Hi electric

DD Frame - Series Circuit Breakers



The DD Frame is a compact yet very powerful circuit breaker. Using the hydraulic-magnetic technology which ensures that the breaker performance is unaffected by ambient temperature, the CBI DD Frame series is suitable for various applications in telecom and datacom equipment. These applications include being the main breaker for battery applications, power supplies, distribution breaker for larger loads in DC branch protection, lighting control, UPS, inverters and DC power switching and in power distribution units (PDU). The DD Frame is also available as a switch.

Due to its robustness and ability to withstand harsh environmental conditions, the DD Frame breaker is also used in military applications, railway infrastructure, railway signalling and rolling stock and also in renewable energy solutions for protection in combiner boxes and other battery and storage applications.

DD Frame profile

The DD Frame is available in various configurations and can be structured to suit specific requirements. Available in 1 to 6 poles, this robust and versatile circuit breaker comes in both AC and DC configurations with a choice of various time delay characteristics.

Among the common configurations are the front mount standard handle, rocker handle, flush rocker handle options. As for the termination, Metric and imperial stud terminals, plug-in (bullet terminal), screw, and clamp terminal configurations are available. The breaker comes with the options of having an auxiliary switch and trip alarm. Customer specific configurations, DIN Rail mount and various other options are available.

The DD Frame compact and precision circuit breaker is made of high quality thermoset material, which offers increased electrical and mechanical endurance. The self-cleaning mechanism of the contact actuators ensures that the circuit breaker contacts are kept clean and operate smoothly, offering longer life span.

Approvals

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



Note:

The DD Frame replaces CBI's old version of the D Frame, and is similar in fit and form, with enhanced features.



DD Frame - Series Circuit Breakers

Features

- AC and DC circuit breaker
- Hydraulic-magnetic technology
- 100% rating capability independent of ambient temperature
- Up to six poles
- VDE, EAC and CCC approved, CE certified
- UL compliant (listed / recognised)
- Ratings 0.1 to 100 A AC and 400 A DC (specific certifications)
- Precision tripping characteristics
- Wide range of circuits, mountings, terminations and time delays
- Two colour handle indication (two tone flush rocker)
- Optional mid-trip indication (standard handle)
- Optional auxiliary switch and trip alarm

DD Frame HRC (high current rating)

Applications

- AC and DC branch circuit installations
- Power conditioning
- Telecom DC power distribution
- Alternative energy equipment
- UPS equipment
- Lighting control
- Mobile power generation equipment
- Battery protection

CBI-electric: low voltage has developed a higher current rated product, capable of handling current ratings up to 125 A in a single pole and 250 A in a two pole configuration.







Data Sheet Page 2 of 6 DD-SERIES-DAT NOV 2016

DD Frame - Series Circuit Breakers

Technical Data

Product Type	DD Frame				
Operating Temperature Range	-40 °C to +85 °C				
Endurance	10000 operations - 1500 electrical at rated current and voltage (IEC 60934) 6000 electrical operations (UL 1077)				
Dielectric Strength	1000 - 2000 V, 50 Hz for one minute after testing (IEC 60934)				
Weight	100 g per pole (unpacked)				
Humidity	35 to 85% relative				
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 \leq 20 which determines the fume class				
Pollution Degree	PD2 - Normally only non-conductive pollution occurs. Temporary conductivity caused by condensation is to be expected.				

Product Type	Circuit Breaker	Circuit Breaker	Circuit Breaker	
Approvals	UL 489, CSA	IEC / EN 60947-2, VDE, CE, CCC	UL 489A, IEC / EN 60947-2,VDE, CE	
Number of Poles	1, 2, 3	1, 2	1, 2 - 5 (parallel)	
Maximum Voltages	120 V AC, 120 / 240 V AC, 240 V AC, 80 V DC	240 V AC, 80 V DC	80 V DC	
Current Ratings	0.1 - 80 A AC, 0.1 - 100 A DC	0.1 - 50 A AC, 0.1 - 100 A DC	20 - 40 A	
Interrupting Capacity	5 kA (240 V AC), 10 kA (DC)	10 kA (120 V AC)	10 kA (DC)	
HIC	10 kA up to 20 A			

Product Type	Circuit Breaker	Circuit Breaker	Switch	
Approvals	IEC / EN 60934, VDE, CE UL 1077, CSA, cURus		UL 508, IEC / EN 60947-3, VDE, CE	
Number of Poles	1 - 4	1 - 4	1, 2	
Maximum Voltages	240 / 415 V AC, 80 V DC	277 / 480 V AC, 80 V DC	120 / 240 V AC, 240 V AC	
Current Ratings	0.1 - 100 A (1 p), 0.1 - 70 A (2 - 4 p)	0.1 - 100 A (1 p), 0.1 - 70 A (2 - 4 p)	15 - 50 A	
Interrupting Capacity	3 kA (AC), 5 kA (DC)	2 kA (AC), 5 kA (DC)	0.6 kA (for 1 s)	

low voltage



DD Frame - Series Circuit Breakers

DD Frame Series Circuit Breakers Ordering Information

Group 1:	Code		Desci	ription		Comme	nts		
Frame	D	DD-Frame							
Group 2:	Code	Description				Comme	nts		
Туре	2	DD-Frame, DD-Type							
Group 3:	Code	Description				Comme	nts		
Mounting	Α	Front mount, rectangular aperture, standard (toggle) handle type				: Maximum penetration depth into the	product by the	mounting screw is 6 mm	
	D	Centre le	ock mount, rour	nd aperture, baton handle		Baton handle	e only		
	G	Rail and surface	nount, (fit DIN	and Mini Rail and surface mount)					
	S	Front mount,		rture, flush rocker handle type	Warning	g: Maximum penetration depth into the		mounting screw is 6 mm	
Group 4: Handle	Code	Description				Comme	nts		
rialitie	2			ndle, mid-trip			-		
	A C			oggle) handle					
	E			- single pole only sion for centre lock mount D only	Only 1 handle per unit				
	H			version S, reduced handle version	Only 1 handle per unit				
	M			inting version S, reduced handle version	Only 1 handle per unit Only 1 handle per unit				
	W			uced handle versions		For reduced handle version, or		it handle	
	Q			-reset, for mounting version S			F (7,		
	R	Flush rocker hand	e, push-to-rese	t, two tone, for mounting version S					
Group 5:	Code			ription		Comme	nts		
Termination	2X	Plug-in (l	oullet) terminal	(Ø 6.25 mm X 21.5 mm)		50 A ma	x		
	3X		,	(Ø 7.80 mm X 21.5 mm)		100 A m			
	4X			rminal, M5 or 10-32		100 A m			
	5X	Double quick connect terminal (0.8 mm X 6.35 mm)				50 A ma			
	AX	O the second second		s, M5 or 10-32		60 A ma			
_	DX LX	Quick connect terminals (0.8 mm x 6.35 mm), top & bottom for mounting version G				50 A max. For mounting G only.			
	MX	Clamp terminals, top & bottom for mounting version G				30 A max. For mounting G only. 100 A max			
	V1	Stud terminals, M6 or 1/4-20 Stud terminals (M6 or ¼ - 20), for single bridged unit				100 A III	4.X		
	V2			m X 21.5 mm) for single bridged unit					
	W1	U U U U	· · ·	0), for multi pole bridged unit				-	
	W2	Plug-in (bullet) terminals (Ø 7.80 mm X 21.5 mm), for multi pole bridged unit							
	X1	Bridge terminal for 2 pole parallel construction width							
		M8 nut for lug (on M6 or ¼-20 stud terminal)					-		
	ZZ			- specify					
Group 6: Number of Poles	Code 1	Description	Code 4	Description	Code A	Description	Code D	Description	
	2	1 pole metric 2 pole metric	5	4 pole metric 5 pole metric	B	1 pole imperial 2 pole imperial	E	4 pole imperial 5 pole imperial	
	3	3 pole metric	6	6 pole metric	C	3 pole imperial	F	6 pole imperial	
Group 7:	Code	Description		Comments	Code	Description		Comments	
Rated Voltages	н	125 V DC			Q	240 / 415 V 50 / 60 Hz		3 phase multi-wire system	
and Frequency - Main Circuit	J	240 V 50 / 60	Ηz		R	277 / 480∨ 50 / 60 Hz		3 phase multi-wire system	
	к	277 V 50 / 60 Hz			s			3 wire centre tap supply. 120 V per phase.	
	L	80 V DC / 277 V 50	/ 60 Hz	AC / DC version.	v	60 V DC			
				With AC and DC curves. AC / DC version.	_	-			
	М	80 V DC / 240 V 50	/ 60 Hz	With AC and DC curves.	Z	Special - specify			
	N	80 V DC							
Group 8:	Code	Description	System	Pulse Tolerance (X In)	Code	Description	System	Pulse Tolerance (X In)	
Time Delay Characteristics	AD								
		Long delay 50 / 60 Hz AS & Dual rated	AC and DC	8 - 10	СН	Short delay 50 / 60 Hz CS & high inrush	AC	12 - 15	
(Curve Details); Pulse Tolerance at	BD			8 - 10 8 - 10	CH AS		AC AC or DC	8 - 10	
(Curve Details);		AS & Dual rated Medium delay 50 / 60 Hz				CS & high inrush			
(Curve Details); Pulse Tolerance at	BD	AS & Dual rated Medium delay 50 / 60 Hz BS & Dual rated Short delay 50 / 60 Hz	AC and DC	8 - 10	AS	CS & high inrush Long delay 50 / 60 Hz	AC or DC	8 - 10	
(Curve Details); Pulse Tolerance at	BD CD	AS & Dual rated Medium delay 50 / 60 Hz BS & Dual rated Short delay 50 / 60 Hz CS & Dual rated Long delay 50 / 60 Hz	AC and DC AC and DC	8 - 10 6 - 8	AS BS	CS & high inrush Long delay 50 / 60 Hz Medium delay 50 / 60 Hz	AC or DC AC or DC	8 - 10 8 - 10	
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DD Frame Series Circuit Breakers Ordering Information

Marking 1 Vertical (reverse mounting, line at the bottom) V Vertical (standard mounting, line at the top) printing will be upside down and codes 1 or should be selected. 2 Horizontal (line at the right) Image: Code in the top of top of the top of top of the top of top	Group 9:	Code		Descript	ion	Comments					
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M Dui control rely up col structures			· · · ·								
Current Art production frage for faily faily for faily fo		Ц1	Dual contro	l relay tri	p construction,						
Group 1: Axistrary and Atarm Svitches Comments Comments Axistrary and Atarm Svitches A Gold type, equally spaced terminals, 275 mm, (108°) 01 At Max			· · · · ·				Curves A	H, BH, CH, A	E, BE, CE not possible.		
Auxian Switches X Image: model (A	a <i>u</i>					_		-			
Alarm Switches \best{A} Cold tips equally speed dermals 275 mm (0 108") 0.1 A MaxBSiner type, equally speed dermals 275 mm (0 108") 0.0 MaxCSiner type, equally speed dermals 275 mm (0 108") 10.0 MaxCSiner type, equally speed dermals 275 mm (0 108") 10.0 MaxZSpeed 1-speed termals 275 mm (0 108") 10.0 MaxCSpeed 1-speed termals 275 mm (0 108") 10.0 MaxZSpeed 1-speed termals 275 mm (0 108") 10.0 MaxSubtage and the speed termals 275 mm (0 108") 10.0 MaxSiner and RayCodeAl112 VAC 50 / 60 HzAl112 VAC 50 / 60 HzAlSpeed 1-speed termals 275 mm (0 Hz)Subta and RayCodeColor 105 the termal 275 mm (0 Hz)Subta and RayCodeSubta and RayCodeSubta and RayCodeColor 15 the termals 275 mm (0 Hz)Subta and RayCodeColor 15 the termals 275 mm (0 Hz)Subta and RayCodeColor 15 the termals 275 mm (0 Hz)Subta and RayCodeColor 16 the termals 275 mm (0 Hz)Subta and RayCodeColor 16 the termals 275 mm (0 Hz)Subta and RayCodeSubta and RayCodeColor 16 the termals 275 mm (0 Hz)Subta and RayCodeColor 16 the te								Com			
	Alarm Switches					ax					
Comp 12: Voltage ad Corrent Ratings for Dual Control, Shurt and Reisp Trip Construction Code X Description Code Size and Control, XX Code XX Description Size and Control, XX Code XX Description Size and Reisp Code Code Size and Reisp Code Code Size and Reisp Code Description Size and Reisp Code Code Size and Reisp Code Code Comments		С	Silver tips, offset term	ninals, 4.75	5 mm (0.187"), 10 A Max						
Group 12: Voitage and Current Ratings for Dual Control, Shurt and Relay Trip Construction Code Not applicable Description Code B0 Description Code B0 Description Code B1 Description ZZ Special - specify Shurt and Relay Trip Construction For Dual Control, Shurt and Relay Colls Code Description Description B1 24V AC S0 / 60 Hz A3 55V AC 50 / 60 Hz B1 24V AC C ZZ Special - specify Shurt and Relay Colls Code Description Description B2 48V DC B2 48V DC B2 48V DC B2 Special - specify			Parallel bridge hous	ing - for al	II parallel bridged poles						
Voltage and Current Rating for Dual Control, Shurt and Relay XX Not applicable A3 65 VAC 50 / 60 Hz B0 12V DC B3 80 V DC A1 12VAC 50 / 60 Hz A4 10 / 125 VAC 50 / 60 Hz B1 24V DC ZZ Special - specify A2 24VAC 50 / 60 Hz A5 220 - 240 VAC 50 / 60 Hz B2 48V DC ZZ Special - specify Group 13: Terminal Chicks Shurt and Relay Code Oescription Comments Comments Comments Coll Quick concet terminal MS or 10 - 32 So Comments So A max So A max So A max Coll Quick concet terminal MS or 10 - 32 So Comments So A max So A max Coroup 14: Voltage for Rocker Handle Code Description So A max So A max Group 15: Terminal Concer Code Description Comments Comments Rocker Handle, So A max and Palay No handle So A max So A max Group 15: Terminal Concer Code Description Comments Rocker Handle, White marking So A max and palay So					, ·						
Current Rating for Dual Control And (12VAC 50 / 60 Hz) Ad A1 12VAC 20 / 60 Hz Ad A3 12VAC 20 / 60 Hz Ad A3 12VAC 20 / 60 Hz Ad A3 12VAC 20 / 60 Hz B1 24V DC ZZ Special - specify A1 12VAC 50 / 60 Hz A3 220 - 204VAC B1 24V DC ZZ Special - specify A2 24VAC 50 / 60 Hz A5 220 - 204VAC B2 48V DC D Group 13: Terminal Options For Dual Control Start and Relay C Quick connect terminal, 05 or 10 - 32 50 A max S0 A max Cols Quick connect terminal, 05 or 10 - 32 50 A max S0 A max S0 A max Cols D Flying leads (wire terminal) 15 A max S0 A max S0 A max Coup 16: Coup 16: Rocker Handle X Not applicable Comments Comments Terminal for Huminated Rocker X Not applicable Comments Comments Group 16: Croup 16: Handle Color X No tangle, black marking Comments Comments Group 16: Handle Color X No tangle, black m											
Shurt and Relay Trip ConstructionA1I 12VAC 50 / 60 HzA450 / 60 HzB1I 4V DCIZSpecial - specifyGroup 13: Tennial Cyclions Tennial Cyclions Email Angle And ExplicitionGoddDescription Description6248 V DCIZSpecial - specifyGroup 13: Tennial Cyclions Email Angle Ang	Current Ratings	XX	Not applicable	A3		BO	12V DC	B3	80 V DC		
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$\begin{tabular}{ c $	Trip Construction	A2	24VAC 50 / 60 Hz	A5		B2	48V DC				
		Code	Desc	ription				Comment	s		
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		Code				Code	Description		Comments		
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2 No marking, with test button, rocker handle Test button for mechanical trip B No marking, rocker handle		2		'n,		В	No marking, rocker hand	dle			

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Hi electric

DD Frame - Series Circuit Breakers

Ordering Information

Group 20:	Code	Description	Comments	Code	Description	Comments		
Inter-phase Barrier and Terminal Cover	х	Not applicable			Z inter-phase barrier & terminal cover			
and terminal Cover	1	Terminal cover (s)		A	Small inter-phase barrier	Inter-phase barriers and terminal covers may		
	2	Small inter-phase barrier & terminal cover		В	Large inter-phase barrier	be required for multi-pole products with U listed and UL recognised approvals. See DE		
	3	Large inter-phase barrier & terminal cover		с	Z inter-phase barrier	Frame Technical Guide.		
Group 21: Approvals (Product Normally Approved to)	Code	Description			Comments			
	1	CUR, UL recognised UL 1077, IEC / EN 60934, CSA, VDE, CE			UL 1077, normally IEC / EN 60934			
	2	CUL, UL listed UL 489, CSA, IEC / EN 60947-2, VDE, CE			UL 489, normally IEC / EN 60947-2			
,	3	UL listed (UL 489A), IEC / EN 60947-2, VDE, CE		DC (telecommunication)				
	Z	No third party approvals						
Group 22:	Code	Description			Comments			
Safety Marks	Х	Not applicable						
	С	CCC / CRCC			For products exported to Peoples Republic of China			
	Z	Specia	l - specify					

For options not listed, please contact CBI



Please review our Customer Terms and Conditions on www.cbi-lowvoltage.co.za

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NOV 2016

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