

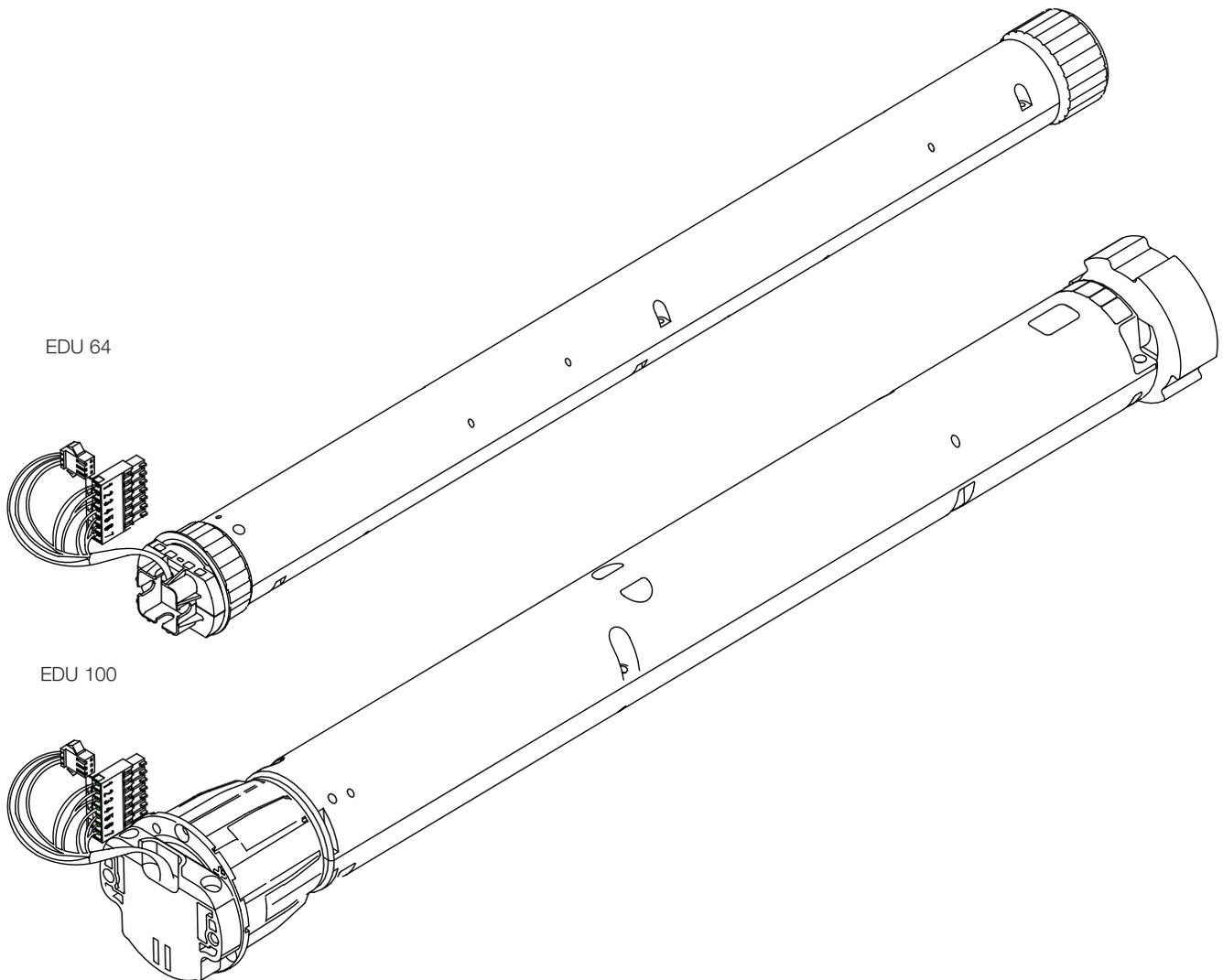
Appendix 3:

Electrical Cut Sheets: Transformers, Panelboards,
Lighting Control Systems

QED INTERIOR SHADE MOTOR

electrical | electronic drive unit

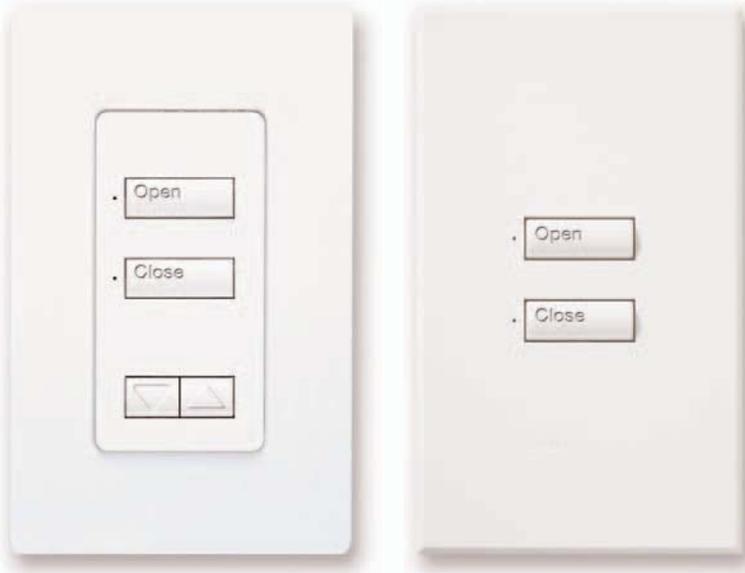
- Ultra-quiet operation: will not exceed 44dBA measured 3 feet from the EDU.
- Smooth, silent starts and stops.
- Integrates with Lutron lighting control systems and other a/v equipment.
- Integrates with most outside systems such as home security or time clocks, without the use of external group controls or relay systems.
- Provides ten year power failure memory.
- Monitors shade position at all times.
- 24 VAC low-voltage power allows Sivoia QED to be installed by low-voltage contractors.
- Shades smoothly move in unison and stop in exact alignment within $\pm 1/8$ " accuracy.
- Optional infrared system provides easy, convenient control from anywhere in the room.



ELECTRICAL COMPONENTS

electrical | keypad faceplate styles

Architectural



- available in insert and non-insert models
- sharp outside corners and beveled outside edges
- available in matte plastic colors and metal finishes
- product dimensions
W: 2.75"
H: 4.56"
D: 1.13"

Designer



- available in insert models only
- standard “decorator” opening
- outside corners of wallplate are rounded
- available in gloss and satin finishes
- product dimensions
W: 2.94"
H: 4.69"
D: 1.13"

For a full presentation of colors, finishes, and keypad styles, please visit www.lutron.com or order the colors of Lutron brochure, P/N 367-949.

electrical keypad button layouts

All keypads control either a single EDU or a group of EDU's operating together. They require a wallbox for single or multi-gang installation.



SVQ-2W-
Full open, full close



SVQ-3W-
Full open, full close, one preset



SVQ-2WRL-
Full open, full close, raise and lower



SVQ-3WRL-
Full open, full close, one preset, and raise and lower

electrical | keypad button layouts

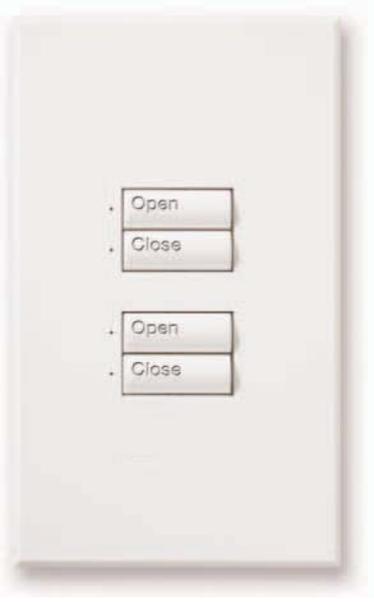
ELECTRICAL COMPONENTS



SVQ-4WRL-IR-
Full open, full close, two presets, infrared reception, and raise and lower



SVQ-5WRL-
Full open, three presets, full close, and raise and lower



SVQ-2WD-
Full open and full close for two separate groups



SVQ-3WD-
Full open, full close, and one preset for two separate groups

electrical | hand-held infrared remotes

Sivoia QED remotes can control one EDU or a group of EDUs acting together. They ship with AAA alkaline batteries. Use only one infrared receiver per room.

ELECTRICAL COMPONENTS



SVQ-OCIT-WH
Full open, full close and fine-tune raise and lower



SVQ-3PIT-WH
Full open, three presets, full close and fine-tune raise and lower



SVQ-4GD-OCIT-WH
Control individual EDUs or up to four groups of EDUs. Ideal for dual-mounted applications. (see page 2.6)



SVQ-4S2G-IT-WH
Control both Sivoia QED EDUs and Lutron lighting control systems. Ideal for home theater or conference room applications.

electrical transformer panel



SVQ-10-PNL

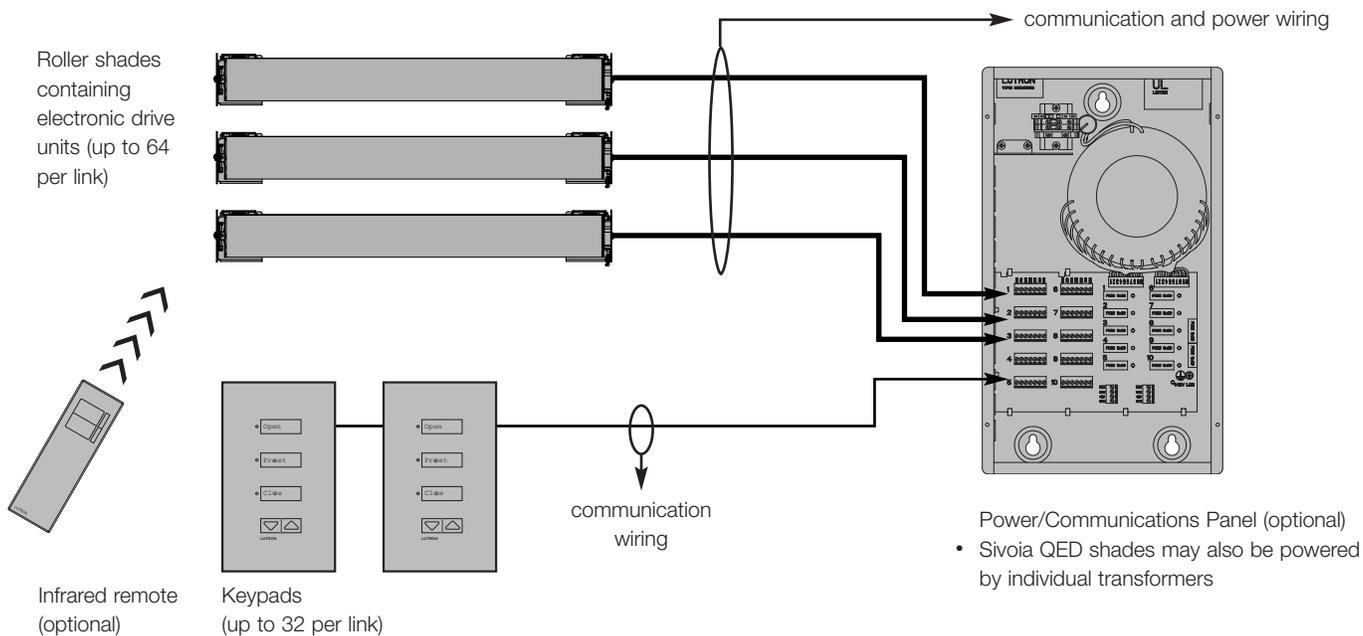
Simplify the wiring and organize installations that require multiple transformers. The power panel consists of a 10-output transformer, 10 fuses and a wire landing board.

Each panel has 10-7 pin connectors for EDUs, each connector is supplied with power for an individual EDU. The panel contains a bus that connects the four communication link wires from each EDU together. It is recommended to home run both EDU and keypad wiring to the power panel.

Note: Maximum feed breaker size of 30 Amps. Each terminal block will accept one 10-18 AWG wire. Power panels must be grounded for safe operation and installed by a licensed electrician adhering to all local and national codes.

Please see the chart on page 3.12 for specific gauges and limitations.

Typical components for a Sivoia QED roller shade system (not shown to scale)

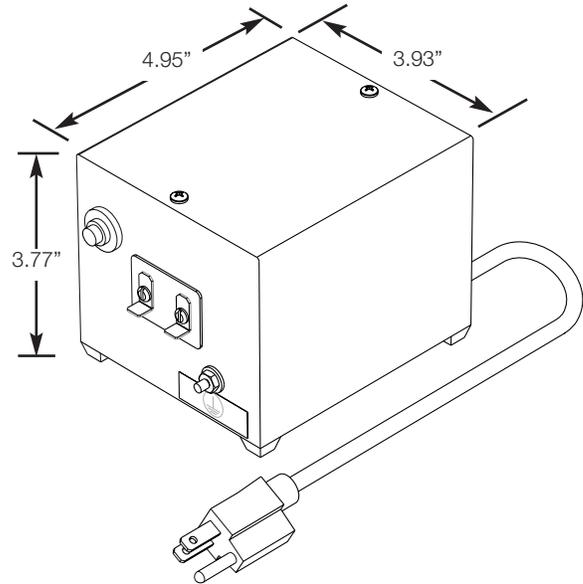
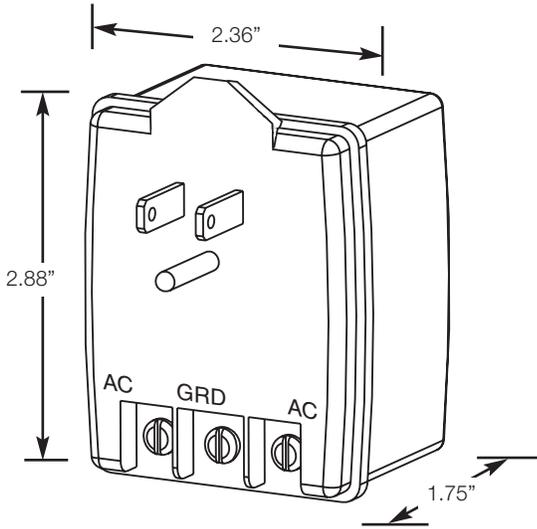


Note: CCI (Contact Closure Input) panels are available to connect to outside systems such as BMS (Building Management Systems) or touchscreen systems. See page 1.6

electrical | individual transformers

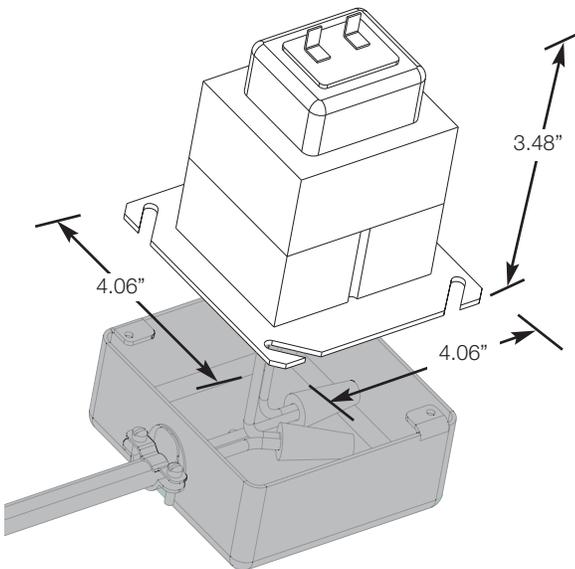
Determining which transformer to use depends upon the size of the shade the EDU needs to operate. For up to 50 square feet of fabric, the 50VA transformer is sufficient. For Sivoia QED treatments up to 225 square feet, either of the 100VA transformers can be used.

Note: There is no paralleling of transformer wiring. One transformer may only power one EDU. All transformers must be earth-grounded.



SV-50SF-PI
50VA plug-in transformer for up to 50 square feet of fabric.

SV-100SF-PI
100VA plug-in transformer for up to 225 square feet of fabric.



SV-100SF-JBOX
100VA junction-box mount transformer for up to 225 square feet of fabric.

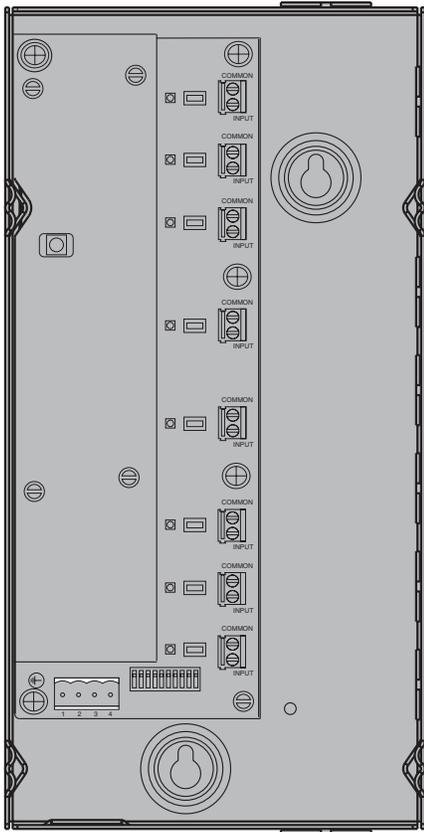
TRANSFORMER CAPACITY

TYPE	CURRENT PER TRANSFORMER	TRANSFORMERS PER 15A CIRCUIT
SV-50SF-PI 44	.45A	36
SV-100SF-PI 23	.85A	17
SV-100SF-JBOX 23	.85A	17
SVQ-10-PNL* 2 PANELS	8A/PANEL	1 PANEL

*Ten EDUs per transformer panel, each EDU must be wired to a dedicated transformer

ELECTRICAL COMPONENTS

electrical | contact closure input board



SVQ-CCI-8

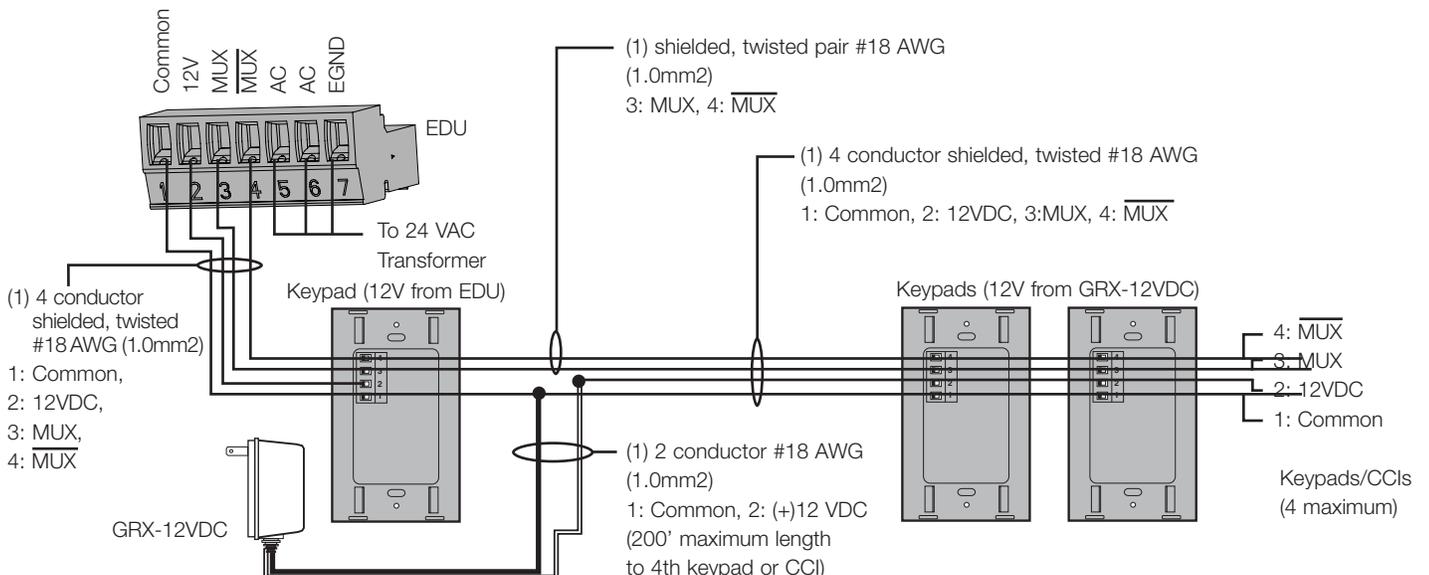
- Receives eight contact closure inputs and sets presets, programs EDUs, etc.
- Utilizes low-voltage, dry contact closure inputs to interface with non-Lutron A/V equipment.
- LEDs provide feedback and receives IR commands.
- Receives power and communication on 4-wire QED communication bus.
- Ships in enclosure, ready for mounting.
- Dimensions for enclosure
W: 5.25" (5.75" with cover)
H: 10.25" (10.75" with cover)
D: 2.00"
- Terminal Blocks Accomodate 14-22 AWG wire.
- Can be configured to operate 1, 2, or 4 groups.

electrical | external keypad power supply

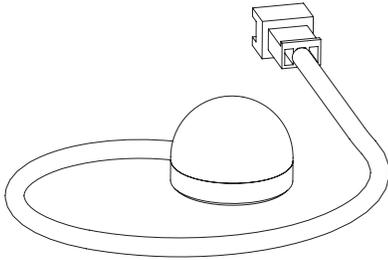
GRX-12VDC

The number of keypads and CCIs in a Sivoia QED system is not to exceed the number of EDUs unless an external keypad power supply is used.

The GRX-12VDC can be used to power up to four additional keypads or CCIs beyond the number of EDUs in the system. For more, please see the app note on www.lutron.com.



electrical | optional infrared receivers

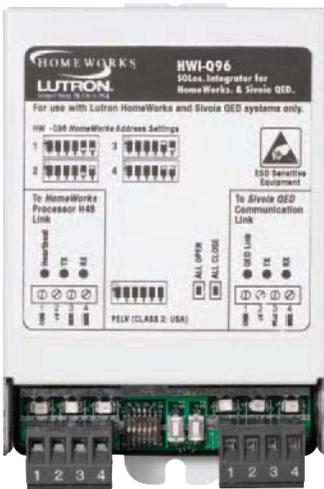


Any Sivoia QED drive has built-in infrared capability simply plug in a remote infrared receiver. It is a small 1.0" wide dome connected to the EDU by a thin 22.0" cable. Extensions of ten-foot lengths are available if the layout requires the receiver eye to be located further from the EDU. Unobtrusive mounting clips and adhesive tape are also provided.

SV-IR

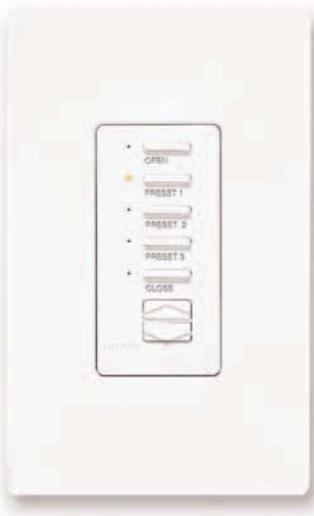
Infrared remote eye, available in white and royal plum

electrical | integration accessories



**HomeWorks® Whole-Home Lighting Control System
HWI-Q96 SOLos™ integrator**

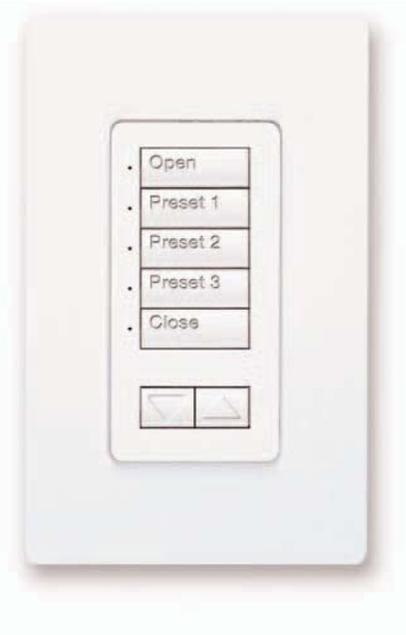
- This low-voltage component provides two-way communication between HomeWorks and Sivoia QED systems
- Can be placed in any HomeWorks HWI-LV-17, HWI-LV-24, or HWI-LV-32 enclosures and is compatible with 4 series and 8 series HomeWorks processors
- Operate all EDUs, groups of EDUs, or single EDUs from HomeWorks Keypads or RS-232 port on HWI processor.
- For wiring information, see page 4.2



**RadioRA® Whole-Home Lighting Control System
RA-SVC**

- Receives signal from RadioRA control system and operates all EDUs on the communication link.
- Must be installed within 30 feet of signal repeater.
- For wiring information, see page 4.11

electrical | integration accessories



**GRAFIK 3000/4000 Lighting Control Systems
SG-SVC**

- Provides two-way communication between Sivoia QED and GRAFIK 3000 or GRAFIK 4000 lighting control system.
- Allow one zone on the Grafik Eye main unit for each SG-SVC.
- Does not occupy a GRX main unit address or accessory control address.
- Operates all Sivoia QED EDUs on the communication link.
- Available in decorator and architectural insert styles.
- For wiring information, see page 4.4



**GRAFIK 5000/6000/7000 Lighting Control Systems
SO-SVC**

- Provides two-way communication between Sivoia QED and GRAFIK 5000, 6000 or 7000 lighting control system.
- Occupies one address on wallstation link.
- Operates all QED EDUs on the communication link.
- Available in decorator and architectural insert styles.
- For wiring information, see page 4.9

GP Dimming Panels
120-127 / 277 Volt

GRAFIK EYE DIMMING PANELS



GP Dimming Panels provide power and dimming for up to 144 load circuits and control any light source, including full-conduction non-dim.

Models available with:

- 120-127 V and 277 V input power.
- 3 to 144 circuits.
- Different feed types and breakers.

GP Dimming Panels work with:

- GRAFIK Eye 4000 Control Units.
- GRAFIK 5000™, GRAFIK 6000®, and GRAFIK 7000® Systems.
- LP Dimming Panels.
- XP Softswitch™ Panels.
- DMX512 dimming systems via the 2LINK™ option.



GP36 Large-Size Panels



GP48-144 Large-Size Panels

Job Name: <input style="width: 95%;" type="text"/>	Model Numbers: <input style="width: 60%;" type="text"/> <input style="width: 35%;" type="text"/>
Job Number: <input style="width: 80%;" type="text"/>	<input style="width: 60%;" type="text"/> <input style="width: 35%;" type="text"/>

GRAFIK EYE WALL STATION CONTROL

GRX-4000 Control Units

Cover (shown open)



Preset Controls

- 4 preset lighting scenes and off for up to 24 zones, accessible from Control Unit faceplate.
- 12 additional scenes stored in Control Unit, accessible via Wallstations and/or Control Interfaces.
- Light levels fade smoothly between scenes. Fade time: 0-59 seconds or 1-60 minutes. Can be set differently for each scene.

Key Design Features

- Meets IEC 801-2. Tested to withstand 15kV electrostatic discharge without damage or memory loss.
- Provides power failure memory: Automatically restores lighting to scene selected prior to power interruption.
- Has faceplate that snaps on with no visible means of attachment.

System Communications and Capacities
Low-voltage type Class 2 (PELV) wiring connects Control Units, Wallstations, and Control Interfaces:

- You can link up to 8 Control Units to control up to 64 zones.
- You can add up to 16 total Wallstations and Control Interfaces for a total of 24 control points.

Environment

- 32-104°F (0-40°C). Relative humidity less than 90% non-condensing.

DESCRIPTION

- Provide pushbutton recall of four preset lighting scenes.
- Control virtually any light source.
- Provide lockout options to prevent accidental changes.
- Include built-in infrared receiver for operation with an optional remote control.

Models available to:

- Control two to 24 zones of lighting.
- Provide easy setup of preset lighting scenes:
GRX-4100 Control Units provide standard setup via pushbuttons on the Control Unit.
GRX-4500 Control Units provide optional setup via a PC, including setting lighting levels in 1% increments.

GRX-4000 Control Units work with:

- GRAFIK Eye Wallstations
- GP and LP Dimming Panels
- XP Softswitch™ Panels

SPECIFICATIONS

Operating Voltage

- Low-voltage type Class 2 (PELV), 12VDC to 24VFW.
- Lightning Strike Protection: Meets ANSI/IEEE standard 62.41-1980. Can withstand voltage surges of up to 6000V and current surges up to 3000A.

Sources/Load Types

Operates sources with a smooth continuous Square Law dimming curve or on a full conduction non-dim basis via GP and LP Dimming Panels and XP Softswitch™ Panels.

JOB NAME:	MODEL NUMBERS:	
<input type="text"/>	<input type="text"/>	<input type="text"/>
JOB NUMBER:	<input type="text"/>	<input type="text"/>

Type PRL5P

Product Description

- 600V AC maximum (250V DC).
- 3-phase 4-wire, 3-phase 3-wire, 1-phase 3-wire.
- 1200 ampere maximum mains.
- 1200 ampere maximum branch devices.
- Plug-on branch devices.
- Factory assembled.
- Refer to **Pages 14-3** and **14-49** for additional information.



Type PRL5P

Application Description

- Power distribution panelboard.
- Fully rated or series rated.
- Interrupting ratings up to 200 kA symmetrical.
- Suitable for use as Service Entrance Equipment, when specified on the order.
- See **Pages 14-3** through **14-16** for additional information.

Standards and Certifications

- UL 67, UL 50.
- Federal Specification W-P-115c.
- Refer to **Page 14-3** for additional information.

Options and Accessories

- Refer to **Page 14-54**.

Layout and Sizing

- Refer to **Page 14-53**.

Product Selection

Panelboard Selection and Layout

Select either single-row or double-row bus chassis. Single-row bus chassis — maximum 800 ampere main breaker or main lug only. Select main device and “X” space from **Table 14-98**. Select branch devices and corresponding “X” space from **Tables 14-99** through **14-102**.

Refer to layout data on **Tables 14-103** and **14-104**. Make a layout sketch of the main and branch devices utilizing either a single-row or double-row bus chassis indicating the “X” space for each device. The maximum total “X” space cannot exceed 40X for any panelboard. Should more than 40X be required, add the appropriate through-feed lug adapter or breaker to feed an additional panelboard.

Formula Pricing: Base Price + Branch Devices + Modifications = Total Price U.S. \$

Table 14-98. Base Prices — PRL5P

Main Ampere Rating	Interrupting Rating (kA Symmetrical)				Main Device Type	Main “X” Space	Price U.S. \$		
	240V AC	480V AC	600V AC	250V DC			3Ph 4W	1Ph 3W	3Ph 3W

Main Lug Only Single-Row Bus

400	—	—	—	—	Lug	8X	1,864.	1,481.	1,640.
600	—	—	—	—	Lug	8X	2,125.	1,698.	1,807.
800	—	—	—	—	Lug	8X	2,527.	1,922.	2,148.

Main Lug Only Double-Row Bus

800	—	—	—	—	Lug	7X	3,384.	2,736.	2,978.
1200	—	—	—	—	Lug	7X	4,296.	3,528.	3,754.

Main Breaker Single-Row Bus

400	65	—	—	10	DK	4X	5,959.	5,142.	5,633.
400	65	35	25	10	KD	4X	6,132.	5,142.	5,810.
400	100	65	35	22	HKD	4X	8,448.	7,666.	8,271.
400	200	100	50	22	KDC	4X	11,439.	9,125.	11,143.
600	35	35	25	22	LD	6X	9,230.	7,778.	8,770.
600	100	65	35	25	HLD	6X	15,395.	12,891.	14,762.
600	200	100	35	25	LDC	6X	17,206.	14,305.	16,500.
800	65	50	25	22	MDL	6X	12,693.	10,570.	12,052.
800	100	65	35	25	HMDL	6X	15,970.	13,422.	15,201.

Main Breaker Double-Row Bus

800	65	50	25	22	MDL	6X	13,369.	11,246.	12,729.
800	100	65	35	25	HMDL	6X	16,820.	14,057.	15,911.
1200	65	50	25	—	ND	6X	20,772.	17,355.	20,000.
1200	100	65	35	—	HND	6X	22,639.	19,037.	21,760.
1200	200	100	35	—	NDC	6X	25,931.	21,637.	24,923.

Note: Includes aluminum bus chassis, box, trim, main and neutral (if required).

Type PRL5P

Table 14-102. Branch Devices — Dual Breaker Adapters — PRL5P

Ampere Rating	Interrupting Rating (kA Symmetrical)				Breaker Type	"X" Space	Price U.S. \$		Price U.S. \$ Space Only	
	240V AC	480V AC	600V AC	250V DC			2-Pole	3-Pole	2-Pole	3-Pole
100 – 225	65	—	—	—	ED	3X	924.	1,240.	99.	148.
100 – 225	100	—	—	—	EDH	3X	1,205.	1,652.	99.	148.
100 – 225	200	—	—	—	EDC	3X	1,649.	2,196.	99.	148.
15 – 60	18	14	—	10	EHD	3X	591.	702.	99.	148.
70 – 100	18	14	—	10	EHD	3X	684.	831.	99.	148.
15 – 60	65	35	18	10	FD	3X	959.	1,132.	99.	148.
70 – 100	65	35	18	10	FD	3X	1,095.	1,283.	99.	148.
110 – 225	65	35	18	10	FD	3X	1,812.	2,069.	99.	148.
15 – 60	100	65	25	22	HFD	3X	1,215.	1,577.	99.	148.
70 – 100	100	65	25	22	HFD	3X	1,561.	1,927.	99.	148.
110 – 225	100	65	25	22	HFD	3X	3,486.	4,333.	99.	148.
15 – 60	200	100	35	22	FDC	3X	1,823.	2,368.	99.	148.
70 – 100	200	100	35	22	FDC	3X	2,342.	2,898.	99.	148.
110 – 225	200	100	35	22	FDC	3X	4,975.	5,827.	99.	148.

Note: Any two breakers listed above may be mounted on the same 2X or 3X dual breaker adapter. Dual breaker adapters may be in single- or double-row chassis. Dual breaker adapters can NOT be mounted across from another in a double-row chassis. Always price two breakers. Price each breaker separately.

Table 14-103. Layout Information — PRL5P Box Sizes and Maximum Component Unit Ampere Rating

Bus Chassis Type	Total "X" Space ①	Box Width		Box Height		Maximum Ampere Rating of Plug-on Components			
		Inches	mm	Inches	mm	Main Lugs	Branch Lugs	Main Breaker	Branch Breaker
Single-Row Bus	24X	30	762.0	64	1625.6	800	600	800	600
	32X	30	762.0	75	1905.0	800	600	800	600
	40X	30	762.0	86	2184.4	800	600	800	600
Double-Row Bus	24X	48	1219.2	64	1625.6	1200	1200	1200	1200
	32X	48	1219.2	75	1905.0	1200	1200	1200	1200
	40X	48	1219.2	86	2184.4	1200	1200	1200	1200

① Deduct "X" space for main breaker or lugs from the total available "X" spaces listed above.

Table 14-104. Main Lug and Sub-Feed Lug Unit — PRL5P

Ampere Rating	"X" Space	Mechanical Lug Size and Number Al/Cu Rated
Single Bus Connection		
400	8X	(1) 1/0 – 500 kcmil or (2) 1/0 – 250 kcmil
600	8X	(2) #4 – 500 kcmil
800	8X	(2) #2 – 500 kcmil or (3) #2 – 400 kcmil
Double Bus Connection		
400 – 1200	7X	(4) #4 – 750 kcmil

Table 14-99. Branch Devices — Single-Pole Breakers in Single Adapter Units — PRL5P

Ampere Rating	Interrupting Rating (kA Symmetrical)				Breaker Type	"X" Space	2 Each — 1-Pole		"X" Space	3 Each — 1-Pole	
	120V AC	240V AC	277V AC	125V DC			Price U.S. \$	Price U.S. \$ Space Only		Price U.S. \$	Price U.S. \$ Space Only
15-60	14	—	14	10	EHD	2X	411.	99.	3X	615.	148.
15-60	35	—	35	10	FD	2X	843.	99.	3X	1,265.	148.
15-60	65	—	65	10	HFD	2X	1,143.	99.	3X	1,715.	148.

Note: Price includes, as indicated, two or three single-pole 15 through 60 ampere breakers assembled on one adapter.

Table 14-100. Branch Devices — Two- and Three-Pole Breakers in Single Adapter Units — PRL5P

Ampere Rating	Interrupting Rating (kA Symmetrical)				Breaker Type	"X" Space	Price U.S. \$		Price U.S. \$ Space Only	
	240V AC	480V AC	600V AC	250V DC			2-Pole	3-Pole	2-Pole	3-Pole
100-225	65	—	—	—	ED	3X	966.	1,296.	99.	148.
100-225	100	—	—	—	EDH	3X	1,260.	1,727.	99.	148.
100-225	200	—	—	—	EDC	3X	1,724.	2,296.	99.	148.
15-60	18	14	—	10	EHD	3X	617.	734.	99.	148.
70-100	18	14	—	10	EHD	3X	715.	869.	99.	148.
15-60	65	35	18	10	FD	3X	1,002.	1,183.	99.	148.
70-100	65	35	18	10	FD	3X	1,144.	1,341.	99.	148.
110-225	65	35	18	10	FD	3X	1,859.	2,179.	99.	148.
15-60	100	65	25	22	HFD	3X	1,270.	1,649.	99.	148.
70-100	100	65	25	22	HFD	3X	1,633.	2,015.	99.	148.
110-225	100	65	25	22	HFD	3X	3,644.	4,529.	99.	148.
15-60	200	100	35	22	FDC	3X	1,906.	2,476.	99.	148.
70-100	200	100	35	22	FDC	3X	2,449.	3,030.	99.	148.
110-225	200	100	35	22	FDC	3X	5,200.	6,091.	99.	148.
70-225	65	35	18	10	JD	3X	1,886.	2,363.	99.	148.
250	65	35	18	10	JD	3X	3,280.	3,950.	99.	148.
70-225	100	65	25	22	HJD	3X	4,207.	4,978.	99.	148.
250	100	65	25	22	HJD	3X	5,537.	6,571.	99.	148.
70-225	200	100	35	22	JDC	3X	5,779.	6,764.	99.	148.
250	200	100	35	22	JDC	3X	6,764.	8,110.	99.	148.
100-400	65	—	—	—	DK	4X	2,725.	3,397.	197.	197.
250-400	65	35	25	10	KD	4X	3,670.	4,012.	197.	197.
250-400	100	65	35	22	HKD	4X	6,242.	6,882.	197.	197.
250-400	200	100	50	22	KDC	4X	6,959.	8,257.	197.	197.
300-600	65	35	25	22	LD	6X	5,501.	6,935.	296.	296.
300-600	100	65	35	25	HLD	6X	9,518.	12,036.	296.	296.
300-600	200	100	50	25	LDC	6X	10,639.	13,453.	296.	296.
400-800	65	50	25	22	MDL ①	6X	7,654.	9,897.	591.	591.
400-800	100	65	35	25	HMDL ①	6X	9,988.	12,245.	591.	591.
400-800	65	50	25	—	ND ①	6X	8,689.	10,468.	591.	591.
400-800	100	65	35	—	HND ①	6X	10,425.	12,560.	591.	591.
400-800	200	100	50	—	NDC ①	6X	12,510.	15,072.	591.	591.
600-1200	65	50	25	—	ND ①	6X	14,169.	17,072.	591.	591.
600-1200	100	65	35	—	HND ①	6X	15,506.	18,683.	591.	591.
600-1200	200	100	50	—	NDC ①	6X	18,608.	22,418.	591.	591.

① For use only in double-row chassis panelboards only.

Table 14-101. Branch Devices — Sub-Feed Lug Units — PRL5P

Ampere Rating	Interrupting Rating (kA Symmetrical)				Breaker Type	"X" Space	Price U.S. \$		Price U.S. \$ Space Only	
	240V AC	480V AC	600V AC	250V DC			2-Pole	3-Pole	2-Pole	3-Pole
400	—	—	—	—	Lug	8X	625.	662.	394.	394.
600	—	—	—	—	Lug	8X	982.	977.	394.	394.
800	—	—	—	—	Lug	8X	1,066.	1,125.	394.	394.
1200	—	—	—	—	Lug ②	7X	1,366.	1,425.	689.	689.

② For use only in double-row chassis panelboards only.

Chassis Layout

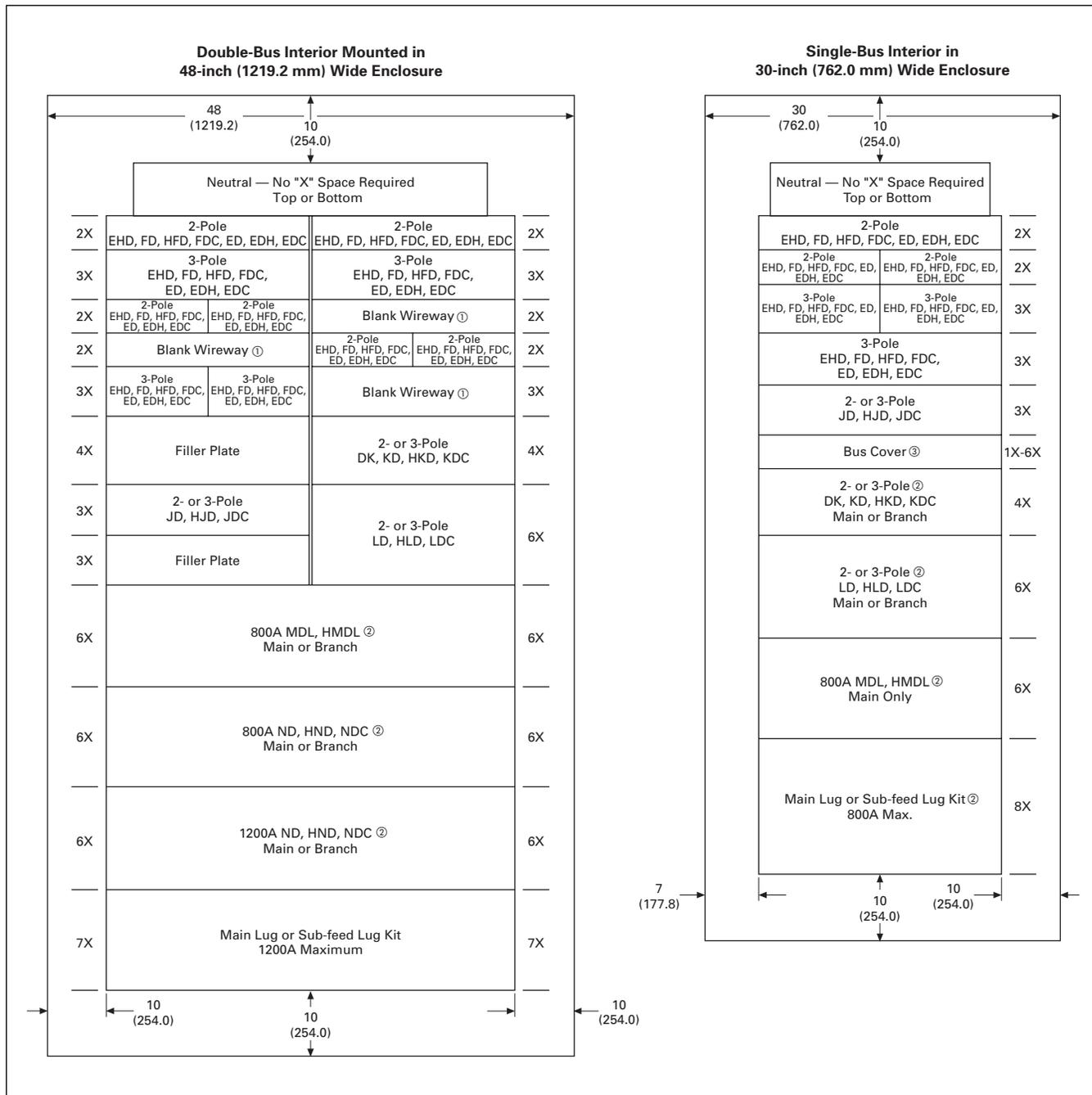


Figure 14-13. PRL5P Chassis Layout — “X” Unit Layout of Circuit Breaker and Lug Units — X = 1-3/8 inches (34.9 mm) — Dimensions in Inches (mm)

- ① Blank wireway fillers are required opposite any dual breaker unit.
- ② If used as a main device, must be mounted at the neutral end of panel.
- ③ Fixed bus covers are required for unused spaces if NEC six circuit disconnect rule is to be met.

Type PRL5P — Modifications

1. Ambient Compensating Breakers

For ambient compensating breakers (where available) in lieu of standard breakers, add 10 percent to panelboard branch breaker and to main breaker list prices, if required. (Not UL listed.)

2. Bus Density

Main bus ampere rating is determined by UL listed temperature test. 1000 ampere per square inch copper is available and included in copper bus price addition.

3. Special Cabinet (Box) Construction

Table 14-105. Modification 3

Modification	Price U.S. \$ Addition
Type 3R Enclosure	
Add per Panel	3,356.

Type 3R Enclosure

Add per Panel	3,356.
---------------	--------

4. Complete Assembly

Complete assembly of panelboard box, interior and trim prior to shipment when required.

Table 14-106. Modification 4

Description	Price U.S. \$
Add per Panel	277.

5. Conduit Covers

Fabricated sheet metal to cover open conduits above and/or below standard Type 1 box.

Table 14-107. Modification 5

Cover Type	Price U.S. \$ Per Foot
Conduit Enclosing Shield (open back)	477.

6. Copper Main Bus

Table 14-108. Modification 6

Panel Construction	Price U.S. \$ Per Panel
Single-Bus Interior	697.
Double-Bus Interior	989.

6a. Silver-Plated Copper Main Bus

For silver-plated copper panelboard main bus and/or connectors, add as follows:

Table 14-109. Modification 6a

Main Bus Ratings Amperes	Price U.S. \$ Addition Per Panel
Single-Bus Interior	1,743.
Double-Bus Interior	2,036.

6b. Copper Neutral

Table 14-110. Modification 6b

Panel Construction	Price U.S. \$ Addition
Single-Bus — 800A maximum	335.
Double-Bus — 1200A maximum	524.

7. Copper Lugs

Optional copper only mechanical main lugs (includes main incoming neutral lugs).

Table 14-111. Modification 7

Main Lug Amperes	Price U.S. \$
400	449.
600	665.
800	665.
1200	966.

8. Directory Frame — Metal

Table 14-112. Modification 8

Frame Type	Price U.S. \$
Metal Frame, Plastic Cover	61.

9. Trim and Door Modifications — Special Fronts and Doors

Table 14-113. Modification 9

Type	Price U.S. \$ Addition
Hinged Door Over Devices for Type 1 Enclosure	854.

10. Ground Bar

Table 14-114. Modification 10

Description	Price U.S. \$
Add per Panel	398.

11. Solid-State Trip Units

Table 14-115. Modification 11

Description	Price U.S. \$ Addition
-------------	------------------------

K-, L-, M-Frame Circuit Breaker

Digitrip RMS310 LS	628.
Digitrip RMS310 LSI	2,577.
Digitrip RMS310 LSG	4,706.
Digitrip RMS310 LSIG	6,656.

N-Frame Circuit Breaker

Digitrip RMS310 LS	Standard
Digitrip RMS310 LSI	1,950.
Digitrip RMS310 LSG	4,079.
Digitrip RMS310 LSIG	6,029.

12. Circuit Breaker Handle Lockoff Devices

Table 14-116. Modification 12

Description	Price U.S. \$
Non-padlockable	56.
Padlockable	71.

13. Nameplates, Engraved

Table 14-117. Modification 13

Type	Price U.S. \$
Mastic back and installed by purchaser, per nameplate	46.
Fixed to panel trim with two screws or rivets, per nameplate	126.

PRL3a

**distribution panel dp-3
(below)**

Table 14-25. Branch Circuit Breakers — PRL3a

Ampere Rating	Interrupting Rating (kA Symmetrical)				Breaker Type	Price U.S. \$												
	240V AC	480V AC	600V AC	250V DC		Breaker												
						1-Pole	2-Pole	3-										
15 - 60	10 ①②	—	—	—	BAB	46.	95.											
15 - 60	10	—	—	—	BAB-H	—	191.											
70	10 ①②	—	—	—	BAB	85.	163.											
70	10	—	—	—	BAB-H	—	269.											
80 - 100	10 ①②	—	—	—	BAB	—	189.											
80 - 100	10	—	—	—	BAB-H	—	282.											
15 - 50 ③	10 ①②	—	—	—	QBGF	313.	495.											
15 - 50 ③	10	—	—	—	QBGFEP	500.	791.				18.	35.						
15 - 20	10 ①②	—	—	—	QBAF ④	313.	495.				18.	35.						
15 - 20	10 ①②	—	—	—	QBAG ⑤	344.	537.				18.	35.						
15 - 60	10 ①②	—	—	—	BAB-D ⑥	57.	119.				18.	35.						
15 - 30	10 ①②	—	—	—	BAB-C ⑦	168.	217.											
15 - 30	10 ①	—	—	—	BABR ⑧	283.	519.				18.	35.						
15 - 30	10 ①	—	—	—	BABRS ⑨	305.	560.				18.	35.						
15 - 60	22 ①②	—	—	—	QBHW	95.	149.				18.	35.	52.					
15 - 60	22	—	—	—	QBHW-H	—	269.	362.			18.	35.	52.					
70	22 ①②	—	—	—	QBHW	125.	191.				18.	35.	52.					
70	22	—	—	—	QBHW-H	—	333.	451.			18.	35.	52.					
80 - 100	22 ①②	—	—	—	QBHW	—	254.				18.	35.	52.					
80 - 100	22	—	—	—	QBHW-H	—	413.	538.			18.	35.	52.					
15 - 30	22	—	—	—	QBHG	623.	988.				18.	35.	52.					
15 - 30	22	—	—	—	QBHGFEF	999.	1,582.				18.	35.						
15 - 20	65	14 ⑩	—	—	GHQ	136.	—				18.							
15 - 60	65	14 ⑩	—	14	GHB	156.	492.	625.			18.	35.	52.					
70 - 100	65	14 ⑩	—	14	GHB	246.	603.	732.			18.	35.	52.					
15 - 30	65	25 ⑩	—	—	HGHB	229.	—				18.							
15 - 30	65	14 ⑩	—	14	GHBS ⑪	456.	836.				18.	35.	52.					
15 - 60	—	14 ⑩	—	—	GHBGFEF	1,809.	—				18.							
15 - 20	—	14 ⑩	—	—	GHBHID ⑫	163.	—				18.							
15 - 60	18 ⑬	14 ⑭	—	10	EHD	179.	537.	638.	25.	50.	74.	48.	96.	144.				
70 - 100	18 ⑬	14 ⑭	—	10	EHD	272.	622.	756.	25.	50.	74.	48.	96.	144.				
15 - 60	18	14	14	10	FDB	—	572.	734.	—	50.	74.	—	96.	144.				
70 - 100	18	14	14	10	FDB	—	697.	866.	—	50.	74.	—	96.	144.				
110 - 150	18	14	14	10	FDB	—	1,524.	1,898.	—	50.	74.	—	96.	144.				
15 - 60	65 ⑬	35 ⑭	18	10	FD	367.	871.	1,029.	25.	50.	74.	48.	96.	144.				
70 - 100	65 ⑬	35 ⑭	18	10	FD	408.	992.	1,167.	25.	50.	74.	48.	96.	144.				
110 - 225	65 ⑬	25	18	10	FD ⑮	—	2,226.	2,559.	—	50.	74.	—	96.	144.				
15 - 60	100 ⑬	65 ⑭	25	22	HFD	497.	1,104.	1,433.	25.	50.	74.	48.	96.	144.				
70 - 100	100 ⑬	65 ⑭	25	22	HFD	560.	1,420.	1,752.	25.	50.	74.	48.	96.	144.				
110 - 225	100 ⑬	65	25	22	HFD ⑮	—	3,169.	3,939.	—	50.	74.	—	96.	144.				
15 - 60	200	100	35	22	FDC	—	1,657.	2,153.	—	50.	74.	—	96.	144.				
70 - 100	200	100	35	22	FDC	—	2,130.	2,635.	—	50.	74.	—	96.	144.				
110 - 225	200	100	35	22	FDC ⑮	—	4,522.	5,297.	—	50.	74.	—	96.	144.				
100 - 225	65	—	—	—	ED ⑯	—	841.	1,127.	—	50.	74.	—	96.	144.				
100 - 225	100	—	—	—	EDH ⑯	—	1,095.	1,502.	—	50.	74.	—	96.	144.				
100 - 225	200	—	—	—	EDC ⑯	—	1,499.	1,997.	—	50.	74.	—	96.	144.				

- ① 1-pole breaker rated 120V AC.
- ② 2-pole breaker rated 120/240V AC.
- ③ 50 ampere devices are available as 2-pole only.
- ④ Arc fault circuit breaker.
- ⑤ Arc fault circuit breaker with GFCI.
- ⑥ HID (High Intensity Discharge) rated breaker.
- ⑦ Switching Neutral Breaker. 1-pole device requires 2-pole space, 2-pole device requires 3-pole space.
- ⑧ Solenoid operated breaker.
- ⑨ 1-pole breaker rated 277V AC.
- ⑩ For use on 480Y/277V systems only.
- ⑪ AIC rating for 2- and 3-pole breakers only.
- ⑫ Maximum of six breakers per panel, 175 - 225 amperes.

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PRL3a

Panel Layout Instructions

1. Select:
 - a. Required mains (lugs or breaker).
 - b. Neutral where required.
 - c. Branch circuits as required.
2. Layout panel as shown in **Figure 14-4**, using appropriate "X" dimensions.
3. Using total X units (panel height) find box height in inches (mm) and box catalog number from **Table 14-26**. (When total X units come out to an uneven number, use next highest number; i.e., if total X comes out 25X, use 31X.)

Layout Example

1. Description of Panel
Type PRL3a 3-phase, 4-wire, 120/208V AC flush mounting. Panel to have short circuit rating of 22,000 symmetrical amperes. Main breaker 400 amperes, 3-pole, bottom mounting. Branch circuits bolt-on as follows:

12 – 20 ampere 1-pole QBHW
1 – 200 ampere 3-pole ED
1 – 225 ampere 3-pole ED
2. Layout Information from **Figure 14-4**:
 - a. 400 ampere Neutral = 8X
 - b. 12-poles of QBHW. = 5X
 - c. Two 3-pole ED breakers . . . = 6X
 - d. Main breaker, 400 amperes, 3-pole DK. = 15X
Total Height = 34X
3. From **Table 14-26**:
 - a. 34X Height (use 40X box)
 - b. Box Height. 72 inches (1828.8 mm)
 - c. Box Catalog Number . . . **YS2072**

		Poles	BAB, QBHW, BABR, BABRS, GHQ, GHB, HGHB
		6 - 3X 12 - 5X 18 - 8X 24 - 10X 30 - 13X 36 - 15X 42 - 18X	①
	1-Pole	1X	ED, EDH, EDC, EHD, FDB, FD, HFD, FDC
	2-Pole	2X	150A Max. Per Branch Breaker (300A Max. Per Connector)
	1-Pole 2-Pole	3X	
		2X 2-Pole 3X 3-Pole	ED, EDH, EDC, FD, HFD, FDC
Neutral Section		5X	100-250A
		8X	400-800A
		11X	800A with Thru-feed Lug
Main Lug Section		2X	100A
		5X	250A
		8X	400-600A
		14X	800A
Main Breaker Section	Horizontal Mounting	2X	EHD, FDB, FD, HFD, FDC
		2-Pole	
		3X 3-Pole	ED, EDH, EDC
	Vertical Mounting	7X	EHD, FDB, FD, HFD, FDC, ED, EDH, EDC
		9X	FCL, FB-P
		14X	JD, HJD, JDC
	15X	DK, KD, HKD, KDC	
	17X	LD, HLD, LDC, CLD, CHLD, CLDC	
	21X	LCL, LA-P	

Figure 14-4. PRL3a Layout

- ① GHB, HGHB and GHQ breakers cannot be mixed on same connector as BAB, QBHW, BABR and BABRS.
- ② Maximum of six breakers per panel.
- ③ If optional terminal kit 3TA225FDK is required, must use 28-inch (711.2 mm) box.
- ④ Horizontal mounted 15 – 150 ampere main breakers EHD, FDB, FD, HFD and FDC, will be furnished as branch breaker construction. Branch breakers 1-, 2- or 3-pole as required, may be located opposite these main breakers.
- ⑤ If optional terminal kit 3TA225FDK is required, use 10X.
- ⑥ FB-P and LA-P top mounting only.
- ⑦ LCL or LA-P main breaker requires 6-1/2-inch (165.1 mm) deep box.

Table 14-26. Box Tabulation — PRL3a

"X" Units	Box Height		Box Catalog Number	Trim Catalog Number ⑥
	Inches	mm		
100 – 400 Amperes				
14X	36	914.4	YS2036	LT2036S or F
23X	48	1219.2	YS2048	LT2048S or F
31X	60	1524.0	YS2060	LT2060S or F
40X	72	1828.8	YS2072	LT2072S or F
53X	90	2286.0	YS2090	LT2090S or F
600 – 800 Amperes				
23X	48	1219.2	YS2848	LTV2848S or F
31X	60	1524.0	YS2860	LTV2860S or F
40X	72	1828.8	YS2872	LTV2872S or F
53X	90	2286.0	YS2890	LTV2890S or F

⑥ 600 ampere panels are optionally available with 20-inch (508 mm) wide box. If selected, change 20-inch (508 mm) wide trim catalog number to LTV_S or F.

Cabinets

Fronts are code-gauge steel, ANSI-61 light gray painted finish.

Boxes are code-gauge galvanized steel without knockouts. Standard depth is 5-3/4 inches (146.1 mm).

Standard widths are:

- 20-inch (508.0 mm) 100 – 400 amperes.
- 28-inch (711.2 mm) 600 – 800 amperes.

Note: 600 ampere panels are optionally available with 20-inch (508 mm) wide box. If selected, change 20-inch (508 mm) wide trim catalog number to LTV_S or F.

Standard Depth

5-3/4 inches (146.1 mm).

Top and Bottom Gutters

5-1/2 inches (139.7 mm) minimum.

Side Gutters

4 inches (101.6 mm) minimum.

Product Description

- 480Y/277V AC maximum (125V DC).
- 3-phase 4-wire, 3-phase 3-wire, 1-phase 3-wire, 1-phase 2-wire.
- 400 ampere maximum mains.
- 100 ampere maximum branch breakers.
- Bolt-on branch breakers.
- Factory assembled.
- Refer to **Page 14-3** for additional Information.



Type PRL2a

Application Description

- Lighting and appliance branch panelboard.
- Fully rated or series rated.
- Interrupting ratings up to 200 kA symmetrical.
- Suitable for use as Service Entrance Equipment, when specified on the order.
- See **Pages 14-3 through 14-16** for additional information.

Standards and Certifications

- UL 67, UL 50.
- Federal Specification W-P-115c.
- Refer to **Page 14-3** for additional information.

Options and Accessories

- Refer to **Page 14-42**.

Layout and Sizing

- Refer to **Page 14-20**.

Product Selection

Formula Pricing: Base Price + Branch Circuits + Modifications = Total Price U.S. \$

Table 14-21. Base Prices — PRL2a

Ampere Rating	Interrupting Rating (kA Symmetrical)			Breaker Type	Price U.S. \$		
	240V AC	480Y/277V AC	125/250V DC		3Ph 4W	1Ph 3W ①, 1Ph 2W	3Ph 3W ①

Main Lug Only

100	—	—	—	—	631.	502.	522.
225	—	—	—	—	688.	555.	574.
400	—	—	—	—	1,096.	815.	957.

Main Breaker

100	65	14	14	GHB	1,237.	1,023.	1,041.
100	18	14	10	EHD	1,344.	1,096.	1,255.
100	65	35	10	FD	2,030.	1,753.	1,876.
100	100	65	22	HFD	2,652.	2,149.	2,496.
100	200	100	22	FDC	3,561.	2,967.	3,488.
225	65	—	—	ED	2,366.	1,983.	2,267.
225	65	35	10	FD	2,927.	2,403.	2,818.
225	100	65	22	HFD	5,201.	4,384.	5,064.
225	200	100	22	FDC	7,978.	6,809.	7,832.
250	65	35	10	JD	3,073.	2,523.	2,959.
250	100	65	22	HJD	5,460.	4,641.	5,318.
250	200	100	22	JDC	8,377.	7,149.	8,223.
400	65	35	10	KD	4,732.	3,896.	4,301.
400	100	65	22	HKD	6,902.	6,264.	6,756.
400	200	100	22	KDC	9,346.	7,457.	9,104.

① These system voltages apply only to 240 volts.

Table 14-22. Branch Circuit Breakers — PRL2a

Ampere Rating	Interrupting Rating (kA Symmetrical)			Breaker Type	Price U.S. \$		
	240V AC ②	480Y/277V AC	125/250V DC		1-Pole	2-Pole	3-Pole
15 – 20	65	14	—	GHQ ③	131.	—	—
15 – 60	65	14	14	GHB ③	151.	488.	625.
70 – 100	65	14	14	GHB ③	246.	603.	732.
15 – 30	65	25	—	HGHB ③	229.	—	—
15 – 30	65	14	—	GHBS ③④	456.	836.	—
15 – 60	—	14	—	GHGFEP ③⑤	1,809.	—	—
15 – 20	—	14	—	GHBHID ③⑥	163.	—	—
Provision	—	—	—	—	18.	35.	52.

② Interrupting ratings in this column are applicable to 120V AC for 1-pole breakers.

③ At 480V, must be used on 480Y/277V grounded wye systems only.

④ Solenoid operated breaker.

⑤ GFP for 30 mA equipment protection. Requires 2-pole spaces. 277V AC only.

⑥ HID (High Intensity Discharge) rated breaker.

Box Sizing and Selection

Assembled Circuit Breaker Panelboards

Box size and box and trim catalog numbers for all standard panelboard types are found in **Table 14-23**.

Instructions

- Using description of the required panelboard, select the rating and type of main required.
- Count the total number of branch circuit-poles, including provisions, required in the panelboard. Do not count main breaker poles. Convert 2- or 3-pole branch breaker to single-poles, i.e., 3-pole breaker, count as 3 poles.

Determine sub-feed breaker or through-feed lug requirements.

- Select the main ampere rating section from **Table 14-23**.
- Select panelboard type from first column, main breaker frame, if applicable, from second column, and sub-feed breaker frame, if applicable, from the third column.
- From Step #2, determine the number of branch circuits in Column 4.
- Read box size, box and trim catalog numbers across columns to the right. Specify surface or flush mounting on the order.

Cabinets

Fronts are code-gauge steel, ANSI-61 light gray painted finish.

Boxes are code-gauge galvanized steel without knockouts. Standard depth is 5-3/4 inches (146.1 mm). Standard width is 20 inches (508.0 mm). An optional 28-inch (711.2 mm) wide box is available.

Top and Bottom Gutters

5-1/2 inches (139.7 mm) minimum.

Table 14-23. PRL2a Panelboard Sizing

Panelboard Types	Main Breaker Types and Mounting Position (H) = Horiz. (V) = Vert.	Sub-Feed Breaker Types and Mounting Position (H) = Horiz. (V) = Vert.	Maximum Number of Branch Circuits Including Provisions	Box Dimensions Inches ^{①②}			Box Catalog Number	Trim Catalog Number
				H	W	D		
100 Ampere Maximum								
Main Breaker	GHB (H)	—	15	36	20	5-3/4	YS2036	LT2036S or F
		—	27	48	20	5-3/4	YS2048	LT2048S or F
		—	39	48	20	5-3/4	YS2048	LT2048S or F
		—	42	60	20	5-3/4	YS2060	LT2060S or F
Main Lugs or Main Breaker	ED, EHD, FD, HFD, FDC (V)	—	18	36	20	5-3/4	YS2036	LT2036S or F
		—	30	48	20	5-3/4	YS2048	LT2048S or F
		—	42	48	20	5-3/4	YS2048	LT2048S or F
Main Lugs or Main Breaker with 100A Thru-Feed Lugs or Sub-Feed Breaker	ED, EHD, FD, HFD FDC (V)	ED, EHD, FD, HFD FDC (V)	18	48	20	5-3/4	YS2048	LT2048S or F
		—	30	48	20	5-3/4	YS2048	LT2048S or F
		—	42	60	20	5-3/4	YS2060	LT2060S or F
225 Ampere Maximum								
Main Lugs or Main Breaker	ED, FD, HFD, FDC (V)	—	18	36	20	5-3/4	YS2036	LT2036S or F
		—	30	48	20	5-3/4	YS2048	LT2048S or F
		—	42	48	20	5-3/4	YS2048	LT2048S or F
		—	18	60	20	5-3/4	YS2060	LT2060S or F
Main Lugs or Main Breaker with 225A Thru-Feed Lugs or Sub-Feed Breaker	ED, FD, HFD, FDC (V)	ED, FD, HFD, FDC (V)	18	48	20	5-3/4	YS2048	LT2048S or F
		—	30	48	20	5-3/4	YS2048	LT2048S or F
		—	42	60	20	5-3/4	YS2060	LT2060S or F
		—	18	60	20	5-3/4	YS2060	LT2060S or F
Main Lugs or Main Breaker with 225A Thru-Feed Lugs or Sub-Feed Breaker	ED, FD, HFD, FDC (V)	ED, EHD, FD, HFD, FDC (V)	18	60	20	5-3/4	YS2060	LT2060S or F
		—	30	72	20	5-3/4	YS2072	LT2072S or F
		—	42	72	20	5-3/4	YS2072	LT2072S or F
		—	18	72	20	5-3/4	YS2072	LT2072S or F
400 Ampere Maximum								
Main Lugs or Main Breaker	KD, HKD, KDC (V)	—	18	60	20	5-3/4	YS2060	LT2060S or F
		—	30	60	20	5-3/4	YS2060	LT2060S or F
		—	42	72	20	5-3/4	YS2072	LT2072S or F
Main Lugs or Main Breaker with 225A Thru-Feed Lugs or Sub-Feed Breaker	DK, KD, HKD, KDC (V)	ED, FD, HFD, FDC (V)	18	60	20	5-3/4	YS2060	LT2060S or F
		—	30	72	20	5-3/4	YS2072	LT2072S or F
		—	42	72	20	5-3/4	YS2072	LT2072S or F
Main Lugs or Main Breaker with 400A Thru-Feed Lugs or Sub-Feed Breaker	DK, KD, HKD, KDC (V)	JD, HJD, JDC, DK, KD, HKD, KDC (V)	18	72	20	5-3/4	YS2072	LT2072S or F
		—	30	90	20	5-3/4	YS2090	LT2090S or F
		—	42	90	20	5-3/4	YS2090	LT2090S or F

① Metric box dimensions:

Box Catalog Number	Dimensions in mm		
	Height	Width	Depth
YS2036	914.4	508.0	146.1
YS2048	1219.2	508.0	146.1
YS2060	1524.0	508.0	146.1
YS2072	1828.8	508.0	146.1
YS2090	2286.0	508.0	146.1

② Smaller panelboard box sizes are available if required. Contact Eaton's Cutler-Hammer for application information.

Insulation System and Temperature Rise

Industry standards classify insulation systems and rise as shown below:

Table 9-7. Insulation System Classification

Ambient	+ Winding Rise	+ Hot Spot	= Temp. Class
40°C	55°C	10°C	105°C
40°C	80°C	30°C	150°C
40°C	115°C	30°C	185°C
40°C	150°C	30°C	220°C

The design life of transformers having different insulation systems is the same — the lower temperature systems are designed for the same life as the higher temperature systems.

Enclosures

Eaton’s Cutler-Hammer ventilated transformers, Type DT-3, utilize a NEMA 2 rated (drip-proof) enclosure as standard, and are rated NEMA 3R with the addition of weathershields. Eaton’s Cutler-Hammer encapsulated transformers, Type EPT, utilize a NEMA 3R rated enclosure as standard.

Sound Levels

All Eaton’s Cutler-Hammer 600 volt class general purpose dry type distribution transformers are designed to meet NEMA ST-20 sound levels listed here. These are the sound levels measured in a soundproof environment. Actual sound levels measured at an installation will likely be higher due to electrical connections and environmental conditions. Lower sound levels are available and should be specified when the transformer is going to be installed in an area where sound may be a concern.

Table 9-8. Average Sound Levels

kVA	NEMA Average ^① Sound Level in dB
0 – 9	40
10 – 50	45
51 – 150	50
151 – 300	55
301 – 500	60
501 – 700	62
701 – 1000	64
1001 – 1500	65

^① Applies to general purpose ventilated transformers only.

Winding Terminations

Primary and secondary windings are terminated in the wiring compartment. Encapsulated units have copper leads or stabs brought out for connections. Ventilated transformers have leads brought out to aluminum pads that are pre-drilled to accept Cu/Al lugs. **Lugs are not supplied with these transformers.** Eaton’s Cutler-Hammer recommends external cables be rated 90°C (sized at 75°C ampacity) for encapsulated designs and 75°C for ventilated designs.

Series-Multiple Windings

Series-multiple windings consist of 2 similar coils in each winding which can be connected in series or parallel (multiple). Transformers with series-multiple windings are designated with an “X” or “/” between the voltage ratings, such as voltages of “120/240” or “240 X 480.” If the series-multiple winding is designated by an “X,” the winding can be connected only for a series or parallel. With the “/” designation, a mid-point also becomes available in addition to the series or parallel connection. As an example, a 120 X 240 winding can be connected for either 120 (parallel) or 240 (series), but a 120/240 winding can be connected for 120 (parallel), or 240 (series), or 240 with a 120 mid-point.

Technical Data and Specifications

Please refer to **Page 9-115.**

The following pages provide listings for most standard transformer ratings and styles.
For other ratings or styles not shown, or for special enclosure types (including stainless steel) refer to Eaton’s Cutler-Hammer.

Three-Phase, Types EPT, DT-3, 60 Hz

Product Selection

Additional Product Selection information begins on **Page 9-129**.

Table 9-9. Three-Phase Selection Information — Types EPT, DT-3, 60 Hz

kVA	Full Cap. Taps		Type	°C Temp. Rise	Dimensions (Inches)			Wt. Lbs.	Dimensions (mm)			Wt. kg	Frame	Wiring Diagram Number	Weathershield		Catalog Number	Price U.S. \$
	FCAN	FCBN			H	W	D		H	W	D				Catalog Number	Price U.S. \$		
208 Δ Volts to 480Y/277 Volts																		
15	2@+2.5%	4@-2.5%	DT-3	150	25	20-1/8	14-1/8	152	635	511	359	69	FR909	280E	WS31	350.	V29M47T15N	2,030.
30	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	230	765	511	359	104	FR910A	280E	WS31	350.	V29M47T30N	2,590.
45	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	310	765	511	359	140	FR912A	280E	WS31	350.	V29M47T45N	3,150.
75	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	480	1000	663	486	217	FR914B	280E	WS33	350.	V29M47T75N	4,460.
112.5	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	600	1000	663	486	272	FR915B	280E	WS33	350.	V29M47T12N	6,450.
150	2@+2.5%	4@-2.5%	DT-3	150	46-1/8	28	23	760	1171	660	585	344	FR916A	280E	WS19	350.	V29M47T49N	8,100.
225	1@+5%	2@-5%	DT-3	150	62-1/4	31-1/4	30-1/4	1600	1581	794	768	728	FR918A	333B	WS34	800.	V29R47T22N	11,850.
300	1@+5%	2@-5%	DT-3	150	62-1/4	31-1/4	30-1/4	1600	1581	794	768	728	FR918A	333B	WS34	800.	V29R47T33N	15,000.
500	—	2@-5%	DT-3	150	75	44-1/2	36	2400	1905	1130	914	1088	FR919	290B	WS35	1,360.	V29G47T55N	22,400.
220 Δ Volts to 190Y/110 Volts																		
3	—	2@-5%	EPT	115	13-3/8	15-15/16	8-5/16	116	340	405	211	53	FR201	70I	—	—	Y25G19T03A	1,380.
6	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	143	403	419	251	65	FR200	70I	—	—	Y25G19T06A	1,680.
9	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	166	403	419	251	75	FR103	70I	—	—	Y25G19T09A	2,170.
15	—	2@-5%	EPT	115	17-3/8	19-11/16	10-7/16	275	442	500	265	125	FR95	①	—	—	Y25G19T15A	2,730.
30	2@+2.5%	4@-2.5%	EPT	115	26-5/8	25-1/4	12-3/4	422	676	638	324	191	FR243	①	—	—	Y25M19T30A	5,200.
45	2@+2.5%	4@-2.5%	EPT	115	26-1/2	28-1/2	14-5/8	660	673	724	372	299	FR244	①	—	—	Y25M19T45A	6,500.
15	2@+2.5%	4@-2.5%	DT-3	150	25	20-1/8	14-1/8	152	635	511	359	69	FR909	280Q	WS31	350.	V25M19T15A	1,825.
30	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	230	765	511	359	104	FR910A	280Q	WS31	350.	V25M19T30A	2,330.
45	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	310	765	511	359	141	FR912A	280Q	WS31	350.	V25M19T45A	2,840.
75	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	480	1000	664	486	218	FR914B	280Q	WS33	350.	V25M19T75A	4,010.
112.5	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	600	1000	664	486	273	FR915B	280Q	WS33	350.	V25M19T12A	5,800.
150	2@+2.5%	4@-2.5%	DT-3	150	46-1/8	28	23	760	1171	712	585	345	FR916A	280Q	WS19	350.	V25M19T49A	7,290.
225	1@+5%	2@-5%	DT-3	150	62-1/4	31-1/4	30-1/4	1600	1581	794	768	728	FR918A	289F	WS34	800.	V25R19T22A	10,660.
300	1@+5%	2@-5%	DT-3	150	62-1/4	31-1/4	30-1/4	1600	1581	794	768	728	FR918A	289F	WS34	800.	V25R19T33A	13,500.
500	—	2@-5%	DT-3	150	75	44-1/2	36	2400	1905	1130	914	1088	FR919	①	WS35	1,360.	V25G19T55A	21,600.
220 Δ Volts to 208Y/120 Volts																		
3	—	2@-5%	EPT	115	13-3/8	15-15/16	8-5/16	116	340	405	211	53	FR201	70Q	—	—	Y25G28T03A	1,590.
6	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	143	403	419	251	65	FR200	70Q	—	—	Y25G28T06A	1,935.
9	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	166	403	419	251	75	FR103	70Q	—	—	Y25G28T09A	1,700.
15	—	2@-5%	EPT	115	17-3/8	19-11/16	10-7/16	275	442	500	265	125	FR95	70Q	—	—	Y25G28T15A	2,510.
30	2@+2.5%	4@-2.5%	EPT	115	26-3/8	25-1/4	12-3/4	422	676	638	324	191	FR243	84AF	—	—	Y25M28T30A	6,000.
45	2@+2.5%	4@-2.5%	EPT	115	26-1/2	28-1/2	14-5/8	660	673	724	372	299	FR244	84AF	—	—	Y25M28T45A	7,500.
15	2@+2.5%	4@-2.5%	DT-3	150	25	20-1/8	14-1/8	152	635	511	359	69	FR909	280Q	WS31	350.	V25M28T15A	1,825.
30	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	230	765	511	359	104	FR910A	280Q	WS31	350.	V25M28T30A	2,330.
45	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	310	765	511	359	141	FR912A	280Q	WS31	350.	V25M28T45A	2,840.
75	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	480	1000	664	486	218	FR914B	280Q	WS33	350.	V25M28T75A	4,010.
112.5	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	600	1000	664	486	273	FR915B	280Q	WS33	350.	V25M28T12A	5,800.
150	2@+2.5%	4@-2.5%	DT-3	150	46-1/8	28	23	760	1171	712	585	345	FR916A	280Q	WS19	350.	V25M28T49A	7,290.
225	1@+5%	2@-5%	DT-3	150	56	31-1/4	24-1/4	1100	1422	794	616	499	FR917	289F	WS34	800.	V25R28T22A	10,660.
300	1@+5%	2@-5%	DT-3	150	62-1/4	31-1/4	30-1/4	1600	1581	794	768	728	FR918A	289F	WS34	800.	V25R28T33A	13,500.
500	—	2@-5%	DT-3	150	75	44-1/2	36	2400	1905	1130	914	1088	FR919	①	WS35	1,360.	V25G28T55A	21,600.
220 Δ Volts to 380Y/220 Volts																		
3	—	2@-5%	EPT	115	13-3/8	15-15/16	8-5/16	116	340	405	211	53	FR201	70X	—	—	Y25G37T03A	1,590.
6	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	143	403	419	251	65	FR200	70X	—	—	Y25G37T06A	1,935.
9	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	166	403	419	251	75	FR103	70X	—	—	Y25G37T09A	2,505.
15	—	2@-5%	EPT	115	17-3/8	19-11/16	10-7/16	275	442	500	265	125	FR95	70X	—	—	Y25G37T15A	3,150.
30	2@+2.5%	4@-2.5%	EPT	115	26-5/8	25-1/4	12-3/4	422	676	638	324	191	FR243	①	—	—	Y25M37T30A	6,000.
45	2@+2.5%	4@-2.5%	EPT	115	26-1/2	28-1/2	14-5/8	660	673	724	372	299	FR244	①	—	—	Y25M37T45A	7,500.
15	2@+2.5%	4@-2.5%	DT-3	150	25	20-1/8	14-1/8	152	635	511	359	69	FR909	280Q	WS31	350.	V25M37T15A	1,890.
30	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	230	765	511	359	104	FR910A	280Q	WS31	350.	V25M37T30A	2,415.
45	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	310	765	511	359	141	FR912A	280Q	WS31	350.	V25M37T45A	2,940.
75	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	480	1000	664	486	218	FR914B	280Q	WS33	350.	V25M37T75A	4,155.
112.5	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	600	1000	664	486	273	FR915B	280Q	WS33	350.	V25M37T12A	6,020.
150	2@+2.5%	4@-2.5%	DT-3	150	46-1/8	28	23	760	1171	712	585	345	FR916A	280Q	WS19	350.	V25M37T49A	7,560.
225	1@+5%	2@-5%	DT-3	150	56	31-1/4	24-1/4	1100	1422	794	616	499	FR917	289F	WS34	800.	V25R37T22A	11,060.
300	1@+5%	2@-5%	DT-3	150	62-1/4	31-1/4	30-1/4	1600	1581	794	768	728	FR918A	289F	WS34	800.	V25R37T33A	14,000.
500	—	2@-5%	DT-3	150	75	44-1/2	36	2400	1905	1130	914	1088	FR919	①	WS35	1,360.	V25G37T55A	21,600.

① Refer to your Cutler-Hammer sales office.

Note: Contact your local Cutler-Hammer sales office for CE Mark transformer requirements.

For other ratings or styles not shown, or for special enclosure types (including stainless steel) refer to Eaton's Cutler-Hammer.

Discount Symbol DT-1

Table 9-10. Three-Phase Selection Information — Types EPT, DT-3, 60 Hz

kVA	Full Cap. Taps		Type	°C Temp. Rise	Dimensions (Inches)			Wt. Lbs.	Dimensions (mm)			Wt. kg	Frame	Diagram Wiring Number	Weathershield		Catalog Number	Price U.S. \$
	FCAN	FCBN			H	W	D		H	W	D				Catalog Number	Price U.S. \$		
240 Δ Volts to 208Y/120 Volts																		
9	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	166	403	419	251	75	FR103	70C	Indoor- Outdoor	—	Y24G28T09N	2,510.
15	—	2@-5%	EPT	115	17-3/8	19-3/4	10-1/2	275	441	499	265	124	FR95	70C		—	Y24G28T15N	3,150.
30	2@+2.5%	4@-2.5%	EPT	115	26-5/8	25-1/4	12-3/4	422	676	638	323	191	FR243	84C		—	Y24M28T30N	6,000.
45	2@+2.5%	4@-2.5%	EPT	115	26-1/2	28-1/2	14-5/8	660	673	723	371	299	FR244	84C		—	Y24M28T45N	7,500.
15	2@+2.5%	4@-2.5%	DT-3	150	25	20-1/8	14-1/8	152	635	511	359	69	FR909	280C	WS31	350.	V24M28T15B	1,825.
30	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	230	765	511	359	104	FR910A	280C	WS31	350.	V24M28T30N	2,330.
45	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	310	765	511	359	140	FR912A	280C	WS31	350.	V24M28T45N	2,840.
75	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	480	1000	663	486	217	FR914B	280C	WS33	350.	V24M28T75N	4,010.
112.5	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	600	1000	663	486	272	FR915B	280C	WS33	350.	V24M28T12N	5,800.
150	2@+2.5%	4@-2.5%	DT-3	150	46-1/8	28	23	760	1171	712	585	344	FR916A	280C	WS19	350.	V24M28T49N	7,290.
225	1@+5%	2@-5%	DT-3	150	62-1/4	31-1/4	24-1/4	1100	1422	793	616	499	FR918A	289A	WS34	800.	V24R28T22N	10,660.
300	1@+5%	2@-5%	DT-3	150	64-1/4	31-1/4	30-1/4	1600	1581	794	768	728	FR918A	289A	WS34	800.	V24R28T33N	15,600.
500	—	2@-5%	DT-3	150	75	44-1/2	36	2400	1905	1130	914	1088	FR919	290A	WS35	1,360.	V24G28T55N	22,600.
380 Δ Volts to 190Y/110 Volts																		
3	—	2@-5%	EPT	115	13-3/8	15-15/16	8-5/16	116	340	405	211	53	FR201	70F	Indoor- Outdoor	—	Y38G19T03A	1,220.
6	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	143	403	419	251	65	FR200	70F		—	Y38G19T06A	1,480.
9	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	166	403	419	251	75	FR103	70F		—	Y38G19T09A	1,920.
15	—	2@-5%	EPT	115	17-3/8	19-11/16	10-7/16	275	442	500	265	125	FR95	70F		—	Y38G19T15A	2,415.
30	2@+2.5%	4@-2.5%	EPT	115	26-5/8	25-1/4	12-3/4	422	676	638	324	191	FR243	84AC	Indoor- Outdoor	—	Y38M19T30A	4,600.
45	2@+2.5%	4@-2.5%	EPT	115	26-1/2	28-1/2	14-5/8	660	673	724	372	299	FR244	84AC		—	Y38M19T45A	5,750.
75	2@+2.5%	4@-2.5%	EPT	115	32-1/4	30-1/8	15-5/8	1275	781	765	397	580	FR245	84AC		—	Y38M19T75A	7,150.
15	2@+2.5%	4@-2.5%	DT-3	150	25	20-1/8	14-1/8	152	635	511	359	69	FR909	280L	WS31	350.	V38M19T15A	1,800.
30	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	230	765	511	359	104	FR910A	280L	WS31	350.	V38M19T30A	2,000.
45	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	310	765	511	359	141	FR912A	280L	WS31	350.	V38M19T45A	2,500.
75	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	480	1000	664	486	218	FR914B	280L	WS33	350.	V38M19T75A	3,400.
112.5	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	600	1000	664	486	273	FR915B	280L	WS33	350.	V38M19T12A	4,900.
150	2@+2.5%	4@-2.5%	DT-3	150	46-1/8	28	23	760	1171	712	585	345	FR916A	280L	WS19	350.	V38M19T49A	6,850.
225	2@+2.5%	4@-2.5%	DT-3	150	56	31-1/4	24-1/4	1100	1422	794	616	499	FR917	280L	WS34	800.	V38M19T22A	9,100.
300	2@+2.5%	4@-2.5%	DT-3	150	62-1/4	31-1/4	30-1/4	1600	1581	794	768	728	FR918A	280L	WS34	800.	V38M19T33A	11,500.
500	2@+2.5%	4@-2.5%	DT-3	150	75	44-1/2	36	2400	1905	1130	914	1088	FR919	280L	WS35	1,360.	V38M19T55A	18,500.
380 Δ Volts to 208Y/120 Volts																		
3	—	2@-5%	EPT	115	13-3/8	15-15/16	8-5/16	116	340	405	211	53	FR201	70D	Indoor- Outdoor	—	Y38G28T03A	1,275.
6	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	143	403	419	251	65	FR200	70D		—	Y38G28T06A	1,550.
9	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	166	403	419	251	75	FR103	70D		—	Y38G28T09A	2,005.
15	—	2@-5%	EPT	115	17-3/8	19-11/16	10-7/16	275	442	500	265	125	FR95	70D		—	Y38G28T15A	2,520.
30	2@+2.5%	4@-2.5%	EPT	115	26-5/8	25-1/4	12-3/4	422	676	638	324	191	FR243	84R	Indoor- Outdoor	—	Y38M28T30A	4,600.
45	2@+2.5%	4@-2.5%	EPT	115	26-1/2	28-1/2	14-5/8	660	673	724	372	299	FR244	84R		—	Y38M28T45A	5,750.
75	2@+2.5%	4@-2.5%	EPT	115	32-1/4	30-1/8	15-5/8	1275	781	765	397	580	FR245	84R		—	Y38M28T75A	7,130.
15	2@+2.5%	4@-2.5%	DT-3	150	25	20-1/8	14-1/8	152	635	511	359	69	FR909	280L	WS31	350.	V38M28T15A	1,800.
30	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	230	765	511	359	104	FR910A	280L	WS31	350.	V38M28T30A	2,000.
45	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	310	765	511	359	141	FR912A	280L	WS31	350.	V38M28T45A	2,500.
75	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	480	1000	664	486	218	FR914B	280L	WS33	350.	V38M28T75A	3,400.
112.5	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	600	1000	664	486	273	FR915B	280L	WS33	350.	V38M28T12A	4,900.
150	2@+2.5%	4@-2.5%	DT-3	150	46-1/8	28	23	760	1171	712	585	345	FR916A	280L	WS19	350.	V38M28T49A	6,850.
225	2@+2.5%	4@-2.5%	DT-3	150	56	31-1/4	24-1/4	1100	1422	794	616	499	FR917	280L	WS34	800.	V38M28T22A	9,100.
300	2@+2.5%	4@-2.5%	DT-3	150	62-1/4	31-1/4	30-1/4	1600	1581	794	768	728	FR918A	280L	WS34	800.	V38M28T33A	11,500.
500	2@+2.5%	4@-2.5%	DT-3	150	75	44-1/2	36	2400	1905	1130	914	1088	FR919	280L	WS35	1,360.	V38M28T55A	18,500.
380 Δ Volts to 220Y/127 Volts																		
3	—	2@-5%	EPT	115	13-3/8	15-15/16	8-5/16	116	340	405	211	53	FR201	70F	Indoor- Outdoor	—	Y38G31T03A	1,220.
6	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	143	403	419	251	65	FR200	70F		—	Y38G31T06A	1,480.
9	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	166	403	419	251	75	FR103	70F		—	Y38G31T09A	1,920.
15	—	2@-5%	EPT	115	17-3/8	19-11/16	10-7/16	275	442	500	265	125	FR95	70F		—	Y38G31T15A	2,415.
30	2@+2.5%	4@-2.5%	EPT	115	26-5/8	25-1/4	12-3/4	422	676	638	324	191	FR243	84R	Indoor- Outdoor	—	Y38M31T30A	4,600.
45	2@+2.5%	4@-2.5%	EPT	115	26-1/2	28-1/2	14-5/8	660	673	724	372	299	FR244	84R		—	Y38M31T45A	5,750.
75	2@+2.5%	4@-2.5%	EPT	115	32-1/4	30-1/8	15-5/8	1275	781	765	397	580	FR245	84R		—	Y38M31T75A	7,130.
15	2@+2.5%	4@-2.5%	DT-3	150	25	20-1/8	14-1/8	152	635	511	359	69	FR909	280L	WS31	350.	V38M31T15A	1,800.
30	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	230	765	511	359	104	FR910A	280L	WS31	350.	V38M31T30A	2,000.
45	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	310	765	511	359	141	FR912A	280L	WS31	350.	V38M31T45A	2,500.
75	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	480	1000	664	486	218	FR914B	280L	WS33	350.	V38M31T75A	3,400.
112.5	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	600	1000	664	486	273	FR915B	280L	WS33	350.	V38M31T12A	4,900.
150	2@+2.5%	4@-2.5%	DT-3	150	46-1/8	28	23	760	1171	712	585	345	FR916A	280L	WS19	350.	V38M31T49A	6,850.
225	2@+2.5%	4@-2.5%	DT-3	150	56	31-1/4	24-1/4	1100	1422	794	616	499	FR917	280L	WS34	800.	V38M31T22A	9,100.
30																		

Three-Phase, Types EPT, DT-3, 60 Hz

Table 9-11. Three-Phase Selection Information — Types EPT, DT-3, 60 Hz

kVA	Full Cap. Taps		Type	°C Temp. Rise	Dimensions (Inches)			Wt. Lbs.	Dimensions (mm)			Wt. kg	Frame	Wiring Diagram Number	Weathershield		Catalog Number	Price U.S. \$
	FCAN	FCBN			H	W	D		H	W	D				Catalog Number	Price U.S. \$		
380 Δ Volts to 220 Δ Volts																		
3	—	2@-5%	EPT	115	13-3/8	15-15/16	8-5/16	116	340	405	211	53	FR201	74K	Indoor- Outdoor	—	Y38G25T03A	1,220.
6	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	143	403	419	251	65	FR200	74K		—	Y38G25T06A	1,480.
9	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	166	403	419	251	75	FR103	74K		—	Y38G25T09A	1,920.
15	—	2@-5%	EPT	115	17-3/8	19-11/16	10-7/16	275	442	500	265	125	FR95	74K		—	Y38G25T15A	2,415.
30	2@+2.5%	4@-2.5%	EPT	115	26-5/8	25-1/4	12-3/4	422	676	638	324	191	FR243	①	Indoor- Outdoor	—	Y38M25T30A	4,600.
45	2@+2.5%	4@-2.5%	EPT	115	26-1/2	28-1/2	14-5/8	660	673	724	372	299	FR244	①		—	Y38M25T45A	5,750.
75	2@+2.5%	4@-2.5%	EPT	115	32-1/4	30-1/8	15-5/8	1275	819	765	397	580	FR245	①		—	Y38M25T75A ②	7,150.
15	2@+2.5%	4@-2.5%	DT-3	150	25	20-1/8	14-1/8	152	635	511	359	69	FR909	281D	WS31	350.	Y38M25T15A	1,800.
30	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	230	765	511	359	104	FR910A	281D	WS31	350.	Y38M25T30A	2,000.
45	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	310	765	511	359	141	FR912A	281D	WS31	350.	Y38M25T45A	2,500.
75	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	480	1000	664	486	218	FR914B	281D	WS33	350.	Y38M25T75A	3,400.
112.5	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	600	1000	664	486	273	FR915B	281D	WS33	350.	Y38M25T12A	4,900.
150	2@+2.5%	4@-2.5%	DT-3	150	46-1/8	28	23	760	1171	712	585	345	FR916A	281D	WS19	350.	Y38M25T49A	6,850.
225	2@+2.5%	4@-2.5%	DT-3	150	56	31-1/4	24-1/4	1100	1422	794	616	499	FR917	281D	WS34	800.	Y38M25T22A	9,100.
300	2@+2.5%	4@-2.5%	DT-3	150	62-1/4	31-1/4	30-1/4	1600	1581	794	768	728	FR918A	281D	WS34	800.	Y38M25T33A	11,500.
500	2@+2.5%	4@-2.5%	DT-3	150	75	44-1/2	36	2400	1905	1130	914	1088	FR919	①	WS35	1,360.	Y38M25T55A	18,500.
380 Δ Volts to 380Y/220 Volts																		
3	—	2@-5%	EPT	115	13-3/8	15-15/16	8-5/16	116	340	405	211	53	FR201	70D	Indoor- Outdoor	—	Y38G37T03A	1,380.
6	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	143	403	419	251	65	FR200	70D		—	Y38G37T06A	1,670.
9	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	166	403	419	251	75	FR103	70D		—	Y38G37T09A	2,170.
15	—	2@-5%	EPT	115	17-3/8	19-11/16	10-7/16	275	442	500	265	125	FR95	70D		—	Y38G37T15A	2,730.
30	2@+2.5%	4@-2.5%	EPT	115	26-5/8	25-1/4	12-3/4	422	676	638	324	191	FR243	84H	Indoor- Outdoor	—	Y38M37T30A	5,200.
45	2@+2.5%	4@-2.5%	EPT	115	26-1/2	28-1/2	14-5/8	660	673	724	372	299	FR244	84H		—	Y38M37T45A	6,500.
75	2@+2.5%	4@-2.5%	EPT	115	32-1/4	30-1/8	15-5/8	1275	819	765	397	580	FR245	84H		—	Y38M37T75A ②	8,060.
15	2@+2.5%	4@-2.5%	DT-3	150	25	20-1/8	14-1/8	152	635	511	359	69	FR909	280L	WS31	350.	Y38M37T15A	1,890.
30	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	230	765	511	359	104	FR910A	280L	WS31	350.	Y38M37T30A	2,415.
45	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	310	765	511	359	141	FR912A	280L	WS31	350.	Y38M37T45A	2,940.
75	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	480	1000	664	486	218	FR914B	280L	WS33	350.	Y38M37T75A	4,160.
112.5	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	600	1000	664	486	273	FR915B	280L	WS33	350.	Y38M37T12A	6,020.
150	2@+2.5%	4@-2.5%	DT-3	150	46-1/8	28	23	760	1171	712	585	345	FR916A	280L	WS19	350.	Y38M37T49A	7,560.
225	2@+2.5%	4@-2.5%	DT-3	150	56	31-1/4	24-1/4	1100	1422	794	616	499	FR917	280L	WS34	800.	Y38M37T22A	11,060.
300	2@+2.5%	4@-2.5%	DT-3	150	62-1/4	31-1/4	30-1/4	1600	1581	794	768	728	FR918A	280L	WS34	800.	Y38M37T33A	14,000.
500	2@+2.5%	4@-2.5%	DT-3	150	75	44-1/2	36	2400	1905	1130	914	1088	FR919	①	WS35	1,360.	Y38M37T55A	22,400.
380 Δ Volts to 480Y/277 Volts																		
3	—	2@-5%	EPT	115	13-3/8	15-15/16	8-5/16	116	340	405	211	53	FR201	70F	Indoor- Outdoor	—	Y38G47T03A	1,590.
6	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	143	403	419	251	65	FR200	70F		—	Y38G47T06A	1,935.
9	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	166	403	419	251	75	FR103	70F		—	Y38G47T09A	2,505.
15	—	2@-5%	EPT	115	17-3/8	19-11/16	10-7/16	275	442	500	265	125	FR95	70F		—	Y38G47T15A	3,150.
30	2@+2.5%	4@-2.5%	EPT	115	26-5/8	25-1/4	12-3/4	422	676	638	324	191	FR243	84AB	Indoor- Outdoor	—	Y38M47T30A	6,000.
45	2@+2.5%	4@-2.5%	EPT	115	26-1/2	28-1/2	14-5/8	660	673	724	372	299	FR244	84AB		—	Y38M47T45A	7,500.
75	2@+2.5%	4@-2.5%	EPT	115	32-1/4	30-1/8	15-5/8	1275	819	765	397	580	FR245	84AB		—	Y38M47T75A ②	9,300.
15	2@+2.5%	4@-2.5%	DT-3	150	25	20-1/8	14-1/8	152	635	511	359	69	FR909	280L	WS31	350.	Y38M47T15A	2,090.
30	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	230	765	511	359	104	FR910A	280L	WS31	350.	Y38M47T30A	2,675.
45	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	310	765	511	359	141	FR912A	280L	WS31	350.	Y38M47T45A	3,260.
75	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	480	1000	664	486	218	FR914B	280L	WS33	350.	Y38M47T75A	4,600.
112.5	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	600	1000	664	486	273	FR915B	280L	WS33	350.	Y38M47T12A	6,665.
150	2@+2.5%	4@-2.5%	DT-3	150	46-1/8	28	23	760	1171	712	585	345	FR916A	280L	WS19	350.	Y38M47T49A	8,370.
225	2@+2.5%	4@-2.5%	DT-3	150	56	31-1/4	24-1/4	1100	1422	794	616	499	FR917	280L	WS34	800.	Y38M47T22A	12,245.
300	2@+2.5%	4@-2.5%	DT-3	150	62-1/4	31-1/4	30-1/4	1600	1581	794	768	728	FR918A	280L	WS34	800.	Y38M47T33A	15,500.
500	2@+2.5%	4@-2.5%	DT-3	150	75	44-1/2	36	2400	1905	1130	914	1088	FR919	①	WS35	1,360.	Y38M47T55A	24,800.

① Refer to your Cutler-Hammer sales office.

② Floor mount only.

Note: Contact your local Cutler-Hammer sales office for CE Mark transformer requirements.

For other ratings or styles not shown, or for special enclosure types (including stainless steel) refer to Eaton's Cutler-Hammer.

Discount Symbol DT-1

Table 9-12. Three-Phase Selection Information — Types EPT, DT-3, 60 Hz

kVA	Full Cap. Taps		Type	°C Temp. Rise	Dimensions (Inches)			Wt. Lbs.	Dimensions (mm)			Wt. kg	Frame	Wiring Diagram Number	Weathershield		Catalog Number	Price U.S. \$	
	FCAN	FCBN			H	W	D		H	W	D				Catalog Number	Price U.S. \$			
416 Δ Volts to 208Y/120 Volts																			
3	—	2@-5%	EPT	115	13-3/8	15-15/16	8-5/16	116	340	405	211	53	FR201	70V	Indoor-	—	Y43G28T03A	1,275.	
6	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	143	403	419	251	65	FR200	70V	Outdoor	—	Y43G28T06A	1,550.	
9	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	166	403	419	251	75	FR103	70V	—	—	Y43G28T09A	2,005.	
15	—	2@-5%	EPT	115	17-3/8	19-11/16	10-7/16	275	442	500	265	125	FR95	70V	—	—	Y43G28T15A	2,520.	
30	2@+2.5%	4@-2.5%	EPT	115	26-5/8	25-1/4	12-3/4	422	676	638	324	191	FR243	84I	Indoor-	—	Y43M28T30A	4,600.	
45	2@+2.5%	4@-2.5%	EPT	115	26-1/2	28-1/2	14-5/8	660	673	724	372	299	FR244	84I	Outdoor	—	Y43M28T45A	5,750.	
75	2@+2.5%	4@-2.5%	EPT	115	32-1/4	30-1/8	15-5/8	1275	819	765	397	580	FR245	84I	—	—	Y43M28T75A ②	7,150.	
15	2@+2.5%	4@-2.5%	DT-3	150	25	20-1/8	14-1/8	152	635	511	359	69	FR909	280P	WS31	350.	Y43M28T15A	1,800.	
30	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	230	765	511	359	104	FR910A	280P	WS31	350.	Y43M28T30A	2,000.	
45	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	310	765	511	359	141	FR912A	280P	WS31	350.	Y43M28T45A	2,530.	
75	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	480	1000	664	486	218	FR914B	280P	WS33	350.	Y43M28T75A	3,450.	
112.5	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	600	1000	664	486	273	FR915B	280P	WS33	350.	Y43M28T12A	4,950.	
150	2@+2.5%	4@-2.5%	DT-3	150	46-1/8	28	23	760	1171	712	585	345	FR916A	280P	WS19	350.	Y43M28T49A	6,850.	
225	2@+2.5%	4@-2.5%	DT-3	150	56	31-1/4	24-1/4	1100	1422	794	616	499	FR917	280P	WS34	800.	Y43M28T22A	9,080.	
300	2@+2.5%	4@-2.5%	DT-3	150	62-1/4	31-1/4	30-1/4	1600	1581	794	768	728	FR918A	280P	WS34	800.	Y43M28T33A	11,500.	
500	2@+2.5%	4@-2.5%	DT-3	150	75	44-1/2	36	2400	1905	1130	914	1088	FR919	①	WS35	1,360.	Y43M28T55A	18,500.	
440 Δ Volts to 220Y/127 Volts																			
3	—	2@-5%	EPT	115	13-3/8	15-15/16	8-5/16	116	340	405	211	53	FR201	70G	Indoor-	—	Y44G31T03A	1,590.	
6	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	143	403	419	251	65	FR200	70G	Outdoor	—	Y44G31T06A	1,935.	
9	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	166	403	419	251	75	FR103	70G	—	—	Y44G31T09A	2,505.	
15	—	2@-5%	EPT	115	17-3/8	19-11/16	10-7/16	275	442	500	265	125	FR95	70G	—	—	Y44G31T15A	3,150.	
30	2@+2.5%	4@-2.5%	EPT	115	26-5/8	25-1/4	12-3/4	422	676	638	324	191	FR243	84O	Indoor-	—	Y44M31T30A	4,600.	
45	2@+2.5%	4@-2.5%	EPT	115	26-1/2	28-1/2	14-5/8	660	673	724	372	299	FR244	84O	Outdoor	—	Y44M31T45A	5,750.	
75	2@+2.5%	4@-2.5%	EPT	115	32-1/4	30-1/8	15-5/8	1275	819	765	397	580	FR245	84O	—	—	Y44M31T75A ②	7,150.	
15	2@+2.5%	4@-2.5%	DT-3	150	25	20-1/8	14-1/8	152	635	511	359	69	FR909	280J	WS31	350.	V44M31T15A	1,800.	
30	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	230	765	511	359	104	FR910A	280J	WS31	350.	V44M31T30A	2,000.	
45	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	310	765	511	359	141	FR912A	280J	WS31	350.	V44M31T45A	2,500.	
75	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	480	1000	664	486	218	FR914B	280J	WS33	350.	V44M31T75A	3,420.	
112.5	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	600	1000	664	486	273	FR915B	280J	WS33	350.	V44M31T12A	4,945.	
150	2@+2.5%	4@-2.5%	DT-3	150	46-1/8	28	23	760	1171	712	585	345	FR916A	280J	WS19	350.	V44M31T49A	6,220.	
225	2@+2.5%	4@-2.5%	DT-3	150	56	31-1/4	24-1/4	1100	1422	794	616	499	FR917	280J	WS34	800.	V44M31T22A	9,100.	
300	2@+2.5%	4@-2.5%	DT-3	150	62-1/4	31-1/4	30-1/4	1600	1581	794	768	728	FR918A	280J	WS34	800.	V44M31T33A	11,500.	
500	2@+2.5%	4@-2.5%	DT-3	150	75	44-1/2	36	2400	1905	1130	914	1088	FR919	275F	WS35	1,360.	V44M31T55A	18,500.	
480 Δ Volts to 208Y/120 Volts																			
3	—	2@-5%	EPT	115	13-3/8	16	8-3/8	116	339	404	211	52	FR201	70A	Indoor-	—	Y48G28T03N	1,060.	
6	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	143	403	419	251	64	FR200	70A	Outdoor	—	Y48G28T06N	1,290.	
6	2@+2.5%	2@-2.5%	EPT	115	15-7/8	16-1/2	9-7/8	143	403	419	251	64	FR200	72B	—	—	Y48D28T06N	1,290.	
9	—	2@-5%	EPT	115	15-7/8	16-1/2	9-7/8	166	403	419	251	75	FR103	70A	Indoor-	—	Y48G28T09N	1,670.	
9	—	4@-2.5%	EPT	115	15-7/8	16-1/2	9-7/8	166	403	419	251	75	FR103	503A	Outdoor	—	Y48J28T09N	1,670.	
9	2@+2.5%	2@-2.5%	EPT	115	15-7/8	16-1/2	9-7/8	166	403	419	251	75	FR103	72B	—	—	Y48D28T09N	1,670.	
15	—	2@-5%	EPT	115	17-3/8	19-11/16	10-7/16	275	441	499	265	124	FR95	70A	Indoor-	—	Y48G28T15N	2,100.	
15	—	4@-2.5%	EPT	115	17-3/8	19-11/16	10-7/16	275	441	499	265	124	FR95	72A	Outdoor	—	Y48J28T15N	2,100.	
15	2@+2.5%	2@-2.5%	EPT	115	17-3/8	19-11/16	10-7/16	275	441	499	265	124	FR95	72B	—	—	Y48D28T15N	2,100.	
30	2@+2.5%	4@-2.5%	EPT	115	26-5/8	25-1/4	12-3/4	422	676	638	323	191	FR243	84A	Indoor-	—	Y48M28T30N	4,000.	
45	2@+2.5%	4@-2.5%	EPT	115	26-1/2	28-1/2	14-5/8	660	673	723	371	299	FR244	84A	Outdoor	—	Y48M28T45N	5,000.	
75	2@+2.5%	4@-2.5%	EPT	115	32-1/4	30-1/8	15-5/8	1275	819	765	397	580	FR245	84A	—	—	Y48M28T75N ②	6,200.	
15	2@+2.5%	4@-2.5%	DT-3	150	25	20-1/8	14-1/8	152	635	511	359	69	FR909	280B	WS31	350.	V48M28T15B	1,350.	
30	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	239	765	511	359	108	FR910A	280B	WS31	350.	V48M28T30K	1,725.	
37.5	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	310	765	511	359	140	FR911A	280B	WS31	350.	V48M28T37K	1,945.	
45	2@+2.5%	4@-2.5%	DT-3	150	30-1/8	20-1/8	14-1/8	310	765	511	359	140	FR912A	280B	WS31	350.	V48M28T45K	2,100.	
50	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	480	1000	663	485	217	FR913B	280B	WS33	350.	V48M28T50J	2,750.	
75	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	480	1000	663	486	217	FR914B	280B	WS33	350.	V48M28T75J	2,970.	
112.5	2@+2.5%	4@-2.5%	DT-3	150	39-3/8	26-1/8	19-1/8	600	1000	663	486	272	FR915B	280B	WS33	350.	V48M28T12H	4,300.	
150	2@+2.5%	4@-2.5%	DT-3	150	46-1/8	28	23	760	1171	712	585	344	FR916A	280B	WS19	350.	V48M28T49K	5,400.	
225	2@+2.5%	4@-2.5%	DT-3	150	56	31-1/4	24-1/4	1100	1422	793	616	499	FR917	280B	WS34	800.	V48M28T22L	7,900.	
300	2@+2.5%	4@-2.5%	DT-3	150	62-1/4	31-1/4	30-1/4	1600	1581	794	768	728	FR918A	280B	WS34	800.	V48M28T33K	10,000.	
500	2@+2.5%	4@-2.5%	DT-3	150	75	44-1/2	36	2400	1905	1130	914	1088	FR919	275A	WS35	1,360.	V48M28T55G	16,000.	
750	2@+2.5%	4@-2.5%	DT-3	150	75	44-1/2	36	2900	1905	1130	914	1315	FR920	275A	WS35	1,360.	V48M28T77F	26,000.	
1500	1@+3.5%	1@-3.5%	DT-3	150	①	①	①	①	①	①	①	①	①	①	—	—	—	V48W28T11G	46,500.

① Refer to your Cutler-Hammer sales office.

② Floor mount only.

Note: Contact your local Cutler-Hammer sales office for CE Mark transformer requirements.

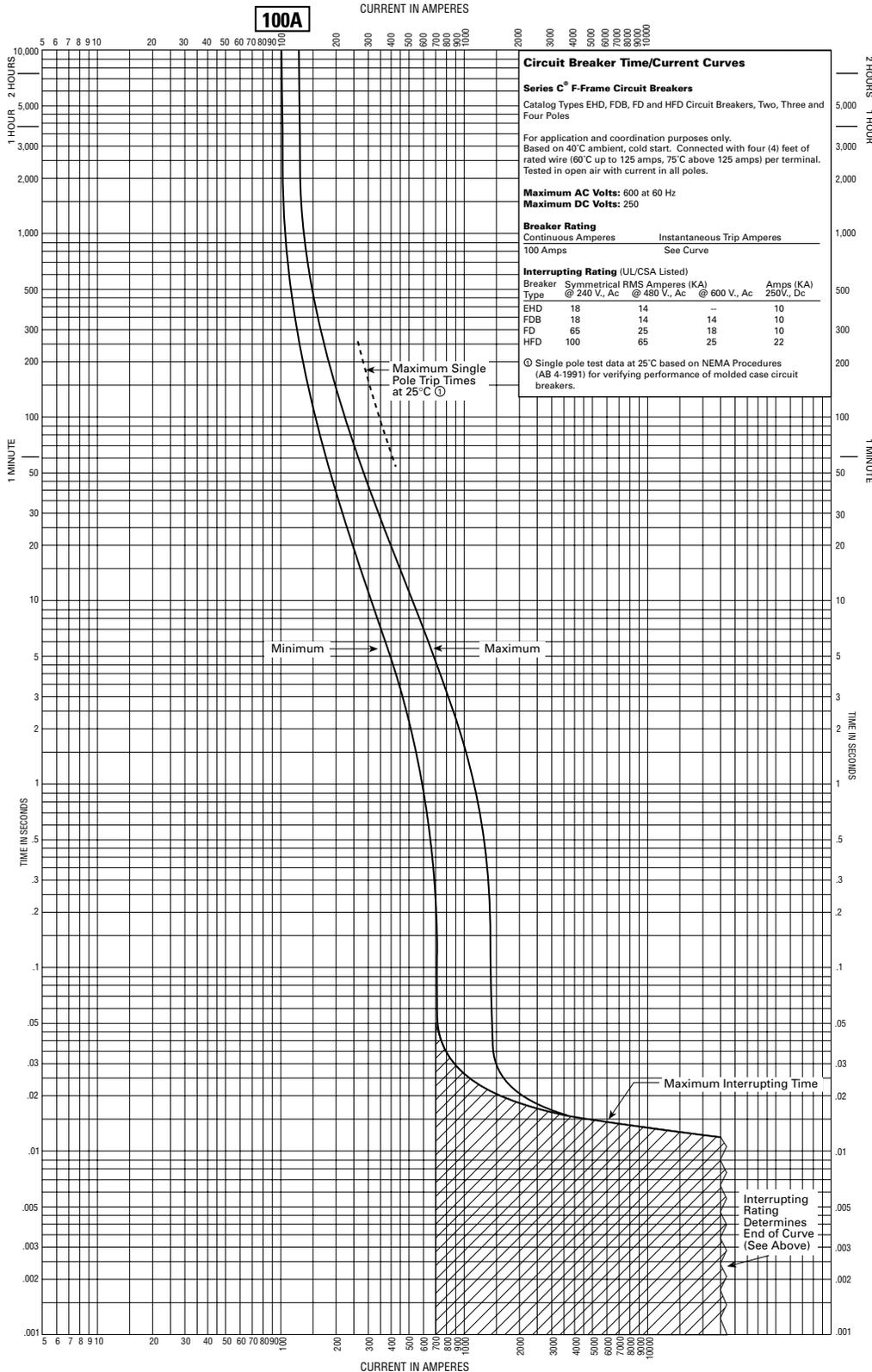
For other ratings or styles not shown, or for special enclosure types (including stainless steel) refer to Eaton's Cutler-Hammer.

Discount Symbol DT-1

COORDINATION: 100A CIRCUIT BREAKER



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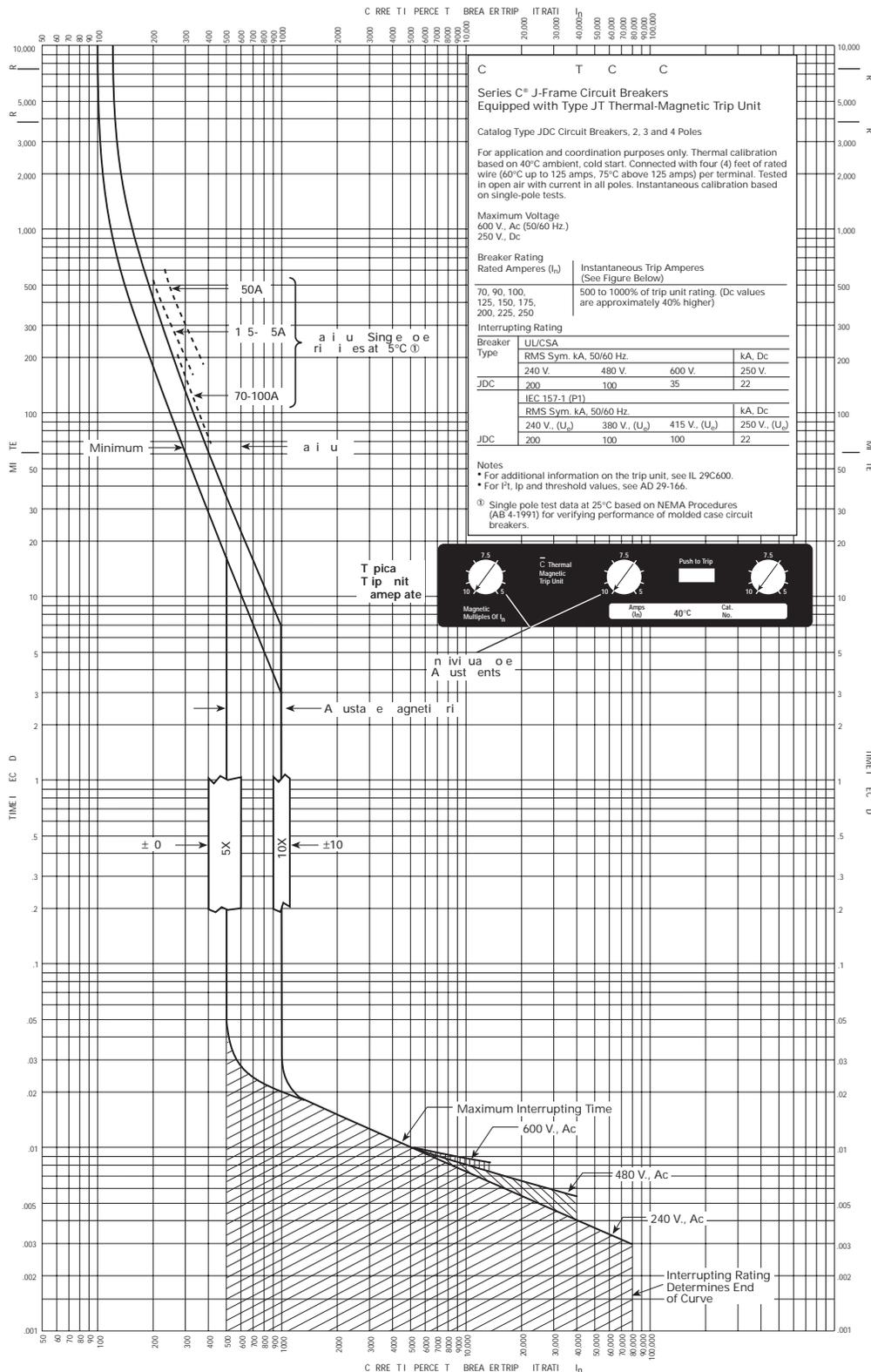


COORDINATION: 250A CIRCUIT BREAKER

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DIODE Circuit Breakers

Series C Type DC Equipped with Thermal-Magnetic Trip Unit





AB DE-ION Circuit Breakers

Types RD, CRD, RDC, CRDC Equipped With Digitrip RMS 510/610/810 Trip Units. Typical Instantaneous Time-Phase Current Characteristic Curve Based on I_n

COORDINATION: 2500A CIRCUIT BREAKER

IMPORTANT
TRIP UNITS ARE NOT AVAILABLE WITH ONLY INSTANTANEOUS PROTECTION. THIS CURVE MUST BE USED in conjunction WITH Curve No. SC-5627-93 for LONG DELAY (and if applicable SHORT DELAY) PROTECTION to obtain the complete time-current characteristic.

Series C[®] R-Frame Circuit Breakers with DIGITRIP RMS 510/610/810 Trip Units Typical Instantaneous Time-Phase Current Characteristic Curve (I)

