TERASAKI
Innovators in Protection Technology

Low-Voltage Circuit Breakers

Selection Guide

TemPower2
TemBreak2

www.terasaki.co.jp

CATALOGUE No. '15-G90E-SEA

TERASAKI is always pleased to send you the world's top-class products.

Already for many decades TERASAKI has been internationally minded. This is proven by the number of certifications, authorizations and approvals by the world's leading organizations and authorities.
TERASAKI maintains the top position.
TERASAKI will exert its further efforts to attain more international quality recognition.

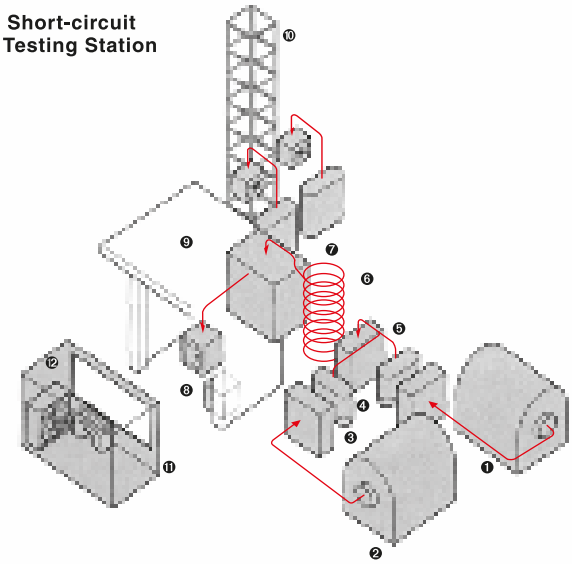
Certifications, Authorizations or Approvals by World's Leading Organizations

Air Circuit Breakers	Moulded Case Circuit Breakers
ASTA/U.K. ASTA CERTIFICATION SERVICES	**ASTA/U.K.** ASTA CERTIFICATION SERVICES
SECV/Australia State Electricity Commission Of Victoria	**SECV/Australia** State Electricity Commission Of Victoria
LR/U.K. Lloyd's Register of Shipping	**LR/U.K.** Lloyd's Register of Shipping
BV/France Bureau Veritas	**BV/France** Bureau Veritas
GL/Germany Germanischer Lloyd	**GL/Germany** Germanischer Lloyd
AB/U.S.A. American Bureau of Shipping	**AB/U.S.A.** American Bureau of Shipping
NK/Japan Nippon Kaiji Kyokai	**NK/Japan** Nippon Kaiji Kyokai

Based Standards

Air Circuit Breakers	Moulded Case Circuit Breakers
IEC 60947-2 International Electrotechnical Commission	**IEC 60947-2** International Electrotechnical Commission
BS EN 60947 Part 2/U.K. British Standard	**BS EN 60947 Part 2/U.K.** British Standard
VDE 0660 Part 101/Germany Verband Deutscher Elektrotechnicker	**VDE 0660 Part 101/Germany** Verband Deutscher Elektrotechnicker
NEMA PUB NO. SG3/U.S.A. National Electrical Manufacturers Association	**CEI EN 60947 Part 101/Geramany** Italian Standard
ANSI C37. 13/U.S.A. American National Standard Institute	**NEMA AB-1/U.S.A.** National Electrigal Manufacturers Association
JIS C8372/Japan Japanese Industrial Standard	**JIS C8370/Japan** Japanese Industrial Standard
JEC-160/Japan Japanese Electrical Committee	

• Short-circuit Testing Station



❶ Short-circuit test generator No.1
❷ Short-circuit test generator No. 2
❸ Voltage change device
❹ Back-up breaker
❺ Making switch
❻ Reactors, Resistance
❼ Step-down 3⌀ transformer
❽ 800V d.c. short-circuit testing equipment
❾ Pit
❿ Impulse generator
⓫ Control room
⓬ Computerized control equipment

Combined Short-circuit Capacity (MVA) When TwoShort-circuit Test Generators (No.1 and No.2) are Paralleled.

Time after short-circuit (Cycle)	Sym. 3⌀ R.M.S.
0	1060
1/2	950
1	860
3	710


Short-circuit test generator No.1


Short-circuit test generator No.2

TYPE TESTS on every lot

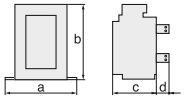
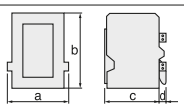
★Construction test
★Operation test
★Tripping test
★Overload test
★Overshooting test
★Temperature rise test
★Endurance test
★Insulation resistance test
★Withstand voltage test
★Short-circuit test
★Flexible cord protection test
★Short-circuit making capacity test
★Short-time withstand current test

RELIABILITY TESTS

★Vibration test
★Mechanical operation test
★Rust proof test
★Mechanical impact test
★Heat-shock test
★Gas proof test
★Aging test

Air Circuit Breakers

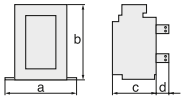
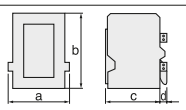
AR Standard Series

Series			Standard		Standard		High fault		Standard		High fault		High fault		Standard		High fault	
AMPERE RATING(A)			800		1250		1250		1600		1600		1600		2000		2000	
TYPE			**AR208S**		**AR212S**		**AR212H**		**AR216S**		**AR216H**		**AR316H**		**AR220S**		**AR220H**	
RATED CURRENT (max) [I_n](A)	JIS⑫,IEC, EN, AS		800		1250		1250		1600		1600		1600		2000		2000	
① ②	NEMA, ANSI		800		1250		1250		1540		1600		1600		2000		2000	
	Marine		800		1250		1250		1600		1600		1600		2000		2000	
NEUTRAL POLE AMPERES FRAME (A)			800		1250		1250		1600		1600		1600		2000		2000	
NUMBER OF POLES	③ ④		3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4
RATED PRIMARY CURRENT OF OVER–CURRENT RELEASE [I_{CT}](A)			200		400		200		400		1600		200		400		2000	
			400		800		400		800				400		800			
• for general feeder circuit use			800		1250		800		1250				800		1250			
							1250		1600				1250		1600			
													1600		2000			
RATED CURRENT OF OVER–CURRENT RELEASE (A)			100≦I_n≦200		200≦I_n≦400		100≦I_n≦200		200≦I_n≦400		800≦I_n≦1600		100≦I_n≦200		200≦I_n≦400		1000≦I_n≦2000	
• for generator protection use			200＜I_n≦400		400＜I_n≦800		200＜I_n≦400		400＜I_n≦800				200＜I_n≦400		400＜I_n≦800			
[I_n] is generator rated current.			400＜I_n≦800		630＜I_n≦1250		400＜I_n≦800		630＜I_n≦1250				400＜I_n≦800		630＜I_n≦1250			
							630＜I_n≦1250		800＜I_n≦1600				630＜I_n≦1250		800＜I_n≦1600			
													800＜I_n≦1600		1000＜I_n≦2000			
AC RATED INSULATION VOLTAGE [U_i](V. 50/60Hz)			1000		1000		1000		1000		1000		1000		1000		1000	
RATED OPERATIONAL VOLTAGE [U_e](V. 50/60Hz)			690		690		690		690		690		690		690		690	
AC RATED BREAKING CAP [kA sym rms]/MAKING CAP [kA peak]																		
JIS⑫, IEC, EN, AS	AC	690V ⑤	50/105		50/105		55/121		50/105		55/121		85/187		50/105		55/121	
[I_{cs}= I_{cu}]		440V	65/143 ⑥		65/143 ⑥		80/176		65/143 ⑥		80/176		100/220		65/143 ⑥		80/176	
NEMA	AC	600V	42/96.6		42/96.6		42/96.6		42/96.6		42/96.6		50/115		42/96.6		42/96.6	
ANSI		480V	50/115		50/115		55/127		50/115		55/127		80/184		50/115		55/127	
		240V	65/149.5		65/149.5		80/184		65/149.5		80/184		100/230		65/149.5		80/184	
⑦	DC	600V ⑧	40/40		40/40		40/40		40/40		40/40		40/40		40/40		40/40	
		250V	40/40		40/40		40/40		40/40		40/40		40/40		40/40		40/40	
NK ⑨	AC	690V	50/115		50/115		55/128		50/115		55/128		85/201		50/115		55/128	
		450V	65/153 ⑥		65/153 ⑥		80/186		65/153 ⑥		80/186		100/233		65/153 ⑥		80/186	
LR, AB, ⑨	AC	690V	50/115		50/115		55/128		50/115		55/128		85/201		50/115		55/128	
GL, BV		450V	65/153 ⑥		65/153 ⑥		80/186		65/153 ⑥		80/186		100/233		65/153 ⑥		80/186	
RATED IMPULSE WITHSTAND VOLTAGE [U_{imp}](kV)			12		12		12		12		12		12		12		12	
RATED SHORT TIME WITHSTAND		1s	65		65		80		65		80		100		65		80	
CURRENT[I_{cw}][kA rms]		3s	50		50		55		50		55		75		50		55	
LATCHING CURRENT (kA)			65		65		65		65		65		85		65		65	
TOTAL BREAKING TIME (s)			0.03		0.03		0.03		0.03		0.03		0.03		0.03		0.03	
CLOSING OPERATION TIME																		
SPRING CHARGING TIME (s) max.			10		10		10		10		10		10		10		10	
CLOSE TIME (s) max.			0.08		0.08		0.08		0.08		0.08		0.08		0.08		0.08	
No. of operating cycles																		
Mechanical life	with maintenance		30000		30000		30000		30000		30000		25000		25000		30000	
	without maintenance		15000		15000		15000		15000		15000		12000		12000		15000	
Electrical life	without maintenance	AC460V	12000		12000		12000		12000		12000		10000		10000		12000	
		AC690V	10000		10000		10000		10000		10000		7000		7000		10000	
Draw-Out Body (kg)		⑪	45	51	45	51	46	52	46	52	46	52	56	68	46	52	46	52
Draw-Out Chassis (kg)		⑪	28	35	28	35	33	42	30	38	33	42	49	57	33	42	33	42
Total Draw-Out Weight (kg)		⑪	73	86	73	86	79	94	76	90	79	94	105	125	79	94	79	94
Fixed (kg)		⑪	53	59	53	59	54	60	54	60	54	60	80	92	54	60	54	60
OUTLINE DIMENSION (mm)																		
FIXED TYPE 		a	360	445	360	445	360	445	360	445	360	445	466	586	360	445	360	445
		b	460		460		460		460		460		460		460		460	
		c	290		290		290		290		290		290		290		290	
		d	75		75		75		75		75		75		75		75	
DRAW-OUT TYPE ⑩ 		a	354	439	354	439	354	439	354	439	354	439	460	580	354	439	354	439
		b	460		460		460		460		460		460		460		460	
		c	345		345		345		345		345		345		345		345	
		d	40		40		40		40		40		40		40		40	

①: Values in open air at 40°C (45°C for marine applications).
②: Values of AR208S, AR212S, AR216S for draw-out type with horizontal terminals, Values of the other ACBs for draw-out type with vertical terminals.
③: For 2 pole ACBs use outside poles of 3 pole ACB.
④: 4poles ACBs without Neutral phases protection can not apply IT earthing system.
⑤: Contact TERASAKI for the details.
⑥: For 500V AC.
⑦: Please contact TERASAKI for DC application.
⑧: 3 poles in series should be applied for 600V DC.
⑨: Applicable to only 3 pole ACBs.
⑩: For vertical terminals or horizontal terminals.
⑪: These weights are based on normal specifications with the OCR and standard accessories.
⑫: Comply with JIS C 8201-2-1 Ann.1 Ann.2
⑬: Being or will be applied.
⑭: Values for ACBs with INST. 100/220kA for ACBs with MCR.
※: Contact TERASAKI for the ratings.

Note: When the INST trip function is set to NON, the MCR function should be enabled, otherwise, the rated breaking capacity is reduced to the rated latching current.

AR Standard Series

Series			High fault		High fault	Standard		High fault	Standard		High fault		Standard		Standard	
AMPERE RATING(A)			2000		2000	2500		2500	3200		3200		4000		4000	
TYPE			**AR320H**		**AR420H**	**AR325S**		**AR325H**	**AR332S**		**AR332H**		**AR440SB**		**AR440S**	
RATED CURRENT (max) [I_n](A)	JIS⑫,IEC, EN, AS		2000		2000	2500		2500	3200		3200		4000		4000	
① ②	NEMA, ANSI		2000		※	2500		2500	3200		3200		3310		3700	
	Marine		2000		2000	2500		2500	3200		3200		4000		4000	
NEUTRAL POLE AMPERES FRAME (A)			2000		2000	2500		2500	3200		3200		4000		4000	
NUMBER OF POLES	③ ④		3	4	3	3	4	3	3	4	3	4	3	4	3	4
RATED PRIMARY CURRENT OF OVER–CURRENT RELEASE [I_{CT}](A) • for general feeder circuit use			2000		800 2000	2500		2500	3200		3200		4000		4000	
RATED CURRENT OF OVER–CURRENT RELEASE (A) • for generator protection use [I_n] is generator rated current.			1000≦I_n≦2000		400≦I_n≦800 1000≦I_n≦2000	1250≦I_n≦2500		1250≦I_n≦2500	1600≦I_n≦3200		1600≦I_n≦3200		2000≦I_n≦4000		2000≦I_n≦4000	
AC RATED INSULATION VOLTAGE [U_i](V. 50/60Hz)			1000		1000	1000		1000	1000		1000		1000		1000	
RATED OPERATIONAL VOLTAGE [U_e](V. 50/60Hz)			690		690	690		690	690		690		690		690	
AC RATED BREAKING CAP [kA sym rms]/MAKING CAP [kA peak]																
JIS⑫, IEC, EN, AS		AC 690V ⑤	85/187		75/165	65/143		85/187	65/143		85/187		85/187		75/165	
[I_{cs}= I_{cu}]		440V	100/220		120/264 ⑭	85/187 ⑥		100/220	85/187 ⑥		100/220		100/220		100/220	
NEMA		AC 600V	50/115		65/149.5	50/115		50/115	50/115		50/115		50/115		65/149.5	
ANSI		480V	80/184		75/172.5	65/149.5		80/184	65/149.5		80/184		80/184		75/172.5	
		240V	100/230		120/276	85/195.5		100/230	85/195.5		100/230		100/230		100/230	
⑦		DC 600V ⑧	40/40		40/40	40/40		40/40	40/40		40/40		40/40		40/40	
		250V	40/40		40/40	40/40		40/40	40/40		40/40		40/40		40/40	
NK ⑨		AC 690V	85/201		⑬	65/153		85/201	65/153		85/201		⑬		75/179	
		450V	100/233		⑬	85/201 ⑥		100/233	85/201 ⑥		100/233		⑬		100/245	
LR, AB, ⑨		AC 690V	85/201		⑬	65/153		85/201	65/153		85/201		⑬		75/179	
GL, BV		450V	100/233		⑬	85/201 ⑥		100/233	85/201 ⑥		100/233		⑬		100/245	
RATED IMPULSE WITHSTAND VOLTAGE [U_{imp}](kV)			12		12	12		12	12		12		12		12	
RATED SHORT TIME WITHSTAND		1s	100		100	85		100	85		100		100		100	
CURRENT[I_{cw}][kA rms]		3s	75		85	65		75	65		75		75		85	
LATCHING CURRENT (kA)			85		100	85		85	85		85		85		100	
TOTAL BREAKING TIME (s)			0.03		0.03	0.03		0.03	0.03		0.03		0.03		0.03	
CLOSING OPERATION TIME																
SPRING CHARGING TIME (s) max.			10		10	10		10	10		10		10		10	
CLOSE TIME (s) max.			0.08		0.08	0.08		0.08	0.08		0.08		0.08		0.08	
No. of operating cycles																
Mechanical life	with maintenance		25000		15000	20000		20000	20000		20000		15000		15000	
	without maintenance		12000		8000	10000		10000	10000		10000		8000		8000	
Electrical life	without maintenance	AC460V	10000		3000	7000		7000	7000		7000		3000		3000	
		AC690V	7000		2500	5000		5000	5000		5000		2500		2500	
Draw-Out Body (kg)		⑪	56	68	71	56	68	56	68	56	68	56	68	58	71	71	92
Draw-Out Chassis (kg)		⑪	49	57	76	49	57	49	57	49	57	49	57	68	87	68	84
Total Draw-Out Weight (kg)		⑪	105	125	147	105	125	105	125	105	125	105	125	126	158	139	176
Fixed (kg)		⑪	80	92	—	80	92	80	92	80	92	80	92	—	—	—	—
OUTLINE DIMENSION (mm)																	
FIXED TYPE 		a	466	586	—	466	586	466	586	466	586	466	586	—	—	—	—
		b	460		—	460		460		460		460		—		—	
		c	290		—	290		290		290		290		—		—	
		d	75		—	75		75		75		75		—		—	
DRAW-OUT TYPE ⑩ 		a	460	580	631	460	580	460	580	460	580	460	580	460	580	631	801
		b	460		460	460		460		460		460		460		460	
		c	345		375	345		345		345		345		345		375	
		d	40		53	40		40		40		40		140		53	

①: Values in open air at 40°C (45°C for marine applications).
②: Values of AR208S, AR212S, AR216S for draw-out type with horizontal terminals, Values of the other ACBs for draw-out type with vertical terminals.
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⑬: Being or will be applied.
⑭: Values for ACBs with INST. 100/220kA for ACBs with MCR.
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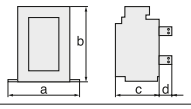
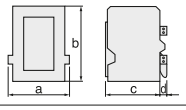
Note: When the INST trip function is set to NON, the MCR function should be enabled, otherwise, the rated breaking capacity is reduced to the rated latching current.

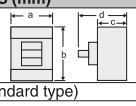
AR Standard Series

Series			High fault	Standard	Standard	High fault
AMPERE RATING(A)			4000	5000	6300	6300
TYPE			**AR440H**	**AR650S**	**AR663S**	**AR663H**
RATED CURRENT (max) [I_n](A) ① ②	JIS⑫,IEC, EN, AS		4000	5000	6300	6300
	NEMA, ANSI		3700	4700	5680	5680
	Marine		4000	5000	6300	6300
NEUTRAL POLE AMPERES FRAME (A)			4000	5000	6300	6300
NUMBER OF POLES ③ ④			3	3 4	3 4	3 4
RATED PRIMARY CURRENT OF OVER–CURRENT RELEASE [I_{CT}](A) • for general feeder circuit use			4000	5000	6300	5000 6300
RATED CURRENT OF OVER–CURRENT RELEASE (A) • for generator protection use [I_n] is generator rated current.			2000≦I_n≦4000	2500≦I_n≦5000	3150≦I_n≦6300	2500≦I_n≦5000 3150≦I_n≦6300
AC RATED INSULATION VOLTAGE [U_i](V. 50/60Hz)			1000	1000	1000	1000
RATED OPERATIONAL VOLTAGE [U_e](V. 50/60Hz)			690	690	690	690
AC RATED BREAKING CAP [kA sym rms]/MAKING CAP [kA peak]						
JIS⑫, IEC, EN, AS [I_{cs}= I_{cu}]	AC	690V ⑤	75/165	85/187	85/187	85/187
		440V	120/264 ⑭	120/264	120/264	135/297
NEMA ANSI	AC	600V	65/149.5	65/149.5	65/149.5	65/149.5
		480V	75/172.5	80/184	80/184	80/184
		240V	120/276	100/230	100/230	100/230
⑦	DC	600V ⑧	40/40	40/40	40/40	40/40
		250V	40/40	40/40	40/40	40/40
NK ⑨	AC	690V	⑬	85/201 ⑬	85/201 ⑬	85/201 ⑬
		450V	⑬	120/287 ⑬	120/287 ⑬	138/322 ⑬
LR, AB, ⑨ GL, BV	AC	690V	⑬	85/201 ⑬	85/201 ⑬	85/201 ⑬
		450V	⑬	120/287 ⑬	120/287 ⑬	138/322 ⑬
RATED IMPULSE WITHSTAND VOLTAGE [U_{imp}](kV)			12	12	12	12
RATED SHORT TIME WITHSTAND CURRENT[I_{cw}][kA rms]		1s	100	120	120	135
		3s	85	85	85	85
LATCHING CURRENT (kA)			100	120	120	120
TOTAL BREAKING TIME (s)			0.03	0.05	0.05	0.05
CLOSING OPERATION TIME						
SPRING CHARGING TIME (s) max.			10	10	10	10
CLOSE TIME (s) max.			0.08	0.08	0.08	0.08
No. of operating cycles						
Mechanical life	with maintenance		15000	10000	10000	10000
	without maintenance		8000	5000	5000	5000
Electrical life	without maintenance	AC460V	3000	1000	1000	1000
		AC690V	2500	500	500	500
Draw-Out Body (kg)		⑪	71	125 160	140 180	140 180
Draw-Out Chassis (kg)		⑪	76	75 100	80 105	80 105
Total Draw-Out Weight (kg)		⑪	147	200 260	220 285	220 285
Fixed (kg)		⑪	—	— —	— —	— —
OUTLINE DIMENSION (mm)						
FIXED TYPE 		a	—	— —	— —	— —
		b	—	—	—	—
		c	—	—	—	—
		d	—	—	—	—
DRAW-OUT TYPE ⑩ 		a	631	799 1034	799 1034	799 1034
		b	460	460	460	460
		c	375	380	380	380
		d	53	60	60	60

①: Values in open air at 40°C (45°C for marine applications).
②: Values of AR208S, AR212S, AR216S for draw-out type with horizontal terminals, Values of the other ACBs for draw-out type with vertical terminals.
③: For 2 pole ACBs use outside poles of 3 pole ACB.
④: 4poles ACBs without Neutral phases protection can not apply IT earthing system.
⑤: Contact TERASAKI for the details.
⑥: For 500V AC.
⑦: Please contact TERASAKI for DC application.
⑧: 3 poles in series should be applied for 600V DC.
⑨: Applicable to only 3 pole ACBs.
⑩: For vertical terminals or horizontal terminals.
⑪: These weights are based on normal specifications with the OCR and standard accessories.
⑫: Comply with JIS C 8201-2-1 Ann.1 Ann.2
⑬: Being or will be applied.
⑭: Values for ACBs with INST. 100/220kA for ACBs with MCR.
※: Contact TERASAKI for the ratings.

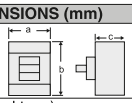
Note: When the INST trip function is set to NON, the MCR function should be enabled, otherwise, the rated breaking capacity is reduced to the rated latching current.

Moulded Case Circuit Breakers (New Compact Breakers)

Frame Size [A]		100	125	160	160	160	250	250
Type		**E100SF**	**S125-SF**	**E160-SF**	**S160SCF**	**S160SF**	**E250SF**	**S250SF**
Number of Poles		2 3	2 3 4	2 3 4	2 3 4	2 3 4	3 4	3 4
■ **RATED CURRENT** (In) [A] at 40˚C (45˚C for marine applications)		10 30 60 15 40 75 20 50 100	15 40 75 20 50 100 30 60 125	15 40 75 20 50 100 30 60 125 160	15 40 75 20 50 100 30 60 125 160	15 40 75 20 50 100 30 60 125 160	125 225 150 250 175 200	125 225 150 250 175 200
			Marine					
Rated impulse withstand voltage (Uimp) [kV]		6	8	8	8	8	8	8
Rated insulation voltage (Ui) [VAC]		690	690	690	690	690	690	690
■ **AC RATED BREAKING CAPACITY** [kA sym. rms.]								
JIS C 8370	550V	7.5	—	—	—	—	—	—
	450V	10	25	—	—	—	—	—
	220V	25	—	—	—	—	—	—
IEC 60947-2 lcu/lcs	690V	—	—	—	—	6/3	—	4/2
EN 60947-2	500V	7.5/3.8	12/6	6/3	7.5/4	10/7.5	10/7.5	25/13
	440V	10/5	25/13	10/5	15/7.5	25/13	15/12	30/15
	415V	10/5	30/15	16/8	25/13	40/20	25/19	40/20
	380V	16/8	30/15	16/8	25/13	40/20	25/19	40/20
	240V	25/13	50/25	25/13	35/18	50/25	35/27	85/43
■ **DC RATED BREAKING CAPACITY** [kA] ①	250V	7.5/3.8	25/13	13/7	20/10	25/13	15/12	25/13
	125V	15/7.5	40/20	20/10	30/15	40/20	25/19	40/20
Rated short time current (Icw) [kA. rms.]		—	—	—	—	—	—	—
Protection								
Adjustable thermal, adjustable magnetic		—	—	—	—	—	—	—
Fixed thermal, fixed magnetic		■	■	■	■	■	■	■
Microprocesor		—	—	—	—	—	—	—
Utilization Category		A	A	A	A	A	A	A
■ **DIMENSIONS (mm)**								
	a	50 75	50 75 100	50 75 100	50 75 100	50 75 100	105 140	105 140
	b	130	130	130	130	130	165	165
	c	68	68	68	68	68	68	68
	d	87	95	95	95	95	95	95
Weight (kg) (standard type)		0.48 0.74	0.6 0.8 1.0	0.6 0.8 1.0	0.6 0.8 1.0	0.6 0.8 1.0	1.5 1.9	1.5 1.9

TemBreak

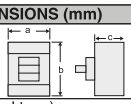
Moulded Case Circuit Breakers

Frame Size (A)		100	125	100	125	125	100	125
Type		**S100NF**	**S125NF**	**S100GF**	**S125GF**	**S125RF**	**H100NF**	**H125NF**
Number of Poles		2 3 4	2 3 4	2 3 4	2 3 4	3 4	3 4	3 4
■ **RATED CURRENT** (In) [A] at 40˚C (45˚C for marine applications)		15 50 20 60 30 75 40 100	125	15 50 20 60 30 75 40 100	125	15 50 20 60 30 75 40 100 125	15 50 20 60 30 75 40 100	125
Rated impulse withstand voltage Uimp [kV]		8	8	8	8	8	8	8
AC rated insulation voltage (Ui) [VAC]		690	690	690	690	690	690	690
■ **AC RATED BREAKING CAPACITY** sym. r.m.s. [kA]								
JIS C 8370	550V	—	—	—	—	—	—	—
	460V	—	—	—	—	65	—	—
	220V	—	—	—	—	100	—	—
IEC 60947-2 lcu/lcs	690V	6/6	6/6	6/6	6/6	20/15	20/15	20/15
EN 60947-2	500V	22/22	22/22	25/22	25/22	35/35	45/45	45/45
	440V	25/25	25/25	50/25	50/25	65/65	120/80	120/80
	415V	30/30	30/30	65/33	65/33	65/65	125/85	125/85
	380V	30/30	30/30	65/33	65/33	65/65	125/85	125/85
	240V	50/50	50/50	85/85	85/85	100/100	150/150	150/150
■ **DC RATED BREAKING CAPACITY** [kA]	250V	25/19	25/19	40/40	40/40	40/40	40/40	40/40
	125V	40/30	40/30	40/40	40/40	40/40	40/40	40/40
Rated short time current r.m.s. [kA] [Icw]		—	—	—	—	—	—	—
Protection								
Adjustable thermal, adjustable magnetic		—	—	—	—	—	—	—
Fixed thermal, adjustable magnetic		—	—	—	—	—	—	—
Fixed thermal, fixed magnetic		■	■	■	■	■	■	■
Microprocesor		—	—	—	—	—	—	—
Utilization Category		A	A	A	A	A	A	A
■ **OUTLINE DIMENSIONS (mm)**								
	a	60 90 120	60 90 120	60 90 120	60 90 120	105 140	105 140	105 140
	b	155	155	155	155	165	165	165
	c	68	68	68	68	107	103	103
Weight (kg) (standard type)		0.7 1.1 1.4	0.7 1.1 1.4	0.7 1.1 1.4	0.7 1.1 1.4	2.4 3.2	2.4 3.2	2.4 3.2

Note: DC rating available on request.

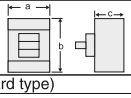
TemBreak

Moulded Case Circuit Breakers

Frame Size (A)			100		125		225		250		225		250		225	
Type			**L100NF**		**L125NF**		**S225NF**		**S250NF**		**S225GF**		**S250GF**		**S225RF**	
Number of Poles			3	4	3	4	3	4	3	4	3	4	3	4	3	4
■ **RATED CURRENT** (In) [A] at 40˚C (45˚C for marine applications)			15 50 20 60 30 75 40 100		125		125 200 150 225 175		250		125 200 150 225 175		250		125 200 150 225 175	
Rated impulse withstand voltage Uimp [kV]			8		8		8		8		8		8		8	
AC rated insulation voltage (Ui) [VAC]			690		690		690		690		690		690		690	
■ **AC RATED BREAKING CAPACITY** sym. r.m.s. [kA]																
JIS C 8370		550V	—		—		—		—		—		—		—	
		460V	—		—		—		—		—		—		—	
		220V	—		—		—		—		—		—		—	
IEC 60947-2	Icu/Ics	690V	25/20		25/20		7.5/7.5		7.5/7.5		7.5/7.5		7.5/7.5		20/15	
EN 60947-2		500V	65/65		65/65		25/25		25/25		25/25		25/25		35/35	
		440V	180/135		180/135		25/25		25/25		50/25		50/25		65/65	
		415V	200/150		200/150		35/35		35/35		65/35		65/35		65/65	
		380V	200/150		200/150		35/35		35/35		65/35		65/35		65/65	
		240V	40/40		40/40		65/65		65/65		85/85		85/85		100/100	
■ **DC RATED BREAKING CAPACITY** [kA]		250V	40/40		40/40		40/40		40/40		40/40		40/40		40/40	
		125V					40/40		40/40		40/40		40/40		40/40	
Rated short time current r.m.s. [kA] [Icw]			—		—		—		—		—		—		—	
Protection																
Adjustable thermal, adjustable magnetic			—		—		—		—		—		—		—	
Fixed thermal, adjustable magnetic			—		—		—		—		—		—		—	
Fixed thermal, fixed magnetic			■		■		■		■		■		■		■	
Microprocesor			—		—		—		—		—		—		—	
Utilization Category			A		A		A		A		A		A		A	
■ **OUTLINE DIMENSIONS (mm)**																
		a	105	140	105	140	105	140	105	140	105	140	105	140	105	140
		b	165		165		165		165		165		165		165	
		c	103		103		68		68		68		68		107	
Weight (kg) (standard type)			2.4	3.2	2.4	3.2	1.5	1.9	1.5	1.9	1.5	1.9	1.5	1.9	2.4	3.2

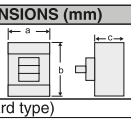
TemBreak

Moulded Case Circuit Breakers

Frame Size (A)			225		250		225		250		400		400		400	
Type			**H225NF**		**H250NF**		**L225NF**		**L250NF**		**S400CF**		**S400NF**		**S400GF**	
Number of Poles			3	4	3	4	3	4	3	4	3	4	3	4	3	4
■ **RATED CURRENT** (In) [A] at 40˚C (45˚C for marine applications)			125 225 150 175 200		250		125 225 150 175 200		250		125 225 400 150 250 175 300 200 350		125 225 400 150 250 175 300 200 350		125 225 400 150 250 175 300 200 350	
Rated impulse withstand voltage Uimp [kV]			8		8		8		8		8		8		8	
AC rated insulation voltage (Ui) [VAC]			690		690		690		690		690		690		690	
■ **AC RATED BREAKING CAPACITY** sym. r.m.s. [kA]																
JIS C 8370		550V	—		—		—		—		—		—		—	
		460V	—		—		—		—		—		—		—	
		220V	—		—		—		—		—		—		—	
IEC 60947-2	Icu/Ics	690V	20/15		20/15		25/20		25/20		15/15		20/15		20/15	
EN 60947-2		500V	45/45		45/45		65/65		65/65		22/22		30/30		30/30	
		440V	120/80		120/80		180/135		180/135		30/30		45/45		65/50	
		415V	125/85		125/85		200/150		200/150		36/36		50/50		70/50	
		380V	125/85		125/85		200/150		200/150		36/36		50/50		70/50	
		240V	150/150		150/150		200/150		200/150		50/50		85/85		100/85	
■ **DC RATED BREAKING CAPACITY** [kA]		250V	40/40		40/40		40/40		40/40		40/40		40/40		40/40	
		125V	40/40		40/40		40/40		40/40		40/40		40/40		40/40	
Rated short time current r.m.s. [kA] [Icw]			—		—		—		—		—		—		—	
Protection																
Adjustable thermal, adjustable magnetic			—		—		—		—		—		—		—	
Fixed thermal, adjustable magnetic			—		—		—		—		■		■		■	
Fixed thermal, fixed magnetic			■		■		■		■		—		—		—	
Microprocesor			—		—		—		—		—		—		—	
Utilization Category			A		A		A		A		A		A		A	
■ **OUTLINE DIMENSIONS (mm)**																
		a	105	140	105	140	105	140	105	140	140	185	140	185	140	185
		b	165		165		165		165		260		260		260	
		c	103		103		103		103		103		103		103	
Weight (kg) (standard type)			2.4	3.2	2.4	3.2	2.4	3.2	2.4	3.2	4.2	5.6	4.2	5.6	4.2	5.6

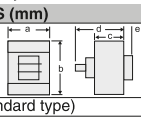
Note: DC rating available on request.

Moulded Case Circuit Breakers

Frame Size (A)			400				800				800										
Type			**S400PF**				**S800NF**				**S800RF**										
Number of Poles			3		4		3		4		3		4								
■ **RATED CURRENT** (In) [A] at 40˚C (45˚C for marine applications)			250 300 350		400		500 630		700 800		500 630		700 800								
Rated impulse withstand voltage Uimp [kV]			8				8				8										
AC rated insulation voltage (Ui) [VAC]			690				690				690										
■ **AC RATED BREAKING CAPACITY** sym. r.m.s. [kA]																					
JIS C 8370		550V	—				—				—										
		460V	—				—				—										
		220V	—				—				—										
IEC 60947-2	Icu/Ics	690V	20/15				20/20				25/20										
EN 60947-2		500V	30/30				30/30				45/34										
		440V	80/80				45/45				65/50										
		415V	85/85				50/50				70/50										
		380V	85/85				50/50				70/50										
		240V	100/85				85/85				100/75										
■ **DC RATED BREAKING CAPACITY** [kA]		250V	40/40				50/50				50/50										
		125V	40/40				50/50				50/50										
Rated short time current r.m.s. [kA] [Icw]			—				—				—										
Protection																					
Adjustable thermal, adjustable magnetic			—				—				—										
Fixed thermal, adjustable magnetic			■				■				■										
Fixed thermal, fixed magnetic			—				—				—										
Microprocesor			—				—				—										
Utilization Category			A				A				A										
■ **OUTLINE DIMENSIONS (mm)**																					
		a	140		185		210		280		210		280								
		b	260				273				273										
		c	103				103				103										
Weight (kg) (standard type)			4.2		5.6		8.5		11.5		8.5		11.5								

TemBreak

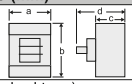
Moulded Case Circuit Breakers

Frame Size [A]			125				125				125				125				250		
Type			**S125NJ**				**S125GJ**				**S125RJ**				**H125NJ**				**S250NJ**		
Number of Poles			3		4		3		4		3		4		3		4		3		4
Utilization Category			A				A				A				A				A		
■ **RATED CURRENT** (In) [A] at 45˚C			20 32 50 63		100 125		20 32 50 63		100 125		20 32 50 63		100 125		20 32 50 63		100 125		160 200 250		
Rated insulation voltage (Ui) [VAC]			800				800				800				800				800		
■ **AC RATED BREAKING CAPACITY** [kA sym. rms.]																					
JIS C 8370		525V	22				25				35				45				25		
		440V	25				50				65				120				25		
		220V	50				85				100				150				65		
IEC 60947-2	Icu/Ics	690V	6/6				6/6				20				20/15				7.5/7.5		
EN 60947-2		525V	22/22				25/22				35/35				45/45				25/25		
		440V	25/25				50/25				65/65				120/80				25/25		
		415V	36/30				65/33				65/65				125/85				36/36		
		240V	50/50				85/85				100/100				150/150				65/65		
■ **DC RATED BREAKING CAPACITY** [kA] ①		250V	25				40				40				40				40		
Rated impulse withstand voltage (Uimp) [kV]			8				8				8				8				8		
Protection																					
Adjustable thermal, adjustable magnetic			■				■				■				■				■		
Fixed thermal, fixed magnetic			—				—				—				—				—		
Microprocesor			—				—				—				—				—		
Rated short time current (Icw) [kA. rms.]			—				—				—				—				—		
Utilization Category			A				A				A				A				A		
■ **DIMENSIONS (mm)**																					
		a	90		120		90		120		105		140		105		140		105		140
		b	155				155				165				165				165		
		c	68				68				103				103				68		
Weight (kg) (standard type)			1.1		1.4		1.1		1.4		2.4		3.2		2.4		3.2		1.5		1.9

Frame Size [A]			250				250				250				400						
Type			**S250GJ**				**S250RJ**				**H250NJ**				**S400CJ**						
Number of Poles			3		4		3		4		3		4		3		4				
Utilization Category			A				A				A				A						
■ **RATED CURRENT** (In) [A] at 45˚C			160 200 250				160 250				160 250				250 400						
Rated insulation voltage (Ui) [VAC]			800				800				800				800						
■ **AC RATED BREAKING CAPACITY** [kA sym. rms.]																					
JIS C 8370		525V	25				35				45				22						
		440V	50				65				120				30						
		220V	85				100				150				50						
IEC 60947-2	Icu/Ics	690V	7.5/7.5				20				20/15				15/15						
EN 60947-2		525V	25/25				35/35				45/45				22/22						
		440V	50/25				65/65				120/80				30/30						
		415V	65/36				65/65				125/85				36/36						
		240V	85/85				100/100				150/150				50/50						
■ **DC RATED BREAKING CAPACITY** [kA] ①		250V	40				40				40				40						
Rated impulse withstand voltage (Uimp) [kV]			8				8				8				8						
Protection																					
Adjustable thermal, adjustable magnetic			■				■				■				■						
Fixed thermal, fixed magnetic			—				—				—				—						
Microprocesor			—				—				—				—						
Rated short time current (Icw) [kA. rms.]			—				—				—				—						
Utilization Category			A				A				A				A						
■ **DIMENSIONS (mm)**																					
		a	105		140		105		140		105		140		140		185				
		b	165				165				165				260						
		c	68				103				103				103						
Weight (kg) (standard type)			1.5		1.9		2.4		3.2		2.4		3.2		4.2		5.6				

Note: DC rating available on request.

Moulded Case Circuit Breakers

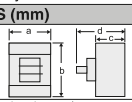
Frame Size [A]			400		400		400		400		630		630		800		800	
Type			**S400NJ**		**S400NE**		**S400GJ**		**S400GE**		**S630CE**		**S630GE**		**S800NJ**		**S800NE**	
Number of Poles			3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4
■ **RATED CURRENT** (In) [A] at 40˚C			250 400		250 400		250 400		250 400		630		630		630 800		630 800	
Rated impulse withstand voltage (Uimp) [kV]			8		8		8		8		8		8		8		8	
Rated insulation voltage (Ui) [VAC]			800		800		800		800		800		800		800		800	
■ **AC RATED BREAKING CAPACITY** [kA sym. rms.]																		
JIS C 8370		525V	30		30		30		30		30		30		30		30	
		440V	45		45		65		65		45		65		45		45	
		220V	85		85		100		100		85		100		85		85	
IEC 60947-2	Icu/Ics	690V	20/15		20/15		20/15		20/15		20/15*		20/15*		20/20*		20/20*	
EN 60947-2		525V	30/30		30/30		30/30		30/30		30/30		30/30		30/30		30/30	
		440V	45/45		45/45		65/50		65/50		45/45		65/50		45/45		45/45	
		415V	50/50		50/50		70/50		70/50		50/50		70/50		50/50		50/50	
		240V	85/85		85/85		100/85		100/85		85/85		100/85		85/85		85/85	
■ **DC RATED BREAKING CAPACITY** [kA] ①		250V	40		—		40		—		—		—		50		—	
Rated short time current (Icw) [kA. rms.]	0.3 Seconds		—		5		—		5		—		—		—		10	
Protection																		
Adjustable thermal, adjustable magnetic			■		—		■		—		—		—		■		—	
Fixed thermal, fixed magnetic			—		—		—		—		—		—		—		—	
Microprocesor			—		■		—		■		■		■		—		■	
Utilization Category			A		B		A		B		A		A		A		B	
■ **DIMENSIONS (mm)**																		
		a	140	185	140	185	140	185	140	185	140	185	140	185	210	280	210	280
		b	260		260		260		260		260		260		273		273	
		c	103		103		103		103		103		103		103		103	
Weight (kg) (standard type)			4.2	5.6	4.3	5.7	4.2	5.6	4.3	5.7	5.0	6.5	5.0	6.5	8.5	11.5	1*	2*

* 1) 8.7kg/630A, 9.1kg/800A
2) 11.9kg/630A, 12.3kg/800A
3) 13.3kg/630A, 14.8kg/800A
4) 16.8kg/630A, 18.8kg/800A

* MCCB cannot be used in IT system at this voltage

TemBreak

Moulded Case Circuit Breakers

Frame Size [A]			800		1000		1000		1250		1250		1600		1600			
Type			**H800NE**		**S1000SE**		**S1000NE**		**S1250NE**		**S1250GE**		**S1600SE**		**S1600NE**			
Number of Poles			3	4	3	4	3	4	3	4	3	4	3	4	3	4		
■ **RATED CURRENT** (In) [A] at 40˚C			630 800		1000		1000		1250		1250		1600		1600			
Rated impulse withstand voltage (Uimp) [kV]			8		8		8		8		8		8		8			
Rated insulation voltage (Ui) [VAC]			800		800		800		800		800		800		800			
■ **AC RATED BREAKING CAPACITY** [kA sym. rms.]																		
JIS C 8370		525V	40		30		45		45		65		30		65			
		440V	125		45		65		65		85		45		85			
		220V	150		85		100		100		125		85		125			
IEC 60947-2	Icu/Ics	690V	25/20*		20/15*		25/20*		25/20*		45/34*		20/15*		45/34*			
EN 60947-2		525V	45/34		30/23		45/34		45/34		65/50		30/23		65/50			
		440V	125/94		45/34		65/50		65/50		85/65		45/34		85/65			
		415V	125/94		50/38		70/50		70/50		85/65		50/38		85/65			
		240V	150/150		85/65		100/75		100/75		125/94		85/65		125/94			
■ **DC RATED BREAKING CAPACITY** [kA] ①		250V	—		—		—		—		—		—		—			
Rated short time current (Icw) [kA. rms.]	0.3 Seconds		10		—		—		15		15		20		20			
Protection																		
Adjustable thermal, adjustable magnetic			—		—		—		—		—		—		—			
Fixed thermal, fixed magnetic			—		—		—		—		—		—		—			
Microprocesor			■		■		■		■		■		■		■			
Utilization Category			B		A		A		B		B		B		B			
■ **DIMENSIONS (mm)**																		
		a	210	280	210	280	210	280	210	280	210	280	210	280	210	280		
		b	273		273		273		370		370		370		370			
		c	140		103		103		120		120		140		140			
Weight (kg) (standard type)			3*	4*	11.0	14.8	11.0	14.8	19.8	25.0	19.8	25.0	27.0	35.0	27.0	35.0		

* MCCB cannot be used in IT system at this voltage

Note: DC rating available on request.

DIN MODULAR DEVICES

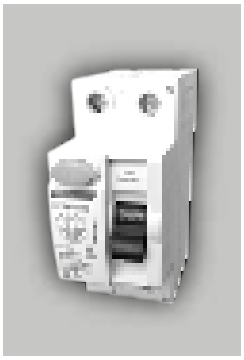
MCB

SPECIFICATIONS	
Rated Current (in)	2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63, 80, 100, 125A
Rated Capacity	Phase to Neutral 230V/240V~ / Phase to Phase 400V/415V~
Breaking Capacity	6 kA / 10kA
Rigid Conductor	25mm² Maximum
Flexible Conductor	16mm² Maximum
Characteristics	B CURVE / C CURVE / D CURVE
Standards	EN 60898 / EN 60947-2 / KEMA / SEMCO / SNI / CE / ROHS
Poles	1, 2, 3 and 4P
Frequency	50/60Hz
Calibration Temperature	30˚C
Electrical Endurance	8000
Mechanical Endurance	20000

POLE	In/A	6KA			10KA		
		B curve	C curve	D curve	B curve	C curve	D curve
1	6	EPB06061	EPC06061	EPD06061	EPB10061	EPC10061	EPD10061
	10	EPB06101	EPC06101	EPD06101	EPB10101	EPC10101	EPD10101
	16	EPB06161	EPC06161	EPD06161	EPB10161	EPC10161	EPD10161
	20	EPB06201	EPC06201	EPD06201	EPB10201	EPC10201	EPD10201
	25	EPB06251	EPC06251	EPD06251	EPB10251	EPC10251	EPD10251
	32	EPB06321	EPC06321	EPD06321	EPB10321	EPC10321	EPD10321
	40	EPB06401	EPC06401	EPD06401	EPB10401	EPC10401	EPD10401
	50	EPB06501	EPC06501	EPD06501	EPB10501	EPC10501	EPD10501
	63	EPB06631	EPC06631	EPD06631	EPB10631	EPC10631	EPD10631
	80	EPB06801	EPC06801	EPD06801	EPB10801	EPC10801	EPD10801
	100	EPB061001	EPC061001	EPD061001	EPB101001	EPC101001	EPD101001
	125	EPB061251	EPC061251	EPD061251	EPB101251	EPC101251	EPD101251
2	6	EPB06062	EPC06062	EPD06062	EPB10062	EPC10062	EPD10062
	10	EPB06102	EPC06102	EPD06102	EPB10102	EPC10102	EPD10102
	16	EPB06162	EPC06162	EPD06162	EPB10162	EPC10162	EPD10162
	20	EPB06202	EPC06202	EPD06202	EPB10202	EPC10202	EPD10202
	25	EPB06252	EPC06252	EPD06252	EPB10252	EPC10252	EPD10252
	32	EPB06322	EPC06322	EPD06322	EPB10322	EPC10322	EPD10322
	40	EPB06402	EPC06402	EPD06402	EPB10402	EPC10402	EPD10402
	50	EPB06502	EPC06502	EPD06502	EPB10502	EPC10502	EPD10502
	63	EPB06632	EPC06632	EPD06632	EPB10632	EPC10632	EPD10632
	80	EPB06802	EPC06802	EPD06802	EPB10802	EPC10802	EPD10802
	100	EPB061002	EPC061002	EPD061002	EPB101002	EPC101002	EPD101002
	125	EPB061252	EPC061252	EPD061252	EPB101252	EPC101252	EPD101252
3	6	EPB06063	EPC06063	EPD06063	EPB10063	EPC10063	EPD10063
	10	EPB06103	EPC06103	EPD06103	EPB10103	EPC10103	EPD10103
	16	EPB06163	EPC06163	EPD06163	EPB10163	EPC10163	EPD10163
	20	EPB06203	EPC06203	EPD06203	EPB10203	EPC10203	EPD10203
	25	EPB06253	EPC06253	EPD06253	EPB10253	EPC10253	EPD10253
	32	EPB06323	EPC06323	EPD06323	EPB10323	EPC10323	EPD10323
	40	EPB06403	EPC06403	EPD06403	EPB10403	EPC10403	EPD10403
	50	EPB06503	EPC06503	EPD06503	EPB10503	EPC10503	EPD10503
	63	EPB06633	EPC06633	EPD06633	EPB10633	EPC10633	EPD10633
	80	EPB06803	EPC06803	EPD06803	EPB10803	EPC10803	EPD10803
	100	EPB061003	EPC061003	EPD061003	EPB101003	EPC101003	EPD101003
	125	EPB061253	EPC061253	EPD061253	EPB101253	EPC101253	EPD101253

DIN MODULAR DEVICES

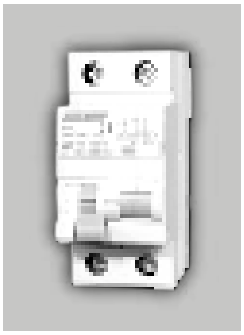
RCCB



SPECIFICATIONS	
Rated Capacity	25 A, 32 A, 40 A, 63 A, 80 A, 100 A
Rigid / Flexible Conductor	35mm² / 25mm² MAXIMUM
Calibration Temperature	30˚C
Frequency	50/60Hz
Electrical Endurance	10000
Mechanical Endurance	20000
Standards	EN 61008-1 / EN 61008-2-1 / ROHS / CE
Poles	2P and 4P; Ue: 230 Vac (2P), 230/400 Vac (4P); 50/60 Hz;
IΔn	10 mA, 30 mA, 100 mA, 300 mA, type A and AC;
Inc = IΔc	6 kA; Im = IΔm: 10 In or 500 A whichever is the greater;

Sensitivity	Current	Cat. Ref	Cat. Ref
IΔn		**2 poles**	**4 poles**
10mA	16A	EPR2016010AC	EPR4016010AC
	20A	EPR2020010AC	EPR4020010AC
	25A	EPR2025010AC	EPR4025010AC
	32A	EPR2032010AC	EPR4032010AC
30mA	16A	EPR2016030AC	EPR4016030AC
	25A	EPR2025030AC	EPR4025030AC
	32A	EPR2032030AC	EPR4032030AC
	40A	EPR2040030AC	EPR4040030AC
	63A	EPR2063030AC	EPR4063030AC
	80A	EPR2080030AC	EPR4080030AC
	100A	EPR2100030AC	EPR4100030AC
100mA	16A	EPR2016100AC	EPR4016100AC
	25A	EPR2025100AC	EPR4025100AC
	32A	EPR2032100AC	EPR4032100AC
	40A	EPR2040100AC	EPR4040100AC
	63A	EPR2063100AC	EPR4063100AC
	80A	EPR2080100AC	EPR4080100AC
	100A	EPR2100100AC	EPR4100100AC
300mA	16A	EPR2016300AC	EPR4016300AC
	25A	EPR2025300AC	EPR4025300AC
	32A	EPR2032300AC	EPR4032300AC
	40A	EPR2040300AC	EPR4040300AC
	63A	EPR2063300AC	EPR4063300AC
	80A	EPR2080300AC	EPR4080300AC
	100A	EPR2100300AC	EPR4100300AC

RCBO



SPECIFICATIONS	SPECIFICATIONS
In accordance with: IEC 61009	Rated voltage: 230VAC
Certification: CE, SEMKO	Rated residual operating current IΔn : 10mA, 30mA, 100mA, 300mA
Pole composition: 2P	Residual tripping current range: 0.5 IΔn ~ 1IΔn
Residual current characteristics: AC	Electrical lifetime > 4,000 cycles
Tripping curve: C	Fastening torque: 2.0Nm
Calibration temperature: +30°C	Terminal capacity: 35mm² solid, 25mm² stranded conductor
Rated current: 16A, 20A, 25A, 32A, 40A	Mounting on rail EN 60715 (EN 50022)
Rated short circuit capacity: 6 kA	Operating temperature: -25°C ~ +55°C
Rated frequency: 50/60Hz	

RTR POWER CAPACITORS - 440Vac

Model (Order code)	Voltage (V)	Frequency (Hz)	Power (KVAR)	Diameter (mm)	Height (mm)
C440 - 0255 - TER	440	50	2.5	70	215
C440 - 0505 - TER	440	50	5	70	215
D440 - 1005 - DW	440	50	10	70	230
D440 - 1255 - DW	440	50	12.5	85	230
D440 - 1505 - DW	440	50	15	85	230
D440 - 2005 - DW	440	50	20	100	230
D440 - 2505 - DW	440	50	25	120	230
D440 - 3005 - DW	440	50	30	120	230
D440 - 4005 - DW	440	50	40	136	230
C440 - 5005 - TER	440	50	50	136	300

RTR POWER CAPACITORS - 525Vac

Model (Order code)	Voltage (V)	Frequency (Hz)	Power (KVAR)	Diameter (mm)	Height (mm)
D525- 1005 - DW	525	50	10	85	230
D525 - 1250 - DW	525	50	12.5	85	230
D525 - 1505 - DW	525	50	15	100	230
D525 - 2005 - DW	525	50	20	120	230
D525 - 2005 - DW	525	50	25	120	230
D525 - 3505 - DW	525	50	30	136	230
D525 - 3505 - DW	525	50	35	136	230
D525-5000--TER	525	50	50	136	300

Characteristics and utility

- Three phase capacitor DUAL WINDING internally delta connected
- Discharge resistors Incorporated
- Reactive power factor correction
- Dry type
- Connector type terminal
- Indoor mounting

Triple safety

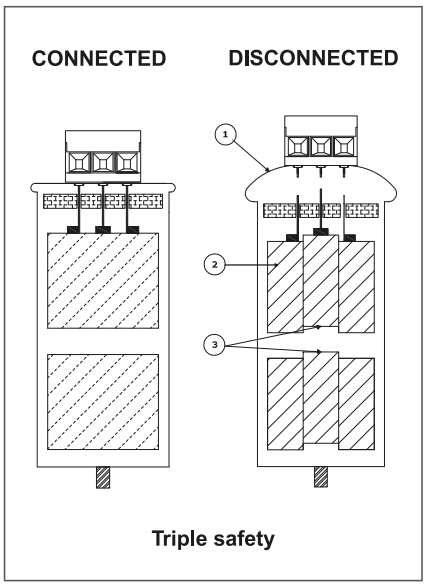
- Overpressure disconnection system
- Protection by internal fuses
- DWCAP system (patent) internal windings Displacement

Construction and materials

- Low losses metallized self-healing polypropylene film, high density, high temperature and greater dielectric resistance Volt/µ
- Polyurethane self-extinguishing resin V0, developed under standard UL 94 by RTR Energía
- Aluminium case with botton fixing M12x16

Standards

- IEC 60831-1/2
- EN 60831-1/2



Triple safety

DETUNED REACTOR

525V Capacitor - Filter 415V -7% - 189Hz Copper

525V / kVAR	Filter / kVAR	Load Ampere	Inductance mH	Capacitor µF
5	3.35	4.7	12.32	3x19.19
7.5	5.03	7	8.2	3x28.82
10	6.71	9.3	6.15	3x38.44
12.5	8.39	11.7	4.92	3x48.07
15	10.06	14	4.1	3x57.64
20	13.42	18.7	3.07	3x76.89
25	16.79	23.4	2.46	3x96.2
30	20.13	28	2.05	3x115.33
40	26.85	37.4	1.54	3x153.84
50	33.55	46.7	1.23	3x192.22
75	50.33	70	0.82	3x288.37
100	67.20	93.5	0.61	3x385.02

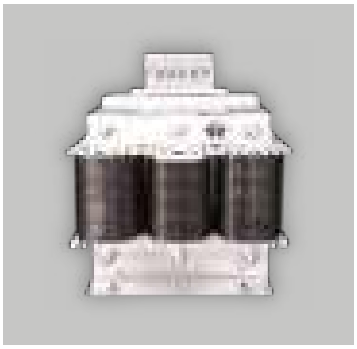
525V Capacitor - Filter 415V -7% - 189Hz Aluminium

525V / kVAR	Filter / kVAR	Load Ampere	Inductance mH	Capacitor µF
5	3.35	4.7	12.32	3x19.19
7.5	5.03	7	8.2	3x28.82
10	6.71	9.3	6.15	3x38.44
12.5	8.39	11.7	4.92	3x48.07
15	10.06	14	4.1	3x57.64
20	13.42	18.7	3.07	3x76.89
25	16.79	23.4	2.46	3x96.2
30	20.13	28	2.05	3x115.33
40	26.85	37.4	1.54	3x153.84
50	33.55	46.7	1.23	3x192.22
75	50.33	70	0.82	3x288.37
100	67.20	93.5	0.61	3x385.02

Three Phase Harmonic Filters

Three Phase Harmonic Filters are made of low losses magnetic plates and copper winding.

Compliances Standard	IEC-60289, IEC - 076
Tolerence ‘L”	3%
Permissible Overload	1.07 In
Linearcity Inductance	1.501 In
Heat Insulation	Class H (180°C)
Thermal Protection	120°C
Room Temperature	45°C
Prof. Stress	3 KV
Protection Degree	IP - 00

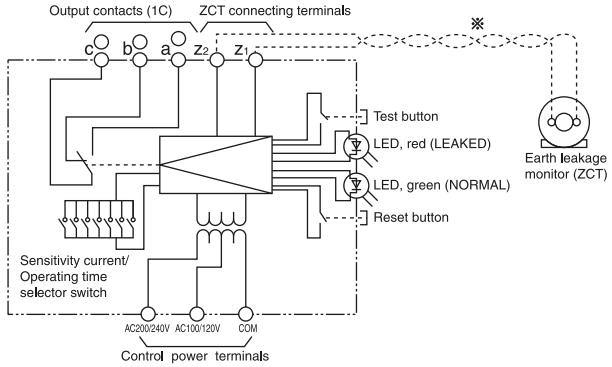


Ratings of Relays

Type		TZS-AD
Phase and wires	3Ø3W, 1Ø2W	*
	3Ø4W	*
Outside view		
■ RATINGS		
Rated control voltage [VAC]	50/60Hz	120 ①②
		240
Applicable range	120V AC	96-132
	240V AC	192-264
Rated sensitivity current [mA]		30
		100
		300 ③
		500
		1000
Rated operating time (sec)		below 0.04
		0.3
		0.5 ③④
		1
		2
■ Dimensions [mm] (surface mount) W/H/D		60/78/100
Weight [kg] (surface mount)		0.22
■ MOUNTING		
Surface mount		◉
Flush mount		•
■ STANDARD FEATURES		
Earth leakage detection		⑤
Output contact		1C ⑥
Earth leakage indication		LED (Red)
Reset function		electrical ⑦
Power source required		1VA

Connection Diagram

● Earth Leakage Relay



※TZS-AD —— ZCT wire length

30mA : less than 3m, 100, 300 mA : less than 5m, 500, 1000 mA : less than 10m

Note : The output contacts are hold until the reset button is pressed.
Loss of control power resets the contacts automatically.
Terminal screw tightening torque: 0.45-0.73 N.m

Note ◉ : Standard, this configuration is used unless otherwise specified.
• : yes" or "available".
① : Terminals for 120V AC and 240V AC are provided.

CAUTION : DO NOT APPLY 240V AC TO THE 120V AC TERMINAL. BURNOUT CAN RESULT.

② : For 415V AC or 440V AC, Please contact to TERASAKI.
③ : Adjustable type by Dip slide switch.
④ : Operating time range and Non-operating time range.

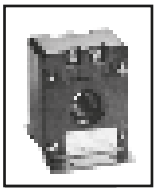
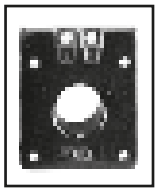
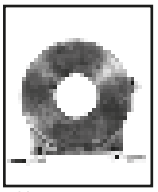
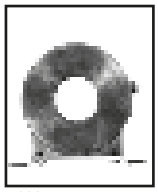
Rated operating time (sec)	Operating time range (sec)	Non-operating time range (sec)
0.3	0.2~0.36	0.15
0.5	0.4~0.6	0.38
1	0.8~1.2	0.7
2	1.3~2	1.25

⑤ : Solid-state type, current operating type.
⑥ : Ratings of output contact.

	Resistance load cos Ø =1	Inductive load cos Ø=0.4 (L/R=7ms)	Min. load
120V AC	6A	3.5A	10mA at 5V DC
240V AC	6A	3.5A	
30V DC	6A	3A	

⑦ : The output contacts remain until the RESET button is operated.
Provided the control power supply fails the contacts automatically reset.

Ratings of ZCT (Core Balanced Current Transformers)

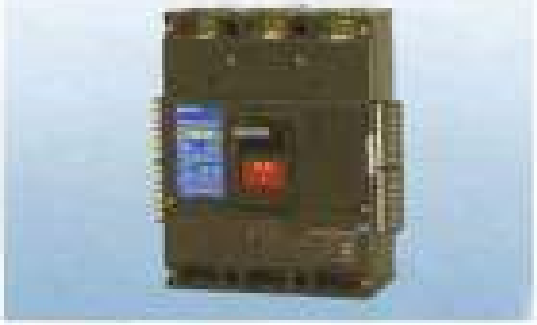
Type		TZS-15	TZS-24	TZS-40	TZS-68	TZS-100
Outside view						
Diameter of transit part [mm]		Ø15	Ø24	Ø40	Ø68	Ø100
Weight [kg]		0.2	0.3	0.7	1.1	2.0
Applicable numbers, size and continuous current of wires (IV cable wires)						
2 wires	max. continuous current	61A	139A	298A	650A	1185A
	max. wires size	8mm²	30mm²	100mm²	325mm²	850mm²
	max. diameter of wire	6mm	10.5mm	17mm	29mm	45mm
3 wires	max. continuous current	61A	139A	298A	650A	1185A
	max. wire size	8mm²	30mm²	100mm²	325mm²	850mm²
	max. diameter of wire	6mm	10.5mm	17mm	29mm	45mm
4 wires	max. continuous current	49A	115A	257A	556A	992A
	max. wire size	5.5mm²	22mm²	80mm²	250mm²	600mm²
	max. diameter of wire	5mm	9.5mm	15.5mm	26mm	38mm

Appearance of major products

TemPower
Air Circuit Breakers with advanced OCR

TemBreak
Moulded Case Circuit Breakers

Air Circuit Breakers
(AME series for Generator Protection)



Earth-leakage Relays

RTR energia

TECS
DIN MODULAR DEVICES
MCB / RCCB / RCBO

⚠CAUTION

Be sure to read the instruction manual carefully
to ensure correct and safe use of the product.

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