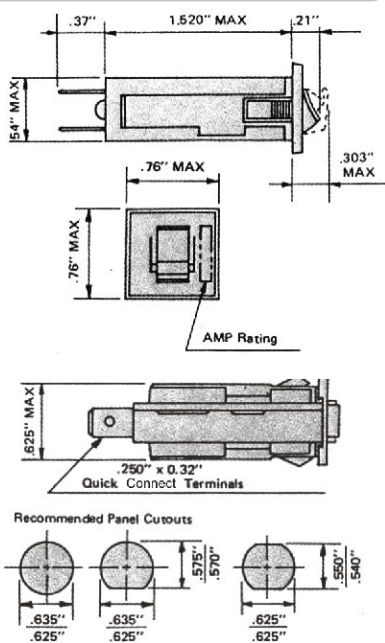


MINI CIRCUIT BREAKER

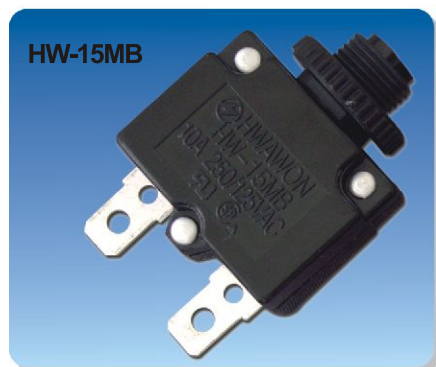
Unit:mm



HW-15CP



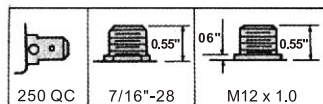
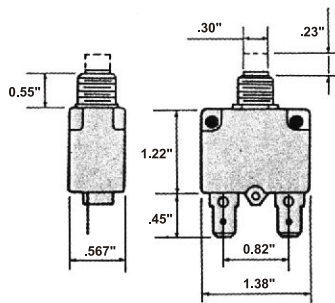
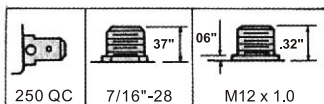
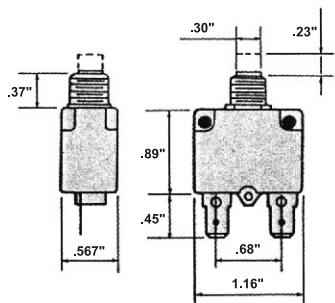
ITEM NO.	HW-15CP	HW-15MB	HW-35MB
NUMBER OF POLE.	1	1	1
CURRENT RATING	5A-15A	5A~15A	5A~35A
MAXIMUM OPERATING VOLTAGE	AC (125V)	250V (125V)	250V (125V)
	DC	50V	50V
INTERRUPT CAPACITY	AC 250V	1000A	1000A
	DC 50V	1000A	2000A
ACTUATOR	PUSH-TO-RESET BUTTON	PUSH-TO-RESET BUTTON	PUSH-TO-RESET BUTTON
CIRCUIT FUNCTION	SERIES TRIP	SERIES TRIP	SERIES TRIP
WEIGHT	8.5g	13g	25g
TERMINALS	250 QUICK CONNECT	250 QUICK CONNECT	250 QUICK CONNECT
MOUNTING	SNAPS INTO PANEL CUTOUT FROM FRONT	7/16" -28 THREADED BUSHING	7/16" -28 THREADED BUSHING
COMPONENT RECOGNITION			



HW-15MB



HW-35MB



Push Button Switch,
Pilot Lamp

Terminal Block

SSR, Socket, Relay, Timer

Limit Switch,
Warning Light, Alarm




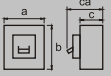

Thermocouple, Temperature
Controller, Sensor





Panel Meter,
Can Switch, C.T.

Hoist Push Button, Enclosure,
Fan, Lock, Bus Bar Insulator



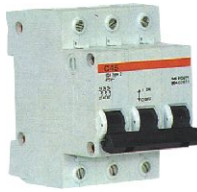

MCCB, Magnetic Contactor,
Overload Relay

TYPE BH LINE MINIATURE CIRCUIT BREAKER & FUSE HOLDER

BH LINE(FOR GENERAL BRANCHING PANELS)					
TYPE		BH			
NUMBER OF POLES		1	2	3	
FRAME SIZE(A)		70	100	100	
PICTURE					
AMPERE RATING AT AMBIENT TEMPERATURE 40°C		10,15,20,30,40,50,60,75	10,15,20,30,40,50,60,75,100	15,20,30,40,50,60,75,100	
RATED VOLTAGE(V)		AC	240	240	240 240/415
		DC	12	125	125
INTERRUPTING CAPACITY (KA)SYM	NEMA V AC	120/240	55	5	-
		240	-	5	5
	BS V AC	240	3	3	3
		240/415	3	3	3
NEMA, BS V AC		125	1	1	1
DIMENSIONS(mm) 		a	25	50	75
		b	95	95	95
		c	59	59	59
		ca	77.5	77.5	77.5
WEIGHT(kg)		0.14	0.29	0.43	
CONNECTION		CLAMP TERMINAL			
					

H.R.C. FUSE HOLDER		
TYPE	RT18-32	RT18-36
PICTURE		
RATED VOLTAGE	500V	500V
RATED CURRENT	32A	63A
CONNECTED WITH FUSE	 RT 14-20 (φ 10X38)	 RT 14-32 (φ 14.3X51)
MOUNTING METHODS	BY DIN RAIL (35mm)	BY DIN RAIL (35mm)

C-45 SERIES MINIATURE CIRCUIT BREAKER

C-45 SERIES SPECIFICATION				
NUMBER OF POLES	1P	2P	3P	4P
PICTURE				
AMPERE RATING AT AMBIENT TEMPERATURE 40°C	5A,10A,15A,20A,25A,32A,40A,50A,63A	5A,10A,15A,20A,25A,32A,40A,50A,63A	5A,10A,15A,20A,25A,32A,40A,50A,63A	5A,10A,15A,20A,25A,32A,40A,50A,63A
RATED VOLTAGE	240V	415V	415V	415V
INTERRUPTING CAPACITY	5A TO 40A	6KA (240V)	6KA (415V)	6KA (415V)
	50A TO 63A	4KV (240V)	4KV (415V)	4KV (415V)

Push Button Switch,
Pilot Lamp

Terminal Block

SSR, Socket, Relay, Timer

Limit Switch,
Warning Light, Alarm





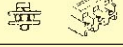
Thermocouple, Temperature
Controller, Sensor





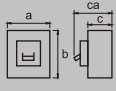
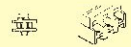


Panel Meter,
Can Switch, C.T.

Hoist Push Button, Enclosure,
Fan, Lock, Bus Bar Insulator

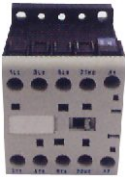





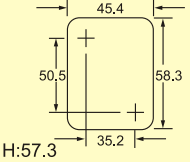
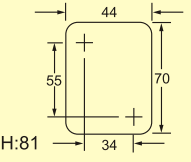
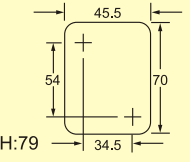
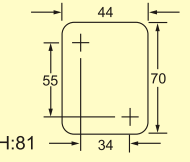
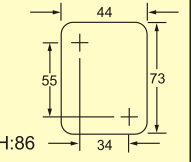

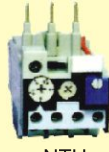
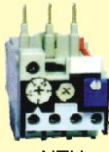


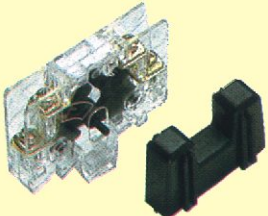
MCCB, Magnetic Contactor,
Overload Relay

MOLDED CASE CIRCUIT BREAKER (MAGNETIC SHUNT TRIP TYPE)

FRAME(A)		30		50		60		100			
ITEM NO.		NF30-CB		NF50-CS		NF60-CS		NF100-CS			
PICTURE											
AMPERE RATING(A) AT AMBIENT TEMPERATURE 40°C (MARINE USE 45°C)		6, 10, 15, 20, 30		10, 15, 20, 30, 40, 50		60		(50), 60, 75, 100			
NUMBER OF POLES		2 3		2 3		2 3		2 3			
RATED VOLTAGE(V)		AC		600		600		600			
		DC		250'		250'		250'			
INTERRUPTING CAPACITY(KA)		IEC (IEC157-1) (BS4752-1)		AC		2.5/1		2.5/1			
				AC		2.5/1.5		2.5/1.5			
				AC		5/2.5		5/2.5			
				AC		5/5		5/5			
		DC		2.5		2.5		2.5			
		DC		-		-		-			
		JIS		AC		1.5		1.5		7.5	
				AC		2.5		2.5		10	
				AC		5		5		25	
				DC		2.5		2.5		7.5	
		DC		-		-		-		-	
		NK, LR, BV, AB, GL		AC		2.5		2.5		10	
AC				5		5		5			
DC				2.5		2.5		7.5			
DC				-		-		-			
DIMENSIONS		A		45 67.5		50 75		60 90			
		B		96		130		130			
		V		52		68		68			
		CA		67 86		86 86		0.65 0.65			
WEIGHT(kg)		0.3 0.4		0.45 0.65		0.65 0.65		0.65 0.9			
CONNECTION		TERMAINAL SCREW						CLAMP TERMINAL			
AUTOMATIC TRIPPING DEVICE											




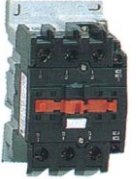

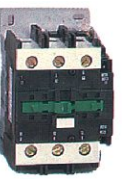
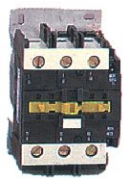
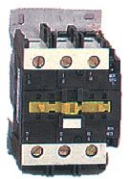
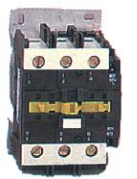
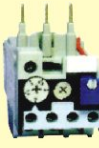
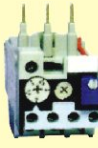




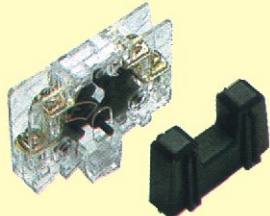
FRAME(A)		250		400		630		800			
ITEM NO.		NF250-CS		NF400-CS		NF630-CS		NF800-CS			
PICTURE											
AMPERE RATING(A) AT AMBIENT TEMPERATURE 40°C (MARINE USE 45°C)		125, 150, 175, 200, 225, 250,		250, 300, 350, 400,		500, 600, 630		630, 700, 800			
NUMBER OF POLES		3		3		3		3			
RATED VOLTAGE(V)		AC		600		600		600			
		DC		250'		250'		20'			
INTERRUPTING CAPACITY(KA)		IEC (IEC157-1) (BS4752-1)		AC		10/7.5		15/10			
				AC		15/10		25/18			
				AC		18/10		25/18			
				AC		25/20		35/25			
		DC		250V		10		20			
		DC		550V		10		15			
		JIS		AC		460V		15		25	
				AC		220V		25		35	
				DC		250V		10		20	
				DC		500V		15		25	
		DC		250V		25		35		50	
		NK, LR, BV, AB, GL		AC		500V		15		30	
AC				250V		25		35			
DC				250V		10		-			
DC				-		-		-			
DIMENSIONS 		A		105		140		210			
		B		165		257		275			
		V		86		103		103			
		CA		110		132		155			
WEIGHT(kg)		2.6		6.5		10		11			
CONNECTION		TERMAINAL SCREW		BUSBAR		BUSBAR					
AUTOMATIC TRIPPING DEVICE											

MAGNETIC CONTACTOR & THERMAL OVERLOAD RELAY

ITEM NO.		C-06D10	C-06D01	C-09D10	C-09D01	C-11D10	C-11D01	C-12D10	C-12D01	C-18D10	C-18D01	
		IEC-947-4-1 BS-5424 CNS-C4084										
V(Ui)		1000V		660V		1000V		660V		660V		
AC1(1th)		16A		25A		25A		25A		32A		
AUXILIARY POLE		1A(1NO) 1B(1NC)	1A(1NO) 1B(1NC)	1A(1NO) 1B(1NC)	1A(1NO) 1B(1NC)	1A(1NO) 1B(1NC)	1A(1NO) 1B(1NC)	1A(1NO) 1B(1NC)	1A(1NO) 1B(1NC)	1A(1NO) 1B(1NC)	1A(1NO) 1B(1NC)	
RAIL		35mm		35mm		35mm		35mm		35mm		
WEIGHT(kg)		0.177		0.335		0.326		0.335		0.365		
3 PHASE AC3	220V	KW(hp)	2.2(3)		2.2(3)		3(4)		3(4)		4(5.5)	
		Ie	9A		9A		12A		12A		18A	
	380V	KW(hp)	3.7(5)		4(5.5)		5.5(7.5)		5.5(7.5)		7.5(10)	
		Ie	8A		8.5A		11A		11.5A		17A	
	500V	KW(hp)	3.7(5)		5.5(7.5)		5.5(7.5)		7.5(10)		10(13.5)	
		Ie	6.5A		7.5A		9A		11A		16A	
OVERLOAD RELAY		NTH		NTH		NTH		NTH		NTH		
ELECTRICAL INTERLOCK		CA9-D02										
AUXILIARY CONTACT BLOCK		CA1-20, CA1-11, CA1-02, CA1-40, CA1-31, CA1-13, CA1-04, CA8-20, CA8-D11, CA8-D02										
SIZE(mm) H:Height												
TYPE NTH THERMAL OVERLOAD RELAY			NTH-0.5(0.35~0.5A) NTH-0.75(0.5~0.75A) NTH-1.05(0.75~1.05A) NTH-1.45(1.05~1.45A) NTH-1.9(1.4~1.9A) NTH-2.5(1.8~2.5A) NTH-3(2.4~3A)				NTH-4(2.9~4A) NTH-5(3.8~5A) NTH-6.5(4.5~6.5A) NTH-8(6~8A) NTH-11(8~11A) NTH-14(11~14A) NTH-17(14~17A)					NTH-21 (17~21A) NTH-25 (21~25A)
AUXILIARY CONTACT BLOCK						ITEM NO. CA1-D20(2a) CA1-D11(1a1b) CA1-D02(2b)		ITEM NO. CA1-D40(4a) CA1-D31(3a1b) CA1-D22(2a2b) CA1-D13(1a3b) CA1-D04(4b)				
MECHANICAL AND ELECTRICAL INTERLOCK						ITEM NO. CA9-D02		SUITABLE CONTACTOR C-06D to C-100D11				

Push Button Switch, Pilot Lamp, Terminal Block, SSR, Socket, Relay, Timer, Limit Switch, Warning Light, Alarm, Thermocouple, Temperature Controller, Sensor, Panel Meter, Can Switch, C.T., Hoist Push Button, Enclosure, Fan, Lock, Bus Bar Insulator, MCCB, Magnetic Contactor, Overload Relay

MAGNETIC CONTACTOR & THERMAL OVERLOAD RELAY

C-25D10		C-25D01		C-35D10		C-35D01		C-45D11		C-55D11		C-65D11		C-80D11		C-100D11	
																	
660V		660V		660V		660V		660V		660V		660V		660V		660V	
40A		50A		60A		80A		90A		125A		130A					
1A(1NO) 1B(1NC)		1A(1NO) 1B(1NC)		1A1B(1NO+1NC)		1A1B(1NO+1NC)		1A1B(1NO+1NC)		1A1B(1NO+1NC)		1A1B(1NO+1NC)		1A1B(1NO+1NC)		1A1B(1NO+1NC)	
35mm		35mm		75mm		75mm		75mm		75mm		75mm		75mm		75mm	
0.525		0.550		1.100		1.100		1.100		1.430		1.430		1.430		1.430	
5.5(7.5)		7.5(10)		11(15)		15(20)		19(25)		22(30)		30(40)		37(50)		55(75)	
25A		35A		45A		60A		70A		80A		100A					
11(15)		15(20)		19(25)		22(30)		30(40)		37(50)		55(75)		65(85)		90A	
22A		30A		40A		45A		64A		75A		92A					
15(20)		19(25)		22(30)		30(40)		37(50)		55(75)		65(85)		90A			
20A		28A		37A		45A		54A		75A		90A					
NTH		NTH		BTH-60		BTH-60		BTH-80		BTH-80		BTH-80		BTH-80		BTH-80	
CA9-D02																	
CA1-20,CA1-11,CA1-02,CA1-40,CA1-31,CA1-13,CA1-04,CA8-20,CA8-D11,CA8-D02																	
																	
NTH-28 (24~28A)				NTH-38 (30~38A)				33A(26~40A) 41A(33~50A) 54A(43~65A)				67A(54~80A) 80A(60~100A)					
NTH-32 (26~32A)				NTH-44 (36~44A)													
NTH				NTH				BTH-60				BTH-80					
CE				CE				CE				CE					
								ITEM NO. CA1-D20(2a) CA1-D11(1a1b) CA1-D02(2b)				ITEM NO. CA1-D40(4a) CA1-D31(3a1b) CA1-D22(2a2b) CA1-D13(1a3b) CA1-D04(4b)					
CA1-D11				CA1-D13													
				ITEM NO. CA9-D02				SUITABLE CONTACTOR C-06D to C-100D11									

Push Button Switch,
Pilot Lamp

Terminal Block

SSR, Socket, Relay, Timer

Limit Switch,
Warning Light, Alarm

Thermocouple, Temperature
Controller, Sensor












Panel Meter,
Can Switch, C. T.

Hoist Push Button, Enclosure,
Fan, Lock, Bus Bar Insulator

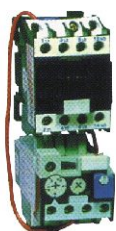
MCCB, Magnetic Contactor,
Overload Relay

DIRECT-ON-LINE MOTOR STARTER

(MOULDED PLASTIC ENCLOSURE MS1 IP65)

ITEM NO.	AC3 3-phase	220V	440V	575V	WEIGHT (kg)
		KW HP A	KW HP A	KW HP A	
MSO-09D		2.2	3.7	3.7	0.585
MS-09D		3	5	5	1.035
MS1-09D		9	8	6.5	1.050
MS1-09D-R					
MSO-11D		3	5.5	5.5	0.585
MS-11D		4	7.5	7.5	1.035
MS1-11D		12	11	9	1.050
MS1-11D-R					
MSO-12D		4	7.5	7.5	0.585
MS-12D		5.5	10	10	1.035
MS1-12D		16	15	13	1.050
MS1-12D-R					
MSO-18D		5.5	11	11	0.625
MS-18D		7.5	15	15	1.065
MS1-18D		23	21	16	1.080
MS1-18D-R					
MSO-25D		7.5	15	15	0.920
MS-25D		10	20	20	1.435
MS1-25D		30	30	25	1.450
MS1-25D-R					
MSO-35D		11	19	19	0.650
MS-35D		15	25	25	1.460
MS1-35D		42	6	29	1.475
MS1-35D-R					
MSO-45D		15	30	30	1.700
		20	40	40	
		55	52	46	
MSO-55D		19	33	33	1.700
		25	45	45	
		65	57	50	
MSO-65D		22	37	37	1.700
		30	50	50	
		75	64	53	
MSO-80D		25	55	55	1.900
		35	75	75	
		90	95	72	
MSO-100D		30	55	60	1.900
		40	75	80	
		105	95	76	

MSO-09D



MS-12D



MS1-18D



MS1-25D-R



T-BAR 360° Energy Saving Circulation Fan



- Color: Light Gray (White upon request)
- Material: ABS, anti-electrostatic
- Total air flow: 1Ø110V, Q106.34m³/min (Q: Quantity of Air) 1Ø220V, Q89.68m³/min
- Energy Efficiency Rate (EER): 1Ø110V, 2.32(m³/min/w) 1Ø220V, 2.20(m³/min/w)
- Fan Diameter: 33cm

WSS-148AC (AC110V)	50 or 60HZ
WSS-248AC (AC220V)	



Love the Earth - Leader of Green Energy
We provide noiseless and comfortable environment



Features:

- ① Patent of Fluid Dynamic Design certified by Intellectual Property office.
- ② Remote controller : Single LED with 3-stage flow - rate indicator for easy identification - Blue → Low, Green → Medium, Red → High.
- ③ Spatial Saving, Energy Saving, Eco-Friendly.
- ④ Lateral guide louver gives large airflow, central rotor directs airflow 360° operated by remote controller.
- ⑤ Easy for disassembly = Just take 8 screws around to disassemble front cover in order to clean the dust for maintenance.
- ⑥ Low weight (Only 4.9kgs), easy for installation.

Function ITEM NO.	Applicable Floor Area	Operation Current(A)			Power Consumption(W)			Dimensions WxDxH(mm)				Noise Level dB			RPM ±40		
		Hi	Me	Lo	Hi	Me	Lo	W	D	FronH	RealH	Hi	Me	Lo	Hi	Me	Lo
WSS-148AC (For AC110V)	12 ~ 15 M ²	0.41	0.30	0.24	45	33.4	26.7	600	600	80	100	40	38	36	1150	910	780
WSS-248AC (For AC220V)		0.20	0.14	0.11	44	30.9	25.0	600	600	80	100	38	36	34	1150	900	780

Push Button Switch,
Pilot Lamp

Terminal Block

SSR, Socket, Relay, Timer

Limit Switch,
Warning Light, Alarm

Thermocouple, Temperature
Controller, Sensor

Panel Meter,
Fan Switch, C. T.

Hoist Push Button, Enclosure,
Fan, Lock, Bus Bar Insulator

MCCB, Magnetic Contactor,
Overload Relay