

Power Defense Molded Case Circuit Breakers—Frame Size 1

2



Contents

Description

	<i>Page</i>
Power Defense Molded Case Circuit Breakers	
Frame Size 1 (15–125 A)	
Catalog Number / Product Selection	V4-T2-23
Accessories	V4-T2-26
Dimensions and Weights	V4-T2-28
Frame Size 2 (15–225 A)	V4-T2-29
Frame Size 3 (45–600 A)	V4-T2-42
Frame Size 4 (300–800 A)	V4-T2-57
Frame Size 5 (320–1200 A)	V4-T2-70
Frame Size 6 (700–2500 A)	V4-T2-79
Motor Circuit Protectors (3–600 A)	V4-T2-87
Motor Protection Circuit Breakers (15–600 A)	V4-T2-98
Terminals, Lugs and Connectors	V4-T2-104
Communications and Software	V4-T2-127
Special Applications	V4-T2-129

Power Defense Molded Case Circuit Breakers—Frame Size 1

Product Description

Frame Size 1 covers a range of 15 A through 125 A with fixed-fixed thermal-magnetic trip units. PD-1 is available in 1-, 2-, 3- and 4-pole configurations, with the 4-pole configuration available with no protection on the neutral pole, or fully protected.

Application Description

Frame Size 1 can be used to meet a wide range of circuit protection and power distribution needs, including current limiting applications. PD-1 is a cable-in / cable-out MCCB.

Features and Benefits

Frame Size 1 breakers are available in multiple ratings from 15 A through 125 A. They are of a modular design with field installable accessories and terminals, which may also be factory installed.

Standards and Certifications

Power Defense breakers are designed and tested to meet stringent requirements for:

- UL
- CSA
- IEC (CE)
- CB (CCC)



Catalog Number / Product Selection**Power Defense—Frame Size 1 (15–125 A)**

Frame Size 1 covers a range of 15 A through 125 A using thermal-magnetic trip units. It is available in configurations of single-pole, 2-pole, 3-pole and 4-pole.

Interrupting Ratings (2-, 3- and 4-Pole)

Catalog Designator	C		F		G		K		M ^①		N ^{①②}		P ^{①②}	
ANSI (UL/CSA)	kA rms		kA rms		kA rms		kA rms		kA rms		kA rms		kA rms	
240 Vac	25		35		65		85		100		150		200	
480 Vac	18		25		35		50		65		85		100	
600Y/347 Vac	10		14		18		22		25		30		35	
250 Vdc ^③	10		22		22		35		35		42		42	
IEC	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}
240 Vac	25	25	35	35	55	55	85	85	100	100	150	150	200	200
380–415 Vac	20	20	25	25	36	36	50	50	70	50	70	70	100	100
250 Vdc ^③	10	10	22	22	22	22	35	35	35	35	42	42	42	42

Interrupting Ratings (Single-Pole)

	C		F		G		K		M	
ANSI (UL/CSA)	kA rms		kA rms		kA rms		kA rms		kA rms	
120 Vac	35		—		100		—		200	
240 Vac	25		35		65		85		100	
277 Vac	18		25		35		50		65	
347 Vac	10		14		18		22		25	
125 Vdc	10		22		22		35		35	
IEC	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}	I _{cu}	I _{cs}
240 Vac	25	25	35	35	55	55	85	85	100	100
125 Vdc	10	10	22	22	22	22	35	35	35	35

Notes

- ① UL current limiting.
- ② Available in 3- and 4-pole configurations only.
- ③ Must use 2 poles in series for 250 Vdc.

2.2

Molded Case Circuit Breakers

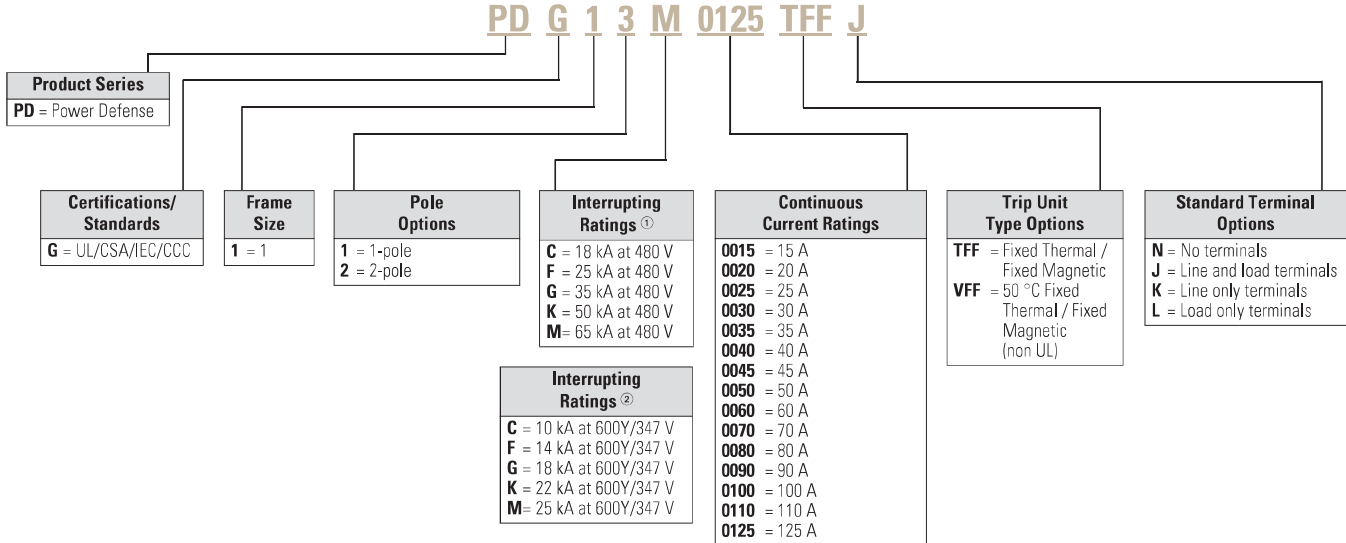
Power Defense Molded Case Circuit Breakers

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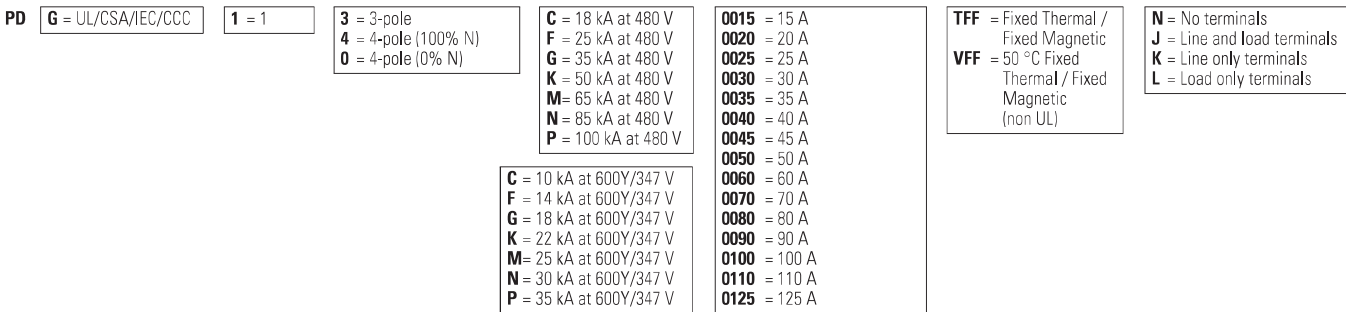
Power Defense—Frame Size 1 (15–125 A)

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

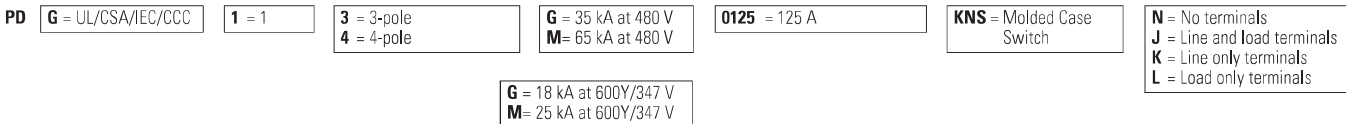
Molded Case Circuit Breakers (Single- and Two-Pole) with Thermal-Magnetic Trip Units—Globally Rated



Molded Case Circuit Breakers (Three- and Four-Pole) with Thermal-Magnetic Trip Units—Globally Rated



Molded Case Switches—Globally Rated ③



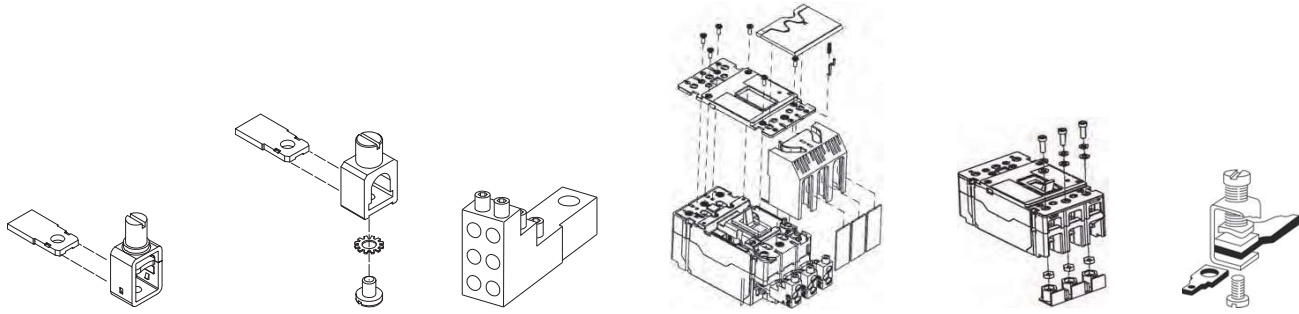
Notes

- ① Ratings at 277 Vac for single-pole.
- ② Ratings at 347 Vac for single-pole.
- ③ Molded case switch may open above 1250 A.

Terminals—Frame Size 1

Catalog numbers shown are for a single side of a 3-pole breaker.
 For 2- and 4-pole options, replace the **X3** with **X2** or **X4**, respectively.
 Example: PDG1**X3**T125 becomes PDG1**X2**T125 for two-pole.

Terminal Types



PDG1X3T125	PDG1X3TA125	PDG1X3TA1256W	PDG1X3TA1253W	PDG1X3TS125	GCWTK
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Note: Pictures are for reference only.

Terminals

Maximum Breaker Amperes	Terminal Body Type	Wire Type	Wire Class	Number of Conductors per Phase	AWG Range per Conductor	Metric (mm ²) Range per Conductor	3-Pole Catalog Number	Included Accessories	Digit 14 Designation			
									Line and Load	Line Only	Load Only	Standard on Amperes
Standard Terminals												
125	Steel	Al or Cu	B, C	1	14-3/0	2.08-85	PDG1X3T125	—	J	K	L	15-125
Alternate Terminals												
125	Aluminum	Cu/Al	B, C	1	14-1/0	2.08-53.5	PDG1X3TA125	—	T	U	V	15-125
Multi-wire Terminals												
125	Aluminum	Cu/Al	B, C	6	14-6	2.08-13.3	PDG1X3TA1256W	Terminal shield	—	—	G	15-125
125	Aluminum	Cu/Al	B, C	3	14-2	2.08-33.6	PDG1X3TA1253W	Terminal shield	—	—	H	15-125
End Cap Kit/Screw Terminals												
—	—	—	—	—	—	—	PDG1X3TS125	—	S	D	E	15-125

Note: Wire capacity is based on standard imperial wire sizes; metric sizes provided in table are a direct conversion to demonstrate maximum capacity, not to denote metric wire sizes.

Control Wire Tabs

Use	Package Quantity	Catalog Number
15-125 A	12	GCWTK

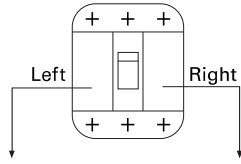
Note: Control wire tabs can be installed with terminals listed above.

Accessories

Internal Accessory Configurations—Frame Size 1^①

2

3- and 4-Pole Circuit Breakers



Tripping Accessory Options

None



Qty: 1



Qty: 1

Indicating Accessory Options

None

1 Make/1 Break Alarm Switch

2 Make/2 Break Alarm Switch

1A/1B Auxiliary Switch

2A/2B Auxiliary Switch

1A/1B Alarm, 1A/1B Auxiliary Combination

Alarm and Auxiliary Switches

Alarm and auxiliary switches are plug-and-play accessories designed to be field installable. However, Eaton also offers the service of field installation in our factories.

Breaker catalog numbers with alarm and auxiliary switch combinations require a complete 20-digit catalog number, adding the alarm and auxiliary switch functionality in digits 15–16 and adhering to the following conditions and tables:

- Digit 15 denotes the type of accessory(-ies) installed and the terminal types
- Digit 16 denotes number of switches installed
- If no other accessories are selected, use NNNN for the final 4 digits of the catalog number

Alarm and Auxiliary Switch—Field Installation Kits^②

	Auxiliary Switch	Catalog Number		
	Three-Pole	None	1NO/1NC (1 Form C)	2NO/2NC (2 Form C)
Alarm Switch	None	—	AUX1A1BPK	AUX2A2BPK
	1NO/1NC (1 Form C)	ALM1M1BEPK	AUXALRMEPK	—
	2NO/2NC (2 Form C)	ALM2M2BEPK	—	—

Alarm and Auxiliary Switch Factory Installation (Digits 15–16)^②

	Auxiliary Switch	Breaker Catalog Number (Digit 15–16 Suffix)		
	Three-Pole	None	1NO/1NC (1 Form C)	2NO/2NC (2 Form C)
Alarm Switch	None	NN	AC	A1
	1NO/1NC (1 Form C)	BC	CC	—
	2NO/2NC (2 Form C)	B1	—	—

Notes

- ^① 2-pole PD-1 breakers have an accessory pocket compatible with indicating accessory options only.
^② All options come with pigtail terminations.

Tripping Accessories—Frame Size 1**Shunt Trips**

Pigtail (29 in / 0.75 m) Voltage	Breaker Catalog Number Digit 17-18 Suffix	Catalog Number
12 Vdc	SH	SNT012CPK
24 Vac/Vdc	SN	SNT024CPK
48–60 Vdc	—	SNT4860CPK
110–125 Vdc	—	SNT125DPK
250 Vdc	—	SNT250DPK
48–60 Vac	—	SNT4860CPK
110–240 Vac	—	SNT120CPK
380–600 Vac	—	SNT480CPK

Undervoltage Releases

Pigtail (29 in / 0.75 m) Voltage	Breaker Catalog Number Digit 17-18 Suffix	Catalog Number
24 Vdc	UG	UVR024DPK
48 Vdc	UJ	UVR048DPK
60 Vdc	UK	UVR048DPK
125 Vdc	—	UVR125DPK
250 Vdc	UM	UVR250DPK
24 Vac	UF	UVR024APK
48 Vac	—	UVR048APK
60 Vac	—	UVR048APK
125 Vac	—	UVR120APK
240 Vac	UB	UVR240APK
480 Vac	—	UVR480APK
525 Vac	UD	UVR600APK
600 Vac	UE	UVR600APK

Handle Mechanisms—Frame Size 1**Universal Direct Rotary Handle Mechanism**

Description	NEMA 1/12 Black Handle Catalog Number	NEMA 1/12 Red Handle Catalog Number
With interlock	EHMCCBI	EHMCCRI
Without interlock	EHMCCB	EHMCCR

Variable Depth Rotary Handle Mechanism

Description	Catalog Number
Standard lockable handle with mechanism (black and gray) NEMA 1/3R/12/4/4X	PDG1XHMS
Emergency lockable handle with mechanism (red and yellow) NEMA 1/3R/12/4/4X	PDG1XHME
Mechanism only	EHMVDB
12-in (307 mm) handle mechanism shaft	PDG12XHMS307
20-in (507 mm) handle mechanism shaft	PDG12XHMS507
Standard NFPA79-compliant shaft handle (black and gray)	PDG12XH79S
Emergency NFPA79-compliant shaft handle (red and yellow)	PDG12XH79E

Flex Shaft Handle Mechanism

Cable Length (ft)	Metal Handle, NEMA 1/3R/12 Catalog Number	High Performance Handle, NEMA 1/3R/12 Catalog Number	Metal Handle, NEMA 4/4X Catalog Number	High Performance Handle, NEMA 4/4X Catalog Number
2	PDG1XFS02	PDG1XFS02HP	PDG1XFS02X	PDG1XFS02HPX
3	PDG1XFS03	PDG1XFS03HP	PDG1XFS03X	PDG1XFS03HPX
4	PDG1XFS04	PDG1XFS04HP	PDG1XFS04X	PDG1XFS04HPX
5	PDG1XFS05	PDG1XFS05HP	PDG1XFS05X	PDG1XFS05HPX
6	PDG1XFS06	PDG1XFS06HP	PDG1XFS06X	PDG1XFS06HPX
7	PDG1XFS07	PDG1XFS07HP	PDG1XFS07X	PDG1XFS07HPX
8	PDG1XFS08	PDG1XFS08HP	PDG1XFS08X	PDG1XFS08HPX
9	PDG1XFS09	PDG1XFS09HP	PDG1XFS09X	PDG1XFS09HPX
10	PDG1XFS10	PDG1XFS10HP	PDG1XFS10X	PDG1XFS10HPX

Flex Shaft Handle Auxiliary Switch

Description	Catalog Number
1A/1B, Early Break	AUX1EBFSEG

Accessories—Frame Size 1**External Accessories**

Description	Fit Type	Catalog Number
Padlockable handle lock, Snap-on	Center	PDG1XPLKSNAP
Padlockable handle lock hasp	Top	PDG1XPLKT
Padlockable handle lock hasp, OFF only	Top	PDG1XPLKTOFF
	Right	PDG1XPLKROFF
Padlockable handle block	On handle	PDG1XPHB
Padlockable handle block, OFF only	On handle	PDG1XPHBOFF
Walking beam interlock	Three-pole	PDG1XWBI3P
	Four-pole	PDG1XWBI4P
Slide bar interlock	Field	EFSBI
Electrical operator	110–240 Vac/Vdc	MOPEG240C
	24/48 Vdc	MOPEG48D
Plug-in adapter, breaker and base	Three-pole	PAD3E
	Four-pole	PAD4E
Plug-in block interlock replacement kit	Field	PIILEG
Wohner bus bar adapter	Field top	EG-BUS-T
	Field bottom	EG-BUS-B
Terminal covers	Three-pole	PDG1XTC3P
	Four-pole	PDG1XTC4P
Interphase barriers	2 barriers	PDG1XIB3P

DIN Rail Mounting

Description	Catalog Number
DIN rail adapter; single-pole	PDG1XDIN1P
Din rail adapter; two-, three- or four-pole	PDG1XDIN234P
DIN rail adapter; three- or four-pole	PDG1XDIN34P
Metal DIN rail adapter, three-pole	PDG1XDINM3P

Base Mounting Hardware

Description	Catalog Number
Single-pole metric	8703C80G11
Two-, three-, four-pole metric	8703C80G08
Single-pole English	8703C80G12
Two-, three-, four-pole English	BMHE

Note: Base mounting hardware is included with a circuit breaker or molded case switch.

Dimensions and Weights—Frame Size 1**Approximate Dimensions in Inches (mm)**

Number of Poles	Width	Height	Depth
1	1.0 (25.4)	5.5 (139.7)	2.99 (76.0)
2	2.0 (50.8)	5.5 (139.7)	2.99 (76.0)
3	3.0 (76.2)	5.5 (139.7)	2.99 (76.0)
4	4.0 (101.6)	5.5 (139.7)	2.99 (76.0)

Approximate Shipping Weight in lb (kg)

Breaker Type	1-Pole	2-Pole	3-Pole	4-Pole
PDG1 125 A	0.85 (0.39)	1.57 (0.71)	2.3 (1.04)	2.84 (1.29)