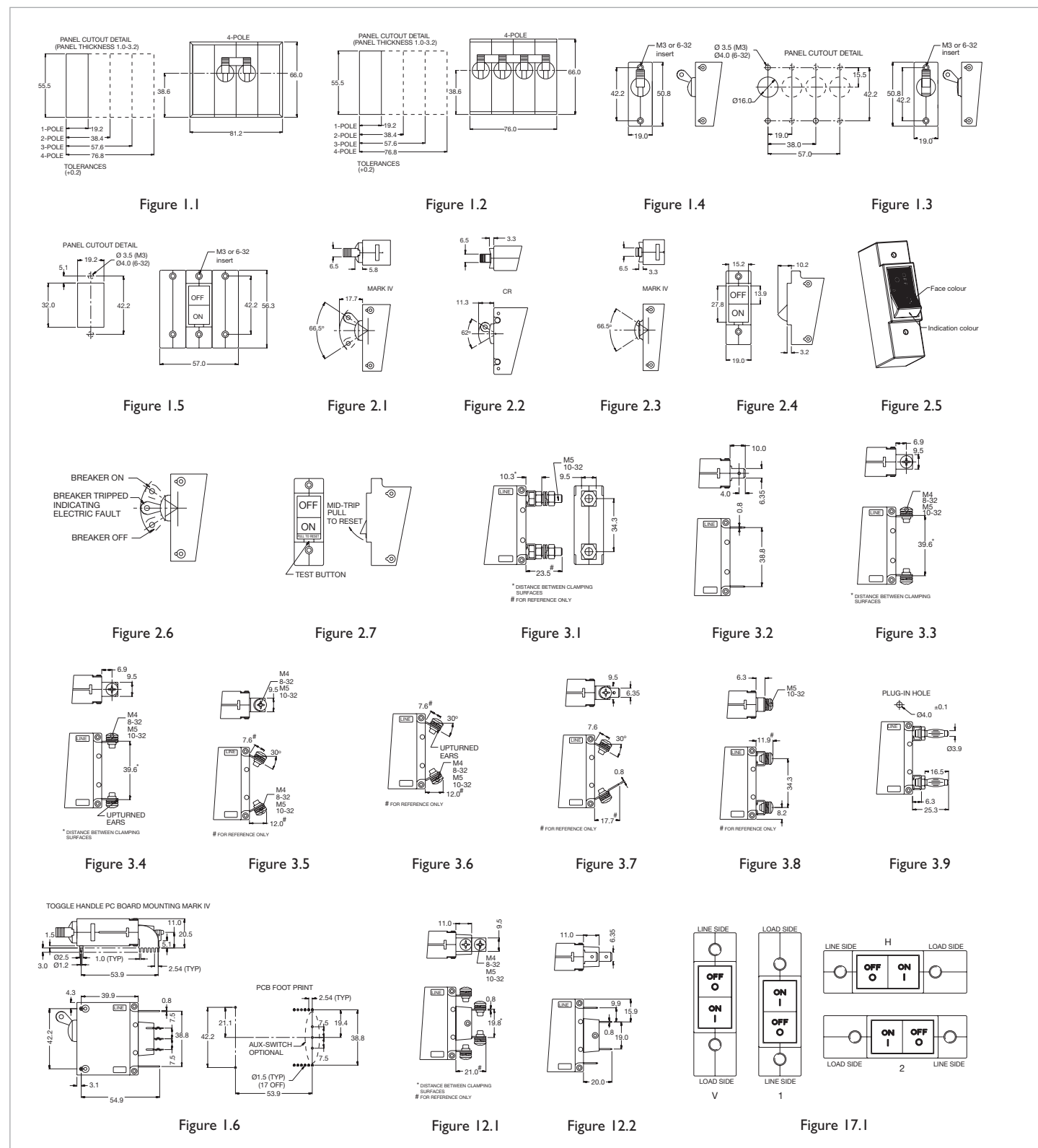


C-Frame Series Circuit Breakers



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C-Frame Series Circuit Breakers

Features

- Hydraulic-Magnetic Technology
- 100% Rating Capability Independent of Ambient Temperature
- Up to Six Poles
- cULus, cURus, VDE and CE Approved
- Optional Trip Alarm and Auxiliary Switch
- Optional Mid Trip Indication
- Wide Range of Circuits, Mountings, Terminations and Time Delays Available
- Two Colour Handle Indication (Two Tone Flush Rocker)
- Motor Starting Applications to 30A

Applications

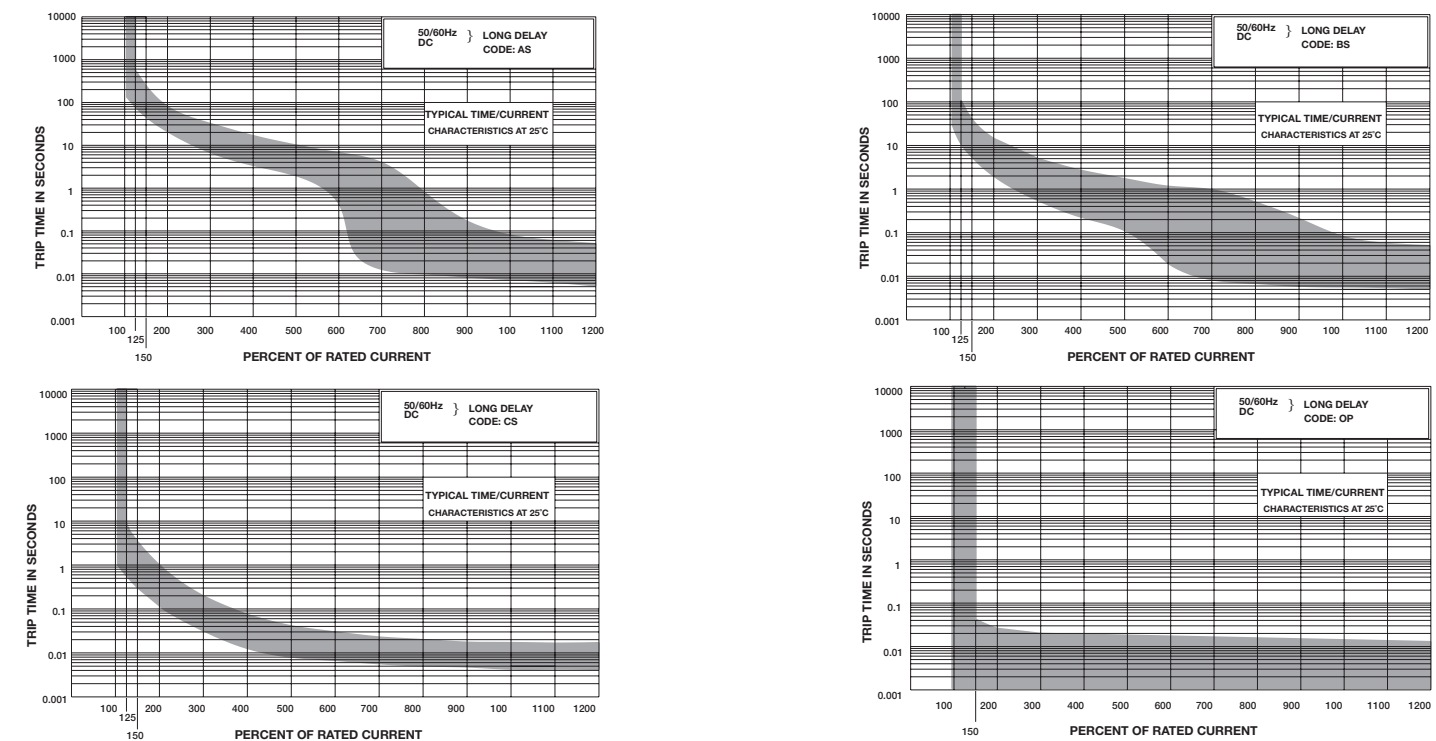
- Telecoms DC Power Distribution
- UPS Equipment
- Mobile Power-Generation Equipment
- Power Conditioning Equipment
- Alternative Energy Equipment
- Lighting Control
- Marine Protection



Technical Data

Product Type	Circuit Breaker	Circuit Breaker	Circuit Breaker	Circuit Breaker
Approvals	cULus 489 ⁽¹⁾	UL489A	cURus ⁽²⁾ , CE,VDE (EN60934)	cURus ⁽²⁾ , CE,VDE (EN60934)
Number of Poles	1, 2	1,2	1,2	1 – 6 cURus / 1 – 4 VDE
Operating Voltages	120V AC, 120/240V AC	80V DC	80V DC	240V AC
Current Ratings	0.05 – 20A	0.05 – 50A	0.05 – 50A	0.05 – 50A
Interrupting capacity	5kA	5kA	7.5kA cURus / 4kA VDE	2 kA & 5kA ⁽³⁾
Product Type	Circuit Breaker	Circuit Breaker	Circuit Breaker	Circuit Breaker
Approvals	cURus ⁽²⁾	cURus ⁽²⁾ , UL1500	cURus ⁽²⁾ , UL1500	cURus ⁽⁴⁾
Number of Poles	1	1	1,2	1 – 3
Operating Voltages	277V AC	65V DC	120V AC, 120/240V AC	80V DC, 240V AC, 277V AC
Current Ratings	0.05 – 30A	0.05 – 50A	0.05 – 50A	0.05 – 50A
Interrupting capacity	2kA & 5kA ⁽³⁾	1.5kA	1.5kA	–
Vibration Resistance	10G to MIL-STD-202F Method 204D Test A			
Shock Resistance	100G to MIL-STD-202F Method 213B Test A			
Operating Temperature Range	-40°C to +85°C			
Notes:	⁽¹⁾ UL489 & CSA 22.2 No 5-02, ⁽²⁾ UL1077 & CSA 22.2 No 235-M89, ⁽³⁾ 5kA with back up fuse, ⁽⁴⁾ UL508 & CSA 22.2 No 14-M9			

Preferred Standard Delays



C-Frame Series Circuit Breakers

Long Code								
Group 0: Frame	Code	Description		Comments				
	C	C-Frame						
Group 1: Type	Code	Description		Comments				
	A	C-Frame CR		UL Recognized VDE (60934) approvals only				
	B	C-Frame Mark IV						
	G	C-Frame Mark IV UL 1500		UL Recognized approvals only				
Group 2: Mounting	Code	Description		Comments				
	3	Snap-in mount edges beveled		See figure 1.1				
	B	Snap-in mount edges flush		See figure 1.2				
	2	Front mount round aperture		See figure 1.3				
	C	Front mount round aperture, dome		See figure 1.4, required for UL listed products, Mark IV only				
	S	Front mount rectangular aperture flush rocker handle type		See figure 1.5, available on C-Frame Mark IV only				
	P	PCB mount		See figure 1.6, with PCB mount terminals only				
	Z	Special specify						
	Group 3: Handle or Pole Blank (Reduced Handle)	Code	Description		Comments			
A		Standard handle		See figure 2.1; for mountings 3, B, 2, C				
B		Short handle		See figure 2.2; for mountings 3, B, 2, CR only				
C		Cut off handle		See figure 2.3; for mountings 3, B, 2, C Only 1 handle per Unit				
H		Flush rocker handle		See figure 2.4; for mounting S, Mark IV Only 1 handle per Unit				
M		Two tone flush rocker handle		See figure 2.5; for mounting S, Mark IV Only 1 handle per Unit				
Y		No handle, Blank front plate		For reduced handle version, on pole(s) without handle				
2		Standard handle, mid trip		See figure 2.6; for mountings 3, B, 2, C, Mark IV only				
5		Flush rocker handle, mid trip pull to reset		See figure 2.7; for mounting S, Mark IV Only 1 handle per Unit				
6		Two tone flush rocker handle, mid trip pull to reset						
Z		Special specify						
Group 4: Main Terminal Description		Code	Description		Comments			
		AX	M5 or 10-32 stud		See figure 3.1; 50A max. Mark IV only			
	CX	Rear quick connect terminal (0.8mm X 6.35mm)		See figure 3.2; 25A max.				
	21	Screw terminal, Bus connected (M4 or 8-32)		See figure 3.3; 40A max.				
	22	Screw terminal, Bus connected (M5 or 10-32)		See figure 3.3; 50A max.				
	31	Screw terminal, Upturned ears (M4 or 8-32)		See figure 3.4; 40A max.				
	32	Screw terminal, Upturned ears (M5 or 10-32)		See figure 3.4; 50A max.				
	41	300 Bent screw terminal, Bus connected (M4 or 8-32)		See figure 3.5; 40A max.				
	42	300 Bent screw terminal, Bus connected (M5 or 10-32)		See figure 3.5; 50A max.				
	51	300 Bent screw terminal, Upturned ears (M4 or 8-32)		See figure 3.6; 40A max.				
	52	300 Bent screw terminal, Upturned ears (M5 or 10-32)		See figure 3.6; 50A max.				
	61							
	62	Marine screw terminal (M5 or 10-32)		See figure 3.7; 50A max.				
	4X	M5 flush rear screw terminal		See figure 3.8; 50A max.; Mark IV only				
	PX	PCB terminal		See figure 1.6 50A max.; CR and Mark IV are different				
	4P	Plug-in terminal ø3.91mm x 19.05mm)		See figure 3.9; 50A max.; Mark IV only				
	ZZ	Special specify						
Group 5: Number of Poles	Code	Description	Code	Description	Note			
	1	1 pole metric	A	1 pole imperial	CR four pole max.			
	2	2 pole metric	B	2 pole imperial				
	3	3 pole metric	C	3 pole imperial				
	4	4 pole metric	D	4 pole imperial				
	5	5 pole metric	E	5 pole imperial				
	6	6 pole metric	F	6 pole imperial				
Group 6: Rated Voltage and Frequency	Code	Description		Comments				
	J	240V 50/60Hz		Common bus at 240V				
	K	277V 50/60Hz		Common bus at 277V				
	N	80V DC		Mark IV only				
	E	65V DC						
	S	120/240V 50/60Hz		3 wire centre tap supply, 120V per phase, Mark IV only				
	Q	240/415V 50/60Hz		3 Phase multi wire system, Mark IV only				
	R	277/480V Hz		3 Phase multi wire system				
	M	80V DC / 240V 50/60z		AC/DC version only with AC and DC curves, Mark IV only				
	L	80V DC / 277V 50/60Hz		AC/DC version only with AC and DC curves, Mark IV only				
Z	Special specify							
Group 7: Time Delay (For details of time delay refer to the application guide or web site)	Code	Description	System	Pulse Tolerance	Code	Description	System	Pulse Tolerance
	AS	Long delay	AC or DC	8 x In	CE	CH & inertia wheel	AC	35 x In
	AH	AS & inertia wheel	AC or DC	20 x In	US	Ultra short time delay	AC or DC	None
	AI	Long delay, high inrush	AC	20 x In	OP	Instantaneous trip	AC or DC	None
	AE	AH & inertia wheel	AC	35 x In	AD	Long delay, Dual rated	AC and DC	8 x In
	BS	Medium delay	AC or DC	8 x In	BD	Medium delay, Dual rated	AC and DC	8 x In
	BI	BS & inertia wheel	AC or DC	20 x In	CD	Short delay, Dual rated	AC and DC	8 x In
	BH	Medium delay, high inrush	AC	20 x In	AW	AD & inertia wheel, Dual rated	AC and DC	20 x In
	BE	BH & inertia wheel	AC	35 x In	BW	BD & inertia wheel, Dual rated	AC and DC	20 x In
	CS	Short delay	AC or DC	6 x In	CW	CD & inertia wheel, Dual rated	AC and DC	15 x In
	CI	CS & inertia wheel	AC or DC	15 x In	OX	Switch		
	CH	Short delay, high inrush	AC	15 x In	ZZ	Special specify		
	H3	Short delay	AC or DC	6 x In				
	Group 8: Main Circuit Current (Example only, any ampere rating possible)	Code	Description					
050M		50mA						
0100		1A						
1000		10A						
1500		15A						
5000		50A						
XXXX		Not applicable		No current, for series voltage trip poles				
Group 9: Circuit Configuration	Code	Description		Comments				
	AX	Switch						
	BX	Series trip						
	CX	Relay trip Current sensing, centre terminal construction		30A max for the sensing coil; total current 50A max				
	DX	Relay trip Voltage sensing, centre terminal construction						
	EX	Shunt trip current sensing, 3rd terminal close to load side		Total load 50A maximum				
	FX	Shunt trip voltage sensing, 3rd terminal close to load side						
	GX	Dual control shunt trip construction, 3rd terminal close to load side						
	HX	Dual control - relay trip construction (4 terminal)		Voltage coil normally at line voltage; No AH, BH, CH, AE, BE, CE				
	JX	Switch with auxiliary switch		Requires Auxiliary switch				
	KX	Series trip, with auxiliary switch		Requires Auxiliary switch				
	LX	Series trip, with trip-alarm		Trip alarm requires mid trip handle and Auxiliary switch				
	ZZ	Special specify						

C-Frame Series Circuit Breakers

Long Code						
Group 10: Auxiliary and Alarm Switches	Code	Description		Comments		
	A	One change over gold tips, equally spaced terminals		0.02 to 0.1A and 30V max.		
	B	One change over silver plated tips, equally spaced terminals		Standard		
	X	Not applicable		No microswitch - Flat base plate		
Group 11: Dual control/ Relay trip Voltage and Current coil ratings	Code	Description	Code	Description	Comments	
	A4	110-125V AC 50/60Hz	C1	20mA		
	A5	220-240V AC 50/60Hz	C2	100mA		
	B0	12V DC	C3	1A		
	B1	24V DC	XX	Not applicable		
	B2	48V DC	ZZ	Special specify		
Group 12: Terminals for Shunt, Relay and Dual control construction (CR only code X)	Code	Description		Comments		
	A	M4/8-32 screw terminal		Figure 12.1; 40A max.		
	B	M5/10-32 screw terminal		Figure 12.1; 50A max.		
	C	Quick connect terminal		Figure 12.3; 25A max.		
	X	Not applicable		Only option for CR		
Group 13: Voltage for Illuminated Rocker	Code	Description		Note		
	X	Not applicable				
Group 14: Terminal for Illuminated Rocker	Code	Description				
	X	Not applicable				
Group 15: Handle colour	Code	Description		Note		
	X	Not applicable				
	G	For toggle handle type		The coding is dependent on the type of handle. For all handles excluding the flush rocker and two tone flush rocker handles, the colour code describes the colour of the handle. For the flush rocker handle the colour code describes the colour of the on and off actuation buttons by a single code. The two tone handle, the colour code describes the indication colour. The face colour is black and the indicator indicates the off or tripped position (see figure 2.6). After selecting the appropriate colour code select the marking code, the marking colour of the two tone handle is equivalent to the indicator colour. After selecting the appropriate marking the orientation of print may be specified. For the toggle handle types only codes V and H are applicable (see figure 17.1). If the pole has no handle because of it being a reduced handle version use code XXX.		
	W	Green with white marking				
	B	White with black marking				
	4	Black with white marking				
	Y	Blue with white marking				
	R	Yellow with black marking				
	W	Red with white marking				
	B	For flush rocker handle				
	G	White (On) / white (Off) black marking				
W	Black (On) / black (Off) white marking					
R	Green (On) / red (Off) white marking					
Group 16: Handle Marking	Code	Description				
	A	No marking				
	B	I - 0				
	C	ON - OFF				
	D	I - 0 and ON - OFF				
	E	Ampere rating				
	F	I - 0 and ampere rating				
	G	ON-OFF and ampere rating				
	H	I-0 and ON-OFF and ampere rating				
	X	No Handle				
	Z	Special specify				
Group 17: Handle Orientation	Code	Description		Comments		
	V	Vertical		See figure 17.1		
	H	Horizontal		See figure 17.1		
	I	Vertical 2		See figure 17.1		
	2	Horizontal 2		See figure 17.1		
	X	No handle				
Group 18: Front plate colour and marking options	Code	Description		Comments		
	B	Black front plate no marking				
	2	Black front plate no marking, with test button for mechanical trip		Test button is standard on rocker handle version, on the switch version the button is nonfunctioning and black in colour		
Group 19: Inter-phase barrier and terminal cover	Code	Description		Comments		
	A	Small inter-phase barrier		Interphase barriers may be required for multi-pole products that have UL approvals. Contact your nearest CBI sales office for assistance.		
	C	Z Inter-phase barrier				
	X	Not applicable				
Group 20: Approvals and typical safety marks (Standard marks and approval basket covers most regions)	Code	Description		Comments		
	1	UL recognized, CSA, VDE				
	2	UL Listed, CSA, VDE				
	3	UL Listed (UL489A), VDE				
	4	UL recognized, CSA				
Group 21: Optional safety marks	Code	Description		Comments		
	Z	No approvals				
	A	UL recognized, only				
	X	Special specify				
Group 21: Optional safety marks	Code	Description		Comments		
	C	CCC Mark		Required for products exported to Peoples Republic of China		
	X	Not applicable		Only required in specific cases where import into the country is prohibited, unless the product carries the mark.		
Z	Special specify					

For Options not listed please contact CBI for assistance

Example code: C-ASM4XBEB2000AXX-XXXXXWHHBCZC