Noark

Product Guide

Low Voltage DC Series

Disconnect Switch
ASD Series Disconnect Switch 1500Vdc A

Molded Case Circuit Breaker
M Series Molded Case Circuit Breaker 600Vdc B
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M Series Molded Case Circuit Breaker 1500Vdc (UL) D
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F30 Series Fuse Holders J

Excellent Products. Exceptional Value.

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ABOUT US

NOARK Electric is a global manufacturer of low-voltage electrical components for industrial applications. We specialize in motor controls and circuit protection for original equipment manufacturers. Our mission is to provide customers with the highest quality products at an exceptional value and back them with world-class service and support. Every NOARK product is tested and certified to the highest industry standards.

Research and Development

The entire portfolio of high-quality NOARK products is designed for manufacturing and assembly. Each component is developed in-house by our engineering team to meet the strictest standards and performance requirements.This dedication to excellence has led to the development of patented technology found in many of our products.

World-class Manufacturing

After being thoroughly tested, approved and certified – each NOARK product is sent into production at ourstate-of-the-art manufacturing facilities. This allows us to maintain strict quality control standards throughout the manufacturing process. In addition, NOARK Electric adheres to a policy of environmental protection and sustainability.

North American Distribution

NOARK's distribution centers are located in Pomona, CA and Kitchener, ON, with the aim of ensuring prompt and reliable deliveries of the entire product range to our customers all over North America. Our supply chain team works closely with our factories and logistics partners to ensure the availability of our products on the North American market and provide logistics services on the level which our customers expect.

NOARK Electric is a wholly subsidiary of the largest electrical manufacturing group in Asia with over 30 thousand employees and sales revenue of $16 billion USD. We have corporate facilities in Los Angeles, Shanghai and Prague to service the requirements of individual markets and countries.

140+	300+	20	22	3	10,000,000+	30,000+
Countries	Overseas Distributors	Overseas Subsidiaries	Logistics Centers	R & D Centers	Sq.Ft. Manufacturing Space	Employees Worldwide

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NOARK Low Voltage DC Series

Product Quick Reference

	Product Family	Standards	Rated Current (A)	Rated Voltage (VDC)	Interrupting Capacity (kA)	Short Time Withstand Current (kA)	Poles
	ASD16 DC	UL489-SC UL489B CSA C22.2 No. 5	600-1600	1500	-	75	4
	ASD25 DC	UL489-SC UL489B CSA C22.2 No. 5	800-2500	1500	-	150	4
	M1	UL489 IEC60947-2 CSA C22.2 No. 5	15~150	Up to 600	Up to 50	-	1,2,3
	M2	UL489 IEC60947-2 CSA C22.2 No. 5	100~250	Up to 600	Up to 50	-	1,2,3
	M3	UL489 IEC60947-2 CSA C22.2 No. 5	250~400	Up to 600	Up to 65	-	2*,3
	M4	UL489 IEC60947-2 CSA C22.2 No. 5	400~600	Up to 600**	Up to 65	-	2*,3
	M5	UL489 IEC60947-2 CSA C22.2 No. 5	600~800	Up to 600**	Up to 65	-	2*,3,4
	M1PVS	UL489B CSA C22.2 No. 5	15~100	1000	10	-	3
	M1D	UL489 IEC60947-2 CSA C22.2 No. 5	15~150	600	-	50	2,3
	M2D	UL489 IEC60947-2 CSA C22.2 No. 5	100~250	600	-	50	2,3
	M3D	UL489 IEC60947-2 CSA C22.2 No. 5	250~400	600	-	65	2,3
	M4D	UL489 IEC60947-2 CSA C22.2 No. 5	400~600	600	-	65	2,3

*3-pole Case
**Poles connected in series.

NOARK Low Voltage DC Series

Product Quick Reference

	Product Family	Standards	Rated Current (A)	Rated Voltage (VDC)	Interrupting Capacity (kA)	Short Time Withstand Current (kA)	Poles
	M5D	UL489 IEC60947-2 C22.2 No. 5	800	600	-	65	2,3,4
	MV2DPV	UL489B GB/T 14048.2 IEC 60947 -2	200	1500	10	10	2
	MD3HVF	UL489B CSA C22.2 No. 5	200~400	1500	18	-	2
	Ex9MV2S-DC1500V	IEC/EN 60947-2, GB/T1404802	250	1500	10	-	2
	B1N	UL489 IEC60947-2 CSA C22.2 No. 5-16	0.5~63	1-pole: 60 2-pole: 125	10	-	1,2
	B1D	UL489 IEC60947-2 CSA C22.2 No. 5-16	0.5~63	1-pole: 125 2-pole: 250	10	-	1,2
	B1E	UL1077 IEC60947-2 CSA C22.2 No. 235	0.5~63	1-pole: 60 2-pole: 125	10	-	1,2
	B1B	UL489 IEC60947-2 CSA C22.2 No.5	25~63	2-pole: 500 4-pole: 1000	10	-	2,4
	Ex9BP	UL1077 IEC60947-2	10~63	2-pole: 300 4-pole: 600	6	-	2,4
	9FP Fuse & Fuse Holder	CSA C22.2 No. 4248	2~30	1500	20	-	1
	F30 Fuse Holder	UL4248-19 CSA C22.2 No. 4248	Max. 30	Up to 1000	Up to 200	-	1,2,3,4

ASD Series Disconnect Switch - 1500Vdc

Product Overview

Features

The Noark Electric ASD16 and ASD25 DC disconnect switches meet the requirements of UL 489B for photovoltaic systems and UL 489 Supplement SC for batteries and energy storage systems. The ASD16 model supports current ratings ranging from 600A to 1600A, with a short-time withstand current capability up to 75kA at 1500Vdc. The ASD25 model is available in current ratings from 800A to 2500A and can handle a short-time withstand current up to 150kA at 1500Vdc. The ASD25 features a poles-in-series design and offers jumper connection options for both grounded and ungrounded systems. In contrast, the ASD16, also with a poles-in-series design, provides factory-configured jumper connections specifically for ungrounded systems. Both models are supported by a 1-year limited warranty.

A

- Ambient temperature: 40°C~70°C
- Mechanical endurance up to 12500 (without maintenance), electrical endurance up to 200 (without maintenance)
- An extensive range of electrical and mechanical accessories are available for ASD16 and ASD25DC disconnects and are fully compliant with the applicable UL standard
- Compact design for limited space in combiner box or the solar inverter

Certifications

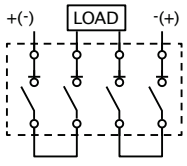
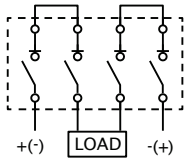
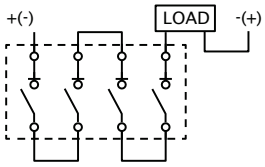
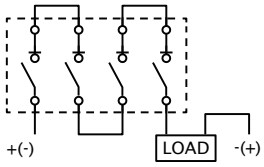
- UL489 Supplement SC Listed, File No. E529658
- UL489B Listed, File No. E529657
- CSA Standards C22.2 No. 5, File No. E529658
- CSA Standards C22.2 No. 5, File No. E529657

ASD Series Disconnect Switch - 1500Vdc

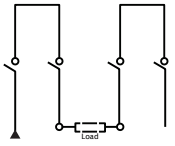
Technical Data

Description		ASD16 DC	ASD25 DC
Rated Voltage (Vdc)		1500Vdc (4-pole in series)	
Rated current (A)		600/800/1000/1200/1600	800/1000/1250/1600/2000/2500
Pole		4-pole	
Mounting type		Fixed	
Standard		UL489 / UL489B	
Frame		1600A	2500A
Short time withstand current (kA)		75	125/150
Operating time (ms)	Max. Breaking Time	≤30	≤30
	Max. Closing Time	≤60	≤70
Operations	Mechanical	12,500	12,500
	Electrical	500	2000
Dimension HxWxD (mm)	600A~1200A	473 x 364 x198.5	-
	800A~2000A	-	392 x 465 x 433
	2500A	-	392 x 465 x 477
Accessories*	Shunt Trip (SHT)	■	
	Closing Trip (XF)	■	
	Motor Operator (MD)	■	
	Auxiliary Contacts (AX)	■	
	Under Voltage Trip (UVT)	■	
	Phase Barrier (PHS)	■	
	OFF Position Keylock (KLK)	■	
	Door Frame (CDP)	■	
	Ready To Close Contact (PF)	■	
	Pushbutton Locking Cover (VBP)	■	
	Mechanical Interlocking With Cables (IPA)	■	
	Jumper (JPR)	■	

Connection Type

Connection	Upper Supply	Lower Supply
Configuration C**		
Configuration D***		

Wire Connection

Lower Supply	
Jumper busbar connection type	

* Accessories are ordered separately except the Jumpers which are factory installed but field customizable.
** Type C: Only suitable for ungrounded systems
*** Type D: Can be used in grounded or ungrounded systems in photovoltaic systems

M Series Molded Case Circuit Breaker - 600Vdc

Product Overview

NOARK Electric offers a wide range of Molded Case Circuit Breakers for DC applications in five frame sizes. The M-Series DC MCCB come with multiple frame selections and pole number options: M1-150A, M2-250A, M3 - 400A, M4 - 600A and M5 - 800A.

Features

- Rated current from 15~800A
- Rated voltage from 250Vdc~600Vdc
- High-breaking capacity and a patented arc extinguishing design
- Fixed and adjustable trip unit settings
- Line and load lugs installed standard

B

Accessories

- Alarm switch and auxiliary contact
- Shunt and under-voltage trip
- Rotary type handle
- Flange type handle

Certifications

- UL489 listed, File No. E355392
- CSA Standards C22.2 No. 5, File No. E355392
- IEC/EN 60947-2
- CE Compliant

M Series Molded Case Circuit Breaker - 600Vdc

Technical Data

		M1							M2					
Rated Current (A)			15~150						100~250					
Number of Poles		1	2			2*, 3			1	2		2*,3		
Breaker Type		N	S	N	H	S	N	H	N	S	N	S	N	H
Rated Voltage	Vdc	250	500			600**			250	500		600**		
Interrupting Capacity (kA rms)														
Circuit Breaker Ratings UL 489 CSA C22.2 (kA rms) Vac 50/60 Hz	250Vdc 1-pole	25	-						25	-				
	500Vdc 2-pole	-	20	35	50	20	35	50	-	20	35	20	35	50
	600Vdc 3-pole	-				20	35	50	-			20	35	50
Current Rating (A) @ 104 °F (40 °C)		15~150							100~250					
Thermal-Magnetic Trip Units (Fixed)	A = Adjustable T = Thermal F = Fixed M = Magnetic	FT/ FM	15~45 FT/FM 50~150A AT/FM			15~45A FT/FM 50~100A AT/FM 125~150A AT/AM			FT/ FM	AT/AM				
Accessories														
Alarm Switch		-	■			■			-	■		■		
Auxiliary Contact														
Shunt Trip														
Under-Voltage Trip														
Handle Lock														
Handle Operators														
Mechanical Interlock		-							-					
Motor Operator														
Flange Handle														
Terminal Cover and Kits														
Connection														
Bus Bar Connection		■				■			■			■		
Lug Line/Load Side Connection														
Rear Connection														
Plug-In		-							-					

* 2 pole in a 3-pole case
** 600Vdc only available for 3-pole and 4-pole

M Series Molded Case Circuit Breaker - 600Vdc

Technical Data

		M3			M4			M5		
Rated Current (A)		250~400			400~600			600~800		
Number of Poles		2*,3						2*,3,4		
Breaker Type		S	N	H	S	N	H	S	N	H
Rated Voltage	Vdc					600**				
Interrupting Capacity (kA rms)										
Circuit Breaker Ratings UL 489 CSA C22.2 (kA rms) Vac 50/60 Hz	500 Vdc 2 Poles	35	50	65	35	50	65	35	50	65
	600 Vdc 3 Poles	35	50	65	35	50	65	35	50	65
Current Rating (A) @ 104 °F (40 °C)		250~400			400~600			600~800		
Thermal-Magnetic Trip Units (Fixed)	A = Adjustable T = Thermal F = Fixed M = Magnetic	AT / AM								
Accessories										
Alarm Switch		■						■		
Auxiliary Contact										
Shunt Trip										
Under-Voltage Trip										
Handle Lock										
Flange Handle										
Mechanical Interlock										
Motor Operator										
Handle Operators										
Terminal Cover and Kits								-		
Connection										
Bus Bar Connection		■			■			■		
Lug Line/Load Side Connection										
Plug-In					-			-		
Rear Connection					■					

* 2 pole in a 3 pole case
** 600 Vdc only available for 3 pole and 4 pole

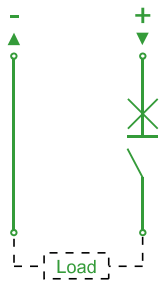
M Series Molded Case Circuit Breaker - 600Vdc

Technical Data

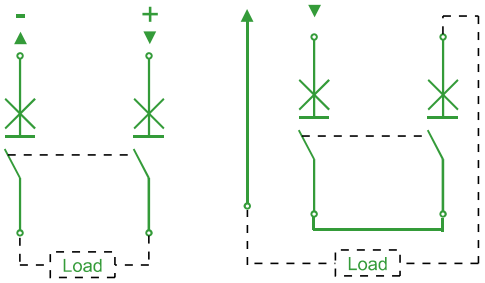
		M1	M2	M3	M4	M5
Operational Ambient Termperature		-40 to 70℃				
Mechanical Operating Cycles		10,000		8,000		3,000
Electrical Operating Cycles		6,000		5,000		500
Dimensions LxWxD in (mm)	1-pole	6.46x1.4x3.33 (164x35x84.5)	7.17×1.57×3.47 (182×40×88)	-		
	2-pole	6.46x2.44x3.33 (164x62x84.5)	7.17×2.95×3.47 (182×75×88)			
	2-pole*	6.46x3.54x3.33 (164x90x84.5)	7.17x4.13x3.47 (182x105x88)	11.22x5.51x4.59 (285x140x116.5)	12.32x7.68x5.43 (313x195x138)	-
	3-pole					16.18x7.68x7.58 (411x195x192.5)
	4-pole	-				16.18x10.2x7.58 (411x260x192.5)
Weight of Unit lb (kg)	1-pole	1.47 (0.67)	1.76 (0.8)	-		
	2-pole	2.53 (1.15)	3.3 (1.5)			
	2-pole*	3.17 (1.44)	3.75 (1.70)	8.97 (4.07)	20.94 (9.5)	27.8 (12.5)
	3-pole	3.68 (1.67)	4.41 (2.00)	13.45 (6.1)	25.35 (11.5)	33.18 (15.05)
	4-pole	-				43.43 (19.7)
Connection						
Bus Bar Connection		■				
Lug Line/Load Side Connection						

M1 - M5 Interruption Polarity fo DC Application

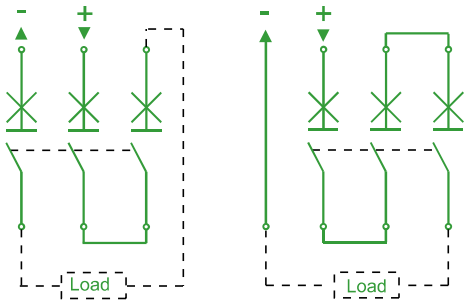
1 Pole



2 Poles



3 Poles



* 2-pole in a 3-pole case

M Series Molded Case Circuit Breaker - 1000Vdc

Product Overview

NOARK M1PVS is a molded case breaker for DC application with UL489B listing and offers solutions for Solar PV and Electric Vehicle Charging applications

Features

- Rated current from 15A~100A in a 3-pole configuration
- Interrupting capacity of 10kA @ 1000Vdc
- Thermal magnetic trip units for protection of overload and short-circuit photovoltaic system
- Available for reverse-feed applications
- Can be used in grounded, ungrounded systems

C

Certifications

- UL489B Listed, File No. E513573
- CSA Standards C22.2 No. 5, File No. E513573

5 years LIMITED WARRANTY

M Series Molded Case Circuit Breaker - 1000Vdc

Technical Data

M1PVS Specifications

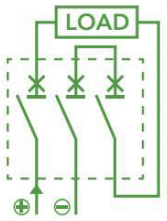
Description		M1PVS
Rated Service Current		15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80,100
Number of Poles		3
Rated Service Voltage		1000Vdc
Short-Circuit Interrupting Rating @1000Vdc		10
Trip Unit		TM
Ambient Temperature		-20°C~50°C
Certification		UL 489B
Mechanical Life		10,000
Electrical Life (Operations @1000Vdc)		1,000
Dimensions (mm/in)	M1PVS-A/B	W 90 (3.5)
		D 84.5 (3.33)
		H 201 (7.91)
	M1PVS-C/D	W 90 (3.5)
		D 84.5 (3.33)
		H 238 (9.37)
Weight (With Jumper)	M1PVS-A/B (kg/lbs)	1.50/3.29
	M1PVS-C/D (kg/lbs)	1.659/3.64
Accessories		
Alarm Switch		■
Auxiliary Contact		■
Shunt Trip		■
Under-Voltage Trip		■
Handle Lock		■
Flange Handle		■
Rotary Handle		■
Mechanical Interlock		■
Motor Operator		■
Terminations		
Connections		Jumpers
Cable Selection		Cu

M Series Molded Case Circuit Breaker - 1000Vdc

Technical Data

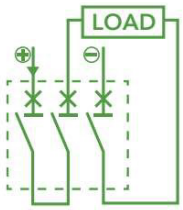
M1PVS Jumper Connection Type and Trip Unit

Connection A



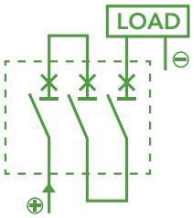
ungrounded system wiring

Connection B



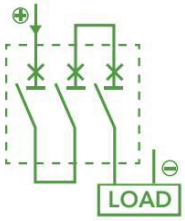
ungrounded system wiring

Connection C



For both grounded and ungrounded

Connection D



For both grounded and ungrounded

M1VPS

- Fixed Thermal: 15~45A rated current
- Adjustable Thermal: 50~100A rated current
- Adjustable: 0.8~1 x In
- Fixed Magnetic: 150~1000A tripping current

M1PVS Trip Unit													
	I_R	15A	20A	25A	30A	35A	40A	45A	50A	60A	70A	80A	100A
Adjustable Thermal Overload Protection	0.8 x In								40	48	56	64	80
	0.9 x In								45	54	63	72	90
	1.0 x In								50	60	70	80	100
Fixed Magnetic Short Circuit Protection	I_i	15A	20A	25A	30A	35A	40A	45A	50A	60A	70A	80A	100A
	Fixed 1.0 x In	150	200	250	300	350	400	450	500	600	700	800	1000

M Series Molded Case Circuit Breaker – 1500Vdc (UL)

Product Overview

MD3HVF is Noark's 2-pole MCCB specifically engineered for 1500Vdc rated voltage applications. Tailored for the dynamic requirements of the new energy industry, particularly in photovoltaic systems with current range from 200A to 400A. MD3HVF shares a comprehensive range of internal and external accessories with existing M series breakers, ensuring a seamless integration that guarantees reliability and safety

Features

- Rated Voltage 1500Vdc
- Rated current from 200A~400A
- Ambient temperature -40°C ~ 70°C
- Fixed thermal-magnetic trip unit

D

Accessories

- Alarm and Auxiliary Contact
- Shunt trip
- Handle Operating Mechanism
- Motor Operator
- Terminal Cover and Phase Barrier

Certifications

- UL489B Listed, File No. E529657
- CSA Standards C22.2 No. 5.1, File No. E529657

M Series Molded Case Circuit Breaker – 1500Vdc (UL)

Technical Data

Description	MD3HVF
Rated Current In (A), 50° C	200~400
Number of Poles	2
Frame Current (A)	400
Rated Operating Voltage Un (Vdc)	1500
Rated Interrupting Capacity (kAIC)	18
Trip Unit	Thermal-Magnetic
Ambient Temperature	-40°C ~ 70°C
Certification	UL489B
Installation Type	Fixed
Accessories	
Alarm and Auxiliary Contact	■
Shunt Trip	■
Handle Operating Mechanism	■
Motor Operator	■
Terminal Cover and Phase Barrier	■

M Series Molded Case Circuit Breaker – 1500Vdc (IEC)

Product Overview

Ex9MV2S-PV/DC 1500V is a DC molded case circuit breaker designed for photovoltaic applications, with rated current from 125A to 250A. The rated ultimate short circuit interrupting capacity is 10kA, suitable for low- voltage power distribution circuits with rated operating voltage less than 1500Vdc, which has a wide application in photovoltaic equipment such as combiner boxes and box transformer. The breaker is designed with double insulation, which improved insulation performance and operational safety. Also, reverse feed connection and modularized accessories make it more convenient to be installed and operated.

5 years LIMITED WARRANTY

Features

- Rated current from 125A~250A
- Rated Voltage less than 1500Vdc
- Improved insulation performance and operational safety
- Reverse feed connection

Accessories

- Alarm Switch
- Auxiliary Contact
- Shunt Trip
- Under-Voltage Trip
- Handle Lock
- Flange Handle
- Rotary Handle
- Mechanical Interlock
- Motor Operator

Certifications

- IEC 60947-2

M Series Molded Case Circuit Breaker – 1500Vdc (IEC)

Technical Data

Description			Ex9MV2S-PV/DC 1500V
Breaker Type			S
Recognized Standards			IEC/EN 60947-2, GB 14048.2
Frame Current (A)			250
Number of Poles			2
Rated Insulation Voltage Ui (V)			1500
Rated Impulse withstand voltage Uimp (kV)			12
Rated Operating Voltage Un (V)			1500
Rated Current In (A), 40°			125/160/200/225/250
Rated ultimate short circuit interrupting Capacity Icu (kA)		DC1500V, 2-stage series connection	10
Rated ultimate operating interrupting Capacity Ics (%Icu)		DC1500V, 2-stage series connection	100%
Disconnection Function			Yes
Utilization Category			A
Protection Grade			IP20
Standards Recognition			CCC/TUV/CE/CB
Operations (C-Ocycle)	Mechanical		10,000
	Electrical		2,000
Trip Unit			Thermal-Magnetic
Short Circuit Protection			10In
Operating Ambient Temperature (°)			-40°C ~ 70°C
Installation Type			Fixed
Connection Type			Bus Bar and Lug Line/Load Side
Geometric Dimensions (mm)	Width		135
	Height		200
	Depth		103
Accessories			
Alarm Switch			■
Auxiliary Contact			■
Shunt Trip			■
Under-Voltage Trip			■
Handle Lock			■
Flange Handle			■
Rotary Handle			■
Mechanical Interlock			■
Motor Operator			■

M Series Molded Case Switches - 600Vdc

Product Overview

NOARK Electric offers 5 types of M-Series Molded Case Switches for DC application. The rated current of M1-150A, M2-250A, M3-400A, M4-600A and M5-800A.

Features

- Rated Voltage up to 600Vdc
- Instantaneous trip ability and a patented arc extinguishing design
- High-quality compact modular design
- Suitable for power source protection and emergency breaking switch

Accessories

- Alarm switch and auxiliary contact
- Shunt and under-voltage trip
- Rotary type handle
- Flange type handle

Certifications

- UL489 Listed, File No. E355396
- CSA Standards C22.2 No. 5, File No. E355396
- IEC/EN 60947-2
- CE Compliant

5 years LIMITED WARRANTY

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M Series Molded Case Switches - 600Vdc

Technical Data

Description		M1D	M2D	M3D	M4D	M5D
Rated Current (A)		100 - 150	225 - 250	400	600	800
Number of Poles		2,3		3		
Switch Type		M1D	M2D	M3D	M4D	M5D
Rated Voltage 50/60 Hz	Vac	600				
	Vdc	600				
Withstand Rating* (kA rms)						
Circuit Breaker Ratings UL 489- -C-SA C22.2 (kA rms) Vac 50/60 Hz	500Vdc 2-pole	35	35	50	50	50
	600Vdc 3-pole	35	35	50	50	50
Connection						
Line/Load Lug Connection		■				
Mechanical Operating Cycles		10,000		8,000		
Electrical Operating Cycles		6,000		5,000		
Dimensions LxWxD in		6.46 x 3.54 x 3.33	7.17 x 4.13 x 3.47	11.22 x 5.51 x 4.59	12.32 x 7.68 x 5.43	16.18 x 7.68 x 7.58
Weight of Unit lb	2-pole	3.17	3.75	-	-	-
	3-pole	3.68	4.41	13.45	25.35	33.18
Lugs lb-in (N.m)		89 (10)	230 (23)	310 (35)		398 (45)

*NOTE: Molded Case Switches do not provide branch circuit protection and must be protected by an upstream OCPD (fuse or circuit breaker). The withstand rating is provided for coordination purposes and refers to the fault, at rated voltage, that the molded case switch can withstand without damage when protected by a circuit breaker or fuse with and equal continuous current rating

M Series Molded Case Switches - 1500Vdc

Product Overview

MV2DPV200 can be used for the is olation of DC circuits, while also providing load current interruption and energy dis connection protection. MV2DPV200 Molded Case Switch is designed for application in new energy industry, can be used in the DC side of PV inverter in a photovoltaic system, and in the DC side of ES converter in an ESS system, or any other conditions where the DC voltage are up to 1500Vdc.

Features

- Rated Voltage up to 1500Vdc
- Rated Current from 125 to 200A
- High-quality compact modular design
- Suitable for power source protection and emergency breaking switch

Accessories

- Shunt Trip
- Auxiliary Contact
- Alarm Contact
- Handle Operating Mechanism
- Extended Shaft
- Extended Rotary Handle

5 years LIMITED WARRANTY

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Certifications

- UL489B Listed File No. E529657
- CE Compliant
- CCC
- RoHS

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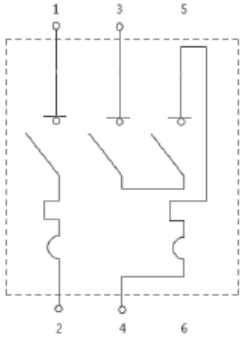
M Series Molded Case Switches - 1500Vdc

Technical Data

	MV2DPV200
Number of Poles	2P
Rated Voltage Ue	DC1500V
Rated	12kV
Rated Current In	125 to 200A
Withstand Capacity 1cm	10kA@1500Vdc
Mechanical Endurance	10000 cycles
Electrical Endurance	2000 cycles
Operational Temperature	-40°C ~ +70°C
Operational Humidity	Relative humidity should not exceed 50% when the temperature is +40°C; Relative humidity can be higher in lower temperatures, e.g. 90% at +20°C Measures should be taken to address condensation caused by temperature changes.
Altitude	≤ 2000m, de-rating is required above 2000m
Pollution Degree	3
Installation Category	III
Width (mm)	135
Height (mm)	200
Depth (mm)	103
Isolation Function	Yes
Operation Indicator	ON/OFF Sign
Weight (kg)	3.2kg
Accessories	
Alarm and Auxiliary Contact	■
Shunt Trip	■
Handle Operating Mechanism	■
Extended Rotary Shaft	■
Extended Rotary Handle	■

Wiring Diagram



B Series Miniature Circuit Breaker

Product Overview

Features

The B1N, B1D & B1B series DC miniature circuit breakers provide over-current protection for main and branch circuits, with a rated short-circuit current of 10kA and operating voltages ranging from 60Vdc (1-pole) to 1000Vdc (4-pole in series). The rated operational current ranges from 0.5A through 63A. B1N & B1D are UL489 listed while B1B is UL489 SC listed. The B1E & Ex9BP series miniature circuit breakers are supplementary protectors (UL1077 recognized) with operational voltages between 60Vdc (1-pole) to 600Vdc (4-pole in series). The maximum rated current is from 0.5A through 125A while the interrupting capacity is 10kA (B1E) and 6kA (Ex9BP) respectively.

- Breakers can be mounted on standard 35mm DIN rail
- Field installable shunt trip and auxiliary switch
- Contact position indicator (red/green)

5 years LIMITED WARRANTY

Accessories

- Alarm Switch
- Auxiliary Contact
- Shunt Trip
- Under-Voltage Trip
- DIN Rails
- Extended Rotary Handles
- MCB Padlock (Lock Off)
- Surface and Flush Mount Clips
- Comb Busbars
- Mechanical Interlock

Certifications

- B1N, B1D:
  UL489 Listed, File no. E355392;
  CSA Standards C22.2 No. 5 File no E355392
- B1B: UL489 SC Listed, File no. E532291
- B1E, Ex9BP:
  UL1077 recognized, File no. E355391;
  CSA-C22.2 No. 235 File no. E355391

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B Series Miniature Circuit Breaker

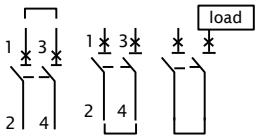
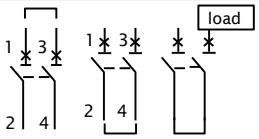
Technical Data

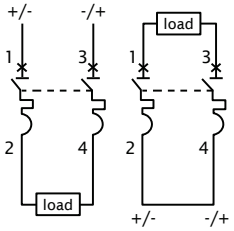
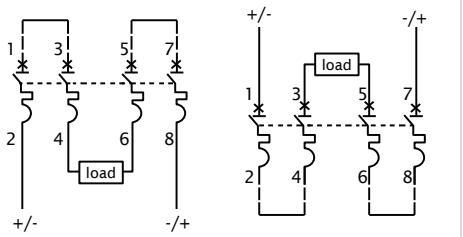
Description		B1N		B1D		B1E				B1B		Ex9BP	
Pole		1	2	1	2	1	2	1	2	2	4	2	4
Rated Current (A)		0.5~63		0.5~63		0.5~63		80~125		25~63		10~63	
Rated Operational Voltage (Vdc)		60	125	125	250	60	125	110	220	500	1000	300	600
Instantaneous Tripping Type		B/C/D		C/D		B/C/D		8~12In		C		C	
Inverse Time-Delay Over-Current Release Type		Thermal-magnetic											
Rated Insulation Voltage (Vdc)		500		500		500		500		1000		1000	
Rated Impulse Withstand Voltage (kV)		6		6		6		8		6		4	6
Short Circuit Current Rating (kA)		10		10		10		10		10		6	
Operations	Electrical	10,000		6,000		6,000		"1,500 (80~100A) 1,000 (125A)"		1,000		6,000	
	Mechanical	20,000		10,000		20,000		"8,000 (80~100A) 7,000 (125A)"		20,000		20,000	
Operation Temperature Range		-30°C ~ +75°C											
Pollution Degree		Class III											
Altitude ft (m)		Does not exceed 6,561 (2,000)											
Atmospheric Conditions		+20°C ≤90%											
		+40°C ≤50%											

B Series Miniature Circuit Breaker

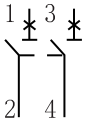
Wiring Diagram

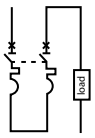
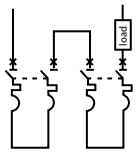
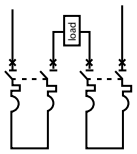
UL489 Miniature Circuit Breaker

Pole	1	2
B1N		
B1D		

Pole	2	4
B1B		

UL1077 Miniature Circuit Breaker

Pole	1	2	4P
B1E			-

	Pole	2	4
Ex9BP	For both grounded and ungrounded		
	ungrounded		

9FP Series Fuse & Fuse Holder

Product Overview

Features

9FP series DC fuses and fuse holders are mainly used in DC junction box, string inverters, and converter of energy storage system in order to protect and isolate photovoltaic cell modules, arrays and chemical energy (storage) batteries. They are suitable for new energy fields with UL certificate.

- Rated current up to 30A
- Rated operational voltage of 1500Vdc
- 22mm installation size per pole
- Standard TH35 rail mounting

Certifications

- UL 248-19 Listed, File No. E522690 (Fuse)
- UL4248-19 Listed, File No. E522691 (Fuse holder)
- CSA C22.2 No. 4248, File No. E522690 (Fuse)
- CSA C22.2 No. 4248, File No. E522691 (Fuse holder)
- IEC/EN 60269-6

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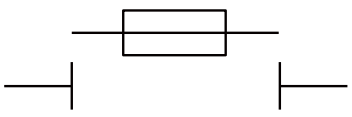
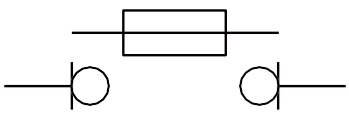
9FP Series Fuse & Fuse Holder

Technical data

Description	9FP-30H series DC fuse
Conformed Standard	UL 248
Maximum Power Loss (W)	≤9
Voltage Rating (V DC)	1500
Amperage Rating (A)	2, 4, 6, 8 ,10, 12, 15, 16, 20, 25, 30
Interrupting rating (kA)	20
Dimensions (mm)	10*85

Description		9FP30H Fuse holder
Conformed Standard		UL 4248-19
Rated Operational Voltage Ue (V DC)		1500
Rated Current In (A)		up to 30A
Maximum Power Loss(W)		≤9
Protection Degree		IP20
Mounting		TH35-7.5/DIN35 rail
Operation Temperature Range°C		-35~+70
Resistance to Wet and Heat		Class II
Altitude ft (m)		Does not exceed 6,561 (2,000)
Atmospheric Conditions		At 68 °F (+20°C), the relative humidity does not exceed 95%
		At 104 °F (+40°C), the relative humidity does not exceed 50%
Installation class		Class III
Installation Environment		No significant vibration or shock
Wiring	Screw Size	M5
	Tightening Torque (N.m)	2-3.5
	Wiring Range (mm^2)	1~25

Wiring Diagram

Isolator	Disconnect Switch
	

F30 Series Fuse Holder

Product Overview

F30 series Fuse holder can be used in variety of scenarios: F30M and F30CC series can be used in the conventional electrical field, while F30P series is dedicated to the photovoltaic industry. F30 series is matched with a variety of fuses and has a high interrupting capacity.

- Rated current up to 30A
- The interrupting capacity of F30M series and F30CC series is up to 200kA while F30P is 50kA.
- Available option for blown-fuse indicating light, which is convenient for quick inspection and identification.

Certifications

- F30M:
  - UL4248-1 Listed, File no. E530645
  - CSA Standard C22.2 No. 4248, File no. E530645
- F30CC:
  - UL4248-4 Listed, File no. E530645
  - CSA Standard C22.2 No. 4248, File no. E530645
- F30P:
  - UL4248-19 Listed, File no. E522691
  - CSA Standard C22.2 No. 4248, File no. E522691

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5 years LIMITED WARRANTY

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F30 Series Fuse Holder

Technical data

Fuse Holder	F30M	F30CC	F30P
Conformed Standard	UL4248-1	UL4248-4	UL4248-19
Rated Operational Voltage	600Vac/dc	600Vac/dc	1000Vdc
Rated Current (A)	Max 30A		
SCCR Rating	200kA	200kA	50kA
Number of Poles	1,2,3,4		1,2
Maximum Power Loss (W)	3.2W (per pole)		
Type	With & Without Indication Light		
Protection Degree	IP20		
Mounting	35mm DIN-Rail		
Operating Temperature (°C)	-30°C to 85°C		
Altitude ft (m)	Does not exceed 6,561 (2,000)		
Humidity Resistance	At 68°F (+20°C), the relative humidty does not exceed 95%		
	At 104°F (+40°C), the relative humidty does not exceed 50%		
Wet and Heat resistance	Class II		
Pollution Degree	Class III		
Connection	Copper conductor, 18-6 AWG (0.75-10mm^2)		
	Compatible with UL508 Comb busbar		
	Terminal screws, 18lb-in (2N-m)		
Applicative Fuses	10x38mm Midget fuses (≤30A)	10x38mm Class CC fuses (≤30A)	10x38mm PV fuses (≤30A)
Remarks	75/90°C (167/194°F) Wire Cu ONLY		

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