

## C-Frame MKIV - Series Circuit Breakers



The C-Frame MKIV is the most traditional distribution and equipment protection circuit breaker and is available in 1 to 4 poles. This front mounted circuit breaker is available for panel mounting, and is available with a standard handle and rocker handle.

The C-Frame MKIV circuit breaker is used in power distribution units, lighting control and in other equipment.

### Features

- AC and DC circuit breaker
- Hydraulic-magnetic technology
- 100% rating capability independent of ambient temperature
- Up to four poles
- VDE, EAC and CCC approved, CE certified
- UL compliant (Listed / recognised)
- Ratings 0.1 A to 50 A (Specific certifications)
- Precision tripping characteristics
- Wide range of circuits, mountings, terminations and time delays
- Two colour handle indication (Two tone flush rocker)
- Optional auxiliary switch and trip alarm

### Applications

- Telecom DC Power distribution
- UPS equipment
- Mobile power generation equipment
- Alternative energy equipment
- Lighting control

### Approvals

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



**Hydraulic-Magnetic Circuit Breakers 100% rated, unaffected by ambient temperature**

## C-Frame MKIV - Series Circuit Breakers

### Technical Data

Product Type	C-Frame MKIV
Ambient Operating Temperature	-40 °C to +85 °C
Endurance	10000 operations DC, 6000 operations AC (IEC60934 Clause 9.11)* 10000 operations, 6000 with current, 4000 without current (UL489 Clause 7.1.5)* As per UL489 or minimum of 1000 operations with current (UL489A Clause 12)*, 6000 operations with current (UL1077 Clause 22)*
Dielectric Strength	1000 - 2000 Vac for one minute (Clause 9.7)* 1000 Vac plus twice the rated voltage for one minute (UL489, Clause 7.1.9; UL489A Clause 8, UL1077 Clause 23)*
Weight	70 g per pole (unpacked)
Altitude	Certification tests done at altitude ≈ 2000 metres. Will operate at higher altitudes.
Shock	100 G to MIL-STD-202G, test method 213B, test condition 1
Vibration	10 G to MIL-STD-202G test method 204D, test condition A
Flammability	I2 - No ignition at 850 °C with an oxygen index of ≥ 32
Toxicity	F1 - Smoke index of ≤ 20 which determines the fume class
Pollution Degree	PD2 - Normally only non-conductive pollution occurs. Temporary conductivity caused by condensation is to be expected.

\* Refer to the standard for details

Product Type	Circuit Breaker	Circuit Breaker	Circuit Breaker	Circuit Breaker
Approvals	UL 489	UL 489A	UL 1077	UL 1500
Number of Poles	1, 2	1, 2	1 - 4	1, 2
Maximum Voltages	120 Vac, 120 / 240 Vac	80 Vdc	240 Vac, 277 Vac 80 Vdc	120/240 Vac 65 Vdc, 32 Vdc
Current Ratings	0.05 - 20 Aac	0.05 - 50 Adc	0.05 - 50 A (AC & DC)	0.05 - 50 A (AC & DC)
Interrupting Capacity	5 kA	5 kA	2 kA (AC), 7.5 kA (DC)	1.5 kA, C1 & 3 kA, C1

Product Type	Circuit Breaker	Switch
Approvals	DIN/EN/IEC 60934, CE, UKCA, GB17701	UL 508
Number of Poles	1 - 4	1 - 4
Maximum Voltages	240 Vac, 80 Vdc	240 Vac, 277 Vac, 80 Vdc
Current Ratings	0.05 - 50 A (AC & DC)	50 A
Interrupting Capacity	2 kA (AC), 4 kA (DC)	-

Verify approvals for specific ratings in accordance with the relevant test certificates.

### Torque Table

Description	Size	Torque Value
Front Inserts	M3	0.5 - 0.8 Nm
	6 - 32	5 - 7 in/lbf
Rear Screws	M5	1.7 - 2.3 Nm
	10 - 32	15 - 20 in/lbf

## C-Frame MKIV - Series Circuit Breakers

### Ordering Information

Group 1: Frame	Code	Description	Comments			
	C	C-Frame				
Group 2: Type	Code	Description	Comments			
	B	C-Frame MKIV				
Group 3: Mounting	Code	Description	Comments			
	2	Front mount round aperture, fleet	Warning: Maximum penetration depth into the mounting screw is 5.4 mm			
	3	Snap-in mount edges bevelled, without handle guards				
	B	Snap-in mount edges flush, without handle guards				
	C	Front mount round aperture, dome	Required for UL listed products. Maximum penetration depth into the product by the mounting screw is 5.4 mm.			
	S	Front mount rectangular aperture flush rocker handle	Warning: maximum penetration depth into the mounting screw is 5.4 mm			
Group 4: Handle Type	Code	Description	Comments			
	A	Standard handle	(Toggle) For mountings 2, 3, B and C			
	C	Cut-off handle - single pole only	For mountings 3, B, 2, C. Only 1 handle per unit			
	H	Flush rocker handle	For mounting S only. Only 1 handle per unit. Reduced handle.			
	M	Flush rocker handle, two tone	For mounting S only. Only 1 handle per unit. Reduced handle.			
	Q	Flush rocker handle, push-to-reset for mounting version S				
	R	Flush rocker handle, push-to-reset, two tone for mounting version S				
	Y	No handle, for reduced handle versions	For reduced handle version, on poles(s) without handle			
Group 5: Termination	Code	Description	Comments	Code	Description	Comments
	CX	Quick connect terminal (0.8 mm x 6.35 mm)	30 A max	42	Screw terminal 30° bent, bus connected (M5 or 10-32)	50 A max
	22	Screw terminal, bus connected (M5 or 10-32)	50 A max	52	Screw terminal 30° bent, upturned ears (M5 or 10-32)	50 A max
	32	Screw terminal, upturned ears (M5 or 10-32)	50 A max			
Group 6: Number of Poles	Code	Description	Code	Description		
	1	1 pole metric	A	1 pole imperial		
	2	2 pole metric	B	2 pole imperial		
	3	3 pole metric	C	3 pole imperial		
	4	4 pole metric	D	4 pole imperial		
Group 7: Rated Voltage and Frequency - Main Circuit	Code	Description	Comments			
	J	240 V	50 / 60 Hz			
	K	277 V	50 / 60 Hz			
	L	80 Vdc / 277 V	50 / 60 Hz AC / DC version. With AC and DC curves			
	M	80 Vdc / 240 V	50 / 60 Hz AC / DC version. With AC and DC curves			
	N	80 Vdc				
	S	120 / 240 V	50 / 60 Hz 3 Wire centre tap supply. 120 V per phase			

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	Code	Description	System	Pulse Tolerance (X In)	Code	Description	System	Pulse Tolerance (X In)
<b>Group 8: Time Delay Characteristics (Curve Details); Pulse Tolerance at 10 ms</b>	AD	Long delay 50 / 60 Hz AS & dual rated	AC and DC	8 - 10	CH	Short delay 50 / 60 Hz CS & high inrush	AC	12 - 15
	BD	Medium delay 50 / 60 Hz BS & dual rated	AC and DC	8 - 10	AS	Long delay 50 / 60 Hz	AC or DC	8 - 10
	CD	Short delay 50 / 60 Hz CS & dual rated	AC and DC	6 - 8	BS	Medium delay 50 / 60 Hz	AC or DC	8 - 10
	AE	Long delay 50 / 60 Hz AH & inertia delay	AC	28 - 35	CS	Short delay 50 / 60 Hz	AC or DC	6 - 8
	BE	Medium delay 50 / 60 Hz BH & inertia delay	AC	28 - 35	AW	Long delay 50 / 60 Hz AD & inertia delay	AC and DC	16 - 20
	CE	Short delay 50 / 60 Hz CH & inertia delay	AC	21 - 35	BW	Medium delay 50 / 60 Hz BD & inertia delay	AC and DC	16 - 20
	AI	Long delay 50 / 60 Hz AS & inertia delay	AC or DC	16 - 20	CW	Short delay 50 / 60 Hz CD & inertia delay	AC and DC	12 - 15
	BI	Medium delay 50 / 60 Hz BS & inertia delay	AC or DC	16 - 20	H3	Short delay	DC	6 - 8
	CI	Short delay 50 / 60 Hz CS & inertia delay	AC or DC	12 - 15	OP	Instantaneous trip 50 / 60 Hz	AC and DC	None
	AH	Long delay 50 / 60 Hz AS & high inrush	AC	16 - 20	OX	Switch 50 / 60 Hz	AC and DC	-
	BH	Medium delay 50 / 60 Hz BS & high inrush	AC	16 - 20				
	<b>Group 9: Rated Current (Main Circuit) - Examples Only - Specific Amp Ratings Possible</b>	Code	Description			Comments		
XXXX		Not applicable			Examples only - specific Amp ratings possible from 0.5 A - 50 A			
050M		50 mA						
100		1 A						
1000		10 A						
5000		50 A						
<b>Group 10: Circuit Configuration (Circuit Breaker's Internal Construction)</b>	Code	Description			Comments			
	AX	Switch						
	BX	Circuit breaker (Series trip, current coil in series)						
	DX	Switch with relay trip voltage sensing, centre terminal construction, four terminal			See group 12 for voltage options			
	GX	Circuit breaker with dual control - shunt trip construction (3rd terminal) 3rd terminal close to load side						
	HX	Circuit breaker with dual control, relay trip construction (4th terminal)			Curves AH, BH, CH, AE, BE, CE not possible. See group 12 for voltage options			
	JX	Switch with auxiliary switch						
	KX	Circuit breaker (Series trip), with auxiliary switch						
<b>Group 11: Auxiliary and Alarm Switches</b>	Code	Description			Comments			
	X	Not applicable						
	A	DB3-Gold Tips, Equally spaced terminals, 2.75 mm (EN61058 0.1 A @ 250 Vac & 0.1 A @ 80 Vdc and UL1054 0.1 A @ 125/250 Vac & 0.1 A @ 30 Vdc & 0.3 A @ 60 Vdc)						
	B	DB2-Silver Tips, Equally spaced terminals, 2.75 mm (EN61058 10 A @ 250 Vac & 0.1 A @ 80 Vdc and UL1054 10 A @ 125/250 Vac)						
<b>Group 12: Voltage and Current Ratings for Dual Control, Shunt and Relay Trip Construction</b>	Code	Description	Code	Description	Code	Description	Code	Description
	XX	Not applicable	A5	220 - 240 Vac 50 / 60 Hz	B1	24 Vdc	B3	80 Vdc
	A4	110 - 125 Vac 50 / 60 Hz	B0	12 Vdc	B2	48 Vdc	<b>Recommended pulse duration: 20 ms to 40ms</b>	
<b>Group 13: Terminal for Shunt Relay and Dual Control Construction</b>	Code	Description			Comments			
	X	Not applicable						
	B	Screw terminal.s M5 or 10 - 32						
	C	Quick connect terminals (0.8 mm x 6.35 mm)						

## C-Frame MKIV - Series Circuit Breakers

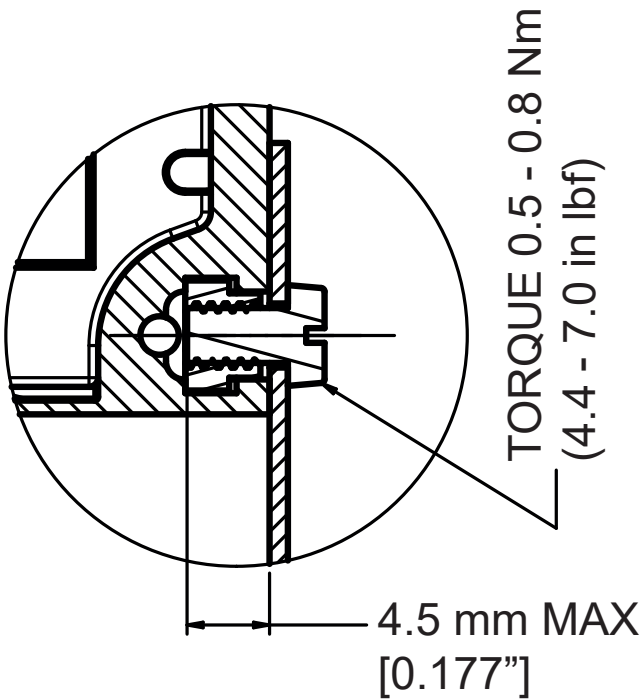
### Ordering Information

Code	Description	Comments
<b>Group 14: Voltage for Illuminated Rocker</b>		
X	Not applicable	
<b>Group 15: Terminal for Illuminated Rocker</b>		
X	Not applicable	
<b>Group 16: Handle Colour</b>		
X	No handle	
B	Black handle, white marking	Not applicable on the two tone version
G	Green handle, white marking	
W	White handle, black marking	
R	Red handle, white marking	
Y	Yellow handle, black marking	
<b>Group 17: Handle Marking</b>		
X	No handle (n/a)	
D	I - 0 and ON - OFF	For products requiring VDE approvals and UL mark (DIN/EN/IEC 60934 & UL1077)
H	I - 0 and ON - OFF and Ampere rating	
I	Push-to-reset and Ampere rating	Group 3 option S only. Group 4 options Q or R only. Flush rocker or two tone rocker handle.
<b>Group 18: Mounting Orientation for Marking</b>		
X	No handle (n/a)	
1	Vertical (reverse mounting, line @ bottom)	
2	Horizontal (line @ right)	
H	Horizontal (line @ left)	
V	Vertical (standard mounting, line @ top)	
<b>Group 19: Front Plate Marking and Test Button</b>		
2	No marking, with test button, rocker handle	
B	No marking, rocker handle	
<b>Group 20: Inter-phase Barrier and Terminal Cover</b>		
X	Not applicable	
A	Small inter-phase barrier	
C	Z inter-phase barrier	
<b>Group 21: Approvals (Product Normally Approved to)</b>		
1	UL1077, DIN/EN/IEC 60934, CE, UKCA	
2	UL489, DIN/EN/IEC 60934, CE, UKCA	
3	UL489A, DIN/EN/IEC 60934, CE, UKCA	
<b>Group 22: Safety Marks</b>		
X	Not applicable	
C	CCC / CRCC	GB17701

*For options not listed, please contact CBI*

## C-Frame MKIV - Series Circuit Breakers

### Mounting Screw Detail

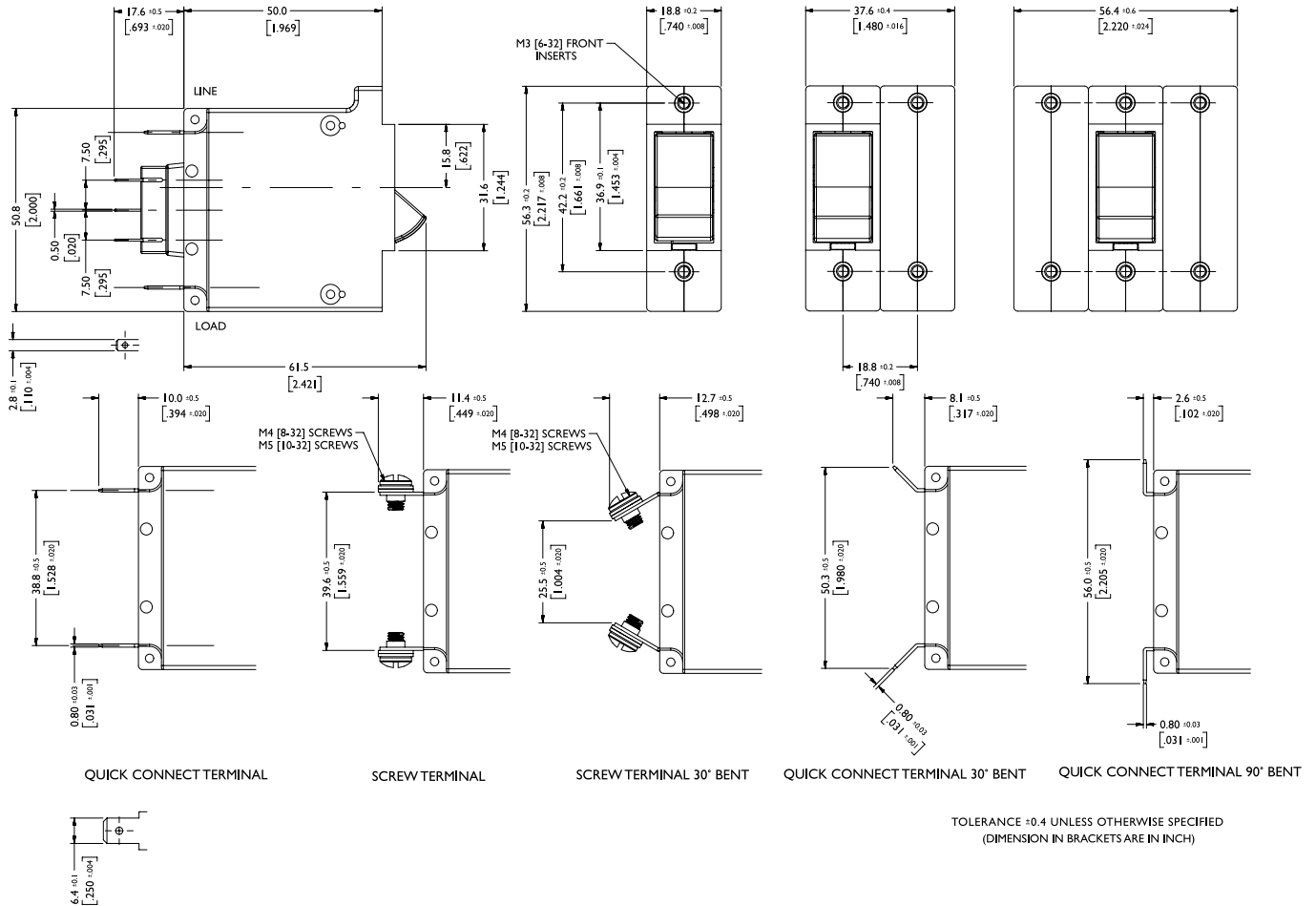


### MOUNTING SCREW DETAIL



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## Outline Dimensions: Rocker Handle



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