

PDU

400-500 kVA

Technical Specifications

Latest updates are available on the Schneider Electric website
12/2023



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Important Safety Instructions — SAVE THESE INSTRUCTIONS

Read these instructions carefully and look at the equipment to become familiar with it before trying to install, operate, service or maintain it. The following safety messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a “Danger” or “Warning” safety message indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages with this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in death or serious injury**.

Failure to follow these instructions will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in death or serious injury**.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in minor or moderate injury**.

Failure to follow these instructions can result in injury or equipment damage.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol shall not be used with this type of safety message.

Failure to follow these instructions can result in equipment damage.

Please Note

Electrical equipment should only be installed, operated, serviced, and maintained by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

FCC Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Safety Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All safety instructions in this document must be read, understood and followed.

Failure to follow these instructions will result in death or serious injury.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Read all instructions in this manual before installing or working on this product.

Failure to follow these instructions will result in death or serious injury.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not install the product until all construction work has been completed and the installation room has been cleaned.

Failure to follow these instructions will result in death or serious injury.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- The product must be installed according to the specifications and requirements as defined by Schneider Electric. It concerns in particular the external and internal protections (upstream breakers, battery breakers, cabling, etc.) and environmental requirements. No responsibility is assumed by Schneider Electric if these requirements are not respected.
- After the product has been electrically wired, do not start up the system. Start-up must only be performed by Schneider Electric.

Failure to follow these instructions will result in death or serious injury.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

The product must be installed according to local and national regulations. Install the product according to:

- NEC NFPA 70, **or**
- Canadian Electrical Code (C22.1, Part 1)

depending on which one of the standards apply in your local area.

Failure to follow these instructions will result in death or serious injury.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Install the product in a temperature controlled indoor environment free of conductive contaminants and humidity.
- Install the product on a non-flammable, level and solid surface (e.g. concrete) that can support the weight of the system.

Failure to follow these instructions will result in death or serious injury.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

The product is not designed for and must therefore not be installed in the following unusual operating environments:

- Damaging fumes
- Explosive mixtures of dust or gases, corrosive gases, or conductive or radiant heat from other sources
- Moisture, abrasive dust, steam or in an excessively damp environment
- Fungus, insects, vermin
- Salt-laden air or contaminated cooling refrigerant
- Pollution degree higher than 2 according to IEC 60664-1
- Exposure to abnormal vibrations, shocks, and tilting
- Exposure to direct sunlight, heat sources, or strong electromagnetic fields

Failure to follow these instructions will result in death or serious injury.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not drill or cut holes for cables or conduits with the gland plates installed and do not drill or cut holes in close proximity to the product.

Failure to follow these instructions will result in death or serious injury.

⚠ WARNING

HAZARD OF ARC FLASH

Do not make mechanical changes to the product (including removal of cabinet parts or drilling/cutting of holes) that are not described in this manual.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

NOTICE**RISK OF OVERHEATING**

Respect the space requirements around the product and do not cover the ventilation openings when the product is in operation.

Failure to follow these instructions can result in equipment damage.

Technical Data

Model List



400 kVA PDU

- 400 kVA PDU with aluminum transformer with limited configurable options (PMM400-ALAX)
- 400 kVA PDU with aluminum transformer with a wide range of configurable options (PMM400-ALA)
- 400 kVA PDU with copper transformer with a wide range of configurable options (PMM400-CUB)

500 kVA PDU

- 500 kVA PDU with aluminum transformer with limited configurable options (PMM500-ALAX)
- 500 kVA PDU with aluminum transformer with a wide range of configurable options (PMM500-ALA)
- 500 kVA PDU with copper transformer with a wide range of configurable options (PMM500-CUB)

System Overview

Overview of Model Options

Commercial reference		PMM500-ALAX	PMM400-ALAX	PM500-ALA	PM400-ALA	PM500-CUB PM400-CUB
Output voltage option	208 V	+	+	+	+	+
	216 V	+		+		
	400 V	+	+	+	+	
	415 V	+		+		
Branch breaker	Injection-tested breaker	+	+	+	+	+
	Standard breaker	+	+	+	+	+
Main input device	800 A switch	+	+	+	+	+
	800 A breaker	+	+	+	+	+
Main input device terminals	Mechanical lugs			+	+	+
	Compression lugs	+	+	+	+	+
Cable entry	Top	+	+	+	+	+
	Bottom	+	+	+	+	+
Main output breaker						+
Transformer thermoswitches	High temp alarm	+	+	+	+	+
	High temp trip			+	+	+
Default - EM4914A 14 channel monitoring		+	+	+	+	+
Output monitoring	EM3550			+	+	+
	PM5563			+	+	+
	PM8244			+	+	+

Overview of Model Options (Continued)

Commercial reference		PMM500-ALAX	PMM400-ALAX	PM500-ALA	PM400-ALA	PM500-CUB PM400-CUB
Input and output monitoring	EM3550 input and EM3550 output	+	+	+	+	+
	EM3550 input and PM5563 output			+	+	+
	PM5563 input and EM3550 output			+	+	+
	PM5563 input and PM5563 output			+	+	+
	EM3550 input and PM8244 output			+	+	+
Manual restart				+	+	+
Emergency power off button on PDU				+	+	+
Surge protective device	208 V	+	+	+	+	+
	400 V	+	+	+	+	

All options and configurations are selected on ordering and factory-installed to deliver a PDU that meets your requirements. See *Hardware Options*, page 22 for feature details.

Efficiency

Commercial reference	PMM400-ALAX PMM400-ALA	PMM400-CUB	PMM500-ALAX PMM500-ALA	PMM500-CUB
kVA	400	400	500	500
100% load	98.62%	98.76%	98.56%	98.74%

Facility Planning

Specifications

Input Specifications

Commercial reference	PMM400-ALAX PMM400-ALA PMM400-CUB	PMM500-ALAX PMM500-ALA PMM500-CUB
kVA	400	500
Connections	3-wire (3P + PE)	
Input voltage (V)	480	
Input current (A)	481	601
Frequency (Hz)	60	
Maximum short circuit rating	65 kA RMS symmetrical at 480 V	

Output Specifications

Commercial reference	PMM400-ALAX PMM400-ALA	PMM400-CUB	PMM500-ALAX PMM500-ALA	PMM500-CUB
kVA	400		500	
Connections	4-wire (3P + N + PE)			
Output voltage (V)	400 or 208	208	400 or 208 415 or 216	208
Output current (A)	1110 at 208 V 577 at 400 V	1110	1388 at 208 V 1336 at 216 V 722 at 400 V 696 at 415 V	1388
Frequency (Hz)	60			
Output current protection (A)	250-600			
Branch output (A)	250, 400, 600			

Recommended Upstream Protection

For PDU systems with a main input switch (MIS), an input breaker must be installed upstream of the PDU.

Commercial reference	PMM400-ALAX	PMM400-ALA	PMM400-CUB	PMM500-ALAX	PMM500-ALA	PMM500-CUB
kVA	400			500		
Upstream OCPD	PJX36080UXXX (I _r =504A max)			PJX36080UXXX (I _r =640A max)		

Recommended Cables Sizes

⚠ **DANGER**

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All wiring must comply with all applicable national and/or electrical codes.

- All field wiring connections to be made with UL listed wire connectors suitable for the size and type of wire involved.
- Conduit openings to be installed only in designated terminal compartment area.
- Equipment must be field grounded using equipment grounding conductors (EGC) sized in accordance with NEC based on the main input device (MID) maximum rating.

Failure to follow these instructions will result in death or serious injury.

Input and Output

Device	Main input device (MID)		Main output device (MOD)	
Type	3-pole, switch (MIS) for 400/500 kVA	3-pole, breaker (MIB) for 400/500 kVA	3-pole, breaker (MOB) for 400 kVA	3-pole, breaker (MOB) for 500 kVA
Rating	800 A, 600 V	800 A, 600 V at 80%	1200 A, 600 V at 100%	1600 A, 600 V at 100%
Brand	Square D by Schneider Electric			
Model	PJF36000S80	PJF36080U33A	RJF36120CU33A	RJF36160CU33A
(Standard) Mechanical terminal wire range (aluminum/copper)	3 x 3/0 AWG to 500 kcmil		NA	NA
Mechanical wire bending space	363.22 mm (14.3 in)		NA	NA
(Option) Compression terminal wire range (aluminum/copper)	2 x 250 kcmil, NEMA 2 hole (1/2 inch bolt) - wire bending space: 279.4 mm (11 in) 2 x 350 kcmil NEMA 2 hole (1/2 inch bolt) - wire bending space: 269.24 mm (10.6 in) 2 x 500 kcmil NEMA 2 hole (3/8 inch bolt) - wire bending space: 279.4 mm (11 in)		NA	NA

Branch Breaker

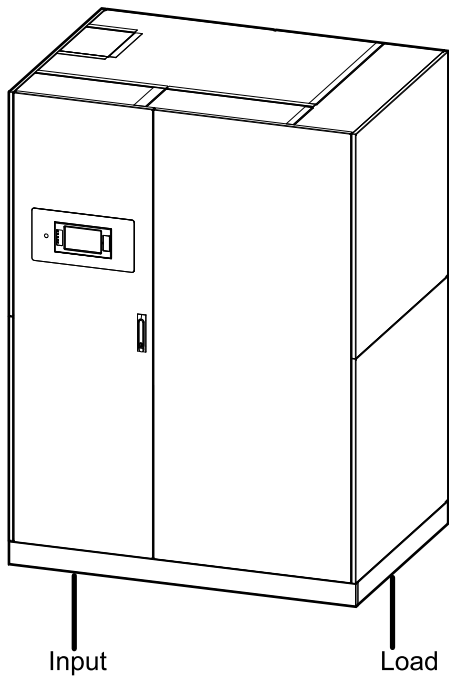
Rating	Branch breaker	Breaking capacity		Terminal wire range (aluminum/copper)	Wire bending space
		240 V	480 V		
250 A at 80%	JDA36250U33X	25 kA	18 kA	3/0 AWG to 350 kcmil	487.68 mm (19.2 in)
250 A at 100% ¹	JDA36250CU33X				
250 A at 80%	JGA36250U33X	65 kA	35 kA		
250 A at 100% ¹	JGA36250CU33X				
400 A at 100%	LGA36400CU33X	25 kA	18 kA	2 x 3/0 AWG to 500 kcmil	386.08 mm (15.2 in)
400 A at 80%	LDA36400U33X				
400 A at 80%	LDA36400U33X				
400 A at 100%	LDA36400CU33X				
600 A at 80%	LGA36600U33X	65 kA	35 kA		
600 A at 80%	LDA36600U33X	25 kA	18 kA		

1. Copper lugs for use with copper cables only.

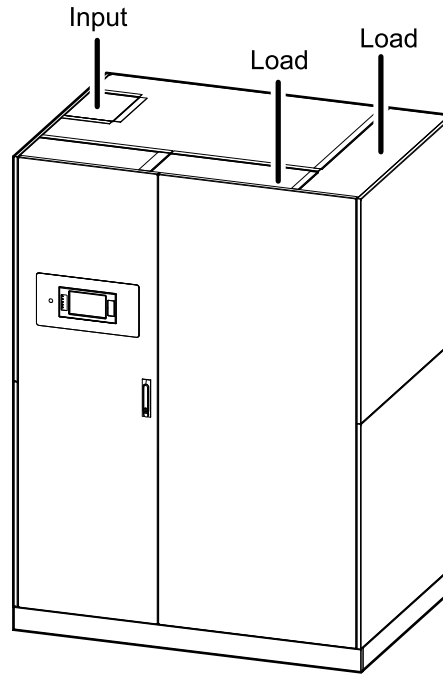
Conduit Area

Cable entry system	Conduit area mm (in)
Top cable entry incoming cables	321 x 212 (12.64 x 8.34)
Top cable entry outgoing cables (distribution)	200 x 957 (7.8 x 37.6)
Bottom cable entry incoming cables	127 x 280 (11 x 5)
Bottom cable entry outgoing cables (distribution)	181 x 934 (7.1 x 36.78)

Bottom Cable Entry System



Top Cable Entry System



Communication and Management

Local area network	100 Mps
Communication protocols	Modbus TCP/IP, Ethernet, RS485, SNMP, BACnet through additional gateway
Control panel	7-inch touchscreen display
Audible alarm	Yes
Emergency power off (EPO)	Yes
Connectivity	StruxureWare for data center operation

Physical

Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
PMM400-ALAX PMM400-ALA	2450 (5400)	2425 (95.5)	1860 (73.2)	1450 (57.1)
PMM400-CUB	2500 (5510)			
PMM500-ALAX PMM500-ALA	2550 (5620)			
PMM500-CUB	2600 (5730)			

Weights and Dimensions

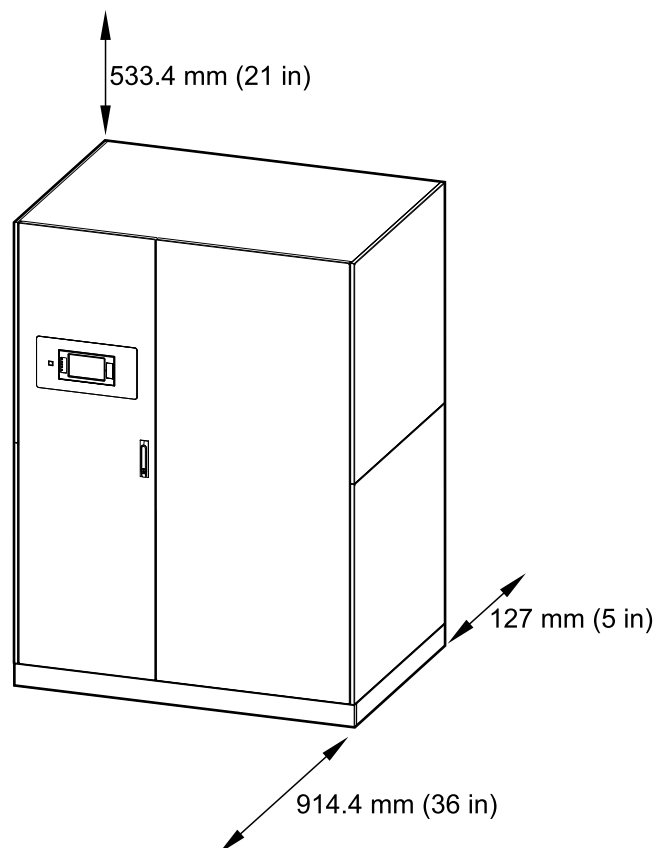
Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
PMM400-ALAX PMM400-ALA	2118.28 (4670)	2043.7 (80.46)	1524 (60)	1092.2 (43)
PMM400-CUB	2168.17 (4780)			
PMM500-ALAX PMM500-ALA	2218.17 (4890)			
PMM500-CUB	2268 (5000)			

Clearance

NOTE: Clearance dimensions are published for airflow and service access only. Consult with the local safety codes and standards for additional requirements in your local area.

NOTE: 914 mm (36 in) left side clearance is only required for non-routine transformer service such as transformer tap changes and main current transformer replacement. For routine operation and maintenance of the PDU, there is no side clearance required.

Front View of the PDU



Environment

	Operating	Storage
Temperature	-10 °C to 40 °C (14 °F to 104 °F)	-25 °C to 55 °C (-13 °F to 131 °F)
Relative humidity	10 to 70% non-condensing	10 to 90% non-condensing
Elevation	0 m to 2011 m (0 feet to 6600 feet) above sea level	152 m below to 7620 m above sea level (500 feet below to 25,000 feet above sea level)
Audible noise one meter (three feet) from unit	400 kVA: 60 dB 500 kVA: 60 dB	
Protection class	NEMA type 1, solid roof, external doors with inner dead front panels	
Cooling	Front and rear ventilation (top and bottom)	
Color	RAL 9003 white	
Accessibility	Front access for: <ul style="list-style-type: none"> • Display • Fuse panel • Communication and monitoring • Adding/replacing branch breakers 	

Heat Dissipation

Commercial reference	PMM400-ALAX PMM400-ALA	PMM400-CUB	PMM500-ALAX PMM500-ALA	PMM500-CUB
kVA	400		500	
Heat dissipation in BTU/hr	16018	14592	20616	18450

Compliance

Safety	UL 60950-1, 2nd Edition (Information Technology Equipment) CSA C22.2 No. 60950-1-07, 2nd Edition (Information Technology Equipment) UL 891, 11th Edition (Switchboard) C22.2 No. 244-05, First Edition (Switchboard)
EMC	FCC Part 15, Subpart B, Class A
Marking	cULus
Performance	Transformer DOE2016 / NRCan
Seismic preapproval	OSHPD

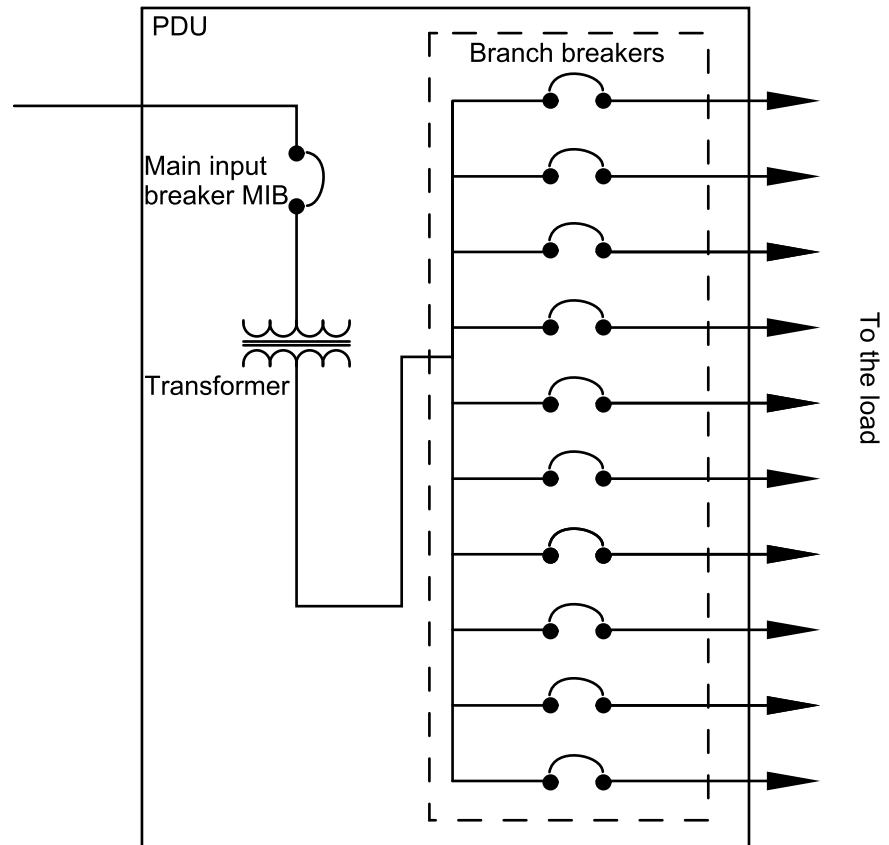
Drawings

NOTE: A comprehensive set of drawings is available on www.se.com.

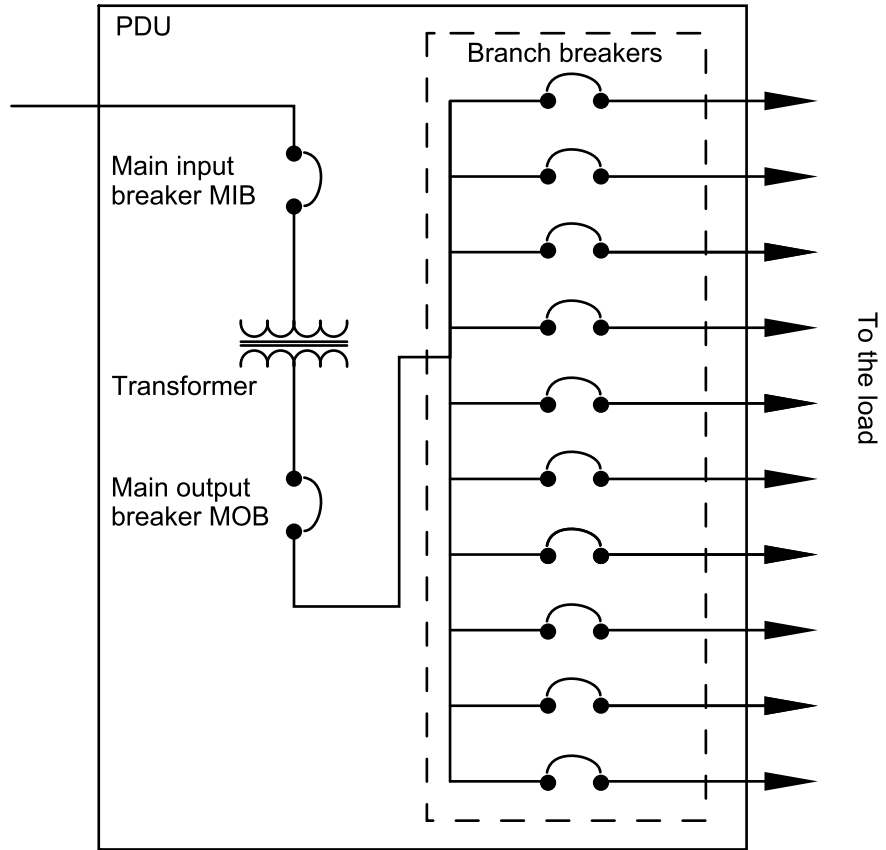
NOTE: These drawings are for reference ONLY – subject to change without notice.

One Line Diagrams

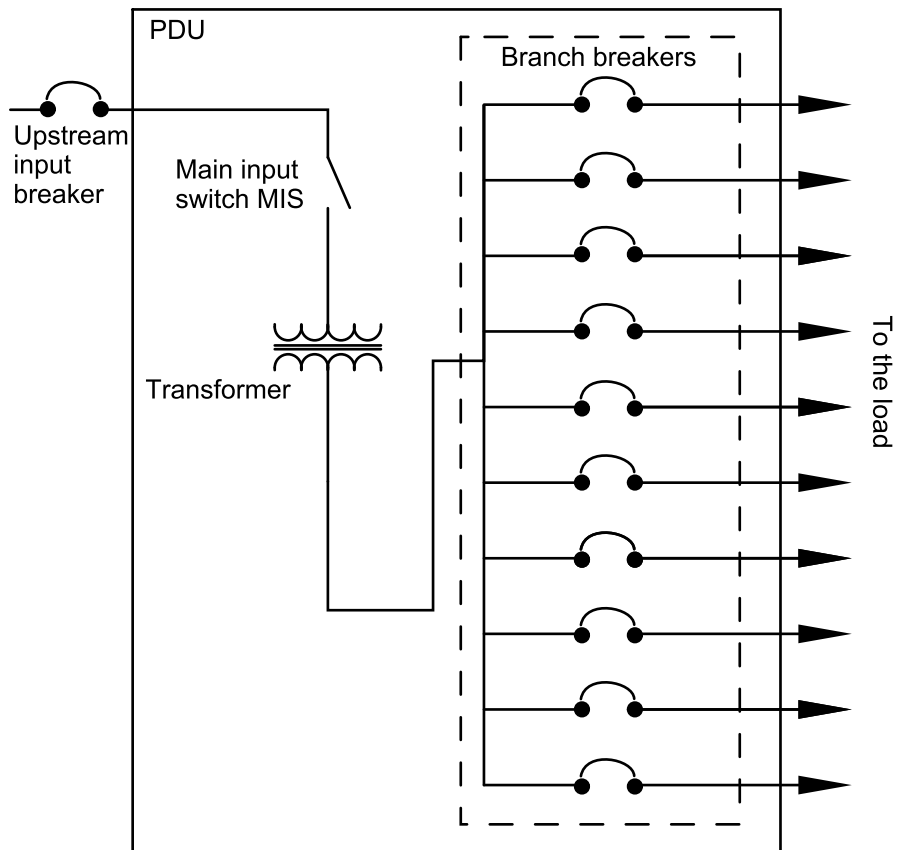
PDU with Main Input Breaker MIB



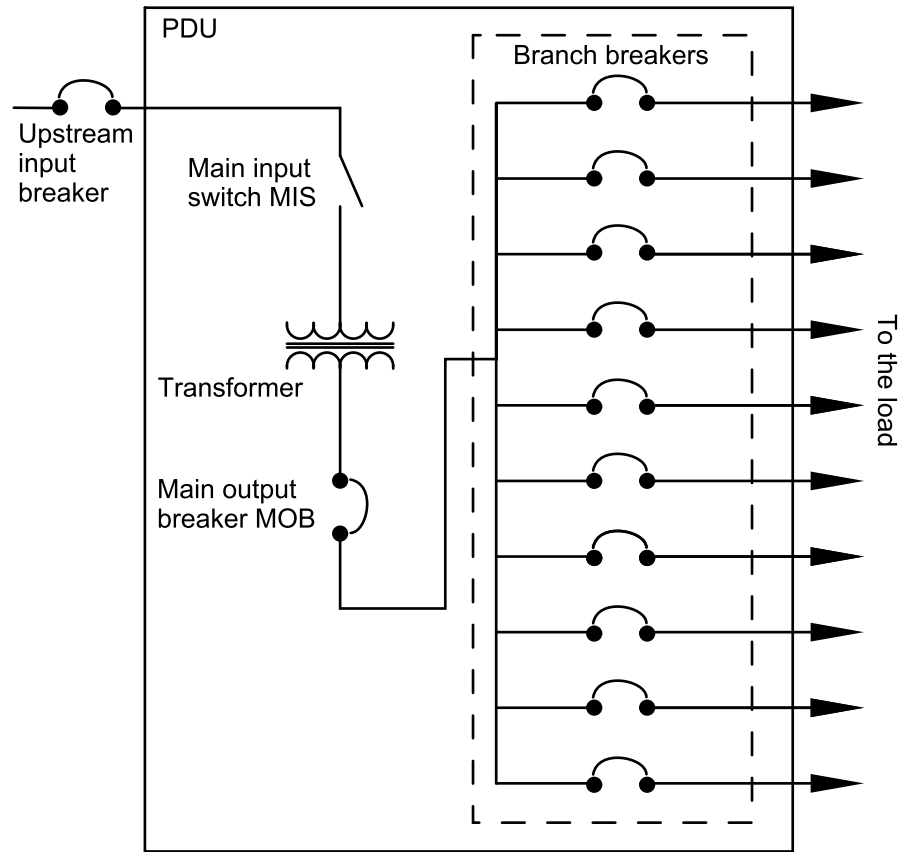
PDU with Main Input Breaker MIB and Main Output Breaker MOB



PDU with Main Input Switch MIS



PDU with Main Input Switch MIS and Main Output Breaker MOB



Options

Hardware Options

All options must be specified at the time of the original order for factory installation. Branch breakers can be field installed; contact your Schneider Electric certified service partner for further information.

Transformer

Transformer Specifications

Commercial reference	PMM400-ALAX (aluminum) PMM400-ALA (aluminum)	PMM400-CUB (copper)	PMM500-ALAX (aluminum) PMM500-ALA (aluminum)	PMM500-CUB (copper)
KVA	400		500	
Input voltage (V)	480 Delta			
Output voltage (V)	208/120 WYE or 400/230 WYE	208/120 WYE	208/120 WYE or 216/125 WYE or 400/230 WYE or 415/240 WYE	208/120 WYE
Frequency (Hz)	60			
Impedance	Minimum 3.4%		Minimum 4%	
K-factor	K9	K13	K9	K13
Conductor material	Aluminum	Copper	Aluminum	Copper
Taps	FCAN = Full capacity above normal (taps): 2.5%, 5.0% FCBN = Full capacity below normal (taps): 2.5%, 5.0%, 7.5%, 10%			
Temperature rise	150 °C			
Insulation class	220(R)			
Inrush	Not to exceed 10 times nominal RMS input current			
Vector	Delta - WYE			

Main Input Disconnection Device

Commercial reference	PMM400-ALAX	PMM400-ALA	PMM400-CUB	PMM500-ALAX	PMM500-ALA	PMM500-CUB
KVA	400			500		
Main input disconnection device	PJF36000S80 molded case switch	PJF36080U33A breaker 80% rated or PJF36000S80 molded case switch	PJF36080U33A breaker 80% rated or PJF36000S80 molded case switch	PJF36000S80 molded case switch	PJF36080U33A breaker 80% rated or PJF36000S80 molded case switch	PJF36080U33A breaker 80% rated or PJF36000S80 molded case switch
In setting	800	800	800	800	800	800
Ir setting	NA	504	504	NA	640	640
Optional terminals for compression NEMA 2 hole lug	2 x 250 kcmil (1/2 inch bolt) 2 x 350 kcmil (1/2 inch bolt) 2 x 500 kcmil (3/8 inch bolt)					

Branch Breakers

The I-Line panelboard allows the installation of 14 J-frame breakers or 10 L-frame breaker. Only 3-pole breakers are accepted. A combination between L and J frame breakers is acceptable.

- UL-listed L-frame breaker from Schneider Electric:
 - 400 A 80% rated breaker
 - 400 A 100% rated breaker
 - 600 A 80% rated breaker
- UL-listed J-frame breaker from Schneider Electric:
 - 250 A 80% rated breaker
 - 250 A 100% rated breaker

Rating	Branch breaker	Breaking capacity	
		240 V	480 V
250 A at 80%	JDA36250U33X	25 kA	18 kA
250 A at 100%	JDA36250CU33X	25 kA	18 kA
250 A at 80%	JGA36250U33X	65 kA	35 kA
250 A at 100%	JGA36250CU33X	65 kA	35 kA
400 A at 80%	LDA36400U33X	25 kA	18 kA
400 A at 100%	LDA36400CU33X	25 kA	18 kA
400 A at 80%	LGA36400U33X	65 kA	35 kA
400 A at 100%	LGA36400CU33X	65 kA	35 kA
600 A at 80%	LGA36600U33X	65 kA	35 kA
600 A at 80%	LDA36600U33X	25 kA	18 kA

Main Output Breaker

Commercial reference	PMM400-ALAX	PMM400-ALA	PMM400-CUB	PMM500-ALAX	PMM500-ALA	PMM500-CUB
kVA	400			500		
Main output breaker	NA	NA	RJF36120C-U33A, 100% rated	NA	NA	RJF36160C-U33A, 100% rated
In (A)	NA	NA	1200	NA	NA	1600
I _r (A) at 208 V	NA	NA	1200	NA	NA	1440
I _r (A) at 400 V	NA	NA	600	NA	NA	800

Power Meters

- PowerLogic energy meter EM3500 series
- PowerLogic multi-circuit meter EM4900 series
- PowerLogic power meter PM5500 series
- PowerLogic power meter PM8000 series

Meter	Main input	Main output	Distribution output	Accuracy	Data output
EM3500	Yes (optional)	Yes (default)	No	Class 0.5S	Standard
EM4914A	No	No	Yes (default)	Class 0.5	Standard
PM5563 (Advanced)	Yes (optional)	Yes (optional)	No	Class 0.2	Standard + power quality and THD available through meter ports
PM8244	Yes (optional)	Yes (optional)	No	Class 0.2	Standard + power quality and THD available through meter ports

Standard data output	Alarms
kWh energy consumption	Overvoltage
kW real power	Undervoltage
kVA apparent power	Overcurrent
Power factor total	Undercurrent
Voltage, L-L, average of three phases	Over kVA
Voltage, L-N, average of three phases	Under kVA
Current, average of three phases	Phase loss L1
kW real power, phase L1, L2, L3	Phase loss L2
Power factor, phase L1, L2, L3	Phase loss L3
Line-to-line voltage, phase L1-L2	Breaker trip indicator common for all branch breakers
Line-to-line voltage, phase L2-L3	
Line-to-line voltage, phase L1-L3	
Line-to-neutral voltage, phase L1-N	
Line-to-neutral voltage, phase L2-N	
Line-to-neutral voltage, phase L3-N	
Current, phase L1, L2, L3	
kW average	
kW minimum	
Frequency (measured from phase L1)	

Emergency Power Off (EPO)

- Emergency power off button (EPO) installed in the PDU
- Remote emergency power off device (REPO) installed in the PDU location

Transformer Thermoswitches

- Three U/R thermoswitches (195 °C trip)
- Three U/R thermoswitches (180 °C alarm)

Current Transformers

- 5 A split core 3090SCCT, Schneider Electric
- 0.33 V split core LVCT0XXXXXS, Schneider Electric

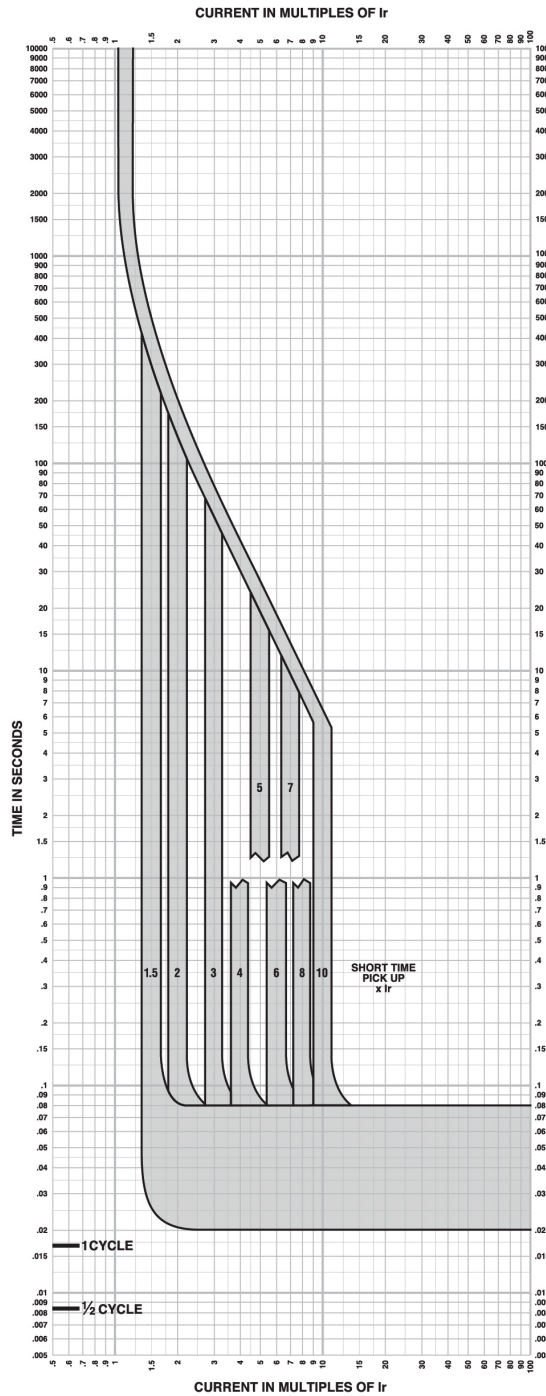
Surge Protective Device

- SurgeLogic Surge protective device for I-Line.

Service voltage	Peak surge current rating per phase	Catalog numbers
208/120 V, 3-phase, 4-wire + ground WYE	240 kA	HL2IMA24C
480/277 V, 3-phase, 4-wire + ground WYE	240 kA	HL4IMA24C

Branch Breaker Trip Curves

J-Frame Breakers 250 A



MICROLOGIC™ ELECTRONIC TRIP UNITS
 Micrologic™ 3.2S and 3.2S-W
 Long Time/Short Time Trip Curve
 250A J-Frame

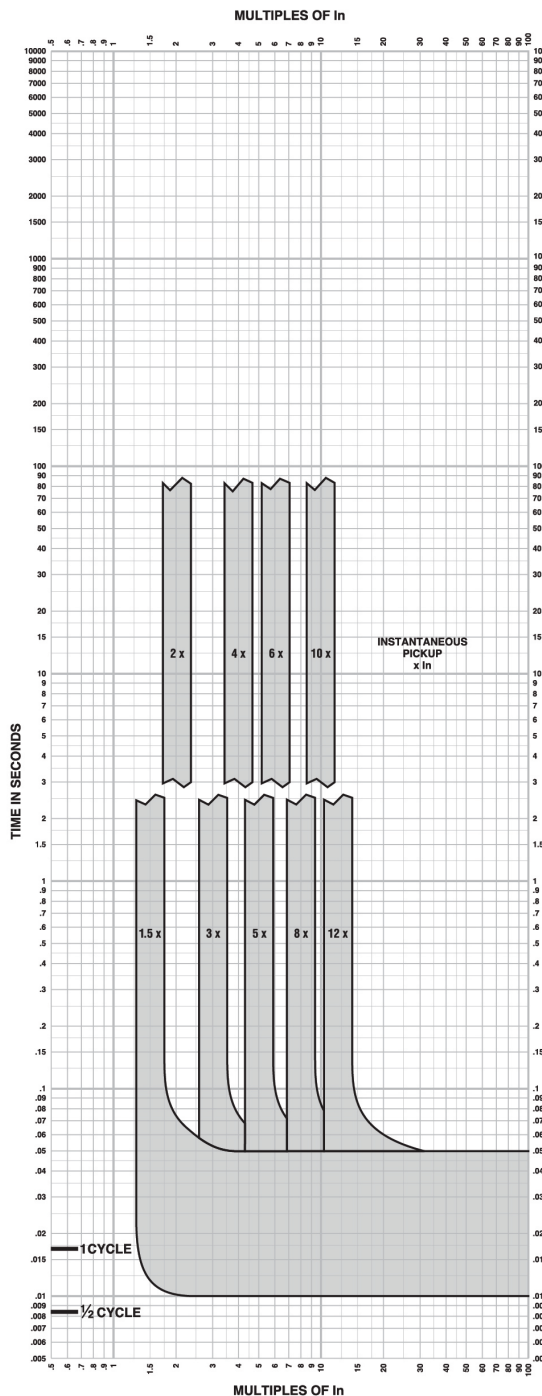
The time-current curve information is to be used for application and coordination purposes only.

Notes:

1. There is a thermal-imaging effect that can act to shorten the long-time delay. The thermal imaging effect comes into play if a current above the long-time delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in a shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately 20 minutes is required between overloads to completely reset thermal-imaging.
2. Total clearing times shown include the response times of the trip unit, the circuit breaker opening, and the extinction of the current.

Curves apply from -35°C to +70°C (-31°F to +158°F) ambient temperature.

J-Frame Breakers 250 A



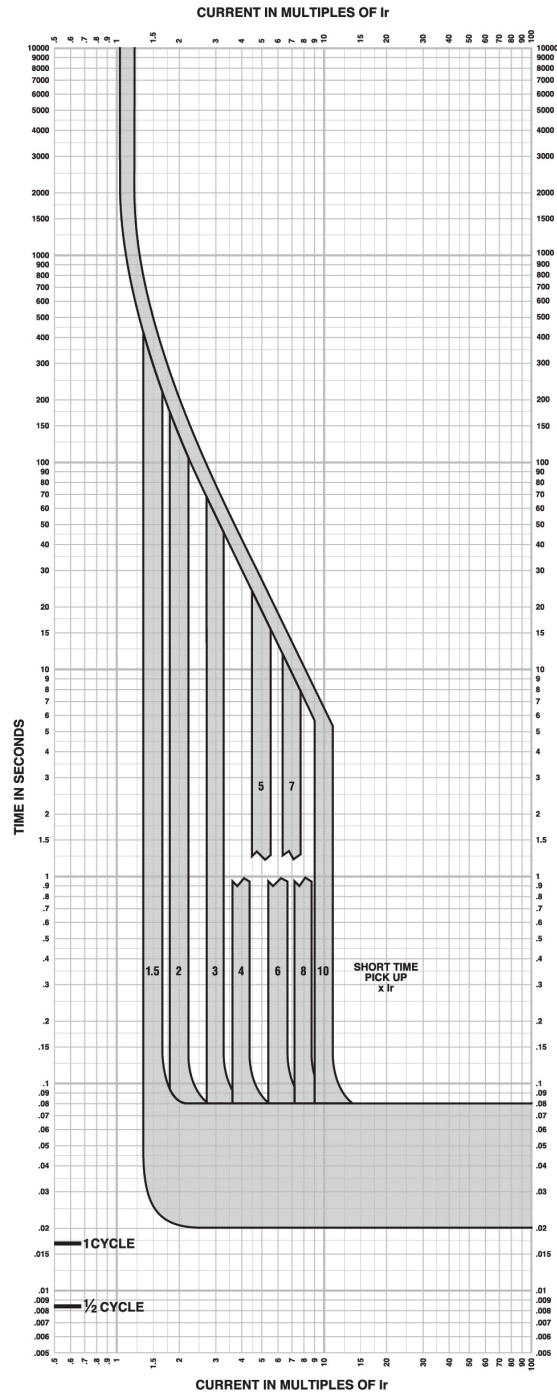
MICROLOGIC™ ELECTRONIC TRIP UNITS
 Micrologic™ 3.2, 3.2-W, 3.2S, 3.2S-W, 5.2A,
 5.2A-W, 5.2E, 5.2E-W, 6.2A, 6.2A-W,
 6.2E, and 6.2E-W
 Instantaneous Trip Curve
 250A J-Frame

The time-current curve information is to be used for application and coordination purposes only.

Notes:

1. There is a thermal-imaging effect that can act to shorten the long-time delay. The thermal imaging effect comes into play if a current above the long-time delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in a shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately 20 minutes is required between overloads to completely reset thermal-imaging.
 2. Total clearing times shown include the response times of the trip unit, the circuit breaker opening, and the extinction of the current.
 3. In = Maximum dial setting of Ir.
 250A J-Frame: In = 250A = Max Ir setting
- Curves apply from -35°C to +70°C (-31°F to +158°F) ambient temperature.

L-Frame Breakers 400 A



MICROLOGIC™ ELECTRONIC TRIP UNITS
 Micrologic™ 3.3S and 3.3S-W
 Long Time/Short Time Trip Curve
 250A, 400A L-Frame

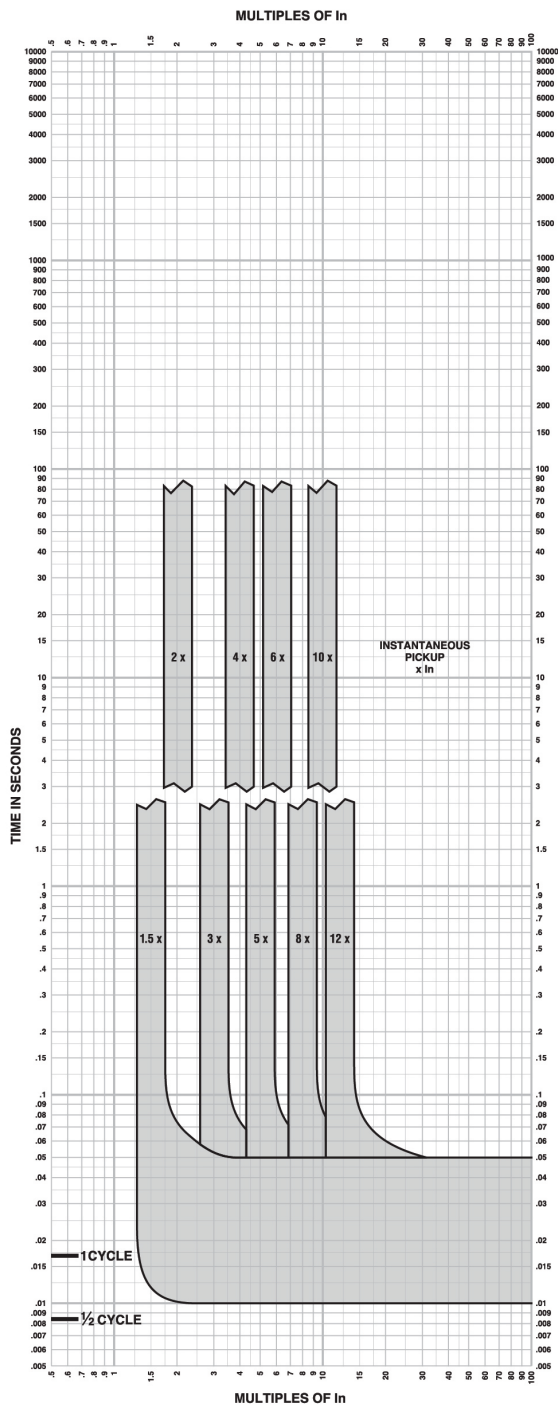
The time-current curve information is to be used for application and coordination purposes only.

Notes:

1. There is a thermal-imaging effect that can act to shorten the long-time delay. The thermal imaging effect comes into play if a current above the long-time delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in a shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately 20 minutes is required between overloads to completely reset thermal-imaging.
2. Total clearing times shown include the response times of the trip unit, the circuit breaker opening, and the extinction of the current.

Curves apply from -35°C to +70°C (-31°F to +158°F) ambient temperature.

L-Frame Breakers 400 A



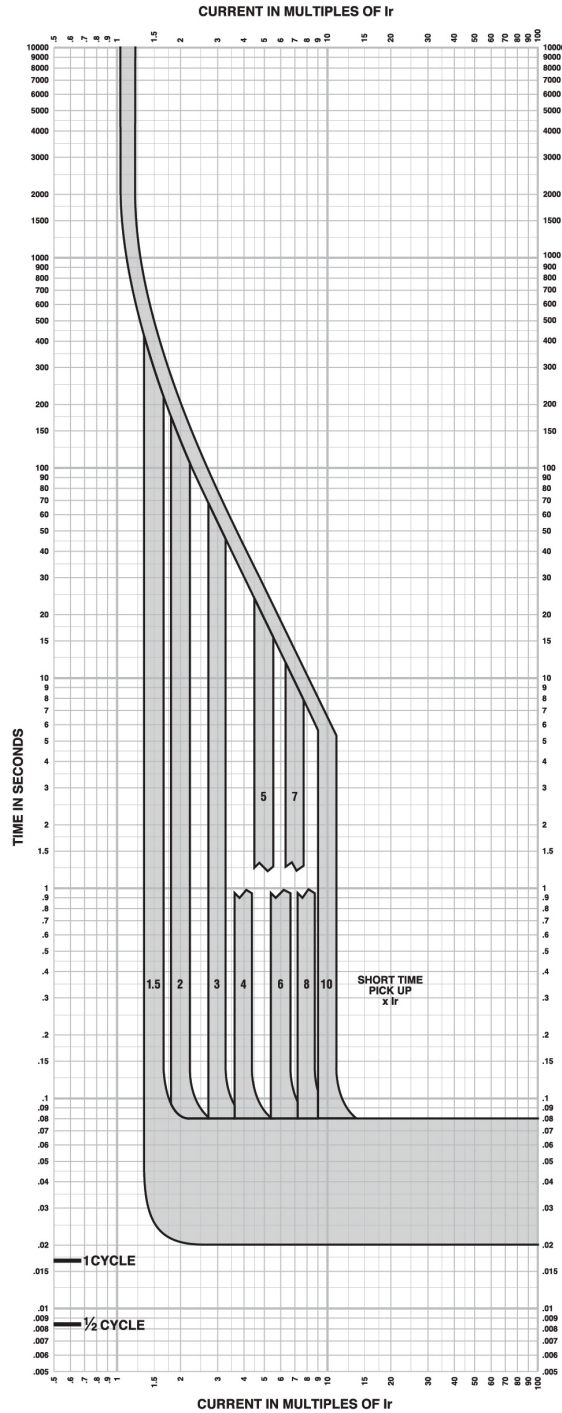
MICROLOGIC™ ELECTRONIC TRIP UNITS
 Micrologic™ 3.3, 3.3-W, 3.3S, 3.3S-W,
 5.3A, 5.3A-W, 5.3E, 5.3E-W, 6.3A, 6.3A-W,
 6.3E, and 6.3E-W
 Instantaneous Trip Curve
 400A L-Frame

The time-current curve information is to be used for application and coordination purposes only.

Notes:

1. There is a thermal-imaging effect that can act to shorten the long-time delay. The thermal imaging effect comes into play if a current above the long-time delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in a shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately 20 minutes is required between overloads to completely reset thermal-imaging.
 2. Total clearing times shown include the response times of the trip unit, the circuit breaker opening, and the extinction of the current.
 3. In = Maximum dial setting of Ir.
 400A L-Frame: In = 400A = Max Ir setting
- Curves apply from -35°C to +70°C (-31°F to +158°F) ambient temperature.

L-Frame Breakers 600 A



MICROLOGIC™ ELECTRONIC TRIP UNITS
 Micrologic™ 3.3S and 3.3S-W
 Long Time/Short Time Trip Curve
 600A L-Frame

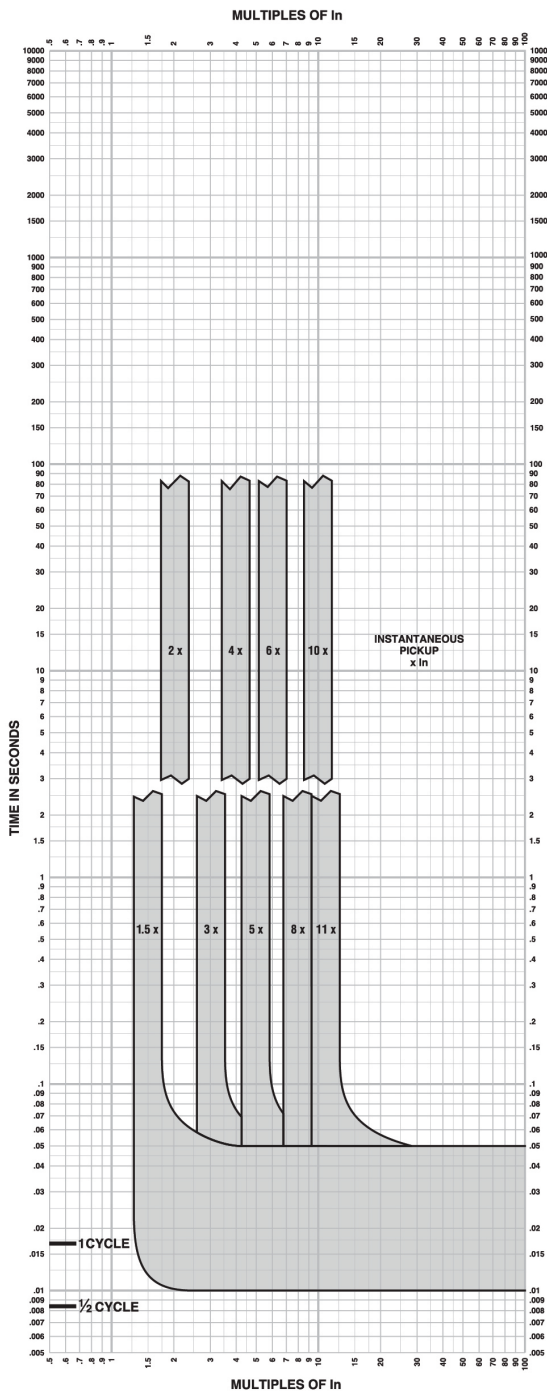
The time-current curve information is to be used for application and coordination purposes only.

Notes:

1. There is a thermal-imaging effect that can act to shorten the long-time delay. The thermal imaging effect comes into play if a current above the long-time delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in a shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately 20 minutes is required between overloads to completely reset thermal-imaging.
2. Total clearing times shown include the response times of the trip unit, the circuit breaker opening, and the extinction of the current.

Curves apply from -35°C to +70°C (-31°F to +158°F) ambient temperature.

L-Frame Breakers 600 A



MICROLOGIC™ ELECTRONIC TRIP UNITS
 Micrologic™ 3.3, 3.3-W, 3.3S, 3.3S-W,
 5.3A, 5.3A-W, 5.3E, 5.3E-W, 6.3A, 6.3A-W,
 6.3E, and 6.3E-W
 Instantaneous Trip Curve
 600A L-Frame

The time-current curve information is to be used for application and coordination purposes only.

Notes:

1. There is a thermal-imaging effect that can act to shorten the long-time delay. The thermal imaging effect comes into play if a current above the long-time delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in a shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately 20 minutes is required between overloads to completely reset thermal-imaging.

2. Total clearing times shown include the response times of the trip unit, the circuit breaker opening, and the extinction of the current.

3. In = Maximum dial setting of Ir.
 600A L-Frame: In = 600A = Max Ir setting

Curves apply from -35°C to +70°C (-31°F to +158°F) ambient temperature.

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