

## B Frame - Series Circuit Breakers



The B Frame is a very compact yet robust circuit breaker. Used in various applications where space is constrained, the B Frame is available in a variety of configurations, with different types of handles such as standard, rocker, protected rocker, push-pull, and push-to-reset handle types. The B Frame is suitable for various applications in telecom, lighting, railway signalling and solar applications. The B Frame is also available as a 300V DC double pole switch.

### B Frame Profile

The B Frame is available in single pole and double pole configurations. This miniaturised precision breaker is available for both AC and DC applications, with a choice of time delay characteristics and auxiliary switch options. The B Frame provides the solution when space constraints exist.

### Approvals

The B Frame circuit breaker carries various approvals such as VDE, cURus, CSA, EAC, CCC and is CE certified. It is also recognised to UL 1077, UL 1500, UL 508 and listed to UL 489A.



### Features

- AC and DC circuit breaker
- Hydraulic-magnetic technology
- 100% rating capability independent of ambient temperature
- Up to two poles
- VDE, EAC and CCC approved, CE certified
- UL compliant (recognised / listed)
- Ratings 0.1 to 30 A (specific certifications)
- Precision tripping characteristics
- Wide range of circuits, mountings, terminations and time delays
- Optional auxiliary switch
- Optional illuminated rocker handle
- 300V DC switch

### Applications

- Lighting equipment
- Office equipment
- Power supplies
- Telecom power distribution
- Small generators and motors
- Railway signalling systems
- Entertainment systems
- Marine power systems
- Vending machines
- Power distribution units (PDU)
- Suitable for motor starting
- Solar and renewable power

## B Frame - Series Circuit Breakers

### Technical Data

<b>Product Type</b>	<b>B Frame</b>
<b>Operating Temperature Range</b>	-40 °C to +85 °C
<b>Endurance</b>	10000 operations - 1500 electrical at rated current and voltage (IEC 60934) 6000 electrical operations (UL 1077)
<b>Dielectric Strength</b>	1000 - 2000V, 50 Hz for one minute after testing (IEC 60934)
<b>Weight</b>	30 g single pole, 60 g double pole (unpacked)
<b>Humidity</b>	35 to 85% relative humidity
<b>Altitude</b>	Certification tests done at altitude ≈ 2000 metres. Will operate at higher altitudes.
<b>Shock</b>	50 G to MIL-STD-202G-213B-A
<b>Vibration</b>	10 G to MIL-STD-202G-204D-A
<b>Flammability</b>	I3 - Ignition does not persist at 850 °C after glow wire is withdrawn with an oxygen index of ≥ 28
<b>Toxicity</b>	F1 - Smoke index of ≤ 20 which determines the fume class
<b>Pollution Degree</b>	PD2 - Normally only non-conductive pollution occurs. Temporary conductivity caused by condensation is to be expected.
<b>Accessories</b>	Mounting Accessories, Legend Plate

Product Type	Circuit Breaker	Circuit Breaker	Switch
<b>Approvals</b>	UL 1077 / CSA, UL 1500, IEC / EN 60934, CCC, CE, EAC	UL 489A, IEC / EN 60934	UL 508
<b>Number of Poles</b>	1, 2	1	2
<b>Maximum Voltages</b>	240V AC, 65V DC	80V DC	300V DC
<b>Current Ratings</b>	0.1 - 30 A (AC), 0.1 - 25 A (DC)	0.1 - 30 A	15 A
<b>Interrupting Capacity</b>	1 kA @ 240V AC 0.5 kA @ 65V DC	0.6 kA @ 80V DC 1 kA @ 65V DC	-
<b>DC Polarity</b>	-	Polarity Sensitive	Polarity Sensitive

### Ordering Information

	Code	Description	Code	Description
	<b>Group 1: Frame, Colour and Handle Type</b>	BA	Black body, square handle	BP
BB		Black body, paddle handle	BQ	Grey body, paddle handle
BC		Black body, baton handle	BR	Grey body, baton handle
BD		Black body, rocker handle	BS	Grey body, rocker handle
BE		Black body, illuminated rocker handle	BT	Grey body, illuminated rocker handle
BF		Black body, push-to-reset handle	BV	Grey body, push-to-reset handle
BG		Black body, push-pull handle	BW	Grey body, push-pull handle
BH		Black front plate, feed through pole	BZ	Black body, cut-off handle
<b>Group 2: Mounting</b>		Code	Description	Comments
	A	Centre lock (thread neck) metric (M12)	Thread neck. Rocker handle is not an option.	
	C	Centre lock (thread neck) imperial (1/2" - 32)	Thread neck. Rocker handle is not an option.	
	G	Snap-in vertical mounting without rocker guard	Rocker & illuminated rocker handle only	
	H	Snap-in vertical mounting with rocker guard	Rocker & illuminated rocker handle only	
	M	Snap-in horizontal mounting without rocker guard	Rocker & illuminated rocker handle only	
	N	Snap-in horizontal mounting with rocker guard	Rocker & illuminated rocker handle only	
	P	PCB mounting - centre lock (thread neck) mount only	M12 thread neck only, 1 pole only	
	Q	Centre lock (thread neck) - imperial (3/8" - 32)	Thread neck. Only option for double pole push-to-reset and push-pull handles. Rocker handle is not an option.	
	R	Clip-in mounting - centre lock (thread neck) push-pull & push-to-reset only	Rocker handle is not an option	
<b>Group 3: Number of Poles and Termination</b>	Code	Description	Code	Description
	1	Single pole, quick connect	A	Single pole, bent terminal 90° outward
	2	Double pole, quick connect	B	Double pole, bent terminal 90° outward
	3	Single pole unit, screw terminal 45° bent	C	Single pole, screw terminal (M4 / 8-32)
	4	Double pole unit, screw terminal 45° bent	D	Double pole, screw terminal (M4 / 8-32)
	5	Single pole, clamp terminal	Z	Special - specify
	6	Double pole, clamp terminal		

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### Ordering Information

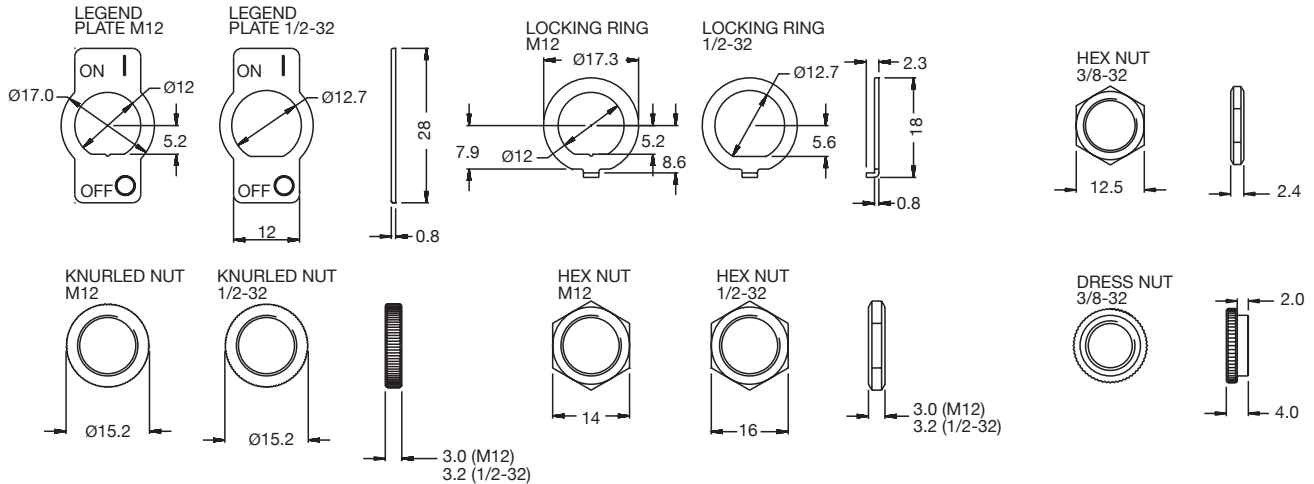
<b>Group 4: Rated Voltage - Main Circuit</b>	<b>Code</b>	<b>Description</b>		<b>Comments</b>				
	D	50V DC		Choose D in Group 5				
	E	65V DC		Choose D in Group 5				
	F	80V DC - polarity sensitive		Choose D in Group 5				
	M	65V DC / 240V AC		Choose M in Group 5				
	P	240V		Choose A in Group 5				
<b>Group 5: Frequency</b>	<b>Code</b>	<b>Description</b>		<b>Comments</b>				
	A	AC 50 / 60Hz		Group 4 option P only				
	D	DC		Group 4 options E, F only				
	M	AC / DC		Group 4 option M only				
	<b>Group 6: Circuit Configuration (Circuit Breaker's Internal Construction)</b>	<b>Code</b>	<b>Description</b>		<b>Comments</b>			
		A	Switch		May be used with auxiliary			
B		Series trip (circuit breaker, current coil in series)		May be used with auxiliary				
C		Relay Trip (current sensing) 4 terminal (auxiliary not available)		Auxiliary not an option				
D		Relay Trip (voltage sensing) 4 terminal		Auxiliary not an option				
E		Shunt Trip 3 terminal (current sensing)		Auxiliary not an option				
<b>Group 7: Auxiliary Switch(es)</b>	<b>Code</b>	<b>Description</b>		<b>Comments</b>				
	0	No auxiliary switch		Only option with rear flush screw terminal				
	1	1 X change-over (3 A - 125V AC, 24V DC)		Silver contacts				
<b>Group 8: Handle, Indicator Colour and Marking (Specify Current Rating on Front or Handle if Required)</b>	<b>Code</b>	<b>Description</b>		<b>Code</b>	<b>Description</b>			
	X	Not Applicable		L	Black (I-O & ON-OFF)			
	2	White (no marking)		W	Black (I-O & ON-OFF)			
	3	Black (no marking)		Y	Red (I-O & ON-OFF)			
	A	Green (I-O & ON-OFF)		Z	Special - specify			
	K	White (I-O & ON-OFF)						
<b>Group 9: Voltages for Illuminated Rocker Units (Illuminated only)</b>	<b>Code</b>	<b>Description</b>		<b>Code</b>	<b>Description</b>			
	1	100 – 110V AC lead connectors		B	200 – 240V AC terminal connectors			
	2	200 – 240V AC lead connectors		C	4 - 8V DC terminal connectors (please specify)			
	3	4 - 8V DC lead connectors (please specify)		D	16 – 24V DC terminal connectors			
	4	16 – 24V DC lead connectors		E	24 – 32V DC terminal connectors (external resistor required)			
	5	24 – 32V DC lead connectors (external resistor required)		G	8 – 16V DC terminal connectors			
	7	8 – 16V DC lead connectors		X	Not applicable			
	A	100 – 110V AC terminals connectors						
<b>Group 10: Time Delay Characteristics, Pulse Tolerance at 10 ms</b>	<b>Code</b>	<b>Description</b>	<b>System</b>	<b>Pulse Tolerance (X In)</b>	<b>Code</b>	<b>Description</b>	<b>System</b>	<b>Pulse Tolerance (X In)</b>
	AD	Long time delay - AS & dual rated	AC and DC	6 - 8	CS	Short delay	AC or DC	6 - 8
	BD	Medium time delay - BS & dual rated	AC and DC	6 - 8	AW	Long time delay - AD & inertia delay	AC and DC	11 - 12
	CD	Short time delay - CS & dual rated	AC and DC	6 - 8	BW	Medium time delay - BD & inertia delay	AC and DC	11 - 12
	AI	Long time delay - AS & inertia delay	AC or DC	11 - 12	CW	Short time delay - CD & inertia delay	AC and DC	12
	BI	Medium time delay - BS & inertia delay	AC or DC	11 - 12	OX	Switch	DC	-
	CI	Short time delay - CS & inertia delay	AC or DC	11 - 12	OP	Instantaneous trip	DC	None
	AS	Long delay	AC or DC	6 - 8	ZZ	Special - specify		
	BS	Medium delay	AC or DC	6 - 8				
	<b>Group 11: Rated Current (Main Circuit)</b>	<b>Code</b>	<b>Description</b>		<b>Comments</b>			
XXXX		No rating		Examples only - Specific A ratings possible from 0.02 - 30A				
050M		50 mA						
0500		5 A						
1000		10 A						
1250		12.5 A						
3000	30 A							
<b>Group 12: Voltage and Current Ratings for Shunt and Relay Trip Construction</b>	<b>Code</b>	<b>Description</b>		<b>Code</b>	<b>Description</b>			
	X	Not applicable		D024	24V DC voltage coil			
	A024	24V AC / DC voltage coil		M100	100 mA current coil			
	A065	65V AC voltage coil		M020	20 mA current coil			
	A100	100V AC voltage coil		K005	5 A current coil			
	A110	110 - 125V AC voltage coil		K015	15 A current coil			
	A220	220 - 240V AC voltage coil		K025	25 A current coil			
D012	12V DC voltage coil		Z	Special - specify				
<b>Group 13: Approvals / Marks</b>	<b>Code</b>	<b>Description</b>		<b>Comments</b>				
	1	CUR, UL recognised, UL 1077, CSA, IEC / EN 60934, VDE, CE						
	2	No third approvals						
<b>Group 14: Safety Marks</b>	<b>Code</b>	<b>Description</b>		<b>Comments</b>				
	1	CCC / CRCC		For products exported to Peoples Republic of China				
	2	Not applicable						

For options not listed, please contact CBI

## B Frame - Series Circuit Breakers

### Mounting Accessories

Mounting hardware must be ordered separately. Legend plates available for M12 and 1.2" only.



### Mounting Kit Ordering Information

Reference	A	B	C	D	E	F	G	H	I	J	K
<b>Mounting Kit Description</b>	2 x Hex Nuts	2 x Hex Nuts 1 x Vertical Legend Plate	2 x Hex Nuts 1 x Horizontal Legend Plate	2 x Hex Nuts 1 x Vertical Legend Plate 1 x Locking Ring	2 x Hex Nuts 1 x Horizontal Legend Plate 1 x Locking Ring	1 x Hex Nut 1 x Knurled Nut 1 x Vertical Legend Plate	1 x Hex Nut 1 x Knurled Nut 1 x Horizontal Legend Plate	1 x Hex Nut 1 x Knurled Nut 1 x Vertical Legend Plate 1 x Locking Ring	1 x Hex Nut 1 x Knurled Nut 1 x Horizontal Legend Plate 1 x Locking Ring	1 x Hex Nut 1 x Dress Nut	1 x Hex Nut 1 x Knurled Nut
<b>Reference</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>	<b>K</b>
<b>M12 Order Number</b>	3670031	3670032	3670033	3670034	3670035	3670036	3670037	3670038	3670039	-	3670338
<b>1/2" - 32 Order Number</b>	3670041	3670042	3670043	3670044	3670045	3670046	3670047	3670048	3670049	-	3670337
<b>3/8" - 32 Order Number</b>	3670129	-	-	-	-	-	-	-	-	3670130	-

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