e-Front runners

G-TWIN

FUJI

Molded Case Circuit Breakers



EEH131b

Fuji Electric FA Components & Systems Co., Ltd.

e-Front runners

FUJI Molded Case Circuit Breakers

Your Best Choice is FUJI.

G-TWIN 32 to 400AF






Ampere frame		32A				50A						63A						100A		125A								160A								250A								400A							
Pole		2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	4	2	3	4	2	3	2	3	4	2	3	4	2	3	4	2	3	4	2	3	2	3	2	3	4	2	3	4
Type		BW32AAG-□-CE		BW32SAG-□-CE		BW50EAG-□-CE		BW50SAG-□-CE		BW50RAG-□-CE		BW63EAG-□-CE		BW63SAG-□-CE		BW63RAG-□-CE		BW100EAG-□-CE		BW125JAG-□-CE			BW125SAG-□-CE			BW125RAG-□-CE		BW160EAG-□-CE		BW160JAG-□-CE			BW160SAG-□-CE			BW160RAG-□-CE				BW250EAG-□-CE		BW250JAG-□-CE			BW250SAG-□-CE			BW250RAG-□-CE				BW400EAG-□-CE		BW400SAG-□-CE		BW400RAG-□-CE			BW400HAG-□-CE			
Rated current / Reference amb. temp. (40˚C)	In(A)	3,5,10,15,20,30,32				5,10,15,20,30,32,40,50						60,63						50,60,63, 75,100		15,20,30,40,50,60,75,100,125								125,150,160								175,200,225,250								250,300,350,400							
Rated impulse with stand voltage	Uimp(kV)	6		6		6		6		6		6		6		6		6		6			6			6		6			6			6				6		6			6			6				8		8		8			8			
Isolation compliant		●		●		●		●		●		●		●		●		●		●			●			●		●			●			●				●		●			●			●				●		●		●			●			
Rated insulation voltage Ui (V)	AC	500		690		690		690		690		690		690		690		690		690			690			690		690			690			690				690		690			690			690				690		690		690			690			
IEC60947-2, EN60947-2	DC	–		250 *1		250 *1		250 *1		250 *1		250 *1		250 *1		250 *1		250 *1		250			250			250		250			250			250				250		250			250			250				250		250		250			250			
Rated breaking capacity	IEC 60947-2 AC 690V	–		–		–		–		–		–		–		–		–		–	–		–			–		–			–			–				–		–			–			–				–		10/5		15/8			15/8			
	JIS C 8201-2-1 600V	–		–		–		–		–		–		–		–		–		–	–		–			–		–			–			–				–		–			–			–				–		–		–			–			
	Ann. 1,2 500V	–		1.5/1		1.5/1		5/3		7.5/4		1.5/1		5/3		7.5/4		7.5/4		5/3	8/4		10/5			10/5		5/3		8/4		10/5			10/5				5/3		8/4			10/5			10/5				18/9		20/10		36/18			42/21			
	Icu/Ics (kA) 440V	1.5/1		2.5/2		2.5/2		7.5/4		10/5		2.5/2		7.5/4		10/5		10/5		30/15	30/15		36/18			50/25		18/9		30/15		36/18			50/25				18/9		30/15			36/18			50/25				30/15		36/18		50/25			70/35			
	415V	1.5/1		2.5/2		2.5/2		7.5/4		10/5		2.5/2		7.5/4		10/5		10/5		30/15	30/15		36/18			50/25		18/9		30/15		36/18			50/25				18/9		30/15			36/18			50/25				30/15		36/18		50/25			70/35			
	400V	1.5/1		2.5/2		2.5/2		7.5/4		10/5		2.5/2		7.5/4		10/5		10/5		30/15	30/15		36/18			50/25		18/9		30/15		36/18			50/25				18/9		30/15			36/18			50/25				30/15		36/18		50/25			70/35			
	380V	1.5/1		2.5/2		2.5/2		7.5/4		10/5		5/3		7.5/4		10/5		10/5		30/15	30/15		36/18			50/25		18/9		30/15		36/18			50/25				18/9		30/15			36/18			50/25				30/15		36/18		50/25			70/35			
	240V	–		–		–		–		–		–		–		–		–		50/25	50/25		85/43			100/50		36/18		50/25		85/43			100/50				36/18		50/25			85/43			100/50				50/25		85/43		100/50			125/63			
	230V	2.5/2		5/3		5/3		10/5		25/13		5/3		10/5		25/13		25/13		50/25	50/25		85/43			100/50		36/18		50/25		85/43			100/50				36/18		50/25			85/43			100/50				50/25		85/43		100/50			125/63			
	DC 250V	–		2.5/2 *1		2.5/2 *1		5/3 *1		5/3 *1		2.5/2 *1		5/3 *1		5/3 *1		5/3 *1		15/8	15/8		30/15			40/20		10/5		20/10		30/15			30/15				10/5		20/10			30/15			30/15				20/10		20/10		40/20			40/20			
	GB14048.2 AC 400V	1.5/2		2.5/2		2.5/2		7.5/4		10/5		2.5/2		7.5/4		10/5		10/5		30/15	30/15		36/18			50/25		18/9		30/15		36/18			50/25				18/9		30/15			36/18			50/25				30/15		36/18		50/25			70/35			
	Icu/Ics (kA) 230V	2.5/2		5/3		5/3		10/5		25/13		5/3		10/5		25/13		25/13		50/25	50/25		85/43			100/50		36/18		50/25		85/43			100/50				36/18		50/25			85/43			100/50				50/25		85/43		100/50			125/63			
Standard certified	CE Marking certified	●		●		●		●		●		●		●		●		●		●			●			●		●			●			●				●		●			●			●				●		●		●			●			
	CCC approved	●		●		●		●		●		●		●		●		●		●			●			●		●			●			●				●		●			●			●				●		●		●			●			
	Electrical Appliance and Material Safety Law <PS>E*2	●		●		●		●		●		●		●		●		●		● (except for 125A)			● (except for 125A)			● (except for 125A)		–		–		–			–				–		–			–			–				–		–		–			–			
Dimensions (mm)	a	50	75	50	75	50	75	50	75	50	75	50	75	50	75	50	75	50	75	60	90	120	90	90	120	90	90	120	105	105	105	105	140	105	105	140	105	105	140	105	105	105	105	140	105	105	140	105	105	140	140	140	140	140	140	140	185	140	140	185
	b	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	155	155	155	155	155	155	155	155	155	165	165	165	165	165	165	165	165	165	165	165	165	165	165	165	165	165	165	165	165	165	165	257	257	257	257	257	257	257	257	257	257
	c	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	103	103	103	103	103	103	103	103	103	103
	d	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	146	146	146	146	146	146	146	146	146	146
Mass (kg)		0.4	0.5	0.4	0.5	0.4	0.5	0.4	0.5	0.4	0.5	0.4	0.6	0.4	0.6	0.4	0.6	0.4	0.6	0.8	1.2	1.6	1.0	1.2	1.6	1.0	1.2	1.6	1.4	1.6	1.4	1.6	2.2	1.4	1.6	2.2	1.4	1.6	2.2	1.4	1.6	1.4	1.6	2.2	1.4	1.6	2.2	1.4	1.6	2.2	4.3	5.1	4.3	5.1	4.3	5.1	6.8	4.3	5.1	6.8
Tripping device		Hydraulic-magnetic																		Thermal-magnetic																																											

G-TWIN 630 to 800AF



S series



Ampere frame		630A					800A					1000A		1200A		1600A	
Pole		3	3	4	3	4	3	3	4	3	4	3	4	3	4	3	4
Type		BW630EAG-□-CE	BW630RAG-□-CE		BW630HAG-□-CE		BW800EAG-□-CE	BW800RAG-□-CE		BW800HAG-□-CE		SA1003E	SA1004E	SA1203E	SA1204E	SA1603E	SA1604E
Rated current / Reference amb. temp. (40˚C)	In(A)	500,600,630					700,800					Adjustable 500-600-700-800-900-1000		Adjustable 600-700-800-1000-1200		Adjustable 800-900-1000-1200-1400-1600	
Rated impulse with stand voltage	Uimp(kV)	8	8		8		8	8		8		8		8		8	
Isolation compliant		●	●		●		●	●		●		●		●		●	
Rated insulation voltage Ui (V)	AC	690	690		690		690	690		690		690		690		690	
IEC60947-2, EN60947-2	DC	250	250		250		250	250		250		–		–		–	
Rated breaking capacity	IEC 60947-2 AC 690V	–	15/8		15/8		–	15/8		15/8		25/19		25/19		45/34	
	JIS C 8201-2-1 600V	–	–		–		–	–		–		25/19		25/19		45/34	
	Ann. 1,2 500V	18/9	36/18		42/21		18/9	36/18		42/21		45/34		45/34		65/49	
	Icu/Ics (kA) 440V	30/15	50/25		70/35		30/15	50/25		70/35		65/49		65/49		85/64	
	415V	30/15	50/25		70/35		30/15	50/25		70/35		65/49		65/49		85/64	
	400V	30/15	50/25		70/35		30/15	50/25		70/35		65/49		65/49		85/64	
	380V	30/15	50/25		70/35		30/15	50/25		70/35		85/64		85/64		100/75	
	240V	50/25	100/50		125/63		50/25	100/50		125/63		–		–		–	
	230V	50/25	100/50		125/63		50/25	100/50		125/63		100/75		100/75		125/94	
	DC 250V	20/10	40/20		40/20		20/10	40/20		40/20		–		–		–	
	GB14048.2 AC 400V	30/15	50/25		70/35		30/15	50/25		70/35		65/49		65/49		85/64	
	Icu/Ics (kA) 230V	50/25	100/50		125/63		50/25	100/50		125/63		100/75		100/75		125/94	
Standard certified	CE Marking certified	●	●		●		●	●		●		–		–		–	
	CCC approved	●	●		●		●	●		●		●		●		●	
	Electrical Appliance and Material Safety Law <PS>E*2	–	–		–		–	–		–		–		–		–	
Dimensions (mm)	a	210	210	280	210	280	210	210	280	210	280	210	280	210	280	210	280
	b	275	275	275	275	275	275	275	275	275	275	370	370	370	370	370	370
	c	103	103	103	103	103	103	103	103	103	103	120	120	120	120	140	140
	d	146	146	146	146	146	146	146	146	146	146	171	171	171	171	191	191
Mass (kg)		7.8	7.8	10.3	7.8	10.3	8.3	8.3	11	8.3	11	22	28	22	28	27	35
Tripping device		Thermal-magnetic										Solid-state					

BW 0 series



Ampere frame		100A			160A						250A					
Pole		3	2	3	2	3	2	3	2	3	2	3	2	3	2	3
Type		BW103E0	BW102S0	BW103S0	BW162E0	BW163E0	BW162J0	BW163J0	BW162S0	BW163S0	BW252E0	BW253E0	BW252J0	BW253J0	BW252S0	BW253S0
Rated current / Reference amb. temp. (40˚C)	In(A)	15,20,25,30,40,50,60,75,80,100			100,125,150,160						175,200,225,250					
Rated impulse with stand voltage	Uimp(kV)	6	6	6	6		6		6		6		6		6	
Isolation compliant		●	●	●	●		●		●		●		●		●	
Rated insulation voltage Ui (V)	AC	690	690	690	690		690		690		690		690		690	
IEC60947-2, EN60947-2	DC	250	250	250	250		250		250		250		250		250	
Rated breaking capacity	IEC 60947-2 AC 690V	–	–	–	–		–		–		–		–		–	
	JIS C 8201-2-1 600V	–	–	–	–		–		–		–		–		–	
	Ann. 1,2 500V	5/3	10/3	10/3	5/3		8/4		10/5		5/3		8/4		10/5	
	Icu/Ics (kA) 440V	10/5	20/5	20/5	15/8		20/10		25/13		15/8		20/10		25/13	
	415V	15/8	30/8	30/8	18/9		25/13		36/18		18/9		25/13		36/18	
	400V	15/8	30/15	30/15	18/9		25/13		36/18		18/9		25/13		36/18	
	380V	18/9	30/15	30/15	18/9		25/13		36/18		18/9		25/13		36/18	
	240V	–	–	–	–		–		–		–		–		–	
	230V	25/13	50/25	100/50	25/13		50/25		85/43		25/13		50/15		85/43	
	DC 250V	5/3	5/3	10/5	5/3		20/10		30/15		5/3		20/10		30/15	
	GB14048.2 AC 400V	15/8	30/15	30/15	–		–		–		–		–		–	
	Icu/Ics (kA) 230V	25/13	50/25	100/50	–		–		–		–		–		–	
Standard certified	CE Marking certified	● (ASEFA)	● (ASEFA)	● (ASEFA)	● (TÜV)		● (TÜV)		● (TÜV)		● (TÜV)		● (TÜV)		● (TÜV)	
	CCC approved	●	●	●	–		–		–		–		–		–	
	Electrical Appliance and Material Safety Law <PS>E*2	–	–	–	–		–		–		–		–		–	
Dimensions (mm)	a	75	50	75	105	105	105	105	105	105	105	105	105	105	105	105
	b	130	130	130	165	165	165	165	165	165	165	165	165	165	165	165
	c	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	d	81	81	81	86	86	86	86	86	86	86	86	86	86	86	86
Mass (kg)		0.8	0.6	0.8	1.4	1.6	1.4	1.6	1.4	1.6	1.4	1.6	1.4	1.6	1.4	1.6
Tripping device		Thermal-magnetic														

●: Approved –: Not approved

Notes : *1 Specify DC only when ordering circuit breakers for DC circuit.
*2 Electrical Appliance and Material Safety Law of Japan.

Compact & High performance

Compact models with unified dimensions meeting UL489 480V and IEC 440V requirements

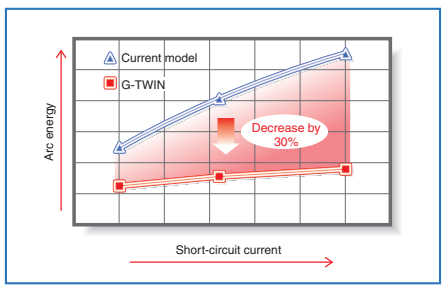
Arc and gas flow control technology

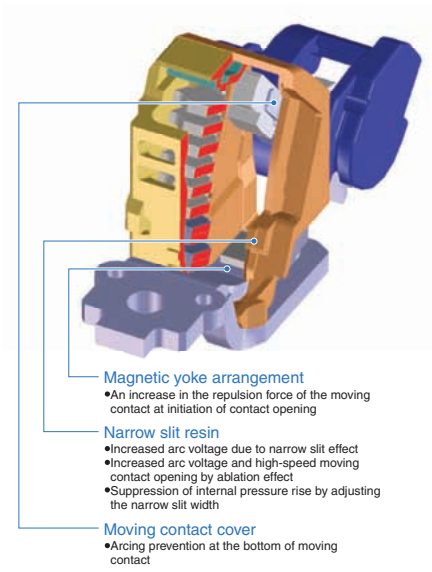
Effect of G-TWIN technical innovation (250AF example)

Compact size meeting UL489 480V requirements



Effect of ablation breaking technology





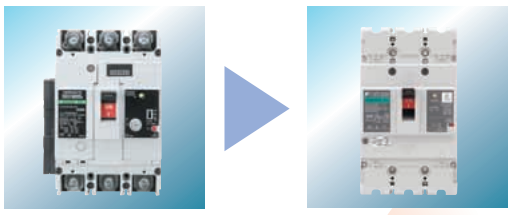
Safety & easy maintenance

Satisfying the latest IEC 60947-2 requirements with improved maintenance

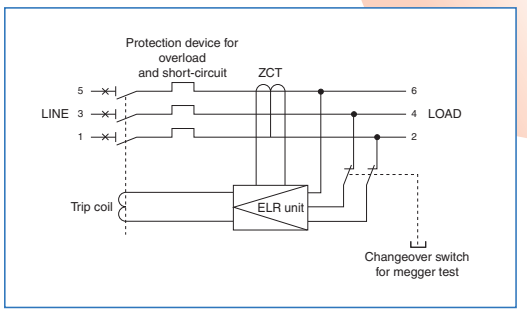
Newly developed earth leakage detection circuit

New three-phase power supply circuit functions in phase-loss state

The revised IEC stipulates that the ELCB should trip when earth-leakage occurs even in phase loss state in three-phase system. The G-TWIN Series meets this requirement.



ELCB internal wiring diagram



Adoption of changeover switch for dielectric test

High workability can be obtained since the removal of ELCB wiring is not required at dielectric test during inspection (Adopted for 125AF or more).

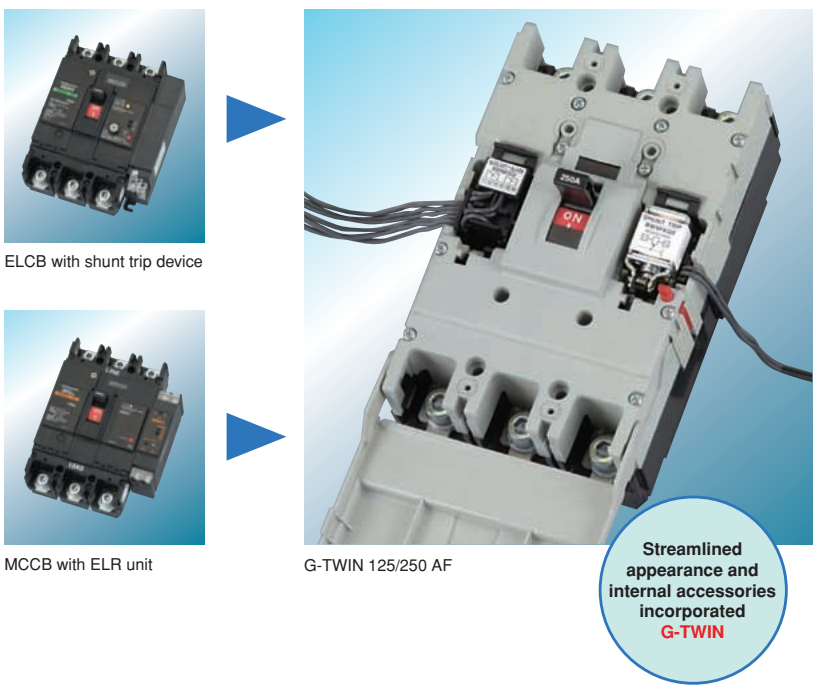


Usefulness

Leading the way in user-friendliness

Unifying and reducing the types of internal accessories

- Sharing internal accessories of 125/250AF breakers.
- The shunt trip (F) and undervoltage trip (R) devices can be installed inside the G-TWIN series ELCB.
- The number of types of internal accessories of 400/630/800AF has been significantly reduced.



Number of types of internal accessories [No. of types]

AF	α-TWIN		G-TWIN
100/125	8	16	8
225/250	8		
400	26		6
600/630			
800			

Ecology

Advanced environmental technology Conforming to the RoHS Directive

The G-TWIN series is designed to lower environmental impact.

Recycling

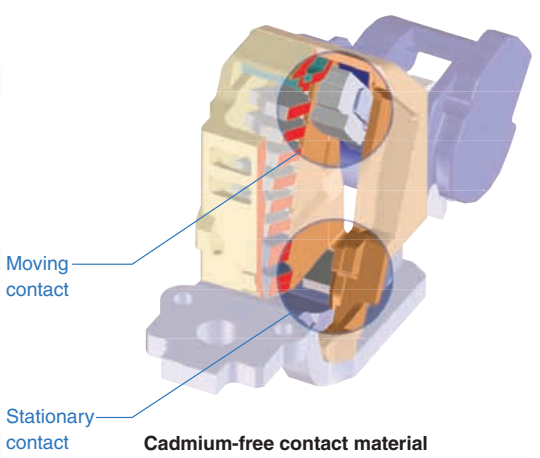
- For easier recycling, all major parts are marked with the names of the materials used.

Conforming to the RoHS Directive

- Lead-free (Pb-free) solder is used.
- Free of hexavalent chromium (Cr^{6+}-free)

Cadmium-free (Cd-free)

- Cd-free contacts are used.



Cadmium-free contact material

Fuji Electric launched the Twin Breaker series to world markets in 1990, in which molded case circuit breaker (MCCB) and earth leakage circuit breaker (ELCB) types were unified in external dimensions for the first time in the world. The Twin Breaker series was highly evaluated and gained strong support.
Based on the Twin Breaker series, Fuji Electric has expanded the range of its products conforming to and approved by international standards for global customers, advanced the innovative development of fundamental technologies in response to the requirements of the market, and now developed the G-TWIN series of MCCB/ELCBs.

Global standard

IEC IEC 60947-2

EN Europe

GB China

JIS Japan

UL/CSA North America

Europe
EN 60947-2

China
GB 14048.2

Japan

Year 1992	Year 1999	Year 2004
JIS C 8370 MCCB JIS C 8371 ELCB	JIS C 8201-2	JIS C 8201-2-1 MCCB JIS C 8201-2-2 ELCB

North America
UL489
CAN/CSA C22.2 NO.5

CE model
- EN 60947-2
- JIS C 8201-2
- ○CE marking (TÜV)

α-TWIN

CCC model
- GB 14048.2 (China)
- ○CCC approved

α-TWIN

JIS model
- JIS C 8201-2
- ○JIS C 8370
- ○JIS C 8371

α-TWIN

G-TWIN Standard series

CE marking (TÜV) + CCC approved + JIS

- IEC 60947-2
- JIS C 8201-2-1, 2 (Ann. 1, 2)
- EN 60947-2 (CE marking)
- GB 14048.2 (CCC)

The G-TWIN series is a global breaker series that satisfies all major standards.

G-TWIN Global series

UL mark (cUL) + CE marking (TÜV) + CCC marking + JIS

- IEC 60947-2
- JIS C 8201-2-1, 2 (Ann. 1, 2)
- EN 60947-2 (CE marking)
- GB 14048.2 (CCC)
- UL 489
- CAN/CSA C22.2 NO.5

UL489 model
- UL 489
- CAN/CSA22.2 No.5
- IEC 60947-2
- JIS C 8201-2
- ○UL mark (cUL)
- ○CE marking (TÜV)

α-TWIN

G-TWIN

Addition of ampere frame sizes in G-TWIN Global series

32	50	63	100	125	250	400	630	800

Fuji Electric FA Components & Systems Co., Ltd.
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