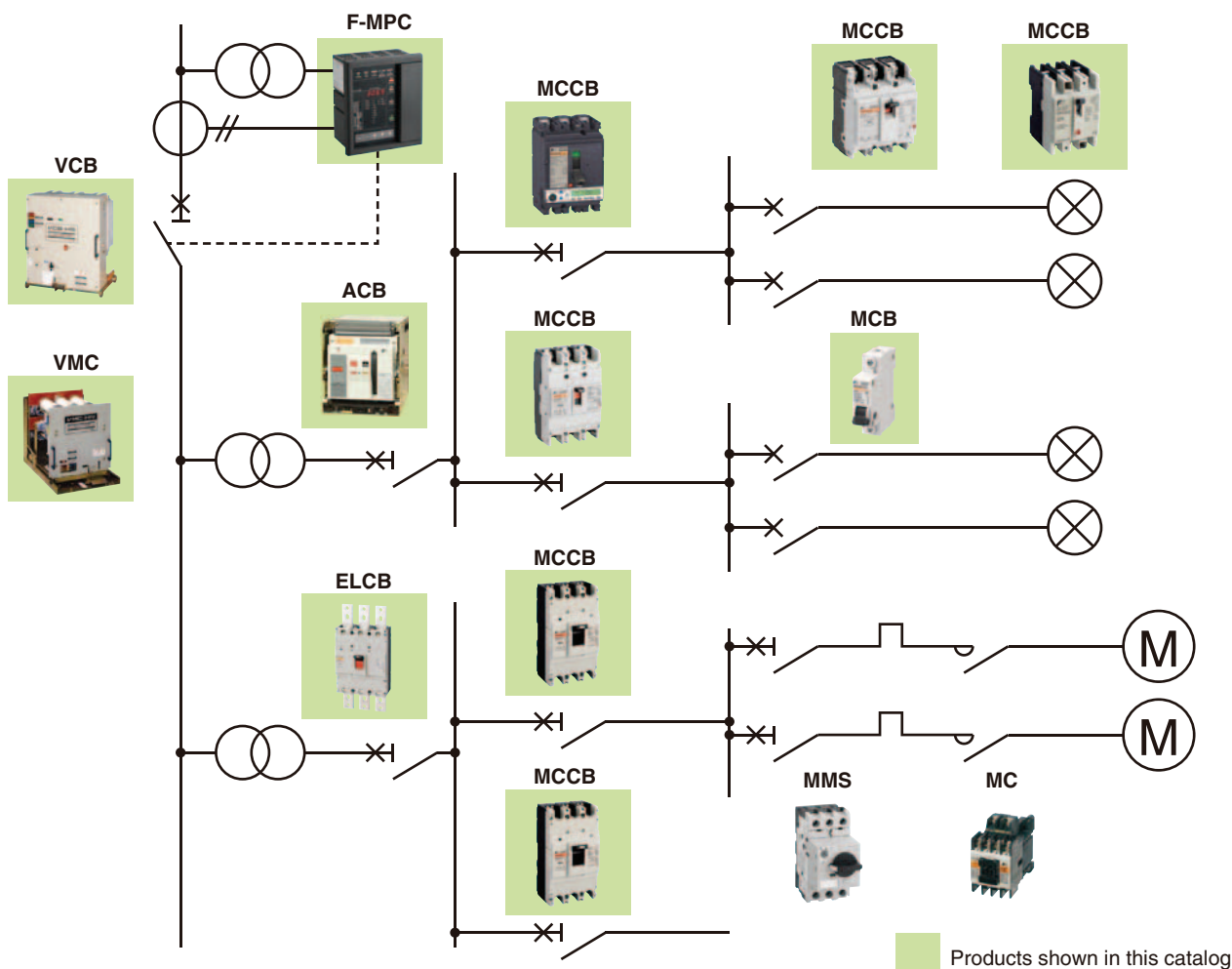


New Line-up D&C Component for Asian Market



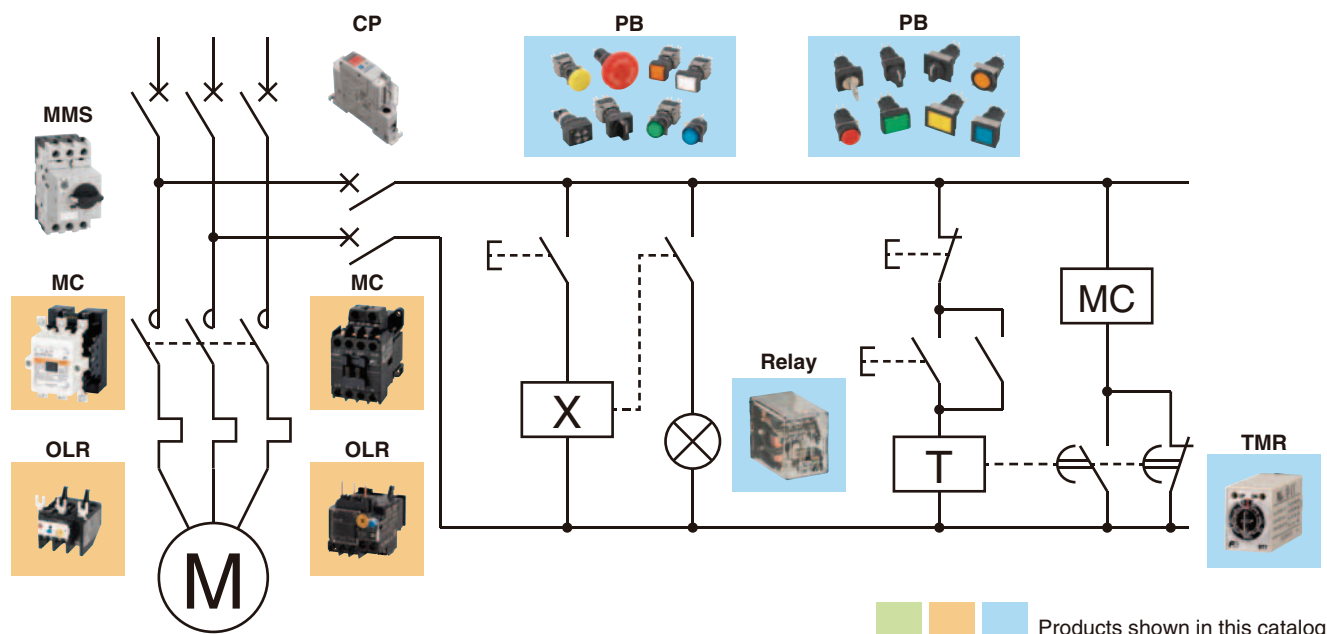
Fuji Electric FA's D&C product line-up can meet your needs

Electrical Distribution


















Motor Control

Control



Line-up

Electrical Distribution OEM (Machine tools, transport machinery etc..)	High-end to Mid-range		Low-end	Page	
	Private (Large-scale) Capital Properties		Private (Small to Middle-scale) Capital Properties		
■ Air circuit breakers	DW Series 		BT3 Series 	4	ACB
■ Miniature circuit breakers	BC Series (IEC60947-2) 		BE1 Series (IEC60898-1) 	8	MCB
■ Molded case circuit breakers	BX Series 	G-TWIN Series 	BW0 Series 	10	MCCB
■ Magnetic contactors ■ Thermal overload relays	SC Series 		FJ Series 	16	MC
■ Push buttons ■ Selector switches ■ Pilot lights	AH164, AH165 Series AR22, DR22 Series 		AR15C, DR15C, AF15C, DF15C AR16C, DR16C, AF16C, DF16C AY22, DY22 Series 	20	PB
■ Industrial relays	HH52, HH53, HH54 Series 		HH52-C, HH53-C, HH54-C Series 	28	Relay
■ Time delay relays	ST7P Series 		ST7P-C Series 	28	TMR

DW Series



The standard for power circuit breakers around the world.

Over the years, other major manufacturers have tried to keep up by developing products incorporating DW's most innovative features, including the breaking principle, modular design and the use of composite materials. In addition to the traditional features of power circuit breakers (withdrawability, discrimination and low maintenance), DW ranges offer built-in communications and metering functions, all in optimised frame sizes. DW incorporate the latest technology to enhance both performance and safety. Easy to install, with user-friendly, intuitive operation and environment-friendly design, DW are, quite simply, circuit breakers of their time.

Features

- Covering all your applications
DW meets the needs of all types of LV electrical distribution networks.
- Building, Data Centres and Networks, Industry, Energy and Infrastructures
- One family and two frame sizes
DW series, in two frame sizes, one from 800 to 4000 A and the other from 4000 A to 6300 A.



DW 800 to 4000 A



DW 4000 to 6300 A

- 2 performance levels
H1 - for industrial sites with high short-circuit levels or installations with two parallel-connected transformers.
H2 - high-performance for heavy industry where very high short-circuits can occur.

		DW08	DW10	DW12	DW16	DW20	DW25	DW32	DW40
H2	100kA								
H1	65kA								
		DW40b	DW50	DW63					
H2	150kA								
H1	100kA								

BT3 Series







Air Circuit Breakers, 1600 to 6300A

Features

- Compact design
- Satisfied $I_{cu} = 50kA$ or above at 440V for all of ampere frame size
- Available I_{cu} / I_{cs} rating at 440V, rated current from 200A to 6300A, $I_{cs} = 100\%$ of I_{cu}
- Conform to IEC 60947-2 (DEKRA (KEMA) certificate will be obtained.)

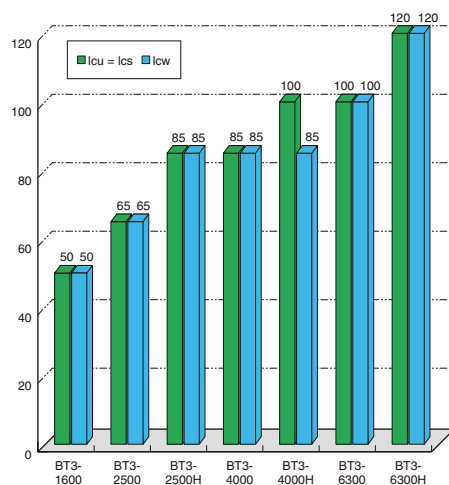
Compact size

BT3 series, Air Circuit Breakers, have four ampere frame sizes and physical dimensions.

Ampere frame	1600	2500	4000	6300
Appearance				
Width (3-poles, Draw-out type)	248mm	347mm	401mm	754mm

Breaking Capacity

I_{cu} is equal to I_{cs} up to 120kA at maximum and I_{cw} 1s is up to 120kA at maximum under AC415V distribution.



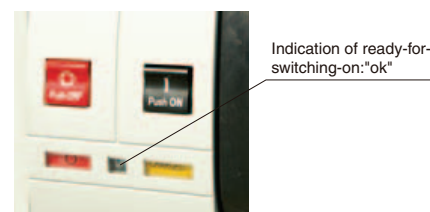
Safety performance

Draw-out type BT3 series Air Circuit Breakers can be operated safely at 3 positions:

1. Connected position
2. Testing position
3. Disconnected position



Clear indication of ready-for-switching-on to ensure safe manipulation and reliable operation.



Installation

The bus bar terminal of the BT3 series, Air Circuit Breakers, can be simply installed as follows:

- Horizontal connection
- Vertical connection
- Composite connection




More reliable safety protection with secondary terminals of protection grade IP30




Air Circuit Breakers DW and BT3 Series

DW Series

Frame size			800AF		1000AF		1250AF		1600AF		
Types			DW08		DW10		DW12		DW16		
Appearance											
International standards			CE								
Number of poles			3, 4								
Rated insulation voltage U_i (V)			1000								
Impulse withstand voltage U_{imp} (kV)			12								
Rated operational voltage U_e max. (V AC) 50/60Hz			690								
Type of circuit breaker			H1	H2	H1	H2	H1	H2	H1	H2	
Rated current	IEC60947-2		800		1000		1250		1600		
In (A) at 40°C	Vertical terminal										
Sensor ratings (A)			400 630 800		400 630 800 1000		630 800 1000 1250		800 1000 1250 1600		
Rated breaking capacity Icu = Ics (kA rms)	IEC60947-2	220/415/440V AC	65	100	65	100	65	100	65	100	
		690V AC	65	85	65	85	65	85	65	85	
Rated making capacity Icm (kA peak)	IEC60947-2	220/415/440V AC	143	220	143	220	143	220	143	220	
		690V AC	143	187	143	187	143	187	143	187	
Rated short-time withstand current Icw (kA rms)		1s	65	85	65	85	65	85	65	85	
		3s	36	50	36	50	36	50	36	50	
Dimensions H x W x D (mm)	Drawout, RC	3P	439×441×395								
		4P	439×556×395								
	Fixed, RC	3P	352×422×297								
		4P	352×537×297								

BT3 Series

Frame size			1600AF		
Types			BT3-1600		
Appearance					
Number of poles			3, 4		
Rated insulation voltage U_i (V)			1000		
Impulse withstand voltage U_{imp} (kV)			12		
Rated operational voltage U_e max. (V AC) 50/60Hz			690		
Rated current	IEC60947-2		200 400 630 800 1000 1250 1600		
In (A) at 40°C	Vertical terminal				
Rated breaking capacity I_{cu} / I_{cs} (kA rms)	IEC60947-2	400V AC	65/55		
		440V AC	50/50		
		690V AC	50/42		
Rated making capacity I_{cm} (kA peak)	IEC60947-2	400V AC	143		
		440V AC	105		
		690V AC	105		
Rated short-time withstand current I_{cw} (kA rms)		400V AC, 1s	50, 55 (0.5s)		
		440V AC, 1s	50		
		690V AC, 1s	42		
Dimensions (mm) H x W x D	Drawout	3P	351.5 x 248 x 297		
		4P	351.5 x 318 x 297		
	Fixed	3P	320 x 259 x 195		
		4P	320 x 329 x 195		

Note: BT3 Specification is subject to change.



	2000AF	2500AF	3200AF	4000AF	4000AF	5000AF	6300AF
	DW20	DW25	DW32	DW40	DW40b	DW50	DW63



CE

	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
	2000		2500		3200		4000				5000		6300	
	1000 1250 1600 2000		1250 1600 2000 2500		1600 2000 2500 3200		2000 2500 3200 4000		2000 2500 3200 4000		2500 3200 4000 5000		3200 4000 5000 6300	
	65	100	65	100	65	100	65	100	100	150	100	150	100	150
	65	85	65	85	65	85	65	85	100	100	100	100	100	100
	143	220	143	220	143	220	143	220	220	330	220	330	220	330
	143	187	143	187	143	187	143	187	220	220	220	220	220	220
	65	85	65	85	65	85	65	85	100	100	100	100	100	100
	36	75	65	75	65	75	65	75	100	100	100	100	100	100

479x786x395

479x1016x395

352x767x297

352x997x297

	2500AF		4000AF		6300AF	
	BT3-2500	BT3-2500H	BT3-4000	BT3-4000H	BT3-6300	BT3-6300H



	630 800 1000 1250 1600 2000 2500		1000 1250 1600 2000 2500 2900 3200 3600 4000		4000 5000 6300	
	65/65	85/85	85/85	100/100	120/120	135/135
	65/65	85/85	85/85	100/100	100/100	120/120
	55/55	65/65	75/75	85/85	85/85	100/100
	143	187	187	220	264	297
	143	187	187	220	264	297
	121	143	165	187	187	220
	65	85	85	100	120	135
	65	85	85	85	100	120
	55	65	75	85	85	100
	438 x 347 x 395		438 x 401 x 395		475.5 x 754 x 395	
	438 x 442 x 395		438 x 514 x 395		475.5 x 980 x 395	
	395 x 362 x 290		395 x 414 x 290		395 x 769 x 290	
	395 x 457 x 290		395 x 527 x 290		395 x 995 x 290	

Miniature Circuit Breakers BC and BE1 Series

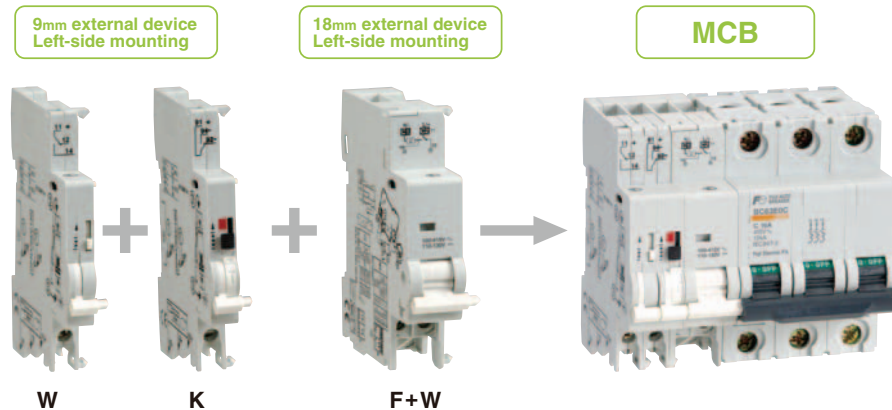
BC Series



MCB "BC series" for General Consumer Use.

Features

- 10kA short circuit breaking capacity.
- In accordance with IEC60947
- Ratings : 1,2 and 3 poles 1-63A
- Type C tripping characteristics (general use)
- IEC 35mm rail mounted, modular devices, 1 module (18mm/pole)
- Accessories = Snap-on fittings speed up mounting.



BE1 Series

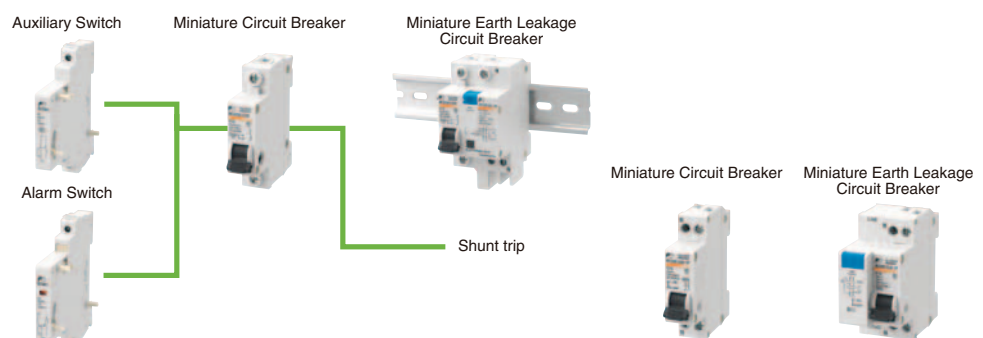


This series of miniature circuit breaker is for the purpose of the protection of distribution equipment in the residential or similar facility, to protect against short circuit and overload damage.

Features

- Among the characteristics of overload protection, there are the Curve C characteristic for the protection of lighting electrical systems having 5 to 10In instantaneous tripping characteristic, and the Curve D characteristic for the protection of ordinary electrical system wires having 10 to 14In instantaneous tripping characteristic.
- ELCB is completed by combining a miniature circuit breaker with an earth leakage shunt trip device.
- As functional components can be installed such as auxiliary switch, alarm switch among others, it can monitor and control the electrical system.

Product Composition





BC Series

Frame	63A		
Type	BC61E0C	BC62E0C	BC63E0C
Number of poles	1	2	3
Curve	C (7-10In)	C (7-10In)	C (7-10In)
In=1A	BC61E0C- 001	BC62E0C- 001	BC63E0C- 001
2A	002	002	002
3A	003	003	003
4A	004	004	004
6A	006	006	006
10A	010	010	010
16A	016	016	016
20A	020	020	020
25A	025	025	025
32A	032	032	032
40A	040	040	040
50A	–	050	050
63A	–	063	063
International standards	IEC60947-2		
Impulse withstand Voltage(Uimp) (kV)	6		
Rated Insulation Voltage(Ui) (V)	500		
Ultimate short circuit capacity(Icu) (kA)	440V AC –	6	6
IEC60947-2	415V AC 3*1	10	10
	240V AC 10	20	20
	130V AC 20	–	–
Service short-circuit capacity(Ics)(kA)	75% of Icu		
Rated interrupting capacity (DC)(kA) L/R<0.015sec	125V DC –	20	30
	<60V DC 15	–	–
Electrical durability(O-C x1000)	20		
Dimensions(mm)	1P	18 x 81 x 70	
W x H x D	2P	36 x 81 x 70	
	3P	54 x 81 x 70	

*1 Breaking capacity under 1 pole with IT isolated neutral system (case of double fault)

BE1 Series

Frame	63A								
Type	BC63E1CG-1P	BC63E1DG-1P	BC63E1CG-2P	BC63E1DG-2P	BC63E1CG-3P	BC63E1DG-3P	BC63E1CG-4P	BC63E1DG-4P	
Number of poles	1		2		3		4		
Curve	C (5-10In)	D (10-14In)	C (5-10In)	D (10-14In)	C (5-10In)	D (10-14In)	C (5-10In)	D (10-14In)	
	In=1A	BC63E1CG-1P001E	BC63E1DG-1P001E	BC63E1CG-2P001E	BC63E1DG-2P001E	BC63E1CG-3P001E	BC63E1DG-3P001E	BC63E1CG-4P001E	BC63E1DG-4P001E
	2A	002E	002E	002E	002E	002E	002E	002E	002E
	3A	003E	003E	003E	003E	003E	003E	003E	003E
	4A	004E	004E	004E	004E	004E	004E	004E	004E
	5A	005E	005E	005E	005E	005E	005E	005E	005E
	6A	006E	006E	006E	006E	006E	006E	006E	006E
	10A	010E	010E	010E	010E	010E	010E	010E	010E
	16A	016E	016E	016E	016E	016E	016E	016E	016E
	20A	020E	020E	020E	020E	020E	020E	020E	020E
	25A	025E	025E	025E	025E	025E	025E	025E	025E
	32A	032E	032E	032E	032E	032E	032E	032E	032E
	40A	040E	040E	040E	040E	040E	040E	040E	040E
	50A	050E	–	050E	–	050E	–	050E	–
	63A	063E	–	063E	–	063E	–	063E	–
International standards	IEC60898-1, GB10963.1, 								
Rated breaking capacity (kA) IEC60898-1	230/400V AC In:1-40A	6	4.5	6	4.5	6	4.5	6	4.5
	In:50,63A	4.5	–	4.5	–	4.5	–	4.5	–
Rated breaking capacity(DC)(kA)	250V DC	–	–	–	–	–	50	–	–
	125V DC	–	–	20	–	–	–	–	–
	60V DC	10	–	–	–	–	–	–	–
Electrical durability(O-C x1000)	10								
Dimensions(mm) W x H x D	1P	18 x 77 x 72.5							
	2P	36 x 77 x 72.5							
	3P	54 x 77 x 72.5							
	4P	72 x 77 x 72.5							

BX Series



Full-featured & compact MCCB.

Ideal for protecting and measuring the power receiving and distribution circuit.

Features

Safety and performance

Compactness, discrimination and modularity - new circuit breakers incorporate advanced monitoring and communication functions, from 40 amps up, combined with impeccable protection.

- Expert technology
A roto-active contact breaking principle provides each circuit breaker with very high breaking capacity in a very small device, remarkable fault current limitation performance, and endurance.
- BX benefits from a patented double roto-active contact breaking concept, together with a reflex tripping system for ultimate breaking.
- Exceptional fault current limitation guarantees robust, reliable protection and, above all, reduces the causes of component aging, thus extending service life for installations.

Breaking performance at 415V 50/60Hz

	BX100	BX160	BX250	BX400	BX630
H 70kA					
R 50kA					

	BX800	BX1000	BX1250	BX1600
H 70kA				
R 50kA				



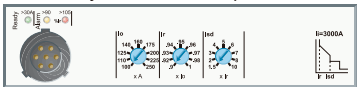
- New breaking capacities
New performance levels for BX improve application targeting:
- 50 kA : standard applications (industrial plants, buildings and hospitals),
- 70 kA : high performance at controlled cost.
- Reduced installation costs
Optimising installations allows for achieving up to 30 % savings:
- considerable savings at the time of installation, thanks to total discrimination with miniature circuit breakers,
- smaller devices, more economic switchboards mean best overall installation cost, without overcalibration.

Built-in control unit

We have prepared a rich lineup ranging from standard types designed exclusively for overcurrent protection to specialized types capable of power quality control.

- The protective functions enable long time delays, short time delays, and instantaneous combinations, while also making it possible to choose various measuring functions such as ammeter and watt-hour meter.
- Parameter measurement, computation, data storage, log event records, alarm output, communication.

Exclusively for overcurrent protection



Equipped with power quality control functions



G-TWIN Series



The Twin Breakers have advanced to an entirely new stage.

Features

Conforming to IEC & local Standards

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



CE marking (TÜV) + CCC approved + JIS
G-TWIN Standard series

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

Ampere frame size (AF)

32	50	63	100	125	160	250	400	630	800
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Compact & High performance

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

Current model



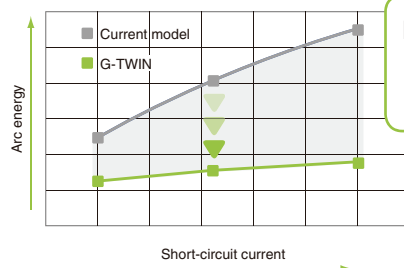
Rated voltage 480V
BU3JLC
(W105 x H256 x D103 mm)
(250AF)



Rated voltage 480V
BW250RAGU
(W105 x H181 x D68 mm)
(250AF)

480V
Volume
ratio
- 53%!

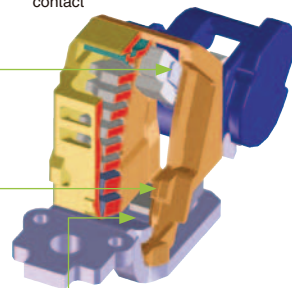
- Effect of "ablation breaking technology"
Short-circuit arc energy reduced by 30%



Reduced by
30%!

- 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

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

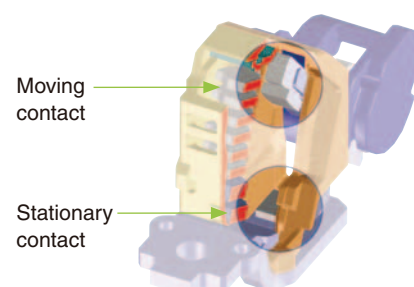


- Magnetic yoke arrangement
- An increase in the repulsion force of the moving contact at initiation of contact opening

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)



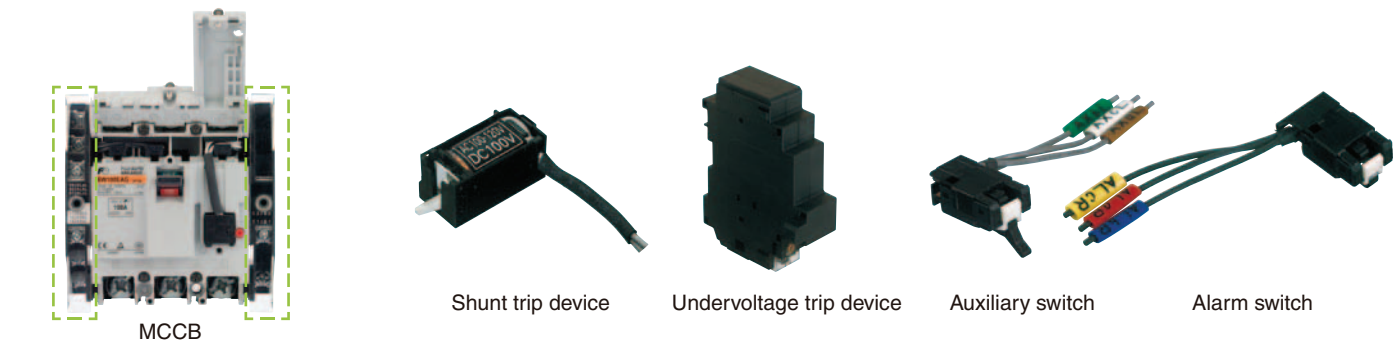
Cadmium-free contact material

Molded Case Circuit Breakers BX, G-TWIN and BW0 Series

Usefulness

- Leading the way in user-friendliness
- Unifying and reducing the types of internal accessories

- 32~100AF
- Internal and external accessories
A wider range of customer-mountable accessories



- 125~250AF
- Sharing internal accessories of 125/160/250AF breakers.



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



BW0 Series



Economy series MCCB from 32AF to 400AF

Features

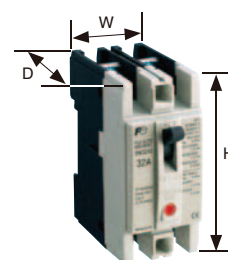
Focusing on assembly of wiring, maintenance check, reasonable price, and standardized distribution box design, BW0 series MCCBs are designed mainly for civil construction market and secondary distribution market.

32AF

Compact design

Cost and space saving for building a control panel.

- Compact size
2P W36×H80×D76(mm)
3P W54×H80×D76(mm)
- AC 440V application
Icu: 1.5kA at 440V AC,
2.5kA at 240V AC



Available accessories

Auxiliary switch, alarm switch and shunt trip device



Compliance to RoHS Directive

All materials used are compliant to RoHS Directive and the main components are easy to recycle.

100AF to 400AF

Compact design

We've applied high-performance technology to achieve 100AF to 250AF models with a uniform depth of 60mm.

Cassette type accessories

All accessories can be assembled by the user. Quickly adaptable to the many onsite changes in specifications.

Compliance to RoHS Directive

All materials used are compliant to RoHS Directive and the main components are easy to recycle.



Interchangeability

The design of the same external dimensions (400AF) and mounting hole size (160AF to 400AF) with G-TWIN circuit breaker. Just simply change the model when a customer suddenly changes the design (e.g. when changed to earth leakage circuit breaker).



BW253E0



EW250EAG-3P

BW403S0



















EW400EAG-3P

Molded Case Circuit Breakers BX, G-TWIN and BW0 Series

BX Series








Frame size		100AF	160AF	
Types	Thermal magnetic Electronic	BX100 <input type="checkbox"/> AG- <input checked="" type="checkbox"/> P BX100 <input type="checkbox"/> AE- <input checked="" type="checkbox"/> P	BX160 <input type="checkbox"/> AG- <input checked="" type="checkbox"/> P BX160 <input type="checkbox"/> AE- <input checked="" type="checkbox"/> P	
Appearance				
International standards		CE	CE	
Number of poles	<input checked="" type="checkbox"/>	3,4	3,4	
Rated insulation voltage (V AC)		800	800	
Type of circuit breaker	<input type="checkbox"/>	H	H	
Rated current In (A)	Thermal magnetic Electronic	16, 25, 32, 40, 50, 63, 80, 100 40, 100	125, 160 160	
Rated breaking capacity 660-690V AC (kA) (IEC 60947-2) (Icu/Ics)	525V AC 500V AC 440V AC 380-415V AC 220-240V AC	10/10 35/35 50/50 65/65 70/70 100/100	10/10 35/35 50/50 65/65 70/70 100/100	
Dimensions (mm) W x H x D	Fixed 3P 4P	105 x 161 x 126 140 x 161 x 126	105 x 161 x 126 140 x 161 x 126	








G-TWIN Series





Frame size	32AF	50AF	63AF	100AF	125AF	160AF	
Types	Thermal magnetic Hydraulic magnetic	– BW32 <input type="checkbox"/> AG- <input checked="" type="checkbox"/> P	BW50 <input type="checkbox"/> AG- <input checked="" type="checkbox"/> P –	– BW63 <input type="checkbox"/> AG- <input checked="" type="checkbox"/> P	– BW100 <input type="checkbox"/> AG- <input checked="" type="checkbox"/> P	BW125 <input type="checkbox"/> AG- <input checked="" type="checkbox"/> P –	BW160 <input type="checkbox"/> AG- <input checked="" type="checkbox"/> P –
Appearance							
International standards	CE  	CE  	CE  	CE  	CE  	CE  	
Number of poles	<input checked="" type="checkbox"/> 2, 3	2, 3	2, 3	3	2, 3, 4	2, 3, 4	2, 3, 4
Rated insulation voltage (V AC) (IEC 60947-2) (V DC)	500 690 – 250*1	500 690 – 250*1	690 250 250*1	500 690 – 250*1	690 250	690 250	690 250
Rated current In (A)	Thermal magnetic Hydraulic magnetic	– 3, 5, 10, 15, 20, 30, 32	– 5, 10, 15, 20, 30, 32, 40, 50	15, 20, 30, 40, 50 –	– 60, 63, 75, 100	15, 20, 30, 40, 50, 60, 75, 100, 125 –	125, 150, 160 –
Type of circuit breaker	<input type="checkbox"/> A S	A E S R	H *3 E S R	A E J S R H *3	E J S R	E J S R	E J S R
Rated breaking capacity (kA) (IEC 60947-2) (Icu/Ics)	690V AC 500V AC 415-440V AC 380-400V AC 230-240V AC 250V DC	– 1.5/1 1.5/1 1.5/1 2.5/2 –	– 1.5/1 2.5/2 2.5/2 2.5/2 –	– 1.5/1 2.5/2 2.5/2 2.5/2 –	– 1.5/1 2.5/2 2.5/2 2.5/2 –	– 1.5/1 2.5/2 2.5/2 2.5/2 –	– 1.5/1 2.5/2 2.5/2 2.5/2 –
Dimensions (mm) W x H x D	Fixed 2P 3P 4P	50 x 100 x 84 75 x 100 x 84 –	90 x 155 x 95 90 x 155 x 95 –	50 x 100x 84 75 x 100x 84 –	90(60*2) x 155 x 95 90 x 155 x 95 120 x 155 x 95	105 x 165 x 95 105 x 165 x 95 140 x 165 x 95	



Notes : *1 Specify DC only when ordering circuit breakers for DC circuit. *2 BW125JAG-2P model only *3 BW50HAG, BW125HAG, BW250HAG : CE standard only

BW0 Series

Frame size	32AF	100AF	160AF	
Types	Thermal magnetic	BW10 <input type="checkbox"/> <input checked="" type="checkbox"/> 0	BW16 <input type="checkbox"/> <input checked="" type="checkbox"/> 0	
Appearance				
International standards	CE  	CE 	CE 	
Number of poles	<input checked="" type="checkbox"/> 2, 3	3	2	3
Rated insulation voltage (V AC) (IEC 60947-2) (V DC)	440 –	690 250	690 250	
Type of circuit breaker	<input type="checkbox"/> A	E	S	E J S
Rated current In (A)	Thermal magnetic	5, 10, 15, 20, 32	15, 20, 25, 30, 40, 50, 60, 75, 80, 100	100, 125, 150, 160
Rated breaking capacity (kA) (IEC 60947-2) (Icu/Ics)	500V AC 440V AC 415V AC 400V AC 380V AC 230-240V AC 250V DC	– 1.5/1 1.5/1 1.5/1 1.5/1 2.5/1 –	5/3 10/5 15/8 15/8 18/9 25/13 5/3	10/3 20/5 30/8 30/8 30/15 30/15 5/3
Dimensions (mm) W x H x D	Fixed 2P 3P	36 x 80 x 76 54 x 80 x 76	50 x 130 x 81 75 x 130 x 81	105 x 165 x 86 105 x 165 x 86

	250AF	400AF	630AF	800AF	1000AF	1250AF	1600AF					
	BX250 <input type="checkbox"/> AG- <input checked="" type="checkbox"/> P BX250 <input type="checkbox"/> AE- <input checked="" type="checkbox"/> P	– BX400 <input type="checkbox"/> AE- <input checked="" type="checkbox"/> P	– BX630 <input type="checkbox"/> AE- <input checked="" type="checkbox"/> P	– BX800 <input type="checkbox"/> AE- <input checked="" type="checkbox"/> P	– BX1000 <input type="checkbox"/> AE- <input checked="" type="checkbox"/> P	– BX1250 <input type="checkbox"/> AE- <input checked="" type="checkbox"/> P	– BX1600 <input type="checkbox"/> AE- <input checked="" type="checkbox"/> P					
												
	3,4	3,4	3,4	3,4	3,4	3,4	3,4					
	800	800	800	800	800	800	800					
	R	H	R	H	R	H	R	H				
	200, 250	–	–	–	–	–	–					
	100, 160, 250	250	400	630	800	1000	1250	1600				
	10/10	10/10	10/10	20/10	30/30	42/31	30/30	42/31	30/30	42/31	30/15	42/21
	35/35	35/35	22/11	35/11	40/40	50/37	40/40	50/37	40/40	50/37	40/20	50/25
	36/36	50/50	30/30	50/50	40/40	50/37	40/40	50/37	40/40	50/37	40/20	50/25
	50/50	65/65	42/42	65/65	42/42	65/65	50/50	65/48	50/50	65/48	50/25	65/32
	50/50	70/70	50/50	70/70	50/50	70/70	50/50	70/52	50/50	70/52	50/37	70/37
	90/90	100/100	85/85	100/100	85/85	100/100	85/50	85/52	85/50	85/52	50/37	70/37
	105 x 161 x 126 140 x 161 x 126	140 x 255 x 168 185 x 255 x 168	210 x 327 x 205 280 x 327 x 205									

250AF	400AF	630AF	800AF
BW250 □ AG- ■ P –	BW400 □ AG- ■ P –	BW630 □ AG- ■ P –	BW800 □ AG- ■ P –
			
2, 3 2, 3, 4 2, 3, 4 2, 3, 4 2, 3	2, 3 2, 3 2, 3, 4 2, 3, 4	3 3, 4 3, 4	3 3, 4 3, 4
690 250	690 250	690 250	690 250
175, 200, 225, 250	125, 150, 160, 175, 200, 225, 250	250, 300, 350, 400	500, 600, 630
–	–	–	–
E J S R H *3	E S R H	E R H	E R H
– – – – –	– 10/5 15/8 15/8	– 15/8 15/8	– 15/8 15/8
5/3 8/4 10/5 10/5 25/7	18/9 20/10 36/18 42/21	18/9 36/18 42/21	18/9 36/18 42/21
18/9 30/15 36/18 50/25 65/17	30/15 36/18 50/25 70/35	36/18 50/25 70/35	36/18 50/25 70/35
18/9 30/15 36/18 50/25 65/17	30/15 36/18 50/25 70/35	36/18 50/25 70/35	36/18 50/25 70/35
36/18 50/25 85/43 100/50 125/63	50/25 85/43 100/50 125/63	50/25 100/50 125/63	50/25 100/50 125/63
10/5 20/10 30/15 30/15 40/20	20/10 20/10 40/20 40/20	20/10 40/20 40/20	20/10 40/20 40/20
105 x 165 x 95 105 x 165 x 95 140 x 165 x 95	140 x 257 x 146 140 x 257 x 146 185 x 257 x 146	– 210 x 275 x 146 280 x 275 x 146	

250AF	400AF
BW25 □ E0	BW40 □ 0
	
2, 3	2, 3
690 250	690 250
E J S	S
175, 200, 225, 250	250, 300, 350, 400
5/3 8/4 10/5	20/10
15/8 20/10 25/13	36/18
18/9 25/13 36/18	36/18
18/9 25/13 36/18	36/18
18/9 25/13 36/18	36/18
25/13 50/25 85/43	85/43
5/3 20/10 30/15	20/10
105 x 165 x 86 105 x 165 x 86	140 x 257 x 146 140 x 257 x 146

SC Series



Features

- Long life expectancy with a strong electrical switching durability of 2 million operations (SC-N3 and below)
- Improves contact reliability by making the auxiliary contacts bifurcated
- Complies with international standards (UL, CSA, CE, LR, BV, etc.)
- Improves usability (Adopts a structure that makes it easy to replace coils, etc.)
- High operation reliability via an integrated circuit mounted super magnet (SC-N6 and above) (prevention of coil burnout due to voltage fluctuation and contact welding due to chattering, as well as AC/DC common use for the coil, enhanced range, elimination of moaning sound, etc.)
- Comes standard with mirror contacts
- Offers a rich lineup of options

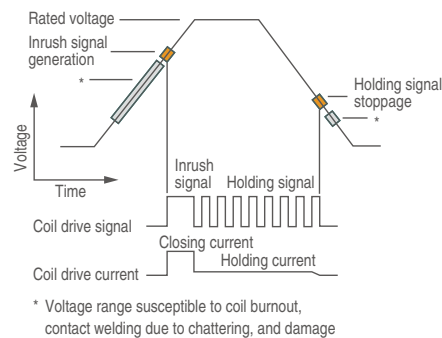
Enhanced operation reliability via a new type of super magnet

We have achieved high operation reliability for the NEO SC Series Magnetic Contactor by adopting a new type of super magnet for electronic control in the operating circuit (AC input DC excitation system).

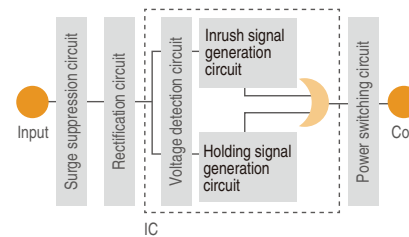
- Eliminates chattering due to voltage fluctuation and prevents contact welding and damage
- Has a regular rated voltage upon inrush, and supports use upon contact with the main contact at a voltage reduced to 65% of the rated voltage
- Prevents low voltage starting of the motor
- Greatly reduces operating volt amperes and power consumption of the operation coil
- The coil has a wide rated range and supports both AC and DC.
- Has a built-in surge suppression function
- Electromagnetically compatible



Operating principles



Circuit configuration



Application specific feature-rich optional unit



Auxiliary contact block
(front mounting)
SZ-A□ type



Auxiliary contact block
(side mounting)
SZ-AS□ type



Main circuit surge suppression unit
(front mounting, side mounting)
SZ-ZM□ type



Interlock unit
SZ-RM type



Power connection kit
for reversing
SZ-RW□ type



Three-phase parallel
terminal plate
SZ-SP□ type



Coil drive unit for IC output
(front mounting, side mounting)
SZ-CD□ type



Coil-surge suppression unit
SZ-Z□ type



Separate mounting unit
for thermal overload relay
SZ-H□ type



Thermal overload relay
trip indicator
SZ-L□ type



Thermal overload relay
reset release
SZ-R□ type



Thermal overload relay
dial cover
SZ-DA type

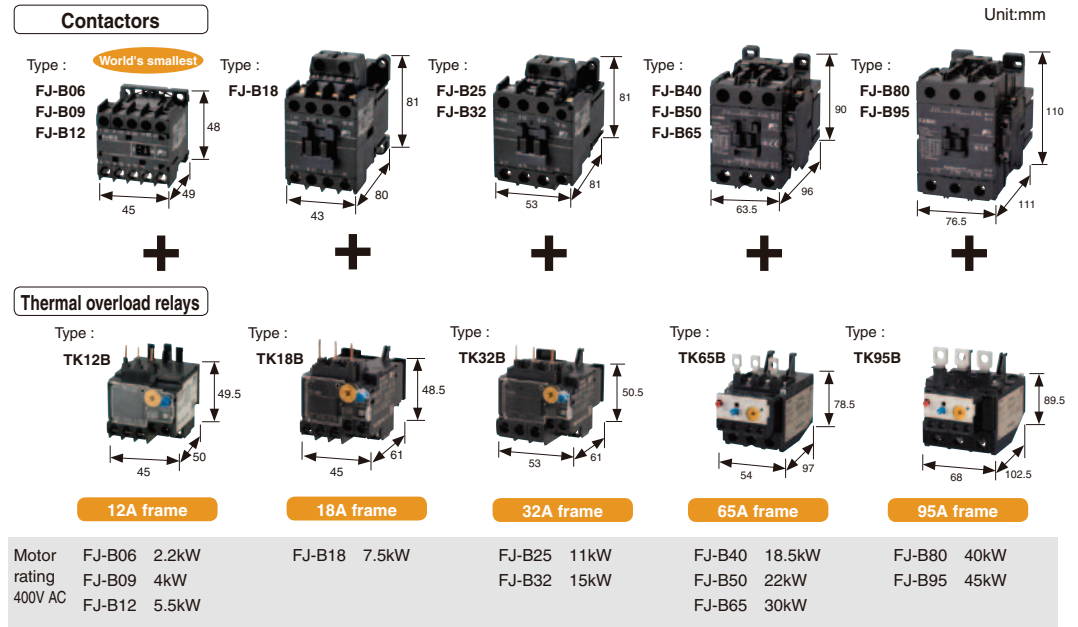
FJ Series



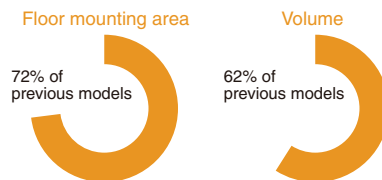
The FJ Series is compact, safety, environmental friendly and the world's smallest magnetic contactors. (applied motor capacity : 440 VAC, 2.2 to 45 kW)

Features

- Compact and space-saving of magnetic contactor and thermal overload relay



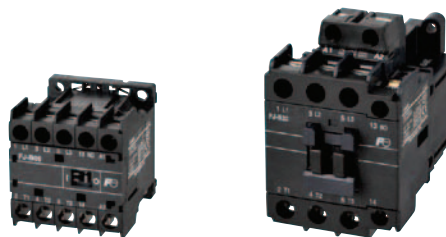
Average of FJ-B06 to B32 types



Average of models with thermal overload relay




















- Highly efficient electromagnet has been developed by using a computer simulation with 3D magnetic field analysis so that AC and DC electromagnets have the same appearance. (FJ-B06, B09, and B12 types)
- Optimization was achieved through 3D thermal analysis and inversion mechanism simulation.
- Terminal cover for finger protection
The terminal cover satisfies the requirements of Machinery Directive EN60204-1 "Direct Contact Prevention" concerning mechanical safety.














































Magnetic Contactors and Thermal overload relays SC and FJ Series









SC Series

Series			SC Series								
Frame			03	0	05	4-0	4-1	5-1	N1	N2	
Magnetic Contactor appearance											
Thermal Overload Relay appearance											
Type	Magnetic Contactors		SC-03	SC-0	SC-05	SC-4-0	SC-4-1	SC-5-1	SC-N1	SC-N2	
	Thermal Overload Relays		TK13-□TN	TK13-□TN	TK13-□TN	TK26-□TN	TK26-□TN	TK26-□TN	TR-N2/3	TR-N2/3	
Rating	Max.motor capacity (kW)	200-240V	2.5	3.5	3.5	4.5	5.5	5.5	7.5	11	
	AC-3,IEC60947-4-1	380-440V	4	5.5	5.5	7.5	11	11	15	18.5	
	Operational current (A)	200-240V	11	13	13	18	22	22	32	40	
	AC-3,IEC60947-4-1	380-440V	9	12	12	16	22	22	32	40	
	Conventional free air thermal current (A)		20	20	20	25	32	32	50	60	
International standards			     								

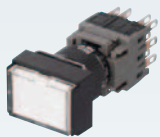
FJ Series

Series			FJ Series							
Frame			06	09	12	18	25	32	40	
Magnetic Contactor appearance										
Thermal Overload Relay appearance										
Type	Magnetic Contactors		FJ-B06	FJ-B09	FJ-B12	FJ-B18	FJ-B25	FJ-B32	FJ-B40	
	Thermal Overload Relays		TK12B	TK12B	TK12B	TK18B	TK32B	TK32B	TK65B	
Rating	Max.motor capacity (kW)	200-240V	1.5	2.2	3	4	5.5	7.5	11	
	AC-3,IEC60947-4-1	380-440V	2.2	4	5.5	7.5	11	15	18.5	
	Operational current (A)	200-240V	6	9	12	18	25	32	40	
	AC-3,IEC60947-4-1	380-440V	6	9	12	18	25	32	40	
	Conventional free air thermal current (A)		20	20	20	25	32	40	50	
International standards			 							

SC Series												
N2S	N3	N4	N5	N6	N7	N8	N10	N11	N12	N14	N16	
												
												—
SC-N2S	SC-N3	SC-N4	SC-N5A	SC-N6	SC-N7	SC-N8	SC-N10	SC-N11	SC-N12	SC-N14	SC-N16	
TR-N3/3	TR-N3/3	TR-N5/3	TR-N5/3	TR-N6/3	TR-N7/3	TR-N8/3	TR-N10/3	TR-N12/3	TR-N12/3	TR-N14/3	—	
15	18.5	22	30	37	45	55	65	90	120	180	220	
22	30	40	55	60	75	90	110	160	220	315	440	
50	65	80	105	125	150	180	220	300	400	600	800	
50	65	80	105	125	150	180	220	300	400	600	800	
80	100	135	150	150	200	260	260	350	450	660	800	
    									    			

FJ Series				
50	65	80	95	
				
				
FJ-B50	FJ-B65	FJ-B80	FJ-B95	
TK65B	TK65B	TK95B	TK95B	
15	18.5	22	25	
22	30	40	45	
50	65	80	95	
50	65	80	95	
60	65	100	105	
 				

AH164, 165, 165-2 Series

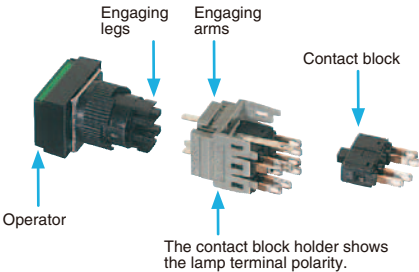


Contact separable type enabling addition and replacement of contact block

Features

Easy addition/replacement of contacts

Contact block holder is easily disengaged by holding down the engaging arms above and below the contact block holder. Addition of contacts and replacement of block is possible.



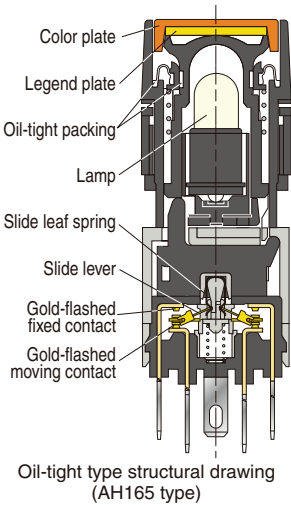
Offering a standard enclosed type and oil-tight type series

The standard enclosed type (AH164) and oil-tight type (AH165, AH 165-2) series make application to all types of equipment ranging from machine tools to office automation (OA) equipment possible.

Operator protective structure

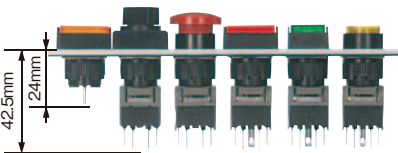
Series	AH164	AH165 AH165-2
JEM1030 Previous view	Standard enclosed type	Dust-tight type Jet-proof type Oil-tight type
JIS C 0920	IP40	IP65F
IEC 60594	IP40	IP65

(Note) Excluding some models.



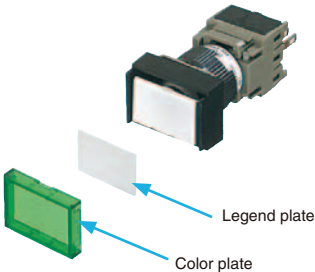
Standardized depth length

The depth length of the panel is standardized at 24 mm for the pilot light and 42.5mm for other components. Wiring is easily implemented since we were able to reduce the thickness of the panel and arrange the entire terminal positions on the back surface.



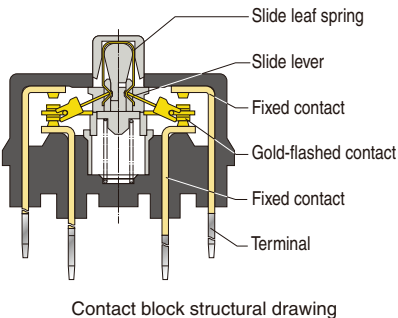
Simplified legend plate

It is possible to engrave the legend plate since a milky-white legend plate is included. In addition, since an adhesive can be applied to the special legend sheet, it is easy to make attachment to the legend plate.



High contact reliability via a unique slide structure

By combining the gold-flashed contact and slide structure, it has become possible to attain an IC level of 5V/1mA. A contact gap of 1mm or greater has been secured via a double break contact.



AR15C, DR15C, AF15C, DF15C, AR16C, DR16C, AF16C and DF16C Series

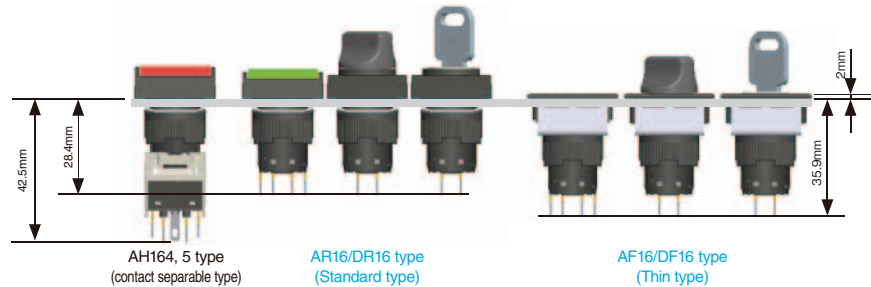


Contact integrated type with reduced panel depth length

Features

Facilitates miniaturization and thinning of operation panel

We have integrated the operator and contacts to reduce the panel depth length. In addition, wiring is easily implemented since we arranged the entire terminal positions on the back surface.



Greatly improved dismounting/mounting life expectancy of the key

The key selector switch adopts a pin tumbler-type key (reversible) that has improved dismounting/mounting of the key.

- We have prepared 6 types of keys.
- We have also improved security via the pin tumbler structure.



Supports neat panel design

Besides the standard type, we have prepared a thin type with 2mm panel protrusion. It is possible to implement an elegant panel design applicable to high density mounting.



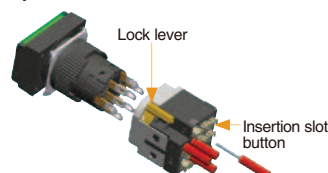
Various sockets improving wiring work efficiency

The combination of switches and various sockets have contributed to improving wiring work efficiency. (Excluding AR16V type)

Quick connection socket



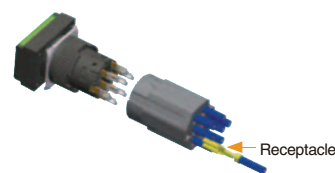
- By combining with a switch, it can be used as a quick connection terminal switch.
- By stripping the sheathing of electrical wire and pushing the button of the insertion slot, wiring can be mounted by simply inserting it (no soldering required).
- Branch wiring (jumper connection) is easy with the branch terminal.



Connector socket



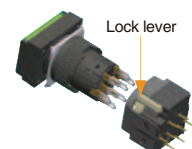
- It can be used as a connector by combining with a receptacle.
- The receptacle can be attached to the switch and held in place by the socket.



Print plate socket



- By combining with a switch, it can be used as a print plate switch.
- It utilizes pattern wiring to reduce wiring hours, while also contributing to preventing miswiring.



AR22/DR22 Series



Long-time seller achieving "easy mounting"

Features

Easy mounting and dismounting via a release arm

It achieves tool-free one-touch mounting and dismounting of the operator and contacts through its separate structure that utilizes a unique wedge mechanism.

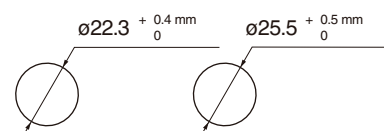
One-step lock!
One-step release!



Compatible with a panel cutout size of ø22.3 mm, ø25.5 mm.

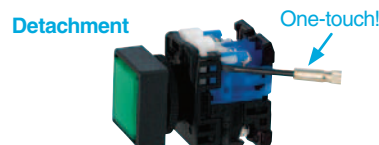
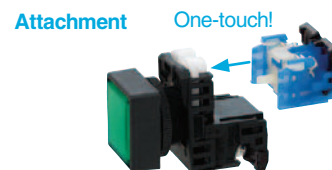
By setting the protrusion for the tightening nut, a single product can be used for mounting two types of panel cutout sizes. Therefore, it is not necessary to purchase a product based on panel cutout size.

ø25.5 mounting is possible by simply reversing the tightening nut.



One-touch addition/replacement of contacts and transformer unit.

No tools are required since the contact block and transformer unit completely support snap-on mounting. Only one screwdriver is needed for dismounting. As a result, not only is simple mounting possible, but by changing the specification when performing high density mounting, addition and replacement of components can be smoothly carried out.



The standard product has acquired international standard certification.

- It comes standard with UL/CSA certification and TÜV based EN certification, making it ideal for use with exported equipment.
- It is also compliant with China's CCC standard.
- The standard product fulfills the compliance standards of the RoHS directive (EU Directive 2002/95/EC). (ø22 commonality)

Excellent contact reliability

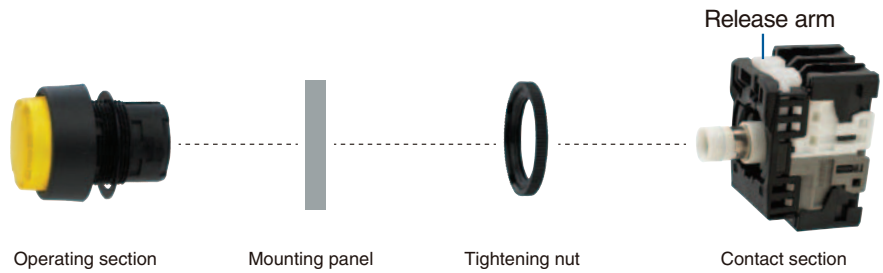
A contact mechanism based on a unique sliding contact technology enables it to achieve high contact reliability (failure rate $\lambda_{60} = 1.15 \times 10^{-8}$ level), and can also be safely used with low voltage and low current circuits (5 V/5 mA).

AY22/DY22 Series



Features

- The use of a release arm enables easy mounting.

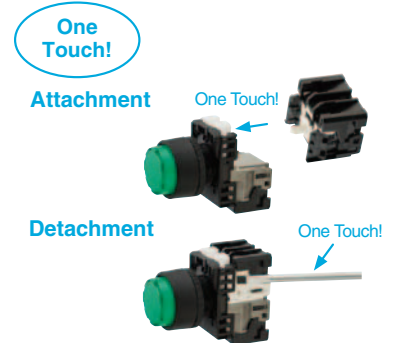


The separate structure with a unique wedge mechanism enables one-step attachment and detachment of the operating section and contact section, without the use of any tool.



- Contact block and lamp terminal can also be added or replaced in a single step.

All contact block and lamp terminal are designed with snap-on mounting, so no tools are required. Replacement of the contact block can be done with a screwdriver, without the need for any special tool. Contact block is easily replaced even when the pushbuttons are mounted closely together.



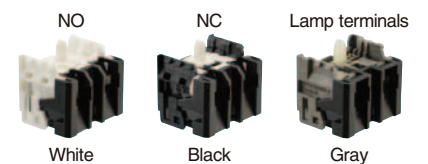
- Metal tone rosette is also available.

Metal tone rosette will provide greater sense of security.



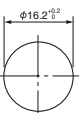















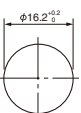











- Color-coding contact blocks improves work efficiency.

Each type of block has a different color, so it is possible to visually check the wiring by color.

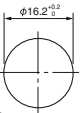







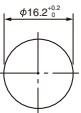







Command Switches ø16 Series







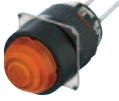



























AH164, AH165 Series








































Product category		Illuminated pushbutton switches				Pushbutton switches	
Operator shape		Flush rectangular	Flush rectangular with guard	Flush square	Extended round	Flush rectangular	
Appearance /panel cutting(mm)							
International standards							
Type (Degree of protection)	IP40	AH164-TL	AH164-TGL	AH164-SL	AH164-L	AH164-TF	
	IP65	AH165-TL	AH165-TGL	AH165-SL	AH165-L	AH165-TF	
Color							
Product category		Selector switches					
Operator shape		Knob with rectangular bezel	Knob with square bezel	Key with rectangular bezel	Key with square bezel	Key with rectangular bezel (Direct opening action)	
Appearance /panel cutting(mm)							
International standards							
Type (Degree of protection)	IP40	AH164-P	AH164-SP	AH164-J	AH164-SJ	AH164-JM	
	IP65	AH165-P	AH165-SP	AH165-J	AH165-SJ	AH165-JM	
Color				—	—	—	
No. of position		2-position, 3-position	2-position, 3-position	2-position, 3-position	2-position, 3-position	2-position, 3-position	
Operator action		Maintained, Spring/manual return, Spring return	Maintained, Spring/manual return, Spring return	Maintained, Spring/manual return, Spring return	Maintained, Spring/manual return, Spring return	Maintained, Spring/manual return, Spring return	

AR15C, DR15C, AF15C, DF15C, AR16C, DR16C, AF16C and DF16C Series

Product category		Illuminated pushbutton switch					Pushbutton switch
Operator shape		Flush rectangular	Flush rectangular with guard	Flush square	Extended round	Flush round	Flush rectangular
Appearance /panel cutting(mm)							
International standards							
Type (Degree of protection)	IP40 *1	AR15F0NC AF15F0NC	AR15G0NC	AR15F0MC AF15F0MC	AR15E0LC	AF15F0LC	AR15F0TC AF15F0TC
	IP65	AR16F0NC AF16F0NC	AR16G0NC	AR16F0MC AF16F0MC	AR16E0LC	AF16F0LC	AR16F0TC AF16F0TC
Color							
Product category		Selector switches					
Operator shape		Knob with rectangular bezel	Knob with square bezel	Knob with round bezel	Key with rectangular bezel	Key with square bezel	Key with round bezel
Appearance /panel cutting(mm)							
International standards							
Type (Degree of protection)	IP40 *1	AR15PTC AF15PTC	AR15PSC AF15PSC	AR15PRC AF15PRC	AR15JTC AF15JTC	AR15JSC AF15JSC	AR15JRC AF15JRC
	IP65	AR16PTC AF16PTC	AR16PSC AF16PSC	AR16PRC AF16PRC	AR16JTC AF16JTC	AR16JSC AF16JSC	AR16JRC AF16JRC
Color					—	—	—
No. of position		2-position, 3-position	2-position, 3-position	2-position, 3-position	2-position, 3-position	2-position, 3-position	2-position, 3-position
Operator action		Maintained, Spring/manual return, Spring return	Maintained, Spring/manual return, Spring return	Maintained, Spring/manual return, Spring return	Maintained, Spring/manual return, Spring return	Maintained, Spring/manual return, Spring return	Maintained, Spring/manual return, Spring return










































*1 : UL/CSA Standards: We will obtain in May 2013.

			Pilot lights				
	Flush rectangular with guard	Flush square	Extended round	Flush rectangular	Flush rectangular with guard	Extended round	Dome
							
							
	AH164-TGF	AH164-SF	AH164-E	AH164-ZT	AH164-ZS	AH164-Z	AH164-ZM
	AH165-TGF	AH165-SF	AH165-E	AH165-ZT	AH165-ZS	AH165-Z	AH165-ZM
							
	Selector switches		Emergency stop pushbutton switches		Buzzers		
	Key (Direct opening action)	Push-lock, turn-reset (32mm dia.)	Push-lock, turn-reset (40mm dia.)	Standard	Loud sound	Loud sound with volume control	Standard sound with volume control
							
	AH164-RJM	—	—	AH164-TX(IP00)	AH164-TX1(IP00)	AH164-TX2(IP00)	—
	AH165-RJM	AH165-V5R	AH165-V6R	—	—	—	AH165-X(IP54)
	—						
	2-position, 3-position	—	—	—	—	—	—
	Maintained, Spring/manual return, Spring return	Push-lock, turn-reset	Push-lock, turn-reset	—	—	—	—




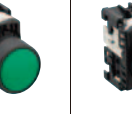
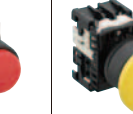


















				Pilot lights					
	Flush rectangular with guard	Flush square	Extended round	Flush round	Flush rectangular	Flush square	Extended round	Flush round	Dome
									
									
	AR15G0TC	AR15F0SC AF15F0SC	AR15E0RC	AF15F0RC	DR15F0NC DF15F0NC	DR15F0MC DF15F0MC	DR15E0LC	DF15F0LC	DR15D0LC
	AR16G0TC	AR16F0SC AF16F0SC	AR16E0RC	AF16F0RC	DR16F0NC DF16F0NC	DR16F0MC DF16F0MC	DR16E0LC	DF16F0LC	DR16D0LC
									
Emergency stop pushbutton switches			Emergency stop illuminated pushbutton switches						
	Push-lock, turn-reset or pull-reset (32mm dia.)	Push-lock, turn-reset or pull-reset (40mm dia.)	Push-lock, turn-reset or pull-reset (32mm dia.)	Push-lock, turn-reset or pull-reset (40mm dia.)					
									
									
	—	—	—	—					
	AR16V0R	AR16V1R	AR16V0L	AR16V1L					
									
	—	—	—	—					
	Push-lock, turn-reset or pull-reset	Push-lock, turn-reset or pull-reset	Push-lock, turn-reset or pull-reset	Push-lock, turn-reset or pull-reset					











































Command Switches ø22 Series















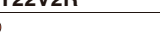
AR22/DR22 Series

Product category	Illuminated pushbutton switches					Pushbutton switches		
Bezel	Round					Square		
Operator shape	Flush round head (24mm dia.)	Extended round head (24mm dia.)	Mushroom head (40mm dia.)	Extended with transparent full guard (24mm dia.)	Extended square head (□24)	Flush round head (24mm dia.)	Extended round head (24mm dia.)	
Appearance								
International standards								
Type	Momentary	AR22F0L	AR22E0L	AR22M0L	AR22G4L	AR22E0M	AR22F0R	AR22E0R
Alternate	AR22F5L	AR22E5L	AR22M5L	AR22G9L	AR22E5M	AR22F5R	AR22E5R	
Color								
Degree of protection	IP65	IP65	IP65	IP65	IP65	IP65	IP65	
Product category	Illuminated selector switches					Illuminated emergency stop pushbutton switches		
Bezel	Round					Round		
Operator shape	Knob	Knob	Lever	Cylindrical knob	Key	Push-lock, turn-reset (40mm dia.)	Push-lock, turn-reset (Soft-touch 29mm dia. with white arrow)	
Appearance								
International standards								
Type	AR22PL	AR22PR AR22PCR	AR22WR AR22WCR	AR22RR AR22RCR	AR22JR AR22JCR	AR22V2L	AR22VSL	
Color					—			
Degree of protection	IP65	IP65	IP65	IP65	IP65	IP65	IP65	
Remarks	No. of position : 2,3-position Operator action : Maintained, Spring/manual return, Spring return	No. of position : 2,3,4,5-position Operator action : Maintained, Spring/manual return, Spring return	No. of position : 2,3,4,5-position Operator action : Maintained, Spring/manual return, Spring return	No. of position : 2,3,4,5-position Operator action : Maintained, Spring/manual return, Spring return	No. of position : 2,3-position Operator action : Maintained, Spring/manual return, Spring return	Operator action : Push-lock, turn-reset	Operator action : Push-lock, turn-reset	

AY22/DY22 Series

Product category	Illuminated pushbutton switches			Pushbutton switches			Selector switches	
Bezel	Round			Round			Round	
Operator shape	Extended round head (24mm dia.)	Mushroom head (40mm dia.)	Extended with transparent full guard (24mm dia.)	Flush round head (24mm dia.)	Extended round head (24mm dia.)	Mushroom head (40mm dia.)	Knob	Key
Appearance								
International standards								
Type	Momentary	AY22E0L	AY22M0L	AY22G4L	AY22F0R	AY22E0R	AY22PR	AY22JR
Alternate	AY22E5L	AY22M5L	AY22G9L	AY22F5R	AY22E5R	AY22M5R	AY22PCR	AY22JCR
Color								—

Pushbutton switches				Pilot lights			
Round		Square		Round		Square	
Mushroom head (40mm dia.)	Extended with full guard (24mm dia.)	Mushroom head with full guard (40mm dia.)	Flush square head (□24)	Dome (24mm dia.)	Extended round (24mm dia.)	Faceted (24mm dia.)	Flush square head (□24)
							
							
AR22M0R	AR22G3R	AR22M3R	AR22F0S	DR22D0L	DR22E3L	DR22K0L	DR22F3M
AR22M5R	AR22G8R	AR22M8R	AR22F5S				
							
IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65
Emergency stop pushbutton switches		Emergency Stop Pushbutton Switches with Synchro Safe Contact		Joy stick selector switches	B buzzers		
Round		Round		Round	Round		
Push-lock, turn-reset (40mm dia.)	Key-release push-lock, turn-reset (40mm dia.)	Push-lock, turn-reset Mushroom head (40mm dia.)	Push-lock, turn-reset Giant Mushroom head (65mm dia.)	Ball type with lock (22mm dia.)	Electronic sound (22mm dia)		
							
							
AR22V2R	AR22V7R	AR22VQR	AR22VPR	AR22A1□ AR22A6□	DR22B5		
							
IP65	IP65	IP65	IP65	IP65	IP00		
Operator action : Push-lock, turn-reset	Operator action : Key-release, push-lock, turn-reset	Operator action : Push-lock, pull/turn-reset	Operator action : Push-lock, pull/turn-reset	Operator action : Manual return, Spring return			

Product category	Pilot lights			Emergency stop pushbutton switches (conform to EN418)	
Bezel	Round			Round	
Operator shape	Extended round (24mm dia.)	Flush round (24mm dia.)	Dome (24mm dia.)	Push-lock, turn-reset (40mm dia.)	Push-lock, turn-reset (40mm dia.)
Appearance					
International standards					
Type	DY22E3L	DY22F3L	DY22D0L	AY22V2L	AY22V2R
Color					

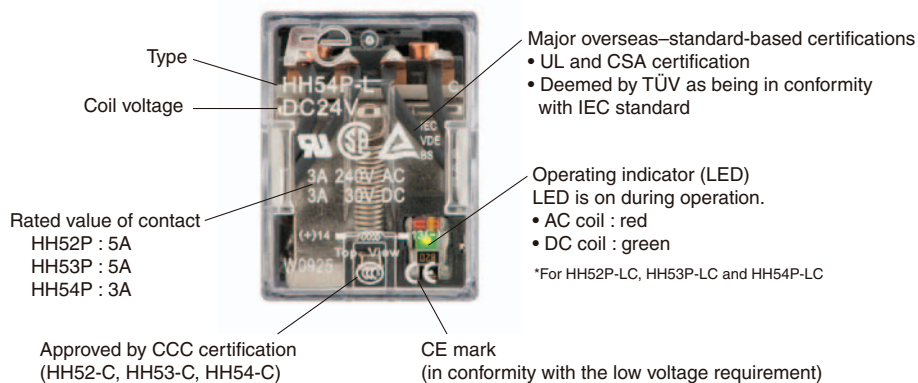
Miniature Control Relays HH Series, Time Delay Relays ST7P Series

HH52-C, HH53-C, HH54-C Series



Features

- The products have obtained the CCC certification and can satisfy the market demands. (HH52-C, HH53-C, HH54-C)
- Standard products have been approved by UL, CSA and TÜV.
- The series products are equipped with an operating indicator (LED), ensuring a clear glance of work status.
- The products are environmentally friendly and conformed to regulations on pollution control of electronic information products.




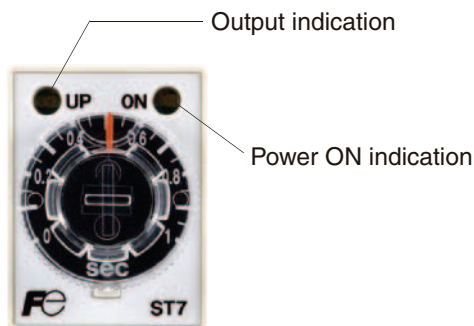
ST7P-C Series



The ST7P series are compact and highly accurate Super Timers. The ST7P are on-delay operation types.













Features

- These Super Timers are highly accurate. Their repeat accuracy is less than $\pm 1\%$ at maximum setting time.
- Timing range
The ST7P are the single timing range types; 0.06 sec. to 12 hours.
- Time setting dial is user friendly.
Easy to check the status of the timer by the LED indicators.
- The ST7P has been approved by the UL,  and CCC.
- The sockets with finger safety protection are also available.











Sockets with finger protection

HH52, HH53, HH54 Series

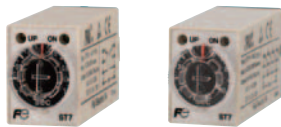


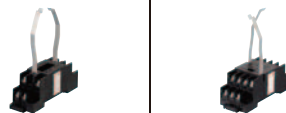
Description		Standard					High capacity		With extra pick-up coil		Magnetically held	
		2P		3P	4P		2P	4P	2P		2P	
		Single	Bifurcated	Single	Single	Bifurcated	Single	Single	Single	Bifurcated	Single	Bifurcated
Relay appearance												
International standards												
Type	Plug-in mounting	HH52P	HH52PW	HH53P	HH54P	HH54PW	HH52PU	HH54PU	HH54-2P	HH54-2PW	HH52P-R	HH52PW-R
	PC board mounting	HH52B	HH52BW	HH53B	HH54B	HH54BW	HH52BU	HH54BU	HH54-2B	HH54-2BW	HH52B-R	HH52BW-R
	Flange mounting	HH52S	HH52SW	HH53S	HH54S	HH54SW	HH52SU	HH54SU	HH54-2S	HH54-2SW	HH52S-R	HH52PS-R
Rated coil voltage		AC6, 12, 24, 48, 100/110, 110/120, 200/220, 220/240V DC6, 12, 24, 48, 100/110V										AC24, 48, 100, 200V DC24, 48A
Rated thermal current		5A	5A	5A	3A	3A	7A	5A	3A	3A	3A	3A
Minimum applicable load		5V 1mA	1V 0.1mA	1V 1mA	1V 1mA	1V 0.1mA	5V 100mA	1V 1mA	1V 1mA	1V 0.1mA	1V 1mA	1V 0.1mA
Socket appearance												
Type	Rail mounting screw terminal	M3	TP58X1	—	TP514X1	TP58X1	TP514X1	TP58X1	TP514X1			
		M3.5	TP58X2	TP511X2	TP514X2	TP58X2	TP514X2	TP58X2	TP514X2			
	Soldering		TP58	TP511	TP514	TP58	TP514	TP58	TP514			
	PC board		TP58B	TP511B	TP514B	TP58B	TP514B	TP58B	TP514B			
	Wire wrap		TP58R2	TP511R2	TP514R2	TP58R2	TP514R2	TP58R2	TP514R2			

HH52-C, HH53-C, HH54-C Series








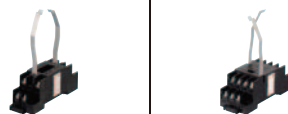
Description		Standard		
		2P	3P	4P
		Single	Single	Single
Relay appearance				
International standards				
Type	Plug-in mounting	HH52P-C	HH53P-C	HH54P-C
Rated coil voltage		AC110V, AC220V DC24V, DC48V		
Rated thermal current		5A	3A	
Minimum applicable load		5V 1mA	5V 1mA	5V 1mA
Socket appearance				
Type	Rail mounting screw terminal	M3	TP58X1-C	TP511X1-C TP514X1-C
Socket appearance (With finger safety protection)				
Type	Rail mounting screw terminal	M3	TP58X1-EC	TP511X1-EC TP514X1-EC

Time Delay Relays ST7P Series

ST7P Series

Description			Plug-in mounting		PC board mounting	
Appearance						
International standards			UL [®]  CE 			
Type			ST7P-2		ST7P-4	
Contact			Timed:2PDT		Timed:4PDT	
Operation			On-delay			
Time range			0.06–0.5s 0.1–1s 0.3–3s 0.4–5s 1–10s 2–30s 4–60s			
Input voltage			0.25–3min 1–10min 2–30min 4–60min			
Socket appearance			0.2–2h 0.5–6h 1–12h 2–24h			
Input voltage			240V AC 50/60Hz 200-230V AC 50/60Hz 100-120V AC 50/60Hz			
Socket appearance			100-110V DC 24V DC 12V DC			
Socket appearance						
Type	Screw terminal and Rail mounting	M3	TP88X1		TP814X1	
		M3.5	TP88X2		TP814X2	
	Soldering		TP88		TP814	
	PC board		TP88B		TP814B	
	Wire wrap		TP88R2		TP814R2	

ST7P-C Series

Description			Plug-in mounting		
Appearance					
International standards			c  US  		c  US  
Type			ST7P-2C		ST7P-4C
Contact			Timed:2PDT		Timed:4PDT
Operation			On-delay		
Time range			0.05-0.5s 0.1-1s 0.5-3s 0.5-5s 1-10s 3-30s 5-60s	0.5-3min 1-10min 3-30min 5-60min	0.2-2h 0.5-6h 1-12h
Input voltage			240V AC 50/60Hz 220V AC 50/60Hz 110V AC 50/60Hz 24V AC 50/60Hz	110V DC 48V DC 24V DC 12V DC	
Socket appearance					
Type	Screw terminal and Rail mounting	M3	TP88X1-C	TP814X1-C	
		M3 (With finger safety protection)	TP88X1-EC	TP814X1-EC	
		M3.5	—	—	
	Soldering		—	—	
	PC board		—	—	
	Wire wrap		—	—	

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