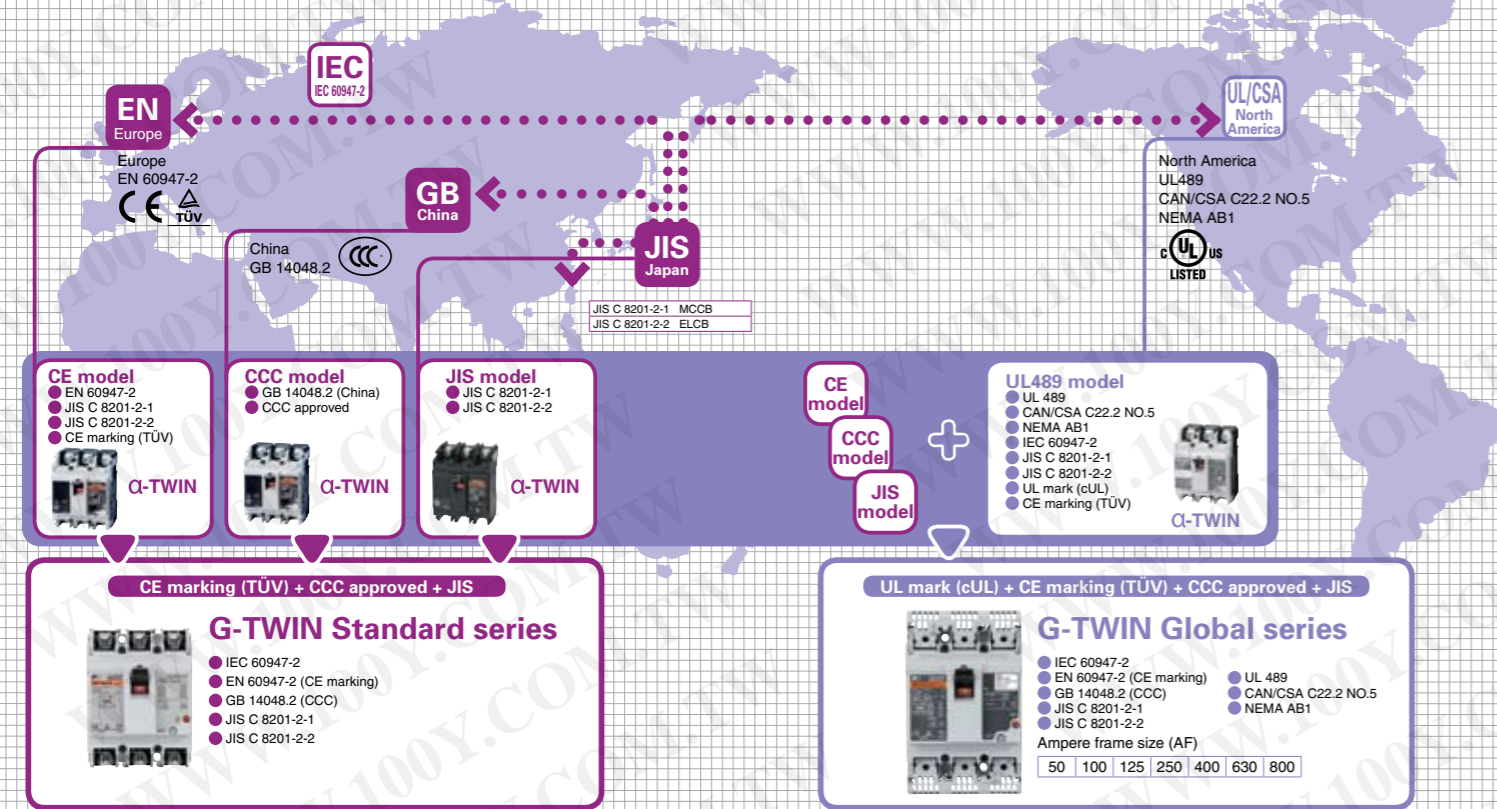


GLOBAL-TWIN

Conforming to IEC & local Standards

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



FUJI Molded Case Circuit Breakers



ETH131

Fuji Electric FA Components & Systems Co., Ltd.

Compact & High performance

Compact size meeting UL489 480V requirements & same dimensions as ELCB

ELCB
Rated voltage 480V (W105xH181xD68mm)

MCCB
Rated voltage 480V (W105xH181xD68mm)

Same dimensions

Technical innovation
Arc and gas flow control technology
Effect of "ablation breaking technology"

Decrease by 30%

Moving contact cover
• Arcing prevention at the bottom of moving contact

Narrow slit resin
• Increased arc voltage due to narrow slit effect
• Increased arc voltage and high-speed moving contact opening by ablation effect
• Suppression of internal pressure rise by adjusting the narrow slit width

Magnetic yoke arrangement
• An increase in the repulsion force of the moving contact at initiation of contact opening

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 (Cr⁶⁺-free) (125 to 800AF)

Moving contact
Stationary contact
Cadmium-free contact material

Usefulness Leading the way in user-friendliness

Unifying and reducing the types of internal accessories
32 to 100AF

Internal and external accessories
A wider range of customer-mountable accessories

MCCB Shunt trip device Undervoltage trip device Auxiliary switch Alarm switch

125 to 250AF

Sharing internal accessories of 125/250AF breakers.

AF	G-TWIN	G-TWIN
125	8	8
160/250	8	8

MCCB Shunt trip device Undervoltage trip device Auxiliary switch Alarm switch

400 to 800AF

The number of types of internal accessories of 400/630/800AF has been significantly reduced.

AF	G-TWIN	G-TWIN
400	26	6
630		
800		

MCCB Shunt trip device Undervoltage trip device Auxiliary switch Alarm switch

The Twin Breakers have advanced to an entirely new stage.

Conforming to IEC & local Standards
Conforming to certifications and standards in major world markets
Expanded frame sizes in G-TWIN Global Series

G-TWIN Standard series MCCB

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

G-TWIN Global series MCCB

FUJI MCCB and ELCB GLOBAL TWIN

Ecology
Lower environmental impact
Advanced green engineering and energy-saving support
Conforming to the RoHS Directive

G-TWIN Standard series MCCB

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

G-TWIN Global series MCCB

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, and the concept of Twin Breakers was established as Japan's de facto standards for MCCBs and ELCBs.

In 1992, Fuji Electric released the Super Twin Breaker Series, which enabled user installation of internal accessories for the first time in Japan.

In 1995, Fuji Electric released the Super 60 Series and advanced modularization via uniform external dimensions. In 2001, Fuji Electric launched the α-Twin Series to further advance the miniaturization and modularization of economic types with 100A frame or less as Japan's first multi-standard circuit breakers satisfying domestic and international standards. Since then, Fuji Electric has been making further product improvements by predicting market trends. In recent years, market globalization has increasingly accelerated.

At the end of 2004, the Japanese Industrial Standards (JIS) were aligned with the IEC standards, and the globalization in this field has been further accelerated. Based on the Twin Breaker Series, Fuji Electric has expanded the range of its products conforming to and approved by international standards for global markets, always advanced the innovative development of fundamental technologies in response to the market demand, and developed the G-TWIN Series of MCCBs and ELCBs.

GLOBAL TWIN History

1990 TWIN Breaker → 1992 Super TWIN → 1995 Super 60 → 2001 α-TWIN → 2006 G-TWIN

Usefulness
Leading the way in user-friendliness

G-TWIN series IEC/EN60947-2, GB14048.2, JISC8201-2-1		32AF				50AF				63AF				100AF				125AF				250AF																			
Type		BW32AAG		BW32SAG		BW50AAG		BW50EAG		BW50SAG		BW50ZSG		BW50RAG		BW63EAG		BW63SAG		BW63ZSG		BW63RAG		BW100AAG		BW100EAG		BW125JAG		BW125RAG		BW250EAG		BW250JAG		BW250RAG					
Pole		2	3	2	3	2	3	2	3	2	3	3	2	3	2	3	2	3	2	3	3	2	3	3	2	3	2	3	4	2	3	2	3	4	2	3	4				
Rated current	In [A]	3, 5, 10, 15, 20, 30, (32) ^{*3}								5, 10, 15, 20, 30, (32) ^{*3} 40, 50								10, 15, 20, 30, (32) ^{*3} 40, 50				60, (63) ^{*3}				60, (63) ^{*3} 75, 100				50, 60, (63) ^{*3} 75, 100				15, 20, 30, 40, 50, 60, 75, 100, 125				125, 150, 160, 175, 200, 225, 250			
Rated impulse withstand voltage	Uimp [kV]	6																																							
Isolation compliant		Approved																																							
Rated insulation voltage	Ui [V]	500																																							
	AC	690		690		690		690		690		690		690		690		690		690		690		690		690		690		690		690		690							
	DC	-		250 ^{*1}		-		250 ^{*1}		250 ^{*1}		-		250 ^{*1}		250 ^{*1}		-		250 ^{*1}		-		250 ^{*1}		250		250		250		250		250							
Rated frequency	[Hz]	50-60																																							
Rated breaking capacity [kA]	IEC60947-2 EN60947-2 JIS8201-2-1 Icu/Ics	AC	690V	-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-					
			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		5/3		8/4		10/5	
			440V	1.5/1		2.5/2		1.5/1		2.5/2		7.5/4		7.5/4		10/5		2.5/2		7.5/4		-		7.5/4		10/5		-		10/5		30/15		50/25		18/9		30/15		50/25	
			415V	1.5/1		2.5/2		1.5/1		2.5/2		7.5/4		7.5/4		10/5		2.5/2		7.5/4		-		7.5/4		10/5		1.5/1		10/5		30/15		50/25		18/9		30/15		50/25	
			400V	-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-	
			380V	-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-	
			240V	2.5/2		5/3		2.5/2		5/3		10/5		15/8		25/13		5/3		10/5		15/8		25/13		5/3		25/13		50/25		100/50		36/18		50/25		100/50			
			230V	-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-		-	
			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		40/20		10/5		20/10		30/15		
			GB14048.2 Icu/Ics	AC	400V	1.5/1		2.5/2		1.5/1		2.5/2		7.5/4		-		10/5		2.5/2		7.5/4		-		10/5		1.5/1		10/5		30/15		50/25		18/9		30/15		50/25	
				230V	2.5/2		5/3		2.5/2		5/3		25/13		-		25/13		5/3		10/5		-		25/13		5/3		50/25		100/50		36/18		50/25		100/50				
			NEMA AB1 ^{*2}	AC	480V/Y	1.5 ^{*2}		2.5 ^{*2}		1.5 ^{*2}		2.5 ^{*2}		7.5 ^{*2}		10 ^{*2}		7.5 ^{*2}		7.5 ^{*2}		10 ^{*2}		15 ^{*2}		25 ^{*2}		5 ^{*2}		10 ^{*2}		30 ^{*2}		50		18		30		30 ^{*2}	
240V	2.5 ^{*2}			5 ^{*2}		2.5 ^{*2}		5 ^{*2}		10 ^{*2}		15 ^{*2}		25 ^{*2}		5 ^{*2}		10 ^{*2}		15 ^{*2}		25 ^{*2}		5 ^{*2}		25 ^{*2}		50		100		36		50		50 ^{*2}		100			
Dimensions	[mm]	a	50	75	50	75	50	75	50	75	50	75	75	50	75	50	75	50	75	75	50	75	75	50	75	75	50	75	60	90	120	90	90	120	105	105	140	105	105	140	
		b	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	155	155	155	155	165	165	165	165	165	165			
		c	60	60	60	60	60	60	60	60	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			
		d	84	84	84	84	84	84	84	84	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			
Mass	[kg]	0.4	0.5	0.4	0.5	0.4	0.5	0.4	0.5	0.4	0.5	0.5	0.4	0.5	0.4	0.6	0.4	0.6	0.6	0.4	0.6	0.6	0.4	0.6	0.6	0.4	0.6	0.8	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
Tripping device		Hydraulic-magnetic																				Thermal-magnetic																			

G-TWIN series IEC/EN60947-2, GB14048.2, JISC8201-2-2		400AF				630AF				800AF															
Type		BW400EAG		BW400SAG		BW400RAG		BW400HAG		BW630EAG		BW630RAG		BW630HAG		BW800EAG		BW800RAG		BW800HAG					
Pole		2	3	2	3	2	3	4 ^{*3}	2	3	4	3	3	4 ^{*3}	3	4	3	3	4 ^{*3}	3	4				
Rated current	In [A]	250, 300, 350, 400								500, 600, 630				700, 800											
Rated impulse withstand voltage	Uimp [kV]	8								8				8											
Isolation compliant		Approved								Approved				Approved											
Rated insulation voltage	Ui [V]	690								690				690											
	DC	250								250				250											
Rated frequency	[Hz]	50-60								50-60				50-60											
Rated breaking capacity [kA]	IEC60947-2 EN60947-2 JIS8201-2-1 Icu/Ics	AC	690V	-		10/5		15/8		15/8		-		15/8		15/8		-		15/8		15/8			
			500V	18/9		20/10		36/18		42/21		20/10		36/18		42/21		20/10		36/18		42/21			
			440V	30/15		36/18		50/25		70/35		36/18		50/25		70/35		36/18		50/25		70/35			
			415V	-		-		-		-		-		-		-		-		-		-			
			400V	-		-		-		-		-		-		-		-		-		-			
			380V	-		-		-		-		-		-		-		-		-		-			
			240V	50/25		85/43		100/50		125/63		50/25		100/50		125/63		50/25		100/50		125/63			
			230V	-		-		-		-		-		-		-		-		-		-			
			DC	250V	10/5		20/10		30/15		40/20		20/10		40/20		40/20		20/10		40/20		40/20		
			GB14048.2 Icu/Ics	AC	400V	30/15		36/18		50/25		70/35		36/18		50/25		70/35		36/18		50/25		70/35	
				230V	50/25		85/43		100/50		125/63		50/25		100/50		125/63		50/25		100/50		125/63		
			NEMA AB1 ^{*2}	AC	480V/Y	30		36		50		50 ^{*2}		70		36		50		50 ^{*2}		70			
240V	50			85		100		100 ^{*2}		125		85		100		100 ^{*2}		125							
Dimensions	[mm]	a	140	140	140	140	140	140	185	210	210	210	210	210	210	210	210	210	210	210	280				
		b	257	257	257	257	257	275	275	275	275	275	275	275	275	275	275	275	275	275	275				
		c	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103				
		d	146	146	146	146	146	146	146	146	146	146	146	146	146	146	146	146	146	146	146				
Mass	[kg]	4.3	5.1	4.3	5.1	4.3	5.1	6.8	4.3	5.1	6.8	7.8	7.8	10.3	7.8	10.3	8.3	8.3	11	8.3	11				
Tripping device		Thermal-magnetic																							

H series, S series		50AF		100AF		225AF		400AF		630AF		800AF		1000AF		1200AF		1600AF									
Type		H52BA		H53BA		H102BA		H103BA		H202BA		H203BA		H203R		H403R		H603R		H803R		S1003		S1203		SE1603	
Pole		2	3	2	3	2	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Rated current	In [A]	15, 20, 30, 40, 50		15, 20, 30, 40, 50, 60, 75, 100		125, 150, 175, 200, 225		40, 50, 60, 75, 100, 125, 150, 175, 200, 225		250, 300, 350, 400		500, 600		700, 800		1000		1200		Selectable ^{*5} 1000-1200-1400-1600							
Rated insulation voltage	Ui [V]	AC 690		690		690		660		690		660 ^{*5}		660 ^{*5}		660 ^{*5}		660 ^{*5}		660 ^{*5}							
	DC	250		250		250		250		250		250		250		250		250		250							
Rated frequency	[Hz]	50-60		50-60		50-60		50-60		50-60		50-60		50-60		50-60		50-60		50-60							
Rated breaking capacity [kA]	IEC60947-2 EN60947-2 JIS8201-2-1 Icu/Ics IEC157-1 ^{*7}	AC	660V	-		-		-		-		-		30		30		35									
			600V	25/7		25/7		25/7		35		-		-		30		30		65							
			500V	35/9		35/9		35/9		42		85/43		85/43		85/43		35		35		65					
			440V	65/17		65/17		65/17		85		125/63		125/63		125/63		50		50		85					
			415V	-																							