Shihlin Electric

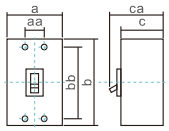
ACB / MCCB / ELCB / ATS
MCB / SPD / MS / MMS

OHSAS 18001 ISO 14001 ISO 9001

SHIHLIN ELECTRIC & ENGINEERING

Index

Molded Case Circuit Breaker

Frame size (AF) (Inm)			30		50		60					
Type			BM30-CN	BM30-SN	BM50-CN	BM60-SN		BM60-HN			BM60-HBN
Appearance											
Rated current In (A) at ambient temp. 40℃			3, 5, 10, 15, 20, 30.	3, 5, 10, 15, 20, 30.	10, 15, 20, 30, 40, 50.	10, 15, 20, 25, 30, 40, 50, 60.		10, 15, 20, 25, 30, 40, 50, 60.			10, 15, 20, 30, 40, 50, 60.
Number of poles (P)			2 / 3	2 / 3	2 / 3	2 / 3 / 4		2 / 3 / 4			3
Rated insulation voltage Ui (V)		AC	690	690	690	690		690			690
		DC	—	—	—	—		—			—
Dimensions (mm)		a	45 / 67.5	50 / 75	50 / 75	50 / 75 / 100		50 / 75 / 100			90
		b	96	130	130	130		130			155
		c	52	68	68	68		68			68
		ca	67	90	90	90		90			90
		bb	84	111	111	111		111			132
		aa	23.5	25	25	25		25			30
Weight (kg)			0.3 / 0.4	0.45 / 0.65	0.45 / 0.65	0.45 / 0.65 / 0.85		0.45 / 0.65 / 0.85			1.3
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu AC	500V	—	1.5	1.5	5		5			15
		440V	—	2.5	2.5	7.5		10			25
		380V	1.5	2.5	2.5	7.5		15			30
		220V(240V)	2.5	5	5	10		25			50
	DC	250V	—	—	—	—		—			—
		125V	—	—	—	—		—			—
Connection			Clamp terminal	Clamp terminal	Clamp terminal	Clamp terminal		Clamp terminal			Clamp terminal
Optional accessories	Alarm switch	(AL)	—	○	○	○		○			○
	Auxiliary switch	(AX)	—	○	○	○		○			○
	Shunt trip	(SHT)	—	○	○	○		○			○
	Under-voltage trip	(UVT)	—	○	○	○		○			○
	Rotary handle	(EH)	—	●	●	●		●			●
	Terminal cover	(TC)	●	●	●	●		●			●
Trip Unit			Hydraulic magnetic	Hydraulic magnetic	Hydraulic magnetic	Hydraulic magnetic		Hydraulic magnetic			Hydraulic magnetic
Tripping button			—	Equipped	Equipped	Equipped		Equipped			Equipped

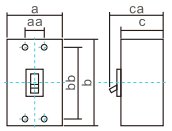
Note 1. "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
Above accessories table is for 3P breaker.
2. Ics= 50% Icu
3. Adjustable thermal: 80%~100% In.

80% ~ 100% Adj. (A)

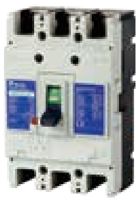
100												
BM100-FTD	**BM100-MN**		**BM100-SN**		**BM100-HN**			**BM100-HBN**		**BM100-H**	
											
15, 20, 30, 40, 50 60, 75, 100.	10, 15, 20, 30, 40, 50, 60, 75, 100.		10, 15, 20, 30, 40, 50, 60, 75, 100.		10, 15, 20, 30, 40, 50, 60, 75, 100.			40, 50, 63, 80, 100.		15, 20, 30, 40, 50, 60, 75, 100.	
1	2	3	2	3	2	3	4	3	4	3	4
690	690		690		690			690		690	
—	—		250	—	—			—		—	
25.4	50	75	50	75	60	90	120	105	140	105	140
130	130		130		155			165		165	
60	68		68		68			68		86	
91	90		90		90			92		112	
111	111		111		132			126		126	
—	25		25		30			35		35	
0.29	0.45	0.65	0.45	0.65	0.9	1.3	1.6	1.5	1.9	2.1	2.6
—	5		5		15			20		25	
—	7.5		10		25			32		42	
5*	10		15		30			36		50	
25	15		25		50			85		85	
—	—		10	—	—			—		—	
—	—		15	—	—			—		—	
Clamp terminal	Clamp terminal		Clamp terminal		Clamp terminal			Clamp terminal		Clamp terminal	
—	○		○		○			●		○	
—	○		○		○			●		○	
—	○		○		○			●		○	
—	○		○		○			●		—	
—	●		●		●			●		●	
—	●		●		●			●		●	
Thermal magnetic	Hydraulic magnetic		Hydraulic magnetic		Hydraulic magnetic			Adj. thermal Fixed magnetic		Thermal magnetic	
Equipped	Equipped		Equipped		Equipped			Equipped		Equipped	

Note : Breaking Capacity of BM100-FTD is 5kA at 380V/415V/440V

Molded Case Circuit Breaker

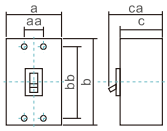
Frame size (AF) (Inm)			100								125								
Type			BM100-HC		BM100-HS		BM100-BTD			BM100-STD			BM125-SN			BM125-HN			BM125-LTD		
Appearance																					
Rated current In (A) at ambient temp. 40℃			40, 50, 63, 80, 100.		40, 50, 63, 80, 100.		15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100			15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100			10, 15, 20, 30, 40, 50, 60, 75, 100, 125.			10, 15, 20, 30, 40, 50, 60, 75, 100, 125.			15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100, 125		
Number of poles (P)			3	4	3	4	2	3	4	2	3	4	2	3	4	2	3	4	2	3	4
Rated insulation voltage Ui (V)		AC	690		690		690			690			690			690			690		
		DC	—		—		—			—			—			—			—		
Dimensions (mm)		a	105	140	105	140	50	75	100	50	75	100	60	90	120	60	90	120	50	75	100
		b	165		165		130			130			155			155			130		
		c	86		86		68			68			68			68			68		
		ca	112		112		90			90			90			90			90		
		bb	126		126		111			111			132			132			111		
		aa	35		35		25			25			30			30			25		
Weight (kg)			2.1	2.6	2.1	2.6	0.5	0.7	0.9	0.5	0.7	0.9	0	30	30	0	30	30	0.5	0.7	0.9
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu AC	500V	42		50		7.5			10			7.5			15			15		
		440V	55		70		10			25			15			25			25		
		380V	70		85		15			30			22			30			36		
		220V(240V)	100		125		25			50			30			50			50		
	DC	250V	—		—		—			—			—			—			—		
		125V	—		—		—			—			—			—			—		
Connection			Clamp terminal		Clamp terminal		Clamp terminal			Clamp terminal			Clamp terminal			Clamp terminal			Clamp terminal		
Optional accessories	Alarm switch	(AL)	○		○		●			●			○			○			●		
	Auxiliary switch	(AX)	○		○		●			●			○			○			●		
	Shunt trip	(SHT)	○		○		●			●			○			○			●		
	Under-voltage trip	(UVT)	—		—		●			●			—	○	○	—	○	○	●		
	Rotary handle	(EH)	●		●		●			●			●			●			●		
	Terminal cover	(TC)	●		●		●			●			●			●			●		
Trip Unit			Thermal magnetic		Thermal magnetic		Thermal magnetic			Thermal magnetic			Hydraulic magnetic			Hydraulic magnetic			Thermal magnetic		
Tripping button			Equipped		Equipped		Equipped			Equipped			Equipped			Equipped			Equipped		

Note 1. "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
Above accessories table is for 3P breaker.
2. Ics= 50% Icu
3. Adjustable thermal: 80%~100% In.

<table>
<tr><td colspan="5">80% ~ 100% Adj. (A)</td><td colspan="6"></td><td colspan="3">80% ~ 100% Adj. (A)</td><td colspan="2"></td></tr>
<tr><td colspan="11">160</td><td colspan="5">250</td></tr>
<tr><td colspan="3">BM160-SN</td><td colspan="2">BM160-HN</td><td colspan="2">BM160-HB</td><td colspan="2">BM160-HC</td><td colspan="2">BM160-HS</td><td colspan="3">BM250-CN</td><td colspan="2">BM250-SN</td></tr>
<tr><td colspan="3">  </td><td colspan="2">  </td><td colspan="2">  </td><td colspan="2">  </td><td colspan="2">  </td><td colspan="3">  </td><td colspan="2">  </td></tr>
<tr><td colspan="3">125, 140, 160.</td><td colspan="2">125, 140, 160.</td><td colspan="2">125, 140, 160.</td><td colspan="2">125, 140, 160.</td><td colspan="2">125, 140, 160.</td><td colspan="3">125, 150, 175,
200, 225, 250.</td><td colspan="2">125, 150, 175,
200, 225, 250.</td></tr>
<tr><td>2</td><td>3</td><td>4</td><td>3</td><td>4</td><td>3</td><td>4</td><td>3</td><td>4</td><td>3</td><td>4</td><td>2</td><td>3</td><td>4</td><td>3</td><td>4</td></tr>
<tr><td colspan="3">690</td><td colspan="2">690</td><td colspan="2">690</td><td colspan="2">690</td><td colspan="2">690</td><td colspan="3">690</td><td colspan="2">690</td></tr>
<tr><td colspan="3">—</td><td colspan="2">—</td><td colspan="2">—</td><td colspan="2">—</td><td colspan="2">—</td><td>250</td><td>—</td><td>—</td><td colspan="2">—</td></tr>
<tr><td>105</td><td>105</td><td>140</td><td>105</td><td>140</td><td>105</td><td>140</td><td>105</td><td>140</td><td>105</td><td>140</td><td>105</td><td>105</td><td>140</td><td>105</td><td>140</td></tr>
<tr><td colspan="3">165</td><td colspan="2">165</td><td colspan="2">165</td><td colspan="2">165</td><td colspan="2">165</td><td colspan="3">165</td><td colspan="2">165</td></tr>
<tr><td colspan="3">68</td><td colspan="2">68</td><td colspan="2">86</td><td colspan="2">86</td><td colspan="2">86</td><td colspan="3">68</td><td colspan="2">68</td></tr>
<tr><td colspan="3">92</td><td colspan="2">92</td><td colspan="2">112</td><td colspan="2">112</td><td colspan="2">112</td><td colspan="3">92</td><td colspan="2">92</td></tr>
<tr><td colspan="3">126</td><td colspan="2">126</td><td colspan="2">126</td><td colspan="2">126</td><td colspan="2">126</td><td colspan="3">126</td><td colspan="2">126</td></tr>
<tr><td colspan="3">35</td><td colspan="2">35</td><td colspan="2">35</td><td colspan="2">35</td><td colspan="2">35</td><td colspan="3">35</td><td colspan="2">35</td></tr>
<tr><td>1.3</td><td>1.5</td><td>1.9</td><td>1.5</td><td>1.9</td><td>2.1</td><td>2.6</td><td>2.1</td><td>2.6</td><td>2.1</td><td>2.6</td><td>1.3</td><td>1.5</td><td>1.9</td><td>1.5</td><td>1.9</td></tr>
<tr><td colspan="3">15</td><td colspan="2">20</td><td colspan="2">25</td><td colspan="2">42</td><td colspan="2">50</td><td colspan="3">7.5</td><td colspan="2">15</td></tr>
<tr><td colspan="3">25</td><td colspan="2">32</td><td colspan="2">42</td><td colspan="2">55</td><td colspan="2">70</td><td colspan="3">15</td><td colspan="2">25</td></tr>
<tr><td colspan="3">30</td><td colspan="2">36</td><td colspan="2">50</td><td colspan="2">70</td><td colspan="2">85</td><td colspan="3">22</td><td colspan="2">30</td></tr>
<tr><td colspan="3">50</td><td colspan="2">85</td><td colspan="2">85</td><td colspan="2">100</td><td colspan="2">125</td><td colspan="3">30</td><td colspan="2">50</td></tr>
<tr><td colspan="3">—</td><td colspan="2">—</td><td colspan="2">—</td><td colspan="2">—</td><td colspan="2">—</td><td>10</td><td>—</td><td>—</td><td colspan="2">—</td></tr>
<tr><td colspan="3">—</td><td colspan="2">—</td><td colspan="2">—</td><td colspan="2">—</td><td colspan="2">—</td><td>15</td><td>—</td><td>—</td><td colspan="2">—</td></tr>
<tr><td colspan="3">Clamp terminal</td><td colspan="2">Clamp terminal</td><td colspan="2">Clamp terminal</td><td colspan="2">Clamp terminal</td><td colspan="2">Clamp terminal</td><td colspan="3">Clamp terminal</td><td colspan="2">Clamp terminal</td></tr>
<tr><td colspan="3">●</td><td colspan="2">●</td><td colspan="2">○</td><td colspan="2">○</td><td colspan="2">○</td><td colspan="3">●</td><td colspan="2">●</td></tr>
<tr><td colspan="3">●</td><td colspan="2">●</td><td colspan="2">○</td><td colspan="2">○</td><td colspan="2">○</td><td colspan="3">●</td><td colspan="2">●</td></tr>
<tr><td colspan="3">●</td><td colspan="2">●</td><td colspan="2">○</td><td colspan="2">○</td><td colspan="2">○</td><td colspan="3">●</td><td colspan="2">●</td></tr>
<tr><td colspan="3">●</td><td colspan="2">●</td><td colspan="2">—</td><td colspan="2">—</td><td colspan="2">—</td><td colspan="3">●</td><td colspan="2">●</td></tr>
<tr><td colspan="3">●</td><td colspan="2">●</td><td colspan="2">●</td><td colspan="2">●</td><td colspan="2">●</td><td colspan="3">●</td><td colspan="2">●</td></tr>
<tr><td colspan="3">●</td><td colspan="2">●</td><td colspan="2">●</td><td colspan="2">●</td><td colspan="2">●</td><td colspan="3">●</td><td colspan="2">●</td></tr>
<tr><td colspan="3">Adj. thermal
Fixed magnetic</td><td colspan="2">Adj. thermal
Fixed magnetic</td><td colspan="2">Thermal magnetic</td><td colspan="2">Thermal magnetic</td><td colspan="2">Thermal magnetic</td><td colspan="3">Adj. thermal
Fixed magnetic</td><td colspan="2">Adj. thermal
Fixed magnetic</td></tr>
<tr><td colspan="3">Equipped</td><td colspan="2">Equipped</td><td colspan="2">Equipped</td><td colspan="2">Equipped</td><td colspan="2">Equipped</td><td colspan="3">Equipped</td><td colspan="2">Equipped</td></tr>
</table>

Molded Case Circuit Breaker

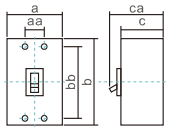
80% ~ 100% Adj. (A)

Frame size (AF) (Inm)			250								400		
Type			BM250-HN		BM250-HB		BM250-HC		BM250-HS		BM400-CN		
Appearance													
Rated current In (A) at ambient temp. 40℃			175, 200, 225, 250.		100, 125, 150, 160, 175, 200, 225, 250.		175, 200, 225, 250.		175, 200, 225, 250.		250, 300, 350, 400.		
Number of poles (P)			3	4	3	4	3	4	3	4	2	3	4
Rated insulation voltage Ui (V)		AC	690		690		690		690		690		
		DC	—		—		—		—		250	—	—
Dimensions (mm)		a	105	140	105	140	105	140	105	140	140	140	185
		b	165		165		165		165		257		
		c	68		86		86		86		103		
		ca	92		112		112		112		155		
		bb	126		126		126		126		194		
		aa	35		35		35		35		44		
Weight (kg)			1.5	1.9	2.1	2.6	2.1	2.6	2.1	2.6	5.0	5.7	7.5
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu AC	500V	20		25		42		50		14		
		440V	32		42		55		70		22		
		380V	36		50		70		85		25		
		220V(240V)	85		85		100		125		35		
	DC	250V	—		—		—		—		10	—	—
		125V	—		—		—		—		15	—	—
Connection			Clamp terminal		Clamp terminal		Clamp terminal		Clamp terminal		Busbar		
Optional accessories	Alarm switch	(AL)	●		○		○		○		●		
	Auxiliary switch	(AX)	●		○		○		○		●		
	Shunt trip	(SHT)	●		○		○		○		●		
	Under-voltage trip	(UVT)	●		—		—		—		●		
	Rotary handle	(EH)	●		●		●		●		●		
	Terminal cover	(TC)	●		●		●		●		●		
Trip Unit			Adj. thermal Fixed magnetic		Thermal magnetic		Thermal magnetic		Thermal magnetic		Thermal magnetic		
Tripping button			Equipped		Equipped		Equipped		Equipped		Equipped		

Note 1. "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
Above accessories table is for 3P breaker.
2. Ics= 50% Icu
3. Adjustable thermal: 80%~100% In.

400								630		
BM400-SN		BM400-HN		BM400-RN		BM400-UN		BM630-CN	BM630-SN	
										
250, 300, 350, 400.		250, 300, 350, 400.		250, 300, 350, 400.		250, 300, 350, 400.		500, 600, 630.	500, 630.	
3	4	3	4	3	4	3	4	3	3	4
690		690		690		690		690	690	
—		—		—		—		250	250	
140	185	140	185	140	185	140	185	210	210	280
257		257		257		257		275	275	
103		103		103		103		103	103	
155		155		155		155		155	155	
194		194		194		194		243	243	
44		44		44		44		70	70	
5.7	7.5	5.7	7.5	5.7	7.5	5.7	7.5	10	10	13
20		25		42		65		14	20	
30		42		55		85		22	30	
35		50		70		85		25	35	
50		85		100		125		35	50	
—		—		—		—		10	20	—
—		—		—		—		—	—	
Busbar		Busbar		Busbar		Busbar		Busbar	Busbar	
●		●		●		●		●	●	
●		●		●		●		●	●	
●		●		●		●		●	●	
●		●		●		●		●	●	
●		●		●		●		●	●	
●		●		●		●		●	●	
Thermal magnetic		Thermal magnetic		Thermal magnetic		Thermal magnetic		Fixed thermal Adj. magnetic	Fixed thermal Adj. magnetic	
Equipped		Equipped		Equipped		Equipped		Equipped	Equipped	

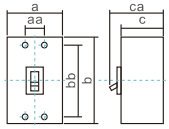
Molded Case Circuit Breaker

Frame size (AF) (Inm)			630				800			
Type			BM630-HN		BM630-RN		BM630-UN		BM800-CN		BM800-SN	
Appearance												
Rated current In (A) at ambient temp. 40℃			500, 630.		500, 630.		500, 630.		700, 800.		700, 800.	
Number of poles (P)			3	4	3	4	3	4	3	4	3	4
Rated insulation voltage Ui (V)		AC	690		690		690		690		690	
		DC	250	—	—		—		250	—	250	—
Dimensions (mm)		a	210	280	210	280	210	280	210	280	210	280
		b	275		275		275		275		275	
		c	103		103		103		103		103	
		ca	155		155		155		155		155	
		bb	243		243		243		243		243	
		aa	70		70		70		70		70	
Weight (kg)			10	13	10	13	10	13	10.5	13.5	10.5	13.5
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu AC	500V	25		42		65		20		25	
		440V	50		70		85		30		50	
		380V	50		70		100		35		50	
		220V(240V)	85		100		125		50		85	
	DC	250V	40	—	—		—		20	—	40	—
		125V	—		—		—		—		—	
Connection			Busbar		Busbar		Busbar		Busbar		Busbar	
Optional accessories	Alarm switch	(AL)	●		●		●		●		●	
	Auxiliary switch	(AX)	●		●		●		●		●	
	Shunt trip	(SHT)	●		●		●		●		●	
	Under-voltage trip	(UVT)	●		●		●		●		●	
	Rotary handle	(EH)	●		●		●		●		●	
	Terminal cover	(TC)	●		●		●		●		●	
Trip Unit			Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic	
Tripping button			Equipped		Equipped		Equipped		Equipped		Equipped	

Note 1 "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
Above accessories table is for 3P breaker.
2. Ics= 50% Icu

800				1000	1200	1600
BM800-HN		BM800-RN		BM1000-HS	BM1200-HS	BM1600-HS
						
700, 800.		700, 800.		1000	1200	1400, 1600.
3	4	3	4	3	3	3
690		690		690	690	690
—		—		—	—	—
210	280	210	280	210	210	210
275		275		406	406	406
103		103		140	140	140
155		155		190	190	190
243		243		375	375	375
70		70		70	70	70
10.5	13.5	10.5	13.5	23	23	23
42		65		65	65	65
70		85		85	85	85
70		100		100	100	100
100		125		130	130	130
—		—		—	—	—
—		—		—	—	—
Busbar		Busbar		Busbar	Busbar	Busbar
●		●		○	○	○
●		●		○	○	○
●		●		○	○	○
●		●		○	○	○
●		●		—	—	—
●		●		—	—	—
Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic	Fixed thermal Adj. magnetic	Fixed thermal Adj. magnetic
Equipped		Equipped		Equipped	Equipped	Equipped

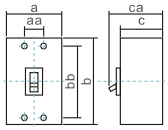
Molded Case Circuit Breaker (BMA Series)

Frame size (AF) (Inm)			125			160			250			400		
Model			BMA125 -STA	BMA125 -LTA	BMA125 -HTA	BMA160 -STA	BMA160 -LTA	BMA160 -HTA	BMA250 -STA	BMA250 -LTA	BMA250 -HTA	BMA400 -LTA	BMA400 -HTA	BMA400 -RTA
Appearance														
Rated current In (A) at ambient temp. 40℃			15, 16, 20, 25, 30, 32, 40, 50, 60, 63, 75, 80, 100, 125A			40, 50, 60, 63, 70, 75, 80, 100, 125, 140, 150, 160A			175, 200, 225, 250A			250, 300, 350, 400A		
Number of poles (P)			3	4		3	4		3	4		3	4	
Rated insulation voltage Ui (V)		AC	800			800			800			800		
Dimensions	 (mm)	a	90	120		105	140		105	140		140	185	
		b	155	155		165	165		165	165		257	257	
		c	68	68		68	68		68	68		103	103	
		ca	92	92		92	92		92	92		155	155	
		bb	132	132		126	126		126	126		194	194	
		aa	30	30		35	35		35	35		44	44	
Weight (kg)			0.7	0.9		1.5	1.9		1.5	1.9		5.7	7.5	
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 Icu AC	690V	8 kA	8 kA	10 kA	8 kA	8 kA	10 kA	8 kA	8 kA	10 kA	8 kA	10 kA	15 kA
		415V	25 kA	36 kA	50 kA	25 kA	36 kA	50 kA	25 kA	36 kA	50 kA	36 kA	50 kA	70 kA
		380V	25 kA	36 kA	50 kA	25 kA	36 kA	50 kA	25 kA	36 kA	50 kA	36 kA	50 kA	70 kA
		220V(240V)	50 kA	85 kA	100 kA	85 kA	85 kA	100 kA	85 kA	85 kA	100 kA	70 kA	85 kA	100 kA
Connection			Clamp terminal	Clamp terminal	Clamp terminal	Clamp terminal	Clamp terminal	Clamp terminal	Clamp terminal	Clamp terminal	Clamp terminal	Busbar	Busbar	Busbar
Optional accessories	Alarm switch	(AL)	●	●	●	●	●	●	●	●	●	●	●	●
	Auxiliary switch	(AX)	●	●	●	●	●	●	●	●	●	●	●	●
	Shunt trip	(SHT)	●	●	●	●	●	●	●	●	●	●	●	●
	Under-voltage trip	(UVT)	●	●	●	●	●	●	●	●	●	●	●	●
	Rotary handle	(EH)	●	●	●	●	●	●	●	●	●	●	●	●
	Terminal cover	(TC)	●	●	●	●	●	●	●	●	●	●	●	●
Trip Unit			Adjustable Thermal Fixed Magnetic			Adjustable Thermal Fixed Magnetic			Adjustable Thermal Fixed Magnetic			Adjustable Thermal Fixed Magnetic		
Tripping button			Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped

Note 1. Ics=100%Icu

630		800		630		800		1250	
BMA630-HTD	BMA630-RTD	BMA800-HTD	BMA800-RTD	BMA630-HED	BMA630-RED	BMA800-HED	BMA800-RED	BMA1250-HED	BMA1250-RED
									
500, 600, 630A		700, 800A		630A		800A		1250A	
3	4	3	4	3	4	3	4	3	4
1000		1000		1000		1000		1000	
210	280	210	280	210	280	210	280	210	280
275	275	275	275	275	275	275	275	327	327
103	103	103	103	103	103	103	103	141	141
155	155	155	155	155	155	155	155	205	205
243	243	243	243	243	243	243	243	200	200
70	70	70	70	70	70	70	70	199	339
10	13	10	13	11.5	15.3	12	15.8	13.3	17.2
10 kA	15 kA	10 kA	15 kA	10 kA	15 kA	10 kA	15 kA	35kA	45 kA
50 kA	70 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA
50 kA	70 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA	50 kA	70 kA
85 kA	100 kA	85 kA	100 kA	85 kA	100 kA	85 kA	100 kA	—	—
Busbar	Busbar	Busbar	Busbar	Busbar	Busbar	Busbar	Busbar	Busbar	Busbar
●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	—	—
●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	—	—
Fixed Thermal Adjustable Magnetic		Fixed Thermal Adjustable Magnetic		Electronic		Electronic		Electronic	
Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped	Equipped

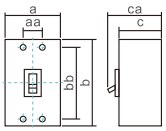
Molded Case Circuit Breaker (Electronic trip Unit)

Frame size (AF) (Inm)			100			160			250		
Type			BM100-HE	BM100-RE	BM100-UE	BM160-HE	BM160-RE	BM160-UE	BM250-HE	BM250-RE	BM250-UE
Rated current In (A) at ambient temp. 40℃			100			160			250		
Electronically adjustable current Ir (A)			40, 45, 50, 60, 70, 80, 90, 95, 100.			64, 72, 80, 96, 112, 128, 144, 152, 160.			100, 113, 125, 150, 175, 200, 225, 238, 250.		
Rated operational voltage Ue (V)			400			400			400		
Rated insulation voltage Ui (V)			690			690			690		
Rated impulse withstand voltage Uimp (V)			8000			8000			8000		
Number of poles (P)			3P / 4P			3P / 4P			3P / 4P		
Model			HE	RE	UE	HE	RE	UE	HE	RE	UE
Rated breaking capacity Icu (kA)			50	70	85	50	70	85	50	70	85
Dimensions (mm)	 (mm)	a	105 / 140			105 / 140			105 / 140		
		b	165			165			165		
		c	86			86			86		
		ca	112			112			112		
		bb	126			126			126		
		aa	35			35			35		
Weight (kg)			2.5 / 3.0			2.5 / 3.0			2.5 / 3.0		
Endurance	Electrical life (10 thousand)		1, 000			1, 000			1, 000		
	Mechanical life (10 thousand)		8, 500			7, 000			7, 000		
Connection			Clamp terminal			Clamp terminal			Clamp terminal		
Trip unit			Electronic			Electronic			Electronic		
Trip button			Equipped			Equipped			Equipped		
Optional accessories	Alarm switch	(AL)	○			○			○		
	Auxiliary switch	(AX)	○			○			○		
	Shunt trip	(SHT)	○			○			○		
	Under-voltage trip	(UVT)	–			–			–		
	Lead wiring terminal	(LT)	○			○			○		
	Motor operation device		○			○			○		
	Communication	(COM)	○			○			○		
	Communication	(HUB)	○			○			○		

Note 1. Ics= 50% Icu

400			630			800			1000		1250	
BM400-HE	BM400-RE	BM400-UE	BM630-HE	BM630-RE	BM630-UE	BM800-SE	BM800-HE	BM800-RE	BM1000-SE	BM1000-HE	BM1250-SE	BM1250-HE
400			630			800			1000		1250	
160, 180, 200, 240, 280, 320, 360, 380, 400.			252, 284, 315, 378, 441, 504, 567, 600, 630.			320, 360, 400, 480, 560, 640, 720, 760, 800.			400, 450, 500, 600, 700, 800, 900, 950, 1000.		500, 563, 625, 750, 875, 1000, 1125, 1188, 1250.	
400			400			400			400		400	
690			690			690			690		690	
8000			8000			8000			8000		8000	
3P / 4P			3P / 4P			3P / 4P			3P		3P	
HE	RE	UE	HE	RE	UE	SE	HE	RE	SE	HE	SE	HE
50	70	85	50	70	85	50	70	85	70	85	70	85
140 / 185			210 / 280			210 / 280			210		210	
257			275			275			406		406	
103			103			103			140		140	
144			155			155			190		190	
194			243			243			375		375	
44			70			70			70		70	
7 / 8			11.5 / 14.5			11.5 / 14.5			26		26	
1, 000			1, 000			500			500		500	
4, 000			4, 000			2, 500			2, 500		2, 500	
Busbar			Busbar			Busbar			Busbar		Busbar	
Electronic			Electronic			Electronic			Electronic		Electronic	
Equipped			Equipped			Equipped			Equipped		Equipped	
○			○			○			○		○	
○			○			○			○		○	
○			○			○			–		–	
○			○			○			–		–	
–			–			–			–		–	
○			○			○			–		–	
○			○			○			–		–	
○			○			○			–		–	

Earth Leakage Circuit Breaker

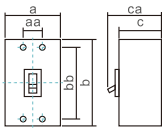
Frame size (AF) (Inm)			50		100			
Type			BL50-SN		BL100-SN		BL100-HN	
Appearance								
Rated current In (A) at ambient temp. 40℃			15, 20, 30, 40, 50.		15, 20, 30, 40, 50, 60, 75, 100.		15, 20, 30, 40, 50, 60, 75, 100.	
Phase & wire (P)			1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W
Number of poles (P)			3	4	3	4	3	4
Rated voltage (VAC)			230, 400.		230, 400.		230, 400.	
High speed	Rated current sensitivity I△n (mA)		30, 100, 300, 500 (Note 2)		30, 100, 300, 500 (Note 2)		30, 100, 300, 500 (Note 2)	
	5I△n operating time (S)		0.04		0.04		0.04	
Delay	Rated current sensitivity I△n (mA)		100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable	
	2I△n operating time (S)		0.1- 0.4- 0.8- 2.0 adjustable		0.1- 0.4- 0.8- 2.0 adjustable		0.1- 0.4- 0.8- 2.0 adjustable	
	2I△n max. non-operating time (S)		0, 0.2, 0.4, 1.0		0, 0.2, 0.4, 1.0		0, 0.2, 0.4, 1.0	
	Leakage detection mode		Mechanical push-button		Mechanical push-button		Mechanical push-button	
Dimensions	 (mm)	a	75	100	90	120	90	120
		b	130		155		155	
		c	68		68		68	
		ca	90		90		90	
		bb	111		132		132	
		aa	25		30		30	
Weight (kg)			0.7	0.9	1.5	1.8	1.5	1.8
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 CNS 14816-2 AC Icu	440V	7.5		10		25	
		380V	7.5		15		30	
		220V	10		25		50	
Connection			Clamp terminal		Clamp terminal		Clamp terminal	
Optional accessories	Alarm switch	(AL)	○		○		○	
	Auxiliary switch	(AX)	○		○		○	
	Shunt trip	(SHT)	○		○		○	
	Under-voltage trip	(UVT)	—		○		○	
	Rotary handle	(EH)	●		●		●	
	Terminal cover	(TC)	●		●		●	
	Leakage alarm module	(AM)	—		○		○	
Trip Unit			Hydraulic magnetic		Hydraulic magnetic		Hydraulic magnetic	
Tripping button			Equipped		Equipped		Equipped	

Note
1. "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
2. Specify rated current sensitivity when place the order.
3. Ics= 50% Icu
4. Adjustable thermal: 80%~100% In.
5. Specify, when order delay type rated current sensitivity 30-100-500mA.

80% ~ 100% Adj. (A)

160		250		400					
BL160-SN		**BL250-SN**		**BL400-SN**		**BL400-HN**		**BL400-RN**	
									
125, 140, 160.		175, 200, 225, 250.		250, 300, 350, 400.		250, 300, 350, 400.		250, 300, 350, 400.	
1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W
3	4	3	4	3	4	3	4	3	4
230, 400.		230, 400.		230, 400.		230, 400.		230, 400.	
30, 100-300-500 Adj.		30- 100- 500 adjustable		30- 100- 500 adjustable		30- 100- 500 adjustable		30- 100- 500 adjustable	
0.04		0.04		0.04		0.04		0.04	
100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable	
0.1- 0.4- 0.8- 2.0 adjustable		0.1- 0.4- 0.8- 2.0 adjustable		0.1- 0.4- 0.8- 2.0 adjustable		0.1- 0.4- 0.8- 2.0 adjustable		0.45- 1.0- 2.0 adjustable	
0, 0.2, 0.4, 1.0		0, 0.2, 0.4, 1.0		0, 0.2, 0.4, 1.0		0, 0.2, 0.4, 1.0		0.1, 0.5, 1.0	
Mechanical push-button		Mechanical push-button		Mechanical push-button		Mechanical push-button		Mechanical push-button	
105	140	105	140	140	185	140	185	140	185
165		165		257		257		257	
68		68		103		103		103	
92		92		155		155		155	
126		126		194		194		194	
35		35		44		44		44	
1.7	2.3	1.7	2.3	6.6	8.4	6.6	8.4	5.7	7.5
25		25		30		42		55	
30		30		35		50		70	
50		50		50		85		100	
Clamp terminal		Clamp terminal		Busbar		Busbar		Busbar	
●		●		●		●		●	
●		●		●		●		●	
●		●		●		●		●	
●		●		●		●		●	
●		●		●		●		●	
●		●		●		●		●	
○		○		○		○		○	
Adj. thermal Fixed magnetic		Adj. thermal Fixed magnetic		Thermal magnetic		Thermal magnetic		Thermal magnetic	
Equipped		Equipped		Equipped		Equipped		Equipped	

Earth Leakage Circuit Breaker

Frame size (AF) (Inm)			400		630			
Type			BL400-UN		BL630-HN		BL630-RN	
Appearance								
Rated current In (A) at ambient temp. 40℃			250, 300, 350, 400.		500, 630.		500, 630.	
Phase & wire (P)			1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W
Number of poles (P)			3	4	3	4	3	4
Rated voltage (VAC)			230, 400.		230, 400.		230, 400.	
High speed	Rated current sensitivity I△n (mA)		30- 100- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable	
	5I△n operating time (S)		0.04		0.04		0.04	
Delay	Rated current sensitivity I△n (mA)		100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable	
	2I△n operating time (S)		0.45- 1.0- 2.0 adjustable		0.45- 1.0- 2.0 adjustable		0.45- 1.0- 2.0 adjustable	
	2I△n max. non-operating time (S)		0.1, 0.5, 1.0		0.1, 0.5, 1.0		0.1, 0.5, 1.0	
	Leakage detection mode		Mechanical push-button		Mechanical push-button		Mechanical push-button	
Dimensions	 (mm)	a	140	185	210	280	210	280
		b	257		257		257	
		c	103		103		103	
		ca	155		155		155	
		bb	194		243		243	
		aa	44		70		70	
Weight (kg)			5.7	7.5	10.0	13.0	10.0	13.0
Rated breaking capacity (kA)	IEC 60947-2 EN 60947-2 CNS 14816-2 AC Icu	440V	85		50		70	
		380V	85		50		70	
		220V	125		85		100	
Connection			Busbar		Busbar		Busbar	
Optional accessories	Alarm switch	(AL)	●		●		●	
	Auxiliary switch	(AX)	●		●		●	
	Shunt trip	(SHT)	●		●		●	
	Under-voltage trip	(UVT)	●		●		●	
	Rotary handle	(EH)	●		●		●	
	Terminal cover	(TC)	●		●		●	
	Leakage alarm module	(AM)	○		○		○	
Trip Unit			Thermal magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic	
Tripping button			Equipped		Equipped		Equipped	

Note
1. "●" which can be installed by client, "○" which have to be installed by manufacturer. "—" which is not available.
2. Specify rated current sensitivity when place the order.
3. Ics= 50% Icu
4. Adjustable thermal: 80%~100% In.
5. Specify, when order delay type rated current sensitivity 30-100-500mA.

630		800					
BL630-UN		**BL800-SN**		**BL800-HN**		**BL800-RN**	
							
500, 630.		700, 800.		700, 800.		700, 800.	
1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W	1ø2W, 3ø3W.	3ø4W
3	4	3	4	3	4	3	4
230, 400.		230, 400.		230, 400.		230, 400.	
100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable	
0.04		0.04		0.04		0.04	
100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable		100- 300- 500 adjustable	
0.45- 1.0- 2.0 adjustable		0.45- 1.0- 2.0 adjustable		0.45- 1.0- 2.0 adjustable		0.45- 1.0- 2.0 adjustable	
0.1, 0.5, 1.0		0.1, 0.5, 1.0		0.1, 0.5, 1.0		0.1, 0.5, 1.0	
Mechanical push-button		Mechanical push-button		Mechanical push-button		Mechanical push-button	
210	280	210	280	210	280	210	280
257		257		257		257	
103		103		103		103	
155		155		155		155	
243		243		243		243	
70		70		70		70	
10.0	13.0	10.5	13.5	10.5	13.5	10.5	13.5
85		50		70		85	
100		50		70		100	
125		85		100		125	
Busbar		Busbar		Busbar		Busbar	
●		●		●		●	
●		●		●		●	
●		●		●		●	
●		●		●		●	
●		●		●		●	
●		●		●		●	
○		○		○		○	
Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic		Fixed thermal Adj. magnetic	
Equipped		Equipped		Equipped		Equipped	

Molded Case Circuit Breaker

Bolt on type

Frame (AF)		100			50	100		50	100		50	100	
Type		BP			BPH			BKH			BKS		
Appearance													
Rated Voltage (A.C) #1		110	220*	220	110	220*	220	110/220*	380		110/220*	220	
Rated Current In (A) At Ambient Temp. 40℃		10*, 15, 20, 30, 40, 50, 60, 75, 100.			15, 20, 30, 40, 50.		15, 20, 30, 40, 50, 60, 75, 100.	15, 20, 30, 40, 50.	15, 20, 30, 40, 50, 60, 75, 100.		15, 20, 30, 40, 50.	15, 20, 30, 40, 50, 60, 75, 100.	
Number of poles (P)		1	2	3	1	2	3	1	2	3	1	2	3
Dimensions (mm)	a	25	50	75	25	50	75	25	50	75	25	50	75
	b	95			95			95			95		
	c	58.5			58.5			58.5			58.5		
	ca	77.5			77.5			77.5			77.5		
	bb	100			100			100			100		
	aa	0	25	50	0	25	50	0	25	50	0	25	50
Weight (kg)		0.15	0.31	0.46	0.2	0.4	0.6	0.22	0.44	0.66	0.22	0.44	0.66
Rated Breaking Capacity (kA) CNS 14816-2 Icu AC #2 #3	110V / 120V*	5	—	—	10	—	—	15	—		25/22**	—	
	220V / 240V*	—	5***	5	—	10	10	10	15		—	25/22**	
	380V / 400V*	—	—	—	—	—	—	—	10		—	—	
Trip Unit		Thermal Magnetic			Thermal Magnetic			Thermal Magnetic			Thermal Magnetic		

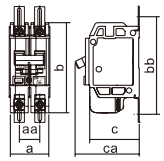
Plug in type

Frame (AF)		50	100		50			100		50	100	
Type		BL			BLH			BLS		BKL		
Appearance												
Rated Voltage (A.C) #1		110/220*	220		110/220*	220		220		110/220*	380	
Rated Current In (A) At Ambient Temp. 40℃		15, 20, 30 40, 50.	15, 20, 30, 40, 50 60, 75, 100.		15, 20, 30 40, 50.	15, 20, 30, 40, 50.		60, 75100.		15, 20, 30 40, 50.	15, 20, 30, 40, 50 60, 75, 100.	
Number of poles (P)		1	2	3	1	2	3	2	3	1	2	3
Dimensions (mm)	a	25	50	75	25	50	75	50	75	25	50	75
	b	74			74			74		79		
	c	60.5			60.5			60.5		61		
	ca	74			74			74		77.5		
	bb	—			—			—		—		
	aa	0	25	50	0	25	50	25	50	0	25	50
Weight (kg)		0.13	0.26	0.39	0.13	0.26	0.39	0.33	0.53	0.18	0.36	0.54
Rated Breaking Capacity (kA) CNS 14816-2 Icu AC	110V / 120V*	5	—		10	—		—		15	—	
	220V / 240V*	—	5		—	10		10		10	15	
	380V / 400V*	—	—		—	—		—		—	10	
Trip Unit		Thermal Magnetic			Thermal Magnetic			Thermal Magnetic		Thermal Magnetic		

Note 1. 〝*〞 1 phase 3 wiring; L-L: 220V, L-N: 110V.
2. 〝**〞 Rated Breaking Capacity: asym/sym.
3. 〝***〞 BP 1P 220V 5kA Rated Current:15, 20, 30, 40, 50A.

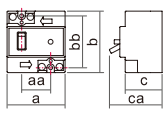
Earth Leakage Circuit Breaker | Earth Leakage, Overload, and Short Circuit Protection

Frame (AF)		50		50		50		50		50	
Type		BL-50L		BL-50UL		BLP-50L		BLP-50UL		BL-50H	
Appearance											
Rated Current In (A) At Ambient Temp. 40℃		15, 20, 30, 40, 50.									
Phase & Wire		1Φ2W									
Number of poles (P)		2P1E	2P2E	2P1E	2P2E	2P1E	2P2E	2P1E	2P2E	2P1E	2P2E
Rated Voltage (A.C) #1.		110	220	220***	220	110	220	220***	220	220***	220/380
Rated Current Sensitivity (mA) #2.		30, (100, 200, 300, 500)*				30				30, (100, 200, 300, 500)*	
Max. Operating Time (s)		≦0.1S									
Rated Breaking Capacity (kA) CNS 5422 Icu AC	110V	5	—	10	—	5	—	10	—	15	—
	220V	—	5	5	10	—	5	5	10	10	15
Dimensions	a	25	50	25	50	25	50	25	50	50	75
	b	110				92				95	
	c	60				60.5				58.5	
	ca	78.4				78.4				77.5	
	bb	120				—				100	
	aa	0	25	0	25	0	25	0	25	25	50
Weight (kg)		0.22	0.39	0.22	0.39	0.2	0.34	0.2	0.34	0.4	0.58
Trip Unit		Thermal Magnetic									
Earth Leakage Tripping Device		Mechanical									



(mm)

		Earth Leakage, Overload Protection		Earth Leakage Protection	
Frame (AF)		30		40	30
Type		BL-KLF		BL-KF	BL-K30F
Appearance					
Rated Current In(A) At Ambient Temp. 40℃		15, 20, 30		15, 20, 30, 40	15, 20, 30
Phase & Wire		1Φ2W		1Φ2W	1Φ3W 3Φ3W
Poles (P)		2P1E	2P2E	2	3
Rated Voltage (A.C)		110~220		110~220	110~220 / 380~440
Rated Current Sensitivity (mA) #2.		30		30, (100, 200, 300, 500)*	30
Max. Operating Time (s)		≦0.1S		≦0.1S	≦0.1S
Rated Breaking Capacity (kA) CNS 5422 Icu AC	110V~220V	1.5		1.5, 2.5	1.5 / —
	380V~480V	—		—	— / 1.5
Dimensions	a	66			90
	b	70			70
	c	42			42
	ca	60			60
	bb	59			59
	aa	33			57
Weight (kg)		0.2			0.25
Trip Unit		Thermal Magnetic		—	
Earth Leakage Tripping Device		Mechanical			

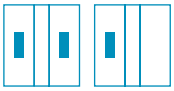
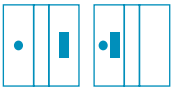
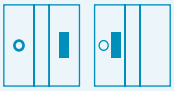


(mm)

Note 1. "***" 3 phase 4 wiring, L-N: 220V
2. "*" Special order.

Optional Accessories Installation Table

- **AL: Alarm Switch / AX: Auxiliary Switch / SHT: Shunt Trip / UVT: Under Voltage Trip**

Model	Poles	AL	AX	SHT or UVT	AL+AX	AL+ SHT or UVT	AX+ SHT or UVT	AL+AX+ SHT or UVT
BM30-SN BM50-CN BM60-SN/ HN BM100-SN / MN	3P							–
BL50-SN	3P 4P			 (#1.)	–	–	–	–
BM60-HBN BM100-HN BM125-SN/HN	3P 4P			 (3P) (4P)		 (3P) (4P)	 (3P) (4P)	–
BL100-SN BL100-HN	3P 4P			 No UVT for 3P	–	 (#2.)	 (#2.)	–
BM100-H/ HC/ HS BM160-HB/ HC/ HS BM250-HB/ HC/ HS	3P 4P			 (#1.)		 (#1.)	 (#1.)	–
BM100-HBN BM160-SN/ HN BM250-SN/ HN BMA125-STA/LTA/HTA BMA160-STA/LTA/HTA BMA250-STA/LTA/HTA	3P 4P							
BL160-SN BL250-SN	3P 4P				–	–	–	–
BM400-SN/ HN/ RN/ UN	3P 4P				 AX can be installed in AL position			
BL400-SN/ HN/ RN/ UN BMA400-LTA/HTA/RTA	3P 4P				 AX can be installed in AL position			–
BM630-SN/ HN/ RN/ UN BM800-CN/ SN/ HN/ RN BMA630-HTA/RTA BMA800-HTA/RTA	3P 4P				 AX can be installed in AL position			 AX can be installed in AL position
BL630-HN/ RN/ UN BL800-SN/ HN/ RN	3P 4P							
BM1000-HS BM1200-HS BM1600-HS	3P				–			–

2P, 125AF and below : Accessories are installed on the right side.

Note:
1. Standard: AL and AX are installed on left side, SHT and UVT are installed on right side.
2. SHT is equipped with coil anti-burn switch.
3. BL series can not do right side installation.
4. UVT of BM30-SN~BM100-HN can not install on its left side.
5. #1 means have no UVT.
6. #2 means only can apply to 4P breakers.

● : AL
○ : AX
▮ : SHT or UVT

Optional Accessories | Application Table

Rotary Handle

TYPE	Poles	Model
EH-100N	2P、3P、4P	BM30-SN, BM50-CN, BM60-SN/HN, BM100-SN/MN, BL50-SN
EH-125N	2P、3P、4P	BM60-HBN, BM100-HN, BM125-SN/HN, BL100-SN/HN, BMA125-STA/LTA/HTA
EH-250N	3P、4P	BM100-HBN, BM160-SN/HN, BM250-SN/HN, BL160-SN, BL250-SN
EH-250T	2P、3P、4P	BMA160-STA/LTA/HTA, BMA250-STA/LTA/HTA
EH-400N	3P、4P	BM400-SN/HN/RN/UN, BL400-SN/HN/RN/UN, BMA400-LTA/HTA/RTA
EH-800N	3P、4P	BM630-SN/HN/RN/UN, BM800-CN/SN/HN/RN, BL630-HN/RN/UN, BL800-SN/HN/RN, BMA630-HTA/RTA, BMA800-HTA/RTA
EH-250H	3P、4P	BM100-H/HC/HS, BM160-HB/HC/HS, BM250-HB/HC/HS

Extended Rotary Handle

TYPE	Poles	Model
MA-100N	3P、4P	BM30-SN, BM50-CN, BM60-SN/HN, BM100-SN/MN, BL50-SN
MA-125N	3P、4P	BM60-HBN, BM100-HN, BM125-SN/HN, BL100-SN/HN, BMA125-STA/LTA/HTA
MA-250N	3P、4P	BM100-HBN, BM160-SN/HN, BM250-SN/HN, BL160-SN, BL250-SN
MA-250T	3P、4P	BMA160-STA/LTA/HTA, BMA250-STA/LTA/HTA
MA-400N	3P、4P	BM400-SN/HN/RN/UN, BL400-SN/HN/RN/UN, BMA400-LTA/HTA/RTA
MA-800N	3P、4P	BM630-SN/HN/RN/UN, BM800-CN/SN/HN/RN, BL630-HN/RN/UN, BL800-SN/HN/RN, BMA630-HTA/RTA, BMA800-HTA/RTA
MA-250H	3P、4P	BM100-H/HC/HS, BM160-HB/HC/HS, BM250-HB/HC/HS

Motor Operation Device

TYPE	Poles	Model
MT-100N	3P、4P	BM30-SN, BM50-CN, BM60-SN/HN, BM100-SN/MN, BL50-SN
MT-125N	3P、4P	BM60-HBN, BM100-HN, BM125-SN/HN, BL100-SN/HN, BMA125-STA/LTA/RTA
MT-250N	3P、4P	BM100-HBN, BM160-SN/HN, BM250-SN/HN, BL160-SN, BL250-SN, BMA160-STA/LTA/HTA, BMA250-STA/LTA/HTA
MT-400N	3P、4P	BM400-SN/HN/RN/UN, BL400-SN/HN/RN/UN, BMA400-LTA/HTA/RTA
MT-800N	3P、4P	BM630-SN/HN/RN/UN, BM800-CN/SN/HN/RN, BL630-HN/RN/UN, BL800-SN/HN/RN, BMA630-HTA/RTA, BMA800-HTA/RTA
MT-250E	3P、4P	BM100-H/HC/HS, BM160-HB/HC/HS, BM250-HB/HC/HS

Note：Applicable voltage：① DC 24V ② AC 110V/ DC 110V ③ AC 230V/ DC 220V

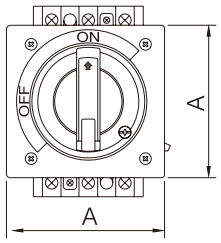
Rear Connection

TYPE	Poles	Model
PGI-100N50	3P	BM30-SN, BM50-CN, BM60-SN/HN, BL50-SN (50A and below), BM50-CN
PGI-100N	3P	BM60-SN/HN, BM100-SN/MN (60A and below)
PGI-125N50	3P	BM60-HBN, BM100-HN, BM125-SN/HN, BL100-SN/HN (50A and below)
	4P	BM100-HN, BM125-SN, BL100-SN/HN (50A and below)
PGI-125N	3P	BM60-HBN, BM100-HN, BM125-SN, BL100-SN/HN (60A and above)
	4P	BM100-HN, BM125-SN, BL100-SN/HN (60A and above)
PGI-250N	3P、4P	BM100-HBN, BM160-SN/HN, BM250-SN/HN, BL160-SN, BL250-SN
PGI-400N	3P、4P	BM400-SN/HN/RN/UN, BL400-SN/HN/RN/UN
PGI-800N	3P、4P	BM630-SN/HN/RN/UN, BM800-CN/SN/HN/RN, BL630-HN/RN/UN, BL800-SN/HN/RN
PGI-BM250	3P	BM100-H/HC/HS, BM160-HB/HC/HS, BM250-HB/HC/HS

Optional Accessories | Dimensions

Rotary Handle

Type	Poles	fig.1			fig.2			fig.3		
		A	B	C	D	E	F	G	H	J
EH-100N	2P、3P、4P	104	105	39	90	78	10	* 25	111	M4 screw or ø5
EH-125N	2P、3P、4P	104	105	39	90	78	10	* 30	132	
EH-250N	3P, 4P	104	105	39	90	78	10	35	126	
EH-250T	3P, 4P	104	105	39	90	78	10	35	126	
EH-400N	3P, 4P	150	183	53	108	112	10	44	194	
EH-800N	3P, 4P	150	183	53	108	112	10	70	243	
EH-250H	3P, 4P	104	125	39	90	78	10	35	126.5	



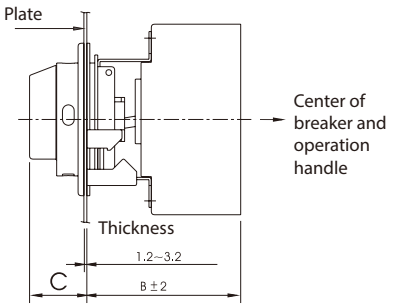
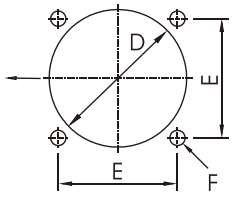
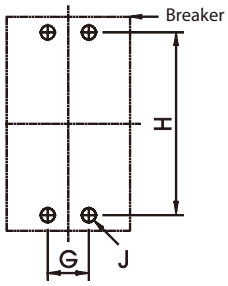


Fig. 1



Panel Dimension
Fig. 2



Breaker Dimension
Fig. 3

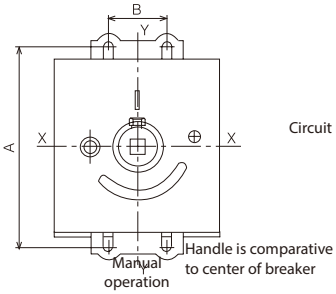
Note: 1. Standard: White, optional: Black.
2. Optional for dust and water protection.
3. L: long type, EH100NL & EH125NL can not install to 2P.
4. * indicates the value is not applied to 2P model.

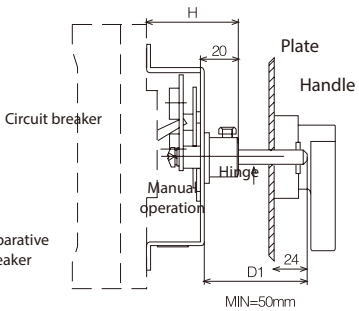
Extended Rotary Handle

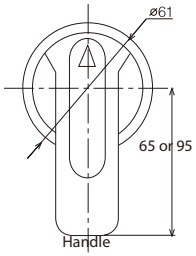
Type	Dimensions (mm)			
	A	B	H	Y
MA-100N	111	25	53.5	+8
MA-125N	132	30	54	+8
MA-250N	146	35	56	0
MA-250T	146	35	55	0
MA-400N	221	45	85	+10
MA-800N	242	70	85	+10

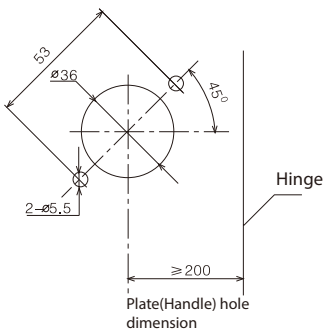
Motor Operation Device

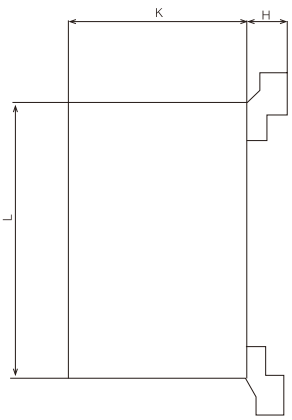
Type	Dimensions (mm)						
	A	B	d	H	K	L	W
MT-100N	25	111	ø4.5	16.5	79	102	74
MT-125N	30	132	ø4.5	15	77	116	90
MT-250N	30	126	ø4.5	15	77	116	90
MT-400N	44	194	ø4.5	36	115	176	130
MT-800N	70	234	ø4.5	36	115	176	130
MT-250E	30	126	ø4.5	15	77	116	90

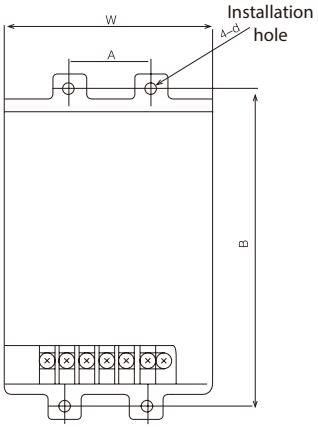






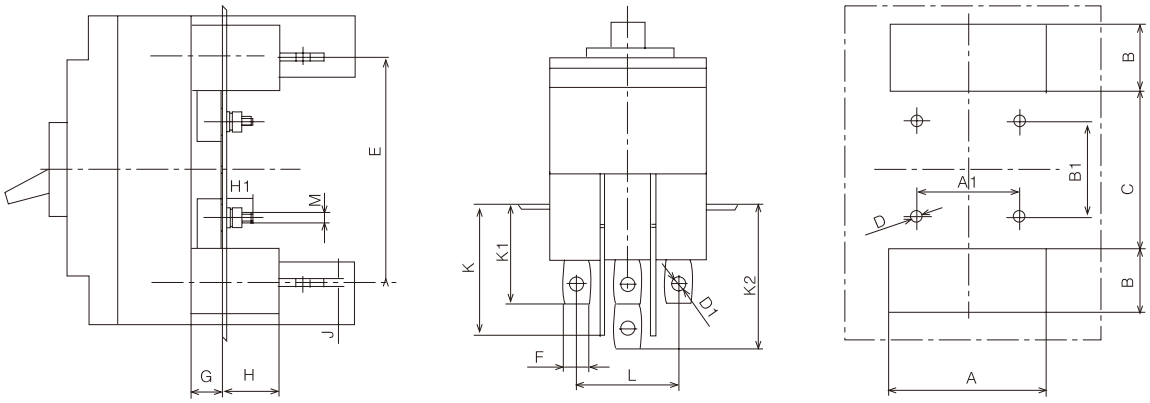






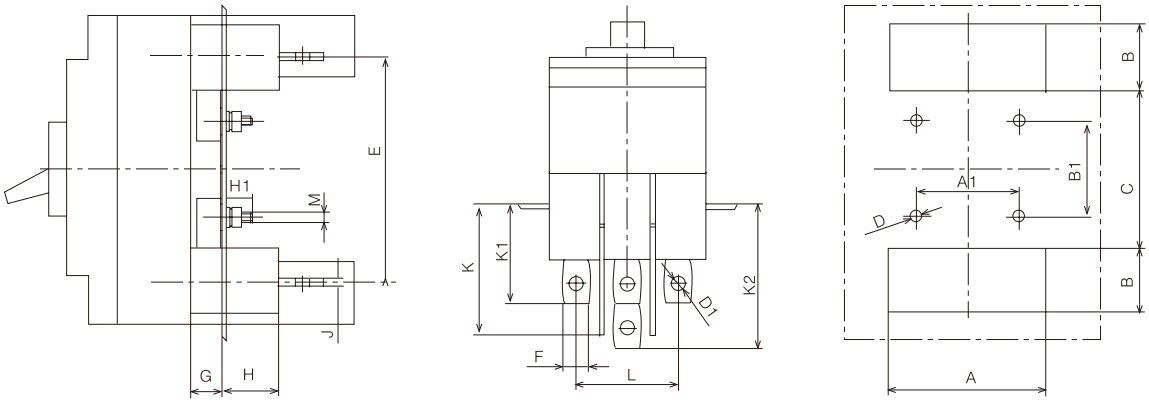
Rear Connection

Type	Poles	Dimensions (mm)																	Connect Direction	
		A	A1	B	B1	C	D	D1	E	F	G	H	H1	J	K	K1	K2	L	M	Horizontal	Vertical
PGI-100N	3	74	50	24	58	90	ø5	/	116	M10	9.5	28	12	M10	/	62	122	50	M4	◎	◎
	4	99	75															75			
PGI-125N	3	92	60	30	70	104	ø6	/	134	M10	13	26	16	M10	/	62	122	60	M5	◎	◎
	4	122	90															90			
PGI-250N	3	107	70	38	76	106	ø6	ø10	144	25	13	34	15	6	/	79	134	70	M5	◎	◎
	4	142	105															105			
PGI-400N	3	137	44	50	135	175	ø10	ø13	225	28	18	40	24	8	120	79	/	44	M8	◎	◎
	4	181	88															88			
PGI-800N	3	212	140	57	143	185	ø10	ø13	243	44	17	53	20	11	/	146	/	140	M8	◎	◎
	4	282	210															210			



Rear Connection

Type	Poles	Dimensions (mm)																	Connect Direction	
		A	A1	B	B1	C	D	D1	E	F	G	H	H1	J	K	K1	K2	L	M	Horizontal	Vertical
PGI-BM250	3	107	70	38	76	106	ø6	ø10	144	25	13	34	15	6	/	79	134	70	M5	◎	◎



ATS (Automatic Transfer Switches)

A. PC Class

Frame size		63			125			250			500		
Insulation Voltage, Ui		AC800V											
Rated Impulse Withstand Voltage, Uimp		12kV											
Rated Voltage, Ue		2P: AC220 / 230 / 240V 3/4P: AC380 / 400 / 415V											
Control Voltage , Us		AC220 / 230 / 240V, 50/60Hz											
Rated Current, In (A)		16, 20 , 25, 32, 40, 50, 63			80, 100, 125			160, 200, 225, 250			350, 400, 500		
Pole		2	3	4	2	3	4	2	3	4	2	3	4
Operation current (A)	AC220/230 /240V	3	3	4	3	3	4	5	5	5	5	5	6
Tripping current (A)	AC220/230 /240V	1									1.4		
Rated condition short circuit current (fuse)		100kA			100kA			120kA			120kA		
Rated condition short circuit current (breaker)		50kA			50kA			65kA			65kA		
Making and Breaking Capacity		AC-33B, DC-33B											
Switching time	I -> II	≤1s											
	II -> I												
Endurance		Electrical: 6000 Mechanical: 20000											
Switching frequency		120 times / hr											
Auxiliary switch		2NO2NC on both source AC110V, 5A AC220V, 3A DC220V, 0.2A											

Note : AC-33A: Making & Breaking: 10Ie, cosφ=0.35
AC-33B: Making & Breaking: 10Ie, cosφ=0.35 (Ie≤100A, cosφ=0.45)
DC-33B:Making & Breaking: 4Ie, L/R=2.5ms

ATS Controller Specification

• XST-5

Type	Standard
Poles	2 / 3 / 4
Rated operation voltage (V)	AC380 / 220 AC400 / 230 AC415 / 240
Rated operation frequency (Hz)	50 / 60
Operation voltage (V)	165~300 (Phase voltage)
Operation temperature (°C)	-25 ~ 60
Optional functions	—

800		1250		2500		5000	
AC800V							
12kV							
AC400V							
AC220V, 50Hz							
630, 800		1000, 1250		1600, 2000, 2500		3200, 4000, 5000	
3	4	3	4	3	4	3	4
6	6	6	8	8	9	18	20
2							
120kA		120kA		—		200kA	
50kA		50kA		50kA		—	
AC-33B, DC-33B						AC-33A, DC-33B	
≤1s							
Electrical: 6000 Mechanical: 10000							
120 times / hr							
2NO2NC on both source AC110V, 5A AC220V, 3A DC220V, 0.2A							

ATS Controller Specification

• XST-6

Type	Multifunction
Poles	2 / 3 / 4
Rated operation voltage (V)	AC380 / 220 AC400 / 230 AC415 / 240
Rated operation frequency (Hz)	50 / 60
Operation voltage (V)	165~300 (Phase voltage)
Operation temperature (°C)	-25 ~ 60
Optional functions	Current measurement + communication

(Controller voltage: AC 220V)

ATS (Automatic Transfer Switches)

A. MCCB Type

Type	Pole	Rated current In (A)	Rated Breaking Capacity Sym r.m.s. (kA) IEC 60947-2 AC Icu	
			220V	380V
BS100SN	2P, 3P, 4P	10, 15, 20, 30, 40, 50, 60, 75, 100.	25	15
BS100HN	2P, 3P, 4P		50	30
BS250SN	2P, 3P, 4P	125, 150, 175, 200, 225, 250.	50	30
BS400SN	2P, 3P, 4P	250, 300, 350, 400.	50	35
BS400HN	2P, 3P, 4P		85	50
BS630SN	3P, 4P	500, 600, 630.	50	35
BS630HN	3P, 4P		85	50
BS800SN	3P, 4P	700, 800.	85	50
BS1000HS	3P	1000	130	100
BS1200HS	3P	1200	130	100
BS1600HS	3P	1400, 1600.	130	100

Note : 1. Standard: IEC 60947-2
2. Special breaking capacity, please contact sales representative.
3. BS225SN rated current 250A is optional order.

B. MS Type

Type	ATS Protection Switch	Rated current In (A)	Pole	Voltage
BS-MB	Miniature Circuit Breaker Protection Switch	20A	R, N	110V
			R, T	220V

Air Circuit Breaker

Frame Size			1600AF		2000AF		2500AF		3200AF		4000AF		6300AF	
Model			BW-1600		BW-2000		BWA-2500		BW-3200		BW-4000		BW-6300	
Rated Current, In			400/630/800/1000	1250/1600	630/800/1000	1250/1600/2000	400/630/800/1000/1250/1600/2000	2500	2000/2500	3200	4000		5000	6300
Pole			3P / 4P		3P / 4P		3P / 4P		3P / 4P		3P / 4P		3P / 4P	
Frequency (Hz)			50 / 60HZ		50 / 60HZ		50/60HZ		50 / 60HZ		50 / 60HZ		50 / 60HZ	
Rated Voltage, Ue			AC690V		AC690V		AC 400/415/690V		AC690V		AC690V		AC690V	
Rated Impulse Withstand Voltage, Uimp			12kV		12kV		12kV		12kV		12kV		12kV	
Insulation Voltage, Ui			AC1000V		AC1000V		AC1000V		AC1000V		AC1000V		AC1000V	
Rated Current of Neutral (%)			100%In		100%In		100%In		100%In		100%In		100%In	
Breaking Capacity	Model		SN		HS	HN	H		HS	HN	HS	HN	HS	
	Icu / Ics (kA)	690V	50/50		50/50	55/55	65 / 65		60/50	55/55	60/50	55/55	85/85	
		380/400/415V	65/65		80/50	85/85	85 / 85		100/65	100/100	100/65	100/100	120/100	
		240V	-		80/50	85/85	-		100/65	100/100	100/65	100/100	120/100	
	Icw (kA) 1sec	400/415V	50		50	65	85		65	85	65	85	100	
		690V	50		50	65	65		65	65	65	75	85	
Operating time (ms)	Max. total breaking time		≦ 30		40		40		40		40		40	40
	Max. closing time		≦ 70		80		80		80		80		80	80
Endurance	Mechanical	With maintenance	20,000		20,000		15000		20,000		20,000		10,000	10,000
		Without maintenance	15,000		10,000		30000		10,000		10,000		2,500	2,500
	Electrical	With maintenance	10,000	8,000	15,000		8000		13,000		12,000		2,000	2,000
		Without maintenance	10,000	8,000	8,000		6000		6,500		6,000		500	500
Dimension HxWxD (mm)	Fixed Type	3P	312×265×201		402×362×332		-		402×422×332		402×422×377		-	-
		4P	312×335×201		402×455×332		-		402×537×332		402×537×377		-	-
	Drawout Type	3P	345×275×300		430×375×421		435x405x448.5	435x405x473	430×435×421		430×465×466		435×842×505	435×960×505
		4P	345×345×300		430×470×421		435x500x448.5	435x500x473	430×550×421		430×580×466		435×956×492	

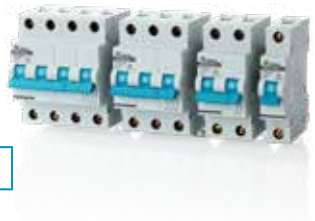
Note: Icu/Ics/Icw for HS type only labled 400V and 690V on the name plate, other voltage are for reference.

MCB (Miniature Circuit Breaker) | BHA Series

Applications:

Applicable to the residential, industrial and commercial power distribution systems, provide circuit-control and protection on equipments against any impacts of overload, short-circuit and earth leakage.

· DIN rail TH 35mm
·Ambient temperature: -5℃~ +40℃



BHA

·Overload, Short Circuit

BHA	2	2	C	32
↓	↓	↓	↓	↓

Type	Rated short-circuit breaking capacity (kA) / Rated voltage (V)	Poles (P)	Tripping characteristics	Rated current In (A)	Standard	Mechanical life
BHA	2: 4.5kA; 3: 6kA; 4: 10kA 230/400V	1, 2, 3, 4	C type: 5~ 10In D type: 10~ 15In	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63.	IEC 60898	20, 000 operations
BHA	125: 10kA 230/240V: 1P 400/415V: 2/3/4P	1, 2, 3, 4	8~12In	80, 100, 125	IEC 60947-2	10, 000 operations
BHA	10kA 4: DC125V(1P) / DC250V(2P) 5: DC220V(1P) / DC440V(2P)	1, 2	DC Type	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63.	IEC 60947-2	20, 000 operations

·BHA5 can't be used in IT system

BHL

·Overload, Short Circuit, Leakage

BHL	2	2	C	32	G
↓	↓	↓	↓	↓	↓

Type	Rated short-circuit breaking capacity (kA) / Rated voltage (V)	Poles (P)	Tripping characteristics	Rated current In (A)	Optional function (2P)
BHL	2: 4.5kA; 3: 6kA 230V	1P+N	C type: 5~ 10In D type: 10~ 15In	6, 10, 16, 20, 25, 32, 40.	Over-voltage protection (230V, internal built)
BHL	2: 4.5kA 230V: 2P ; 400V: 3P/4P	2, 3, 4	C type: 5~ 10In D type: 10~ 15In	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63.	Over-voltage protection (230V, internal built)
BHL	3: 6kA 230/400V	2, 3, 4	C type: 5~ 10In D type: 10~ 15In	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63.	Over-voltage protection (230V, internal built)

·Standard: IEC 61009
·Intermal OVT over voltage range AC 280V ± 5%

BHL-A

·Overload, Short Current, Leakage

BHL-A	3	1	C	32	A	30	G
↓	↓	↓	↓	↓	↓	↓	↓

Type	Rated short-circuit breaking capacity (kA) / Rated voltage (V)	Poles (P)	Tripping characteristics	Rated current In (A)	Residual current type	Rated sensitivity current (mA)	Optional function (2P)
BHL-A	2: 4.5kA; 3: 6kA 230V	1P+N	C type: 5~ 10In D type: 10~ 15In	6, 10, 16, 20, 25, 32, 40, 50, 63	A, AC	30, 100, 300	Over-voltage protection (230V, internal built)

BL-BF

·Overload, Short Current, Leakage

BL-BF	V	15	015	20
↓		↓	↓	↓

Model	Type	Rated current In (A)	Rated sensitivity current IΔn (mA)	Pole
BL-BF	V : RCCB L : RCBO C : MCB	15, 20, 30	000 : N/A (C Type) 015 : 15 (V/L Type) 030 : 30 (V/L Type)	20 : 2P0E (V type) 21 : 2P1E (C type) 22 : 2P2E (L type)

BHR-A

·Residual Current

BHR-A	42	25	A	030
↓		↓	↓	↓

Type	Poles (P)	Rated current In (A)	Residual current Type	Rated sensitivity current IΔn (mA)
BHR-A	42: 2P 44: 4P	25, 32, 40, 63	A, AC	030: 30 100: 100 300: 300

BHG

·Disconnect Switch

BHG		2	32
↓		↓	↓

Type	Rated voltage (V)	Poles (P)	Rated current In (A)	Standard	Mechanical life
BHG	230/400V	1, 2, 3, 4	32A, 40A, 63A, 80A, 100A.	IEC 60947-3	50, 000 operations

BHN

·N+L Overload, Short Circuit

BHN	2	1	C	32
↓		↓	↓	

Type	Rated breaking capacity (kA) Rated voltage (V)	Poles (P)	Tripping characteristics	Rated current In (A)
BHN	2: 4.5kA; 3: 6kA 230V	1P+N	C type: 5~ 10In	6, 10, 16, 20, 25, 32.

· Standard: IEC 60898

BHZ

·Over / Under Voltage Protective Device with Auto-reset

BHZ2	25
↓	

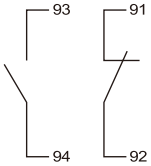
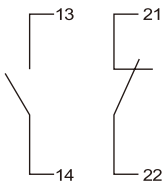
Type	Rated current In (A)
BHZ2	25, 32, 40, 50, 63

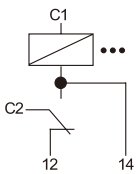
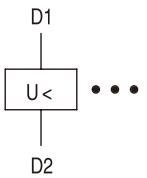
· Standard: IEC 60898

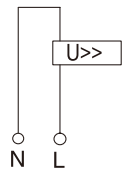
BHK
·Accessories

BHK	2					1	
↓	↓					↓	
Type	Accessory Code					Installation	
	1	2	3	4	5	1	2
BHK	AL	AX	SHT	UVT	OVT	Standard	Option

Note: 1. Standard: Attached on left side of breaker
2. Option: Attached on left side of accessory

	Type	Auxiliary Contact AC/12	Width (mm)	Product Code
	AL Alarm Switch 	1NO. 1NC 230V 6A 440V 3A	9	BHK11
	AX Auxiliary Contact 	1NO. 1NC 230V 6A 440V 3A	9	BHK21 BHK22

	Type	Control Voltage V AC	Control Voltage V DC	Width (mm)	Product Code
	SHT Shunt Trip 	12 24-48 230-415	12-48 110-130	18	BHK31 BHK32
	UVT Under Voltage Trip 	220-240	48	18	BHK41 BHK42

	Type	Rated voltage	Current	Over voltage range	Trip time	Width (mm)	Product Code
	OVT Over Voltage Trip 	230V	15mA	280V±5%	≦0.2S	18	BHK51 BHK52

Surge Protective Device | BHP Series

BHP	20	–	3P	R	320
↓	↓		↓	↓	↓

Type	Imax/Limp (kA)	Waveform (μs)	Pole (P)	Alarm auxiliary contact R: with Blank: without	Uc (V)	Un (V)	Up (kV)	Waveform (μs)	In (kA)	Connection wire diameter	
										L-N	PE
BHP20	20: 20kA	8/20	1P: 1P 1P1: 1P+1 2P: 2P 3P: 3P 3P1: 3P+1 4P: 4P	R	320	230/400	≦1.3	8/20	10	≧ 2.5mm²	≧6mm²
BHP40	40: 40kA	8/20		R	385	230/400	≦1.8	8/20	20	≧4mm²	≧ 16mm²
BHP80	80: 80kA	8/20		R	385	230/400	≦2.1	8/20	40	≧ 10mm²	≧ 25mm²
BHP100	100: 100kA	8/20		R	385	230/400	≦2.3	8/20	60	≧ 16mm²	≧ 25mm²
BHP250	250: 25kA	10/350			440	230/400	≦1.8	10/350	25	≧ 25mm²	≧ 35mm²

To enable the surge protective device to work, please read the following note:
1. The grounding system type of the protected device and maximum operating voltage of the power grid Us. Max.
2. The impulse withstand voltage of the protected device.

Note: 1. BHP20, 40 are plug-in type; BHP80, 100, 250 are fixed type.
2. The standard operation voltage Uc(V) is below table. Max operation voltage Uc(V): 660V.

SPD Counter

Model	TAD-04-99
Rated Voltage	85~250V
Max. Count	99
Display	LED
Dimension (mm)	91X69X18

Normal working conditions

·Frequency: the AC power frequency shall be 50/60Hz.

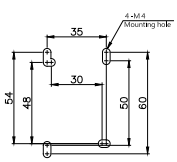
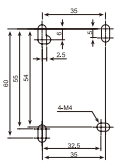
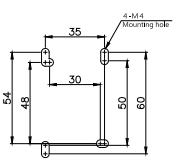
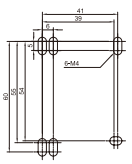
·Voltage: the voltage continuously supplied between the wiring terminals of the surge protective device shall not exceed its maximum continuous operating voltage Uc.

·Altitude: less than 2,000m.

·Use and storage temperature: -Normal range: -5℃ ~ +40℃;
-Ultimate range: -40℃ ~ +80℃;
·Humidity: Relative humidity 30%~90% under ambient temperature.

Magnetic Contactor / Motor Starter ◆ AC control

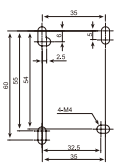
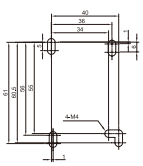
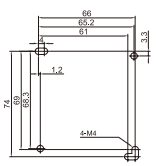


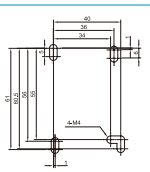
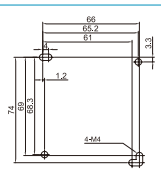
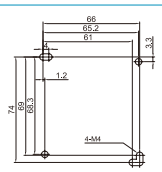
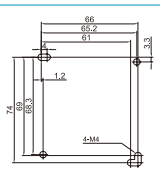
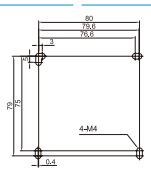

Model				9T	11	12T	12
Type	Magnetic Contactor	Nonreversing		S-P9T	S-P11	S-P12T	S-P12
		Reversing		S-P2XP9T	S-2×P11	S-P2XP12T	S-2×P12
	Motor Starter	without enclosure	Nonreversing	MSO-P9T	MSO-P11	MSO-P12T	MSO-P12
			Reversing	MSO-P2XP9T	MSO-2×P11	MSO-P2XP12T	MSO-2×P12
		with enclosure	Nonreversing	MS-P9T	MS-P11	MS-P12T	MS-P12
			Reversing	MS-P2XP9T	MS-2×P11	MS-P2XP12T	MS-2×P12
		with enclosure (push button)	Nonreversing	MS-P9TPB	MS-P11PB	MS-P12TPB	MS-P12PB
	TOR		Standard	TH-P12E	TH-P12 E	TH-P12E	TH-P12 E
			Differential	TH-P12PP	TH-P12PP	TH-P12PP	TH-P12PP
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A)	3 ø	240V	2.5/3/11	3.5/ 4.5/ 13	3.5/4.5/13	3.5/ 4.5/ 13
			380/415V	4/5.5/9	5.5/ 7.5/ 12	5.5/7.5/12	5.5/ 7.5/ 12
			440V	4/5.5/9	5.5/ 7.5/ 12	5.5/7.5/12	5.5/ 7.5/ 12
			550V	4/5.5/7	5.5/ 7.5/ 9	7.5/10/12	5.5/ 7.5/ 9
			660V	4/5.5/6	5.5/ 7.5/ 7	7.5/10/9	5.5/ 7.5/ 7
		Operation current (Ith) AC1 (A)		25	20	25	20
		Rated insulation voltage (V)		AC690	AC660	AC690	AC660
	UL 508 CSA-C22.2 AC3 (HP/A)	1 ø	100~120V	0.5/9.8	0.5/ 9.8	0.75/13.8	0.5/ 9.8
			200~240V	1.5/10	2/ 10	2/12	2/ 12
		3 ø	200~240V	3/9.6	3/ 9.6	5/15.2	3/ 9.6
			380~480V	5/7.6	7.5/ 11	7.5/11	7.5/ 11
			550~600V	7.5/9	10/ 11	10/11	10/ 11
		Operation current (Ith) AC1 (A)		25	24	25	24
		Rated insulation voltage (V)		AC600	AC600	AC600	AC600
NEMA				-	0	-	0
Auxiliary Contact	IEC 60947-5-1 EN 60947-5-1 GB14048.4 AC 15	Contact	Standard	1No 1NC	1NO	1No 1NC	1NO 1NC
			Special	-	1NC	-	2NC or 2NO
			220V	1.6	1.6	1.6	1.6
			380V	0.95	0.95	0.95	0.95
		Operation current (Ith) AC1 (A)		16	16	16	16
		Contact class (UL)		A600 · Q300	A600, P600, Q300	A600 · Q300	A600, P600, Q300
Electrical Life AC3				1.6 Mil.	1.6 Mil.	1.6 Mil.	1.6 Mil.
Mechanical Life				10 Mil.	10 Mil.	10 Mil.	10 Mil.
Operation (Time/Hour)				1200	1200	1200	1200
Magnetic Contactor	Weight (kg)			0.34	0.33	0.34	0.35
	Appearance Dimensions (W×H×D) (mm)			43×81×86	43×81×83.5	43×81×86	53×81×83.5
	Installation Dimension (mm)						
Mechanical Interlock				MPU-11	MPU-11	MPU-11	MPU-21

Magnetic Contactor / Motor Starter ◆ AC control



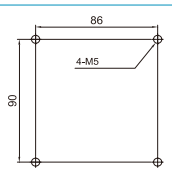
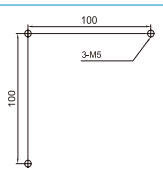
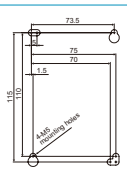
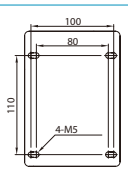


Model				15	16	21 (A)	25	30T
Type	Magnetic Contactor	Nonreversing		S-P15	S-P16	S-P21 (A)	S-P25	S-P30T
		Reversing		S-2×P15	S-2×P16	S-2×P21 (A)	S-2×P25	S-2×P30T
	Motor Starter	without enclosure	Nonreversing	MSO-P15	MSO-P16	MSO-P21 (A)	MSO-P25	MSO-P30T
			Reversing	MSO-2×P15	MSO-2×P16	MSO-2×P21 (A)	MSO-2×P25	MSO-2×P30T
		with enclosure	Nonreversing	MS-P15	MS-P16	MS-P21 (A)	MS-P25	MS-P30T
			Reversing	MS-2×P15	MS-2×P16	MS-2×P21 (A)	MS-2×P25	MS-2×P30T
		with enclosure (push button)	Nonreversing	MS-P15PB	MS-P16PB	MS-P21PB (A)	MS-P25PB	MS-P30TPB
	TOR		Standard	TH-P12 E	TH-P20 E	TH-P20 E	TH-P20 E(TA)	TH-P20 E(TA)
			Differential	TH-P12PP	TH-P20PP	TH-P20PP	TH-P20(TA)PP	TH-P20(TA)PP
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A)	3 ø	240V	4.5/ 6/ 18	4.5/ 6/ 18	5.5/ 7.5/ 24	6.5/ 8.5/ 26	7.5/ 10/ 30
			380/415V	7.5/ 10/ 18	7.5/ 10/ 18	11/ 15/ 21	12/ 16/ 25	15/ 20/ 30
			440V	7.5/ 10/ 16	7.5/ 10/ 16	11/ 15/ 21	12/ 16/ 23	15/ 20/ 27
			550V	7.5/ 10/ 13	7.5/ 10/ 13	11/ 15/ 17	12/ 16/ 20	15/ 20/ 22
			660V	7.5/ 10/ 9	7.5/ 10/ 9	11/ 15/ 14	12/ 16/ 16	15/ 20/ 18
		Continuous current (Ith) AC1 (A)		25	30	32	32	50
		Rated insulation voltage (Ui) (V)		AC660	AC660	AC660	AC660	AC660
	UL 508 CSA-C22.2 AC3 (HP/A)	1 ø	100~120V	-	1/ 16	2/ 24	2/ 24	2/ 24
			200~240V	-	3/ 17	3/ 17	3/ 17	5/ 28
		3 ø	200~240V	-	5/ 15.2	7.5/ 22	10/ 28	10/ 28
			380~480V	-	10/ 14	15/ 21	15/ 21	20/ 27
			550~600V	-	10/ 11	15/ 17	15/ 17	30/ 32
		Operation current (Ith) AC1 (A)		-	30	35	40	50
		Rated insulation voltage (Ui) (V)		-	AC600	AC600	AC600	AC600
NEMA				0	0	1	1	2
Auxiliary Contact	IEC 60947-5-1 EN 60947-5-1 GB14048.4 AC 15	Contact	Standard	1NO	1NO 1NC	1NO 1NC (2NO 2NC)	1NO 1NC	2NO 2NC
			Special	1NC	-	-	-	-
			220V	1.6	1.6	1.6	1.6	1.6
			380V	0.95	0.95	0.95	0.95	0.95
		Continuous current (Ith) AC1 (A)		16	16	16	16	16
		Contact class (UL)		-	A600, Q300	A600, Q300	A600, Q300	A600, Q300
Electrical Life			AC3	1.3 Mil.	1.3 Mil.	1.3 Mil.	1.3 Mil.	1.3 Mil.
Mechanical Life				10 Mil.	10 Mil.	10 Mil.	10 Mil.	10 Mil.
Operation			(Time/Hour)	1200	1200	1200	1200	1200
Magnetic Contactor	Weight		(kg)	0.33	0.37	0.38	0.38	0.55
	Appearance Dimensions (W×H×D)		(mm)	43×81×83.5	53.5×81×83.5	53.5×81×83.5	53.5×81×83.5	73×95×93
	Installation Dimension		(mm)					
Mechanical Interlock				MPU-11	MPU-21	MPU-21	MPU-21	**MPU-11**

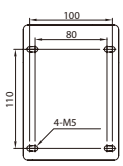
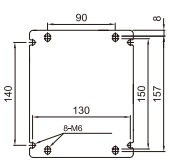
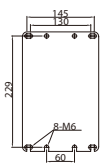
					
32T	**35T**	**38T**	**40T**	**50T**	**60T**
S-P32T	S-P35T	S-P38T	S-P40T	S-P50T	S-P60T
S-2XP32T	S-2×P35T	S-2XP38T	S-2×P40T	S-2×P50T	S-2×P60T
MSO-P32T	MSO-P35T	MSO-P38T	MSO-P40T	MSO-P50T	MSO-P60T
MSO-2×P32T	MSO-2×P35T	MSO-2×P38T	MSO-2×P40T	MSO-2×P50T	MSO-2×P60T
MS-P32T	MS-P35T	MS-P38T	MS-P40T	MS-P50T	MS-P60T
MS-2×P32T	MS-2×P35T	MS-2×P38T	MS-2×P40T	MS-2×P50T	MS-2×P60T
MS-P32TPB	MS-P35TPB	MS-P38TPB	MS-P40TPB	MS-P50TPB	MS-P60TPB
TH-P20 E(TA)	TH-P20 E(TA)	TH-P20 E(TA)	TH-P20 E(TA)	TH-P60 E	TH-P60 E(TA)
TH-P20(TA)PP	TH-P20(TA)PP	TH-P20(TA)PP	TH-P20(TA)PP	TH-P60PP	TH-P60(TA)PP
7.5/10/32	9/ 12.5/ 35	11/15/39	11/ 15/ 44	15/ 20/ 58	19/ 25/ 65
15/20/32	18.5/ 25/ 35	18.5/25/38	22/ 30/ 40	30/ 40/ 52	37/ 50/ 65
15/20/32	18.5/ 25/ 27	18.5/25/38	22/ 30/ 40	30/ 40/ 52	37/ 50/ 65
15/20/22	18.5/ 25/ 22	18.5/25/29	22/ 30/ 32	30/ 40/ 41	37/ 50/ 52
15/20/18	18.5/ 25/ 18	18.5/25/22	22/ 30/ 26	30/ 40/ 34	37/ 50/ 43
50	50	60	60	80	90
AC660	AC660	AC660	AC660	AC660	AC660
-	2/ 24	-	3/ 34	5/ 56	5/ 56
-	5/ 28	-	7.5/ 40	10/ 50	10/ 50
-	10/ 28	-	15/ 42	20/ 54	20/ 54
-	20/ 27	-	20/ 27	30/ 40	40/ 52
-	30/ 32	-	30/ 32	40/ 41	50/ 52
-	50	-	60	80	90
-	AC600	-	AC600	AC600	AC600
2	2	2	2	2	2
1NO 1NC	2NO 2NC	2NO 2NC	2NO 2NC	2NO 2NC	2NO 2NC
-	-	-	-	-	-
1.6	1.6	1.6	1.6	1.6	1.6
0.95	0.95	0.95	0.95	0.95	0.95
16	16	16	16	16	16
A600, Q300	A600, Q300	A600, Q300	A600, Q300	A600, Q300	A600, Q300
1.3 Mil.	1.3 Mil.	1.3 Mil.	1.3 Mil.	1.3 Mil.	1.3 Mil.
10 Mil.	10 Mil.	10 Mil.	10 Mil.	6 Mil.	6 Mil.
1200	1200	1200	1200	1200	1200
0.38	0.55	0.55	0.55	1.05	1.05
53.5x81x83.5	73×95×93	73x95x93	73×95×93	87.9×115×107	87.9×115×107
					
MPU-21	MPU-11	MPU-11	MPU-11	MPU-11	MPU-11

Magnetic Contactor / Motor Starter ◆ AC control



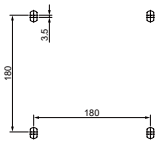
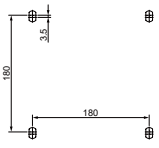

Model				80T	100T	100E	125T
Type	Magnetic Contactor	Nonreversing		S-P80T	S-P100T	S-P100E	S-P125T
		Reversing		S-2×P80T	S-2×P100T	S-2×P100E	S-2×P125T
	Motor Starter	without enclosure	Nonreversing	MSO-P80T	MSO-P100T	MSO-E100	MSO-P125T
			Reversing	MSO-2×P80T	MSO-2×P100T	MSO-2×E100	MSO-2×P125T
		with enclosure	Nonreversing	MS-P80T	MS-P100T	MS-E100	MS-P125T
			Reversing	MS-2×P80T	MS-2×P100T	MS-2×E100	MS-2×P125T
		with enclosure (push button)	Nonreversing	-	-	MS-E100PB	-
	TOR		Standard	TH-P60 E(TA)	TH-P120 E(TA)	TH-E100E	TH-P120 E(TA)
			Differential	TH-P60(TA)PP	TH-P120(TA)PP	TH-E100PP	TH-P120(TA)PP
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A)	3 ø	240V	22/ 30/ 80	30/ 40/ 105	30/ 40/ 105	37/ 50/ 135
			380/415V	45/ 60/ 80	60/ 80/ 105	55/ 75/ 100	75/ 100/ 130
			440V	45/ 60/ 75	60/ 80/ 105	60/ 80/ 100	75/ 100/ 130
			550V	45/ 60/ 60	60/ 80/ 85	60/ 80/ 85	75/ 100/ 105
			660V	45/ 60/ 50	60/ 80/ 70	60/ 80/ 70	75/ 100/ 90
		Continuous current (Ith) AC1 (A)		100	135	135	170
		Rated insulation voltage (Ui) (V)		AC660	AC660	AC690	AC660
	UL 508 CSA-C22.2 AC3 (HP/A)	1 ø	100~120V	7.5/ 80	-	-	-
			200~240V	15/ 68	-	-	-
		3 ø	200~240V	25/ 68	30/ 80	-	50/ 130
			380~480V	50/ 65	60/ 77	-	100/ 124
			550~600V	60/ 62	60/ 62	-	100/ 99
		Continuous current (Ith) AC1 (A)		90	100	-	170
		Rated insulation voltage (Ui) (V)		AC600	AC600	-	AC600
NEMA				3	3	-	3
Auxiliary Contact	IEC 60947-5-1 EN 60947-5-1 GB14048.4 AC 15	Contact	Standard	2NO 2NC	2NO 2NC	1NO 1NC	2NO 2NC
			Special	-	-	-	-
			220V	1.6	1.6	3*	3.3
			380V	0.95	0.95	1.9	1.6
		Operation current (Ith) AC1 (A)		16	16	10	16
		Contact class (UL)		A600, Q300	A600, Q300	A600, Q300	A600, Q300
Electrical Life			AC3	1.2 Mil.	1.2 Mil.	1 Mil.	1.2 Mil.
Mechanical Life				6 Mil.	6 Mil.	6 Mil.	6 Mil.
Operation			(Time/Hour)	1200	1200	1200	1200
Magnetic Contactor	Weight		(kg)	1.5	2.35	1.34	2.7
	Appearance Dimensions (W×H×D)		(mm)	100×142×116	120×116×128	85×125×127	106×152.5×140
	Installation Dimension		(mm)				
Mechanical Interlock				MPU-50	Assembled and adjusted by the factory.	MEU-11	MPU-125

Note: Mark * means the value is @240V

				
150T	**200T**	**220T**	**300T**	**400T**
S-P150T	S-P200T	S-P220T	S-P300T	S-P400T
S-2×P150T	S-2×P200T	S-2×P220T	S-2×P300T	S-2×P400T
MSO-P150T	MSO-P200T	MSO-P220T	MSO-P300T	MSO-P400T
MSO-2×P150T	MSO-2×P200T	MSO-2×P220T	MSO-2×P300T	MSO-2×P400T
MS-P150T	MS-P200T	MS-P220T	-	-
MS-2×P150T	MS-2×P200T	MS-2×P220T	-	-
-	-	-	-	-
TH-P120 E(TA)	TH-P220T E	TH-P220T E	TH-P400T E	TH-P400T E
TH-P120(TA)PP	TH-P220TPP	TH-P220TPP	TH-P400TPP	TH-P400TPP
45/ 60/ 165	55/ 75/ 200	65/ 85/ 225	90/ 125/ 300	110/ 150/ 400
90/ 125/ 160	110/ 150/ 200	120/ 160/ 220	160/ 220/ 300	220/ 300/ 400
90/ 125/ 160	110/ 150/ 190	120/ 160/ 220	185/ 250/ 300	250/ 340/ 400
90/ 125/ 130	110/ 150/ 150	132/ 180/ 180	185/ 250/ 263	250/ 340/ 360
90/ 125/ 110	110/ 150/ 125	132/ 180/ 150	200/ 300/ 220	280/ 380/ 305
200	240	260	350	450
AC660	AC660	AC660	AC1000	AC1000
-	-	-	-	-
-	-	-	-	-
60/ 154	75/ 192	75/ 192	100/ 248	125/ 312
125/ 156	150/ 180	150/ 180	200/ 240	250/ 302
125/ 125	150/ 144	150/ 144	200/ 192	300/ 289
200	240	260	350	450
AC600	AC600	AC600	AC1000	AC1000
3	4	4	5	5
2NO 2NC	2NO 2NC	2NO 2NC	2NO 2NC	2NO 2NC
-	-	-	-	-
3.3	3.3	3.3	3.3	3.3
1.6	1.6	1.6	1.6	1.6
16	16	16	10	10
A600, Q300	A600, Q300	A600, Q300	A600, Q300	A600, Q300
1.2 Mil.	1.2 Mil.	1.2 Mil.	1.2 Mil.	1.2 Mil.
6 Mil.	6 Mil.	6 Mil.	6 Mil.	6 Mil.
1200	1200	1200	1200	1200
2.7	4.35	4.35	9.75	9.75
106×152.5×140	138×185×159.5	138×185×159.5	164×246×196.5	164×246×196.5
				
MPU-125	MPU-125	MPU-125	MPU-125	MPU-125

Magnetic Contactor / Motor Starter ◆ AC control

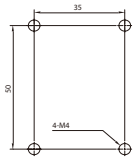


Model				630T	800T	1260T
Type	Magnetic Contactor	Nonreversing		S-P630T	S-P800T	S-P1260T
		Reversing		S-2XP630T	S-2XP800T	S-2XP1260T
	Motor Starter	without enclosure	Nonreversing	-	-	-
			Reversing	-	-	-
		with enclosure	Nonreversing	-	-	-
			Reversing	-	-	-
		with enclosure (push button)	Nonreversing	-	-	-
	TOR		Standard	TH-P600CT(E)	TH-P600CT(E)	-
			Differential	TH-P600CTPP	TH-P600CTPP	-
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A)	3 ø	240V	200 / 270 / 630	250 / 340 / 800	-
			380/415V	335 / 450 / 630	450 / 610 / 800	-
			440V	400 / 545 / 630	450 / 610 / 800	-
			550V	400 / 545 / 552	450 / 610 / 620	-
			660V	450 / 610 / 450	475 / 645 / 475	-
		Continuous current (Ith) AC1 (A)		800	1000	1260
		Rated insulation voltage (Ui) (V)		AC1000	AC1000	AC1000
	UL 508 CSA-C22.2 AC3 (HP/A)	1 ø	100~120V	-	-	-
			200~240V	-	-	-
		3 ø	200~240V	-	-	-
			380~480V	-	-	-
			550~600V	-	-	-
		Continuous current (Ith) AC1 (A)		-	-	-
		Rated insulation voltage (Ui) (V)		-	-	-
NEMA				3	3	4
Auxiliary Contact	IEC 60947-5-1 EN 60947-5-1 GB14048.4 AC 15	Contact	Standard	2NO 2NC*	2NO 2NC*	-
			Special	-	-	-
			220V	-	-	-
			380V	-	-	-
		Operation current (Ith) AC1 (A)		-	-	-
		Contact class (UL)		-	-	-
Electrical Life AC3				500000	500000	-
Mechanical Life				3000000	3000000	3000000
Operation (Time/Hour)				-	-	-
Magnetic Contactor	Weight (kg)			16.4	18.3	18.3
	Appearance Dimensions (W×H×D) (mm)			304×309×255	338×309×255	338×309×255
	Installation Dimension (mm)					
Mechanical Interlock				-	-	-

*Note: S-P630T and S-P800T is equipped with AP-22N (2NO2NC) when ordered, S-P1260T can be purchase separated.

Magnetic Contactor / Motor Starter ◆ AC control

Mini Contactor

Model				06	09
Type	Magnetic Contactor	Nonreversing		S-P06	S-P09
		Reversing		S-2×P06	S-2×P09
	Motor Starter	without enclosure	Nonreversing	MSO-P06	MSO-P09
			Reversing	-	-
		with enclosure	Nonreversing	-	-
			Reversing	-	-
		with enclosure (push button)	Nonreversing	-	-
	TOR		Standard	-	-
			Differential	TH-P09PP	TH-P09PP
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A)	3 ø	240V	1.5/ 2/ 7.5	2.2/ 3/ 10.1
			380/415V	3/ 4/ 6.6	4/ 5.5/ 9
			440V	3/ 4/ 6.5	4/ 5.5/ 8.5
			550V	3/ 4/ 5	4/ 5.5/ 6.5
			660V	3/ 4/ 4	4/ 5.5/ 5
		Continuous Current (Ith) AC1 (A)		20	20
		Rated insulation voltage (V)		AC660	AC660
	UL 508 CSA-C22.2 AC3 (HP/A)	1 ø	100~120V	0.25/ 5.8	0.5/ 9.8
			200~240V	1/ 8	1.5/ 10
		3 ø	200~240V	2/ 6.8	3/ 9.6
			380~480V	3/ 4.8	5/ 7.6
			550~600V	3/ 3.9	5/ 6.1
		Continuous Current (Ith) AC1 (A)		20	20
		Rated insulation voltage (V)		AC660	AC660
NEMA				00	00
Auxiliary Contact	IEC 60947-5-1 EN 60947-5-1 GB14048.4 AC 15	Contact	Standard	1NO	1NO
			Special	1NC	1NC
			220V	3.3	3.3
			380V	1.9	1.9
		Continuous Current (Ith) AC1 (A)		10	10
		Contact class (UL)		A600	A600
Electrical Life AC3				1.6 Mil.	1.6 Mil.
Mechanical Life				10 Mil.	10 Mil.
Operation (Time/Hour)				1200	1200
Magnetic Contactor	Weight (kg)			0.15	0.15
	Appearance Dimensions (W×H×D) (mm)			46×58×51	46×58×51
	Installation dimension (mm)				
Mechanical Interlock				-	-

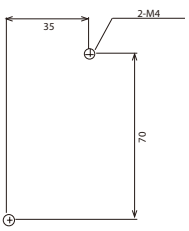
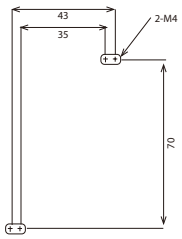
Thermal Overload Relay

Type		09
Standard	Contactor Assembled Type	-
	Independently Installed Type	-
With phase failure protection	Contactor Assembled Type	TH-P09PP
	Independently Installed Type	-
Reset Mode		Manual / Automatic
Magnetic Contactor		S-P06, S-P09.
TOR Adjustment Range (A)		Rating (A) / Range (A)
		0.13 / 0.1~0.16
		0.20 / 0.16~0.24
		0.32 / 0.24~0.4
		0.5 / 0.4~0.6
		0.8 / 0.6~1
		1.3 / 1~1.6
		2.0 / 1.6~2.4
		3.2 / 2.4~4
		5 / 4~6
		7.5 / 6~9
Auxiliary Contact		1NO 1NC
Weight		0.075
Dimensions (mm) (W×H×D)		45.5×64.8×50

Coil Specification Table

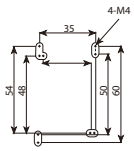
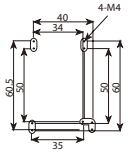
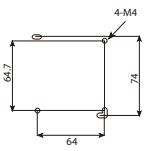
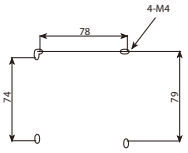
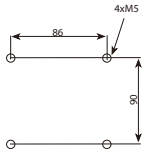
◆ S-P06, S-P09						
Description	AC12V	AC24V	AC48V	AC110V	AC120V	AC220V
Coil rated specifications marking	12V 50Hz 12V 60Hz	24V 50Hz 24V 60Hz	48~50V 50Hz 48~50V 60Hz	100V 50Hz 100~110V 60Hz	110~120V 50Hz 115~120V 60Hz	200~220V 50Hz 220V 60Hz
Description	AC230V	AC240V	AC380V	AC440V	AC480V	AC550V
Coil rated specifications marking	230V 50Hz 230V 60Hz	220~240V 50Hz 240~260V 60Hz	346~380V 50Hz 380V 60Hz	400V 50Hz 400~440V 60Hz	415~440V 50Hz 460~480V 60Hz	500V 50Hz 500~550V 60Hz

Magnetic Contactor / Motor Starter ◆ DC control

						
Type	Magnetic Contactor	Nonreversing		SD-P11	SD-P16	SD-P21
		Reversing		SD-2×P11	SD-2×P16	SD-2×P21
	Motor Starter	without enclosure	Nonreversing	MDO-P11	MDO-P16	MDO-P21
			Reversing	MDO-2×P11	MDO-2×P16	MDO-2×P21
		with enclosure	Nonreversing	-	-	-
			Reversing	-	-	-
		with enclosure (push button)	Nonreversing	-	-	-
	TOR		Standard	TH-P12	TH-P20	TH-P20
			Differential	TH-P12PP	TH-P20PP	TH-P20PP
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A)	3 ø	240V	3.5/ 4.5/ 13	4.5/ 6/ 18	5.5/ 7.5/ 24
			380/440V	5.5/ 7.5/ 12	7.5/ 10/ 18	11/ 15/ 21
			550V	5.5/ 7.5/ 9	7.5/ 10/ 13	11/ 15/ 17
			660V	5.5/ 7.5/ 7	7.5/ 10/ 9	11/ 15/ 14
		Continuous current (Ith) AC1 (A)		20	30	32
	UL 508 CSA-C22.2 AC3 (HP/A)	1 ø	110~120V	0.5/ 9.8	1/ 16	2/ 24
			220~240V	2/ 12	3/ 17	3/ 17
		3 ø	220~240V	3/ 9.6	5/ 15.2	7.5/ 22
			440~480V	7.5/ 11	10/ 14	15/ 21
			550~600V	10/ 11	10/ 11	15/ 17
		Continuous current (Ith) AC1 (A)		24	30	35
NEMA				0	0	1
Auxiliary contact				1NO or 1NC	1NO 1NC	1NO 1NC
Control coil voltage DC (V)					12/ 24/ 30*/ 48/ 72/ 110/ 125/ 220	
Electrical Life AC3 (10 thousand)				120	120	120
Mechanical Life (10 thousand)				600	600	600
Magnetic Contactor	Weight (kg)			0.33	0.37	0.38
	Appearance Dimensions (W×H×D) (mm)			43×81×83.5	53.5×81×83.5	53.5×81×83.5
	Installation Dimension (mm)					
Mechanical Interlock				MPU-11	MPU-11	MPU-11

"Note: control circuit voltage 30V can be customized."

Capacitor Contactors

Type				SC-P12	SC-P16	SC-P20	SC-P25	SC-P33	SC-P45	SC-P60
Rated Insulation voltage (Ui)			(V)	690	690	690	690	690	690	690
Rated Capacity	IEC 60947-4-1 EN 60947-4-1 DIN VDE 0660 AC 3 (kW/HP/A)	AC-6b 3 ø (kVar/A)	200~240V	6.7/ 18	8.5/ 22	10/ 26	15/ 39	20/ 48	25/ 66	35/ 92
			400~440V	12.5/ 16	16.7/ 22	20/ 26	25/ 33	33.3/ 44	45/ 59	60/ 86
			AC 525V	14/15	18/20	23/25	28/31	38/42	48/53	72/79
			660~690V	18/ 15	24/ 20	30/ 25	36/ 30	48/ 40	58/ 49	75/ 63
		Continuous current (Ith) AC1 (A)		20	30	40	50	80	90	100
		Auxiliary Contact		2NO or 1NO 1NC	2NO 1NC	2NO 1NC	3NO 2NC	3NO 2NC	3NO 2NC	3NO 2NC
Auxiliary Contact	IEC 60947-5-1 EN 60947-5-1	AC12 (A)	100~120V	6	6	6	6	6	6	6
			200~220V	5	5	5	5	5	5	5
			380~440V	3	3	3	3	3	3	3
			550~600V	3	3	3	3	3	3	3
		Continuous current (Ith)	(A)	16	16	16	16	16	16	16
Mechanical Life / Electrical Life (AC-6b) ≦440V (10 thousand)				100 / 30	100 / 30	100 / 30	100 / 30	100 / 30	100 / 30	100 / 30
Operation frequency			(time/ hour)	240	240	240	240	240	240	100
Capacitor unit				AP-40 A	AP-40 A	AP-40 A	AP-40 B	AP-40 B	AP-40 B	AP-40 B
Magnetic Contactor	Weight		(kg)	0.42	0.47	0.47	0.63	1.14	1.14	1.59
	Appearance Dimensions (W×H×D)		(mm)	44×108×134	54×112×134	54×112×134	74×185×144	89×185×158	89×185×158	101×195×168
	Installation Dimension		(mm)							

Capacitor Unit

Capacitor Unit	Magnetic Contactor	Maximum operating power(kvar)			Max. peak current(A)
		220~240V	400~440V	660~690V	
AP-40-A	S-P11	6.7	12.5	18	560
	S-P16	8.5	16.7	24	560
	S-P21	10	20	30	1250
AP-40-B	S-P40T	15	25	36	1900
	S-P50T	20	33.3	48	2160
	S-P60T	25	45	58	3040
	S-P80T	35	60	75	3040

Thermal Overload Relay



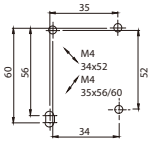

Type		12	18	20	
Standard	Contactor Assembled Type	TH-P12E	TH-P18E	TH-P20E	TH-P20ETA
#3	Separate Installed Type	TH-P12ER	TH-P18ER	-	-
Differential type	Contactor Assembled Type	TH-P12PP	TH-P18PP	TH-P20PP	TH-P20TAPP
#3	Separate Installed Type	TH-P12PPR	TH-P18PPR	-	-
Reset Mode		Manual / Automatic	Manual / Automatic	Manual / Automatic	
Magnetic Contactor		S-P09T, S-P11, S-P12T, S-P12, S-P15.	S-P16, S-P21	S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T.	S-P25, S-P30T, S-P35T, S-P40T.

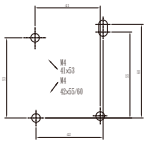
TOR Adjustment Range (A)							
Rating (A)	Range (A)	Rating	Range	Rating (A)	Range (A)	Rating (A)	Range (A)
0.25	0.19~0.31	0.25	0.19 - 0.31	0.25	0.19~0.31	28	22~34
0.4	0.3~0.5	0.4	0.3 - 0.5	0.4	0.3~0.5	33	28~38
0.6	0.45~0.75	0.6	0.45 - 0.75	0.6	0.45~0.75	40	32~48
0.9	0.7~1.1	0.9	0.7-1.1	0.9	0.7~1.1		
1.2	0.9~1.5	1.2	0.9-1.5	1.2	0.9~1.5		
1.7	1.3~2.1	1.7	1.3-2.1	1.7	1.3~2.1		
2.1	1.6~2.6	2.1	1.6-2.6	2.1	1.6~2.6		
3.3	2.5~4.1	3.3	2.5-4.1	3.3	2.5~4.1		
4.4	3.4~5.4	4.4	3.4-5.4	4.4	3.4~5.4		
6.5	5~8	6.5	5 - 8	6.5	5~8		
9	7~11	9	7-11	9	7~11		
11	9~13	11	9-13	11	9~13		
✻15	12~18	15	12-18	15	12~18		
		21	17-24	21	17~24		

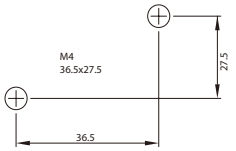
Auxiliary Contact	1NO 1NC	1NO 1NC	1NO 1NC	
Weight	0.11/ 0.12	0.15	0.18/ 0.19	0.20/ 0.21
Appearance Dimensions (W×H×D)	TH-P12(PP): 45.5×55.5×78 TH-P12(PP)R: 47×71×86.2	53.5×55.5×78.5	TH-P20(PP): 64.5×46.1×80	TH-P20TA(PP): 64.5×56.2×80

Installation Dimensions (mm)

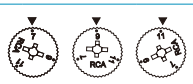
TH-P12(PP):
TH-P12(PP)R:

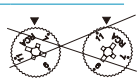






Note. 1. The purpose of using TOR is protecting load tripping. For protecting circuit, please choose circuit breaker.
2. When adjusting the rated current; please refer to the TOR range table above. Do not exceed its range.
3. (E): 3 Elements
4. ✻: The rating current of TH-P12 can only use up to "11A" when combined with S-P11.


Correct

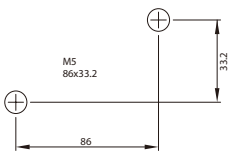

Incorrect

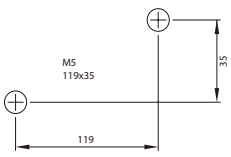


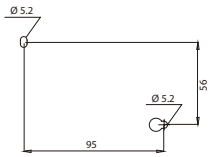


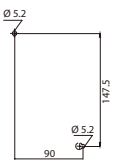


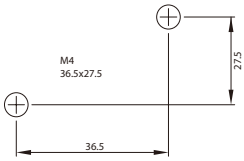
60				120				220T		400T		600CT	
TH-P60E		TH-P60ETA		TH-P120E		TH-P120ETA		TH-P220TE		TH-P400TE		TH-P600CTE	
-		-		-		-		-		-		-	
TH-P60PP		TH-P60TAPP		TH-P120PP		TH-P120TAPP		TH-P220TPP		TH-P400TPP		TH-P600CTPP	
-		-		-		-		-		-		-	
Manual / Automatic				Manual / Automatic				Manual / Automatic		Manual / Automatic		Manual / Automatic	
S-P50T, S-P60T, S-P80T.		S-P60T, S-P80T.		S-P100T, S-P125T, S-P150T.				S-P200T, S-P220T.		S-P300T, S-P400T.		S-P630T, S-P800T.	
Rated (A)	Adjustable Range (A)	Rated (A)	Adjustable Range (A)	Rated (A)	Adjustable Range (A)	Rated (A)	Adjustable Range (A)	Rated (A)	Adjustable Range (A)	Rated (A)	Adjustable Range (A)	Rated (A)	Adjustable Range (A)
11	9~13	67	54~80	40	32~48	105	80~130	80	60~100	105	80~130	260	200~320
15	12~18	80	60~100	54	43~65	130	100~160	105	80~130	130	100~160	350	260~440
21	17~24			67	54~80	160	120~200	130	100~160	160	120~200	500	400~600
28	22~34			80	60~100			160	120~200	200	150~250		
33	28~38							200	150~250	260	200~320		
40	32~48									350	260~440		
54	43~65												
1NO 1NC				1NO 1NC				1NO 1NC		1NO 1NC		1NO 1NC	
0.28/ 0.30		0.34/ 0.36		0.55		0.76		2.25		2.65		3.93/ 3.95	
TH-P60(PP): 98×50.5×78		TH-P60TA(PP): 64.5×65.5×80		TH-P120(PP): 133×54×105		TH-P120TA(PP): 133×85.5×105		140×151.5×158.7		164×165×163.7		TOR: 64.5×46.1×80 TOR W/CT: 106×46.8×104.5	











Magnetic Control Relays



Type		SR-P40	SR-P50	SR-P80
Auxiliary Contact		4NO 3NO 1NC 2NO 2NC	5NO 4NO 1NC 3NO 2NC 2NO 3NC	8NO 7NO 1NC 6NO 2NC 5NO 3NC 4NO 4NC
Rated Capacity IEC 60947-4-1 AC15 (A)	220V	1.6	1.6	1.6
	380V	0.95	0.95	0.95
Rated insulation voltage	(Ui) (V)	660	660	660
Operation current	(Ith) (A)	16	16	16
Contact Class	(UL)	A600, Q300	A600, Q300	A600, Q300
Electrical Life	(10 thousand)	50 and up	50 and up	50 and up
Mechanical Life	(10 thousand)	500	500	500
On/ Off Frequency	(time per / hour)	500	500	500

Definite Purpose Magnetic Contactor | SF Series

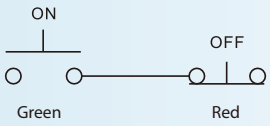
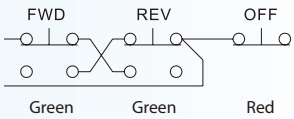
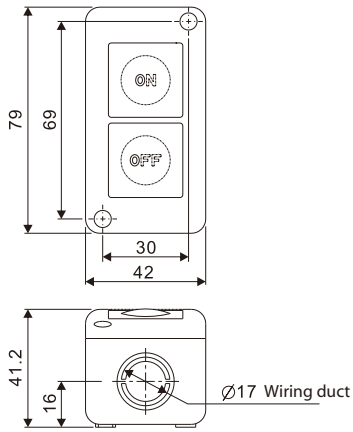
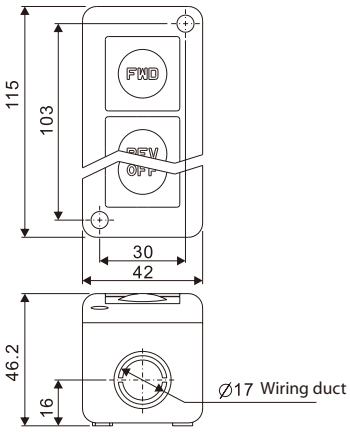
Type		20	25	30	35	40
Type		 C1		 C2		 C3
Type	1 Pole	SF20C1	SF25C1	SF30C1	SF35C1	SF40C1
	2 Pole	SF20C2	SF25C2	SF30C2	SF35C2	SF40C2
	1Pole w/shunt	SF20C3	SF25C3	SF30C3	SF35C3	SF40C3
Start Current(A) (Per Pole)	AC 240V / AC 277V	120	150	180	180	180
	AC 480V	100	125	150	150	150
	AC 600V	80	100	120	120	120
Start Current(A) (Single Phase) (2 Pole)	AC 240V / AC 277V	120	150	180	210	240
	AC 480V	100	125	150	175	200
	AC 600V	80	100	120	140	160
Rated Current w/resistance load (A)		30	35	40	50	50
Full Rated Current (A)		20	25	30	35	40
Mechanical / Electrical life (10 thousand)		50/25	50/25	50/25	50/25	50/25
Operation frequency (time / hour)		360	360	360	360	360
Coil Control Voltage 50/60 Hz		24 / 110-120 / 200 / 220 / 208-240 / 277				



Star-delta Starter

Model		21	35	50	60	80	100	125	150	220
Type	Without enclosure (no CT)	SDO-P21	SDO-P35	SDO-P50	SDO-P60	SDO-P80	SDO-P100	SDO-P125	SDO-P150	SDO-P220
	Without enclosure (with CT)	SDO-P21T	SDO-P35T	SDO-P50T	SDO-P60T	SDO-P80T	SDO-P100T	SDO-P125T	SDO-P150T	SDO-P220T
	With enclosure (no Ammeter)	SDE-P21	SDE-P35	SDE-P50	SDE-P60	SDE-P80	SDE-P100	SDE-P125	SDE-P150	SDE-P220
	With enclosure (With Ammeter)	SDA-P21	SDA-P35	SDA-P50	SDA-P60	SDA-P80	SDA-P100	SDA-P125	SDA-P150	SDA-P220
Rated Capacity (kW/HP)	200V~220V	11/ 15	19/ 25	22/ 30	30/ 40	37/ 50	45/ 60	55/ 75	75/ 100	110/ 150
	380V~440V	19/ 25	30/ 40	45/ 60	55/ 75	75/ 100	90/ 125	110/ 150	132/ 180	200/ 260
AC Magnetic Contactor	MCM	S-P21	S-P35T	S-P50T	S-P60T	S-P80T	S-P100T	S-P125T	S-P150T	S-P220T
	MCD	S-P21	S-P35T	S-P50T	S-P60T	S-P80T	S-P100T	S-P125T	S-P150T	S-P220T
	MCS	S-P11	S-P16	S-P21	S-P21	S-P35T	S-P35T	S-P50T	S-P50T	S-P60T
Thermal Overload Relay		TH-P20	TH-P60	TH-P60	TH-P120	TH-P120	TH-P120	TH-P220T	TH-P220T	TH-P400T
		TH-P20TA	TH-P60TA	TH-P60TA	TH-P120TA	TH-P120TA	TH-P120TA		TH-P400T	
Conducting wire size of motor (mm^2)	Line side	2.5~16	2.5~25	2.5~35	2.5~50	10~70	10~95	35~150	35~150	35~240
	Load side	2.5~10	2.5~16	2.5~25	2.5~35	4~50	4~70	10~95	10~90	16~150
	Control side	1~2.5	1~2.5	1~2.5	1~2.5	1~2.5	1~2.5	1~2.5	1~2.5	1~2.5

Push Button | PB Series

Type	PB2	PB3
Contact schema		
External dimensions (mm)	 	 
WET.	72.5g	110g

Separate Mounting Unit

Type	UATP12
TOR	TH-P12

Auxiliary Contact Block
◆ AP Series




Installation		2P FRONT MOUNTED TYPE						4P FRONT MOUNTED TYPE						
Model		AP-20	AP-11	AP-02	AP-20N	AP-11N	AP-02N	AP-40	AP-31	AP-22	AP-40N	AP-31N	AP-22N	AP-13N
Contact		2NO	1NO 1NC	2NC	2NO	1NO 1NC	2NC	4NO	3NO 1NC	2NO 2NC	4NO	3NO 1NC	2NO 2NC	1NO 3NC
Applicable contactor		SR-P40, SR-P50 S-P09T~ S-P80T SD-P11~ SD-P21			S-P100E S-P630T~ S-P1260T			SR-P40, SR-P50 S-P09T~ S-P80T SD-P11~ SD-P21			S-P100E S-P630T~ S-P1260T			
Rated Capacity AC 15 (A)	220V	1.6			3			1.6			3			
	380V	0.95			1.9			0.95			1.9			
Operation current	(Ith) (A)	16			10			16			10			

Auxiliary Contact Block
◆ AP Series


Installation		SIDE MOUNTED TYPE	
Model		APS-11	APL-11
Contact		1NO 1NC	1NO 1NC
Applicable contactor		SR-P40, SR-P50 S-P09T~ S-P60T SD-P11~ SD-P21	S-P125, S-P150T S-P200T, S-P220T S-P300T, S-P400T
Rated Capacity AC 15 (A)	220V	1.6	
	380V	0.95	
Operation current	(Ith) (A)	16	

Auxiliary Contact Block
◆ MAP Series

Installation		2P FRONT MOUNTED TYPE			4P FRONT MOUNTED TYPE		
Model		MAP-20	MAP-11	MAP-02	MAP-40	MAP-31	MAP-22
Contact		2NO	1NO 1NC	2NC	4NO	3NO 1NC	2NO 2NC
Applicable contactor		S-P06, S-P09.					
Rated Capacity AC 15 (A)	220V	3.3					
	380V	1.9					
Operation current	(Ith) (A)	10					

Timer

Model		PTR-30	PTR-180
Contact		1NO 1NC	1NO 1NC
Applicable contactor		SR-P40, SR-P50, S-P09T~ S-P60T, SD-P11~ SD-P21.	
Rated Capacity AC 15 (A)	220V	1.6	
	380V	0.95	
Operation current	(Ith) (A)	16	

Surge unit

Model	BMSACW220V	BMSACW380V
Applicable contactor	SR-P40, SR-P50, S-P09T~ S-P60T.	

Mechanical Interlock

Model	MPU-11	MPU-21	MPU-50
Applicable contactor	S-P11/S-P15/S-P35T~60T	S-P12/S-P16~30T	S-P80T

Coil Characteristics

Model		S-P06 S-P09	S-P09T S-P12T	S-P11 S-P15	S-P12	S-P16 S-P21 S-P25 S-P30T S-P32T	S-P35T S-P38T S-P40T	S-P50T S-P60T S-P80T	S-P100T	S-P125T S-P150T	S-P200T S-P220T	S-P300T S-P400T	S-P630T	S-P800T S-P1260T
Coil Capacity (VA)	Impulse	25	55	55	55	55	72	250	319	370	440	700	1400	1400
	Operation	5	11	11	11	11	12	28	36	42	50	50	32	32
Power Consumption (W)		1.6	2.5	2.5	2.5	2.5	3	7	11	10	12	7	5	5
Operation Vot. (Ue)	On	55~70%	55~68%	55~68%	55~68%	59~70%	60~75%	63~75%	65~75%	75~80%	75~80%	65~80%	65~80%	65~80%
	Off	35~50%	34~48%	34~48%	34~48%	36~52%	40~57%	40~57%	40~55%	40~55%	40~60%	20~50%	20~50%	20~50%
Close Time (ms)	Aux. OFF	5-12	6~14	5-12	4-11	6-14	6-13	6-13	18-28	9-20	10-19	22-37	40-58	40-58
	Aux. ON	6-15	10~18	10-18	10-18	10-18	12-20	12-20	22-32	15-24	17-25	25-40	40-60	40-60
	Contact ON	6-15	10~18	10-18	10-18	10-18	12-20	12-20	22-32	10-20	12-27	30-45	42-62	46-66
Open Time (ms)	Aux. OFF	6-15	9~19	12-20	9-18	9-19	10-17	10-17	50-100	9-18	10-20	40-60	65-85	65-85
	Aux. ON	5-12	6~15	8-15	4-13	6-14	5-12	5-12	48-98	7-15	7-18	31-51	63-83	63-83
	Contact ON	5-12	8~15	8-15	4-13	6-14	5-12	5-12	46-96	7-15	7-20	30-50	65-85	65-85

Coil Specifications Table

◆ S-P09T~S-P25, S-P30T~P220T, SR-P40~P80, SC-P12~P60

Description	AC12V	AC24V	AC48V	AC110V	AC120V	AC220V
Coil rated specifications marking	12V 50Hz 12V 60Hz	24V 50Hz 24V 60Hz	48~50V 50Hz 48~50V 60Hz	100V 50Hz 100~110V 60Hz	110~120V 50Hz 115~120V 60Hz	200~220V 50Hz 220V 60Hz
Description	AC230V	AC240V	AC380V	AC440V	AC480V	AC550V
Coil rated specifications marking	230V 50Hz 230V 60Hz	220~240V 50Hz 240~260V 60Hz	346~380V 50Hz 380V 60Hz	400V 50Hz 400~440V 60Hz	415~440V 50Hz 460~480V 60Hz	500V 50Hz 500~550V 60Hz

"Note: Control voltage of SR-P40 can be customized DC 12/24/30/48/72/110/125/220V."

◆ S-P300T~P400T

Description	AC48V	AC100V	AC220V	AC380V	AC550V
Coil rated specifications marking	AC 48~50V 50/60Hz DC 48V	AC 100~127V 50/60Hz DC 100~127V	AC 220~250V 50/60Hz DC 200~250V	AC 265~450V 50/60Hz	AC 440~575V 50/60Hz

◆ S-P630T~S-P1260T

Description	AC110V	AC220V	AC380V
Coil rated specifications marking	AC 100~127V 50/60Hz DC 100~127V	AC 200~250V 50/60Hz DC 200~250V	AC 380~440V 50/60Hz

Selection Table ◆ Direct On-Line Starter

Motor rated capacity kW (HP)		3 ø 200V~220V		
		Heating element rating (A)		Selection of the contactor
0.016	(1/47)	0.13A	0.1~0.16A	S-P06, S-P09
0.025	(1/30)	0.2A	0.16~0.24A	S-P06, S-P09
0.04	(1/19)	0.32A	0.24~0.4A	S-P06, S-P09
0.09	(1/8)	0.5A	0.4~0.6A	S-P06, S-P09
0.12	(1/6)	0.8A	0.6~1.0A	S-P06, S-P09
0.25	(1/3)	1.3A	1.0~1.6A	S-P06, S-P09
0.37	(1/2)	2.0A	1.6~2.4A	S-P06, S-P09
0.75	(1)	3.2A	2.4~4.0A	S-P06, S-P09
1.1	(1 1/2)	5A	4.0~6.0A	S-P09
1.5	(2)	7.5A	6.0~9.0A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
0.03	(1/25)	0.25A	0.19~0.31A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
0.05	(1/15)	0.4A	0.3~0.5A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
0.1	(1/8)	0.6A	0.45~0.75A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
0.15	(1/5)	0.9A	0.7~1.1A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
0.2	(1/4)	1.2A	0.9~1.5A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
0.3	(2/5)	1.7A	1.3~2.1A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
0.4	(1/2)	2.1A	1.6~2.6A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
0.75	(1)	3.3A	2.5~4.1A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
1.1	(1 1/2)	4.4A	3.4~5.4A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
1.5	(2)	6.5A	5~8A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
2.2	(3)	9A	7~11A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T, S-P50T, S-P60T, S-P80T
3	(4)	11A	9~13A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T, S-P50T, S-P60T, S-P80T
3.7	(5)	15A	12~18A	S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T, S-P50T, S-P60T, S-P80T
5.5	(7 1/2)	21A	17~24A	S-P21, S-P25, S-P30T, S-P35T, S-P40T, S-P50T, S-P60T, S-P80T
6.5	(8 1/2)	28A	22~34A	S-P25, S-P30T, S-P35T, S-P40T, S-P50T, S-P60T, S-P80T
7.5	(10)			S-P30T, S-P35T, S-P40T, S-P50T, S-P60T, S-P80T
9	(12 1/2)	33A	28~38A	S-P35T, S-P40T, S-P50T, S-P60T, S-P80T
11	(15)	40A	32~48A	S-P40T, S-P50T, S-P60T, S-P80T, S-P100T, S-P125T, S-P150T
15	(20)	54A	43~65A	S-P50T, S-P60T, S-P80T, S-P100T, S-P125T, S-P150T
19	(25)	67A	54~80A	S-P60T, S-P80T, S-P100T, S-P125T, S-P150T
22	(30)	80A	60~100A	S-P80T, S-P100T, S-P125T, S-P150T
25	(35)	105A	80~130A	S-P100T, S-P125T, S-P150T, S-P200T, S-P220T
30	(40)			S-P125T, S-P150T, S-P200T, S-P220T, S-P300T, S-P400T
37	(50)	130A	100~160A	S-P125T, S-P150T, S-P200T, S-P220T, S-P300T, S-P400T
45	(60)	160A	120~200A	S-P150T, S-P200T, S-P220T, S-P300T, S-P400T
55	(75)	200A	150~250A	S-P200T, S-P220T, S-P300T, S-P400T
65	(85)			S-P220T, S-P300T, S-P400T, M-600C
75	(100)	260A	200~320A	S-P300T, S-P400T, M-600C
90	(125)	350A	260~440A	S-P300T, S-P400T, M-600C
110	(150)			S-P400T, M-600C
132	(180)	500A	400~600A	M-600C
160	(220)			M-600C

Selection Table ◆ Direct On-Line Starter

Motor rated capacity kW (HP)		3 ø 380V~440V		
		Heating element rating (A)		Selection of the contactor
0.025	(1/30)	0.13A	0.1~0.16A	S-P06, S-P09
0.04	(1/19)	0.2A	0.16~0.24A	S-P06, S-P09
0.09	(1/8)	0.32A	0.24~0.4A	S-P06, S-P09
0.18	(1/4)	0.5A	0.4~0.6A	S-P06, S-P09
0.25	(1/3)	0.8A	0.6~1.0A	S-P06, S-P09
0.37	(1/2)	1.3A	1.0~1.6A	S-P06, S-P09
0.55	(3/4)	2.0A	1.6~2.4A	S-P06, S-P09
0.75	(1)			S-P06, S-P09
1.1	(1 1/2)	3.2A	2.4~4.0A	S-P06, S-P09
1.5	(2)	5A	4.0~6.0A	S-P06, S-P09
2.2	(3)			S-P06, S-P09
3	(4)	7.5A	6.0~9.0A	S-P09
0.05	(1/15)	0.25A	0.19~0.31A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
0.1	(1/8)	0.4A	0.3~0.5A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
0.2	(1/4)	0.6A	0.45~0.75A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
0.3	(2/5)	0.9A	0.7~1.1A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
0.4	(1/2)	1.2A	0.9~1.5A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
0.75	(1)	1.7A	1.3~2.1A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
1.1	(1 1/2)	2.1A	1.6~2.6A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
1.5	(2)	3.3A	2.5~4.1A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
2.2	(3)	4.4A	3.4~5.4A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
3	(4)	6.5A	5~8A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
3.7	(5)	9A	7~11A	S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
4	(5 1/2)			S-P11, S-P12, S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T
4.5	(6)	11A	9~13A	S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T, S-P50T, S-P60T, S-P80T
5.5	(7 1/2)			S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T, S-P50T, S-P60T, S-P80T
7.5	(10)	15A	12~18A	S-P15, S-P16, S-P21, S-P25, S-P30T, S-P35T, S-P40T, S-P50T, S-P60T, S-P80T
11	(15)	21A	17~24A	S-P21, S-P25, S-P30T, S-P35T, S-P40T, S-P50T, S-P60T, S-P80T
12	(16)			S-P25, S-P30T, S-P35T, S-P40T, S-P50T, S-P60T, S-P80T
15	(20)	28A	22~34A	S-P30T, S-P35T, S-P40T, S-P50T, S-P60T, S-P80T
19	(25)	33A	28~38A	S-P35T, S-P40T, S-P50T, S-P60T, S-P80T
22	(30)	40A	32~48A	S-P35T, S-P40T, S-P50T, S-P60T, S-P80T
25	(35)			S-P40T, S-P50T, S-P60T, S-P80T, S-P100T, S-P125T, S-P150T
30	(40)	54A	43~65A	S-P40T, S-P50T, S-P60T, S-P80T, S-P100T, S-P125T, S-P150T
37	(50)	67A	54~80A	S-P50T, S-P60T, S-P80T, S-P100T, S-P125T, S-P150T
45	(60)			S-P80T, S-P100T, S-P125T, S-P150T
50	(70)	80A	60~100A	S-P80T, S-P100T, S-P125T, S-P150T, S-P200T, S-P220T
60	(80)	105A	80~130A	S-P100T, S-P125T, S-P150T, S-P200T, S-P220T, S-P300T
75	(100)	130A	100~160A	S-P125T, S-P150T, S-P200T, S-P220T, S-P300T
90	(125)	160A	120~200A	S-P150T, S-P200T, S-P220T, S-P300T
110	(150)	200A	150~250A	S-P200T, S-P220T, S-P300T, S-P400T
132	(180)			S-P220T, S-P300T, S-P400T
150	(200)	260A	200~320A	S-P300T, S-P400T
160	(220)	350A	260~440A	S-P300T, S-P400T
220	(330)			S-P400T
250	(350)	500A	400~600A	M-600C
315	(420)			M-600C

Selection Table ◆ Direct On-Line Starter

<table>
<tr><th colspan="2" rowspan="2">Motor rated capacity kW (HP)</th><th colspan="20">3 ø 500V~550V</th></tr>
<tr><th colspan="2">Heating element rating (A)</th><th colspan="18">Selection of the contactor</th></tr>
<tr><td>0.06</td><td>(1/12)</td><td>0.13A</td><td>0.1~0.16A</td><td rowspan="11">S-P06</td><td rowspan="12">S-P09</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>0.09</td><td>(1/8)</td><td>0.2A</td><td>0.16~0.24A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>0.12</td><td>(1/6)</td><td>0.32A</td><td>0.24~0.4A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>0.18</td><td>(1/4)</td><td>0.5A</td><td>0.4~0.6A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>0.37</td><td>(1/2)</td><td>0.8A</td><td>0.6~1.0A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>0.55</td><td>(3/4)</td><td>1.3A</td><td>1.0~1.6A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>0.75</td><td>(1)</td><td rowspan="2">2.0A</td><td rowspan="2">1.6~2.4A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>1.1</td><td>(1 1/2)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>1.5</td><td>(2)</td><td>3.2A</td><td>2.4~4.0A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>2.2</td><td>(3)</td><td rowspan="2">5A</td><td rowspan="2">4.0~6.0A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>3</td><td>(4)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>4</td><td>(5 1/2)</td><td>7.5A</td><td>6.0~9.0A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>0.12</td><td>(1/6)</td><td>0.25A</td><td>0.19~0.31A</td><td rowspan="10">S-P11, S-P12</td><td rowspan="12">S-P15, S-P16</td><td rowspan="14">S-P21</td><td rowspan="15">S-P25</td><td rowspan="16">S-P30T</td><td rowspan="16">S-P35T</td><td rowspan="18">S-P40T</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>0.18</td><td>(1/4)</td><td>0.4A</td><td>0.3~0.5A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>0.25</td><td>(1/3)</td><td>0.6A</td><td>0.45~0.75A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>0.37</td><td>(1/2)</td><td>0.9A</td><td>0.7~1.1A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>0.55</td><td>(3/4)</td><td>1.2A</td><td>0.9~1.5A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>0.75</td><td>(1)</td><td>1.7A</td><td>1.3~2.1A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>1.1</td><td>(1 1/2)</td><td>2.1A</td><td>1.6~2.6A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>1.5</td><td>(2)</td><td>3.3A</td><td>2.5~4.1A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>2.2</td><td>(3)</td><td>4.4A</td><td>3.4~5.4A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>4</td><td>(5 1/2)</td><td>6.5A</td><td>5~8A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>4.5</td><td>(6)</td><td>9A</td><td>7~11A</td><td></td><td rowspan="9">S-P50T</td><td rowspan="10">S-P60T</td><td rowspan="11">S-P80T</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>5.5</td><td>(7 1/2)</td><td rowspan="2">11A</td><td rowspan="2">9~13A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>7.5</td><td>(10)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>11</td><td>(15)</td><td>15A</td><td>12~18A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>12</td><td>(16)</td><td rowspan="2">21A</td><td rowspan="2">17~24A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>15</td><td>(20)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>19</td><td>(25)</td><td>28A</td><td>22~34A</td><td></td><td></td><td></td><td></td><td></td><td></td><td rowspan="7">S-P100T</td><td rowspan="8">S-P125T</td><td rowspan="9">S-P150T</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>22</td><td>(30)</td><td>33A</td><td>28~38A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>30</td><td>(40)</td><td>40A</td><td>32~48A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>37</td><td>(50)</td><td>54A</td><td>43~65A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>45</td><td>(60)</td><td rowspan="2">67A</td><td rowspan="2">54~80A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>50</td><td>(70)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td rowspan="5">S-P200T</td><td rowspan="6">S-P220T</td><td></td><td></td><td></td></tr>
<tr><td>60</td><td>(80)</td><td>80A</td><td>60~100A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td rowspan="7">S-P300T</td><td rowspan="8">S-P400T</td><td></td></tr>
<tr><td>75</td><td>(100)</td><td>105A</td><td>80~130A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>90</td><td>(125)</td><td>130A</td><td>100~160A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>110</td><td>(150)</td><td rowspan="2">160A</td><td rowspan="2">120~200A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>132</td><td>(180)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>150</td><td>(200)</td><td>200A</td><td>150~250A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td rowspan="4">M-600C</td></tr>
<tr><td>160</td><td>(220)</td><td>260A</td><td>200~320A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>220</td><td>(330)</td><td>350A</td><td>260~440A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>315</td><td>(420)</td><td>500A</td><td>400~600A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

Selection Table ◆ λ-Δ Starter

Heater selection table (A)	Motor output kW (HP)				TH selection of λ-Δ Starter																	
	A		B		21		35		50		60		80		100		125		150		220	
	200~220V		380~440V		A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
6.5	1.5	(2)	3	(4)	TH-P20	TH-P20																
9	1.9	(2 1/2)	3.7	(5)																		
9	2.2	(3)	4.5	(6)																		
11	3	(4)	5.5	(7 1/2)			TH-P60	TH-P60	TH-P60	TH-P60												
15	3.7	(5)	7.5	(10)																		
15	4.5	(6)	10	(13)																		
21	5.5	(7 1/2)	11	(15)																		
28	6.5	(8)	14	(19)	TH-P20TA	TH-P20TA																
28	7.5	(10)	15	(20)																		
33	9	(12 1/2)	19	(25)																		
40	11	(15)	22	(30)							TH-P120	TH-P120	TH-P120	TH-P120	TH-P120	TH-P120						
40	14	(19)	26	(35)																		
54	15	(20)	30	(40)																		
67	19	(25)	37	(50)			TH-P60TA		TH-P60TA	TH-P60TA												
80	22	(30)	45	(60)													TH-P220T	TH-P220T	TH-P220T	TH-P220T	TH-P400T	TH-P400T
80	25	(34)	50	(67)																		
105	30	(40)	55	(75)							TH-P120TA	TH-P120TA	TH-P120TA	TH-P120TA	TH-P120TA	TH-P120TA						
130	37	(50)	75	(100)																		
160	45	(60)	90	(125)																		
200	55	(75)	110	(150)																		
200	65	(85)	132	(200)																		
260	75	(100)	150	(200)															TH-P400T			
350	110	(150)	200	(260)																		

Modular Contactor

Model	Modular Contactors	Standard	SMC16-S		SMC25-S		SMC40-S		SMC63-S	
		Manual	SMC16-M		SMC25-M		SMC40-M		SMC63-M	
		Pole	2P	4P	2P	4P	2P	4P	2P	4P
Rated insulation voltage (Ui) IEC		(V)	500	500	500	500	500	500	500	500
Rated operational voltage (Ue) IEC / UL		(V)	230	400	250	400	250	400	250	400
Rated impulse withstand voltage (Uimp) IEC		(kV)	4	4	4	4	4	4	4	4
Rated operational current		AC-7a (A)	16	16	25	25	40	40	63	63
		AC-7b (A)	6	6	8.5	8.5	15	15	20	20
Continuous Current (Ith)		(A)	25	25	25	25	63	63	63	63
Mechanical Life (Thousand)		(Thousand)	100							
Electrical Life AC-7a (Thousand)		(Thousand)	10							
IP Level		-	IP20							

Accessory

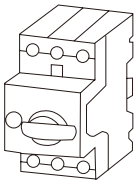
·Side mount auxiliary contacts

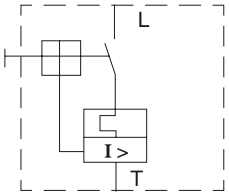
Model	Contacts	Voltage
smAX11	1NO1NC	500V

·9mm spacing block

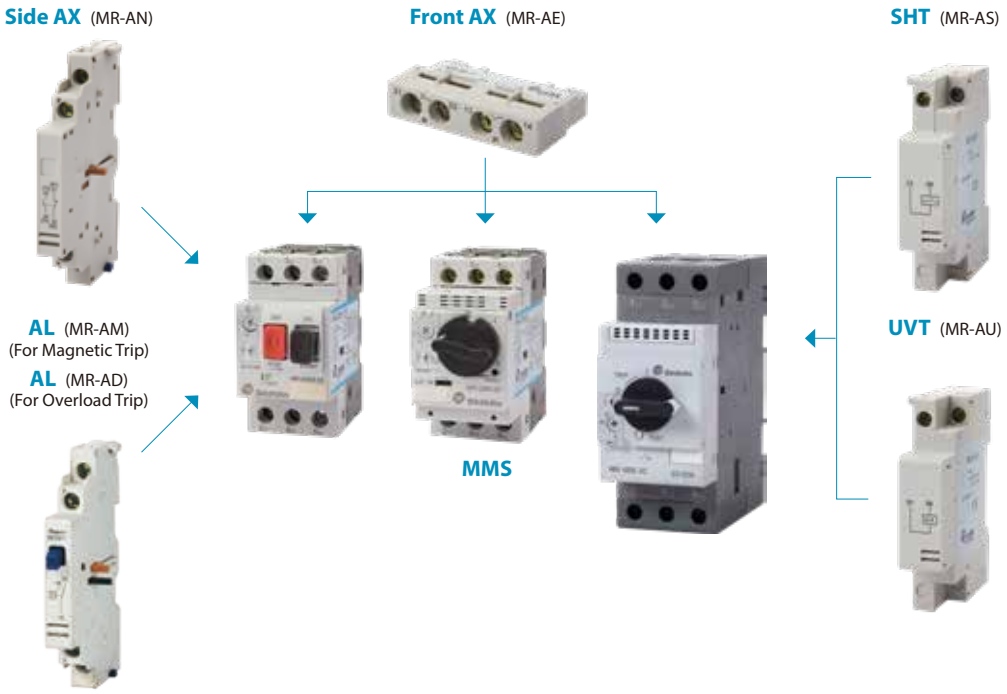
Model	Usage
smSB	When modular contactor is installed in distribution box, attach spacing block on both side of the contactor for heat radiation

MANUAL MOTOR STARTER





Power factor AC-3		Rated current	Overload adjustable range	Tripping current (A)	Type	
220V (kW)	400V (kW)	In (A)	Ie (A)	Id ± 20%	Button	Rotary
—	—	0.16	0.1-0.16	1.92	MR-32S-0.16	MR-32R-0.16
—	—	0.25	0.16-0.25	3	MR-32S-0.25	MR-32R-0.25
—	—	0.4	0.25-0.4	4.8	MR-32S-0.4	MR-32R-0.4
—	—	0.63	0.4-0.63	7.56	MR-32S-0.63	MR-32R-0.63
—	—	1	0.63-1	12	MR-32S-1	MR-32R-1
—	0.37	1.6	1-1.6	19.2	MR-32S-1.6	MR-32R-1.6
0.37	0.75	2.5	1.6-2.5	30	MR-32S-2.5	MR-32R-2.5
0.55	1.5	4	2.5-4	48	MR-32S-4	MR-32R-4
1.1	2.2	6.3	4-6.3	75.6	MR-32S-6.3	MR-32R-6.3
2.2	4	10	6-10	120	MR-32S-10	MR-32R-10
2.2	5.5	14	9-14	168	MR-32S-14	MR-32R-14
3.7	7.5	18	13-18	216	MR-32S-18	MR-32R-18
5.5	11	23	17-23	276	MR-32S-23	MR-32R-23
5.5	11	25	20-25	300	MR-32S-25	MR-32R-25
7.5	15	32	24-32	384	MR-32S-32	MR-32R-32
3	5.5	13	9-13	182	-	MR-65R-13
4	7.5	18	12-18	252	-	MR-65R-18
5.5	11	25	17-25	350	-	MR-65R-25
7.5	15	32	23-32	448	-	MR-65R-32
7.5	18.5	40	30-40	560	-	MR-65R-40
11	22	50	37-50	700	-	MR-65R-50
15	30	65	48-65	910	-	MR-65R-65



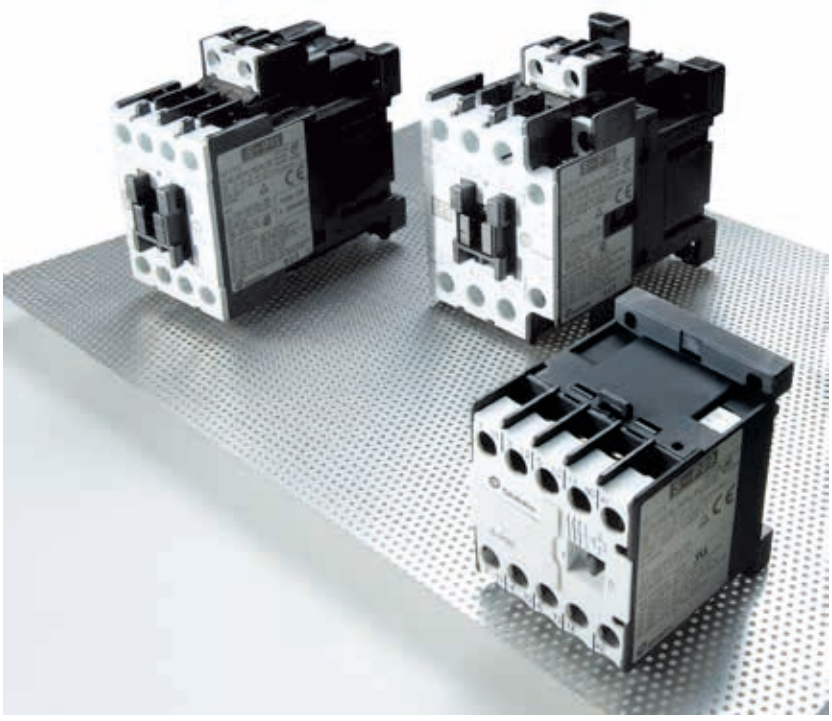
Shihlin Electric

CIRCUIT BREAKER (MCCB / ELCB / EMCCB / MCB)

Breaker & Switchgear System

AIR CIRCUIT BREAKER

AUTOMATIC TRANSFER SWITCHES



MAGNETIC CONTACTOR / SWITCH (CONTACTOR / MS / MMS)

SURGE PROTECTIVE DEVICE

SMART METER

INVERTER

LOW VOLTAGE POWER CAPACITORS

SHIHLIN ELECTRIC & ENGINEERING

MAGNETIC CONTACTOR / SWITCH (CONTACTOR/ MS/ MMS), CIRCUIT BREAKER (MCCB/ ELCB/ EMCCB/ MCB), AIR CIRCUIT BREAKER, AUTOMATIC TRANSFER SWITCHES, SURGE PROTECTIVE DEVICE, SMART METER, LOW VOLTAGE POWER CAPACITORS, INVERTER

Breaker & switchgears overseas sales dept.
3F, No.9, Sec. 1, Chang-an E. Rd., Zhongshan Dist., Taipei City 10441, Taiwan
T. +886-2-2541-9822 F. +886-2-2581-2665
e-mail. b.export@seec.com.tw
http://circuit-breaker.seec.com.tw

Headquarters
16F, No.88, Sec. 6, Zhongshan N. Rd., Shilin Dist., Taipei City 11155, Taiwan
T. +886-2-2834-2662 F. +886-2-2836-6187
http://www.seec.com.tw

Distributor

B190904E.ALL-BO