



## Contactors & Overload Relays



**intelli CONTROL**  
intelligent control

RANGE



# Corporate Information

**HPL's** vision of creating a niche, as a major player in India Electrical Industry with commitment to state-of-the-art technology & world class products.

**HPL** Group possess seven modern manufacturing units, ISO 9001 : 2000, ISO 14001, OHSAS 18001, certified located at Gurugram, Kundli, Sonipat, Karnal & Jabli (H.P.) having 5,00,000 sq. feet covered area to manufacture products confirming to International and India standards.

**HPL** Products Profile has the following Strategic Business Units :

- **LV Switchgears & Controlgear**
- **LV Protection Devices**
- **Metering and Energy Management Systems**
- **LED Lighting (Consumer, Professional & Outdoor)**
- **Wires & Cables**
- **Electrical Wiring Accessories**
- **Solar Solutions**

**HPL** Products are tested at CPRI, ERDA, ERTL, NPL, RoHS, CE etc. according to respective Standards, where as MCB's, Rewireable Switches & Electronic Energy Meters carry ISI marking also. HPL has upto 1500V DC in-house test support the only facility in India. Further HPL products have approvals from CPWD, state PWD's, MES, State & Central Utilities, Telecom Sector, Power Distribution Companies & many more Institutional users.

**HPL** Group with Head Office at Noida has extensive Sales & Marketing Network of 90 Branch & Representative Offices, over 900+ Authorised Dealers & Distributors and 35000+ Retailers across country, who are committed to provide solutions and services to customer's delight. HPL is also exporting its products to Middle East, SAARC and European Countries.

**HPL** range of controlgear is in technical collaboration with **LSIS** co., Ltd, Korea, a US\$25 billion group. **LSIS** is a leader in LV, MV & HV Switchgear, Controlgear, Circuit breakers, Automation, Large scale system, GIS and green technologies solutions.





Contactors and Overload Relays

# *intelli*CONTROL

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## Product Portfolio & Features

- Widest Range of 3P & 4P Contactors upto 1450A (AC3) & 2100A (AC1).
- 29 Models in just 11 frames.
- Capacitor Duty Contactors upto 62 kvar.
- Control Contactor upto 12 Contacts Combination.
- Highest Electrical Life upto 2.5 million operations.
- Differential Bimetallic Overload Relays upto 800A.
- Site mounted add on accessories.
- Safety cover to avoid dust.
- Designed as per latest IEC/IS Standards.
- Type II Co-ordination
- CE marked.





## Specifications

### IC type - 3 Pole Power Contactors



Frame Size	
Type	
As per Standards	
<b>POWER CONTACTS</b>	
No. of poles	
Rated Operational voltage(V), Ue	
Rated Insulation voltage(V), Ui	
Rated Impulse withstand voltage(kV), Uimp	
Rated Making Capacity(A) as per IEC	
Rated Breaking Capacity(A) as per IEC	
AC Thermal current (A)	Ith & AC-1
Motor Duty, 3ph, 380/440v AC, 50Hz (A/kW)	AC-3 AC-4
Capacitor Switching delta connected, 415V, 50Hz (kVAR)	AC-6b
DC Current (A) with 3 poles in series	DC1-24V
	DC1-48V
	DC1-110V
	DC2,4-24V
	DC2,4-48V DC2,4-110V
Mechanical Durability(Million op.)	
Electrical Durability(Million op.)	
Max Operating Rate in Op.Cycles/Hour	AC-3
Service Temperature	
Main Terminal Capacity Lug(mm <sup>2</sup> ) 2 Conductors	
Solid/Multi Strand conductors-AWG	
Wt.(kg)---AC Control	
Size(W*H*D)-(mm)AC Control	
Wt.(kg)---DC Control	
Size(W*H*D)-(mm)DC Control	
<b>AUXILIARY CONTACTS</b>	
No. of Built in Aux Contacts	
Conventional Thermal current(A) Ith (AC-12 duty)	
AC-15 Rating at 380/440 V,50 hz	
Terminal Capacity (solid or multi strand mm <sup>2</sup> )	
<b>CONTROL CIRCUIT/COIL (AC)</b>	
Voltages available for Uc V,50/60 Hz	
Pick Up	VA
Hold on	VA
Heat Dissipation	Watts
Limit of Operations	Pick up(%Uc)
	Drop out(%Uc)

18AF			
IC-6a	IC-9a	IC-12a	IC-18a
IEC /EN 60947-1,IEC/EN-60947-4-1,UL508,K60947			
3	3	3	3
690	690	690	690
690	690	690	690
6	6	6	6
70	90	120	180
56	72	96	144
25	25	25	32
9/3	9/4	12/5.5	18/7.5
5/2.2	6/2.2	9/4	11/4
NA	9.7	12.5	16.7
3	4	5.5	7.5
20	20	20	20
20	20	20	20
15	15	15	15
18	18	18	18
15	15	15	15
12	12	12	12
15	15	15	15
2.5	2.5	2.5	2.5
1800	1800	1800	1800
-5°C to +60°C	-5°C to +60°C	-50C to +600C	-50C to +600C
1.5~4	1.5~4	1.5~10	1.5~10
18~10AWG	16~10AWG	16~8AWG	14~8AWG
0.3	0.3	0.3	0.3
45*73.5*80.4	45*73.5*80.4	45*73.5*80.4	45*73.5*80.4
0.4	0.4	0.4	0.4
45*73.5*96.6	45*73.5*96.6	45*73.5*96.6	45*73.5*96.6
1NO or 1NC	1NO or 1NC	1NO or 1NC	1NO or 1NC
16	16	16	16
1.9	1.9	1.9	1.9
1~2.5	1~2.5	1~2.5	1~2.5
24 to 550V	24 to 550V	24 to 550V	24 to 550V
70	70	70	70
9	9	9	9
2.3	2.3	2.3	2.3
85-110%	85-110%	85-110%	85-110%
30-60%	30-60%	30-60%	30-60%



**22AF**

IC- 9b	IC- 12b	IC- 18b	IC- 22b
IEC /EN 60947-1, IEC/EN-60947-4-1, UL508, K60947			
3	3	3	3
690	690	690	690
690	690	690	690
6	6	6	6
90	120	180	220
72	96	144	176
27	27	32	45
9/4	12/5.5	18/7.5	22/11
6/2.2	9/4	11/4	13/5.5
9.7	12.5	16.7	18
4	5.5	7.5	11
20	20	20	20
20	20	20	20
15	15	15	15
18	18	18	18
15	15	15	15
12	12	12	12
15	15	15	15
2.5	2.5	2.5	2.5
1800	1800	1800	1800
-5°C to +60°C	-5°C to +60°C	-5°C to +60°C	-5°C to +60°C
1.5~10	1.5~10	1.5~10	1.5~10
14~8AWG	14~8AWG	14~8AWG	14~8AWG
0.3	0.3	0.3	0.3
45*73.5*87.4	45*73.5*87.4	45*73.5*87.4	45*73.5*87.4
0.4	0.4	0.4	0.4
45*73.5*103.6	45*73.5*103.6	45*73.5*103.6	45*73.5*103.6
1NO + 1NC	1NO + 1NC	1NO + 1NC	1NO + 1NC
16	16	16	16
1.9	1.9	1.9	1.9
1~2.5	1~2.5	1~2.5	1~2.5
24 to 550V	24 to 550V	24 to 550V	24 to 550V
70	70	70	70
9	9	9	9
2.3	2.3	2.3	2.3
85-110%	85-110%	85-110%	85-110%
30-60%	30-60%	30-60%	30-60%

**40AF**

IC- 32a	IC- 40a
IEC /EN 60947-1, IEC/EN-60947-4-1, UL508, K60947	
3	3
1000	1000
1000	1000
8	8
320	400
256	320
55	60
32/15	40/18.5
17/7.5	24/11
25	33.3
15	18.5
32	55
32	55
27	45
30	45
30	40
20	30
12	12
2	2
1800	1800
-5°C to +60°C	-5°C to +60°C
2.5~10	4~16
12~8AWG	10~6AWG
0.4	0.4
45*83*90	45*83*90
0.6	0.6
45*83*117.1	45*83*117.1
NA	NA
16	16
1.9	1.9
1~2.5	1~2.5
24 to 550V	24 to 550V
90	90
12	12
2.7	2.7
85-110%	85-110%
30-60%	30-60%



## Specifications

### IC type - 3 Pole Power Contactors



Frame Size	65AF		100AF	
	IC- 50a	IC- 65a	IC- 75a	IC- 85a
Type	IEC /EN 60947-1, IEC/EN-60947-4-1, UL508, K60947		IEC /EN 60947-1, IEC/EN-60947-4-1, UL508	
As per Standards				
<b>POWER CONTACTS</b>				
No. of poles	3	3	3	3
Rated Operational voltage(V), Ue	1000	1000	1000	1000
Rated Insulation voltage(V), Ui	1000	1000	1000	1000
Rated Impulse withstand voltage(kV), Uimp	8	8	8	8
Rated Making Capacity(A)	500	650	750	850
Rated Breaking Capacity(A)	400	520	600	650
AC Thermal current (A)	100	115	125	135
Motor Duty, 3ph, 380/440v AC, 50Hz (A/kW)	50/22	65/30	75/37	85/45
Capacitor Switching delta connected, 415V, 50Hz (kVAR)	32/15	47/22	52/25	62/30
	40	45.7	54	60
DC Current (A) with 3 poles in series	200	30	37	45
	70	90	90	100
	70	90	90	100
	60	80	80	85
	55	75	75	80
Mechanical Durability(Million op.)	50	65	65	70
	35	55	55	60
Electrical Durability(Million op.)	12	12	12	12
Max Operating Rate in Op.Cycles/Hour	2	2	2	2
Service Temperature	1800	1800	1800	1800
Main Terminal Capacity Lug(mm <sup>2</sup> ) 2 Conductors	-5°C to +60°C	-5°C to +60°C	-5°C to +60°C	-5°C to +60°C
Solid/Multi Strand conductors-AWG	6~25	10~35	10~35	10~50
Wt.(kg)---AC Control	10~4AWG	8~3AWG	8~2AWG	8~00AWG
Size(W*H*D)-(mm)AC Control	0.9	0.9	1.8	1.8
Wt.(kg)---DC Control	55*106*119	55*106*119	70*140*135.8	70*140*135.8
Size(W*H*D)-(mm)DC Control	1.2	1.2	2.7	2.7
<b>AUXILIARY CONTACTS</b>				
No. of Built in Aux Contacts	55*106*146.4	55*106*146.4	79*140*172.3	79*140*172.3
Conventional Thermal current(A) Ith (AC-12 duty)	NA	NA	NA	NA
AC-15 Rating at 380/440 V, 50 hz	16	16	16	16
Terminal Capacity (solid or multi strand mm <sup>2</sup> )	1.9	1.9	1.9	1.9
<b>CONTROL CIRCUIT/COIL (AC)</b>				
Voltagess available for Uc V, 50/60 Hz	1~2.5	1~2.5	1~2.5	1~2.5
Pick Up	24 to 550V	24 to 550V	24 to 550V	24 to 550V
Hold on	110	110	240	240
Heat Dissipation	13	13	17	17
Limit of Operations	2.8	2.8	5.4	5.4
Drop out(%Uc)	85-110%	85-110%	85-110%	85-110%
	30-60%	30-60%	30-60%	30-60%



100AF	150AF		225AF	
IC- 100a	IC- 130a	IC- 150a	IC- 185a	IC- 225a
	IEC /EN 60947-1, IEC/EN-60947-4-1, UL508, K60947		IEC /EN 60947-1, IEC/EN-60947-4-1, UL508, K60947	
3	3	3	3	3
1000	1000	1000	1000	1000
1000	1000	1000	1000	1000
8	8	8	8	8
1050	1200	1500	1850	2250
840	960	1200	1480	1800
160	200	250	300	350
105/55	130/60	150/75	185/90	225/132
75/37	90/45	110/55	150/75	180/90
62				
45	NA	NA	NA	NA
100	120	150	180	220
100	120	150	180	220
85	100	150	180	220
80	120	150	180	220
70	90	130	180	220
60	80	120	150	150
12	5	5	5	5
1	1	1	1	1
1800	1200	1200	1200	1200
-5°C to +60°C	-5°C to +60°C	-5°C to +60°C	-5°C to +60°C	-5°C to +60°C
10~70	35~70	35~95	50~95	50~150
8~0AWG	3~00AWG	3~00AWG	1~410AWG	110~300AWG
1.8	2.4	2.4	5.4	5.4
70*140*135.8	95*158*130.3	95*158*130.3	138*203*185.1	138*203*185.1
2.7	2.4	2.4	5.4	5.4
94*140*172.3	95*158*130.3	95*158*130.3	138*203*185.1	138*203*185.1
NA	NA	NA	2NO+2NC	2NO+2NC
16	16	16	16	16
1.9	1.9	1.9	1.9	1.9
1~2.5	1~2.5	1~2.5	1~2.5	1~2.5
24 to 550V	24 to 500V	24 to 500V	24 to 500V	24 to 500V
	110	110	380	380
17	18	18	11.6	11.6
5.4	2.7	2.7	4.7	4.7
85-110%	85-110%	85-110%	85-110%	85-110%
30-60%	30-60%	30-60%	30-60%	30-60%



## Specifications

### IC type - 3 Pole Power Contactors



Frame Size		400AF			
		IC- 265a	IC- 330a	IC- 400a	IC- 500a
Type		IEC /EN 60947-1, IEC/EN-60947-4-1, UL508, K60947			
As per Standards					
<b>POWER CONTACTS</b>					
No. of poles		3	3	3	3
Rated Operational voltage(V), Ue		1000	1000	1000	1000
Rated Insulation voltage(V), Ui		1000	1000	1000	1000
Rated Impulse withstand voltage(kV), Uimp		8	8	8	8
Rated Making Capacity(A) as per IEC		2650	3300	4000	5000
Rated Breaking Capacity(A) as per IEC		2120	2640	3200	4000
AC Thermal current (A)	Ith & AC-1	400	500	520	700
Motor Duty, 3ph, 380/440v AC, 50Hz (A/kW)	AC-3	265/147	330/160	400/200	500/265
	AC-4	200/102	220/110	300/150	350/176
Capacitor Switching delta connected, 415V, 50Hz (kVAR)	AC-6b	NA	NA	NA	NA
DC Current (A) with 3 poles in series	DC1-24V	220	300	400	400
	DC1-48V	220	300	400	400
	DC1-110V	220	300	400	400
	DC2,4-24V	220	300	400	400
	DC2,4-48V	220	280	280	280
	DC2,4-110V	150	200	200	200
Mechanical Durability(Million op.)		5	5	2.5	2.5
Electrical Durability(Million op.)		1	1	1	0.5
Max Operating Rate in Op.Cycles/Hour	AC-3	1200	1200	1200	1200
Service Temperature		-5°C to +60°C	-5°C to +60°C	-5°C to +60°C	-5°C to +60°C
Main Terminal Capacity Lug(mm <sup>2</sup> ) 2 Conductors		95~240	95~240	185~370	185~480
Solid/Multi Strand conductors-AWG		310~500AWG	410~500AWG	350~700AWG	350~800AWG
Wt.(kg)---AC Control		9.2	9.2	9.2	22.4
Size(W*H*D)-(mm)AC Control		163*243*204.4	163*243*204.4	163*243*204.4	285*312*245.3
Wt.(kg)---DC Control		9.2	9.2	9.2	22.4
Size(W*H*D)-(mm)DC Control		163*243*204.4	163*243*204.4	163*243*204.4	285*312*245.3
<b>AUXILIARY CONTACTS</b>					
No. of Built in Aux Contacts		2NO+2NC	2NO+2NC	2NO+2NC	2NO+2NC
Conventional Thermal current(A) Ith (AC-12 duty)		16	16	16	16
AC-15 Rating at 380/440 V,50 hz		1.9	1.9	1.9	1.9
Terminal Capacity (solid or multi strand mm <sup>2</sup> )		1~2.5	1~2.5	1~2.5	1~2.5
<b>CONTROL CIRCUIT/COIL (AC)</b>					
Voltages available for Uc V,50/60 Hz		100 to 500V	100 to 500V	100 to 500V	100 to 500V
Pick Up	VA	571	571	571	1000
Hold on	VA	14	14	14	29
Heat Dissipation	Watts	5	5	5	7.8
Limit of Operations	Pick up(%Uc)	85-110%	85-110%	85-110%	85-110%
	Drop out(%Uc)	30-60%	30-60%	30-60%	30-60%





800AF		1200AF		2100AF	
IC- 630a	IC- 800a	IC-1260a	IC-1400a	IC-1700a	IC-2100a
IEC /EN 60947-1, IEC/EN-60947-4-1, UL508, K60947			IEC /EN 60947-1, IEC/EN-60947-4-1, UL508, K60947		
3	3	3	3	3	3
1000	1000	1000	1000	1000	1000
1000	1000	1000	1000	1000	1000
8	8	8	8	8	8
6300	8000				
5040	6400				
900	1050	1260	1400	1700	2100
630/330	800/440	----	860 / 550	1050 / 700	1450 / 900
400/200	630/300				
NA	NA				
630	800				
630	800				
630	800				
630	800				
630	630				
630	630				
2.5	2.5	0.5	0.5	0.5	0.5
0.5	0.5	0.05	0.05	0.05	0.05
1200	1200	300	300	300	300
-5°C to +60°C	-5°C to +60°C				
NA	NA				
600~2000AWG	1700 BUSBAR				
22.4	22.4	23.5	33.8	33.8	33.8
285*312*245.3	285*312*245.3	285*352*244.1	431*389*246.1	431*389*246.1	431*389*246.1
22.4	22.4	22.4	22.4	22.4	22.4
285*312*245.3	285*312*245.3	285*352*246	431*380*246	431*380*246	431*380*246
2NO+2NC	2NO+2NC	2NO+2NC	2NO+2NC	2NO+2NC	2NO+2NC
16	16	16	16	16	16
1.9	1.9	1.9	1.9	1.9	1.9
1~2.5	1~2.5	1~2.5	1~2.5	1~2.5	1~2.5
100 to 500V	100 to 500V	100 to 240V	100 to 240V	100 to 240V	100 to 240V
1000	1000	1000	1000	1000	1000
29	29	29	29	29	29
7.8	7.8	7.8	7.8	7.8	7.8
85-110%	85-110%	85-110%	85-110%	85-110%	85-110%
30-60%	30-60%	30-60%	30-60%	30-60%	30-60%



## Specifications

### IR & IC Type - 4 Pole Control & Power Contactors



<b>Frame size</b>			
Type			
As per Standard			
<b>POWER CONTACTS</b>			
Number of poles			
Rated operational voltage (Ue)			
Rated insulation voltage (Ui)			
Rated frequency			
Rated impulse withstand voltage, Uimp			
Maximum operating rate in operating cycles per hour(AC1)			
Durability	Mechanical (No. of operations)		
	Electrical (No. of operations)		
Current and Power	Ith/AC1	Thermal current	A
			200/240V kW
			A
			380/400V kW
			A
			500/550V kW
		A	
		690V kW	
Size and weight	AC Control	Weight	kg
		Size(W × H × D)	mm
	DC Control	Weight	kg
		Size(W × H × D)	mm
<b>AUXILIARY CONTACTS</b>			
No. of Built in Aux Contacts			
Additional Aux Contacts(Side Mounted)			
Additional Aux Contacts (Top Mounted)			
Conventional Thermal current(A) Ith (AC-12 duty)			
AC-15 Rating at 380/440 V,50 hz			
Terminal Capacity	(solid or multi strand (mm <sup>2</sup> ))		
<b>CONTROL CIRCUIT/COIL (AC)</b>			
Voltages available for Uc V,50/60Hz			
Pick Up	VA		
Hold on	VA		
Heat Dissipation	Watts		
Limit of Operations	Pick up(%Uc)		
	Drop out(%Uc)		

<b>18AF</b>				
IR	IC-6a/4	IC-9a/4	IC-12a/4	IC-18a/4
IEC/EN60947-1,IEC/EN60947-4-1,UL508,K60947				
4				
690V				
690V				
50/60Hz				
6kV				
1800 operations per hour				
10 Million	15 Million			
0.5 Million	0.5 mil. Operations		0.8 mil. Operations	
16	25	25	25	40
	9	9	9	15
	25	25	25	40
	17	17	17	27
	25	25	25	40
	21	21	21	35
	25	25	25	40
	27	27	27	44
	25	25	25	40
0.33				
45x73.5x80.4				
0.4				
45x73.5x96.6				
-				
IUA1-11				
IUA2,IUA4				
16				
1.9				
1~2.5				
24 to 550V				
70				
9				
2.3				
85-110%				
30-60%				



22AF	40AF		85AF			
IC-22a/4	IC-32a/4	IC-40a/4	IC-50a/4	IC-65a/4	IC-75a/4	IC-85a/4
IEC/EN60947-4-1, UL508, K60947	IEC/EN60947-1, IEC/EN60947-4-1, UL508, K60947		IEC/EN60947-1, IEC/EN60947-4-1, UL508, K60947			
4	4		4			
690V	690V		690V			
690V	690V		1000V			
50/60Hz	50/60Hz		50/60Hz			
6kV	6kV		8kV			
1800 operations	1800 operations per hour		1800 operations per hour			
15 mil. Operations	15 mil. Operations		12 mil. Operations			
1 mil. Operations	1 mil. Operations		1 mil. Operations			
40	50	60	80	100	110	135
15	18	22	30	37	41	51
40	50	60	80	100	110	135
27	35	42	56	70	76	95
40	50	60	80	100	110	135
35	43	52	70	88	97	120
40	50	60	80	100	110	135
44	55	66	88	110	120	150
40	50	60	80	100	110	135
0.4	0.59		1.2			
47.2x80x86.8	59x83.5x94.5		91x123.5x117.8			
0.5	0.7		1.29			
47.2x80x113.2	59x83.5x121		91x123.5x117.8			
-	-		-			
IAU-11	IAU-11		IAU-11			
IUA2, IUA4	IUA2, IUA4		IUA2, IUA4			
16	16		16			
1.9	1.9		1.9			
1~2.5	1~2.5		1~2.5			
-	-		-			
24 to 550V	24 to 550V		24 to 550V			
95	95		220			
9	9		17			
2	2		5			
85-110%	85-110%		85-110%			
30-60%	30-60%		30-60%			



## Specifications

### IR & IC Type - 4 Pole Control & Power Contactors



<b>Frame size</b>			
Type			
As per Standard			
<b>POWER CONTACTS</b>			
Number of poles			
Rated operational voltage (Ue)			
Rated insulation voltage (Ui)			
Rated frequency			
Rated impulse withstand voltage, Uimp			
Maximum operating rate in operating cycles per hour(AC1)			
Durability	Mechanical (No. of operations)		
	Electrical (No. of operations)		
Current and Power	Ith/AC1	Thermal current	A
			200/240V kW
			A
			380/400V kW
			A
			500/550V kW
		A	
		690V kW	A
Size and weight	AC Control	Weight	kg
		Size(W × H × D)	mm
	DC Control	Weight	kg
		Size(W × H × D)	mm
<b>AUXILIARY CONTACTS</b>			
No. of Built in Aux Contacts			
Additional Aux Contacts(Side Mounted)			
Additional Aux Contacts (Top Mounted)			
Conventional Thermal current(A) Ith (AC-12 duty)			
AC-15 Rating at 380/440 V,50 hz			
Terminal Capacity	(solid or multi strand (mm <sup>2</sup> ))		
<b>CONTROL CIRCUIT/COIL(AC)</b>			
Voltages available for Uc V,50/60Hz			
Pick Up	VA		
Hold on	VA		
Heat Dissipation	Watts		
Limit of Operations	Pick up(%Uc)		
	Drop out(%Uc)		



<b>225AF</b>				
IC-100a/4	IC-130a/4	IC 150a/4	IC-185a/4	IC-225a/4
IEC/EN60947-1,IEC/EN60947-4-1,UL508,K60947				
4				
690V				
1000V				
50/60Hz				
8kV				
1200 operations per hour				
15 mil. Operations				
0.8 mil. Operations				
200	250	275	300	350
57	60	76	87	100
200	250	275	300	350
106	110	142	165	185
200	250	275	300	350
132	137	180	205	230
200	250	275	300	350
165	170	225	255	290
200	250	275	300	350
5.6				
175x203x185				
5.6				
175x203x185				
2NO+2NC				
IAU-100, IAU-100E				
-				
16				
1.9				
1~2.5				
100~500V				
380				
11.6				
4.7				
85-110%				
30-60%				



**400AF**

**800AF**

IC-265a/4	IC-330a/4	IC-400a/4
IEC/EN60947-1, IEC/EN60947-4-1, UL508, K60947		
4		
690V		
1000V		
50/60Hz		
8kV		
1200 operations per hour		
15 mil. Operations		
0.5 mil. Operations		
400	500	520
115	135	160
400	500	520
215	250	300
400	500	520
265	315	375
400	500	520
335	390	470
400	500	520
9.9		
206x243x205		
9.9		
206x243x205		
2NO+2NC		
IAU-100, IAU-100E		
-		
16		
1.9		
1~2.5		
100~500V		
571		
14		
5		
85-110%		
30-60%		

IC-500a/4	IC-630a/4	IC-800a/4
IEC/EN60947-1, IEC/EN60947-4-1, UL508, K60947		
4		
690V		
1000V		
50/60Hz		
8kV		
1200 operations per hour		
12 mil. Operations		
0.5 mil. Operations		
700	900	1050
245	255	310
700	900	1050
450	470	570
700	900	1050
560	590	710
700	900	1050
710	740	900
700	900	1050
26.3		
346x310x244		
26.3		
346x310x244		
2NO+2NC		
IAU-100, IAU-100E		
-		
16		
1.9		
1~2.5		
100~500V		
571		
14		
5		
85-110%		
30-60%		



## Specifications

### IT type - 3 Pole Thermal Overload Relays

(Protection against Overloads, Phase unbalance,  
Loss of Phase & Prolonged Stalling of motor)



Type	IT 12	IT 32	IT 63
As Per Standards			
Range (A)	0.1---0.16	0.63---1.0	24---36
	0.16---0.25	1---1.6	28---40
	0.25---0.40	1.6---2.5	34---50
	0.40---0.63	2.5---4.0	45---65
	0.63---1.0	4---6	
	1---1.6	5---8	
	1.6---2.5	6---9	
	2.5---4.0	7---10	
	4---6	9---13	
	5---8	12---18	
	6---9	16---22	
	7---10	18---25	
	9---13	22---32	
	12---18	28---40	
Mounting	Direct/Separate	Direct/Separate	Direct/Separate
Suitable for Contactor Frame Size	IC 6a,9a,12a,18a(18AF)	IC-9b,12b, 18b,22b(22AF) 32a,40a (40AF)	IC-50a,65a(65AF)
Rated Operational voltage(V),Ue	690	690	690
Rated Insulation voltage(V),Ui	690	690	690
Rated Impulse withstand voltage(kV), Uimp	6	6	6
Service Temp			
Stop/Test/ Reset (H/A)	Test/Reset	Stop/Test/ Reset	Stop/Test/ Reset
Built in contacts	1NO+1NC	1NO+1NC	1NO+1NC
Rated Operational Current(A),Ie Aux Contacts	5	5	5
AC-15 Duty	1.5	1.5	1.5
	0.75	0.75	0.75
	0.47	0.47	0.47
	0.375	0.375	0.375
Trip Class	10A & 20	10A & 20	10A & 20
Main Terminal capacity(Max 2 no conductors) Lug(mm <sup>2</sup> )	1~2.5	1~10	1~10
Aux terminal capacity Wire(mm <sup>2</sup> )	2*2.5	2*2.5	2*2.5
Separate Mounting Unit	IUZ-12	IUZ-32	IUZ-63

### Accessories & Spares for Contactors

Contactor Frame	Timer	Additional Aux. Contacts(Top)		Additional Aux. Contacts(Side)	
3 Pole / 4 Pole	3 Pole / 4 Pole	3 Pole	4 Pole	3 Pole	4 Pole
18AF	IUT/1UN*	IUA2, IUA4	IUA2, IUA4	IUA1	IUA1
22AF					
40AF					
65AF					
85AF					
100AF					
150AF					
225AF					
400AF	NA	-		IAU100,IAU100E	IAU100,IAU100E
800AF					

\*IUN upto 100AF



IT 95	IT 150	IT 225	IT 400	IT 800
IEC /EN 60947-1, IEC/EN-60947-4-1				
34---50	80---105	100---160	160---240	200---300
45---65	95---130	120---185	200---330	260---400
54---75	110---150	160---240	260---400	400---600
63---85				520---800
70---95				
80---100				
Direct/Separate	Direct/Separate	Direct/Separate	Direct/Separate	Direct/Separate
IC-75a,85a,100a(100AF)	IC-130a,150a(150AF)	IC-185a,225a(225AF)	IC-265a,330a,400a(400AF)	IC-500a,630a,800a(800AF)
690	690	690	690	690
690	690	690	690	690
6	6	6	6	6
	-5°c to +60°c			
Stop/Test/ Reset	Stop/Test/ Reset	Stop/Test/ Reset	Stop/Test/ Reset	Stop/Test/ Reset
1NO+1NC	1NO+1NC	1NO+1NC	1NO+1NC	1NO+1NC
5	5	5	5	5
1.5	1.5	2.5	2.5	2.5
0.75	0.75	2	2	2
0.47	0.47	0.47	0.47	0.47
0.375	0.375	0.375	0.375	0.375
10A	10A & 20	10A & 20	10A & 20	10A & 20
2.5~35	10~50	35~120	50~240	2*185~240
2*2.5	2*2.5	2*2.5	2*2.5	2*2.5
IUZ-95	IUZ-150	NA	NA	NA

Mechanical Interlock Unit		Mechanical Latch Unit	Spare Coil	Surge Suppressor
<b>3 Pole</b>	<b>4 Pole</b>	<b>3 Pole/4 Pole</b>	<b>3 Pole/4 Pole</b>	<b>3 Pole/4 Pole</b>
IUR-02	IUR-02	IML-65	IXC22AF/IXC22AF	IUS/IUS
	IAR-9		IXC22AF/IXC404P	IUS/IAS
	-	IXC404AF/IXC404P	IXC65AF/NA	
IAR-180	IAR-180	IML-150	NA/IXC854P	
IAR-600	IAR-600	IAR-220	IXC100AF/NA	IAS/IAS
		IAR-400	IXC150AF/NA	
		-	IXC225AF/IXC2254P	
			IXC400AF/IXC4004P	
			IXC800AF/IXC8004P	



# Overload Relay Tripping Curves

Class 10A

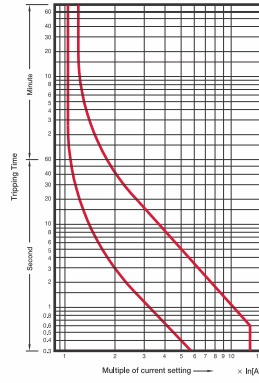
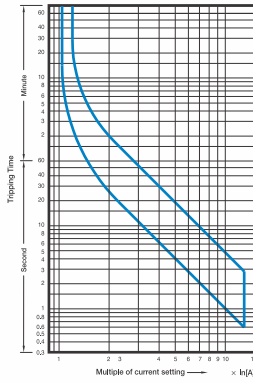
Cold Starting

Hot Starting

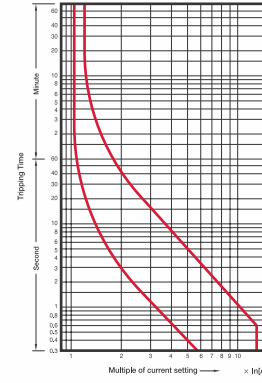
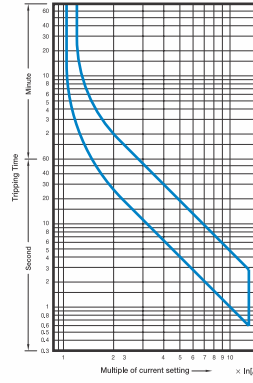
Cold Starting

Hot Starting

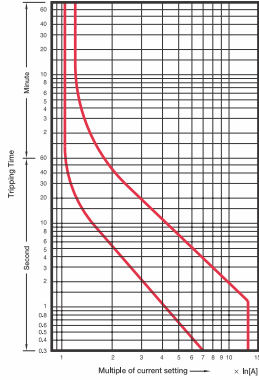
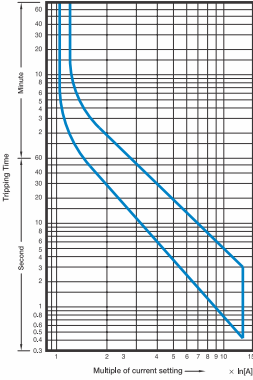
IT-12/3K



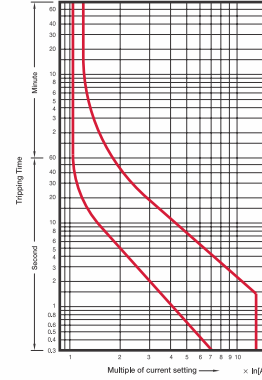
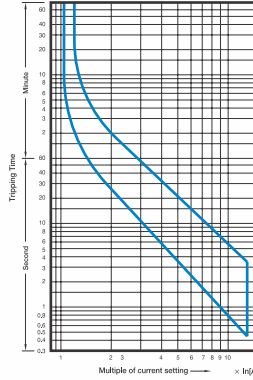
IT-32/3K



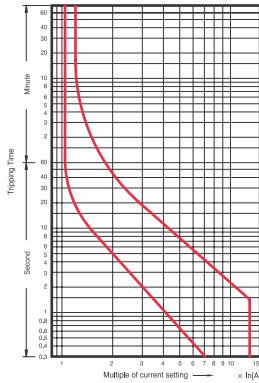
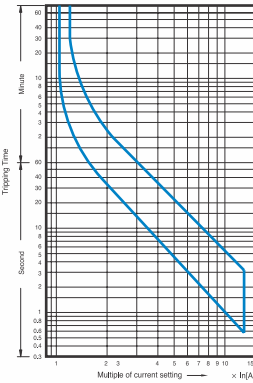
IT-63/3K



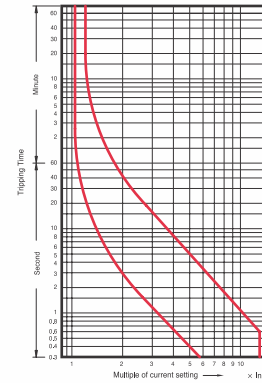
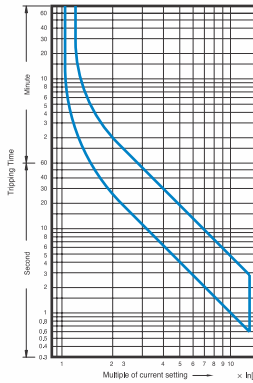
IT-95/3K



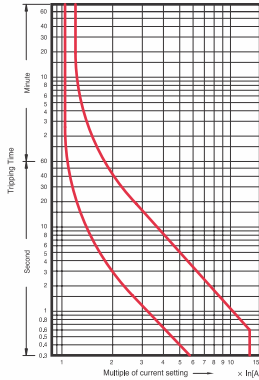
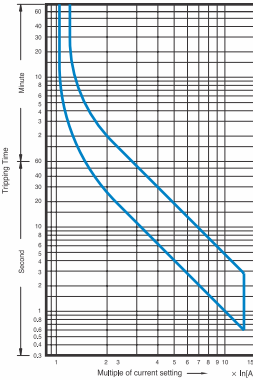
IT-150/3K



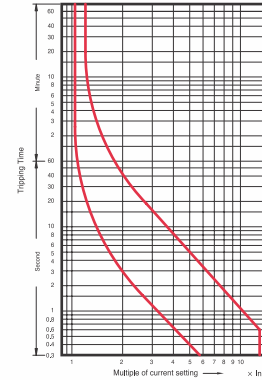
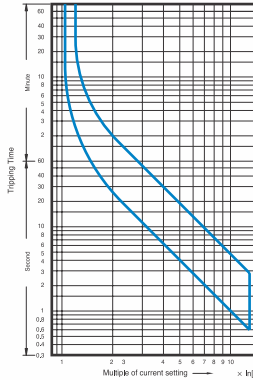
IT-225/3K



IT-400/3K



IT-800/3K







# Capacitor Duty Contactors

## Description

Capacitor unit(Pre-loading resistor) is connected to the terminals of the contactor to reduce the high inrush current exceeding 20x in.

- AC or DC control coil on selection
- 3-pole(NO) main contact
- Finger proof design
- DIN rail or screw mountable

## Rating

Type	Maximum Operating Power (kVar) / Rated Current (A)				Contactor Frame
	220 ~ 240V	400 ~ 440V	500~550V	600~690V	
IC097CC	5/13	9.7/14	14/16	16/15	18AF
IC125CC	6.7/18	12.5/18	18/21	18/17	18AF
IC167CC	8.5/22	16.7/24	24/28	26/25	18AF
IC180CC	10/26	18/26	26/30	30/29	22AF
IC250CC	15/39	25/36	36/42	40/38	40AF
IC333CC	20/52	33.3/48	48/55	53/51	40AF
IC400CC	20/52	40/58	58/67	65/63	65AF
IC457CC	25/66	45.7/66	66/76	73/70	65AF
IC540CC	29.7/78	54/78	78/90	85/82	100AF
IC600CC	35/92	60/87	92/106	100/96	100AF
IC620CC	37/97	62/89	94/109	105/101	100AF

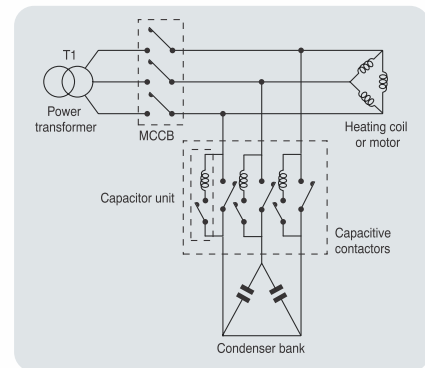
Note) - When the switch is closed condenser must be discharged before recharged. (Maximum residual voltage at terminals ≤ 50V)  
- To prevent short current, gG type fuse must be 1.5~2 times than rated current.

## Features of capacitor unit (Pre-loading resistor)

These capacitive contactors are suitable for switching single-step or multiple-step condenser bank. It is standardized by IEC-60947-4941, UL and CSA.

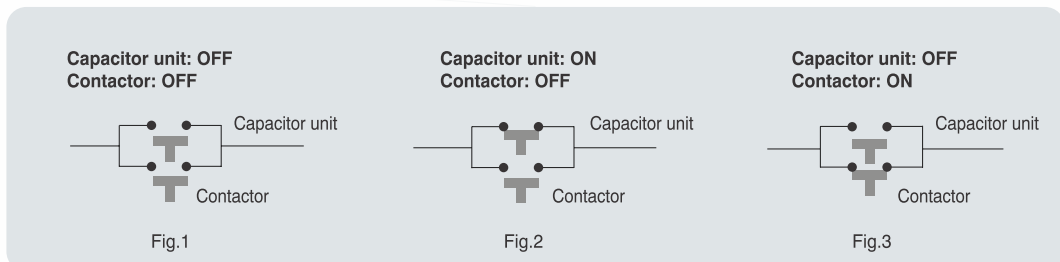
### Features of capacitor unit (Pre-loading resistor)

- Damping resistor that can limit the inrush current upto 60x  
In is connected to the mechanism that closes earlier than the main contact of the contactor
- No heat loss by the series resistor
- Eliminate the switching surge
- Improving the performance of the capacitor circuit system



Example

## Operation sequence



Note) Closing sequence: Fig.1 => Fig.2 => Fig.3  
Opening sequence: Fig.3 => Fig.1

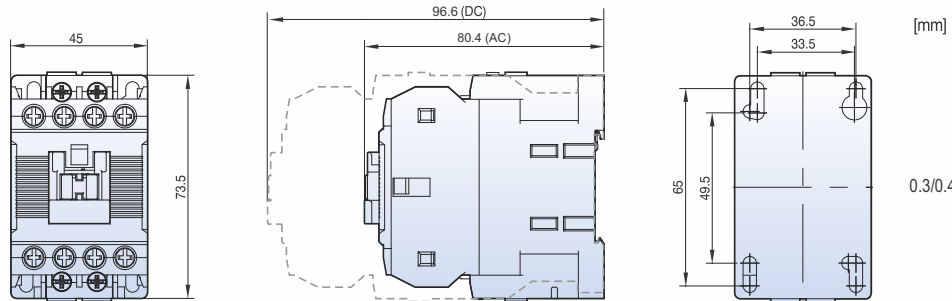




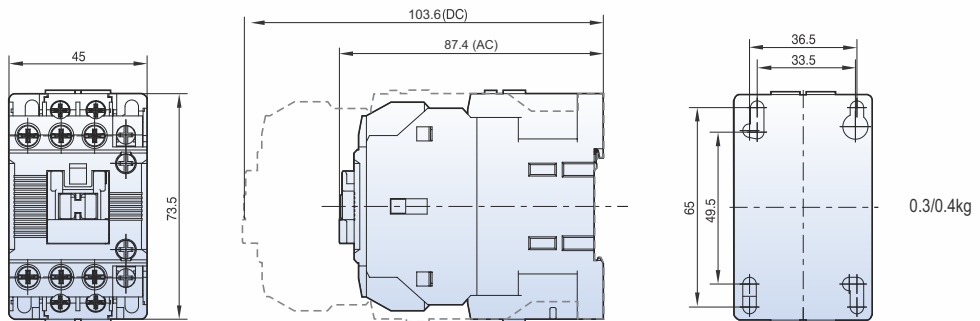
## Dimensions (3Pole)

### Power Contactors (IC-6a~100a)

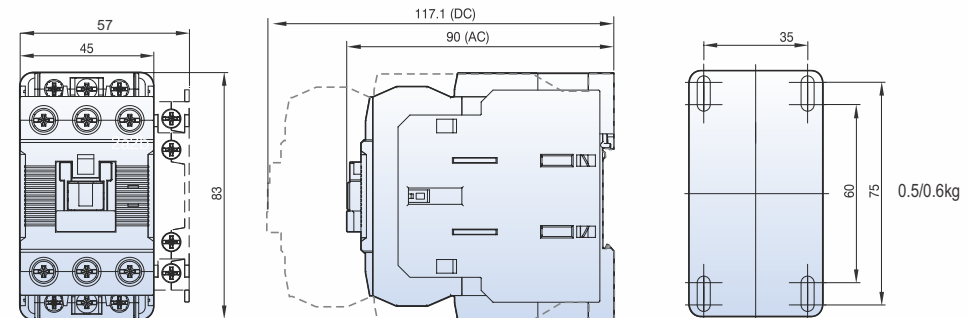
IC-6a~18a AC/DC



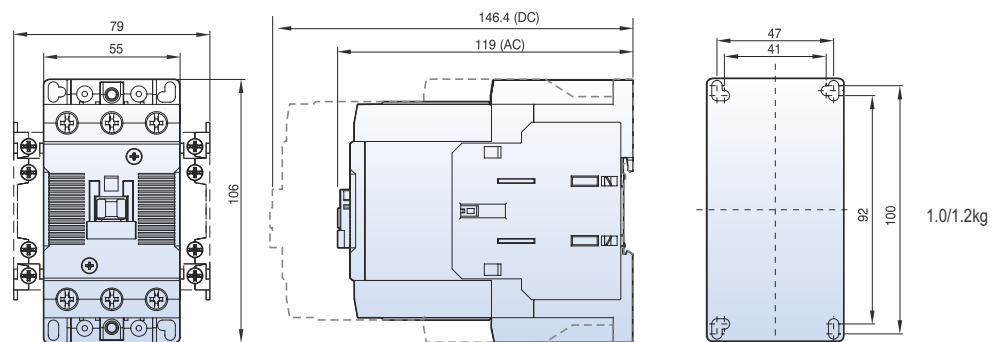
IC-9b~22b AC/DC



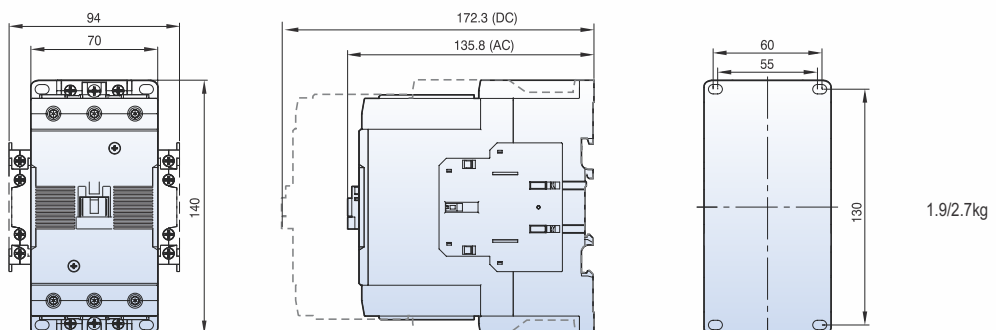
IC-32a~40a AC/DC



IC-50a~65a AC/DC



IC-75a~100a AC/DC

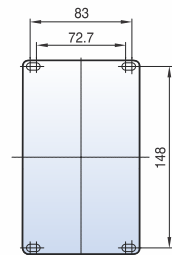
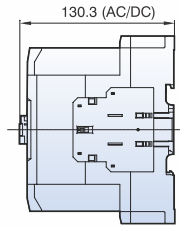
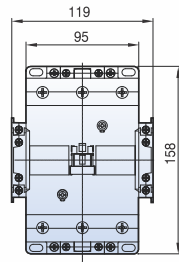




## Dimensions (3Pole)

### Power Contactors (IC-130a~800a)

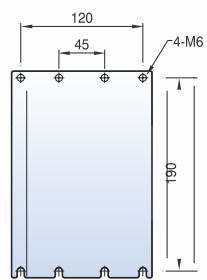
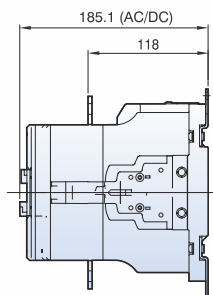
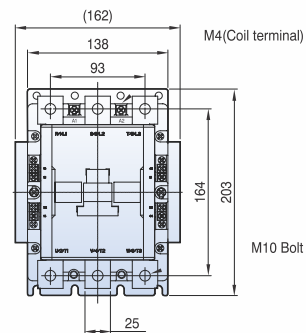
IC-130a~150a AC/DC



[mm]

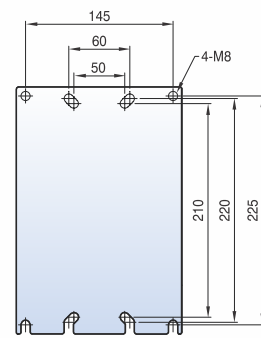
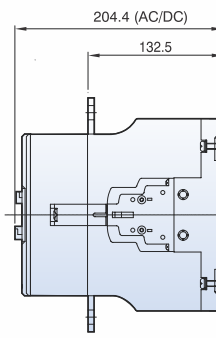
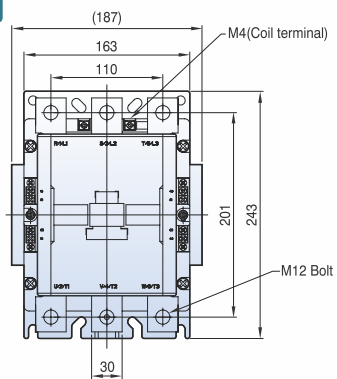
2.4kg

IC-185a~225a AC/DC



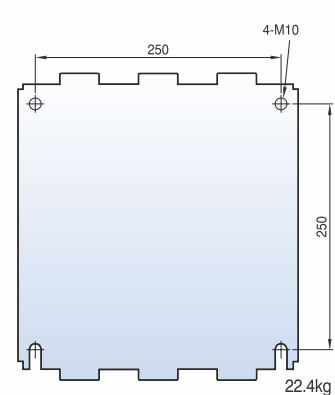
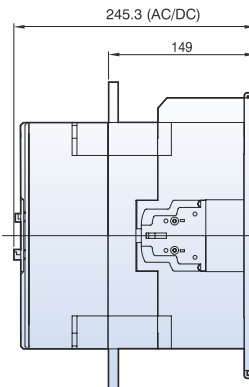
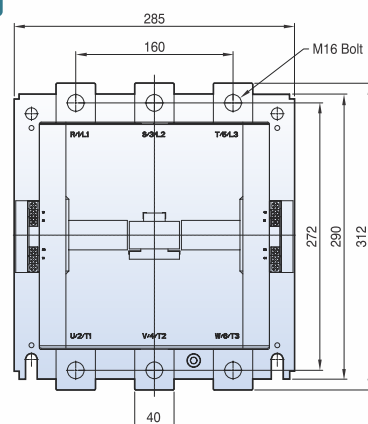
5.4kg

IC-265a~400a AC/DC



9.2kg

IC-500a~800a AC/DC



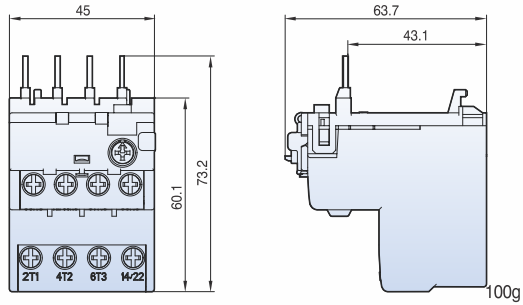
22.4kg



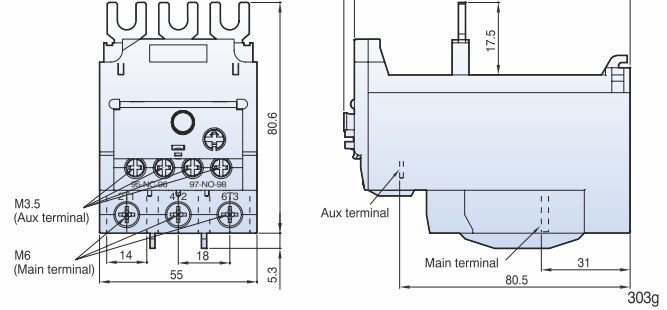
# Dimensions (TOR)

## Overload Relays

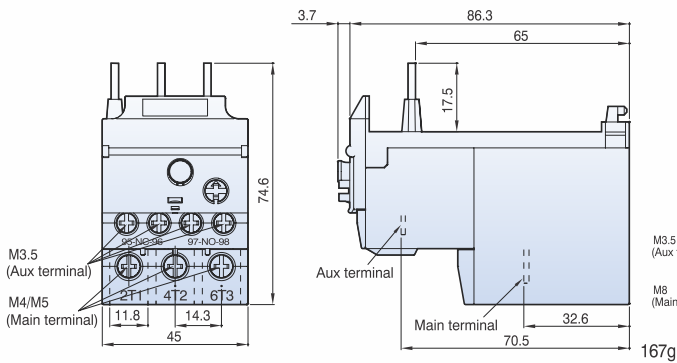
**IT-12**



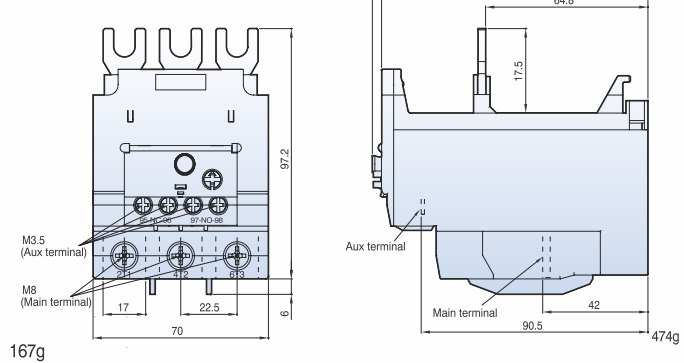
**IT-63**



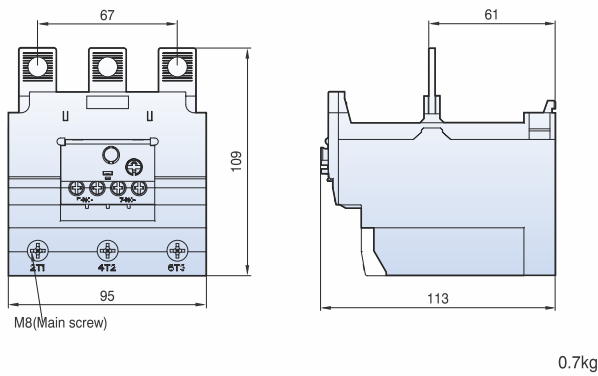
**IT-32**



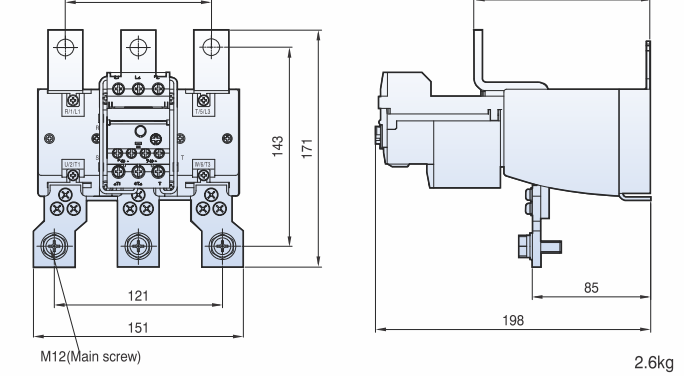
**IT-95**



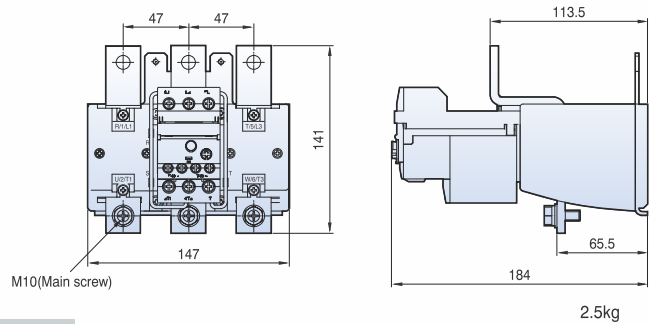
**IT-150**



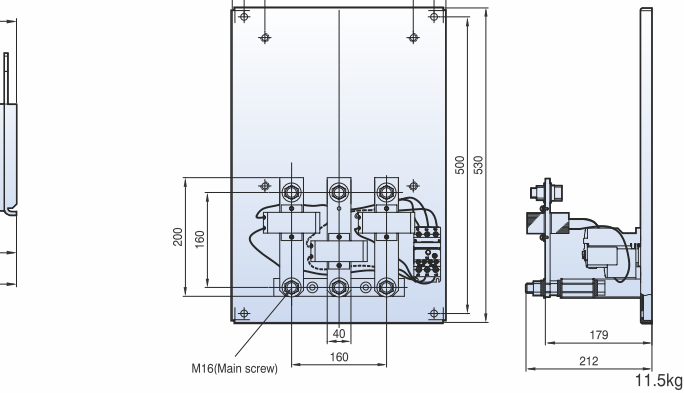
**IT-400**



**IT-225**



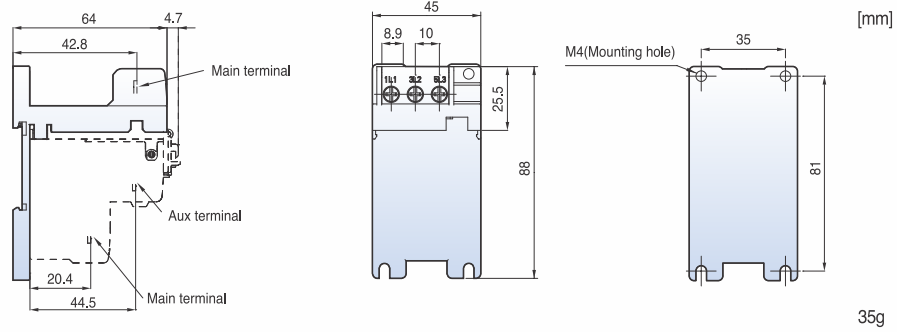
**IT-800**



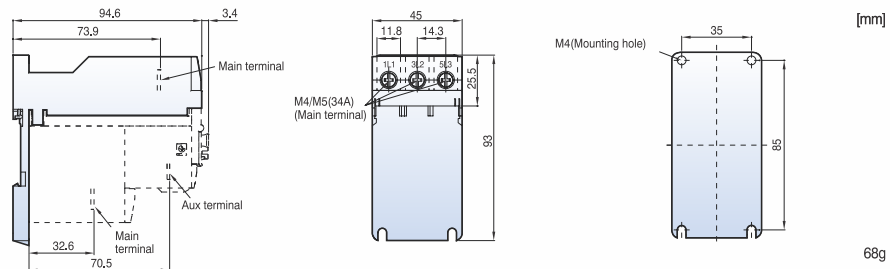


# Dimensions (TOR) Separate Mounting Units

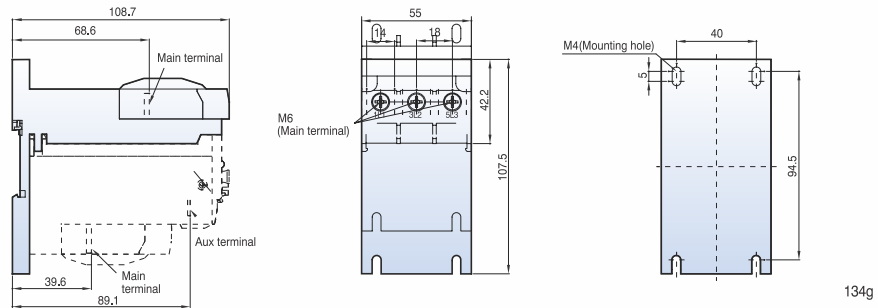
IUZ-12



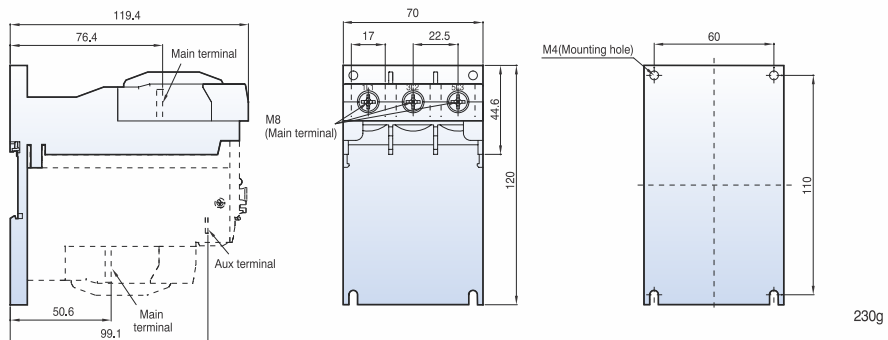
IUZ-32



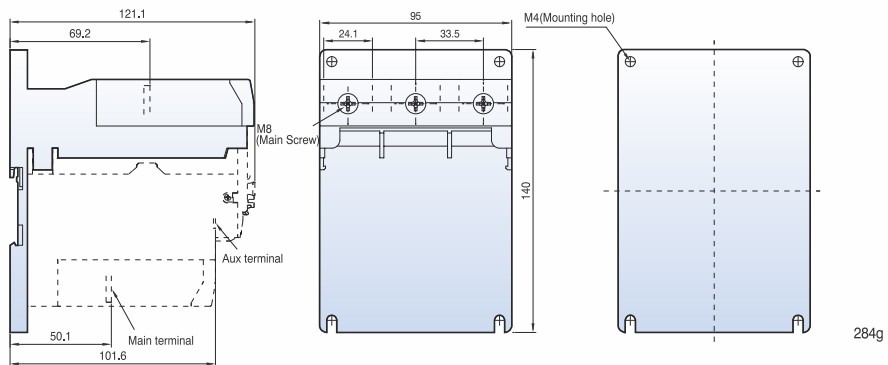
IUZ-63



IUZ-95



IUZ-150

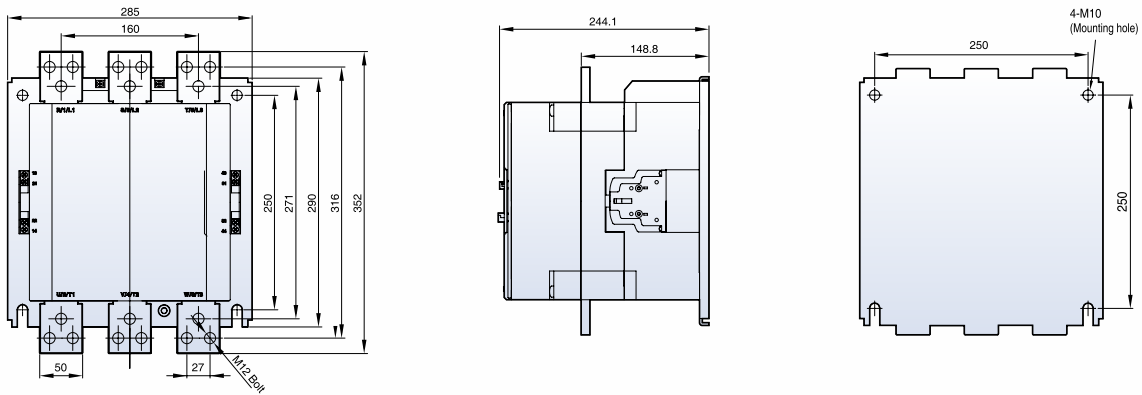




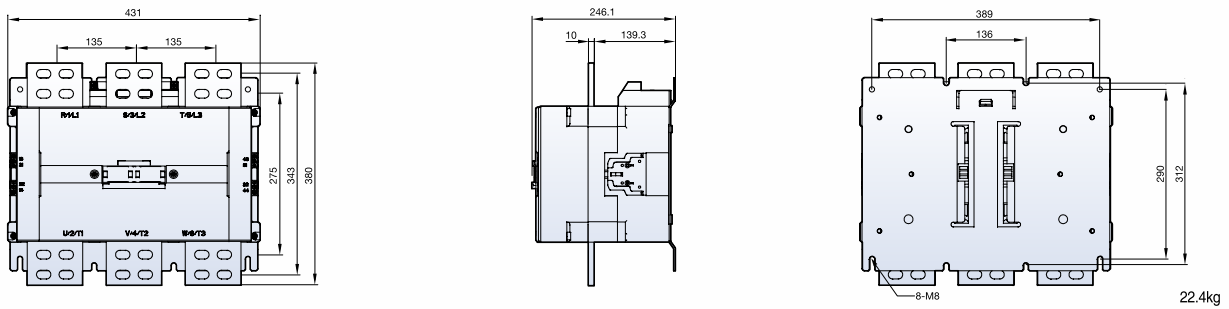
## Dimensions (3Pole)

### 3-pole contactors dimension (1260AF~2100AF)

IC-1260a AC/DC



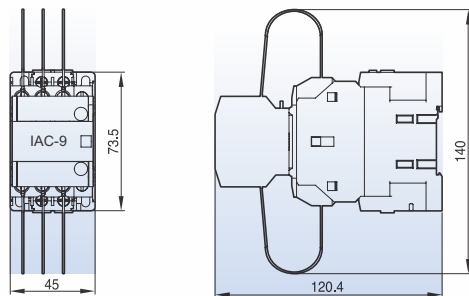
IC-2100a AC/DC



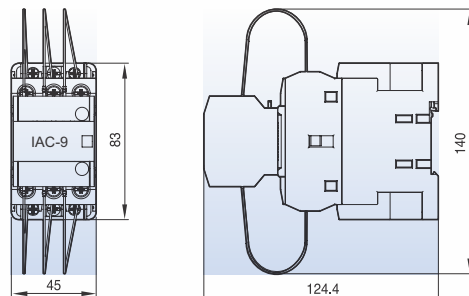
22.4kg

### Capacitor Duty Contactors (IC-097CC~620CC)

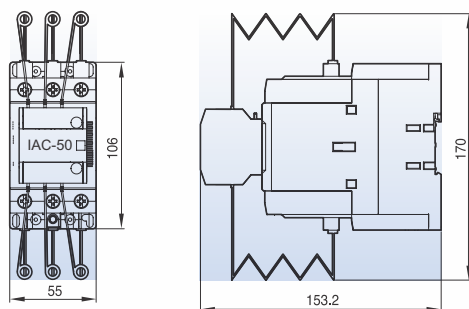
IC097CC~180CC AC



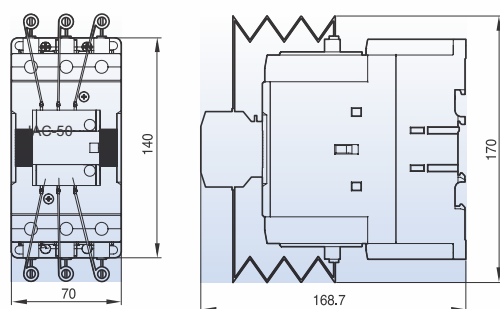
IC250CC~333CC AC



IC400CC~457CC AC



IC540CC~620CC AC

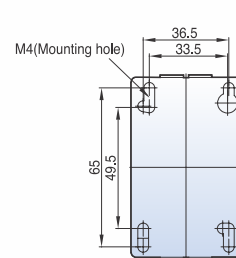
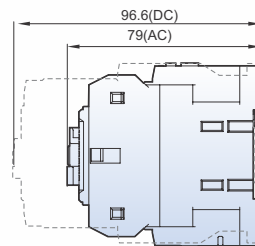
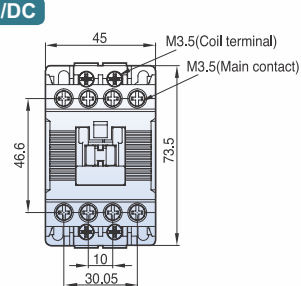




## Dimensions (4Pole)

### Control & Power Contactors (IR, IC-6a/4~85a/4)

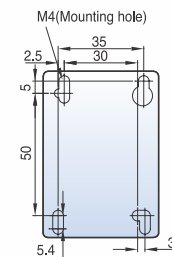
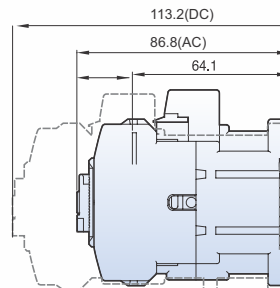
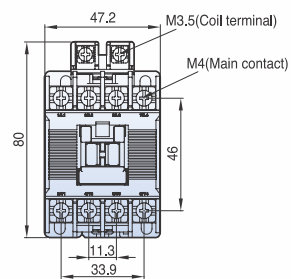
**IR & IC-6a/4~18a/4 AC/DC**



[mm]

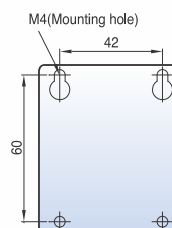
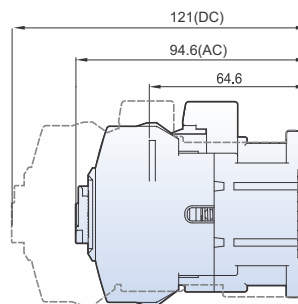
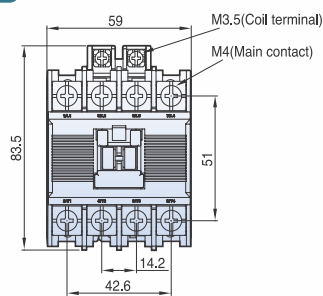
0.3/0.45kg

**IC-22a/4 AC/DC**



0.4/0.55kg

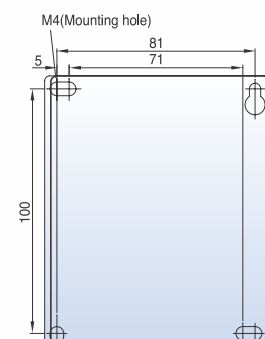
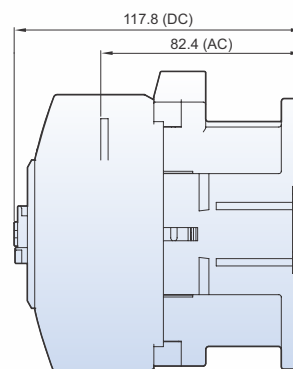
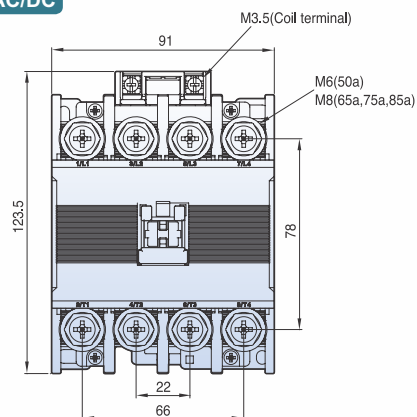
**IC-32a/4~40a/4 AC/DC**



[mm]

0.6/0.7kg

**IC-50a/4~85a/4 AC/DC**



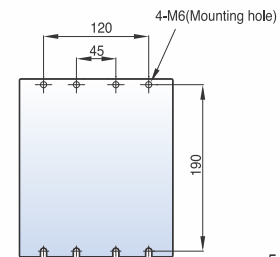
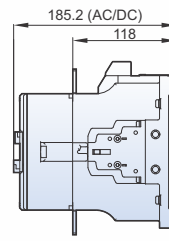
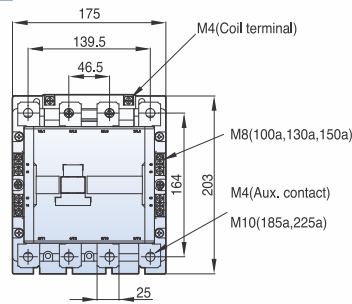
1.2/1.3kg



## Dimensions (4Pole)

### Control & Power Contactors (IC-100a/4~800a/4)

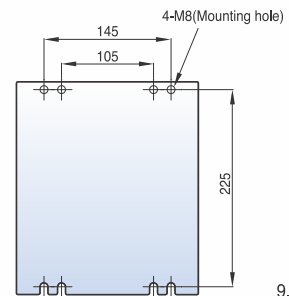
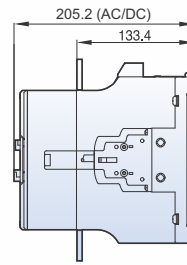
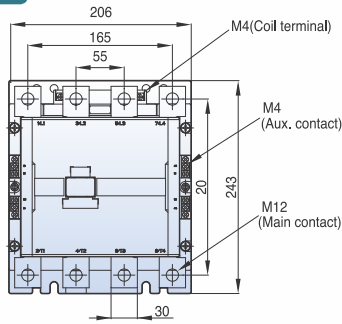
#### IC-100a/4~225a/4 AC/DC



[mm]

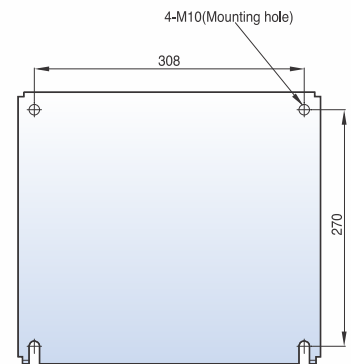
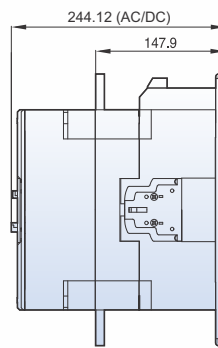
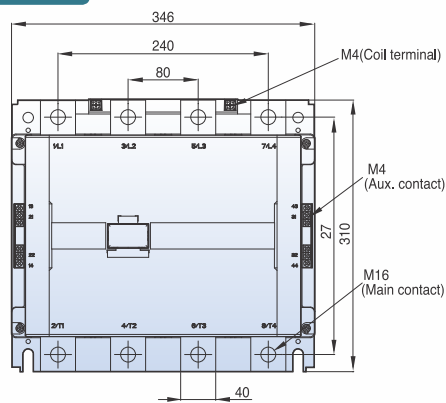
5.6kg

#### IC-265a/4~400a/4 AC/DC



9.9kg

#### IC-500a/4~800a/4 AC/DC



26.3kg



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