 1 min.

B.AUTO-position and reset button on position O/R.

The tripped relay will automatically reset itself after approx. 1 min.

The blue reset button is used only as a STOP-button. Contact 95-96 open while the reset button is pressed.

Note : Select and set the overload relay according to the current value on the motor rating plate.

Direct mounting on the underside of the contactors.

Terminals protected against direct finger contact and fitted with ready to tighten screws.

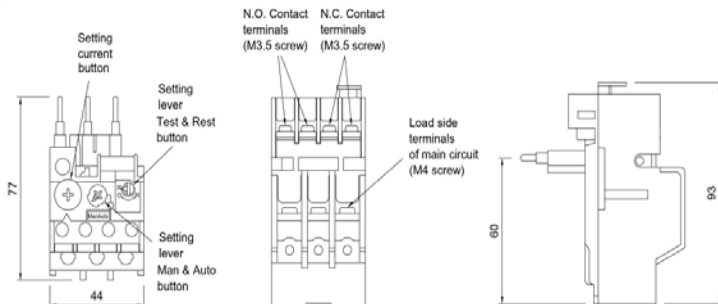
Lockable and sealable Man/Auto switch.

Trip Test. Cover locks the function.

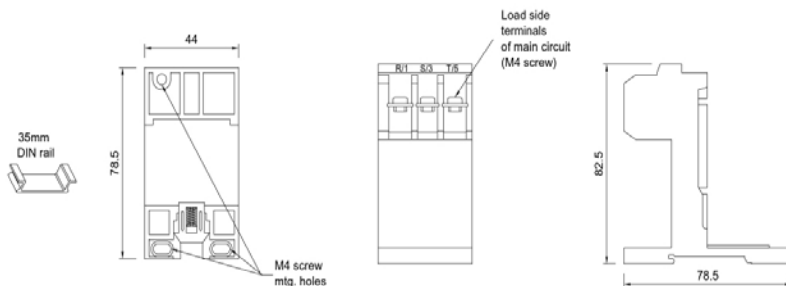
"NTH"- Series Thermal Overload Relays

Dimensions(mm)

NTH-Series



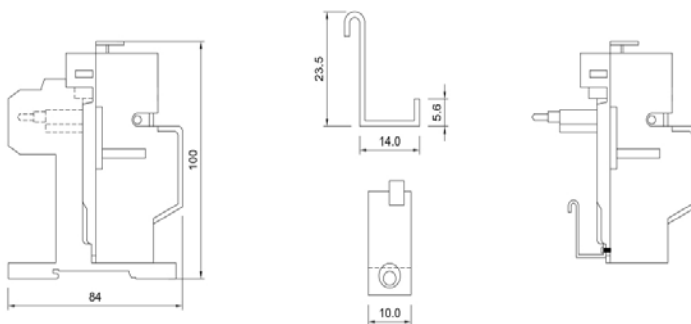
NTH-04 Separate Blocks



NTH+NTH-04

NTH-51 Rear connector

NTH+NTH-51(C-25D.C-35D)



Thermal Overload Relays

"TH"- Series 0.64A to 160A



TH-12



TH-20



TH-20(T)



TH-60



TH-60(T)



TH-120

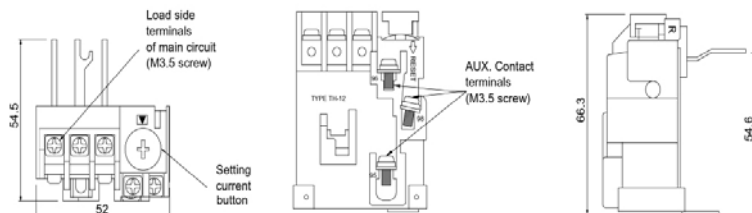
Compensated and differential overload relays
With 1 N/O-N/C (1COM) auxiliary contacts
For direct connection with "S-C"- series contactors

calalogue name	relay setting range	mean A	contactors	weight Kg	Motor Capacity (HP)				
					1 phase		3 phase		
	RC (FLC) A				100-110V	200-220V	200-220V	380-440V	500-550V
TH-12	0.64 - 0.96A	0.8A	S-C11~S-C12	0.095			1/8	1/4	1/2
TH-12	0.9 - 1.5A	1.2A	S-C11~S-C12	0.095			1/4	1/2	3/4
TH-12	1.6 - 2.6A	2.1A	S-C11~S-C12	0.095		1/4	1/2	1	1 1/2
TH-12	2.8 - 4.2A	3.5A	S-C11~S-C12	0.095		1/2	1	2	3
TH-12	4 - 6A	5A	S-C11~S-C12	0.095	1/4	3/4	1 1/2	3	4
TH-12	5 - 8A	6.5A	S-C11~S-C12	0.095	1/2	1	2	4	
TH-12	7 - 11A	9A	S-C11~S-C12	0.095			3	5	7 1/2
TH-12	9 - 13A	11A	S-C12	0.095	3/4	1 1/2	4	7 1/2	10
TH-12	12 - 18A	15A	S-C16	0.095	1	2	5	10	
TH-20(T)	1.6 - 2.6A	2.1A	S-C16~S-C21	0.135			1/2	1	1 1/2
TH-20(T)	2.8 - 4.2A	3.5A	S-C16~S-C21	0.135		1/2	1	2	3
TH-20(T)	4 - 6A	5A	S-C16~S-C21	0.135	1/4	3/4	1 1/2	3	4
TH-20(T)	5 - 8A	6.5A	S-C16~S-C21	0.135	1/2	1	2	4	
TH-20(T)	7 - 11A	9A	S-C16~S-C21	0.135			3	5	7 1/2
TH-20(T)	9 - 13A	11A	S-C16~S-C21	0.135	3/4	1 1/2	4	7 1/2	10
TH-20(T)	12 - 18A	15A	S-C16~S-C21	0.135	1	2	5	10	
TH-20(T)	18 - 26A	22A	S-C21	0.135			7 1/2	15	20
TH-20(T)	24 - 36A	30A	S-C35	0.135		5	10	20	
TH-60(T)	24 - 36A	30A	S-C50	0.225		5	10	20	
TH-60(T)	33 - 50A	41A	S-C50	0.225	3	7 1/2	15	30	40
TH-60(T)	43 - 65A	54A	S-C60	0.225			20	40	50
TH-60(T)	54 - 80A	67A	S-C65	0.225	6		25	50	60
TH-60(T)	60 - 100A	80A	S-C80	0.225			30	60	75
TH-120	60 - 100A	80A	S-C100	0.490			30	60	75
TH-120	80 - 130A	105A	S-C100	0.490			40	75	100
TH-120	100 - 160A	130A	S-C125	0.490			50	100	125

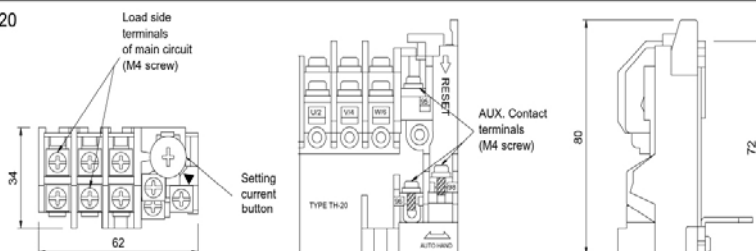
"TH"- Series Thermal Overload Relays

Dimensions(mm)

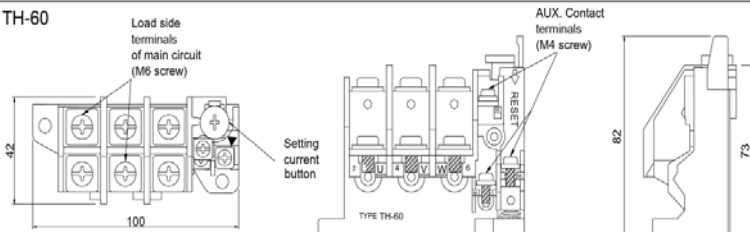
TH-12



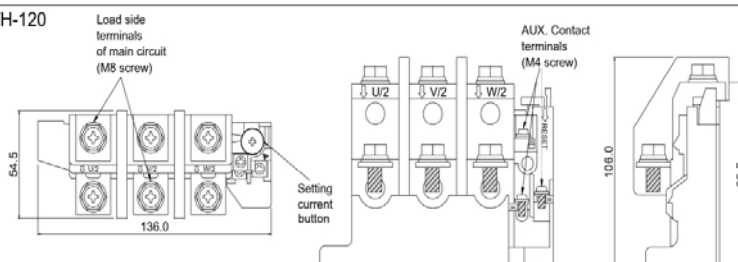
TH-20



TH-60



TH-120



AC Starters

Moulded Plastic Enclosure(MS1 IP65)

Model Designation

MSO — 09DN1 G7 B3.5 2P

1.Type

MSO	Open
MS	Enclosure
MS1	Enclosure with pushbutton

2.Capacity

MSO	C-09D~C-100D
MS	C-09D~C-35D
MS1	C-09D~C-35D

3.Cover Model

none	Normal
N	Lock
R	Reset
G	Only Start
S	Only Stop

4.Phase

1	Single Phase
2	Single Phase Terminal Jumper
3	3 Phase

7.Phase-Failure Protect

2P	2 Heaters
3P	Phase-Failure

6.Overload Relay

B	BTH	T12	TH12
N	NTH	T20	TH20

5.Coil Control Voltage

Detail Page 1-1

Enclosures of Magnetic Starters

MS1 IP65



MSO-09D



MS-12D



MS1-12D



MS1-18DR



MS1-35D



MSO-45D

Non-reversing starters - enclosed without pushbutton and open type

Catalogue name	3-phase				1-phase	Overload relay type	Instantaneous auxiliary contacts		weight Kg	Approval
	220V	380V	440V	575V	240V		N/O	N/C		
Open type	KW	KW	KW	KW	KW					
Non-pushbutton	HP	HP	HP	HP	HP					
Starters	A	A	A	A	A					
MSO-09D	2.2	3.7	3.7	3.7	1.5	TH12/20,BTH,NTH			0.585	SP CE UL
MS-09D	3	5	5	5	2	BTH,NTH	1	-	1.035	
MS1-09D	9	9	8	6.5	12	BTH,NTH			1.050	
MSO-11D	3	5.5	5.5	5.5	1.5	TH12/20,BTH,NTH			0.585	SP CE UL
MS-11D	4	7.5	7.5	7.5	2	BTH,NTH	1	-	1.035	
MS1-11D	12	12	11	9	12	BTH,NTH			1.050	
MSO-12D	4	7.5	7.5	7.5	2.2	TH12/20,BTH,NTH			0.585	SP CE UL
MS-12D	5.5	10	10	10	3	BTH,NTH	1	-	1.035	
MS1-12D	16	16	15	13	17	BTH,NTH			1.050	
MSO-18D	5.5	10	10	10	3.7	TH20,BTH,NTH			0.625	SP CE
MS-18D	7.5	15	15	15	5	BTH,NTH	1	-	1.065	
MS1-18D	23	22	21	16	28	BTH,NTH			1.080	
MSO-25D	7.5	15	15	15	4	TH20,BTH,NTH			0.920	SP CE
MS-25D	10	20	20	20	5.5	BTH,NTH	1	-	1.435	
MS1-25D	30	30	30	25	33	BTH,NTH			1.450	
MSO-35D	11	19	19	19	5.5	TH20,BTH,NTH			0.650	SP CE
MS-35D	15	25	25	25	7.5	BTH,NTH	1	-	1.460	
MS1-35D	42	39	36	29	40	BTH,NTH			1.475	
MSO-45D	15	30	30	30		BTH			1.700	CE
	20	40	40	40			1	1		
	55	64	52	46						
MSO-55D	19	33	33	33		BTH			1.700	CE
	25	45	45	45			1	1		
	65	68	57	50						
MSO-65D	22	37	37	37		BTH			1.700	CE
	30	50	50	50			1	1		
	75	72	64	53						
MSO-80D	25	45	55	55		BTH			1.900	CE
	35	60	75	75			1	1		
	90	85	95	72						
MSO-100D	30	55	55	60		BTH			1.900	CE
	40	75	75	80			1	1		
	105	105	95	76						

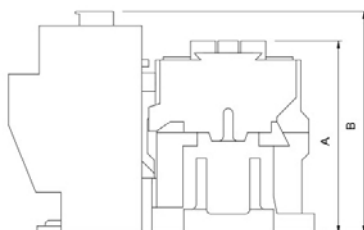
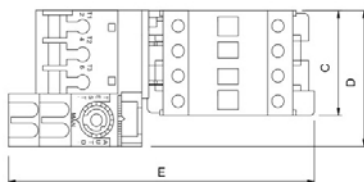
Open type

Non-Enclosures with Box

Dimensions(mm)

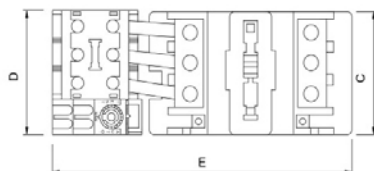
MSO-09D/11D/12D/18D/25D/35D

Overload Relay : BTH12~35



MSO-45D/55D/65D/80D/100D

Overload Relay : BTH60~80



Catalogue name	Dimensions (mm)					Catalogue name	Dimensions (mm)				
	A	B	C	D	E		A	B	C	D	E
C-09D	79	94	45.5	55	126	C-45D	115	112	75	77	185
C-11D	79	94	45.5	55	126	C-55D	115	112	75	77	185
C-12D	79	94	45.5	55	126	C-65D	115	112	75	77	185
C-18D	85	94	45.5	55	126	C-80D	123	112	85	77	185
C-25D	94	94	57	55	130	C-100D	123	112	85	77	185
C-35D	99	94	57	55	130						

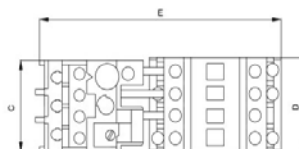
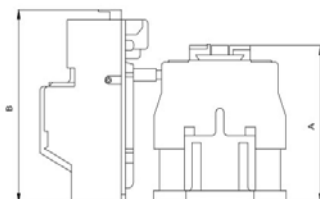
Open type

Non-Enclosures with Box

Dimensions (mm)

MSO-09D/11D/12D/18D/25D/35D

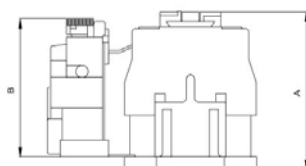
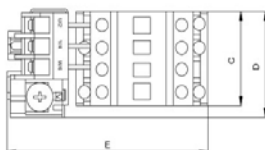
Overload Relay:NTH-Series



Catalogue name	Dimensions (mm)				
	A	B	C	D	E
C-09D	79	93	44	45.5	128
C-11D	79	93	44	45.5	128
C-12D	79	93	44	45.5	128
C-18D	85	93	44	45.5	128
C-25D	94	105	44	57	135
C-35D	99	105	44	57	137.5

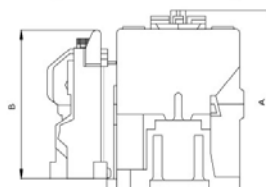
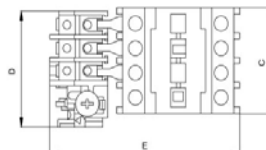
MSO-09D/11D/12D

Overload Relay:TH12-Series



MSO-09D/11D/12D/18D/25D/35D

Overload Relay:TH20-Series



Catalogue name	Dimensions (mm)				
	A	B	C	D	E
C-09D	79	66.3	45.5	50.3	105
C-11D	79	66.3	45.5	50.3	105
C-12D	79	66.3	45.5	50.3	105

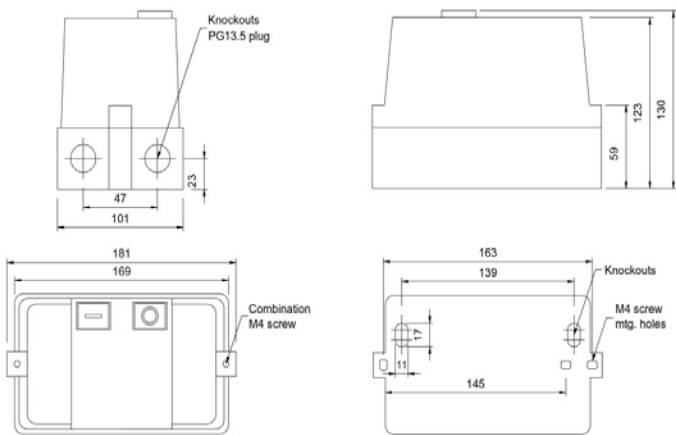
Catalogue name	Dimensions (mm)				
	A	B	C	D	E
C-09D	79	80	45.5	62	107
C-11D	79	80	45.5	62	107
C-12D	79	80	45.5	62	107
C-18D	85	80	45.5	62	107
C-25D	94	80	57	62	116
C-35D	99	80	57	62	113

Enclosures of Magnetic Starters

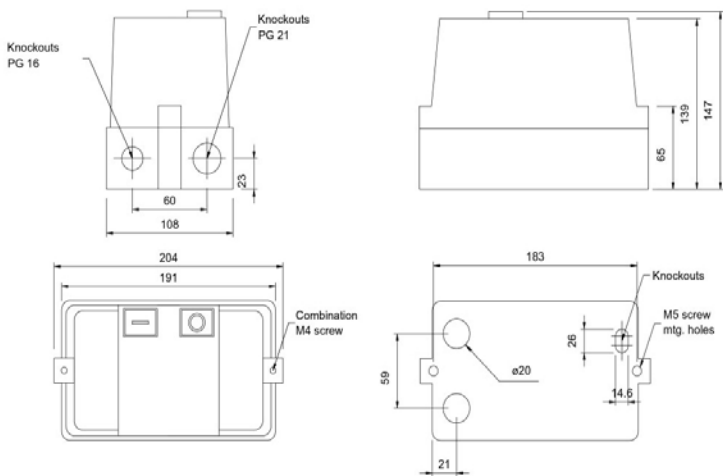
MS1 IP65

Dimensions(mm)

MS1-09D/11D/12D/18D



MS1-25D/35D

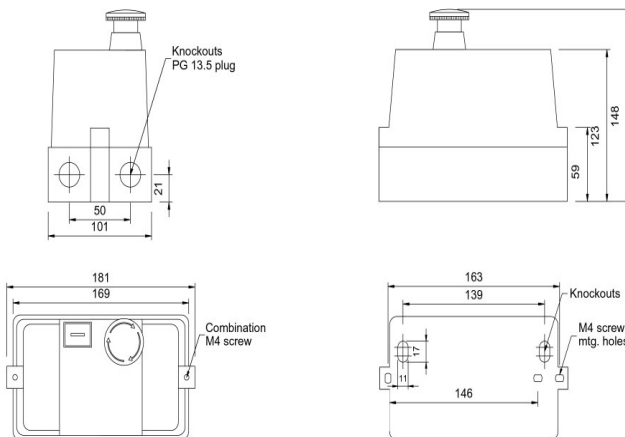


Enclosures of Magnetic Starters

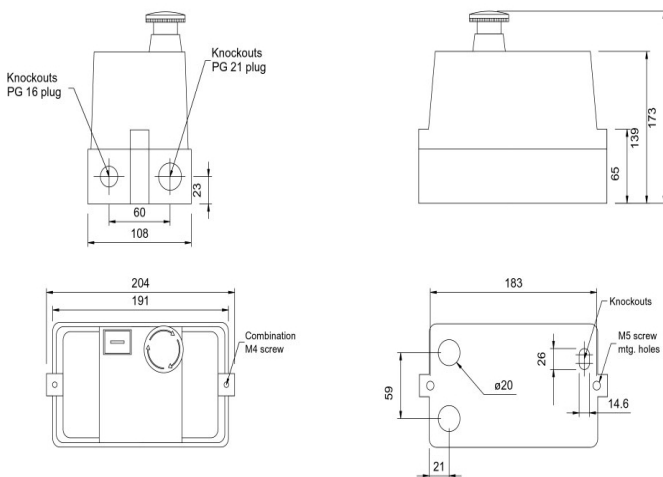
MS1 IP65

Dimensions(mm)

MS1-09D/11D/12D/18D-R



MS1-25D/35D-R



AC Starters

Moulded Plastic Enclosure(MSP IP42)

Model Designation

MSP11 – C111G7N8 2P– PB

1.Series

MSP11
MSP21

2.Capacity

MSP11	09D 11D 12D S-C11
MSP21	09D~35D S-C11~S-C21

3.Phase

1	Single Phase
2	Single Phase Terminal Jumper
3	3 Phase

4.Coil Control Voltage

Detail Page 1-1

7.Cover Model

none	Enclosure
PB	Enclosure with pushbutton

6.Phase-Failure Protect

2P	2 Heaters
3P	Phase-Failure

5.Overload Relay

T12	TH12	N	NTH
T20	TH20		

Enclosures of Magnetic Starters

MSP IP42

Non-reversing starters - enclosed without push button type

With differential overload relay , 1 N/O - N/C(1COM) auxiliary contacts
Maximum power rating for standard 3 phase motors 50 or 60 HZ AC3 duty



MSP11-C11



MSP11-C09D-PB



MSP21-C21



MSP21-C35D-PB

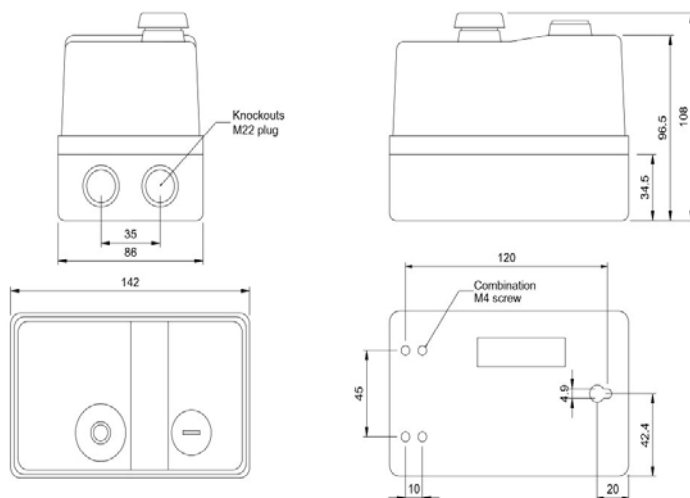
Catalogue name	3-phase				Overload relay type	Instantaneous auxiliary contacts		weight Kg
	220V	380V	440V	575V		N/O	N/C	
Non-pushbutton Starters	KW HP	KW HP	KW HP	KW HP				
MSP11-C11	3	4	4	4	TH-12	1	-	0.577
MSP11-C11-PB	4	5.5	5.5	5.5	TH-12			0.592
MSP11-C09D	2.2	3.7	3.7	3.7	TH-12/20	1	-	0.620
MSP11-C09D-PB	3	5	5	5	TH-12/20			0.635
MSP11-C11D	3	5.5	5.5	5.5	TH-12/20	1	-	0.625
MSP11-C11D-PB	4	7.5	7.5	7.5	TH-12/20			0.640
MSP11-C12D	4	7.5	7.5	7.5	TH-12/20	1	-	0.625
MSP11-C12D-PB	5.5	10	10	10	TH-12/20			0.640
MSP21-C11	3	4	4	4	TH-12	1	-	0.695
MSP21-C11-PB	4	5.5	5.5	5.5	TH-12			0.645
MSP21-C12	3	4	4	4	TH-12	1	1	0.723
MSP21-C12-PB	4	5.5	5.5	5.5	TH-12			0.670
MSP21-C16	4	5.5	5.5	5.5	TH-12/20	1	1	0.750
MSP21-C16-PB	5.5	7.5	7.5	7.5	TH-12/20			0.800
MSP21-C21	5.5	11	11	11	TH-20	2	2	1.015
	7.5	15	15	15				
MSP21-C09D	2.2	3.7	3.7	3.7	TH-12/20	1	-	0.740
MSP21-C09D-PB	3	5	5	5	TH-12/20			0.790
MSP21-C11D	3	5.5	5.5	5.5	TH-12/20	1	-	0.740
MSP21-C11D-PB	4	7.5	7.5	7.5	TH-12/20			0.790
MSP21-C12D	4	7.5	7.5	7.5	TH-12/20	1	-	0.740
MSP21-C12D-PB	5.5	10	10	10	TH-12/20			0.790
MSP21-C18D	5.5	10	10	10	TH-20.NTH	1	-	0.754
MSP21-C18D-PB	7	15	15	15	TH-20.NTH			0.804
MSP21-C25D	7.5	15	15	15	TH-20	1	-	0.940
MSP21-C25D-PB	10	20	20	20	TH-20			0.990
MSP21-C35D	11	19	19	19	TH-20	1	-	0.965
MSP21-C35D-PB	15	25	25	25	TH-20			1.015
catalogue name	Terminal Jumper-1phase							
	240V	380V	440V					
MSP11-C09D	1.5HP	3HP	3HP		TH-20			0.623
MSP11-C09D-PB	1.5HP	3HP	3HP		TH-20			0.638
MSP11-C11D	3HP	5HP	5HP		TH-20			0.628
MSP11-C11D-PB	3HP	5HP	5HP		TH-20			0.643
MSP11-C12D	3HP	5HP	5HP		TH-20			0.626
MSP11-C12D-PB	3HP	5HP	5HP		TH-20			0.643
MSP21-C09D	1.5HP	3HP	3HP		TH-20.NTH			0.748
MSP21-C09D-PB	1.5HP	3HP	3HP		TH-20.NTH			0.798
MSP21-C11D	3HP	5HP	5HP		TH-20.NTH			0.748
MSP21-C11D-PB	3HP	5HP	5HP		TH-20.NTH			0.796
MSP21-C12D	3HP	5HP	5HP		TH-20.NTH			0.748
MSP21-C12D-PB	3HP	5HP	5HP		TH-20.NTH			0.798
MSP21-C18D	5HP	7.5HP	7.5HP		TH-20.NTH			0.762
MSP21-C18D-PB	5HP	7.5HP	7.5HP		TH-20.NTH			0.812

Enclosures of Magnetic Starters

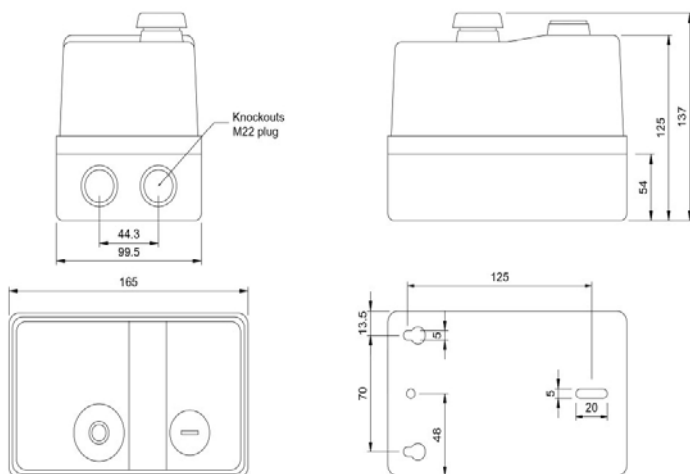
MSP IP42

Dimensions(mm)

MSP11



MSP21



AC Starters

Moulded Metal Enclosure(MSN IP40)

Model Designation

MSN11 – C111G7T123.5 2P–PB

1.Series

MSO	Open
MSN11	11 Iron Box
MSN12	12 Iron Box
MSN21	21 Iron Box
MSN35	35 Iron Box
MSN65	65 Iron Box
MSN100	100 Iron Box
MSN150	150 Iron Box

2.Capacity

MSO	S-C11~S-C150
MSN11	S-C11 09D 11D 12D
MSN12	S-C11 S-C12 09D 11D 12D
MSN21	S-C16~S-C21 09D~25D
MSN35	S-C35 25D
MSN65	S-C50~S-C80
MSN100	S-C100~S-C125 45D~100D
MSN150	S-C150

3.Phase

1	Single Phase
2	Single Phase Terminal Jumper
3	3 Phase

7.Cover Model

none	Enclosure
PB	Enclosure with pushbutton

6.Phase-Failure Protect

2P	2 Heaters
3P	Phase-Failure

5.Overload Relay

T12	TH12	T60	TH60
T20	TH20	B	BTH
T120	TH120		

4.Coil Control Voltage

Detail Page 1-1

Moulded Metal Enclosure

MSN IP40

Non-reversing starters - enclosed without pushbutton and open type

With differential overload relay , 1 N/O - N/C(1COM) auxiliary contacts

Maximum power rating for standard 3 phase motors 50 or 60 HZ AC3 duty

Catalogue name	3-phase				Overload relay type	Instantaneous auxiliary contacts		weight Kg
	220V	380V	440V	575V		N/O	N/C	
TYPE	KW HP A	KW HP A	KW HP A	KW HP A				
MSO-C11	3	4	4	4	TH12	1	-	0.405
	4	5.5	5.5	5.5				
	12	9	9	7				
MSO-C12	3	4	4	4	TH12	1	1	0.445
	4	5.5	5.5	5.5				
	12	9	9	7				
MSO-C16	4	5.5	5.5	5.5	TH12/20	1	1	0.495
	5.5	7.5	7.5	7.5				
	16	12	11	10				
MSO-C21	5.5	11	11	11	TH20	2	2	0.750
	7.5	15	15	15				
	24	21	20	17				
MSO-C35	9	15	15	15	TH20	2	2	1.270
	12.5	20	20	20				
	35	27	25	22				
MSO-C50	13	24	24	24	TH60	2	2	1.695
	17.5	32	32	32				
	50	44	41	35				
MSO-C60	15	30	30	30	TH60	2	2	1.695
	20	40	40	40				
	58	56	54	45				
MSO-C65	19	37	37	37	TH60	2	2	2.730
	25	50	50	50				
	67	63	60	52				
MSO-C80	22	44	44	44	TH60	2	2	2.730
	30	60	60	60				
	85	80	75	64				
MSO-C100	30	60	60	60	TH120	2	2	4.000
	40	80	80	80				
	110	90	85	72				
MSO-C125	37	75	75	75	TH120	2	2	4.000
	50	100	100	100				
	135	130	120	105				
MSO-C150	44	93	93	93	TH120	2	2	5.450
	60	125	125	125				
	150	165	155	130				



MSO-C11



MSO-C21



MSO-C35



MSO-C50



MSO-C100

Moulded Metal Enclosure

MSN IP40



MSN12-C11-PB



MSN12-12D-PB



MSN21-C16-PB



MSN21-11D



MSN21-25D-PB

Non-reversing starters - enclosed without pushbutton and open type

With differential overload relay , 1 N/O - N/C(1COM) auxiliary contacts

Maximum power rating for standard 3 phase motors 50 or 60 HZ AC3 duty

Catalogue name	3-phase				Overload relay type	Instantaneous auxiliary contacts		weight
	220V	380V	440V	575V		N/O	N/C	
TYPE	KW HP A	KW HP A	KW HP A	HP hp A				Kg
MSN11-C11	3	4	4	4	TH12	1	-	0.705
	4	5.5	5.5	5.5				
	12	9	9	7				
MSN11-09D	2.2	3.7	3.7	3.7	TH12	1	-	0.731
	3	5	5	5				
	9	9	8	6.5				
MSN11-11D	3	5.5	5.5	5.5	TH12	1	-	0.735
	4	7.5	7.5	7.5				
	12	12	11	9				
MSN11-12D	4	7.5	7.5	7.5	TH12	1	-	0.735
	5.5	10	10	10				
	16	16	15	13				
MSN12-C11-PB	3	4	4	4	TH12	1	-	0.860
	4	5.5	5.5	5.5				
	12	9	9	7				
MSN12-C12-PB	3	4	4	4	TH12	1	1	0.905
	4	5.5	5.5	5.5				
	12	9	9	7				
MSN12-09D-PB	2.2	3.7	3.7	3.7	TH12/20	1	-	0.886
	3	5	5	5				
	9	9	8	6.5				
MSN12-11D-PB	3	5.5	5.5	5.5	TH12/20	1	-	0.890
	4	7.5	7.5	7.5				
	12	12	11	9				
MSN12-12D-PB	4	7.5	7.5	7.5	TH12/20	1	-	0.890
	5.5	10	10	10				
	16	16	15	13				
MSN21-C16	4	5.5	5.5	5.5	TH20	1	1	1.045
MSN21-C16-PB	5.5	7.5	7.5	7.5				1.115
	16	12	11	10				
MSN21-C21	5.5	11	11	11	TH20	2	2	1.300
MSN21-C21-PB	7.5	15	15	15				1.375
	24	21	20	17				
MSN21-09D	2.2	3.7	3.7	3.7	TH12/20,NTH	1	-	1.025
MSN21-09D-PB	3	5	5	5	TH12/20,NTH			1.085
	9	9	8	6.5				
MSN21-11D	3	5.5	5.5	5.5	TH12/20,NTH	1	-	1.025
MSN21-11D-PB	4	7.5	7.5	7.5	TH12/20,NTH			1.085
	12	12	11	9				
MSN21-12D	4	7.5	7.5	7.5	TH12/20,NTH	1	-	1.025
MSN21-12D-PB	5.5	10	10	10	TH12/20,NTH			1.085
	16	16	15	13				
MSN21-18D	5.5	10	10	10	TH20,NTH	1	-	1.030
MSN21-18D-PB	7.5	15	15	15	TH20,NTH			1.090
	23	22	21	16				
MSN21-25D	7.5	15	15	15	TH20	1	-	1.225
MSN21-25D-PB	10	20	20	20	TH20			1.295
	30	30	30	25				

Moulded Metal Enclosure

MSN IP40



MSN35-C35



MSN35-C35-PB



MSN65-C80-PB



MSN100-45D-PB



MSN150-C150-PB

Non-reversing starters - enclosed without pushbutton and open type

With differential overload relay, 1 N/O - N/C(1COM) auxiliary contacts

Maximum power rating for standard 3 phase motors 50 or 60 HZ AC3 duty

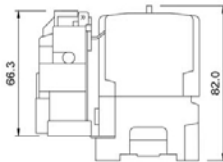
Catalogue name	3-phase				Overload relay type	Instantaneous auxiliary contacts		weight
	220V	380V	440V	575V		N/O	N/C	
TYPE	KW HP A	KW HP A	KW HP A	KW HP A				Kg
MSN35-C35	9	15	15	15	TH20	2	2	2.260
MSN35-C35-PB	12.5	20	20	20				2.234
	35	27	25	22				
MSN35-25D	7.5	15	15	15	TH20.NTH	1	-	1.950
MSN35-25D-PB	10	20	20	20				2.070
	30	30	30	25				
MSN35-35D	11	19	19	19	BTH60 TH60	1	-	1.950
MSN35-35D-PB	15	25	25	25				2.070
	42	39	36	29				
MSN65-C50	13	24	24	24	TH60	2	2	3.140
MSN65-C50-PB	17.5	32	32	32				3.440
	50	44	41	35				
MSN65-C60	15	30	30	30	TH60	2	2	3.140
MSN65-C60-PB	20	40	40	40				3.445
	58	56	54	45				
MSN65-C65	19	37	37	37	TH60	2	2	4.090
MSN65-C65-PB	25	50	50	50				4.240
	67	63	60	52				
MSN65-C80	22	44	44	44	TH60	2	2	4.090
MSN65-C80-PB	30	60	60	60				4.240
	85	80	75	64				
MSN100-C100	30	60	60	60	TH120	2	2	6.280
MSN100-C100-PB	40	80	80	80				6.430
	110	90	85	72				
MSN100-C125	37	75	75	75	TH120	2	2	6.280
MSN100-C125-PB	50	100	100	100				6.430
	135	130	120	105				
MSN100-45D	15	30	30	30	BTH60	1	1	3.980
MSN100-45D-PB	20	40	40	40				4.130
	55	64	52	46				
MSN100-55D	19	33	33	33	BTH60	1	1	3.980
MSN100-55D-PB	25	45	45	45				4.130
	65	68	57	50				
MSN100-65D	22	37	37	37	BTH60	1	1	3.980
MSN100-65D-PB	30	50	50	50				4.130
	75	72	64	53				
MSN100-80D	25	45	55	55	BTH80	1	1	4.190
MSN100-80D-PB	35	60	75	75				4.330
	90	85	95	72				
MSN100-100D	30	55	55	60	BTH80	1	1	4.190
MSN100-100D-PB	40	75	75	80				4.330
	105	105	95	76				
MSN150-C150-PB	44	93	93	93	TH120	2	2	8.950
	60	125	125	125				
	150	165	155	130				

Open type

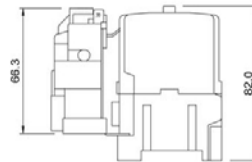
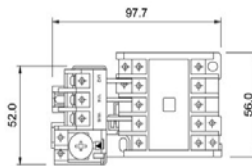
Non-Enclosures without Box

Dimensions(mm)

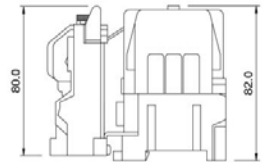
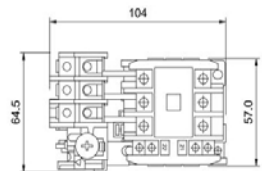
MSO-C11

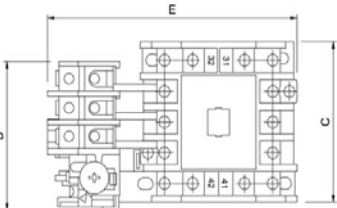


MSO-C12



MSO-C16

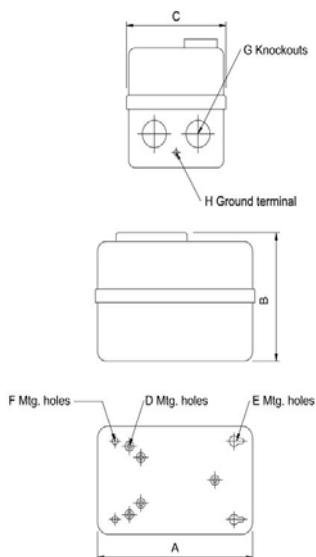
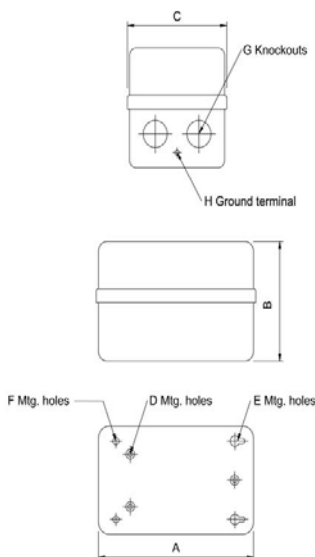


	Catalogue name	Dimensions (mm)				
		A	B	C	D	E
	S-C21	100	80	69	64.5	116
	S-C35	108	80	85	64.5	126
	S-C50	105	82	101	100	160
	S-C60	105	82	101	100	160
	S-C65	129	82	117	100	162
	S-C80	129	82	117	100	162
	S-C100	143	106	141	136	196
	S-C125	143	106	141	136	196
	S-C150	163	106	161	136	223

Enclosures of Magnetic Starters

MSN IP40

Dimensions(mm)



Catalogue name	Dimensions (mm)								Catalogue name	Dimensions (mm)							
	A	B	C	D	E	F	G	H		A	B	C	D	E	F	G	H
MSN11-C11	137	90	86	4	4.5	5.5	22	4	MSN12 C11-PB	141	103	86	4	4.5	5.5	22	4
MSN21-C16	166	113	100	4	5	6	22	4	MSN12 C12-PB	141	103	86	4	4.5	5.5	22	4
MSN21-C21	166	113	100	4	5	6	22	4	MSN21 C16-PB	166	120	100	4	5	6	22	4
MSN35-C35	225	132	129	5	6	6	28	5	MSN21 C21-PB	166	120	100	4	5	6	22	4
MSN65-C50	265	147	152	5	6	6	35	5	MSN35 C35-PB	225	139	129	5	6	6	28	5
MSN65-C60	265	147	152	5	6	6	35	5	MSN65 C50-PB	265	153	152	5	6	6	35	5
MSN65-C65	265	147	152	5	6	6	35	5	MSN65 C60-PB	265	153	152	5	6	6	35	5
MSN65-C80	265	147	152	5	6	6	35	5	MSN65 C65-PB	265	153	152	5	6	6	35	5
MSN100-C100	298	170	190	5	7	7.5	35	5	MSN65 C80-PB	265	153	152	5	6	6	35	5
MSN100-C125	298	170	190	5	7	7.5	35	5	MSN100 C100-PB	298	177	190	5	7	7.5	35	5
									MSN100 C125-PB	298	177	190	5	7	7.5	35	5
									MSN150 C150-PB	350	177	230	6	8	8	55	6

Star-delta Starters

CONTROL CIRCUIT : AC



EYD₃-35



EYD₃-50



EYO₃-100



EYO₃-45D

"S-C" Series

Type	220~240V		380~415V		MCM	MCY	MCΔ	BOX Dimensions (mm)
	HP	A	HP	A				
EYD ₃ -21	7.5~10	22~30A	10~15	15~22A	S-C21	S-C21	S-C21	300*460*170
EYD ₃ -35	15~20	41~54A	20~30	30~41A	S-C35	S-C21	S-C35	300*460*170
EYD ₃ -50	25~30	67~80A	40~50	54A~67A	S-C50	S-C35	S-C50	360*520*190
EYD ₃ -65	40	105A	60	80A	S-C65	S-C35	S-C65	420*560*210
EYD ₃ -80	50	130A	75	105A	S-C80	S-C50	S-C80	420*560*210
EYD ₃ -100	60	2CT TH20-5A	100	2CT TH20-5A	S-C100	S-C60	S-C100	420*560*210
EYD ₃ -125	75	2CT TH20-5A	125	2CT TH20-5A	S-C125	S-C65	S-C125	420*560*210
EYD ₃ -150	100	2CT TH20-5A	150	2CT TH20-5A	S-C150	S-C80	S-C150	480*700*230
EYD ₃ -220	125	2CT TH20-5A	200	2CT TH20-5A	S-C220	S-C100	S-C220	850*550*250

"C" Series

Type	220~240V		380~415V		MCM	MCY	MCΔ	BOX Dimensions (mm)
	HP	A	HP	A				
EYD ₃ -12D	7.5~10	22~30A	10~15	15~22A	C-12D10	C-12D01 +CA8-D11	C-12D10 +CA8-D11	300*460*170
EYD ₃ -25D	15~20	41~54A	20~30	30~41A	C-25D10	C-12D01 +CA8-D11	C-25D10 +CA8-D11	300*460*170
EYD ₃ -35D	25~30	67~80A	40~50	54~67A	C-35D10	C-25D01 +CA8-D11	C-35D10 +CA8-D11	300*460*170
EYD ₃ -55D	40	105A	60	80A	C-55D11	C-35D01 +CA8-D11	C-55D11	300*460*170
EYD ₃ -65D	50	130A	75	105A	C-65D11	C-45D11	C-65D11	360*520*190
EYD ₃ -80D	60	2CT TH20-5A	100	2CT TH20-5A	C-80D11	C-55D11	C-80D11	360*520*190
EYD ₃ -100D	75	2CT TH20-5A	125	2CT TH20-5A	C-100D11	C-65D11	C-100D11	360*520*190

Accessories

4 Pole contactors

Model Designation

C-12D22G7

1 2 3

1.Type

09D	11D	12D	25D
-----	-----	-----	-----

2.Contacts

09D	11D	12D	25D
40	4a	40	4a
22	2a2b	22	2a2b
04	4b		

3.Coil Control Voltage

Detail page 1-1



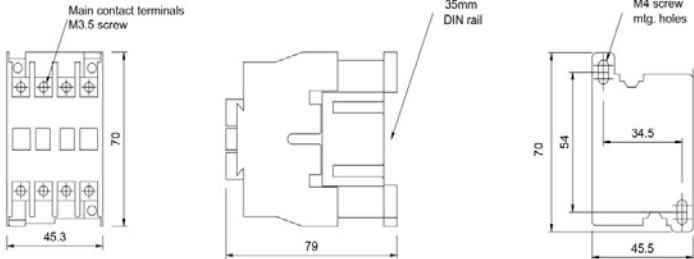
C-12D22



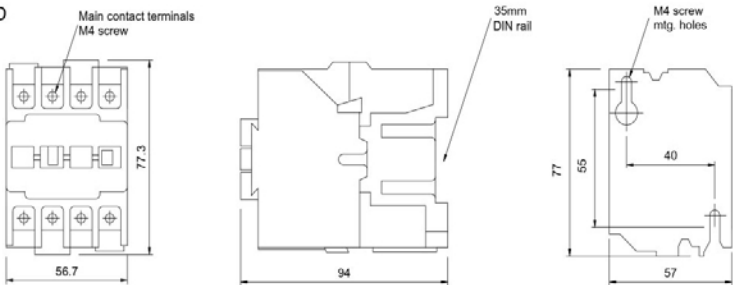
C-25D22

catalogue name	contacts		insulation voltage	AC1 duty 0 ≤ 40°C	AC3 Ie	weight Kg
	N/O	N/C				
C-09D40	4	-	1000V	20A	9A	0.326
C-09D22	2	2	1000V	20A	9A	0.326
C-09D04	-	4	1000V	20A	9A	0.326
C-11D40	4	-	1000V	25A	12A	0.326
C-11D22	2	2	1000V	25A	12A	0.326
C-11D04	-	4	1000V	25A	12A	0.326
C-12D40	4	-	1000V	25A	16A	0.326
C-12D22	2	2	1000V	25A	16A	0.326
C-12D04	-	4	1000V	25A	16A	0.525
C-25D40	4	-	1000V	40A	32A	0.525
C-25D22	2	2	1000V	40A	32A	0.525

C-09D/11D/12D



C-25D



Accessories

Control relays and auxiliary contacts blocks

Model Designation

CR2-1010AD
1 2 3



CR2-1022

1.Type

10	control circuit AC
20	control circuit DC

2.Contacts

10		20	
40	4a	30	3a
22	2a2b	12	1a2b
31	3a1b	21	2a1b
13	1a3b	03	3b
04	4b		

3.Coil Control Voltage

Detail page 1-1



CR2-2030



CA1-D11



CA1-D04



CA8-D11



CA9-D02

catalogue name	contacts		insulation voltage	thermal current	weight Kg
	N/O	N/C			
CR2-1040	4	-	660V	10A	0.335
CR2-1031	3	1	660V	10A	0.335
CR2-1022	2	2	660V	10A	0.335
CR2-1013	1	3	660V	10A	0.335
CR2-1004	0	4	660V	10A	0.335
CR2-2030	3	-	660V	10A	0.340
CR2-2021	2	1	660V	10A	0.340
CR2-2012	1	2	660V	10A	0.340
CR2-2003	-	3	660V	10A	0.340

Auxiliary contacts blocks

CA1-D 11
1 2

1.Series

CA1	Top mtg.
CA8	Side mtg.
CA9	Mechanical Interlock

2.Contacts

20	2a	31	3a1b
11	1a1b	13	1a3b
02	2b	22	2a2b
40	4a	04	4b

catalogue name	applicable contactors	auxiliary contacts		weight Kg
		N/O	N/C	
CA1-D20	C-09D to C-100D11	2	-	0.033
CA1-D11	C-09D to C-100D11	1	1	0.033
CA1-D02	C-09D to C-100D11	-	2	0.033
CA1-D40	C-09D to C-100D11	4	-	0.059
CA1-D31	C-09D to C-100D11	3	1	0.059
CA1-D22	C-09D to C-100D11	2	2	0.059
CA1-D13	C-09D to C-100D11	1	3	0.059
CA1-D04	C-09D to C-100D11	-	4	0.059
CA8-D20	C-09D to C-100D11	2	-	0.035
CA8-D11	C-09D to C-100D11	1	1	0.035
CA8-D02	C-09D to C-100D11	-	2	0.035
CA9-D02	C-09D to C-100D11	-	2	0.035

CR2/CA1/CA8/CA9

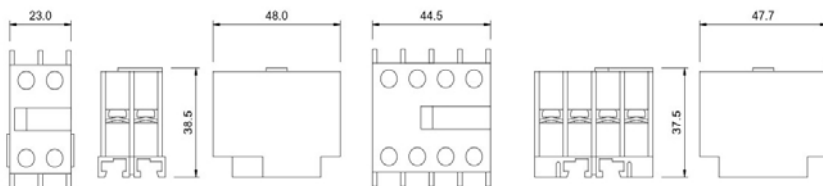
Dimensions(mm)

CR2-10



CA1-DXX(2P)

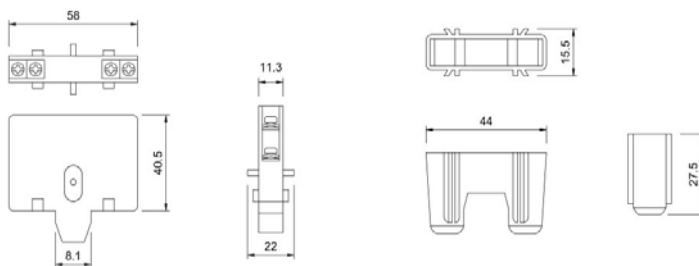
CA1-DXX(4P)



CA8-DXX



CA9-D02



Accessories

Coils for control relays

Model Designation

CL— $\frac{09D}{1}\frac{G7}{2}$

1.Type

C	09D 25D 45D 80D
	09DC 25DC 45DC 80DC
S	C11 C12 C21 C35 C50
	C65 C100 C150 C220
AC	201 202 203

2.Coil Control Voltage

Detail Pagp 1-1



CL-09D



CL-45D



CL-C11



CL-C100



CL-201



CL-202



CL-203

Catalogue
name.

Applicable
contactors

Weight
Kg.

CL-09D

C-09D~C-18D

0.06

CL-25D

C-25D~C-35D

0.07

CL-45D

C-45D~C-65D

0.10

CL-80D

C-80D~C-100D

0.105

CL-09DC

C-09DC~C-18DC

0.062

CL-25DC

C-25DC~C-35DC

0.072

CL-45DC

C-45DC~C-65DC

0.102

CL-80DC

C-80DC~C-100DC

0.102

CL-C11

S-C11

0.044

CL-C12

S-C12~S-C16

0.038

CL-C21

S-C21

0.082

CL-C35

S-C35

0.125

CL-C50

S-C50~S-C60

0.130

CL-C65

S-C65~S-C80

0.152

CL-C100

S-C100~S-C125

0.200

CL-C150

S-C150

0.440

CL-C220

S-C220

0.940

CL-201

AC201~AC501

0.047

CL-202

AC202~AC502

0.036

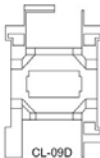
CL-203

AC203~AC503

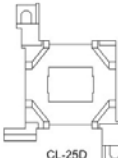
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CL-202



CL-09D



CL-25D



CL-45D

Accessories

Moulded Plastic Enclosure(MS1 IP65)

Model Designation

MS1 12D — 01G — C
1 2 3 4

1.Type

MS1	Enclosure with pushbutton
MS	Enclosure

2.Item

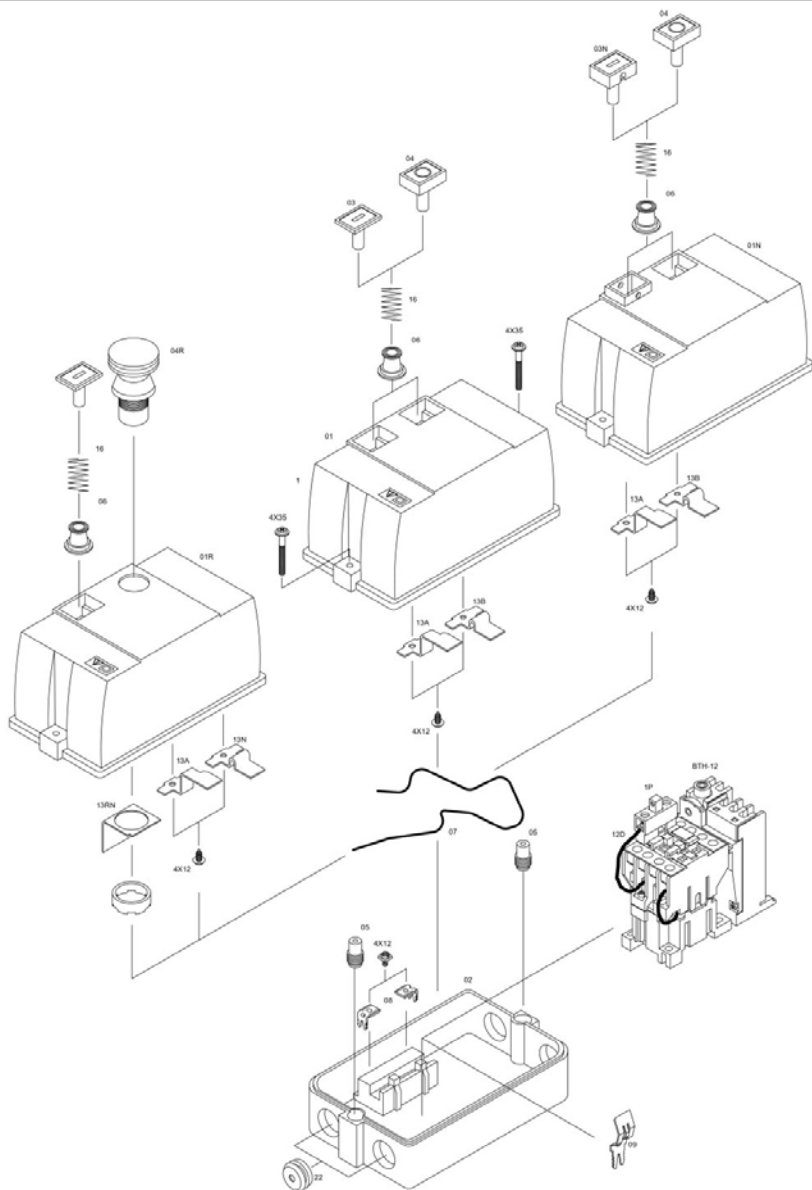
12D	09D 11D 12D 18D
25D	25D 35D

4.Cover Model

none	Empty
C	Normal

3.Parts Number

1P	Starter contact	05	Plastic screw for combine
01	Cover	06	Waterproof rubber
01N	Lock cover	07	Seal packing
01G	Only start cover	08	Neutral/Protective conductor bar
01S	Only stop cover	09	Iron plate for install
01R	Reset cover	13A	Iron plate for start
02	Pedestal	13B	Iron plate for stop(BTH)
03	Start push-button	13N	Iron plate for stop(NTH)
03N	Lock start push-button	13RN	Plate for 13N
04	Stop push-button	16	Spring
04R	Reset push-button	22	Rubber



Definite Purpose Contactors

1 Pole 、 2 Pole and 3 Pole

CONTROL CIRCUIT : AC



AC201



AC201



AC202



AC202



AC203



AC203

Used on air conditioning,refrigeration ,Heating,Lighting and other applications

Catalogue Name	Full Load Amps	Locked Rotor Amps			Resistive Amperes Per Pole	Weight Kg	Approval
		240V	480V	600V			
AC201	20	120	100	80	30	0.265	
AC251	25	150	120	100	35	0.265	
AC301	30	180	150	120	40	0.265	
AC401	40	240	200	160	50	0.265	
AC501	50	300	250	200	60	0.265	

NOTE: 1 Pole applying

AC202 AC203	20	120	100	80	30	0.282 0.440	CE U _L
AC252 AC253	25	150	120	100	35	0.282 0.440	CE
AC302 AC303	30	180	150	120	40	0.282 0.440	CE U _L
AC402 AC403	40	240	200	160	50	0.282 0.440	CE U _L
AC502 AC503	50	300	250	200	60	0.282 0.440	CE

2 Pole--Particularly suited for residential air conditioning and heating Used on 1.5 to 3 ton air conditioners. Single Phase

3 Pole--For light commercial or heavy residential air conditioning and heating equipment .

Used on 3 to 6 ton air conditioners.Three Phase

Model Designation

AC203A5
1 2 3 4

1-Air Conditioning

2-Full Load Amps

3-1 Pole or 2 Pole or 3 Pole

4-Coil Voltage

Coil Table

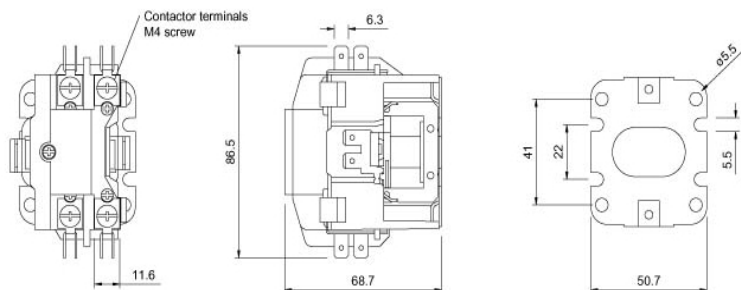
Coil control voltage:	24V	48V	110V	120V	190V	220V	230V	240V	380V	415V	440V	480V
50Hz	A5	C5	D5	E5	F5	G5	H5	I5	J5	L5	M5	N5
60Hz	A6	C6	D6	E6	F6	G6	H6	I6	J6	L6	M6	N6

Definite Purpose Contactors

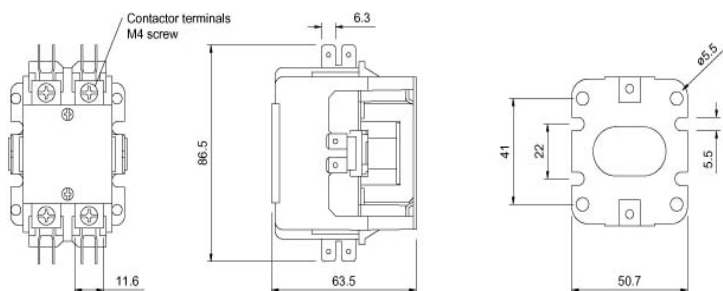
1 Pole 、 2 Pole and 3 Pole

Dimensions(mm)

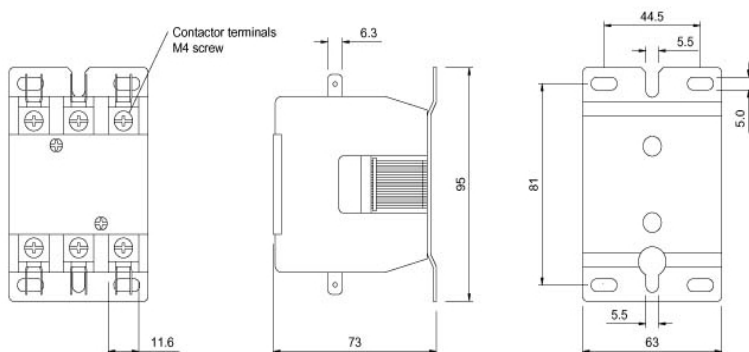
1 Pole

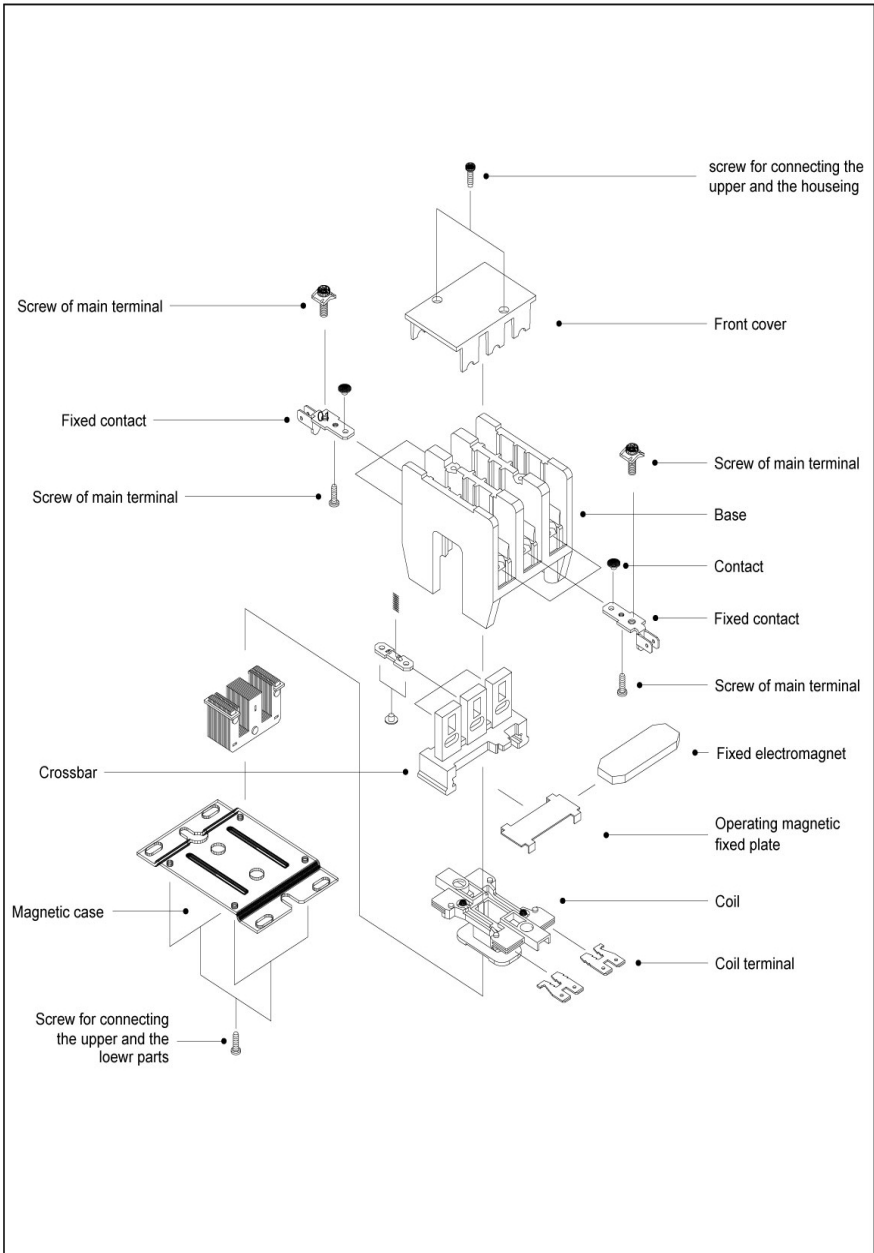


2 Pole



3 Pole





Manual Motor Starter

Model Designation

NMSB — 4.0
1 2

1.Type

NMS	Open
NMSB	Moulded Plastic Enclosure

2.Current Rating

0.63	1.0	1.6	2.5	4.0
6.3	10.0	15.0		

NMS Manual Motor Starter
with thermal overload and
magnetic short-circuit releases



NMS-4.0

TYPE	Ampere Setting	Weight (Kg)	max.Back-up Fuse(slow)A 3x220V 3x380V 3X440V 3x550V 3x660V 3x240V 3X425V (3x690V)	Approval
NMS 0.63	0.40 - 0.63	0.230	no back-up fuse required, irrespective of prospective short-circuit current Breaking Capacity 10KA at 3X220/240V 6KA at 3X380/440V 2.5KA at 3X600V	
NMS 1.0	0.63 - 1.0	0.230		
NMS 1.6	1.0 - 1.6	0.230		
NMS 2.5	1.6 - 2.5	0.230		
NMS 4.0	2.5 - 4.0	0.230		
NMS 6.3	4.0 - 6.3	0.230		
NMS 10.0	6.3 - 10.0	0.230		
NMS 15.0	10.0 - 16.0	0.230		



NAS-11

Instantaneous auxiliary Contact blocks (1per breaker)

Catalogue name	Normal early break type contacts		AC1 Ith	AC15			weight Kg
	No	Nc		230V Ie	400V Ie	500V Ie	
NAS-20	2	-	6A	3.5A	2A	1A	0.035
NAS-11	1	1	6A	3.5A	2A	1A	0.035
NAS-02	-	2	6A	3.5A	2A	1A	0.035



NMSB-6.3

Moulded Plastic Enclosure NMSB(IP56)

As enclosure NMSB,however with seal and push-button diaphragm.
Degree of protection IP56



NMSB-46

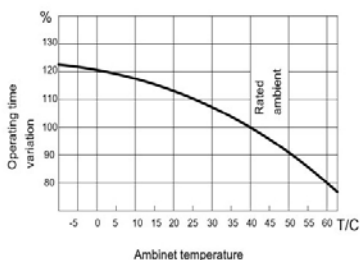
Neutral/Protective Conductor(PEN)Bar

Enclosures NMSB can be fitted with a second neutral/protective conductor(PEN)bar.

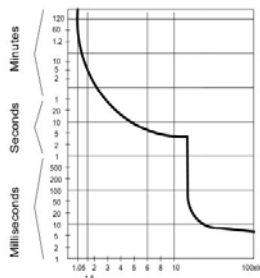
NMS Technical Data

Rated insulation voltage U_i	660V 400V	☞
Rated operating voltage U_e	660V 400V	☞
Adjustable ampere setting	0.4-16A	
Admissible frequency range	50-60Hz	
Electrical durability	>100,000 cycle	
Mechanical durability	>100,000 cycle	
Operation rate	30cycle/hr	
Degree of protection	open	IP20
	enclosed	IP56
Ambient air temperature	storage	-25°C to +80°C
	operation	-20°C to +60°C
Temperature compensation	-5°C to +40°C	
Magnetic trip	About 10~12 times the maximum setting of the trips	

Ambinet Compensation



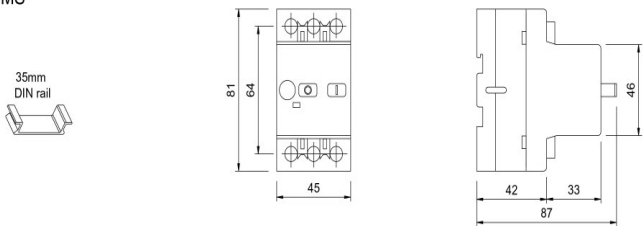
Technical characteristics



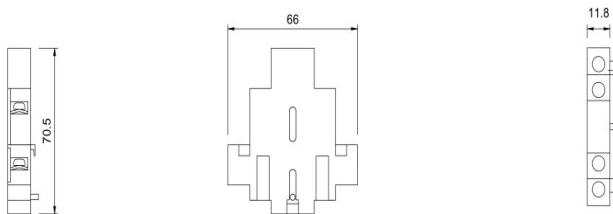
NMS/NMSB/NAS

Dimensions(mm)

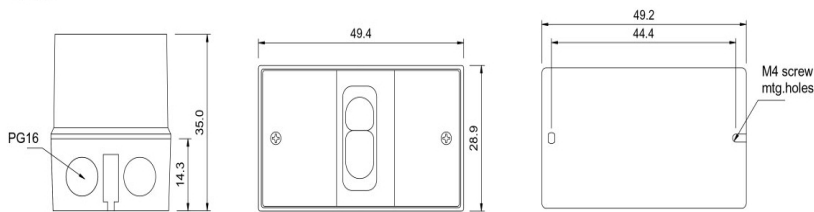
NMS



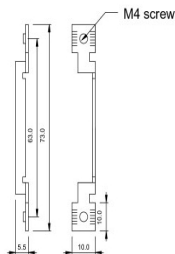
NAS



NMSB



NMSB-46



NMSB-22B

