e-Front runners

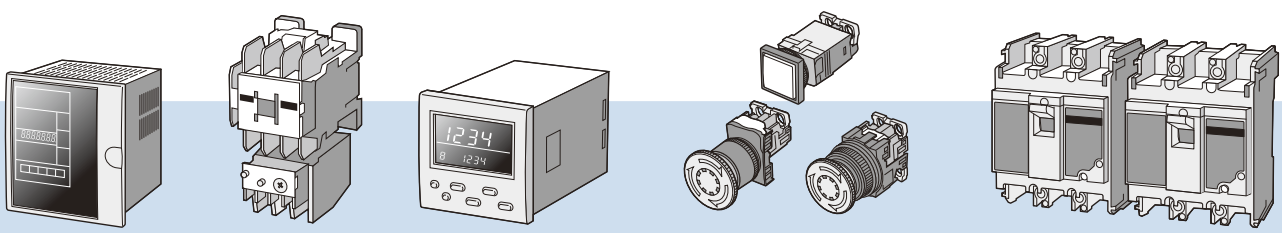
Vol. 13

FUJI ED&C TIMES

New Products

Modified Products

Discontinued Products



New Products

FC series magnetic motor starter with pushbuttons: FW-1P

Release of smaller and lighter motor starter with plastic enclosure

Features

The new motor starter FW-1P comes in a new lighter design, made of plastic enclosure (conventional model: steel-made). The built-in thermal overload relay has become common to SC series one.

Type

Product name	Type	Ordering code *1	Auxiliary contact arrangement	Enclosure material
FC series magnetic motor starter with pushbuttons	**FW-1P/3H**	SF20BPAN- □ 10 △◇	1NO	Plastic
		SF20BPAN- □ 01 △◇	1NC	

*1 □: Enter the operating coil voltage code. △&◇: Enter the main circuit voltage and overload relay setting range code.

Main circuit ratings

Rated insulation voltage (V)	Three-phase motor (AC-3)			
	Rated capacity (kW)		Rated operational current (A)	
	200 to 240V	380 to 440V	200 to 240V	380 to 440V
500	3.7	5.5	18	13

Auxiliary contact ratings

Magnetic contactor

Rated insulation voltage (V)	Conventional enclosed thermal current (rated thermal current) (A)	Making & breaking capacity (AC) (A)	Rated operational voltage (V)	Rated operational current (A)		Minimum operational voltage, current *1
				AC-15 (Ind. load)	AC-12 (Res. load)	
500	10	100	100 to 120 AC	10	10	24V DC, 0.1A
		60	200 to 240 AC	6	10	
		60	380 to 440 AC	6	10	

*1 The failure rate is 10^{-7} level in normal atmosphere where there are no dusts and corrosive gases.

Thermal overload relay

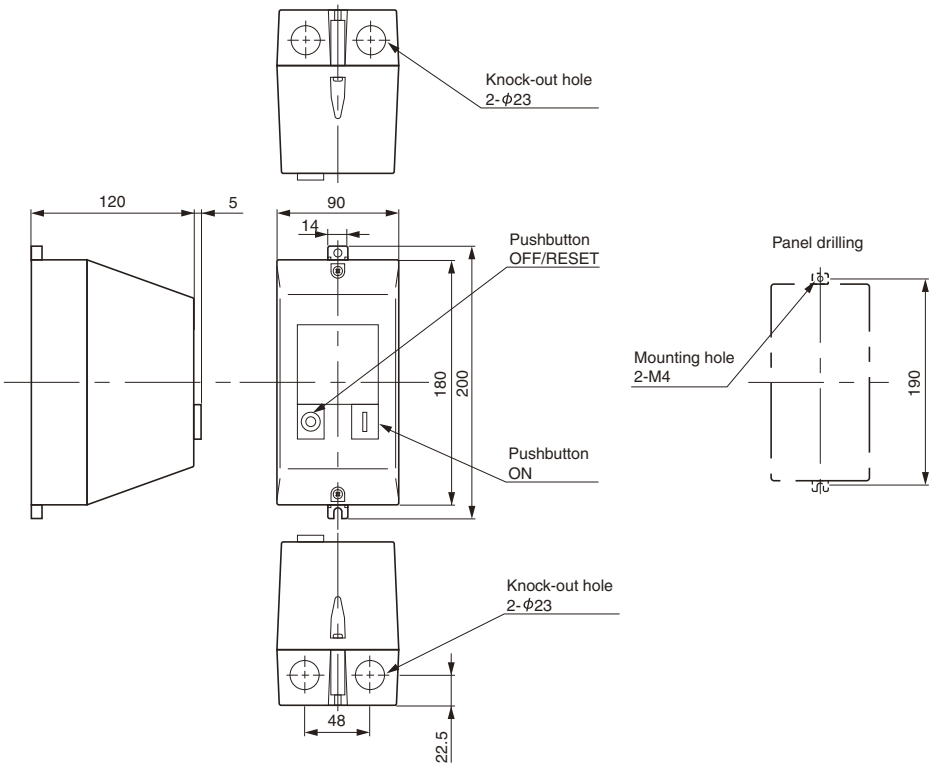
Rated insulation voltage (V)	Conventional enclosed thermal current (rated thermal current) (A)	Making & breaking capacity (AC) (A)	Rated operational voltage (V)	Rated operational current (A)		Minimum operational voltage, current *1
				AC-15 (Ind. load)	DC-13 (Ind. load)	
500	5	30	24	3 (0.5)	1.1 (0.3)	5V DC, 3mA
		25	100 to 120	2.5 (0.5)	0.28 (0.28)	
		20	200 to 240	2 (0.5)	0.14 (0.14)	
		10	380 to 440	1 (0.5)	–	

*1 The failure rate is 10^{-7} level in normal atmosphere where there are no dusts and corrosive gases.
Note: In the rated operational current column, the values in ( ) indicate the NO contact rating with the auto reset selected.

Performance

Rated operational voltage (V)	Rated operational current (A)	Making & breaking current (A)		Switching frequency (operating cycle per hour)	Durability (No. of operations)		Applied standard
		Making	Breaking		Mechanical	Electrical AC-3	
220	18	180	180	600	250,000 or more	250,000 or more	JIS AC-3・2・4-2
440	13	130	130				

Dimensions, mm



Time of release

Available immediately
For details, please contact your FUJI sales representative.

New Products

High performance multifunctional inverter: FRENIC-MEGA series

Product lineup expansion of three-phase 400V 90 to 220kW

Features

Enhanced control performance

- Applicable control methods: PG vector control, sensorless vector control, dynamic torque vector control, and V/f control
- Improved overload capability

	Overload capability	Major use
HD (High Duty) mode: Heavy duty load use	150%-1min, 200%-3s	General industrial machinery and installations
MD (Middle Duty) mode: Middle duty load use	150%-1min	Under constant torque load
LD (Low Duty) mode: Low duty load use	120%-1min	Fans and pumps, centrifuges, etc. Variable torque load in particular

Note: The 90 to 400kW models are suitable for MD (Middle Duty) mode, i.e. middle duty load use (overload capability: 150% - 1min) too.

Product lineup

	Capacity range
Basic type	Three-phase 400V series 0.4 to 630kW
EMC filter built in type	(280 to 630kW: available soon)

Note: Three-phase 200V series (0.4 to 90kW) are also available according to your region.

Accommodating various applications

- PG card (Option) is provided, best suited for the application that requires highly accurate positioning.
- Provided with servo lock function, which is effective in adjusting the stop timing or the braking torque, the equipment such as conveyance machine is stopped by positioning of the motor.
- Connection with the following network
  Device Net
  CC-Link
  PROFIBUS-DP etc

Standard specifications (Basic type)

Three-phase 400V series

• (0.4 to 55kW) HD mode designed for heavy duty load applications

Item			Specifications														
Type (FRN_ _ _ G1S-4∗)			0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55
Nominal applied motor (kW) (*2)			0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55
Output rating	Rated capacity (kVA) (*3)		1.1	1.9	2.8	4.1	6.8	10	14	18	24	29	34	45	57	69	85
	Rated voltage (V) (*4)		Three-phase, 380 to 480V (with AVR function)														
	Rated current (A)		1.5	2.5	4	5.5	9	13.5	18.5	24.5	32	39	45	60	75	91	112
	Overload capability		150%-1min, 200%-3.0s														
Input rating	Voltage, frequency		Three-phase, 380 to 480V, 50/60Hz														
	Voltage, frequency variations		Voltage: +10 to -15% (Interphase voltage unbalance: 2% or less (*6)), Frequency: +5 to -5%														
	Required capacity with DCR (kVA) (*7)		0.6	1.2	2.1	3.2	5.2	7.4	10	15	20	25	30	40	48	58	71
Braking	Torque (%) (*8)		150%			100%				20%				10 to 15%			
	Braking transistor		Built-in											–			
	Built-in braking resistor																
		Braking time (s)	5s							–							
		%ED	5	3	5	3	2	3	2	–							
DC reactor (DCR)			Option														
Applicable safety standards			UL508C, C22.2 No.14, EN50178: 1997														
Enclosure (IEC 60529)			IP20, UL open type											IP00, UL open type			
Cooling method			Natural cooling			Fan cooling											
Weight / Mass (kg)			1.7	2	2.6	2.7	3	6.5	6.5	5.8	9.5	9.5	10	25	26	31	33

• (75 to 630kW) HD mode designed for heavy duty load applications

Item		Specifications												
Type (FRN_ _ _ G1S-4∗)		75	90	110	132	160	200	220	280	315	355	400	500	630
Nominal applied motor (kW) (*2)		75	90	110	132	160	200	220	280	315	355	400	500	630
Output rating	Rated capacity (kVA) (*3)	114	134	160	192	231	287	316	396	445	495	563	731	891
	Rated voltage (V) (*4)	Three-phase, 380 to 480V (with AVR function)												
	Rated current (A)	150	176	210	253	304	377	415	520	585	650	740	960	1170
	Overload capability	150%-1min, 200%-3.0s												
Input rating	voltage, frequency	Three-phase 380 to 480V, 50Hz Three-phase 380 to 480V, 60Hz												
	Voltage, frequency variations	Voltage: +10 to -15% (Interphase voltage unbalance: 2% or less (*6)) Frequency: +5 to -5%												
	Required capacity with DCR (kVA) (*7)	96	114	140	165	199	248	271	347	388	436	489	611	773
Braking	Torque (%) (*8)	10 to 15%												
	Braking transistor	–												
DC reactor (DCR)		Option (*9)												
Applicable safety standards		UL508C, C22.2 No.14, EN50178: 1997												
Enclosure (IEC 60529)		IP00, UL open type												
Cooling method		Fan cooling												
Weight / Mass (kg)		42	62	64	103	103	144	144						

(*2) Fuji's 4-pole standard motor.
(*3) Rated capacity is calculated by assuming the rated output voltage as 220V for 200V series and 440V for 400V series.
(*4) Output voltage cannot exceed the power supply voltage.
(*6) Voltage unbalance (%) = (Max. voltage (V) – Min. voltage (V)) / Three-phase average voltage (V) x 67 (IEC 61800-3))
If this value is 2 to 3%, use an optional AC eractor (ACR).
(*7) Required when a DC reactor (DCR) is used.
(*8) Average braking torque for the motor running alone. (It varies with the efficiency of the motor.)
(*9) A DC reactor (DCR) is an optional. However, inverters with a capacity of 75kW or above require a DCR to be connected. Be sure to connect it to those inverters.

Dimensions

Please refer to the FRENIC-MEGA Inverter catalog No. (EU version: MEH655, other country: MEH642) for the dimensions or contact your FUJI sales representative.

Time of release

Available immediately
For details, please contact your FUJI sales representative.

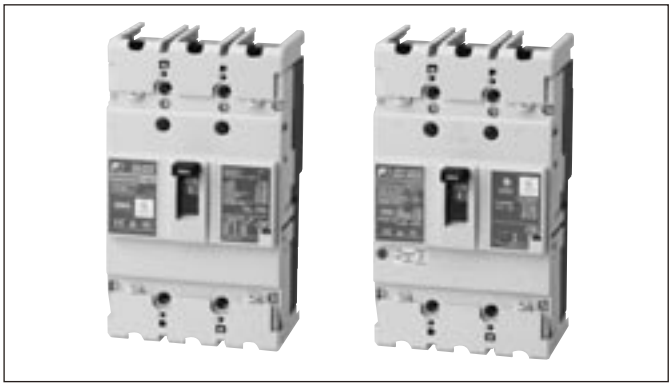
New Products

MCCBs and ELCBs G-TWIN series

A new compact high-performance MCCB and ELCB series – G-TWIN series circuit breakers satisfying major international safety standards

Features

- Conforming to major international safety standards (G-TWIN Standard series)
  IEC, CE Marking, TÜV, CCC, JIS
- Release of a breaker series comforting to standards in North America in addition (G-TWIN Global series)
  UL, CAN/CSA, IEC, CE Marking, TÜV, CCC, JIS
- Smaller, higher performance breaker adopting Fuji's original ablation breaking technology
- Easier to use due to standardizing of internal accessory
- Newly developed earth leakage detection device installed in ELCB increases noise and surge immunity
  - •Withstand voltage test can be made without disconnecting wiring by adopting a megger test changeover switch.
  - •Adopts a new three-phase power supply circuit which operates when a ground fault occurs even during open phase state in three-phase circuit. (Revised IEC 60947-2 requirement)



- Environmental load reduction by indicating main parts material name, conformity with RoHS Directive, and use of cadmium-free contact

Type

G-TWIN MCCB Standard series

Ampere frame	Basic type	No. of pole	Rated current (A)
125	BW125JAG	2, 3, 4	15-125
	BW125SAG		
	BW125RAG		
160	BW160EAG	2, 3	125-160
	BW160JAG	2, 3, 4	
	BW160SAG		
	BW160RAG		
250	BW250EAG	2, 3	175-250
	BW250JAG	2, 3, 4	
	BW250SAG		
	BW250RAG		
400	BW400EAG	2, 3	250-400
	BW400SAG		
	BW400RAG	2, 3, 4	
	BW400HAG		

G-TWIN MCCB Global series

Ampere frame	Basic type	No. of pole	Rated current (A)
125	BW125JAGU	2, 3	15-125
	BW125RAGU		
250	BW250EAGU	2, 3	125-250
	BW250JAGU		
	BW250RAGU		
400	BW400EAGU	2, 3	250-400
	BW400SAGU		
	BW400RAGU		
	BW400HAGU		

G-TWIN ELCB Standard series

Ampere frame	Basic type	No. of pole	Rated current (A)
125	EW125JAG	3, 4	15-125
	EW125SAG		
	EW125RAG		
160	EW160EAG	3	125-160
	EW160JAG	3, 4	
	EW160SAG		
	EW160RAG		
250	EW250EAG	3	175-250
	EW250JAG	3, 4	
	EW250SAG		
	EW250RAG		
400	EW400EAG	3	250-400
	EW400SAG	3, 4	
	EW400RAG		
	EW400HAG		

G-TWIN ELCB Global series

Ampere frame	Basic type	No. of pole	Rated current (A)
125	EW125JAGU	3	15-125
	EW125RAGU		
250	EW250JAGU	3	125-250
	EW250RAGU		
400	EW400SAGU	3	250-400
	EW400RAGU		

Time of release

Available immediately
For details, please contact your FUJI sales representative.

MCCB Standard Series

Ampere frame				125A									160A											
Type				BW125JAG			BW125SAG			BW125RAG			BW160EAG		BW160JAG			BW160SAG			BW160RAG		
Pole				2	3	4	2	3	4	2	3	4	2	3	2	3	4	2	3	4	2	3	4
Rated current Ref. amb. temp. (40°C)		In(A)		15, 20, 30, 40, 50, 60, 75, 100, 125									125, 150, 160										
Rated impulse withstand voltage		Uimp(kV)		6			6			6			6		6			6			6		
Isolation compliant				◎			◎			◎			◎		◎			◎			◎		
Rated insulation voltage Ui (V)		AC		690			690			690			690		690			690			690		
		DC		250			250			250			250		250			250			250		
Rated breaking capacity Icu/Ics (kA)	IEC 60947-2 JIS C 8201-2-1 Ann. 1,2	AC	690V	–	–		–			–			–		–			–			–		
			500V	5/3	8/4		10/5			10/5			5/3		8/4			10/5			10/5		
			440V	30/15	30/15		36/18			50/25			18/9		30/15			36/18			50/25		
			415V	30/15	30/15		36/18			50/25			18/9		30/15			36/18			50/25		
			400V	30/15	30/15		36/18			50/25			18/9		30/15			36/18			50/25		
			380V	30/15	30/15		36/18			50/25			18/9		30/15			36/18			50/25		
			240V	50/25	50/25		85/43			100/50			36/18		50/25			85/43			100/50		
			230V	50/25	50/25		85/43			100/50			36/18		50/25			85/43			100/50		
		DC	250V	15/8	15/8		30/15			40/20			10/5		20/10			30/15			30/15		
	GB14048.2	AC	400V	30/15	30/15		36/18			50/25			18/9		30/15			36/18			50/25		
			230V	50/25	50/25		85/43			100/50			36/18		50/25			85/43			100/50		
Standard certified	CE Marking certified (TÜV)			◎			◎			◎			◎		◎			◎			◎		
	CCC approved			◎			◎			◎			◎		◎			◎			◎		
	<PS>E *			◎ (except for 125A)									–		–			–			–		
Dimensions (mm)		a		60	90	120	90	90	120	90	90	120	105	105	105	105	140	105	105	140	105	105	140
		b		155			155			155			165		165			165			165		
		c		68			68			68			68		68			68			68		
		d		95			95			95			95		95			95			95		
Mass (kg)				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
Tripping device				Thermal-magnetic									Thermal-magnetic										

Ampere frame				250A									400A										
Type				BW250EAG		BW250JAG			BW250SAG			BW250RAG			BW400EAG		BW400SAG		BW400RAG			BW400HAG		
Pole				2	3	2	3	4	2	3	4	2	3	4	2	3	2	3	2	3	4	2	3	4
Rated current Ref. amb. temp. (40°C)		In(A)		175, 200, 225, 250											250, 300, 350, 400									
Rated impulse withstand voltage		Uimp(kV)		6		6			6			6			8		8		8			8		
Isolation compliant				◎		◎			◎			◎			◎		◎		◎			◎		
Rated insulation voltage Ui (V)		AC		690		690			690			690			690		690		690			690		
		DC		250		250			250			250			250		250		250			250		
Rated breaking capacity Icu/Ics (kA)	IEC 60947-2 JIS C 8201-2-1 Ann. 1,2	AC	690V	–		–			–			–			–		10/5		15/8			15/8		
			500V	5/3		8/4			10/5			10/5			18/9		20/10		36/18			42/21		
			440V	18/9		30/15			36/18			50/25			30/15		36/18		50/25			70/35		
			415V	18/9		30/15			36/18			50/25			30/15		36/18		50/25			70/35		
			400V	18/9		30/15			36/18			50/25			30/15		36/18		50/25			70/35		
			380V	18/9		30/15			36/18			50/25			30/15		36/18		50/25			70/35		
			240V	36/18		50/25			85/43			100/50			50/25		85/43		100/50			125/63		
			230V	36/18		50/25			85/43			100/50			50/25		85/43		100/50			125/63		
		DC	250V	10/5		20/10			30/15			30/15			20/10		20/10		40/20			40/20		
	GB14048.2	AC	400V	18/9		30/15			36/18			50/25			30/15		36/18		50/25			70/35		
			230V	36/18		50/25			85/43			100/50			50/25		85/43		100/50			125/63		
Standard certified	CE Marking certified (TÜV)			◎		◎			◎			◎			◎		◎		◎			◎		
	CCC approved			◎		◎			◎			◎			◎		◎		◎			◎		
	<PS>E *			–		–			–			–			–		–		–			–		
Dimensions (mm)		a		105	105	105	105	140	105	105	140	105	105	140	140	140	140	140	140	140	185	140	140	185
		b		165		165			165			165			257		257		257			257		
		c		68		68			68			68			103		103		103			103		
		d		95		95			95			95			146		146		146			146		
Mass (kg)				1.4	1.6	1.4	1.6	2.2	1.4	1.6	2.2	1.4	1.6	2.2	4.6	5.6	4.6	5.6	4.6	5.6	7.4	4.6	5.6	7.4
Tripping device				Thermal-magnetic									Thermal-magnetic											

◎: Approved –: Not approved
Note: * Electrical Appliance and Material Safety Law of Japan

MCCB Global Series

Ampere frame				125A				250A					
Type				BW125JAGU		BW125RAGU		BW250EAGU		BW250JAGU		BW250RAGU	
Pole				2	3	2	3	2	3	2	3	2	3
Rated current Ref. amb. temp. (40°C)			In(A)	15, 20, 30, 40, 50, 60, 70, 75, 80, 90, 100, 125				125, 150, 160, 175, 200, 225, 250					
Rated impulse withstand voltage			Uimp(kV)	6		6		6		6		6	
Isolation compliant				◎		◎		◎		◎		◎	
Rated insulation voltage Ui (V)			AC	690		690		690		690		690	
			DC	250		250		250		250		250	
Rated breaking capacity	IEC 60947-2 JIS C 8201-2-1 Ann. 1,2 Icu/Ics (kA)	AC	690V	–		5/3		–		–		5/3	
			500V	15/8		36/18		10/5		18/9		36/18	
			440V	30/15		50/25		18/9		30/15		50/25	
			415V	30/15		50/25		18/9		30/15		50/25	
			400V	30/15		50/25		18/9		30/15		50/25	
			380V	30/15		50/25		18/9		30/15		50/25	
			240V	50/25		100/50		36/18		50/25		100/50	
			230V	50/25		100/50		36/18		50/25		100/50	
		DC	250V	15/8		40/20		10/5		20/10		40/20	
	GB14048.2 Icu/Ics(kA)	AC	400V	30/15		50/25		18/9		30/15		50/25	
			230V	50/25		100/50		36/18		50/25		100/50	
	UL489 CAN/CSA C22.2 NO.5 (kA)	AC	600V/Y	10	10	18		–		10		25	
			480V/Δ	–	30	50		–		30		50	
			480V/Y	30	30	50		–		30		50	
			240V	50	50	100		22		50		100	
		DC	250V	10	10	10		10		10		10	
Standard certified	CE Marking certified (TÜV)			◎		◎		◎		◎		◎	
	CCC approved			◎		◎		◎		◎		◎	
	UL approved			◎		◎		◎		◎		◎	
	<PS>E *			◎ (except for 125A)				–		–		–	
Dimensions (inch(mm))			a	2.362 (60)	3.543 (90)	3.543 (90)		4.134 (105)		4.134 (105)		4.134 (105)	
			b	6.732 (171)		6.732 (171)		7.126 (181)		7.126 (181)		7.126 (181)	
			c	2.677 (68)		2.677 (68)		2.677 (68)		2.677 (68)		2.677 (68)	
			d	3.740 (95)		3.740 (95)		3.740 (95)		3.740 (95)		3.740 (95)	
Mass (kg)				0.8	1.2	1.0	1.2	1.4	1.6	1.4	1.6	1.4	1.6
Tripping device				Thermal-magnetic				Thermal-magnetic					

Ampere frame				400A							
Type				BW400EAGU		BW400SAGU		BW400RAGU		BW400HAGU	
Pole				2	3	2	3	2	3	2	3
Rated current Ref. amb. temp. (40°C)			In(A)	250, 300, 350, 400							
Rated impulse withstand voltage			Uimp(kV)	8		8		8		8	
Isolation compliant				◎		◎		◎		◎	
Rated insulation voltage Ui (V)			AC	690		690		690		690	
			DC	250		250		250		250	
Rated breaking capacity	IEC 60947-2 JIS C 8201-2-1 Ann. 1,2 Icu/Ics (kA)	AC	690V	–		10/5		15/8		15/8	
			500V	18/9		20/10		36/18		42/21	
			440V	30/15		36/18		50/25		70/35	
			415V	30/15		36/18		50/25		70/35	
			400V	30/15		36/18		50/25		70/35	
			380V	30/15		36/18		50/25		70/35	
			240V	50/25		85/43		100/50		125/63	
			230V	50/25		85/43		100/50		125/63	
		DC	250V	20/10		20/10		40/20		40/20	
	GB14048.2 Icu/Ics(kA)	AC	400V	30/15		36/18		50/25		70/35	
			230V	50/25		85/43		100/50		125/63	
	UL489 CAN/CSA C22.2 NO.5 (kA)	AC	600V/Δ	–		–		–		25	
			600V/Y	–		–		25		25	
			480V/Δ	–		35		50		65 (With block terminal: 50)	
			480V/Y	–		35		50		65 (With block terminal: 50)	
			240V	22		50		100		125	
		DC	250V	10		10		10		10	
Standard certified	CE Marking certified (TÜV)			◎		◎		◎		◎	
	CCC approved			◎		◎		◎		◎	
	UL approved			◎		◎		◎		◎	
	<PS>E *			–		–		–		–	
Dimensions (inch(mm))			a	5.512 (140)		5.512 (140)		5.512 (140)		5.512 (140)	
			b	10.12 (257)		10.12 (257)		10.12 (257)		10.12 (257)	
			c	4.055 (103)		4.055 (103)		4.055 (103)		4.055 (103)	
			d	5.748 (146)		5.748 (146)		5.748 (146)		5.748 (146)	
Mass (kg)				4.6	5.6	4.6	5.6	4.6	5.6	4.6	5.6
Tripping device				Thermal-magnetic							

◎: Approved –: Not approved Note: * Electrical Appliance and Material Safety Law of Japan

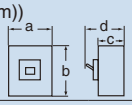
ELCB Standard Series

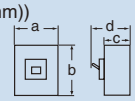
Ampere frame				125A						160A							
Type				EW125JAG		EW125SAG		EW125RAG		EW160EAG	EW160JAG		EW160SAG		EW160RAG		
Pole				3	4	3	4	3	4	3	3	4	3	4	3	4	
Rated current Ref. amb. temp. (40°C)		In(A)		15, 20, 30, 40, 50, 60, 75, 100, 125						125, 150, 160							
Rated impulse withstand voltage		Uimp(kV)		6		6		6		6	6		6		6		
Isolation compliant				◎		◎		◎		◎	◎		◎		◎		
Rated voltage (AC V)				100-230-440						100-230-440							
Type of earth leakage trip action				AC type						AC type							
Instantaneous trip type	Rated sensitive current (mA)			30						30							
	Tripping time (s)			0.1 or less						0.1 or less							
Instantaneous/ time-delay trip type	Rated sensitive current (mA)			100/300/500/1000 changeover						100/300/500/1000 changeover							
	Tripping time (s)			0.1/0.4/1/2 changeover						0.1/0.4/1/2 changeover							
	Inertia non-tripping time (s) (2IΔn)			0/0.2/0.5/1						0/0.2/0.5/1							
Rated breaking capacity Icu/Ics (kA)	IEC60947-2 JISC8201-2-2 Ann. 1,2	AC	440V	30/15		36/18		50/25		18/9	30/15		36/18		50/25		
			415V	30/15		36/18		50/25		18/9	30/15		36/18		50/25		
			400V	30/15		36/18		50/25		18/9	30/15		36/18		50/25		
			380V	30/15		36/18		50/25		18/9	30/15		36/18		50/25		
			240V	50/25		85/43		100/50		36/18	50/25		85/43		100/50		
			230V	50/25		85/43		100/50		36/18	50/25		85/43		100/50		
			100V	50/25		85/43		100/50		36/18	50/25		85/43		100/50		
	GB14048.2	AC	400V	30/15		36/18		50/25		18/9	30/15		36/18		50/25		
			230V	50/25		85/43		100/50		36/18	50/25		85/43		100/50		
Standard certified	CE Marking certified (TÜV)			◎		◎		◎		◎	◎		◎		◎		
	CCC approved			◎		◎		◎		◎	◎		◎		◎		
	<PS>E *			◎ (except for 125A)						–	–		–		–		
Dimensions (mm)			a	90	120	90	120	90	120	105	105	140	105	140	105	140	
			b	155		155		155		165	165		165		165		
			c	68		68		68		68	68		68		68		
			d	95		95		95		95	95		95		95		
Mass (kg)				1.2	1.6	1.2	1.6	1.2	1.6	1.6	1.6	2.2	1.6	2.2	1.6	2.2	
Tripping device				Thermal-magnetic						Thermal-magnetic							

Ampere frame				250A								400A							
Type				EW250EAG		EW250JAG		EW250SAG		EW250RAG		EW400EAG	EW400SAG		EW400RAG		EW400HAG		
Pole				3		3	4	3	4	3	4	3	3	4	3	4	3	4	
Rated current Ref. amb. temp. (40°C)		In(A)		175, 200, 225, 250								250, 300, 350, 400							
Rated impulse withstand voltage		Uimp(kV)		6		6		6		6		6	6		6		6		
Isolation compliant				◎		◎		◎		◎		◎	◎		◎		◎		
Rated voltage (AC V)				100-230-440								IEC : 100-230-440 UL : 200-480							
Type of earth leakage trip action				AC type								AC type							
Instantaneous trip type	Rated sensitive current (mA)			30								30							
	Tripping time (s)			0.1 or less								0.1 or less							
Instantaneous/ time-delay trip type	Rated sensitive current (mA)			100/300/500/1000 changeover								100/300/500/1000 changeover							
	Tripping time (s)			0.1/0.4/1/2 changeover								0.1/0.4/1/2 changeover							
	Inertia non-tripping time (s) (2IΔn)			0/0.2/0.5/1								0/0.2/0.5/1							
Rated breaking capacity Icu/Ics (kA)	IEC60947-2 JISC8201-2-2 Ann. 1,2	AC	440V	18/9		30/15		36/18		50/25		30/15	36/18		50/25		70/35		
			415V	18/9		30/15		36/18		50/25		30/15	36/18		50/25		70/35		
			400V	18/9		30/15		36/18		50/25		30/15	36/18		50/25		70/35		
			380V	18/9		30/15		36/18		50/25		30/15	36/18		50/25		70/35		
			240V	36/18		50/25		85/43		100/50		50/25	85/43		100/50		125/63		
			230V	36/18		50/25		85/43		100/50		50/25	85/43		100/50		125/63		
			100V	36/18		50/25		85/43		100/50		50/25	85/43		100/50		125/63		
	GB14048.2	AC	400V	18/9		30/15		36/18		50/25		30/15	36/18		50/25		70/35		
			230V	36/18		50/25		85/43		100/50		50/25	85/43		100/50		125/63		
Standard certified	CE Marking certified (TÜV)			◎		◎		◎		◎		◎	◎		◎		◎		
	CCC approved			◎		◎		◎		◎		◎	◎		◎		◎		
	<PS>E *			–		–		–		–		–	–		–		–		
Dimensions (mm)			a	105		105	140	105	140	105	140	140	140	185	140	185	140	185	
			b	165		165		165		165		257	257		257		257		
			c	68		68		68		68		103	103		103		103		
			d	95		95		95		95		146	146		146		146		
Mass (kg)				1.6		1.6	2.2	1.6	2.2	1.6	2.2	5.6	5.6	7.4	5.6	7.4	5.6	7.4	
Tripping device				Thermal-magnetic								Thermal-magnetic							

◎: Approved –: Not approved Note: * Electrical Appliance and Material Safety Law of Japan

ELCB Global Series

Ampere frame				125A		250A	
Type				**EW125JAGU**	**EW125RAGU**	**EW250JAGU**	**EW250RAGU**
Pole				3	3	3	3
Rated current Ref. amb. temp. (40°C)	In(A)			15, 20, 30, 40, 50, 60, 75, 100, 125		125, 150, 160, 175, 200, 225, 250	
Rated impulse withstand voltage	Uimp(kV)			6	6	6	6
Isolation compliant				◎	◎	◎	◎
Rated voltage (AC V)				IEC : 100-230-440 UL : 200-480		IEC : 100-230-440 UL : 200-480	
Type of earth leakage trip action				AC type		AC type	
Instantaneous trip type	Rated sensitive current (mA)			30		30	
	Tripping time (s)			0.1 or less		0.1 or less	
Instantaneous/ time-delay trip type	Rated sensitive current (mA)			100/200/500/1000 changeover		100/200/500/1000 changeover	
	Tripping time (s)			0.1/0.4/1/2 changeover		0.1/0.4/1/2 changeover	
	Inertia non-tripping time (s) (2IΔn)			0/0.2/0.5/1		0/0.2/0.5/1	
Rated breaking capacity	IEC60947-2 JISC8201-2-2 Ann. 1,2 Icu/Ics (kA)	AC	440V	30/15	50/25	30/15	50/25
			415V	30/15	50/25	30/15	50/25
			400V	30/15	50/25	30/15	50/25
			380V	30/15	50/25	30/15	50/25
			240V	50/25	100/50	50/25	100/50
			230V	50/25	100/50	50/25	100/50
			100V	50/25	100/50	50/25	100/50
	GB14048.2 Icu/Ics (kA)	AC	400V	30/15	50/25	30/15	50/25
			230V	50/25	100/50	50/25	100/50
	UL489 CAN/CSA C22.2 NO.5 (kA)	AC	480V/Δ	30	50	30	50
			480V/Y	30	50	30	50
			240V	50	100	50	100
Standard certified	CE Marking certified (TÜV)			◎	◎	◎	◎
	CCC approved			◎	◎	◎	◎
	UL approved			◎	◎	◎	◎
	<PS>E *			◎ (except for 125A)		–	–
Dimensions (inch(mm)) 			a	3.543 (90)	3.543 (90)	4.134 (105)	4.134 (105)
			b	6.732 (171)	6.732 (171)	7.126 (181)	7.126 (181)
			c	2.677 (68)	2.677 (68)	2.677 (68)	2.677 (68)
			d	3.740 (95)	3.740 (95)	3.740 (95)	3.740 (95)
Mass (kg)				1.2	1.2	1.6	1.6
Tripping device				Thermal-magnetic		Thermal-magnetic	

Ampere frame				400A	
Type				**EW400SAGU**	**EW400RAGU**
Pole				3	3
Rated current Ref. amb. temp. (40°C)	In(A)			250, 300, 350, 400	
Rated impulse withstand voltage	Uimp(kV)			6	6
Isolation compliant				◎	◎
Rated voltage (AC V)				IEC : 100-230-440 UL : 200-480	
Type of earth leakage trip action				AC type	
Instantaneous trip type	Rated sensitive current (mA)			30	
	Tripping time (s)			0.1 or less	
Instantaneous/ time-delay trip type	Rated sensitive current (mA)			100/200/500/1000 changeover	
	Tripping time (s)			0.1/0.4/1/2 changeover	
	Inertia non-tripping time (s) (2IΔn)			0/0.2/0.5/1	
Rated breaking capacity	IEC60947-2 JISC8201-2-2 Ann. 1,2 Icu/Ics (kA)	AC	440V	36/18	50/25
			415V	36/18	50/25
			400V	36/18	50/25
			380V	36/18	50/25
			240V	85/43	100/50
			230V	85/43	100/50
			100V	85/43	100/50
	GB14048.2 Icu/Ics (kA)	AC	400V	36/18	50/25
			230V	85/43	100/50
	UL489 CAN/CSA C22.2 NO.5 (kA)	AC	480V/Δ	35	50
			480V/Y	35	50
			240V	50	100
Standard certified	CE Marking certified (TÜV)			◎	◎
	CCC approved			◎	◎
	UL approved			◎	◎
	<PS>E *			–	–
Dimensions (inch(mm)) 			a	5.512 (140)	5.512 (140)
			b	10.12 (257)	10.12 (257)
			c	4.055 (103)	4.055 (103)
			d	5.748 (146)	5.748 (146)
Mass (kg)				5.6	5.6
Tripping device				Thermal-magnetic	

◎: Approved –: Not approved Note: * Electrical Appliance and Material Safety Law of Japan

Modified Products

SC series mechanical latch contactors

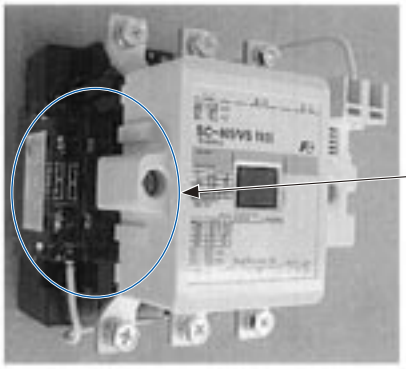
Change of factory-assembled auxiliary contact block in frame sizes from N4 to N7

Product name	Type	Changed part	Before	After
Mechanical latch contactors SC series	SC-N4/VS, SC-N5/VS, SC-N6/VS, SC-N7/VS SC-N4RM/VS, SC-N5RM/VS, SC-N6RM/VS, SC-N7RM/VS	Auxiliary contact block (for main unit use and additional use) attached to the contactors shown on the left column	Frame (SC): 03 to 5-1 / N1 to N3 — Standard type: SZ-AS1 — Mechanical latch type (V, VG, VS): SZ-AS1V **N4 to N7** — **SZ-AS2** N8 to N12 N14, N16 — SZ-AS3H	Use of dedicated auxiliary contact block SZ-AS2V (Before change, common use of SZ-AS2) Frame (SC): 03 to 5-1 / N1 to N3 — Standard type: SZ-AS1 — Mechanical latch type (V, VG, VS): SZ-AS1V **N4 to N7** — SZ-AS2 — **SZ-AS2V** N8 to N12 N14, N16 — SZ-AS3H

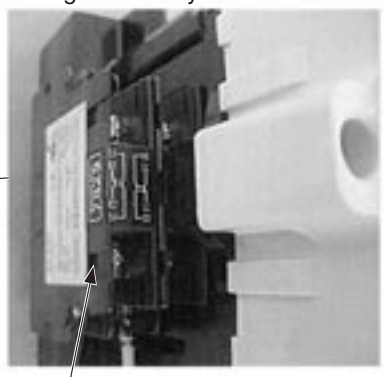
Contents of change

The auxiliary contact block changes to dedicated mechanical latch contactor.

Overview



Enlarged auxiliary contact block



Auxiliary contact block

Nameplate

As a dedicated contact block is adopted to the mechanical latch type, the type number indication on the nameplate of auxiliary contact block changes as below.

SZ-AS2 → SZ-AS2V

Note on modification

This block is a factory-assembled part, this is not supplied separately.

Time of modification: April 2008

SC series magnetic contactors, motor starters and industrial relays
SJ series magnetic contactors

Partial change of auxiliary contact base metal

Product name	Type	Changed part
(1) SC series (2) SJ series (3) Optional front mounting & side mounting auxiliary contact block	(1) SC-03 to SC-5-1, SC-N1 to SC-N12, SH-4, SH-5 (including motor starter, reversing type, and applied models) (2) SJ-1SG (including reversing type and applied models) (3) SZ-A□, SZ-AS1, SZ-AS2	Auxiliary NO contact (stationary), auxiliary NC contact (stationary), including auxiliary single-button contact model (/H) (Excluding auxiliary NC contact (stationary) for SC-03 to SC-5-1, SJ-1SG. Excluding NC contact for SH-4 and SH-5 main unit.)

Contents of change	Before	After
(1) Stationary contact for bifurcated contact Back side of NO and NC contact base metal	Flat	Concave
(2) Stationary contact for single-button contact NO and NC contact base metal	No stamp	Addition of stamp “H”

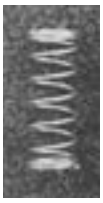
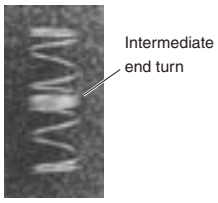
Reason of change

Due to change of manufacturing method

Time of modification: May 2008

Magnetic contactors, industrial relay – auxiliary contact block

Change due to difficulty in procurement of coloring material for spring

Product name	Type	Changed part	Before	After
Magnetic contactors, industrial relay-auxiliary contact block	SC-03 to 05	(1) Main contact contact spring color	Gold	Silver
	SC-03 to N3 SH-4, 5 SZ-A□, AS1	(2) Auxiliary contact shape of contact spring	No intermediate end turn 	Addition of intermediate end turn 
	SC-03 to 5-1 SH-4, 5	(3) Color of back spring 	3 colors; silver, gold, black	Silver

Note on modification

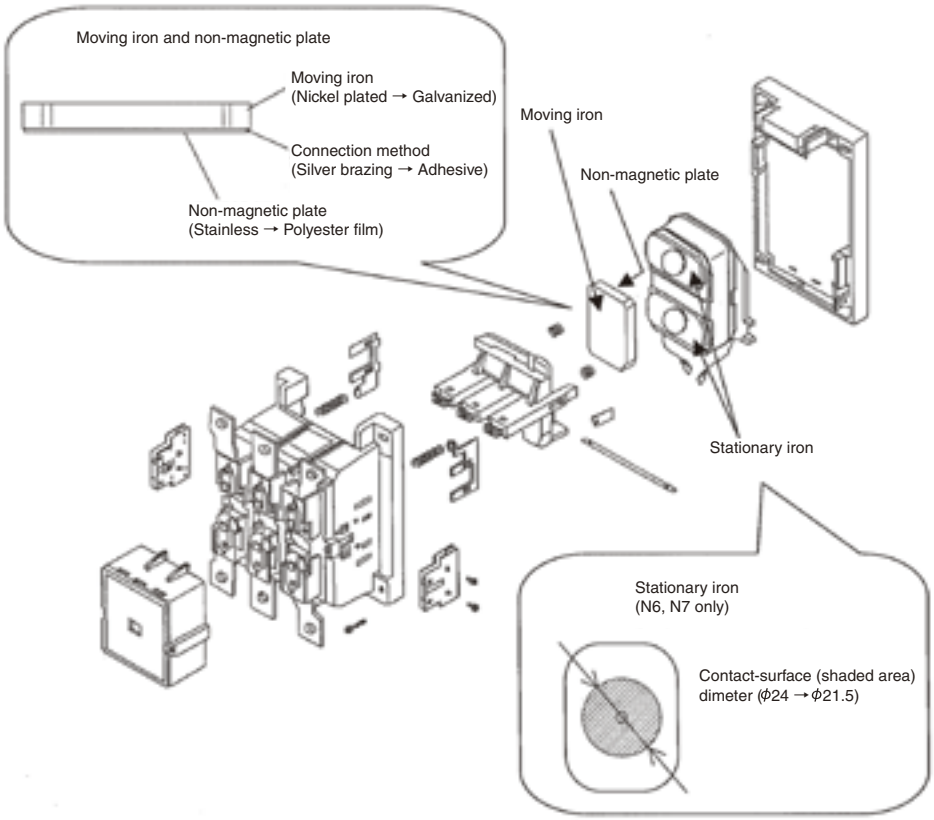
The performance and quality remain unchanged only because of the change of the appearance of internal parts (spring).

Time of modification: January 2008

SC series magnetic contactors, motor starters non-magnetic plate material

Change due to manufacturing process change

Product name	Type	Changed part	Before	After
SC series magnetic contactors, starters	SC-N4/SE, SC-N5 to SC-N12, SW-N4/SE, SW-N5 to SW-N12 (including reversing, enclosed type)	(1) Non-magnetic plate material	Stainless	Polyester film
		(2) Moving iron treatment (plating)	Nickel plated	Galvanized
		(3) Moving iron & non-magnetic plate connection method	Silver brazing	Adhesive
		(4) External diameter of stationary iron contact-surface (N6, N7 only)	24mm dia.	21.5mm dia.



Note on modification

The performance and quality remain unchanged.

Time of modification: March 2008

Socket for power control unit, analog distance sensor, timer

Withdrawal of UL/CSA standard certification

Product name	Type	Changed part	Contents of change	Before	After
Socket for power control unit, analog distance sensor, timer	TP28X-UL, ATX1NS, ATX2NS	Withdrawal of UL/CSA certification	No certification of UL and CSA	Certification mark on nameplate	No certification mark
			Further, type number change of TP28X-UL (Deletion of "-UL")	TP28X-UL	TP28X

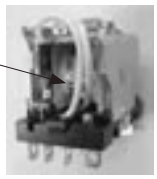
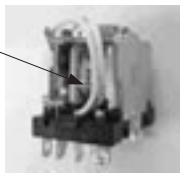
Reason for change

Unification of standard certified products

Time of modification: April 2008

Miniature power relays HH series

Change of CSA rating indication and bobbin color due to CSA certification

Product name	Type	Changed part	Before	After
Miniature power relays HH series	HH63P, HH63P-L HH64P, HH64P-L	CSA rating indication	Indication, example of HH64P  Rating Res. 10A 120VAC 7.5A 240VAC 10A 30VAC Gen. 7.5A 120VAC use 5A 240VAC	Res. 10A 240VAC 10A 30VAC Gen. 7.5A 120VAC use 5A 240VAC
		Bobbin external color (HH64P, HH64P-L only)	Translucent (PA6 nylon) 	White (PBT) 

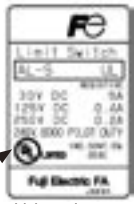
Note on modification

The above modification will not impact product performance.

Time of modification: December 2007

UL mark of limit switch

Change of UL mark according to instructions by UL

Product name	Type	Changed part	Before	After
Limit switch AL, AL-S series	AL-□UL AL-S□UL	UL mark on nameplate		 The UL mark has thickened.

Time of modification: January 2008

Command switches (16mm-dia. series buzzer RoHS-compliant)

Change in order to be compliant to RoHS by reducing the environmental load substances.

Product name	Type	Changed part	Contents of change
Command switch (16mm-dia. series)	AH164-TX□ AH164-TX1□ AH164-TX2□ AH165-X□	• Speaker (Types AH164-TX1, TX2 and AH165-X only) • Printed circuit board • Terminal	To reduce the environmental load substances, the following changes have been made. (1) Lead-free soldering (speaker, printed circuit board) (2) Change to tin-plating (terminal)

Note on modification

The change above will not influence product performance.

Time of modification: February 2008

Command switches (DR22/30 series buzzer RoHS-compliant)

Change in order to be compliant to RoHS by reducing the environmental load substances.

Product name	Type	Changed part	Contents of change
Command switch (DR22/30 series)	DR22B5-□/DR30B5-□ DR22B8-□/DR30B8-□ DR22B3-□ DR30B6-□ DR30B0-□	• Speaker (Types DR22B5, DR30B5, DR22B8, DR30B8 only) • Printed circuit board • Terminal screw	To reduce the environmental load substances, the following changes have been made. (1) Lead-free soldering (speaker, printed circuit board) (2) Hexavalent chromium-free (terminal screw)

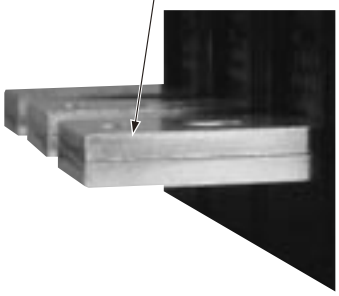
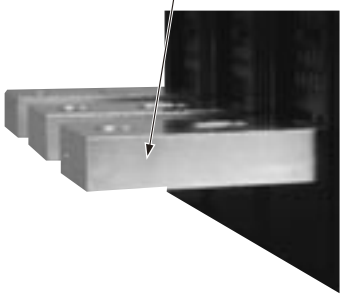
Note on modification

The change above will not influence product performance.

Time of modification: February 2008

Molded case circuit breaker – flat terminal

Change of terminal plate for reducing the mass

Product name	Type	Changed part	Before	After
Molded case circuit breaker	SA203E, SA204E, SA403E, SA404E, H403E, H404E SA1003E, SA1004E, SA1203E, SA1204E, SA1253E, SA1254E	Terminal plate material	Copper	Aluminum
		Number of terminal plates for 1000AF, 1200AF, 1250AF	Plate thickness: 7mm x 2 pieces 	Plate thickness: 14mm x 1 piece  Targeted type: SA1003E, SA1004E, SA1203E, SA1204E, SA1253E, SA1254E,

Mass comparison

Frame	Type	Before (Mass, kg)	After (Mass, kg)
225AF	SA203E	5.7	5.2
	SA204E	7.3	6.6
400AF	SA403E	5.7	5.2
	SA404E	7.3	6.6
	H403E	5.7	5.2
	H404E	7.3	6.6
1000AF	SA1003E	22.0	20.0
	SA1004E	28.0	25.0
1200AF	SA1203E	22.0	20.0
	SA1204E	28.0	25.0
1250AF	SA1253E	22.0	20.0
	SA1254E	28.0	25.0

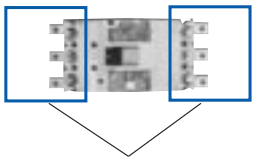
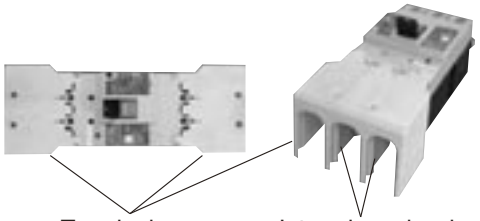
Note on modification

The material change will not influence product performance and characteristics.

Time of modification: January 2008

MCCBs and ELCBs – terminal cover, BZ-TB60B

Change of terminal cover in order to improve workability

Product name	Type	Changed part	Before	After
Molded case circuit breaker and earth leakage circuit breaker	Terminal cover BZ-TB60B	External view Shape Material	 Terminal cover	 Terminal cover Inter-phase barrier • Changes the terminal cover from U-shaped cover to terminal cover with inter-phase barrier. • Unifies the mounting screw for standard type breakers and N-type external operating handle-mounted breakers (the spacer to mount external operating handle deleted). • Changes the material from PET to PC (polycarbonate). Note : The photographs show the shape of terminal cover and the actual color is transparent.

Target main unit type numbers

MCCB : EA400B, EA400C, SA400B, SA400C, SA400R, SA400RC
H400B, H400C, H400R, SA400BUL, SA400CUL, SA400RUL, SA400RCUL

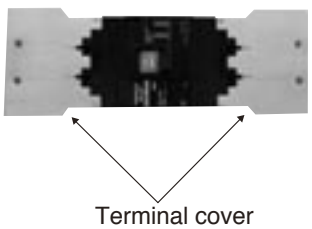
ELCB : EG400B, EG400C, SG400B, SG400C, SG400R, SG400RC, HG400B, HG400C, SG400CUL

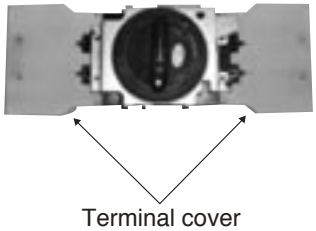
Note on modification

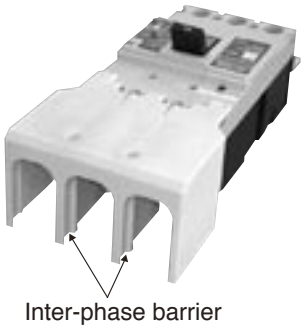
Mounting on a front mounting type breaker

Mounting on an N-type external operating handle-mounted front mounting breaker

The new terminal cover can be directly screw-mounted on the surface of the breaker though the conventional cover needed spacer.


Terminal cover


Terminal cover


Inter-phase barrier

Note : The photographs show the shape of terminal cover and the actual color is transparent.

Time of modification: February 2008

MCCBs and ELCBs – terminal cover, BZ-TB70B

Change of material due to difficulty of RoHS compliant current material procurement and for the purpose of improved workability (RoHS compliant remain unchanged)

Product name	Type	Changed part	Before	After
Terminal cover	BZ-TB70B	Manufacturing method	Bending of plate material	Molding
		Material	PET	PC (polycarbonate)

Time of modification: February 2008

Molded case circuit breaker – shunt trip device

Change due to unification of the coil specifications of shunt trip device

Product name	Type	Changed part	Before	After
Shunt trip device	Shunt trip device of SA102C, SA102RC, SA103C, SA103RC, EA202C, SA202C, SA202RC, EA203C, SA203C, SA203RC Type separately sold: BZ6FT30C, BZ6FU30C, BZ6FT40C, BZ6FU40C	Input VA due to coil specification change	100-125V AC : 30VA 200-240V AC : 30VA	100-125V AC : 45-70VA 200-240V AC : 45-65VA
			100-110V DC : 35W 200-220V DC : 35W	100-110V DC : 45-55W 200-220V DC : 45-55W

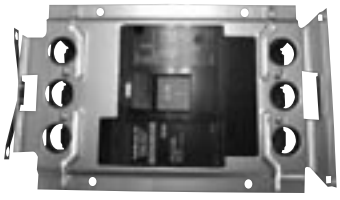
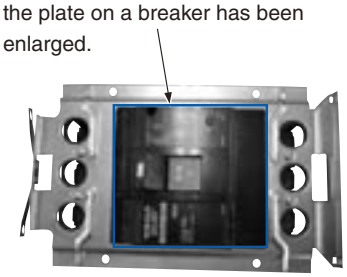
Note on modification

"F" will be indicated to the lot number suffix of the models after modification.

Time of modification: May 2008

MCCBs and ELCBs
400AF flush mounting-rear connection (E) type, mounting plate

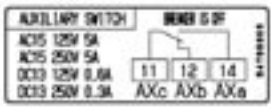
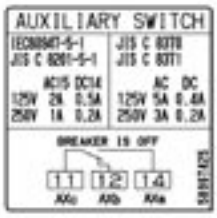
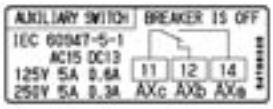
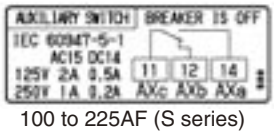
Change for simplifying mounting plate shape

Product name	Type	Changed part	Before	After
400AF Molded case circuit breaker, Earth leakage circuit breaker	EA400B, SA400B, SA400R, H400B, H400R, EA400C, SA400C, SA400RC, H400C, EG400B, SG400B, HG400B, EG400C, SG400C, SG400RC, HG400C and relevant items	Flush mounting-rear connection (E) type mounting plate		The size of frame used for mounting the plate on a breaker has been enlarged. 

Time of modification: March 2008

MCCBs and ELCBs, internal accessory nameplate

Change of internal accessory nameplate for the purpose of compliance with from conventional JIS standard to new JIS standard and unification of the layout and shape

Product name	Type	Changed part	Before	After
MCCB ELCB	New JIS standard compliant model (See the table below.)	Internal accessory nameplate (W, K, F, R, TL)	 30 to 100AF (E series)   100 to 225AF (S series) 400 to 800AF	 30 to 100AF (E series)  100 to 225AF (S series) 400 to 800AF

Contents of nameplate change
(1) Indicates IEC 60947-5-1 due to compliance with New JIS
(2) Unification of layout and shape
(3) Deletion of 500V AC rating of W and K (some models)

Targeted models

Category	MCCB							ELCB			
For distribution panel	EA32FC EA52FC	EA33FC EA53FC EA103FC						EG32FC EG52FC	EG33FC EG53FC EG103FC		
For line protection	EA32AC	EA33AC	SA32C	SA33C				EG32AC	EG33AC	SG33C	
									EG33C	SG53C	HG53B
	EA52AC	EA53AC	SA52C	SA53C	H52C	H53C	LA53B	EG52AC	EG53AC	SG53RC	
	EA52C	EA53C	SA52RC	SA53RC					EG53C		
	EA62C	EA63C	SA62C	SA63C					EG63C	SG63C	
			SA62RC	SA63RC						SG63RC	
		EA103AC	SA102C	SA103C	H102C	H103C	H103R		EG103AC	SG103C	HG103B
	EA102C	EA103C	SA102RC	SA103RC				EG102C	EG103C	SG103RC	
	EA202C	EA203C	SA202C	SA203C	H202C	H203C	H203R		EG203C	SG203C	HG203B
			SA202RC	SA203RC						SG203RC	
	EA402C	EA403C	SA402C	SA403C	H402C	H403C	H403R		EG403C	SG403C	HG403C
			SA403RC	SA403RC						SG403RC	
		EA603C		SA603RC		H603C	H603R		EG603C	SG603RC	HG603C
		EA803C		SA803RC		H803C	H803R		EG803C	SG803RC	HG803C
For line protection Adj. inst. tripping type				H53CN							
				SA103CN		H103CN				SG103CN	HG103BN
				SA103RCN						SG103RCN	
				SA203CN		H203CN				SG203CN	HG203BN
				SA203RCN						SG203RCN	
	EA402CN	EA403CN	SA402CN	SA403CN	H402CN	H403CN	H403RN		EG403CN	SG403CN	HG403CN
			SA402RCN	SA403RCN						SG403RCN	
		EA603CN		SA603RCN		H603CN	H603RN		EG603CN	SG603RCN	HG603CN
		EA803CN		SA803RCN		H803CN	H803RN		EG803CN	SG803RCN	HG803CN

Category	MCCB						ELCB			
For motor protection		EA33ACM EA53CM EA63CM EA103CM EA203CM	SA32CM	SA33CM SA53CM SA53RCM SA63CM SA103CM SA103RCM SA203CM SA203RCM		H53CM	L53BM LA53BM		EG33CM EG53CM EG63CM EG103CM EG203CM	SG33CM SG53CM SG63CM SG103CM SG103RCM SG203CM SG203RCM
Instantaneous trip type (fixed)		 EA63CI	SA32CI	SA33CI SA53CI SA63CI SA103CI SA103RCI SA203CI SA203RCI SA403RCI SA603RCI SA803RCI	H402CI	H403CI H603CI H803CI	L53BI LA53BI			
Instantaneous trip type (adj.)			SA102RCIN SA202CIN SA202RCIN SA402RCIN	SA103RCIN SA203CIN SA203RCIN SA403RCIN SA603RCIN SA803RCIN	H402CIN	H403CIN H603CIN H803CIN				
Transformer primary use	EA52CT EA102T EA402CT	EA53CT EA103CT EA403CT EA603CT EA803CT	SA32CT SA52CT SA102CT SA402CT SA403RCT	SA33CT SA53CT SA103CT SA403CT SA403RCT SA603RCT						
4-pole	SA54B EA104B		SA104R SA204R			SA404HA SA604H SA804H			SGa104A SGa204A SGa404A	SG104H SG204H
Non-automatic trip	EA32ACS EA52CS EA62CS EA102CS EA202CS EA402CS	EA33ACS EA53CS EA63CS EA103CS EA203CS EA403CS EA603CS EA803CS	SA32CS SA52CS SA62CS SA102CS SA102RCS SA202CS SA202RCS SA402CS SA402RCS	SA33CS SA53CS SA63CS SA103CS SA103RCS SA203CS SA203RCS SA403CS SA403RCS SA603RCS SA803RCS						
With leakage current warning indicator		EA53CL EA103CL EA203CL EA403CL EA603CL EA803CL		 SA103CL SA103RCL SA203CL SA203RCL SA403CL SA403RCL SA603RCL SA803RCL						
1φ3W N-phase loss protective series	EA53NC EA103NC	EA203NC EA403NC					EG53NC EG103NC	EG203NC EG403NC		
For line protection, with ZCT			SA103CFZ SA103RCFZ SA203CFZ SA203RCFZ	SA403CFZ SA403RCFZ SA603RCFZ SA803RCFZ						
For arc welder								EG103CY EG203CY EG403CY		
For resistance welder									HG203BY-T	

Note: Models conforming to CE and CCC included.

Overview of other changes

For details, please contact FUJI.

Product name	Series	Changed part	Contents of change	Before	After	Time of modification
Command Switch	AR22A, AR30A series	Main unit nameplate	Type number stamp method	Stamping on printed seals	Stamping on plain seals	February 2008
	AH165 series, AR30/DR30 series	Packing box label (inner label, outer label)	Type number color	Black characters on white back	White characters on black back	February 2008
	AH164 series buzzer	Substrate unit structure to speaker	Speaker location	Built in main unit	Built in substrate unit	February 2008
Square pilot lamp	DP36, 40, 48 series	Capacitor	Built-in capacitor	–	Change of manufacturer	April 2008
Multi display light	AP30F, AP40F series	Capacitor	Built-in capacitor	–	Change of manufacturer	July 2008
MCCB, ELCB	E series, S series 225AF	Back cover, case	Back cover material (E series only)	Bakelite	Nylon	November 2007
			Case shape	Presence of hole shape	No hole shape	November 2007
	α-TWIN series	Nameplate (LINE, LOAD)		Present (for with S series ≧100AF, E series ≧225AF)	Deletion	December 2007
		Locking-plate plating		Nickel	Galvanized	December 2007
		Washer		Used	None	December 2007
		Mounting-screw plating		Nickel	Galvanized	December 2007
Circuit protector	CP-F series	“Ro” mark on package box (individual package box)	Method	Stamping (ϕ8)	Printing (ϕ6)	April 2008

Discontinued Products

The production of the following products has or will soon be discontinued.
Please use substituting models.

FC series magnetic motor starter with pushbuttons

Product name	Discontinued product	Substitute	Remarks
Magnetic motor starter with pushbuttons	FW-0PB (Case material: Iron)	FW-0P (Case material: Plastic)	There are some incompatible models between the discontinued models and substitute ones. For details, please refer to catalogs etc.
	FW-0SPB (Case material: Iron)	FW-0SP (Case material: Plastic)	
	FW-1PB (Case material: Iron)	FW-1P (Case material: Plastic)	

Time of discontinuation: February 2009

Time Counter MA4

Product name	Discontinued product	Substitute	Remarks
Time Counter	MA4 MA4-R MA4-R-M MA4-B MA4-R-B	None	Substitutes by other companies will be introduced. For details, please consult your Fuji Electric representative.

Time of discontinuation: March 2008

LED lamps for signal light

Product name	Discontinued product	Substitute	Remarks
LED lamp	APX515 APX516 APX517	None	Special LED lamp for the Signal Light type SL102.

Time of discontinuation: March 2008

Grounding terminal block – LT8E series

Product name	Discontinued product	Substitute	Remarks
Grounding terminal block	LTE8E series all models	Consider use of TAIWA Electric-made.	–
	LT8E-1402F	TB3EA-F	–
	LT8E-2202F	TB4EA-F	–
	LT8E-1X02F	TB4EB-F	TAIWA Electric-made is provided with wing nut.
	LT8E-1X02G	TB4EB-B	

Time of discontinuation: March 2008

36kV power fuse link – HH fuse link

Product name	Discontinued product	Substitute	Remarks
36kV power fuse link	HFB-30/16	None	–
	HFB-30/20	None	
	HFB-30/40	None	

Time of discontinuation: March 2008

Air circuit breaker (ACB) DB series

Product name		Discontinued product	Substitute	Remarks
Air circuit breaker (ACB) DB series main unit	600 (800)	DB06	DH08	–
	1250	DB12	DH12	
	1600	DB16	DH16	
	2000	DB20	DH20	
	2500	DB25	DH25	
	3200	DB30	DH30	
	4000	DB40	DH40	

Time of discontinuation: March 2008

Vacuum circuit breaker – 24kV 12.5/16kA

Product name	Discontinued product	Substitute	Remarks
Vacuum circuit breaker	HS1220□-■Mf-K (24kV 12.5kA 600/1200A)	HS1220□-■Mf-EA	The type number suffix of substitute changes to “-E (A)” from the conventional “-K”.
	HS1620□-■Mf-K (24kV 16kA 600/1200A)	HS1620□-■Mf-E	

Time of discontinuation: March 2008

Capacitor trip device for vacuum circuit breaker – VCB-T□PA, flush mounting

Product name	Discontinued product	Substitute	Remarks
Capacitor trip device for vacuum circuit breaker	VCB-T1PA	VCB-T1PB	The type number suffix of substitute changes to “B” from the conventional “A”. The outline dimensions and mounting dimensions also change.
	VCB-T2PA	VCB-T2PB	

Time of discontinuation: May 2008

⚠ Safety Considerations

- For safe operation, read the instruction manual or user manual that comes with the product carefully or consult the Fuji sales representative from whom you purchased the product, before using the product.
- Products introduced in this catalog have not been designed or manufactured for such applications in a system or equipment that will affect human bodies or lives.
- Customers, who want to use the products introduced in this catalog for special systems or devices such as for atomic-energy control, aerospace use, medical use, passenger vehicle, and traffic control, are requested to consult the Fuji sales division.
- Customers are requested to prepare safety measures when they apply the products introduced in this catalog to such systems or facilities that will affect human lives or cause severe damage to property if the products become faulty.
- For safe operation, wiring should be conducted only by qualified engineers who have sufficient technical knowledge about electrical work or wiring.

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