TemP2owerACB

Double Breaker

- Two Steps Ahead

BHARTIA BCH

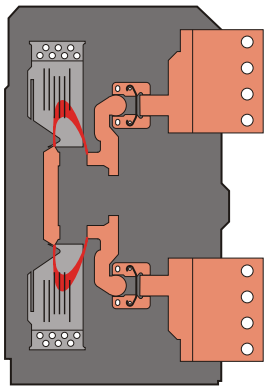
BCH ELECTRIC LIMITED

TemPowerACB

The ultimate in performance and compactness

TemPower ACB offers long term cost saving for plant owners and operators over a competing breaker. Robust construction and ease of maintenance make the ACB operational after years of arduous switching and fault breaking service. Three and four pole, fixed and withdrawable version are available in all the range to match specific requirements. Electrical load from 80 A to 6300 A can be protected and switched. Each standard ***TemPower*** over current relay has over 200,000 unique time/current curves available to the users

Unique Double Break Structure



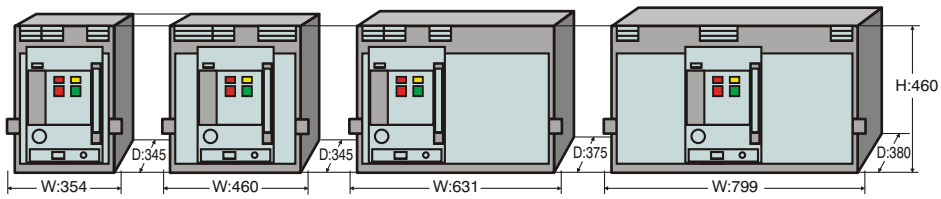
Icw, 1s = Ics = Icu for all *TemPower2* ACBs

TemPower2 is ***"Double Break"*** ACB, having two breaking contacts per phase. The unique pole structure means that the short time withstand rating (Icw, 1sec.) is equal to the service short circuit breaking capacity (Ics) for all models. Full selectivity is guaranteed up to the full system fault level.

The unique ***"Double Break"*** main contact system ensures extremely fast interruption of short circuit currents and substantially reduces main contact wear. The internally symmetrical ***"Double Break"*** structure means the moving contact is isolated from the supply voltage even when the ACB is reverse connected. The neutral pole of all ***"TemPower2"*** ACBs are of early make/late break design. This eliminates the risk of abnormal line to neutral voltages, which may damage sensitive electronic equipment.

"Double Break" contacts increase service life - Electrical and mechanical endurance ratings are the best available, and exceed the requirements of IEC 60947-2.

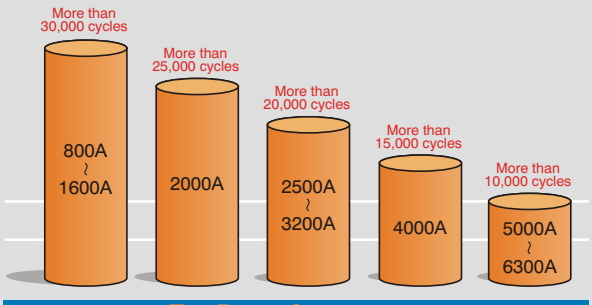
Uniform Dimension



Standard series	800–2000A	2500–4000A	4000A	5000-6300A
High fault series	1250–2000A	1600–3200A	4000A	6300A

With the widest range of ACBs there is a solution from 800 A to 6300 A all with the same front cover dimension and standardized accessories through out the range. Maximum power from minimum volume is the objective for the design specification.

A substantial improvement in life cycles



Note: above figures are the mechanical endurance with maintenance. For details please refer to pages 3 & 4.

Specifications

L-characteristic for general feeder circuits (Type AGR-11BL, 21BL, 31BL)

Protection functions	Setting range
■ Adjustable long time-dalay trip characteristics	
LT	
Pick-up current [I_R] (A)	[I_n] X (0.8 - 0.85 - 0.9 - 0.95 - 1.0 - NON) ; 6 graduations • Non tripping when load current ≦ ([I_R] X 1.05) • Tripping when ([I_R] X 1.05) < load current ≦ ([I_R] X 1.2)
Time-delay [I_R] (s)	(0.5 - 1.25 - 2.5 - 5 - 10 - 15 - 20 - 25 - 30) at 600% of [I_R] ; 9 graduations
Time-dalay setting tolerance (%)	± 15% + 150ms - 0ms
■ Adjustable short time-dalay trip characteristics	
ST	
Pick-up current [I_{sd}] (A)	[I_n] X (1 - 1.5 - 2 - 2.5 - 3 - 4 - 6 - 8 - 10 - NON) ; 10 graduations
Current setting tolerance (%)	± 15%
Time-dalay [t_{sd}] (ms) Relay time	50 / 100 / 200 / 400 / 600 / 800 ; 6 graduations
Resettable time (ms)	25 / 75 / 175 / 375 / 575 / 775
Max. total clearing time (ms)	120 / 170 / 270 / 470 / 670 / 870
■ Adjustable instantaneous trip characteristics	
INST or MCR (For AGR-11B, INST only)	
Pick-up current [I_i] (A)	[I_n] X (2 - 4 - 6 - 8 - 10 - 12 - 14 - 16 - NON) ; 9 graduations
Current setting tolerance (%)	± 20%
■ Adjustable pre-trip alarm characteristics	
PTA	
Pick-up current [I_{p1}] (A)	[I_n] X (0.75 - 0.8 - 0.85 - 0.9 - 0.95 - 1.0) ; 6 graduations
Current setting tolerance (%)	± 7.5%
Time-delay [t_{p1}] (s)	(5 - 10 - 15 - 20 - 40 - 60 - 80 - 120 - 160 - 200) at [I_{p1}] or more; 10 graduations
Time-delay setting tolerance (%)	± 15% + 100ms - 0ms
■ Adjustable ground fault trip characteristics	
GF	Note : Set [I_g] to 1200A or less.
Pick-up current [I_g] (A)	[I_{CT}] X (0.1 - 0.2 - 0.3 - 0.4 - 0.6 - 0.8 - 1.0 - NON) ; 8 graduations
Current setting tolerance (%)	± 20%
Time-delay [t_g] (ms) Relay time	100 / 200 / 300 / 500 / 1000 / 2000 ; 6 graduations
Resettable time (ms)	75 / 175 / 275 / 475 / 975 / 1975
Max. total clearing time (ms)	170 / 270 / 370 / 570 / 1070 / 2070
Ground fault trip characteristics on line side	
REF (AGR-21B, 31B only)	
Pick-up current [I_{REF}] (A)	[I_{CT}] X (0.1 – 0.2 – 0.3 – 0.4 – 0.6 – 0.8 – 1.0 – NON) ; 8 graduations
Current setting tolerance (%)	± 20%
Time-delay (s)	Inst
■ N-phase protection characteristics	
NP	
Pick-up current [I_N] (A)	[I_{CT}] X (0.4 – 0.5 – 0.63 – 0.8 – 1.0) ; Factory set to a user-specified value for AGR-11BL. • Non tripping when load current ≦ ([I_N] X 1.05). • Tripping when ([I_N] X 1.05) ≦ load current < ([I_N] X1.2)
Time-delay ([t_N] (s)	Tripping at 600% of [I_N] with LT time-delay [t_R]
Time-delay setting tolerance (%)	± 15% + 150ms - 0ms
■ Phase rotation protection characteristics	
NS (AGR-21B, 31B only)	
Pick-up current [I_{NS}] (A)	[I_N] X (0.2 – 0.3 – 0.4 – 0.5 – 0.6 – 0.7 – 0.8 – 0.9 – 1.0) ; 9 graduations
current setting tolerance (%)	± 10%
Time-delay [t_{NS}] (s)	(0.4 – 0.8 – 1.2 – 1.6 – 2 – 2.4 – 2.8 – 3.2 – 3.6 – 4) at 150% of [I_{NS}] ; 10 graduations
Time-delay setting tolerance (%)	± 20% + 150ms - 0ms
■ Adjustable earth leakage trip characteristics	
ELT (AGR-31B only)	
Pick-up current [$t_{?R}$] (A)	0.2 - 0.3 - 0.5 - 1 (Medium sensitivity) or 3 - 5 (Low sensitivity)
Current setting tolerance	Non operate below 50% of [$I_{?R}$], Operate between 50% and 100% of [$I_{?R}$].
Time-delay [$t_{?R}$] (ms) Relay time	100 / 200 / 300 / 500 / 1000 / 2000 ; 6 graduations
Resettable time (ms)	50 / 150 / 250 / 450 / 950 / 1950
Max. total clearing time (ms)	250 / 350 / 450 / 600 / 1150 / 2150
■ Undervoltage alarm characteristics	
UV (AGR-31B only)	
Recovery setting voltage (V)	[V_n] X (0.8 - 0.85 - 0.9 - 0.95) ; 4 graduations
Recovery voltage setting tolerance (%)	± 5%
Setting voltage (V)	[V_n] X (0.4 - 0.6 - 0.8) ; 3 graduations
Voltage setting tolerance (%)	± 5%
Time-delay (s)	0.1 - 0.5 - 1 - 2 - 5 - 10 - 15 - 20 - 30 - 36 ; 10 graduations
Time-delay setting tolerance (%)	± 15% + 100ms - 0ms
■ Control power	AC100 - 120V / AC200 - 240V) Common DC100 - 125V / DC200 - 250V) Common DC24V / DC48V) Common Power consumption : 5 VA

_ : Default setting

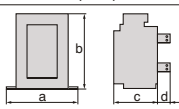
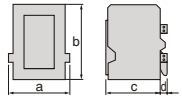
■ Values of [I_{CT}] and [I_n]

Type	Applicable [I_{CT}] (A)	Rated current [I_n] (A) [I_{CT}] X0.5	[I_{CT}] X0.63	[I_{CT}] X0.8	[I_{CT}] X1.0
AR208S	200	100	125	160	200
	400	200	250	320	400
	800	400	500	630	800
AR212S	400	200	250	320	400
	800	400	500	630	800
	1250	630	800	1000	1250
AR216S	400	200	250	320	400
	800	400	500	630	800
	1250	630	800	1000	1250
	1600	800	1000	1250	1600

Type	Applicable [I_{CT}] (A)	Rated current [I_n] (A) [I_{CT}] X0.5	[I_{CT}] X0.63	[I_{CT}] X0.8	[I_{CT}] X1.0
AR220S	400	200	250	320	400
	800	400	500	630	800
	1250	630	800	1000	1250
	1600	800	1000	1250	1600
	2000	1000	1250	1600	2000
AR325S	2500	1250	1600	2000	2500
AR332S	3200	1600	2000	2500	3200
AR440SB	4000	2000	2500	3200	4000
AR440S	4000	2000	2500	3200	4000
AR650S	5000	2500	3200	4000	5000
AR663S	6300	3200	4000	5000	6300

Type	Applicable [I_{CT}] (A)	Rated current [I_n] (A) [I_{CT}] X0.5	[I_{CT}] X0.63	[I_{CT}] X0.8	[I_{CT}] X1.0
AR212H	200	100	125	160	200
	400	200	250	320	400
	800	400	500	630	800
	1250	630	800	1000	1250
AR216H	1600	800	1000	1250	1600
AR220H	2000	1000	1250	1600	2000
AR316H	200	100	125	160	200
	400	200	250	320	400
	800	400	500	630	800
	1250	630	800	1000	1250
	1600	800	1000	1250	1600
AR320H	2000	1000	1250	1600	2000
AR325H	2500	1250	1600	2000	2500
AR332H	3200	1600	2000	2500	3200
AR420H	800	400	500	630	800
	2000	1000	1250	1600	2000
AR440H	4000	2000	2500	3200	4000
AR663H	5000	2500	3200	4000	5000
	6300	3200	4000	5000	6300

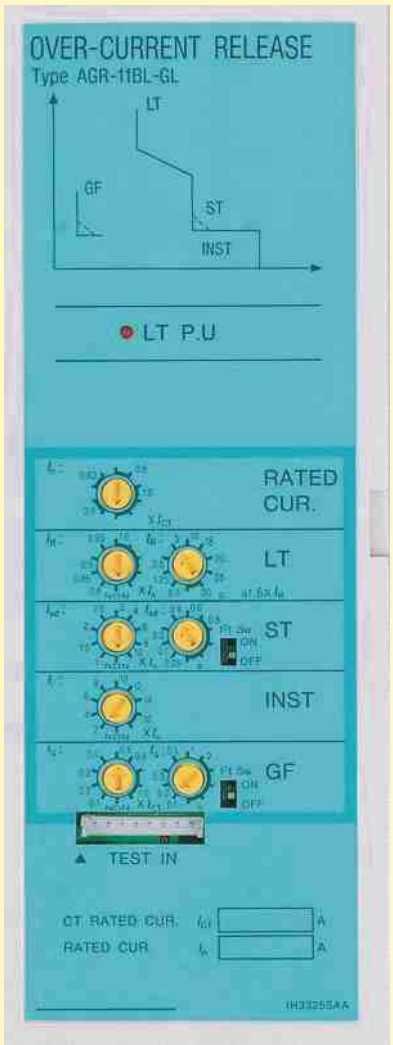
Ratings

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) ①②	JIS⑫, IEC, EN, AS		800	1250	1250	1600	1600	1600	2000	2000
	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≦200(	
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	690V⑤	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

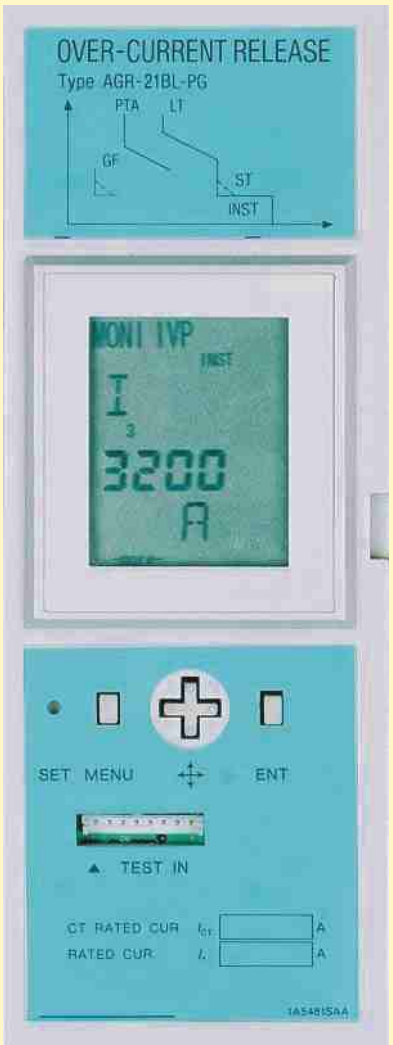
① : Values in open air at 40°C (45°C for marine applications).
② : Values of AR208S, AR212S, AR216S for draw-out type with horizontal terminals, Values of the other ACBs for draw-out type with vertical terminals.
③ : For 2 pole ACBs use outside poles of 3 pole ACB.
④ : 4 poles ACBs without Neutral phases protection can not apply IT earthing system.
⑤ : Contact BCH Electric for the details.
⑥ : For 500V AC.
⑦ : Please contact BCH Electric 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 BCH Electric 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.

High fault	High fault	Standard	High fault	Standard	High fault	Standard	Standard	High fault	Standard	Standard	High fault
2000	2000	2500	2500	3200	3200	4000	4000	4000	5000	6300	6300
AR320H	AR420H	AR325S	AR325H	AR332S	AR332H	AR440SB	AR440S	AR440H	AR650S	AR663S	AR663H
2000	2000	2500	2500	3200	3200	4000	4000	4000	5000	6300	6300
2000	※	2500	2500	3200	3200	3310	3700	3700	4700	5680	5680
2000	2000	2500	2500	3200	3200	4000	4000	4000	5000	6300	6300
2000	2000	2500	2500	3200	3200	4000	4000	4000	5000	6300	6300
3 4	3	3 4	3 4	3 4	3 4	3 4	3 4	3	3 4	3 4	3 4
2000	800 2000	2500	2500	3200	3200	4000	4000	4000	5000	6300	5000 6300
$1000 \leqq l_n \leqq 2000$	$400 \leqq l_n \leqq 800$ $1000 \leqq l_n \leqq 2000$	$1250 \leqq l_n \leqq 2500$	$1250 \leqq l_n \leqq 2500$	$1600 \leqq l_n \leqq 3200$	$1600 \leqq l_n \leqq 3200$	$2000 \leqq l_n \leqq 4000$	$2000 \leqq l_n \leqq 4000$	$2000 \leqq l_n \leqq 4000$	$2500 \leqq l_n \leqq 5000$	$3150 \leqq l_n \leqq 6300$	$2500 \leqq l_n \leqq 5000$ $3150 \leqq l_n \leqq 6300$
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
690	690	690	690	690	690	690	690	690	690	690	690
85/187	75/165	65/143	85/187	65/143	85/187	85/187	75/165	75/165	85/187	85/187	85/187
100/220	120/264 ⑭	85/187 ⑥	100/220	85/187 ⑥	100/220	100/220	100/220	120/264 ⑭	120/264	120/264	135/297
50/115	65/149.5	50/115	50/115	50/115	50/115	50/115	65/149.5	65/149.5	65/149.5	65/149.5	65/149.5
80/184	75/172.5	65/149.5	80/184	65/149.5	80/184	80/184	75/172.5	75/172.5	80/184	80/184	80/184
100/230	120/276	85/195.5	100/230	85/195.5	100/230	100/230	100/230	120/276	100/230	100/230	100/230
40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40	40/40
85/201	⑬	65/153	85/201	65/153	85/201	⑬	75/179	⑬	85/201 ⑬	85/201 ⑬	85/201 ⑬
100/233	⑬	85/201 ⑥	100/233	85/201 ⑥	100/233	⑬	100/245	⑬	120/287 ⑬	120/287 ⑬	138/322 ⑬
85/201	⑬	65/153	85/201	65/153	85/201	⑬	75/179	⑬	85/201 ⑬	85/201 ⑬	85/201 ⑬
100/233	⑬	85/201 ⑥	100/233	85/201 ⑥	100/233	⑬	100/245	⑬	120/287 ⑬	120/287 ⑬	138/322 ⑬
12	12	12	12	12	12	12	12	12	12	12	12
100	100	85	100	85	100	100	100	100	120	120	135
75	85	65	75	65	75	75	85	85	85	85	85
85	100	85	85	85	85	85	100	100	120	120	120
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.05
10	10	10	10	10	10	10	10	10	10	10	10
0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
25000	15000	20000	20000	20000	20000	15000	15000	15000	10000	10000	10000
12000	8000	10000	10000	10000	10000	8000	8000	8000	5000	5000	5000
10000	3000	7000	7000	7000	7000	3000	3000	3000	1000	1000	1000
7000	2500	5000	5000	5000	5000	2500	2500	2500	500	500	500
56 68	71	56 68	56 68	56 68	56 68	58 71	71 92	71	125 160	140 180	140 180
49 57	76	49 57	49 57	49 57	49 57	68 87	68 84	76	75 100	80 105	80 105
105 125	147	105 125	105 125	105 125	105 125	126 158	139 176	147	200 260	220 285	220 285
80 92	—	80 92	80 92	80 92	80 92	— —	— —	—	— —	— —	— —
466 586	—	466 586	466 586	466 586	466 586	— —	— —	—	— —	— —	— —
460	—	460	460	460	460	—	—	—	—	—	—
290	—	290	290	290	290	—	—	—	—	—	—
75	—	75	75	75	75	—	—	—	—	—	—
460 580	631	460 580	460 580	460 580	460 580	460 580	631 801	631	799 1034	799 1034	799 1034
460	460	460	460	460	460	460	460	460	460	460	460
345	375	345	345	345	345	345	375	375	380	380	380
40	53	40	40	40	40	140	53	53	60	60	60

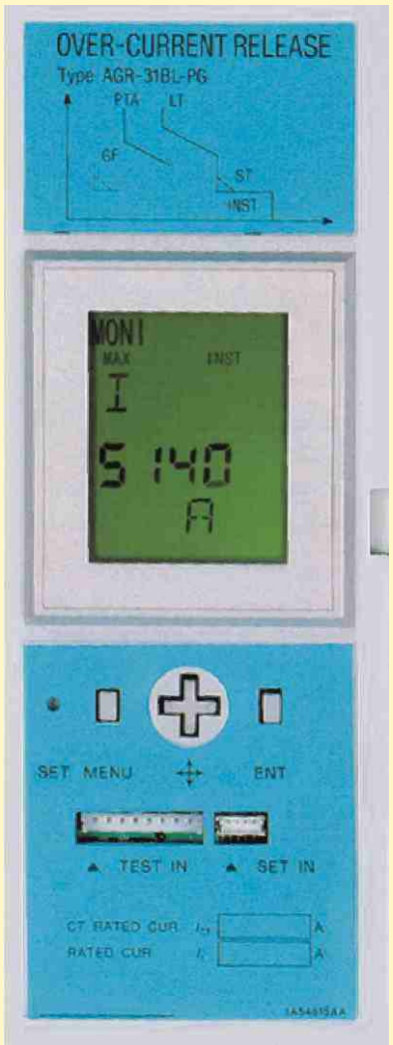
The *TemPower2* series is equipped with an RMS sensing over -current release (OCR) having a wide range of protection functions and capabilities



Standard OCR with adjustment dial
Type AGR-11B.



Standard OCR with LCD-'Ammeter'
Type AGR-21B,22B.



Enhanced OCR with LCD- 'Analyser'
Type AGR-31B.

Backlit LCD installed

Optional Features

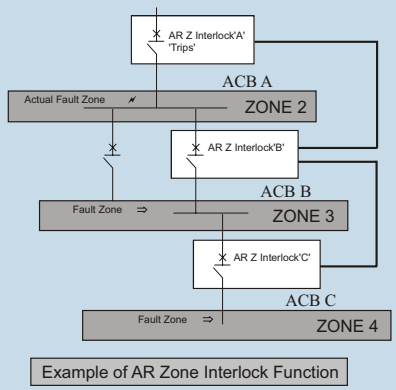
- Reverse power trip function (s-characteristic)
- Two channel pre-trip alarm function
- N-phase protection function
- Ground fault trip function
- Earth leakage trip function
- Phase rotation protection function
- External display
- Advanced L.C.D. display , Over Current Relay
- Remote Communications Protocols
- Contact temperature monitoring function

OCR Specifications

Protection characteristic		Protection Relay Over-current release (OCR)	PROTECTION						FUNCTIONS				SPECIAL APPLICATIONS														
			Standard Protection			Ground Fault ⑤		N-Phase	Indication and Monitoring				Contact Temperature Monitoring	Zone Interlock	Earth Leakage Protection	Reverse Power Protection	Phase Rotation Protection	Under Voltage Alarm	Pre-Trip Alarm		Spring Charge Indication	Trip Indication	Commu-nication	External Display	Field Test	Control Power
			Long Time	Short Time	Instant-aneous	Unrestricted	Restricted	N-Phase Protection	Indication		Monitoring									③						
			L	S	I	UREF	REF②	NP	Single Contact	Individual Contacts	Ammeter	Energy Analyser	OH ②	Z	ELT ⑥	RPT ⑦	NS ②	UV ③	PTA	PTA2	③	②	C	I ④		
Standard Protection Relays																											
Dial Type	For general feeder circuits	**AGR-11BL-AL**	●			---	---	○	●	---	---	---	---	---	---	---	---	---	---	---	○	○	---	---	---	Not Required
		AGR-11BL-GL	●			●	---	○	●	---	---	---	---	---	---	---	---	---	---	---	○	○	---	---	---	Not Required
Standard LCD Type	For general feeder circuits	**AGR-21BL-PS**	●			---	---	○	---	●	●	---	---	---	---	---	○	---	●	---	○	○	○	---	●	Required
		AGR-21BL-PG	●			●	○	○	---	●	●	---	---	---	---	---	○	---	●	---	○	○	○	---	●	Required
Specialised Protection Relays																											
Standard LCD Type	IEC 60255-3 ①	AGR-21BR-PS	●			---	---	○	---	●	●	---	---	---	---	---	○	---	●	---	○	○	○	---	●	Required
		AGR-21BR-PG	●			●	○	○	---	●	●	---	---	---	---	---	○	---	●	---	○	○	○	---	●	Required
	For generator protection	AGR-21BS-PS	●			---	---	---	---	●	●	---	---	---	---	---	---	---	●	---	○	○	○	---	●	Required
		AGR-22BS-PR	●			---	---	---	---	●	●	---	○	○	---	●	---	○	●	○	○	○	○	○	●	Required
Enhanced LCD Type	For general feeder circuits	AGR-31BL-PS ④	●			---	---	○	---	●	---	●	○	○	○	---	○	○	●	---	○	○	○	○	●	Required
		AGR-31BL-PG	●			●	○	○	---	●	---	●	○	○	---	---	○	○	●	---	○	○	○	○	●	Required
	IEC 60255-3 ①	AGR-31BR-PS ④	●			---	---	○	---	●	---	●	○	○	○	---	○	○	●	---	○	○	○	○	●	Required
		AGR-31BR-PG	●			●	○	○	---	●	---	●	○	○	---	---	○	○	●	---	○	○	○	○	●	Required
	For generator protection	AGR-31BS-PS	●			---	---	---	---	●	---	●	○	○	---	---	---	○	●	○	○	○	○	○	●	Required
		AGR-31BS-PR	●			---	---	---	---	●	---	●	○	○	---	●	---	○	●	○	○	○	○	○	●	Required

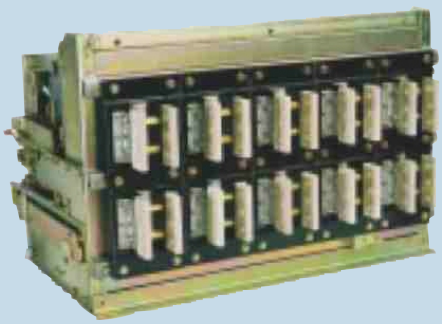
● : Available as standard
○ : Available as option
– : Not available

Zone Interlocking

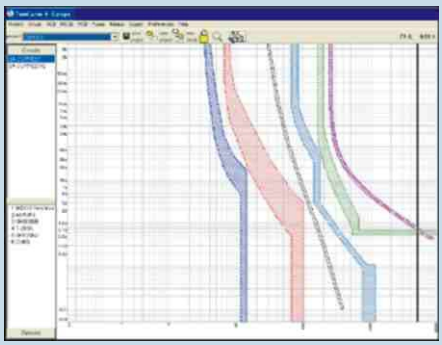


Example of AR Zone Interlock Function

Double Neutrals

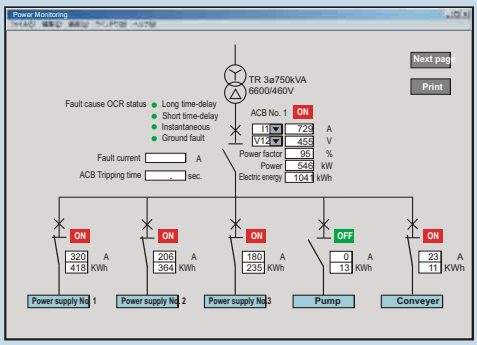


TemCurve



Communication facililty

On-screen PC monitor



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Certification and	Authorization	
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