

Reliable since 1965...

Freedom Contactors

Born Rugged



Contactors & Overload Relays

Freedom Series



BCH
ELECTRIC
LIMITED

Unmatched performance



- Highly reliable operation
- No deration up to 60°C (AC3 duty)
- Time tested for heavy duty applications for 2 decades

Lasts a life time

- Rugged construction
- Electrical life as high as 2.7 Million
- Mechanical life as high as 20 Million



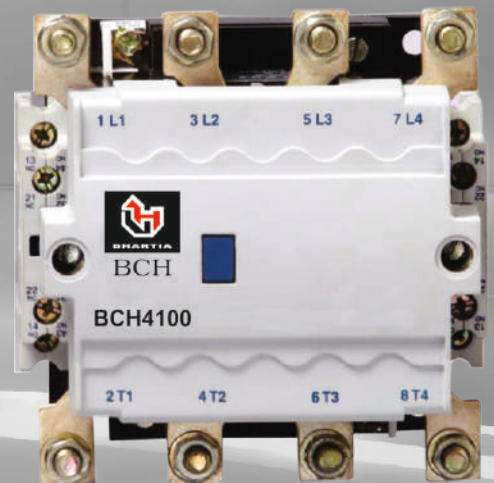
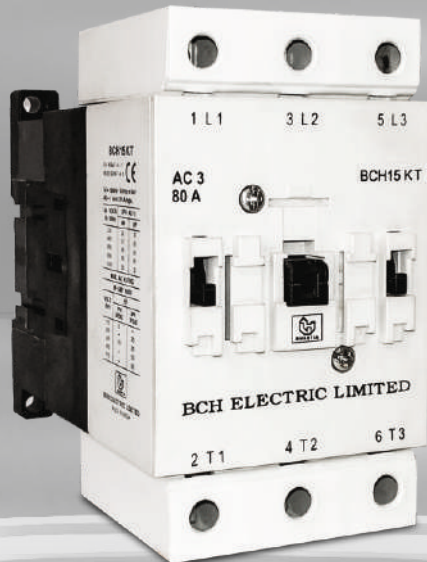
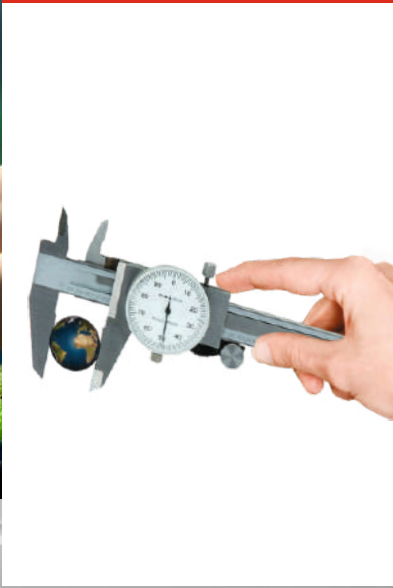
Save more energy

- Lower VA burden coils
- Clean Pick-up
- Sophisticated Electronic control



Most compact design

- Compact construction
- Higher ratings in lower frame sizes



FREEDOM CONTACTORS (3 POLE)

Operating Temperature : -20°C to +60°C
 Operating Altitude : 2000m
 Humidity : 50% RH at 60°C
 : 95% RH at 40°C
 Vibration : 5 to 100 Hz (0.7g in x,y,z plane)
 Operating position : ±30°
 Standard : IS/IEC 60947-4-1



CONTACTOR CAT. REFERENCE		CE15AN 3-B	CE15BN 3-B	CE15CN 3-B	CE15DN 3-B	CE15EN 3-B	CE15FN 3-B	CE15GN 3-B	CE15HN 3-B	CE15JN 3-B	CE15KN 3-B
Nominal current rating at 380 / 415V 50Hz (AC3 Duty)	le (A)	6	9	12	18	25	32	40	50	65	75
Standard power rating at 380V / 415V 50Hz	P (kW)	2.2/2.26	4/4	5.5/5.5	9.0/9.0	11/11	15/15	18.5/22	22/25	30/37	37/37
Electrical endurance at rated current AC3 Duty	Million	2.7	2.3	2.1	1.5	1.5	1.7	1.1	1.3	1.4	1.3
Maximum frequency of no load operation	op / h	600	600	600	600	600	600	600	600	600	600

MECHANICAL DATA

Frame size	mm	45						65			
Number of poles		4	4	4	3	3	3	3	3	3	3
Mounting Dimensions	mm	M4 34.5x60						M5 55x95			
Weight	Kg	0.41	0.41	0.41	0.44	0.44	0.44	1.28	1.28	1.28	1.28
Mechanical durability	Million	20	20	20	20	20	20	10	10	10	10

POWER CIRCUIT

Operational voltage	Ue (V)	660	660	660	660	660	660	660	660	660	660
Insulation voltage	Ui (V)	690	690	690	690	690	690	690	690	690	690
Impulse Voltage withstand	kV	6	6	6	6	6	6	6	6	6	6
Thermal current	Ith (A)	20	20	20	32	40	40	60	75	80	80
Connections	mm ²	2.5	2.5	2.5	6	6	6	25	25	25	25
AC-1 Duty rated at 380 / 415V 50Hz	le (A)	20	20	20	32	40	40	60	75	80	80
AC-4 Duty rated at 380 / 415V 50Hz	le (A)	6	9.1	12	16	23	23	37	44	50	59
Electrical life at rated current AC4 Duty	ops.	60000	59000	43000	67000	52000	75000	58000	62000	35000	34000
AC-4 Duty rating for 200000 operations	le (A)	2.5	4.3	4.8	8.3	10	12	17	34	34	34
Stator current rating acc. to Ac2 Duty (A) ≤55°C	100% DF	6	9	12	16	25	32	40	50	65	73
Rotor Duty rating-Delta Connected (A) ≤40°C	100% DF	12	16	21	29	40	52	64	76	104	126
	60% DF	15	21	27	38	51	67	83	98	134	163
	40% DF	19	26	33	47	63	82	101	120	164	200
	20% DF	27	36	46	66	89	116	143	170	232	283
Maximum Rotor Voltage - Starting & Inching Starting & Plugging		Delta connected - 1160V ; Star connected - 1380V Delta connected - 580V ; Star connected - 690V									
Transformer primary switching 500V AC	A	3.1	4.2	5.4	7.6	10	13	15	20	20	24
Capacitor switching (single bank only) 380/400V, 3ph	kVAR	4.9	6.7	8.6	12	15	15	25	30	37	40

CONTROL CIRCUIT

Coil VA Consumption	Pickup	VA	70			92			230		
	Seal	VA	6.4			8			28		

FREEDOM CONTACTORS (3 POLE)

Operating Temperature : -20°C to +60°C
 Operating Altitude : 2000m
 Humidity : 50% RH at 60°C
 : 95% RH at 40°C
 Vibration : 5 to 100 Hz (0.7g in x,y,z plane)
 Operating position : ±30°
 Standard : IS/IEC 60947-4-1



CONTACTOR CAT. REFERENCE	BCH15KT ·3·11·■	BCH15LT ·3·11·■	BCH15MT ·3·11·■	BCH15NT ·3·11·■	BCH15PT ·3·11·■	MCE15RN 3=7	MCE15SON 3=7	MCE15SN 3=7
Nominal current rating at 380 / 415V 50Hz (AC3 Duty) I _e (A)	80	95	110	150	175	200	265	300
Standard power rating at 380V / 415V 50Hz P (kW)	37/40	45/47	55/59	75/80	90/95	110/110	90/90	160/160
Electrical endurance at rated current AC3 Duty Million	0.8	0.8	0.8	0.8	0.8	0.52	0.55	0.351
Maximum frequency of no load operation op / h	3000			1200		600	600	300

MECHANICAL DATA

Frame size mm	79			110		178		
Number of poles	3	3	3	3	3	3	3	3
Mounting Dimensions mm	M5 70x100			M5 100x130		M6 160x166.5		
Weight Kg	1.8		2.2	4		8.3		
Mechanical durability Million	10			5				

POWER CIRCUIT

Operational voltage U _e (V)	1000					660		
Insulation voltage U _i (V)	1000					690		
Impulse Voltage withstand kV	8	8	8	8	8	6	6	6
Thermal current I _{th} (A)	125		135	230	250	300	315	315
Connections mm ²	50			120		240		
AC-1 Duty rated at 380 / 415V 50Hz I _e (A)	125		135	230	250	300	315	315
AC-4 Duty rated at 380 / 415V 50Hz I _e (A)	80	90	110	150	175	140	165	170
Electrical life at rated current AC4 Duty ops.	20000					65000	60000	60000
AC-4 Duty rating for 200000 operations I _e (A)	27	31	34	41	50	70	75	80
Stator current rating acc. to AC2 Duty (A) ≤55°C 100% DF	80	95	110	150	175	200	265	300
Rotor Duty rating-Delta Connected (A) ≤40°C 100% DF	160	175	224	280	350	393	425	465
60% DF	185	200	250	325	406	507	550	600
40% DF	217	236	245	380	475	621	700	735
20% DF	272	296	360	475	594	879	950	1040
Maximum Rotor Voltage - Starting & Inching Starting & Plugging	Delta connected - 1160V ; Star connected - 1380V Delta connected - 580V ; Star connected - 690V							
Transformer primary switching 500V AC A	36	40	50	65	80	90	100	135
Capacitor switching (single bank only) 380/400V, 3ph kVAR	40	50	60	80	100	110	140	158

CONTROL CIRCUIT

Coil VA Consumption	Pickup VA	250			350		1040	
	Seal VA	19			5		116	

■ Suffix for Coil Voltage

FREEDOM CONTACTORS (3 POLE)

Operating Temperature : -20°C to +60°C
 Operating Altitude : 2000m
 Humidity : 50% RH at 60°C
 : 95% RH at 40°C
 Vibration : 5 to 100 Hz (0.7g in x,y,z plane)
 Operating position : ±30°
 Standard : IS/IEC 60947-4-1



CONTACTOR CAT. REFERENCE	BCH54 ·3·22·	BCH55 ·3·22·	BCH57 ·3·22·	BCH62 ·3·22·	BCH64 ·3·22·	BCH76 ·3·12·	BCH78 ·3·12·
Nominal current rating at 380 / 415V 50Hz (AC3 Duty) I _e (A)	400	450	550	700	860	1000	1200
Standard power rating at 380V / 415V 50Hz P (kW)	220/240	220/240	280/315	375/400	475/500	550/600	650/700
Electrical endurance at rated current AC3 Duty Million	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Maximum frequency of no load operation op / h	300	300	300	300	300	120	120

MECHANICAL DATA

Frame size	mm	220			280		334	
Number of poles		3	3	3	3	3	3	
Mounting Dimensions	mm	M8 110x220			M10 175x280		M12 120x380	
Weight	Kg	13.0	13.0	13.5	26.4	27.6	49	53
Mechanical durability	Million	5	5	5-10	5-10	5-10	1-5	1-5

POWER CIRCUIT

Operational voltage	U _e (V)	1000	1000	1000	1000	1000	690	690
Insulation voltage	U _i (V)	1000	1000	1000	1000	1000	690	690
Impulse Voltage withstand	kV	8	8	8	8	8	8	8
Thermal current	I _{th} (A)	600	600	760	1000	1100	1200	1350
Connections	mm ²	2(40x5)	2(40x5)	2(50x5)	2(60x5)	2(60x6)	2(60x6)	2(60x6)
AC-1 Duty rated at 380 / 415V 50Hz	I _e (A)	600	600	760	1000	1100	1200	1350
AC-4 Duty rated at 380 / 415V 50Hz	I _e (A)	400	450	550	700	860	1000	1200
Electrical life at rated current AC4 Duty	ops.	6000	6000	6000	6000	6000	6000	6000
AC-4 Duty rating for 200000 operations	I _e (A)	100	115	140	185	215	265	300
Stator current rating acc. to AC2 Duty (A) ≤55°C	100% DF	400	450	550	700	860	1000	1200
Rotor Duty rating-Delta Connected (A) ≤40°C	100% DF	750	840	1060	1400	1540	1680	1850
	60% DF	860	960	1210	1600	1760	1930	2120
	40% DF	1020	1130	1430	1890	2080	2270	2500
	20% DF	1300	1420	1790	2370	2610	2840	3130
Maximum Rotor Voltage - Starting & Inching Starting & Plugging		Delta connected - 1700V ; Star connected - 2000V Delta connected - 850V ; Star connected - 1000V				Delta connected - 1160V ; Star connected - 1380V Delta connected - 580V ; Star connected - 690V		
Transformer primary switching 500V AC	A	185	203	250	315	390	450	540
Capacitor switching (single bank only) 380/400V, 3ph	kVAR	190	200	250	350	400	450	500

CONTROL CIRCUIT

Coil VA Consumption	Pickup	VA	950			1600		2450	
	Seal	VA	11			25		75	

■ Suffix for Coil Voltage

FREEDOM CONTACTORS (4 POLE)

Rating : 20A to 500A AC1 (4 Pole)

As per IS/IEC 60947-4-1

Wide band coil in 40A to 100A AC1

Compact & modular construction

More energy saving

Compact mechanical interlocking

New



CATALOGUE NO		CE15CN4=B-N	BCH4040=	BCH4063=	BCH4080=
Number of Poles		4	4	4	4
POWER CIRCUIT					
Rated insulation Voltage, U_i		690V	690V	690V	690V
Rated Operational Voltage, U_e		415V	415V	415V	415V
Rated withstand inpulse Voltage, U_{imp}		6kV	8kV	8kV	8kV
Conventional thermal current, I_m /AC1 at 40°C		20A	40A	63A	80A
Motar duty:3ph, 415v, 50Hz Utilization Category AC-3		12A	22A	35A	45A
Operating temperature	°C	-20°C to +60°C	-20°C to +55°C	-20°C to +55°C	-20°C to +55°C
Number of built - in Aux Contacts		-	-	-	-
Operating time	Closing time (ms)	16	10-12	10-12	10-12
	Opening time (ms)	12	7-18	7-18	7-18
CONTROL CIRCUIT					
Coil voltage available for 50Hz at, U_e (V)		110, 220, 240, 415	110, 220, 240, 415	110, 220, 240, 415	110, 220, 240, 415
Pick - up	VA	70	68	180	190
Hold - on	VA	6.4	11	22	22
Limits of Operation	Pick - up (% U_e)	85 - 110	55 - 120	50 - 120	65 - 120
	Drop - off (% U_e)	75 - 20	30 - 50	25 - 45	40 - 60
MECHANICAL DATA					
Overall Dimensions H X W X D	mm	75 x 45 x 84	83 x 45 x 88	80 x 83.5 x 91.8	109 x 109 x 120.5
Mounting Dimensions H x W	mm	60 x 34.5	(60-65-70) x 35	(55-58) x 70	80 x 85
Main terminal capacity	With lug (Sq mm)	1 x 6	1 x 6	1 x 16	1 x 35
	Link	-	-	-	1x(12.5mm x 3mm)
	Solid conductors (sq mm)	-	2 x 4	2 x 10	-
	Multistand conductors (sq mm)	-	2 x 2.5	2 x 6	-

■ Suffix for Coil Voltage

FREEDOM CONTACTORS (4 POLE)

- Rating : 20A to 500A AC1 (4 Pole)
- As per IS/IEC 60947-4-1
- Wide band coil in 40A to 100A AC1
- Compact & modular construction
- More energy saving
- Compact mechanical interlocking



BCH4100 ■	BCH4130 ■	BCH15MN0.4.11. ■	BCH15MN.4.11. ■	BCH15NN.4.11. ■	BCH15PN.4.11. ■	BCH4400 ■	BCH4500 ■
4	4	4	4	4	4	4	4
690V	690V	1000V	1000V	1000V	1000V	1000V	1000V
415V	415V	415V	415V	415V	415V	415V	415V
8kV	8kV	8kV	8kV	8kV	8kV	8kV	8kV
100A	130A	160A	200A	250A	300A	400A	500A
65A	80A	115A	115A	150A	175A	300A	325A
-20 ⁰ C to +55 ⁰ C	-20 ⁰ C to +55 ⁰ C	-20 ⁰ C to +60 ⁰ C	-20 ⁰ C to +60 ⁰ C	-20 ⁰ C to +60 ⁰ C	-20 ⁰ C to +60 ⁰ C	-20 ⁰ C to +55 ⁰ C	-20 ⁰ C to +55 ⁰ C
-	-	1NO+1NC	1NO+1NC	1NO+1NC	1NO+1NC	2NO+2NC	2NO+2NC
15-35	15-35	30-60	30-60	30-60	30-60	20-45	-
10-25	10-25	30-80	30-80	30-80	30-80	10-25	-
110, 220, 240, 415	110, 220, 240, 415	110, 220, 240, 415	110, 220, 240, 415	110, 220, 240, 415	110, 220, 240, 415	110, 220, 240, 415	110, 220, 240, 415
190	550	350	350	350	350	2100	-
22	36	5	5	5	5	95	-
65 - 120	80 - 100	85 - 110	85 - 110	85 - 110	85 - 110	80 - 100	85 - 110
40 - 60	35 - 65	75 - 20	75 - 20	75 - 20	75 - 20	35 - 65	-
109 x 109 x 120.5	175 x 183.5 x 152	170 x 147 x 162	170 x 147 x 162	170 x 147 x 162	170 x 147 x 162	275 x 248 x 221	275 x 248 x 221
80 x 85	115 x 165	130 x 135	130 x 135	130 x 135	130 x 135	170 x 255	170 x 255
1 x 35	1 x 120	1 x 120	1 x 120	1 x 120	1 x 120	2 x 240	2 x 240
1x(12.5mm x 3mm)	2 x (25mm x 3mm)	2 x (20mm x 3mm)	2 x (20mm x 3mm)	2 x (20mm x 3mm)	2x(20mm x 3mm)	2x(50mm x 5mm)	2x(50mm x 5mm)
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

■ Suffix for Coil Voltage

CONTROL CONTACTOR

Control Relay	D15CR22 ■ , D15CR31■ , D15CR40■		
Standards	IEC 60947-1, 60947-5		
Width (mm)	45		
Number of Poles	4		
Protection against Direct Contact	IP20		
Mechanical Life Span	20 Million		
Weight	410 gm		
Environment Pollution Degree IEC 60947-4-1	3		
Impulse Withstand Voltage IEC 60947-1	6kV		
Operating Temp. (open)	-20 to +65° C		
Operating Altitude	2000m		
Operating Position (Related to normal mounting position)	±30°		
Contact Rating (rated thermal current, open I _{th})	10A		
Rated Insulation Voltage U _i	690V		
Operating Frequency Limits	50 to 60Hz		
AC 15 Duty	U_e	VA	I_e
Control of AC	48	480	10
Electromagnetic Loads (Greater than 72VA)	120	720	6
	240	960	4
	440	880	2
	660	990	1.5
DC 13 Duty	U_e	W	I_e
Control of DC	24	192	8
Electromagnets	48	288	6
	120	120	1
	220	110	0.5
	440	110	0.25
	660	66	0.1
Coil Data	refer CE15BN •3 ■		



THERMAL OVERLOAD RELAYS

THERMAL OVERLOAD RELAYS	Freedom OLR		Citation OLR	
	MC318ANA*/ MC318GNA*		MC305ANA3*	CT*MC305ANA3C
Storage temperature	deg C.	-40 -- +70	-40 -- +60	-40 -- +60
Operating temperature	deg C.	-25 -- +55	-10 -- +55	-10 -- +55
Fixing		Direct/ Independent mounting	Direct mounting	Independent mounting
POWER CIRCUIT				
Rated Insulation Voltage U _i (V)		690	690	690
Tripping Class as per IEC 947-4-1		10A	10	30
Switching Frequency Op./Hr		15	15	15
AUXILIARY CIRCUIT				
Type of contacts		1NO+1NC	1C/O	1C/O
Reset type		Auto/ manual selectable	Auto/ manual selectable	Auto/ manual selectable
Rated voltage U _i at NO/NC contacts	(V)	500	600	600
Rated operational current	240V (A)	3(NC)/ 1.5(NO)	2.5	2.5
	AC15 440V (A)	1.9(NC)/ 0.95(NO)	1.4	1.4
	500V (A)	1(NC)/ 0.75(NO)	1.2	1.2
I _e DC13	220V (A)	0.12(NC)/ 0.04(NO)	0.12	0.12
Gg class protection fuse	(A)	10(NC)/ 6(NO)	4	4

* Please refer page no.8 for corresponding suffix.

THERMAL OVERLOAD RELAYS

CITATION RELAYS

Citation Relay (Range: 0.195A to 600A)

- Built-in Single Phasing Protection
- Ambient Temperature Compensation
- Test button for checking tripping mechanism
- Field convertible auto/ manual reset
- Snap on cover
- Contactor mounting & separate mounting for flexibility
- Trip class 10

RELAY TYPE

CITATION DIRECT :
MC305ANA3*



CITATION - CT OPERATED :
CT*MC305ANA3C



Relay Range (A)

* Suffix for Corresponding range

0.195 to 0.31	A
0.30 to 0.48	B
0.47 to 0.75	C
0.72 to 1.14	D
1.07 to 1.70	E
1.58 to 2.50	F
2.40 to 3.80	G
3.80 to 6.00	H
6.00 to 9.30	J
8.90 to 13.50	K
13.20 to 20.00	L
17.40 to 24.00	M
22.00 to 30.00	N*
23.00 to 32.00	P*
26.00 to 40.00	Q*
24.40 to 39.00	1
37.60 to 60.00	2
56.40 to 90.00	3
84.60 to 135.00	4
131.60 to 210.00	5
188.00 to 300.00	6
263.20 to 420.00	7
376.00 to 600.00	8

CITATION ACCESSORIES

CAT REFERENCE

RELAY TYPE

DIN Rail Kit
Adjustment Cover
Terminal Block*
Terminal Block*
Terminal Block

MC305DM1
MC305DM2
MC305PC
MC305TB1
MC305TB2
MC305TB3

For A - K Relay
For L - N Relay
For Relay up to K Range
For L, M & N Ranges
For Terminal Side (L, M & N Ranges)

* Terminal blocks are meant for converting contactor mounting relays to individual mounting relays. With "N, P & Q" relays use of terminal block MC305TB3 is essential.

FREEDOM RELAYS

Freedom Relay (Range: 0.1A to 80A)

- Built-in Single Phasing Protection
- Ambient Temperature Compensation
- Test button for checking tripping mechanism
- Field convertible auto/manual reset
- Contactor mounting & separate mounting for flexibility
- Trip class 10A
- Potential free Contacts

RELAY TYPE

FREEDOM RELAY - DIRECT : MC318ANA3*
Use Adaptor for individual mounting C318F1



FREEDOM RELAY - DIRECT : MC318GNA3*
Use Adaptor for individual mounting C318F2



Relay Range (A)

* Suffix for Corresponding range

0.10 to 0.16	A
0.16 to 0.25	B
0.25 to 0.40	C
0.40 to 0.63	D
0.63 to 1.00	E
1.00 to 1.40	F
1.30 to 1.80	G
1.70 to 2.40	H
2.20 to 3.10	J
2.80 to 4.00	K
3.50 to 5.00	L
4.50 to 6.50	M
6.00 to 8.50	N
7.50 to 11.00	P
10.00 to 14.00	Q
13.00 to 19.00	R
18.00 to 25.00	S
24.00 to 32.00	T

Relay Range (A)

* Suffix for Corresponding range

22.00 - 32.00	B
29.00 - 42.00	C
36.00 - 52.00	D
45.00 - 63.00	E
60.00 - 80.00	F

ORDERING INFORMATION

COIL VOLTAGE SUFFIX FOR CONTACTORS

	Coil Voltage AC	Suffix for AC	Suffix for DC*
	24	U	U3
	42	R	-
	48	W	W3
	110	A	A3
	220	B	B3
▪ SIZE D15CR, CE15AN, BCH15KT, BCH15LT, MCE15RN to SN	240	K	-
	380	L	-
	415	M	-
	440	C	-
	550	D	-

* DC coils are supplied upto size K/ 73A contactors

COIL VOLTAGE CODE FOR CONTACTORS

	Coil Voltage AC	Suffix for AC	Suffix for DC*
	24	24	-
	110	110	-
	220/240	220	-
BCH15MT, BCH15NT, BCH15PT BCH15MN0, BCH15MN, BCH15NN, BCH15PN	380	380	-
	440	440	-
	550	550	-

COIL VOLTAGE CODE FOR CONTACTORS

	Coil Voltage AC	Suffix for AC	Suffix for DC
	110	110	110
	220	220	220
BCH55 to BCH64	380	380	380
	440	440	440

COIL VOLTAGE CODE FOR CONTACTORS

	Coil Voltage AC	Suffix for AC	Suffix for DC
	48	-	W17
	110	A7	A17
BCH76, BCH78	220	B7	B17
	380	L7	-
	440	-	-

COIL VOLTAGE CODE FOR CONTACTORS

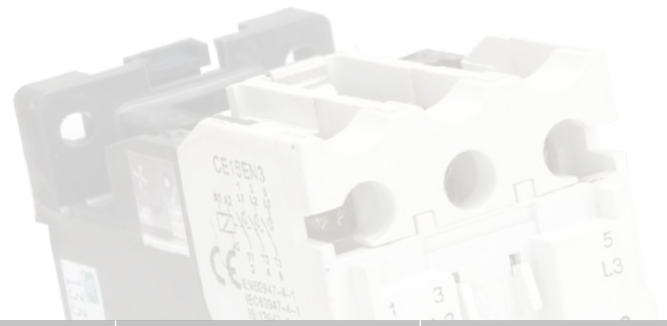
	Coil Voltage AC	Suffix for AC	Suffix for DC
	110	A	-
	220	B	-
BCH4	240	K	-
	415	M	-

▪ Suffix for Coil Voltage

ADD-ON ACCESSORIES - 3P & 4P FREEDOM CONTACTORS

Additional Auxiliary Contact Blocks

Rated Thermal Current I _{th}	10A
Rated Insulation Voltage	690V
Operating Frequency	50 - 60 Hz
AC15 Duty at 220/240V	960VA, 4A
DC13 Duty at 220V	110W, 0.5A
Conditional Short Circuit Current	1kA



ACCESSORIES

Aux. Contact Block (side Mounting)



4th Neutral Switching Pole

Aux. Contact Block (Front Mounting)



Pneumatic Timer Block "On/Off" Delay site selectable Mechanical Interlocks



Coil Surge Suppressors

CONFIGURATION

CAT NO.

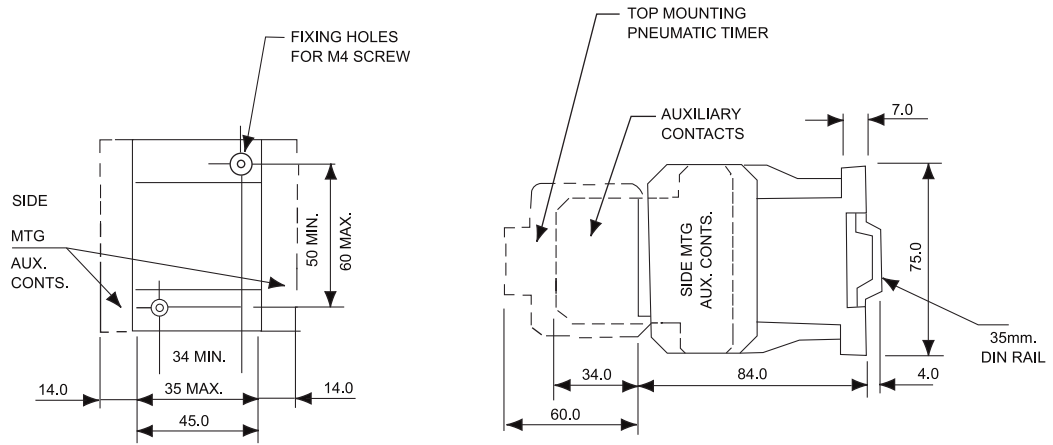
CONTACTOR TYPE

ACCESSORIES	CONFIGURATION	CAT NO.	CONTACTOR TYPE	
Aux. Contact Block (side Mounting)	1NO	C320KGSR10	CE15 & CR	
	1NO+1NC	C320KGSR11		
	1NC	C320KGSR01		
	2NO	C320KGSR20		
	1NO+1NC	BCH15S11	BCH15	
	1NO+1NC	MC320KB11	MCE15R to MCE15S	
	2NO+2NC	EF22	BCH54 to BCH64	
	1NO+1NC	EB11	BCH76 to BCH78	
	1NO+1NC (1st Left)	BCH4A04041SL11	BCH4040	
	1NO+1NC (1st Right)	BCH4A04041SR11	BCH4040	
1NO+1NC (1st Left)	BCH4A06131SL11	BCH4063-130		
1NO+1NC (1st Right)	BCH4A06131SR11	BCH4063-130		
4th Neutral Switching Pole	800A	NP800/5	BCH54 to 57	
	1000A	NP1000/6	BCH62 to 64	
	1000A	NP1000/7	BCH76 to 78	
Aux. Contact Block (Front Mounting)	1NO	C320KGTC10	CE15, CR	
	1NC	C320KGTC01		
	2NO	C320KGT*20		
	2NC	C320KGT*02		
	1NO+1NC	C320KGT*11		
	2NO+2NC	C320KGT*22		
	3NO+1NC	C320KGT*31		
	4NO	C320KGT*40	BCH15	
	1NO+3NC	C320KGT*13		
	4NC	C320KGT*04		
	4NO	BCH15T40		
	3NO+1NC	BCH15T31		
	2NO+2NC	BCH15T22		
	1NO+1NC	BCH15T11		
1NO	BCH15T10	BCH4040-063		
1NC	BCH15T01			
1NO+1NC	BCH4A0413T11	CE15, CR, BCH15		
1NO+1NC (0.1 to 30 sec)	C320TP1			
1NO+1NC (0.1 to 180 sec)	C320TP2			
Mechanical Interlocks	-	C321KM60	CE15, CR	
	-	MC321KM3	MCE15R to MCE15S	
	H-Horizontal	BM5H / BM5V	BCH54 to 57	
		BM6H / BM6V	BCH62 to 64	
		BM7H / BM7V	BCH76 to 78	
	V-Vertical	BM0H	BCH15	
		BM3H		
		BCH4M0404	BCH4040	
		BCH4M0608	BCH4063-080	
		BCH4M1013	BCH4100-130#	
	BCH4M4040	BCH4400		
	Coil Surge Suppressors	24-48V (50/60Hz)	MC320LR11	CE15, CR
		110-240V (50/60Hz)	MC320LR12	

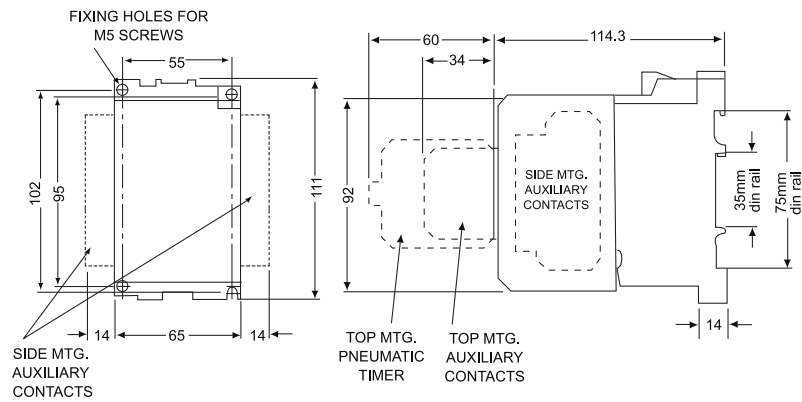
*Add suffix C for Power Contactors & R for control relays Mechanical interlock for BCH4100-130 comes with 2left & 2right side add-on aux. blocks i.e. 4NO+4NC

CONTACTOR DIMENSION - 3P FREEDOM (in mm)

CE15AN TO FN

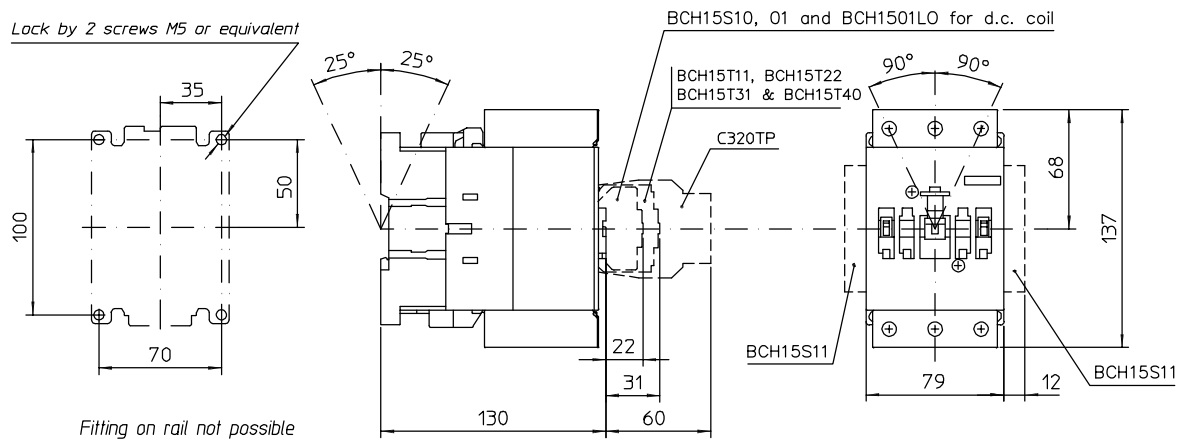


CE15GN TO K1N

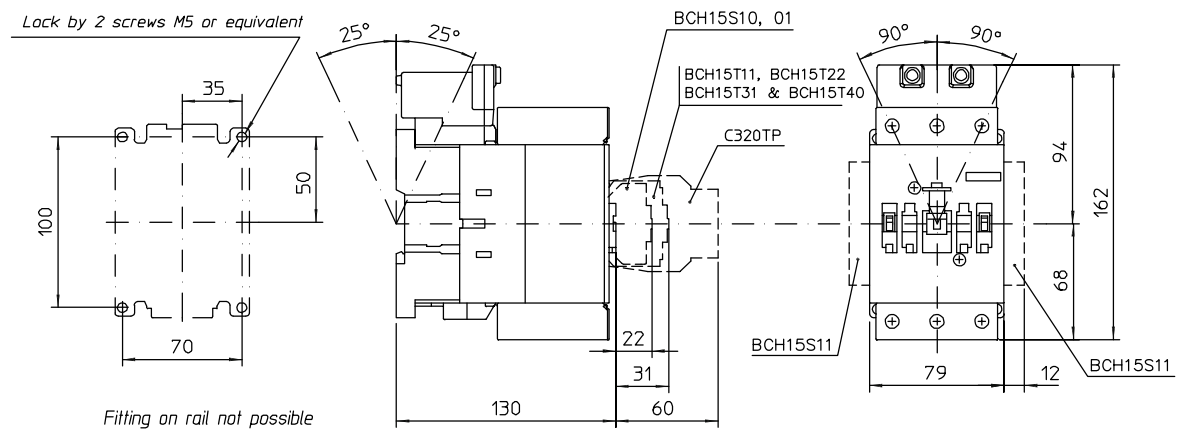


CONTACTOR DIMENSION - 3P FREEDOM (in mm)

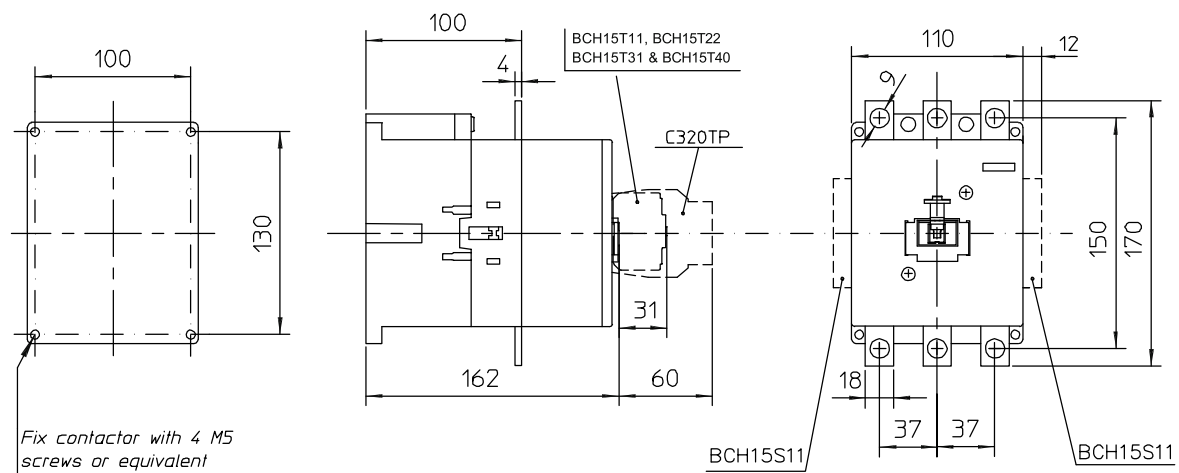
BCH15KT/LT



BCH15MT

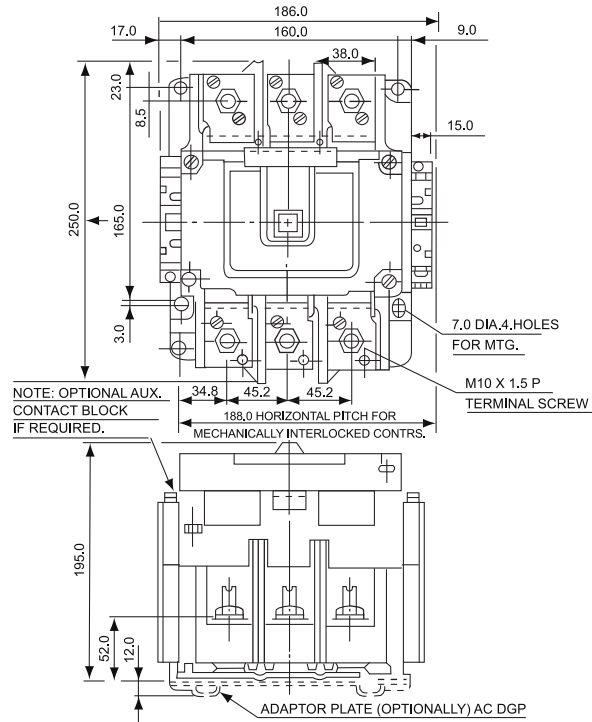


BCH15NT/PT

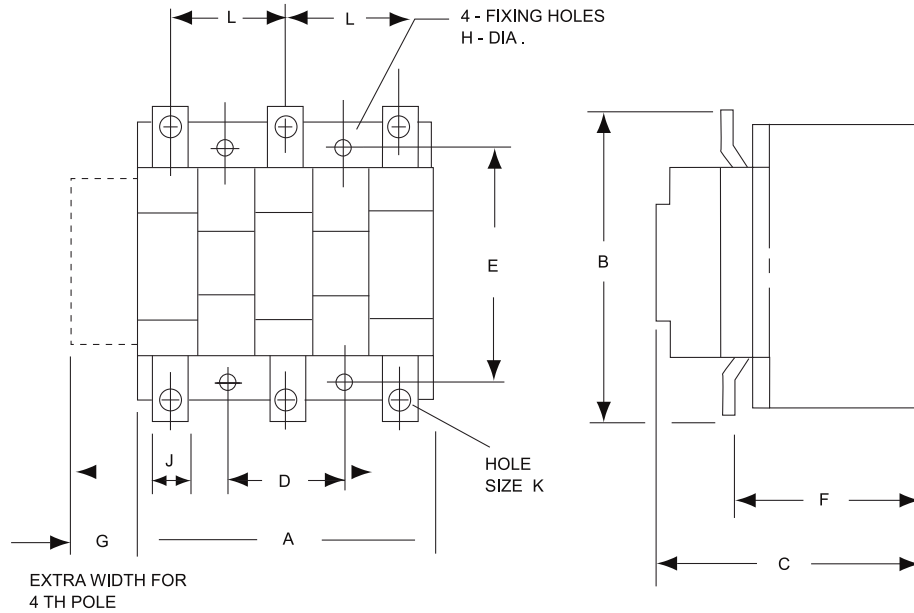


CONTACTOR DIMENSION - 3P FREEDOM (in mm)

MCE15RN TO SN



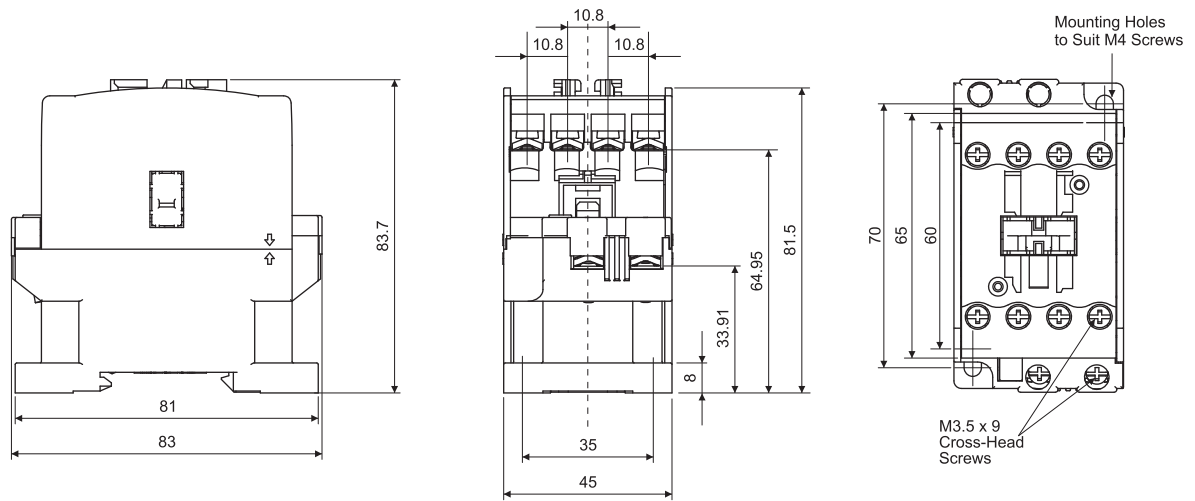
BCH54 TO BCH78



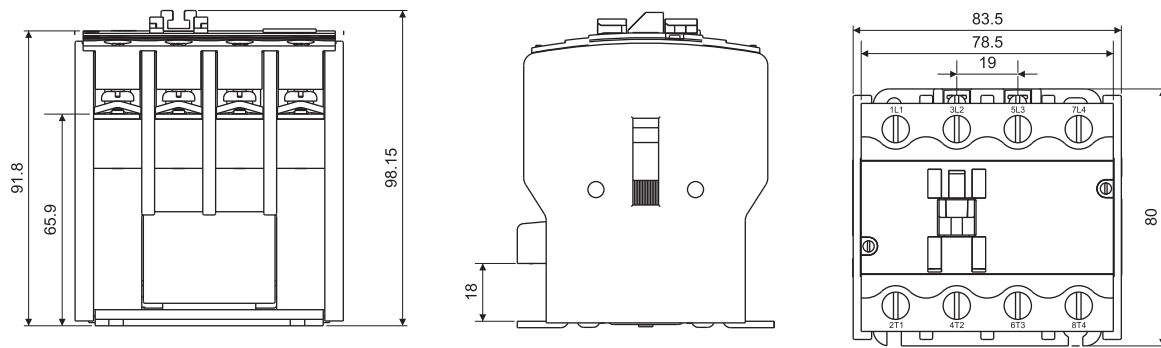
	A	B	C	D	E	F	G	H	J	K	L	Mechanical Interlock mounting matrix		Weight kg.
												Horiz.	Vert.	
BCH 54	220	233	225	110	220	160	72	8	30	10.5	80	262	314	13
BCH 55	220	233	225	110	220	160	72	8	30	10.5	80	262	314	13
BCH 57	220	258	225	110	220	160	72	8	40	12.5	80	262	314	13.5
BCH 62	280	307	291	175	280	200	90	10	50	13	100	312	380	26
BCH 64	280	361	291	175	280	200	90	10	50	15	100	312	380	28
BCH 76	334	490	345	120	380	220	111	12	50	17X2	100	380	580	49
BCH 78	334	490	345	120	380	220	111	12	60	17X2	100	380	580	53

CONTACTOR DIMENSION - 4P FREEDOM (in mm)

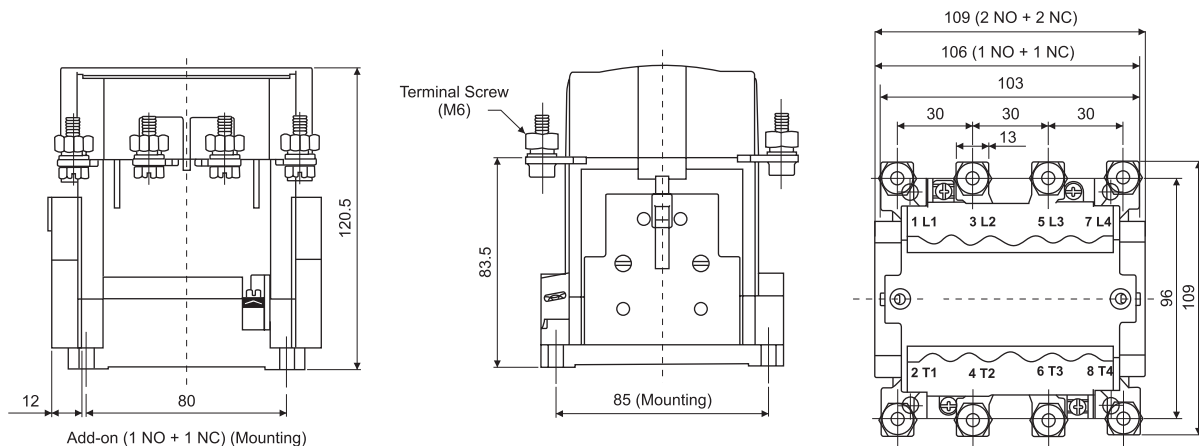
BCH4040



BCH4063 /080

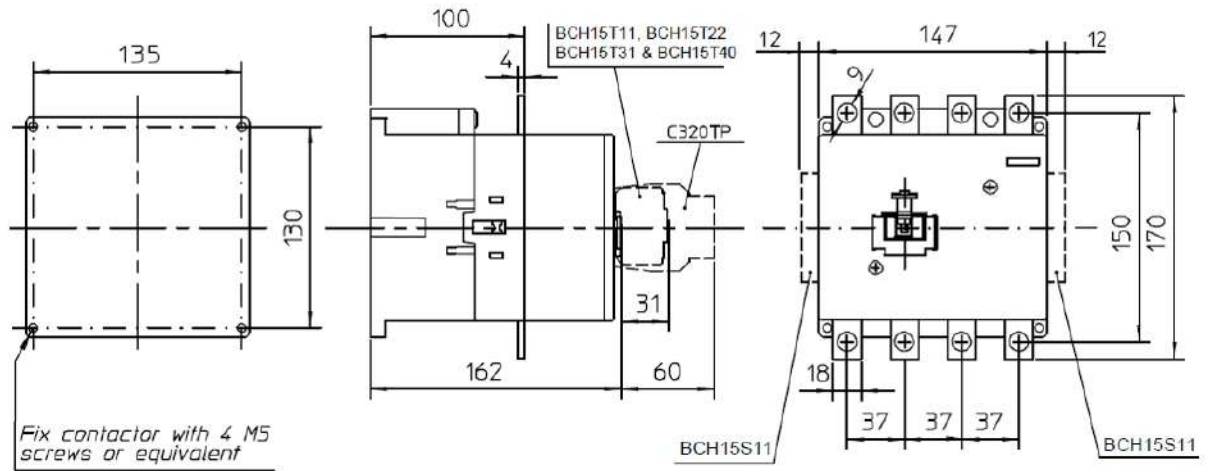


BCH4100 / 130

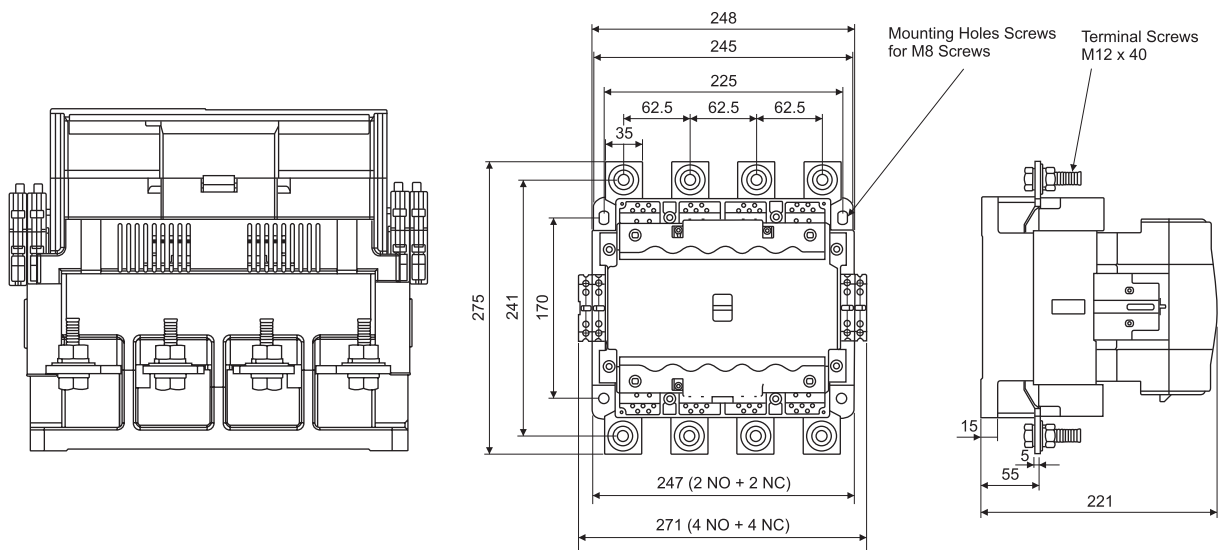


CONTACTOR DIMENSION - 4P FREEDOM (in mm)

BCH15 MN0 / MN / NN / PN

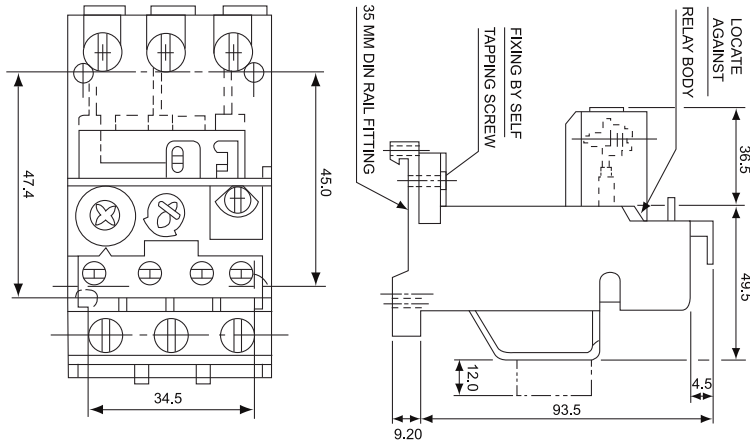


BCH4400 / BCH4500

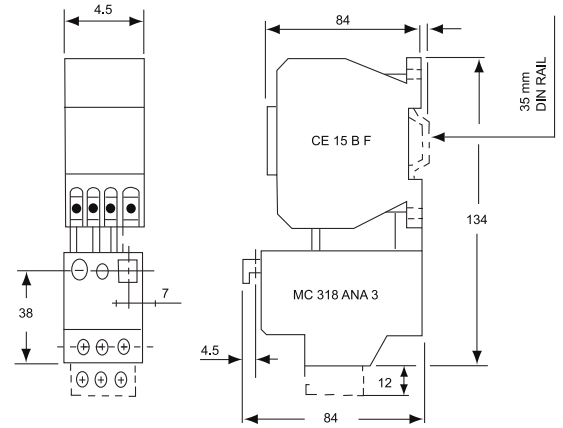


OVERLOAD RELAY - DIMENSIONS (in mm)

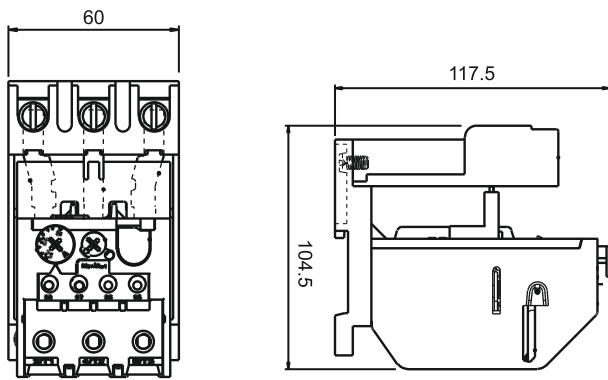
MC318ANA* + C318 F1



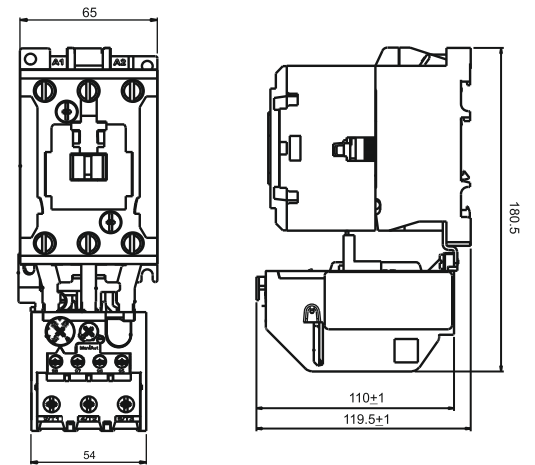
CE15BN TO FN + MC318ANA 3*



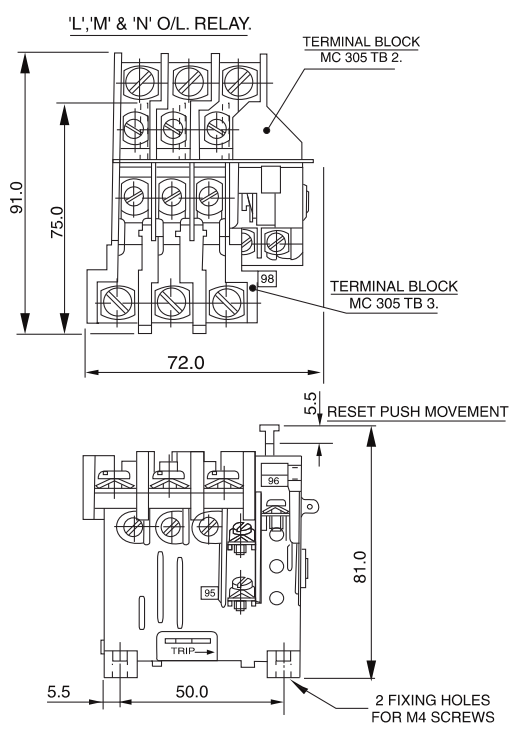
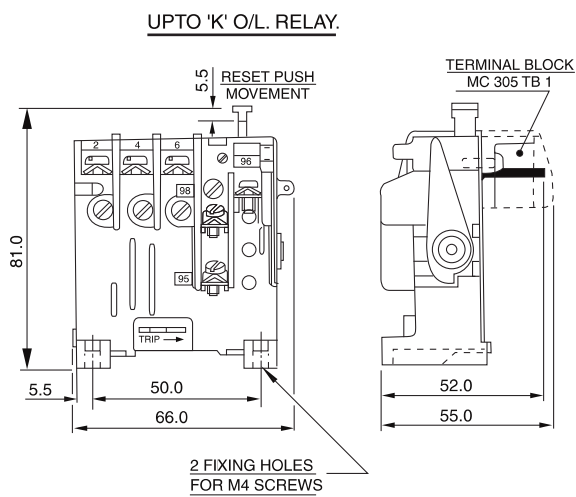
MC318GNA3* + C318F2



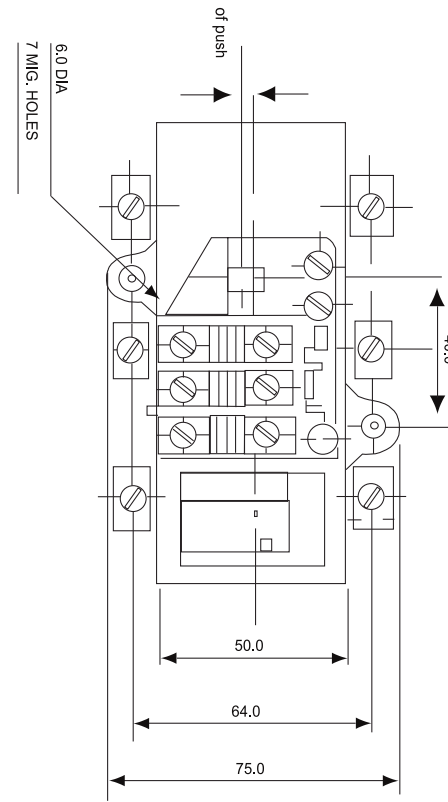
CE15GN TO KN + MC318GNA3*



CITATION - DIRECT READING RELAY

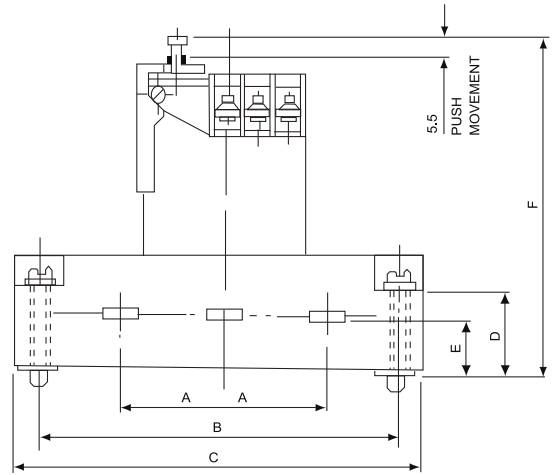
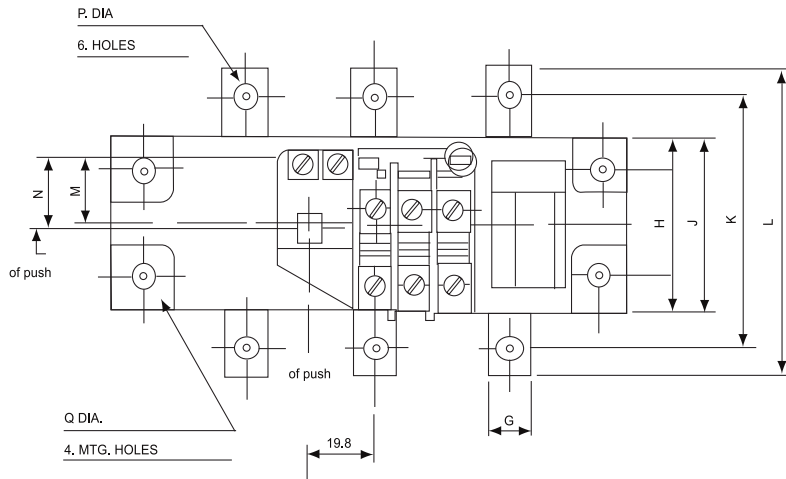


CT1 RELAY



OVERLOAD RELAY - DIMENSIONS (in mm)

CT2 - CT8



CT OPERATED RELAY

Relay/type	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
CT1	40	40	125	-	-	123	-	-	50	64	76	-	-	-	7.0
CT2	44	138	156	35	21.5	125	12	32	50	74	90	18.0	21.0	6.5	7.0
CT3	54	162	180	43	25.5	133	22	32	50	82	106	18.0	21.0	13.0	7.0
CT4	54	162	180	43	25.5	133	22	32	50	82	106	18.0	21.0	13.0	7.0
CT5	60	182	200	63	34.5	153	32	32	50	88	116	18.0	21.0	13.0	7.0
CT6	60	182	200	63	34.5	153	32	32	50	88	116	18.0	21.0	13.0	7.0
CT7	86	252	270	63	33.0	153	34	32	50	100	140	18.0	21.0	16.5	7.0
CT8	86	252	270	63	33.0	153	34	32	50	100	140	18.0	21.0	16.5	7.0

WEIGHT (kg)

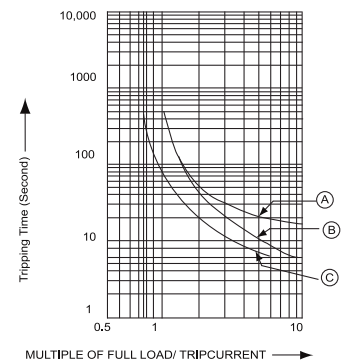
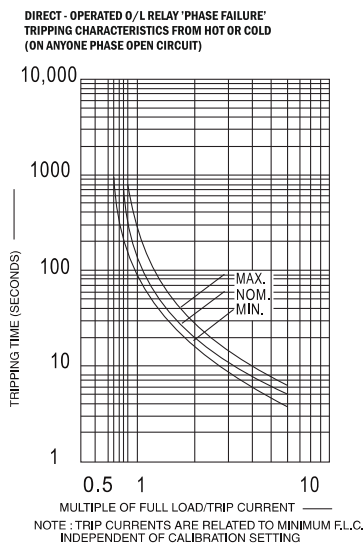
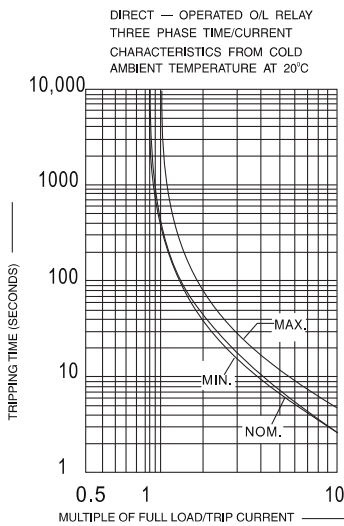
Citation M overload relay	: 0.123
Terminal block	: 0.029
C T operated relay	: CT1: 1.3
	CT2: 1.4
	CT3: 1.6
	CT5: 2.2
	CT6: 2.2
	CT7: 3.1
	CT8: 3.3

OVERLOAD CHARACTERISTIC (Time/Current)

CITATION DIRECT OPERATED OVERLOAD RELAY

SIZE CT* 305ANA 3C

FLC CURRENT RANGES 24.44 TO 600A



- A. Three phase characteristic at higher setting
- B. Three phase characteristic at lower setting.
- C. Single phase characteristic (Based on lower setting)

NOTE : TRIP CURRENTS ARE RELATED TO MINIMUM F.L.C. INDEPENDENT OF CALIBRATION SETTING

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BCH Contactors have proven and time tested installed base in various industries, spanning over more than four decades, of which BCH Contactors have championed in following industries against all our competition.

Cement Plants

Cement Industries generally have very dusty environment with high ambient temperatures. This poses challenges to the switchgears. To meet these challenges we need rugged & reliable switchgear solutions



- Coal Handling
- Ash Handling
- Kiln application
- Crane application
- Packaging plant

Steel

Steel manufacturing is an extremely challenging industry which always demands rugged solutions with a focus on reducing the energy consumption



- Coke oven
- Hot Rolling Mill
- Blast Furnace
- Cranes
- Pulverizers

Cranes

The challenges of Material Handling Equipment (MHE) Industries lies in providing efficient solutions related to the movement, storage, control and protection of the material. Starting, Plugging & Inching operations demands rugged switchgears



- EOT Crane
- Rotary overhead cranes
- Gantry Cranes

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Railways demands switching solution for the tough environmental conditions i.e. varied Temperatures, Humidity, Dusty conditions, High Vibration applications & High frequency Resistive braking.



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Works 2 : 64-68, Sector-7, IIE, Pant Nagar, Rudrapur, Udham Singh Nagar - 263 153 (Uttarakhand) Tel. : 05944-250214/16 Fax : 05944-250215

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E-mail : vadodara@bchindia.com

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