

# Molded Case Circuit Breakers Overview

## Overview

Fuji Molded Case Circuit Breakers are more compact (especially 100A, 125A, 250A frames) than any breakers on the market, so they take up less space in control panels.

This product group maintains conformity to all Worldwide standards.

## Agency Approvals

- UL listed, MCCB, File: E90584
- UL listed, Accessories, File E93289
- CE marked
- CCC marked
- TUV certified

## Standards

- UL 489
- CSA C22.2 No.5
- IEC 60947-2
- EN 60947-2
- GB 14048.2
- JIS C8201-2-1, 2 (ANN.1, 2)

## Features

- Thermal-magnetic 15A through 800A
- Suitable for branch circuit protection
- Rated current of 15 to 800A, max 600V
- Standard type and high-interrupting capacities available in identically sized breakers
- Shunt Trip, Undervoltage Release and other accessories available
- Line & load lug terminals included on all MCCBs
- Auxiliary switch, Alarm switch and Shunt Trip can be installed in the field
- Door-mounted or flange-mounted, flex shaft operating handles
- All frame sizes suitable for reverse-feed use
- All breakers include mounting hardware
- Terminal covers included for BW125 and BW250 frames. Terminal covers available for BW400, BW630 and BW800 frames.



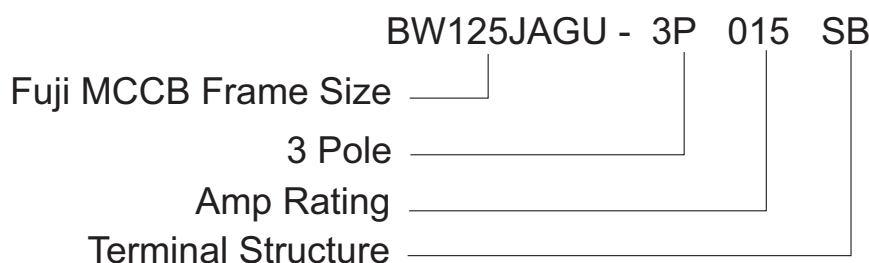
Fuji Electric Molded Case Circuit Breakers Technical Specifications

Circuit Breaker Type	Ampere Rating at 40°C	No. Poles	Volts		Type of Trip*	UL 489 Interrupting Ratings (rms Symmetrical Amperes) (kA)			
			AC	DC		Volts AC (50/60 Hz)			Volts DC
						240	480	600	
<b>BW125JAGU</b>	15-125	3	600	250	N.I.T.U	50	30	10	10
<b>BW250JAGU</b>	125-250	3	600	250	N.I.T.U	50	30	10	10
<b>BW400SAGU</b>	250-400	3	480	250	N.I.T.U	50	35	–	10
<b>BW630RAGU</b>	500-600	3	480	250	N.I.T.U	100	50	–	10
<b>BW800RAGU</b>	700-800	3	480	250	N.I.T.U	100	50	–	10

\*Note: N.I.T.U denotes non-interchangeable trip unit.

\*\*Note: For DC or 1-phase AC applications, use the two outside poles of the 3-pole circuit breaker

## Fuji Molded Case Circuit Breakers Part Numbering System



# Fuji Molded Case Circuit Breakers – 800A Frame



Fuji BW800A series MCCBs are 800 amp frame, 3-pole, non-adjustable magnetic trip, molded case circuit breakers (MCCB). The BW800 series is suitable for reverse feed

applications. Included with each MCCB are Line and Load-side lug terminals and mounting hardware. Accessories are not pre-installed and are sold separately.

**BW800RAGU-3P700SB**  
shown

BW800-Frame Series Three-Pole Molded Case Circuit Breakers									
Part Number	Price	Frequency	Rated Interrupting Capacity (kA)						
			Rated Current	UL489 CAN/CSA C22.2 No. 5		IEC60947-2, JIS C 8201-2-1 Icu/Ics		GB14048.2 Icu/Ics	
			Ampere Rating	Voltage	Interrupt Capacity	Voltage	Interrupt Capacity	Voltage	Interrupt Capacity
<b>BW800RAGU-3P700SB</b>	<--->	50/60 Hz	700	480V/Δ AC	50 kA	690V AC	15/8 kA	400V AC	50/25 kA
<b>BW800RAGU-3P800SB</b>	<--->			800					
				240V AC	10 kA	440V AC	50/25 kA		
				250V DC		400V AC	50/25 kA		
						240V AC	100/50 kA		
						250V DC	40/20 kA		

*Note: SCCR = UL489 interrupting capacity*

BW800-Frame Accessory Selection Guide		
Part Number	Price	Description
<b>BW9W1SHA</b>	<--->	Field installable auxiliary contact for BW800frame MCCBs. SPDT. Lead wires: 20AWG, 19.69" long. Left side mount only
<b>BW9FHA-R</b>	<--->	Field installable 24-48 VAC/VDC shunt trip for BW800-frame MCCBs. Lead wires: 20AWG, 19.69" long. Left side mount only
<b>BW9FHA-A</b>	<--->	Field installable 100-280 VAC, 100-220 VDC shunt trip for BW630-frame MCCBs. Lead wires: 20AWG, 19.69" long. Left side mount only
<b>BW9RHA-R</b>	<--->	Field installable 24 V AC/VDC undervoltage release for BW800-frame MCCBs. Lead wires: 20AWG, 19.69" long. Left side mount only
<b>BW9RHA-1</b>	<--->	Field installable 120-130 VAC, 125 VDC undervoltage release for BW800-frame MCCBs. Lead wires: 20AWG, 19.69" long. Left side mount only
<b>BW9BTJA-L3W*</b>	<--->	Terminal cover for BW800-frame MCCBs, line and load side, package of 2
<b>BW9V0JA</b>	<--->	NEMA 12 rotary handle for BW800-Frame. Position indicating; lock-off feature. Shaft length: 0.39"
<b>BZ-VS2</b>	<--->	NEMA 12 rotary handle shaft for BW9V0JA for BW 800-Frame. Shaft length: 3.48"
<b>BW9QNHA</b>	<--->	Lockout attachment. Lock not included.

*\* Note: Terminal covers are not supplied as standard.*



**BW9V0JA**



**BZ-VS2**



**BW9FHA-A**



**BW9RHA-1**

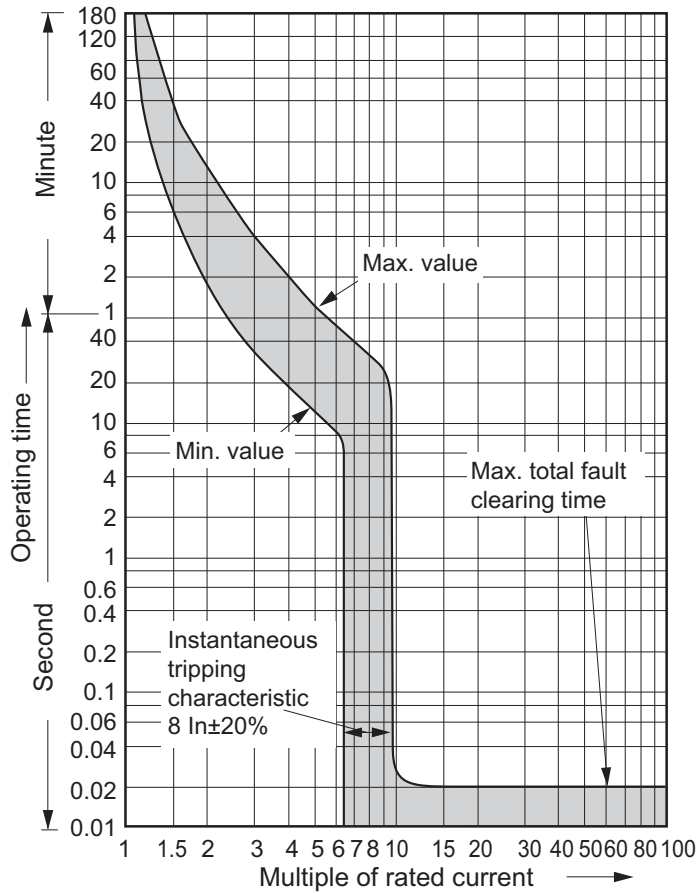


**BW9QNHA**

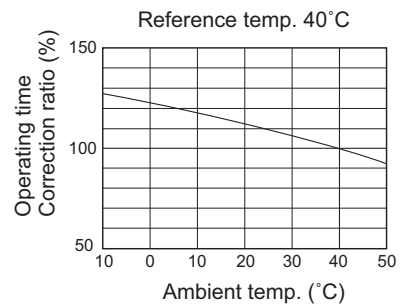
Wiring Specifications chart is on page 31-30

# Fuji Molded Case Circuit Breakers – 800A Frame Characteristic Curves

**BW800 Current Range 700 - 800A**



Note: Instantaneous tripping =  $8 \times (\text{rated current}) \pm 20\%$   
 $I_n$  = rated current



# Fuji Molded Case Circuit Breakers – Dimensions

Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

Comm.

Terminal Blocks & Wiring

Power

Circuit Protection

Enclosures

Tools

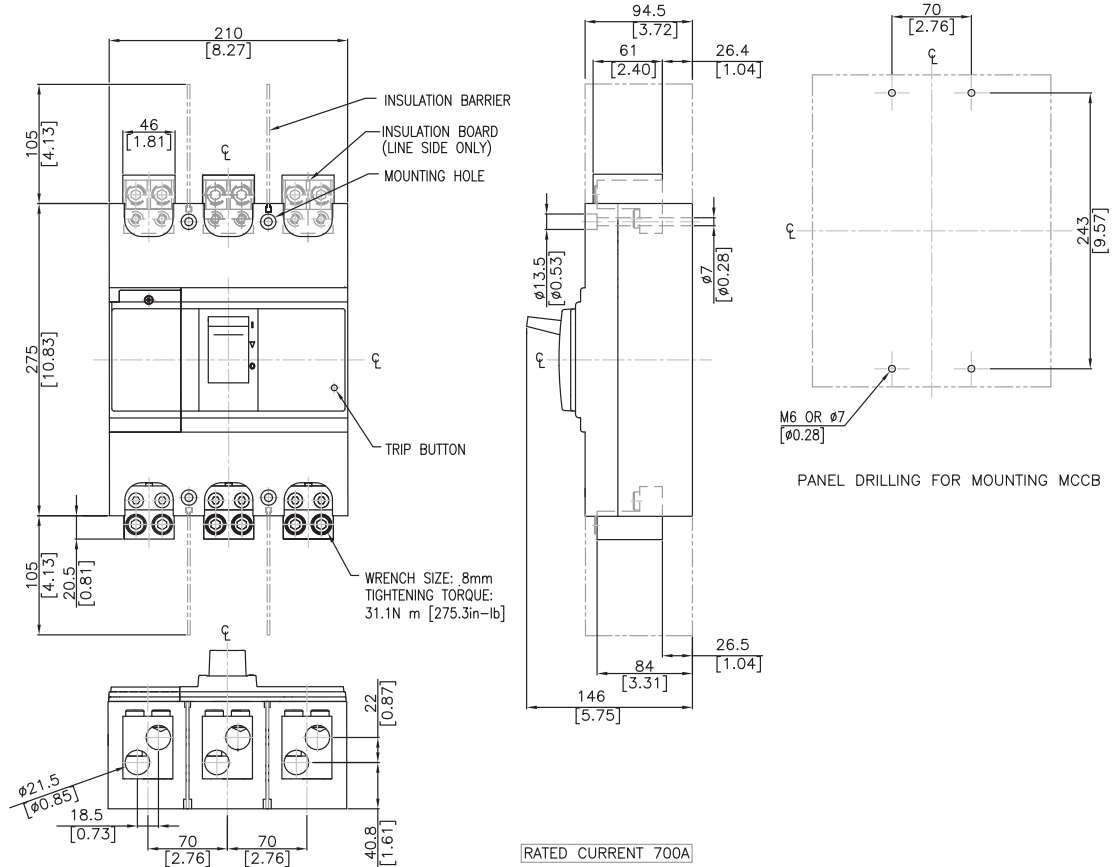
Pneumatics

Appendix

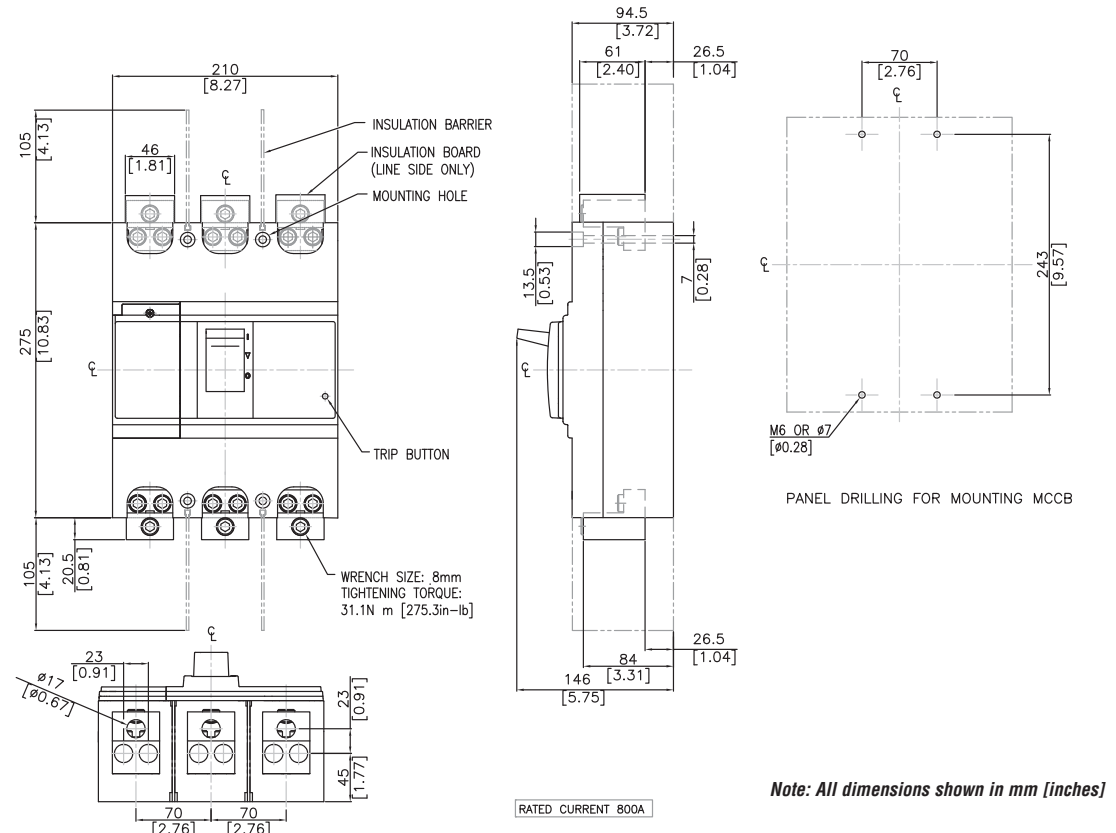
Product Index

Part # Index

## 700A BW800 Frame



## 800A BW800 Frame



Note: All dimensions shown in mm [inches]

# Fuji Molded Case Circuit Breakers – Products And Accessory Compatibility

Match the Accessories with Fuji Molded Case Circuit Breakers						
Part Number	Description	BW125JAGU	BW250JAGU	BW400SAGU	BW630RAGU	BW800RAGU
<b>BW9W1SGO</b>	Auxiliary Switch (Mounting Left and right side)	X	X			
<b>BW9W1SHA</b>	Auxiliary Switch (Mounting Left side ONLY)			X	X	X
<b>BW9FRGO</b>	Shunt Trip 24 VAC/VDC (Mounting both Left and Right sides)	X	X			
<b>BW9FHA-R</b>	Shunt Trip 24-48 VAC/VDC (Mounting Left side ONLY)			X	X	X
<b>BW9FAGO</b>	Shunt Trip 100-120 VAC, 100-110 VDC (Mounting both Left and Right sides)	X	X			
<b>BW9FHA-A</b>	Shunt Trip 100-280 VAC, 100-220 VDC (Mounting Left side ONLY)			X	X	X
<b>BW9RGAR</b>	UnderVoltage Release 24VDC (Left side ONLY)	X	X			
<b>BW9RHA-R</b>	UnderVoltage Release 24 VAC/VDC (Left side ONLY)			X	X	X
<b>BW9RGAT</b>	UnderVoltage Release 110-130 VAC (Left side ONLY)	X	X			
<b>BW9RHA-1</b>	UnderVoltage Release 120-130 VAC, 125VDC (Left side ONLY)			X	X	X
<b>BW9SLOCA-3</b>	Replacement Lugs Kit for 125 Amp frame	X				
<b>BW9SLOGA-3</b>	Replacement Lugs Kit for 250 Amp frame up to 175A		X			
<b>BW9SL1GA-3</b>	Replacement Lugs Kit for 250 Amp frame 200A to 250A		X			
<b>BW9V0CA</b>	Rotary Handle, H = 4.134"(shaft is shorter)	X				
<b>BW9V0GA</b>	Rotary Handle, H = 4.134"(shaft is shorter)		X			
<b>BW9VSGO</b>	Optional Shaft for BW9V0CA and BW9V0GA, H = 9.843" (shorter shaft)	X	X			
<b>BW9V0HA</b>	Rotary Handle, H = 7.48"(shaft is shorter)			X		
<b>BW9V0JA</b>	Rotary Handle, H = 7.48"(shaft is shorter)				X	X
<b>BZ-VS2</b>	Optional Shaft for BW9V0HA and BW9V0JA, H = 9.843" (shorter shaft)			X	X	X
<b>BW9FOCA-15A</b>	Flange Handle (flex shaft), NEMA 12, 59" (1.5m) cable, 125 Amp frame	X				
<b>BW9FOCA-20A</b>	Flange Handle (flex shaft), NEMA 12, 78.7" (2.0m) cable, 125 Amp frame	X				
<b>BW9FOGA-15A</b>	Flange Handle (flex shaft), NEMA 12, 59" (1.5m) cable, 250 Amp frame		X			
<b>BW9FOGA-20A</b>	Flange Handle (flex shaft), NEMA 12, 78.7" (2.0m) cable, 250 Amp frame		X			
<b>BW9FOHA-15A</b>	Flange Handle (flex shaft), NEMA 12, 59" (1.5m) cable, 400 Amp frame			X		
<b>BW9FOHA-20A</b>	Flange Handle (flex shaft), NEMA 12, 78.7" (2.0m) cable, 400 Amp frame			X		
<b>BW9BTHA-L3W</b>	Terminal Cover for the 400A frame			X		
<b>BW9BTJA-L3W</b>	Terminal Cover for the 630A AND 800A frame				X	X
<b>BW9Q1CA</b>	Lockout Attachment 125A and 250A frames	X	X			
<b>BW9QNHA</b>	Lockout Attachment 400A, 630A and 800A frames			X	X	X

## Internal Accessory Combinations for BW Series



MCCB	BW125 BW250	BW400 BW630 BW800
Pole	3	3
Auxiliary switch SPDT		
Shunt trip		
Undervoltage trip		
Auxiliary Switch + Shunt Trip		
Undervoltage + Auxiliary Switch		

# Fuji Molded Case Circuit Breakers – Wire Range Specifications

## Wiring

- When connecting the wires, follow NEC (National Electric Code, USA) or CEC (Canadian Electrical code Part 1, Canada) instructions.
- Use copper wire rated for 75°C for connecting. UL or CSA approved wire is recommended.
- Tighten the wire connections adequately, as a very large electromagnetic force will be generated when short circuit current is generated.
- Perform additional tightening of the terminal screws periodically.



### Caution

- Adhere to the number of strands of wire indicated in the table.
- Multiconductor wire can not be connected.
- Two wires cannot be connected to the lug terminal at once.
- Do not solder the end of the wire.

Allowable Wire Specifications for Lug Terminals	
Wire Size AWG or MCM (mm <sup>2</sup> )	Number of Wire Strands
14 to 2 (2.1 to 33.6)	7
1 to 4/0 (42.4 to 107.2)	19
250 to 500 (127 to 250)	37

Maximum Wire Sizes and Tightening Torque			
Type	Rated Current (A)	Wire Size AWG or MCM (mm <sup>2</sup> )	Tightening Torque
			Lug Terminal*
BW125	15	14 AWG (2.1mm <sup>2</sup> )	51 lb.-in. (5.8 N-m)
	20	12 AWG (3.3mm <sup>2</sup> )	
	30	10 AWG (5.3mm <sup>2</sup> )	
	40	8 AWG (8.4mm <sup>2</sup> )	
	50	8 AWG (8.4mm <sup>2</sup> )	
	60	6 AWG (13.3mm <sup>2</sup> )	
	70	4 AWG (21.1mm <sup>2</sup> )	
	75	4 AWG (21.1mm <sup>2</sup> )	
	80	4 AWG (21.1mm <sup>2</sup> )	
	90	3 AWG (26.7mm <sup>2</sup> )	
	100	3 AWG (26.7mm <sup>2</sup> )	
BW250	125	1 AWG (42.4mm <sup>2</sup> )	204 lb.-in. (23 N-m)
	150	1/0 AWG (53.5mm <sup>2</sup> )	
	175	2/0 AWG (67.4mm <sup>2</sup> )	
	200	3/0 AWG (85.0mm <sup>2</sup> )	
	225	4/0 AWG (107.2mm <sup>2</sup> )	
	250	250 MCM (127mm <sup>2</sup> )	
BW400	250	250 MCM (127mm <sup>2</sup> )	385 lb.-in (43.5 N-m)
	300	350 MCM (177mm <sup>2</sup> )	
	350	500 MCM (253mm <sup>2</sup> )	282 lb-in (31.9 N-m)
	400	3/0 AWGx2 (85.0mm <sup>2</sup> x2)	
BW630	500	250-500 MCMx2	275 lb.-in. (31.07 N-m)
	600	250-500 MCMx2	
BW800	700	250-500 MCMx2	275 lb.-in. (31.07 N-m)
	800	3/0 AWG-300 MCMx3	

\*Note: Lug terminals are supplied as standard.