

Introduction .....	6-1
EntelliGuard® G Low Voltage Power Circuit Breakers .....	6-2
WavePro Circuit Breakers with Power+, Enhanced MicroVersaTrip® Plus and MicroVersaTrip® PM Trip Unit Systems .....	6-3
WavePro Low Voltage Power Circuit Breakers .....	6-4
OEM Substructures and Substructure Accessories .....	6-17
Trip Unit Conversion Kits Introduction .....	6-24
ProTrip™™ Conversion Kits for	
-GE Power Circuit Breakers .....	6-26
-I-T-E Power Circuit Breakers .....	6-27
-Allis-Chalmers Power Circuit Breakers .....	6-28
-Westinghouse Power Circuit Breakers .....	6-29
-ProTrip™™ Rating Plugs .....	6-30
MicroVersaTrip® Plus and MicroVersaTrip® PM Unit Conversion Kits for	
-GE Power Circuit Breakers .....	6-31
-I-T-E Power Circuit Breakers .....	6-33
-Westinghouse Power Circuit Breakers .....	6-35
-Allis-Chalmers Power Circuit Breakers .....	6-37
Asbestos Free Arc Quencher Replacement Kits .....	6-41
Electrically Operated Racking Device .....	6-42
Gerapid High Speed DC Circuit Breakers .....	6-44
Features and Benefits .....	6-44
Technical Data .....	6-46
Outline Drawings and Dimensions .....	6-48
Reference Publications .....	6-49

## GE WavePro Power Circuit Breakers

WavePro circuit breakers are the newest generation of GE low voltage power circuit breakers. WavePro builds on the experience of the AKR breaker line to bring new convenience and safety features while retaining the robustness of GE's long-standing power circuit breaker products. WavePro breakers are ANSI designed and carry the UL label. They are designed to withstand short circuit stresses equal to their short time interrupting ratings. This means that maximum selectivity with downstream devices can be attained because instantaneous trips are not required to achieve the breaker's short circuit rating. This attests to the ruggedness of the WavePro design and places it ahead of insulated case breakers and other maker's power circuit breakers in many critical applications. WavePro breakers can be applied on power systems from 208 to 600 volts and have current ratings of 800 through 5000 amperes. Short circuit interrupting ratings for WavePro breakers range from 30kA to 200kA rms symmetrical.

Visit GE Consumer and Industrial website for ordering low voltage power circuit breakers and accessories at:

[www.geindustrial.com/industrialsystems/wizards/peb\\_oem\\_am/home.htm](http://www.geindustrial.com/industrialsystems/wizards/peb_oem_am/home.htm)

## Three Choices of Advanced, Solid-State Trip Units

For basic functionality, the Power+ trip unit gives you straightforward means of providing overload and short circuit protection on a WavePro circuit breaker. Tripping characteristics are easily adjusted by simple-to-use rotary switches. The trip unit is upgradeable to ground fault by simply inserting a ground fault rating plug. An optional target module allows for target monitoring and also functions as a trip unit health indicator. Enhanced MicroVersaTrip® Plus and MicroVersa PM trip units give you two ways to monitor and control the WavePro breaker with unprecedented ease. A simple keypad lets you program and display a variety of functions including tripping characteristics, remote communications, status information and protective relaying, and allows integration with GE POWER LEADER® Power Management Systems. The trip unit display also allows viewing of many standard metering parameters as well as pickup alarms, trip target indications and fault status information.

For more information on these products, order publications listed in Section 22.

**AKR BREAKERS AND SUBSTRUCTURES ARE AVAILABLE FOR SPECIAL APPLICATIONS. CONTACT YOUR LOCAL GE SALES REPRESENTATIVE OR BURLINGTON CUSTOMER SERVICE FOR PRICE AND LEAD-TIME.**



## Low Voltage Power and DC Circuit Breakers EntelliGuard® G Low Voltage Power Circuit Breaker

## Section 6

From 400 to 6400A, EntelliGuard® G low voltage power circuit breakers are designed to meet the stringent demands required in today's electrical distribution systems without compromising safety, reliability or system performance.

EntelliGuard® G will be available June 2008. Consult your local GE Field Sales Office for technical information and pricing.



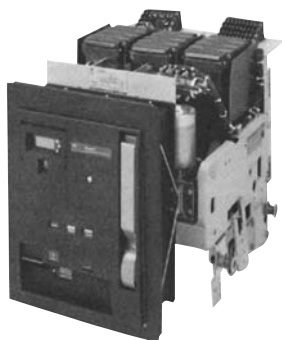
# Low Voltage Power and DC Circuit Breakers

## WavePro Circuit Breakers with Power+, Enhanced MicroVersaTrip® Plus and MicroVersaTrip® PM Trip Unit Systems



There are three trip unit systems available for WavePro Low Voltage Power Circuit Breakers — Power+, and Enhanced MicroVersaTrip® Plus and MicroVersaTrip® PM. All three systems consist of the trip unit, the trip actuator, current sensors and rating plugs. The term “trip unit systems” applies to the combination of these four components, which form the circuit breaker solid-state tripping system.

The Power+ trip unit is the latest addition to the list of trip units available on GE low voltage power circuit breakers. It continues to use GE’s proven technique of measuring true rms currents of both sinusoidal and harmonically distorted waveforms. The frequent sampling (48 times per cycle per phase) allows precise calculations of true rms current. The sampling rate allows waveform measurements up to the 11th harmonic. True rms sensing avoids potential under- or over-protection problems associated with peak-sensing tripping systems.



Enhanced MicroVersaTrip® Plus and MicroVersaTrip® PM trip units also measure true rms currents (and voltages for MicroVersaTrip® PM trip units). The higher sampling rate (64 times per cycle) allows waveform measurements up to the 31st harmonic to achieve accuracy of 99%.

MicroVersaTrip® Plus and MicroVersaTrip® PM trip units contain a digital liquid crystal

display with a five-button keypad for local setup and readout of trip settings. The trip units have a lithium battery for cold setup capability and viewing of targets without external power. The LCD and keypad also provide a three-phase ammeter and trip indicators.

The Enhanced MicroVersaTrip® (MVT) PM trip unit adds power management system capability, including advanced metering and protective relaying, to the basic functions of the MVT Plus. The MVT PM can be interfaced with either Modbus RTU or Ethernet TCP/IP compatible systems.

All trip units utilize a series of interchangeable rating plugs to establish the current rating of the breaker.

### Standard functions:

—Rating plug with test port

### Protection

—Long-time, Instantaneous (Instantaneous may be omitted when short-time is provided)

The Power+ trip unit is identified by its plug-in modules and rotary switches. The optional “target module” provides LED targets for overload, short circuit and ground fault trips. View and Reset push buttons are also provided to monitor status, including a battery check LED. Standard 3-volt lithium batteries, in the target module, power the indicating LEDs (batteries are not required for trip unit operation). The “rating plug module” serves the dual purpose of establishing the trip rating for the circuit breaker as well as providing ground fault protection when required. All pickup and delay settings are selected with detented rotary switches.

### Standard functions:

—Rating plug with test port

### Protection

—Long-time, Instantaneous (Instantaneous may be omitted when short-time is provided)

### Optional functions:

### Protection

—Short-time protection, with selectable  $I^2t$   
—Ground fault protection, with selectable  $I^2t$   
—Defeatable ground fault (not UL)

### Target Module

—View and Reset buttons  
—Battery check LED  
—Longtime pickup/trip unit “health” LED  
—LEDs for overload, short circuit, ground fault trips

### Status

—Trip target (trip type)  
—Trip information (magnitude and phase)  
—Trip operations counters

### Metering display

—Phase current (selectable among phases)

### Optional Functions:

—Short-time protection, with selectable  $I^2t$   
—Ground fault protection, with selectable  $I^2t$   
—Defeatable ground fault (not UL)  
—Switchable instantaneous/short-time and ground fault (not UL).  
—Zone-selective interlock, for ground fault only or for both ground fault and short-time protection.

### Additional functions available only with MicroVersaTrip® PM trip unit:

—Communication and metering (M-option)  
—Communication, metering and protective relaying (PM-option)

### Communication:

—Remote communication with POWER LEADER® Power Management Control System (PMCS) software

### Metering:

—Voltage (V), Energy (kWh/MWh/GWh)  
—Real Power (kW/MW), Total Power (kVA/MVA)  
—Demand Power (kW/MW), Peak demand power (kW/MW)  
—Frequency (Hz)

### Protective relaying:

—Undervoltage, Overvoltage  
—Voltage unbalance, Current unbalance, Power reversal



# Low Voltage Power and DC Circuit Breakers

## WavePro Low Voltage Power Circuit Breakers

## Section 6

### How to select and price WavePro low voltage power circuit breakers — One step at a time

This selection and pricing guide allows you to systematically arrive at the product number and list price for a WavePro OEM breaker. It also contains information you can use to specify applicable fuses, neutral current transformers and other associated devices (Tables A-1 to A-4 on pages 6-8 and 6-9 and Tables B-5 to B-12 on pages 6-21 and 6-22) and to select and order substructures and substructure accessories (Tables B-1 to B-4 on pages 6-17 to 6-21). The WavePro Breaker Application Guide (DET-167) contains additional information that will help you select options to specify for your particular application.

First, determine the appropriate WavePro breaker type from Table A-1 on page 6-8.

Using that information, follow the step-by-step instructions beginning on page 6-11 to select options and accessories. At the end of each step, transfer the resulting product number digit(s) and price component for your selection to the appropriate boxes in the Product Number Line and Price Column. **Helpful Hint:** Make a photocopy of the Product Number Line and Price Column (page 6-7) every time you follow this process so you can use the form again.

When you're done, you'll have a complete breaker product number and, after you add up the price components, a total list price. Note: To order, you must submit a complete 15-digit breaker product number. If you reach a point where no further options or accessories are required, fill in each of the remaining product numbers digits with X (indicating no option or accessory) before submitting

your order. Here's an example of the selection and pricing process based on a WavePro breaker with the following specifications: Example is on pages 6-4 through 6-6. **Breaker selection and pricing starts on page 6-11.** An alternative to developing the breaker product number and pricing manually is to generate the same information electronically via the web wizards at [www.geindustrial.com/industrialsystems/wizards/peb\\_oem\\_am/home.htm](http://www.geindustrial.com/industrialsystems/wizards/peb_oem_am/home.htm)

### Example

Rated AC Voltage Nominal (Max.)	Breaker Type	Frame Size (amps)	Short Circuit Ratings RMS Symmetrical		
			kA		
			Short-Time Withstand	With Instantaneous Trip	Without Instantaneous Trip
480 (508)	WPS-08	800	30	30	30
	WPH-08	800	42	42	42
	WPX-08	800	65	65	65
	WPS-16	1600	50	50	50
	WPH-16	1600	65	65	65
	WPS-20	2000	65	65	65
	WPS-32	3200	65	65	65
	WPH-32	3200	85	85	85
	WPX-32	3200	100	100	100
	WPS-40	4000	85	85	85
	WPX-40	4000	100	100	100
	WPS-50	5000	85	85	85
	WPX-50	5000	100	100	100

### Example

Option or Accessory		Option or Accessory	
Tables A-1 to A-4	WPF-08 Breaker, 800A Frame	<b>Step 6</b>	240V, 50/60 Hz electric lockout
<b>Step 1</b>	800A Class L Fuse, 800A Sensor	<b>Step 7</b>	4-stage aux switch
<b>Step 2</b>	MVT PM Trip Unit with LSIG functions	<b>Step 8</b>	Bell alarm with lockout
<b>Step 3</b>	700A Trip Unit Rating Plug	<b>Step 9</b>	24V dc shunt trip (second shunt trip)
<b>Step 4</b>	120V ac 60Hz Electrical Charge & Close Operation	<b>Step 10</b>	Hidden close push button and remote charge indicator (Note: "A" disconnect comes standard with the options selected here.)
<b>Step 5</b>	120V ac shunt trip, 60 Hz		

**NOTE:** Example digits and price shown in red type.

### Product Number Line – WavePro Breaker (Example)

WavePro Breaker for Substructures		Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Future use but "X" required
W	S	G D	C Q	E	F	1	5	A	B	B	E	X

Price Column	List Price GO-128W
<b>Step 1</b>	<b>\$12790.00</b>
<b>Step 2</b>	<b>\$6500.00</b>
<b>Step 3</b>	<b>\$0.00</b>
<b>Step 4</b>	<b>\$2150.00</b>
<b>Step 5</b>	<b>\$350.00</b>
<b>Step 6</b>	<b>\$595.00</b>
<b>Step 7</b>	<b>\$450.00</b>
<b>Step 8</b>	<b>\$635.00</b>
<b>Step 9</b>	<b>\$635.00</b>
<b>Step 10</b>	<b>\$500.00</b>
<b>Breaker Item List Price, GO-128W</b>	<b>\$24605.00</b>
Item Number	1
Quantity	1

### Step 1 Select Interrupting Type and Current Sensor (Example)

Breaker Type	Interrupting Type & Rating		Current Sensor					
			No Sensor <sup>1</sup>	List Price GO-128W	150A	400A	800A	List Price GO-128W
WPS-08	Standard	—	1A	\$5380.00	1B	1C	1D	\$5980.00
WPH-08	High	—	2A	\$7320.00	2B	2C	2D	\$7920.00
WPX-08	Extended	—	3A	\$10220.00	3B	3C	3D	\$10820.00
WPF-08	Class J Fuse	300A Fuse	—	—	AB	AC	AD	\$12790.00
		350A Fuse	—	—	BB	BC	BD	\$12790.00
		400A Fuse	—	—	CB	CC	CD	\$12790.00
		450A Fuse	—	—	DB	DC	DD	\$12790.00
		500A Fuse	—	—	EB	EC	ED	\$12790.00
		600A Fuse	—	—	FB	FC	FD	\$12790.00
	Class L Fuse	800A Fuse	—	—	GB	GC	GD	\$12790.00
		1000A Fuse	—	—	HB	HC	HD	\$12790.00
		1200A Fuse	—	—	JB	JC	JD	\$12790.00
		1600A Fuse	—	—	KB	KC	KD	\$12790.00

**GO TO STEP 2 ON PAGE 6-5**



# Low Voltage Power and DC Circuit Breakers

## WavePro Low Voltage Power Circuit Breakers

## Section 6

### Step 2 Select Trip Unit (Example)

Function Code	Long Time	Short Time	Instantaneous	Ground Fault <sup>1</sup>	Functions				MicroVersaTrip® Plus		MicroVersaTrip® M		MicroVersaTrip® PM		EntelliGuard® Trip Unit	
					Defeatable Ground Fault <sup>1</sup>	Switchable ST or Inst & GF <sup>1</sup>	ZSI-G F	ZSI-GF & ST	Product No. Digits	List Price GO-128W	Product No. Digits	List Price GO-128W	Product No. Digits	List Price GO-128W	Product No. Digits	List Price GO-128W
LI	•		•						AJ	\$1250.00	BJ	\$2600.00	CJ	\$3500.00	GA	*
LIG	•		•	•					AK	\$3500.00	BK	\$4850.00	CK	\$5750.00	GB	*
LIGZ1	•		•	•			•		AL	\$3915.00	BL	\$5265.00	CL	\$6165.00	GC	*
LIGD <sup>2</sup>	•		•	•	•				AM	\$4000.00	BM	\$5350.00	CM	\$6250.00	GD	*
LIGDZ1 <sup>2</sup>	•		•	•	•		•		AN	\$4500.00	BN	\$5850.00	CN	\$6750.00	GE	*
LS	•	•							AA	\$2000.00	BA	\$3350.00	CA	\$4250.00	GF	*
LS G	•	•		•					AB	\$4250.00	BF	\$5600.00	CC	\$6500.00	GH	*
LSGZ1	•	•		•			•		AA	\$2000.00	BA	\$3350.00	CA	\$4250.00	GK	*
LSGZ2	•	•		•				•	AD	\$5080.00	BD	\$6430.00	CD	\$7330.00	GL	*
LSGD <sup>2</sup>	•	•		•	•				AE	\$4750.00	BE	\$6100.00	CE	\$7000.00	GM	*
LSGDZ1 <sup>2</sup>	•	•		•	•		•		AF	\$5165.00	BF	\$6515.00	CF	\$7415.00	GN	*
LSGDZ2 <sup>2</sup>	•	•		•	•			•	AG	\$5580.00	BG	\$6930.00	CG	\$7830.00	GP	*
LSI	•	•	•						AP	\$2000.00	BP	\$3350.00	CP	\$4250.00	GQ	*
LSIG	•	•	•	•					AQ	\$4250.00	BQ	\$5600.00	CQ	\$6500.00	GR	*
LSIGX	•	•	•	•		•			AR	\$4920.00	BR	\$6270.00	CR	\$7170.00	GS	*
LSIGZ1	•	•	•	•			•		AS	\$4665.00	BS	\$6015.00	CS	\$6915.00	GT	*

\*EntelliGuard® Trip Units will be available for WavePro circuit breakers after June 2008. Consult your local GE Field Sales Office for technical information and pricing.

### Step 3 Select Trip Unit Rating Plug By Current Sensor (Example)

Example only - ordering information starts on page 6-11.

Rating Plug	Product No. Digit	Availability by Current Sensor Rating (shaded areas indicate availability)							
		150	400	800	1600	2000	3200	4000	5000
None	X								
60	1	1							
80	2								
100	3								
125	4								
150	5		1						
200	6								
225	7								
250	8								
300	9			1					
400	A								
450	B			1					
500	C								
600	D				1				
700	E								
750	F					1			
800	G					1			
1000	H								
1100	J				1				
1200	K								
1500	L					1			
1600	M								
2000	N								
2400	P								
2500	Q								
3000	R								
3200	S								1
3600	T							1	
4000	V								1
5000	W								1



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

# Low Voltage Power and DC Circuit Breakers

## WavePro Low Voltage Power Circuit Breakers

## Section 6

### Step 4 Select Charge and Close Operators (Example)

Voltage	Manual		Manual Charge, Remote Close		Electrical Charge & Close	
	Product Number Digit	List Price GO-128W	Product Number Digit	List Price GO-128W	Product Number Digit	List Price GO-128W
Manual	X	\$0.00	—	—	—	—
120V, 60 Hz	—	—	1	\$547.00	F	\$2150.00
120V, 50 Hz	—	—	4	\$547.00	H	\$2150.00
120V, 50/60 Hz-48Vdc	—	—	—	—	N	\$2150.00
240V, 60 Hz	—	—	3	\$547.00	T	\$2150.00
240V, 50 Hz	—	—	6	\$547.00	W	\$2150.00
48Vdc	—	—	A	\$547.00	E	\$2150.00
110Vdc	—	—	B	\$547.00	P	\$2150.00
125Vdc	—	—	C	\$547.00	Q	\$2150.00

### Step 5 Select Shunt Trip (Example)

Voltage	Product Number Digit	List Price GO-128W
None	X	\$0.00
120V, 60 Hz	1	\$350.00
208V, 60 Hz	2	\$350.00
240V, 60 Hz	3	\$350.00
70V, 60 Hz	4	\$350.00
120V, 50 Hz	5	\$350.00
208V, 50 Hz	6	\$350.00

### Step 6 Select Undervoltage Trip OR Electric Lockout (Example)

Voltage	Undervoltage (Instantaneous)		Undervoltage with Time Delay		Electric Lockout	
	Product Number Digit	List Price GO-128W	Product Number Digit	List Price GO-128W	Product Number Digit	List Price GO-128W
None	X	\$0.00	X	\$0.00	X	\$0.00
120V, 50/60 Hz	1	\$565.00	—	—	4	\$595.00
208V, 50/60 Hz	—	—	3	\$565.00	—	—
240V, 50/60 Hz	2	\$565.00	3	\$565.00	5	\$595.00
24Vdc	A	\$565.00	—	—	G	\$595.00
48Vdc	B	\$565.00	—	—	H	\$595.00
110Vdc	C	\$565.00	—	—	J	\$595.00
125Vdc	C	\$565.00	E	\$565.00	J	\$595.00

### Step 7 Select Auxiliary Switch (Example)

Auxiliary Switch	Product Number Digit	List Price GO-128W
None	X	\$0.00
4-stage Auxiliary Switch	A	\$450.00

### Step 8 Select Bell Alarm (Example)

Bell Alarm	Product Number Digit	List Price GO-128W
None	X	\$0.00
Bell Alarm	A	\$635.00
Bell Alarm with Lockout	B	\$635.00

### Step 9 Select Second Shunt Trip (Example)

(not available with WPS-50 5000A breakers)

Voltage	Product Number Digit	List Price GO-128W
None	X	\$0.00
120V, 60Hz	1	\$635.00
240V, 60Hz	3	\$635.00
24Vdc	B	\$635.00
110/125Vdc	E	\$635.00

### Step 10 Select Additional Options (Example)

A-Disconnect "PM Ready"	Hidden Close Push Button	Operation Counter	Remote Charge Indicator	Product No. Digit	List Price GO-128W
				X (none)	\$0.00
			•	A	\$375.00
		•		B	\$375.00
		•	•	C	\$750.00
	•			D	\$725.00
	•		•	E	\$500.00
	•	•		F	\$500.00
	•	•	•	G	\$875.00
•				H	\$250.00
•			•	J	\$625.00
•		•		K	\$625.00
•		•	•	L	\$1000.00
•	•			M	\$375.00
•	•		•	N	\$750.00
•	•	•		P	\$750.00

Example only - ordering information starts on page 6-11.



# Low Voltage Power and DC Circuit Breakers

## WavePro Low Voltage Power Circuit Breakers

## Section 6

### Ordering Worksheet

The step-by-step process below allows you to systematically arrive at the product number and list price for your WavePro OEM breaker. As a result, you will get exactly what you need. In addition, this system reduces the cycle time, precisely specifies your requirements, allows tracking during production and ensures accurate invoicing. The final product number will appear on the breaker nameplate, so you can identify all components built into the original breaker and compare breakers within a facility for proper application.

Follow the instructions at each step and transfer the product number digit and price for each selection to the appropriate boxes in the Product Number Line and Price Column below. Note: You must submit a complete 15-digit product number when ordering. If you reach a point where no further options or accessories are desired, fill in the remaining product number digits with "X" (for none).

For options not listed, contact your GE Sales Engineer or GE Switchgear Marketing for assistance.

### Product Number Line—WavePro Breaker

WavePro Breaker for Substructures		Step 1		Step 2		Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Future use, but "X" required
W	S													X

Date \_\_\_\_\_

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_

Telephone \_\_\_\_\_

Fax \_\_\_\_\_

Price Column	List Price GO-128W
Step 1	\$
Step 2	\$
Step 3	\$0.00
Step 4	\$
Step 5	\$
Step 6	\$
Step 7	\$
Step 8	\$
Step 9	\$
Step 10	\$
Breaker Item List Price, GO-128W	\$
Item Number	
Quantity	

**Note: Photocopy this page for each breaker you select and submit it with your order.**



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

# Low Voltage Power and DC Circuit Breakers

## WavePro Low Voltage Power Circuit Breakers

Basic Selection Information

## Section 6

**Table A-1.**

WavePro Interrupting Ratings (50/60 Hz ac)

Rated AC Voltage, Nominal (max)	Breaker Type	Frame Size (amps)	Short-Circuit RMS Symmetrical kA		
			Short-Time Withstand	With Instantaneous Trip	Without Instantaneous Trip
600 (635)	WPS-08	800	30	30	30
	WPH-08	800	42	42	42
	WPX-08	800	50	50	50
	WPS-16	1600	42	42	42
	WPH-16	1600	65	65	65
	WPS-20	2000	65	65	65
	WPS-32	3200	65	65	65
	WPH-32	3200	85	85	85
	WPX-32	3200	85	85	85
	WPS-40	4000	85	85	85
	WPX-40	4000	85	85	85
	WPS-50	5000	85	85	85
	WPX-50	5000	85	85	85
480 (508)	WPS-08	800	30	30	30
	WPH-08	800	42	42	42
	WPX-08	800	65	65	65
	WPS-16	1600	50	50	50
	WPH-16	1600	65	65	65
	WPS-20	2000	65	65	65
	WPS-32	3200	65	65	65
	WPH-32	3200	85	85	85
	WPX-32	3200	100	100	100
	WPS-40	4000	85	85	85
	WPX-40	4000	100	100	100
	WPS-50	5000	85	85	85
	WPX-50	5000	100	100	100
240 (254)	WPS-08	800	30	42	30
	WPH-08	800	42	50	42
	WPX-08	800	50	65	50
	WPS-16	1600	50	65	50
	WPH-16	1600	65	65	65
	WPS-20	2000	65	65	65
	WPS-32	3200	65	85	65
	WPH-32	3200	85	130	85
	WPX-32	3200	100	130	100
	WPS-40	4000	85	130	85
	WPX-40	4000	100	130	100
	WPS-50	5000	85	130	85
	WPX-50	5000	100	130	100

**Table A-2.**

Fused Breaker Ratings. Max. 600V ac 50/60 Hz.

Frame Size (Amps)	Fuse Rating (Amps) <sup>1</sup>		Interrupting Rating rms Symmetrical kA	Breaker Type
	Min	Max		
800	300	1600	200	WPF-08
1600	450	2500	200	WPF-16
2000	2000	2500	200	WPS-20 <sup>2</sup>
3200	2000	4000	200	WPS-32 <sup>2</sup>
4000	2000	5000	200	WPS-40 <sup>2</sup>
5000	2000	5000	200	WPS-50 <sup>2</sup>

<sup>1</sup>The maximum fuse rating is the largest fuse that tests show will result in proper performance of the breaker and fuse in combination under short circuit conditions.

<sup>2</sup>Fuses are mounted on separate fuse roll-out element and are ordered and shipped separately. See Table A-4 on page 6-9.





# Low Voltage Power and DC Circuit Breakers

## WavePro Low Voltage Power Circuit Breakers

Basic Selection Information (cont.)

## Section 6

**Table A-3.**

Allowable Fuse Sizes for WavePro WPF and WPS breakers with separate fused rollout elements.

Note: WPS breakers with separate fuse roll-out element require the open fuse lockout (OFLO) device. Select "OFLO only" option for breakers 2000A-5000A: The "OFLO" option is standard on WPF breakers.

				Ferraz-Shawmut Fuse Range (Amps) <sup>1</sup> Darkened areas indicate available fuse ranges														
Breaker Type	Frame Size	Sensor Rating	Rating Plug	Class J						Class L								
				300	350	400	450	500	600	800	1000	1200	1600	2000	2500	3000	4000	5000
WPF-08	800A	150A	Below 150A															
		150A, 400A	150A															
		400A	225A															
		400A, 800A	300A															
		400A, 800A	400A															
		800A	600A															
		800A	700A															
		800A	800A															
WPF-16 <sup>3</sup>	1600A	800A	400A & below															
		800A	500A															
		800A, 1600A	600A															
		800A, 1600A	700A															
		800A, 1600A	800A															
		1600A	1000A															
		1600A	1200A															
		1600A <sup>3</sup>	1600A <sup>3</sup>												3			
WPS-20 <sup>2</sup>	2000A	2000A	2000A & below															
WPS-32 <sup>2</sup>	3200A	3200A	3200A & below															
WPS-40 <sup>2</sup>	4000A	4000A	4000A & below															
WPS-50 <sup>2</sup>	5000A	5000A	5000A & below															

<sup>1</sup>Class L fuses less than 800A are not UL or CSA listed. Use Class J fuses for 600A and below. 800A-2000A fuses are also available as welder limiters.

<sup>2</sup>Fuses are mounted on separate fuse roll-out element and are ordered and shipped separately. See Table B-3 on pages 6-18 to 6-20.

<sup>3</sup>Integrally fused 1600A frame breakers (WPF-16) equipped with 2500A fuses can be furnished with rating plugs from 300-1600A. Breakers equipped with 2500A fuses cannot be modified to accept lower rated fuses. WPF-16 breakers equipped with 2000A and lower fuses cannot be upgraded to 2500A fuses. The maximum trip rating for a WPF-16 breaker is 1200A when furnished with other than 2500A fuses (see chart for min-max fuse rating for each rating plug value). 2500A fuses preclude the use of shutters in the breaker cubicle.

**Table A-4.**

Product Numbers for Replacement Fuses

Note: These product numbers are for field-installed replacement fuses. Original fuses for 800A and 1600A frame breakers are integral to the breaker and are factory installed. For larger frame breakers (2000A and greater), customers must provide and separately mount fuses.

### Class J & Class L Breaker Mounted Fuses for 800A and 1600A Frames

(replace original GE-installed fuses)

Fuse Class	Fuse Rating	Product Number
J	300A	A4J300
J	400A	A4J400
J	450A	A4J450
J	500A	A4J500
J	600A	A4J600
L	800A	A4BY800
L	1000A	A4BY1000BG
L	1200A	A4BY1200BG
L	1600A	A4BY1600BG
L	2000A	A4BY2000
L (Silver)	2500A	A4BQ2500GE

### Class L Fuses for Roll-out Elements on 2000A, 3200A, 4000A and 5000A Frames

(replace original customer-installed fuses)

Fuse Rating	Product Number
2000A	A4BY2000-55BA
2500A	A4BY2500-55BA
3000A	A4BY3000-55BA
4000A	A4BY4000-55BA
5000A	A4BY5000-55BA

### Welder Limiters for Breaker Mounted Fuses

(replace original GE-installed fuses)

Fuse Rating	Product Number
800A	A4BX800
1600A	A4BX1600BG
2000A	A4BX2000



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

# Low Voltage Power and DC Circuit Breakers

## WavePro Low Voltage Power Circuit Breakers

## Section 6

### Power+, MicroVersaTrip® Plus and MicroVersaTrip® PM Trip Unit Characteristics

Frame Size	Max. Amp Rating	Sensor Rating (Amps) (CT)	Long-time		Short-time	
			Long Time (LT) (Pickup) Multiple of Rating Plug Amps ( $I_n$ )	Delay [Band] (Seconds) <sup>1</sup>	Pickup (Multiple of Long Time) (LT)	Delay [Band] (Seconds)
WPS-08 / WPH-08 WPX-08 / WPF-08	800	150, 400, 800	Power+ 0.5 thru 1.1 in steps of 0.1	[1] [2] [3] [4] 2.4, 4.9, 9.8, 20	Power+ 1.5, 2.0, 2.5, 3.0, 4.0 5.0, 7.0, 9.0	$I^2t$ in 0.40
WPS-16 / WPH-16 WPF-16	1600	800, 1600				
WPS-20	2000	2000				
WPS-32 / WPH-32 / WPX-32	3200	3200	MVT Plus/PM 0.5 thru 1.1 in steps of 0.05		MVT Plus/PM 1.5 thru 9.0 in steps of 0.5	$I^2t$ out <sup>2</sup> [1] [2] [3] .10, .21, .35
WPS-40 / WPX-40	4000	4000				
WPS-50 / WPX-50 <sup>4</sup>	5000	5000				

Frame Size	Adjustable Instantaneous Pickup without ST (Multiple of Rating Plug Amps) ( $I_n$ )	Adjustable Instantaneous Pickup with ST (Multiple of Rating Plug Amps) ( $I_n$ )	Ground Fault		
			Pickup (Multiple of Sensor Amp rating) (CT)	Delay with $I^2t$ (Seconds)	Delay without $I^2t$ [Band] (Seconds) <sup>3</sup>
WPS-08 WPH-08 WPX-08 WPF-08 WPS-16 / WPH-16 WPF-16 WPS-20	Power+ 1.5, 2.0, 3.0, 5.0, 7.0, 9.0, 10.0  MVT Plus/PM 1.5 thru 10.0 in steps of 0.5	Power+ 1.5, 2.0, 3.0, 5.0, 7.0, 9.0, 10.0, 13.0, 15.0  MVT Plus/PM 1.5 thru 15.0 in steps of 0.5	Power+ .20, .25, .30, .35, .40, .45, .50, .60,  MVT Plus/PM 0.20 thru 0.60 in steps of 0.01	.44 at 200% of pick up at lower limit of band	[1] [2] [3] .10, .21, .35
WPS-32 / WPH-32 / WPX-32		Power+ 1.5, 2.0, 3.0, 5.0, 7.0, 9.0, 10.0, 13.0  MVT Plus/PM 1.5 thru 13.0 in steps of 0.5	Power+ .20, .22, .24, .26, .28, .30, .34, .37,  MVT Plus/PM 0.20 thru 0.37 in steps of 0.01		
WPS-40 / WPX-40	Power+ 1.5, 2.0, 3.0, 5.0, 7.0, 9.0  MVT Plus/PM 1.5 thru 9.0 in steps of 0.5	Power+ 1.5, 2.0, 3.0, 5.0, 7.0, 9.0  MVT Plus/PM 1.5 thru 9.0 in steps of 0.5	Power+ .20, .22, .24, .26, .28, .30  MVT Plus/PM 0.20 thru 0.30 in steps of 0.01		
WPS-50 / WPX-50 <sup>4</sup>	MVT Plus/PM 1.5 thru 7.0 in steps of 0.5	MVT Plus/PM 1.5 thru 7.0 in steps of 0.5	MVT Plus/PM 0.20 thru 0.24 in steps of 0.01		

<sup>1</sup>Time delay shown at 600% of current setting at lower limit of band.

<sup>2</sup>Time delay shown at lower limit of each band. All pickup tolerances are  $\pm 10\%$ .

<sup>3</sup>Time delay shown at lower limit of band. Ground-fault pickup not to exceed 1200 amps.

<sup>4</sup>Power+ not available on 5000 amp (WPS/WPX-50) circuit breaker.

(X)  $I_n$  = Rating plug amps

(S) CT = Sensor amp rating

(C) LT = Long-time current setting

ST = Short Time function



# Low Voltage Power and DC Circuit Breakers

## WavePro Low Voltage Power Circuit Breakers

## Section 6

### Selection and Pricing

Before beginning the selection and pricing process, first determine the appropriate WavePro breaker type from Table A-1 on page 6-8. You will need this information to proceed.



### Step 1 Select Interrupting Type And Current Sensor

For WPF breaker types, see Table A-3 on page 6-9 for allowable combinations of fuse size, current sensor and rating plugs. From the table below that corresponds to your frame size, select the interrupting type and current sensor for your breaker type. Transfer the product number digits to the box marked **Step 1** in the Product Number Line and the price to the box marked **Step 1** in the Price Column on the Ordering Worksheet (page 6-7). Note: Power fuses and open fuse lockout (OFLO) devices are included in the pricing for WPF type 800 and 1600 amp fused breakers.

### 800 Amp Frame

Breaker Type	Interrupting Type & Rating		Current Sensor					
			No Sensor <sup>1</sup>	List Price GO-128W	150A	400A	800A	List Price GO-128W
WPS-08	Standard	—	1A	\$5380.00	1B	1C	1D	\$5980.00
WPH-08	High	—	2A	\$7320.00	2B	2C	2D	\$7920.00
WPX-08	Extended	—	3A	\$10220.00	3B	3C	3D	\$10820.00
WPF-08	Class J Fuse	300A Fuse	—	—	AB	AC	AD	\$12790.00
		350A Fuse	—	—	BB	BC	BD	\$12790.00
		400A Fuse	—	—	CB	CC	CD	\$12790.00
		450A Fuse	—	—	DB	DC	DD	\$12790.00
		500A Fuse	—	—	EB	EC	ED	\$12790.00
		600A Fuse	—	—	FB	FC	FD	\$12790.00
	Class L Fuse	800A Fuse	—	—	GB	GC	GD	\$12790.00
		1000A Fuse	—	—	HB	HC	HD	\$12790.00
		1200A Fuse	—	—	JB	JC	JD	\$12790.00
		1600A Fuse	—	—	KB	KC	KD	\$12790.00
	Welder Limiter	800A Fuse	—	—	—	—	ND	\$12790.00
		1600A Fuse	—	—	—	—	QD	\$12790.00

<sup>1</sup> Draw-out breaker only, non-automatic.

### 1600 Amp Frame

Breaker Type	Interrupting Type & Rating		Current Sensor				
			No Sensor <sup>1</sup>	List Price GO-128W	800A	1600A	List Price GO-128W
WPS-16	Standard	—	1E	\$11730.00	1F	1G	\$12330.00
WPH-16	High	—	2E	\$13960.00	2F	2G	\$14560.00
WPF-16	Class J Fuse	450A Fuse	—	—	DF	—	\$19040.00
		500A Fuse	—	—	EF	—	\$19040.00
		600A Fuse	—	—	FF	FG	\$19040.00
	Class L Fuse	800A Fuse	—	—	GF	GG	\$19040.00
		1000A Fuse	—	—	HF	HG	\$19040.00
		1200A Fuse	—	—	JF	JG	\$19040.00
		1600A Fuse	—	—	KF	KG	\$19040.00
		2000A Fuse	—	—	LF	LG	\$19040.00
		2500A Fuse	—	—	MF	MG	\$19040.00
		800A Fuse	—	—	NF	NG	\$19040.00
	Welder Limiter	1600A Fuse	—	—	QF	QG	\$19040.00
		2000A Fuse	—	—	RF	RG	\$19040.00

<sup>1</sup> Draw-out breaker only, non-automatic.



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

# Low Voltage Power and DC Circuit Breakers

## WavePro Low Voltage Power Circuit Breakers

Selection and Pricing (cont.)

## Section 6

### Step 1 (Cont.)

#### 2000 Amp Frame

Breaker Type	Interrupting Type	No Sensor <sup>1</sup>	List Price GO-128W	2000A Sensor	List Price GO-128W
WPS-20	Standard	1H	\$19190.00	1J	\$19790.00
	OFLO only <sup>2</sup>	—	—	4J	\$20765.00

#### 4000 Amp Frame

Breaker Type	Interrupting Type	No Sensor <sup>1</sup>	List Price GO-128W	4000A Sensor	List Price GO-128W
WPS-40	Standard	1M	\$32190.00	1N	\$32790.00
	OFLO only <sup>2</sup>	—	—	4N	\$33765.00
WPX-40	Extended	3M	\$37115.00	3N	\$37715.00

<sup>1</sup> Draw-out breaker only, non-automatic.

<sup>2</sup> List Price includes OPEN FUSE LOCKOUT (OFLO) device. Use with separate fuse roll-out element (see TABLE B-2 on page 6-17).



#### 3200 Amp Frame

Breaker Type	Interrupting Type	No Sensor <sup>1</sup>	List Price GO-128W	3200A Sensor	List Price GO-128W
WPS-32	Standard	1K	\$25100.00	1L	\$25700.00
	OFLO only <sup>2</sup>	—	—	4L	\$26675.00
WPH-32	High	2K	\$28550.00	2L	\$29150.00
WPX-32	Extended	3K	\$33045.00	3L	\$33645.00

#### 5000 Amp Frame

Breaker Type	Interrupting Type	5000A Sensor	List Price GO-128W
WPS-50	Standard	1R	\$36660.00
	OFLO only <sup>2</sup>	4R	\$37635.00
WPX-50	Extended	3R	\$42165.00

### Step 2 Select Trip Unit

From the table below, select your trip unit. Transfer the product number digits to the boxes marked **Step 2** in the Product Number Line and the price to the box marked **Step 2** in the Price Column.

#### MicroVersaTrip® Trip Unit

All MicroVersaTrip® trip units include integral targets and ammeter display. MicroVersaTrip® M adds full metering and communications; MicroVersaTrip® PM adds relaying, metering and communications.

Functions									MicroVersaTrip® Plus		MicroVersaTrip® PM			
Function Code	Long Time	Short Time	Instantaneous	Ground Fault <sup>1</sup>	Defeatable Ground Fault <sup>1,2</sup>	Switchable ST or Inst & GF <sup>1,2</sup>	ZSI-GF <sup>3</sup>	ZSI-GF & ST <sup>3</sup>	Product No. Digits	List Price GO-128W	M		PM	
											Product No. Digits	List Price GO-128W	Product No. Digits	List Price GO-128W
LI	•		•						AJ	\$1250.00	BJ	\$2600.00	CJ	\$3500.00
LIG	•		•	•					AK	\$3500.00	BK	\$4850.00	CK	\$5750.00
LIGZ1	•		•	•			•		AL	\$3915.00	BL	\$5265.00	CL	\$6165.00
LIGD <sup>2</sup>	•		•		•				AM	\$4000.00	BM	\$5350.00	CM	\$6250.00
LIGDZ1 <sup>2</sup>	•		•		•		•		AN	\$4500.00	BN	\$5850.00	CN	\$6750.00
LS	•	•							AA	\$2000.00	BA	\$3350.00	CA	\$4250.00
LSG	•	•		•					AB	\$4250.00	BB	\$5600.00	CB	\$6500.00
LSGZ1	•	•		•			•		AC	\$4665.00	BC	\$6015.00	CC	\$6915.00
LSGZ2	•	•		•				•	AD	\$5080.00	BD	\$6430.00	CD	\$7330.00
LSGD <sup>2</sup>	•	•			•				AE	\$4750.00	BE	\$6100.00	CE	\$7000.00
LSGDZ1 <sup>2</sup>	•	•			•		•		AF	\$5165.00	BF	\$6515.00	CF	\$7415.00
LSGDZ2 <sup>2</sup>	•	•			•			•	AG	\$5580.00	BG	\$6930.00	CG	\$7830.00
LSI	•	•	•						AP	\$2000.00	BP	\$3350.00	CP	\$4250.00
LSIG	•	•	•	•					AQ	\$4250.00	BQ	\$5600.00	CQ	\$6500.00
LSIGX <sup>2</sup>	•	•	•	•		•			AR	\$4920.00	BR	\$6270.00	CR	\$7170.00
LSIGZ1	•	•	•	•			•		AS	\$4665.00	BS	\$6015.00	CS	\$6915.00
LSIGZ2	•	•	•	•				•	AT	\$5080.00	BT	\$6430.00	CT	\$7330.00
LSIGD <sup>2</sup>	•	•	•		•				AV	\$4750.00	BV	\$6100.00	CV	\$7000.00
LSIGDZ1 <sup>2</sup>	•	•	•		•		•		AW	\$5165.00	BW	\$6515.00	CW	\$7415.00
LSIGDZ2 <sup>2</sup>	•	•	•		•			•	AY	\$5580.00	BY	\$6930.00	CY	\$7830.00

<sup>1</sup> Ground fault is 3-wire/4-wire. If 4-wire ground fault is required, then one of the A-Disconnect options in **Step 10** must be selected and the sensor for the 4th wire (neutral) must be ordered separately. See Table B-5 on page 6-21.

<sup>2</sup> Function combination is not UL Listed.

<sup>3</sup> Requires zone selective interlock module, Type TIM1 (120Vac control voltage), List Price \$402.00, GO-245B.



# Low Voltage Power and DC Circuit Breakers

## WavePro Low Voltage Power Circuit Breakers

Selection and Pricing (cont.)

## Section 6

### Step 3 Select Trip Unit Rating Plug By Current Sensor

Select your rating plug and current sensor combination. Transfer the product number digit to the box marked **Step 3** in the product number line. There is no price component for this step.

Rating Plug	Product No. Digit	Availability by Current Sensor Rating (shaded areas indicate availability)							
		150	400	800	1600	2000	3200	4000	5000
None	X								
60	1	1							
80	2								
100	3								
125	4								
150	5		1						
200	6								
225	7								
250	8								
300	9			1					
400	A								
450	B			1					
500	C								
600	D				1				
700	E								
750	F					1			
800	G					1			
1000	H								
1100	J				1				
1200	K								
1500	L					1			
1600	M								
2000	N								
2400	P								
2500	Q								
3000	R								
3200	S								1
3600	T							1	
4000	V								1
5000	W								1

<sup>1</sup> At coordinate indicated, rating plug and current sensor combination available only on MicroVersaTrip trip units. Not available on Power+ trip units.

### Step 4 Select Charge and Close Operators

Select your charge and close options. Transfer the product number digits to the box marked **Step 4** in the Product Number Line and the price to the box marked **Step 4** in the Price Column.

Charge-Close Voltage	Manual		Manual Charge, Remote Close <sup>1</sup>		Electrical Charge & Close <sup>1</sup>	
	Product No. Digit	List Price GO-128W	Product No. Digit	List Price GO-128W	Product No. Digit	List Price GO-128W
Manually Operated	X	\$0.00	—	—	—	—
120V, 60 Hz	—	—	1	\$547.00	F	\$2150.00
120V, 50 Hz	—	—	4	\$547.00	H	\$2150.00
120V, 50/60 Hz - 48Vdc	—	—	—	—	N	\$2150.00
240V, 60 Hz	—	—	3	\$547.00	T	\$2150.00
240V, 50 Hz	—	—	6	\$547.00	W	\$2150.00
48Vdc	—	—	A	\$547.00	E	\$2150.00
110Vdc	—	—	B	\$547.00	P	\$2150.00
125Vdc	—	—	C	\$547.00	Q	\$2150.00
250Vdc	—	—	D	\$547.00	R	\$2150.00

<sup>1</sup> Requires the selection of a shunt trip in **Step 5** and a 4-stage or higher auxiliary switch in **Step 7**.



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

# Low Voltage Power and DC Circuit Breakers

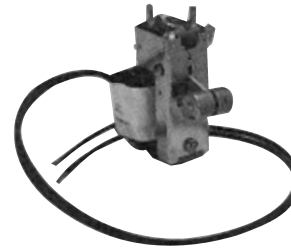
## WavePro Low Voltage Power Circuit Breakers

## Section 6

### Step 5 Select Shunt Trip

Select your shunt trip. Transfer the product number digit to the box marked **Step 5** in the Product Number Line and the price to the box marked **Step 5** in the Price Column. (Note: All shunt trips require the selection of a 4- or 7-stage auxiliary switch in **Step 7**. Second shunt trip may be selected in **Step 9**.)

Voltage	Product Number Digit	List Price, GO-128W	Voltage	Product Number Digit	List Price GO-128W
None	X	\$0.00	240V/50 Hz	7	\$350.00
120V, 60 Hz	1	\$350.00	—	—	—
208V, 60 Hz	2	\$350.00	24Vdc	B	\$350.00
240V, 60 Hz	3	\$350.00	48Vdc	D	\$350.00
70V, 60 Hz	4	\$350.00	110/125Vdc	E	\$350.00
120V, 50 Hz	5	\$350.00	250Vdc	F	\$350.00
208V, 50 Hz	6	\$350.00	—	—	—



Shunt Trip

### Step 6 Select Undervoltage Trip OR Electric Lockout

Select your undervoltage trip or electric lockout option. Transfer the product number digit to the box marked **Step 6** in the Product Number Line and the price to the box marked **Step 6** in the Price Column.

Voltage	Undervoltage (Instantaneous)		Undervoltage with Time Delay <sup>1</sup>		Electric Lockout	
	Product Number Digit	List Price GO-128W	Product Number Digit	List Price GO-128W	Product Number Digit	List Price GO-128W
None	X	\$0.00	X	\$0.00	X	\$0.00
120V, 50/60 Hz	1	\$565.00	—	—	4	\$595.00
208V, 50/60 Hz	—	—	3 <sup>2</sup>	\$565.00	—	—
240V, 50/60 Hz	2	\$565.00	3 <sup>3</sup>	\$565.00	5	\$595.00
24Vdc	A	\$565.00	—	—	G	\$595.00
48Vdc	B	\$565.00	—	—	H	\$595.00
110Vdc	C	\$565.00	—	—	J	\$595.00
125Vdc	C	\$565.00	E <sup>4</sup>	\$565.00	J	\$595.00
250Vdc	D	\$565.00	F <sup>5</sup>	\$565.00	K	\$595.00

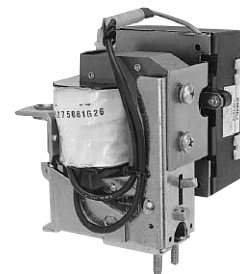
<sup>1</sup> Time delay module is provided as a separate component.

<sup>2</sup> Order static time delay TAKYUVT5 separately. See Table B-6 on page 6-21.

<sup>3</sup> Order static time delay TAKYUVT4 separately. See Table B-6 on page 6-21.

<sup>4</sup> Order static time delay TAKYUVT1 separately. See Table B-6 on page 6-21.

<sup>5</sup> Order static time delay TAKYUVT2 separately. See Table B-6 on page 6-21.



Undervoltage Trip/Electric Lockout

### Step 7 Select Auxiliary Switch

Select your auxiliary switch option. Transfer the product number digit to the box marked **Step 7** in the Product Number Line and the price to the box marked **Step 7** in the Price Column.

Auxiliary Switch	Product No. Digit	List Price GO-128W
None	X	\$0.00
4-stage Auxiliary Switch	A	\$450.00
7-stage Auxiliary Switch	B	\$765.00

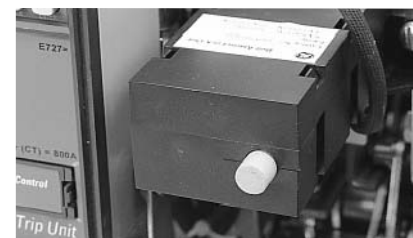


Auxiliary Switch

### Step 8 Select Bell Alarm/Push Button Cover

Select your bell alarm option. Transfer the product number digit to the box marked **Step 8** in the Product Number Line and the price to the box marked **Step 8** in the Price Column.

Bell Alarm	Push Button Cover	Product No. Digit	List Price GO-128W
None	None	X	\$0.00
Bell Alarm	None	A	\$635.00
Bell Alarm with Lockout	None	B	\$635.00
None	CLOSE PB Cover	C	\$40.00
Bell Alarm	CLOSE PB Cover	D	\$675.00
Bell Alarm with Lockout	CLOSE PB Cover	E	\$675.00
None	OPEN PB Cover	F	\$40.00
Bell Alarm	OPEN PB Cover	G	\$675.00
Bell Alarm with Lockout	OPEN PB Cover	H	\$675.00
None	CLOSE & OPEN PB Cover	J	\$80.00
Bell Alarm	CLOSE & OPEN PB Cover	K	\$715.00
Bell Alarm with Lockout	CLOSE & OPEN PB Cover	L	\$715.00



Bell Alarm



# Low Voltage Power and DC Circuit Breakers

## WavePro Low Voltage Power Circuit Breakers

## Section 6

### Step 9 Select Second Shunt Trip

If you selected a shunt trip in **Step 5** and require another, select your second shunt trip option. Transfer the product number digit to the box marked **Step 9** in the Product Number Line and the price to the box marked **Step 9** in the Price Column. Note: Second shunt trip requires the selection of a 7-stage auxiliary switch in **Step 7**.

Voltage	Product No. Digit	List Price GO-128W
None	X	\$0.00
120V, 60 Hz	1	\$635.00
240V, 60 Hz	3	\$635.00
24Vdc	B	\$635.00
110/125Vdc	E	\$635.00
250Vdc	F	\$635.00

### Step 10 Select Additional Options

Select your combination of additional options. Transfer the product number digit to the box marked **Step 10** in the Product Number Line and the price to the box marked **Step 10** in the Price Column.

A-Disconnect <sup>1</sup> "PM Ready"	Hidden Close Push Button <sup>2</sup>	Operation Counter	Remote Charge Indicator	Product No. Digit	List Price GO-128W
				X (none)	\$0.00
			•	A	\$375.00
		•		B	\$375.00
		•	•	C	\$750.00
	•			D	\$125.00
	•		•	E	\$500.00
	•	•		F	\$500.00
	•	•	•	G	\$875.00
•				H	\$250.00
•			•	J	\$625.00
•		•		K	\$625.00
•		•	•	L	\$1000.00

<sup>1</sup>The 36-point A-Disconnect is automatically supplied if any of the following options were selected in previous steps:

- zone selective interlock
- shunt trip
- auxiliary switch
- bell alarm
- undervoltage trip
- electrical lockout device
- electric charge and close
- MicroVersaTrip PM trip unit ("M" or "PM" option)

Select the A-Disconnect here only if (1) none of these options were selected in previous steps and 4-wire ground fault is required or (2) none of these options were selected in previous steps and your WavePro breaker is to be "PM ready." "PM ready" wiring includes inputs for 24V dc auxiliary power, communications, and 3 phase voltage.

<sup>2</sup>Available only on breakers with electrical charge and close option.



Optional Hidden Close button feature shown



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

# Low Voltage Power and DC Circuit Breakers

## WavePro Low Voltage Power Circuit Breakers

## Section 6

### WavePro Breaker Power+ and MicroVersaTrip® Plus/PM Rating Plugs

Breaker Frame Size (Amps)	Current Sensor (Amps)	Rating Plug (Amps)	Power+ Rating Plug w/o GF	Power+ Rating Plug with GF	Power+ Rating Plug with Defeatable GF	MicroVersaTrip® Plus/PM Rating Plug
800	150	List Price GO-245A	\$89.00	\$747.00	\$820.00	\$89.00
		60	N/A	N/A	N/A	TR1B60
		80	TR1C80	TR1C80GF	TR1C80GFD	TR1B80
		100	TR1C100	TR1C100GF	TR1C100GFD	TR1B100
		125	TR1C125	TR1C125GF	TR1C125GFD	TR1B125
		150	TR1C150	TR1C150GF	TR1C150GFD	TR1B150
	400	150	N/A	N/A	N/A	TR4B150
		200	TR4C200	TR4C200GF	TR4C200GFD	TR4B200
		225	TR4C225	TR4C225GF	TR4C225GFD	TR4B225
		250	TR4C250	TR4C250GF	TR4C250GFD	TR4B250
		300	TR4C300	TR4C300GF	TR4C300GFD	TR4B300
		400	TR4C400	TR4C400GF	TR4C400GFD	TR4B400
	800	300	N/A	N/A	N/A	TR8B300
		400	TR8C400	TR8C400GF	TR8C400GFD	TR8B400
		450	N/A	N/A	N/A	TR8B450
		500	TR8C500	TR8C500GF	TR8C500GFD	TR8B500
		600	TR8C600	TR8C600GF	TR8C600GFD	TR8B600
		700	TR8C700	TR8C700GF	TR8C700GFD	TR8B700
		800	TR8C800	TR8C800GF	TR8C800GFD	TR8B800
1600	800	300	N/A	N/A	N/A	TR8B300
		400	TR8C400	TR8C400GF	TR8C400GFD	TR8B400
		450	N/A	N/A	N/A	TR8B450
		500	TR8C500	TR8C500GF	TR8C500GFD	TR8B500
		600	TR8C600	TR8C600GF	TR8C600GFD	TR8B600
		700	TR8C700	TR8C700GF	TR8C700GFD	TR8B700
		800	TR8C800	TR8C800GF	TR8C800GFD	TR8B800
	1600	600	N/A	N/A	N/A	TR16B600
		800	TR16C800	TR16C800GF	TR16C800GFD	TR16B800
		1000	TR16C1000	TR16C1000GF	TR16C1000GFD	TR16B1000
		1100	N/A	N/A	N/A	TR16B1100
		1200	TR16C1200	TR16C1200GF	TR16C1200GFD	TR16B1200
2000	2000	1600	TR16C1600	TR16C1600GF	TR16C1600GFD	TR16B1600
		750	N/A	N/A	N/A	TR20B750
		800	N/A	N/A	N/A	TR20B800
		1000	TR20C1000	TR20C1000GF	TR20C1000GFD	TR20B1000
		1200	TR20C1200	TR20C1200GF	TR20C1200GFD	TR20B1200
		1500	N/A	N/A	N/A	TR20B1500
		1600	TR20C1600	TR20C1600GF	TR20C1600GFD	TR20B1600
		2000	TR20C2000	TR20C2000GF	TR20C2000GFD	TR20B2000
3200	3200	1200	TR32C1200	TR32C1200GF	TR32C1200GFD	TR32B1200
		1600	TR32C1600	TR32C1600GF	TR32C1600GFD	TR32B1600
		2400	TR32C2400	TR32C2400GF	TR32C2400GFD	TR32B2400
		3200	TR32C3200	TR32C3200GF	TR32C3200GFD	TR32B3200
4000	4000	1600	TR40C1600	TR40C1600GF	TR40C1600GFD	TR40B1600
		2000	TR40C2000	TR40C2000GF	TR40C2000GFD	TR40B2000
		2500	TR40C2500	TR40C2500GF	TR40C2500GFD	TR40B2500
		3000	TR40C3000	TR40C3000GF	TR40C3000GFD	TR40B3000
		3600	N/A	N/A	N/A	TR40B3600
		4000	TR40C4000	TR40C4000GF	TR40C4000GFD	TR40B4000
5000	5000	3200	N/A	N/A	N/A	TR50B3200
		4000	N/A	N/A	N/A	TR50B4000
		5000	N/A	N/A	N/A	TR50B5000





# Low Voltage Power and DC Circuit Breakers OEM Substructures and Substructure Accessories

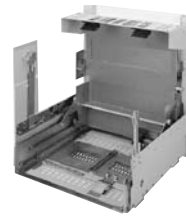
## Section 6

**Table B-1.**

### Breaker Substructures

NOTE: Use shallow substructures unless there are other deep substructures in the line-up.

Frame Size	Breaker Type	Substructure Type	Substructure Product No.	List Price GO-128W
800	WPS-08	Shallow (29")	WPS08SUBSH1	\$1650.00
		Deep (36")	WPS08SUBDP1	\$1850.00
	WPH-08	Shallow (29")	WPH08SUBSH1	\$1650.00
		Deep (36")	WPH08SUBDP1	\$1850.00
	WPX-08	Shallow (29")	WPX08SUBSH1	\$1950.00
		Deep (36")	WPX08SUBDP1	\$2100.00
	WPF-08	Deep (36")	WPF08SUBDP1	\$1850.00
1600	WPS-16	Shallow (29")	WPS16SUBSH1	\$1950.00
		Deep (36")	WPS16SUBDP1	\$2100.00
	WPH-16	Shallow (29")	WPH16SUBSH1	\$1950.00
		Deep (36")	WPH16SUBDP1	\$2250.00
	WPF-16	Deep (36")	WPF16SUBDP1	\$2300.00
		Deep, with 2500A CL Fuses (36")	WPF16SUBDP2	\$2450.00
2000	WPS-20	Shallow (29")	WPS20SUBSH1	\$2100.00
		Deep (36")	WPS20SUBDP1	\$2250.00
	WPS-20 with OFLO	Shallow (29")	WPS20SUBSH2	\$2100.00
		Deep (36")	WPS20SUBDP2	\$2250.00
3200	WPS-32	Shallow (29")	WPS32SUBSH1	\$3450.00
	WPS-32 with OFLO	Shallow (29")	WPS32SUBSH2	\$3450.00
	WPH-32	Shallow (29")	WPH32SUBSH1	\$3450.00
	WPX-32	Shallow (29")	WPX32SUBSH1	\$3450.00
4000	WPS-40	Shallow (29")	WPS40SUBSH1	\$5300.00
	WPS-40 with OFLO	Shallow (29")	WPS40SUBSH2	\$5300.00
	WPX-40	Shallow (29")	WPX40SUBSH1	\$5300.00
5000	WPS-50	Deep (36")	WPS50SUBDP1	\$7650.00
	WPS-50 with OFLO	Deep (36")	WPS50SUBDP2	\$7650.00
	WPX-50	Deep (36")	WPX50SUBDP1	\$7650.00



**Large frame sub-structure  
(shown with optional accessories)**

**Table B-2.**

### Fuse Rollout Elements and Substructures for Drawout Equipment Substructures 600 Volts AC, 50/60 Hz

NOTE: When used in conjunction with these fuse roll out elements, WavePro Type WPS drawout circuit breaker elements should be equipped with an open fuse lockout (OFLO) device, and the WPS breaker substructure should be ordered with a Keylock Mounting Kit. Key interlock is supplied and mounted by the customer.

Frame Size	Substructure Type	Fuse Roll Out Element (FRE) Only (No Fuses) <sup>1,2</sup>		FRE Drawout Substructures <sup>2,3</sup>	
		Product No.	List Price GO-128W	Product No.	List Price GO-128W
2000A/3200A	Shallow	WP32FRE	\$7470.00	WP32FRSUBSH1	\$4150.00
4000A	Shallow	WP40FRE	\$7950.00	WP40FRSUBSH1	\$5250.00
5000A	Deep	WP50FRE	\$8690.00	WP50FRSUBSH1	\$6375.00

<sup>1</sup>Fuse rollouts accept special Class L fuses 2000-5000 Amps. See WavePro Application Guide (DET-167) for additional information.

<sup>2</sup>UL recognized component.

<sup>3</sup>Substructures for fuse rollouts include provision for keylock mounting as standard feature.



# Low Voltage Power and DC Circuit Breakers OEM Substructures and Substructure Accessories

## Section 6

**Table B-3**

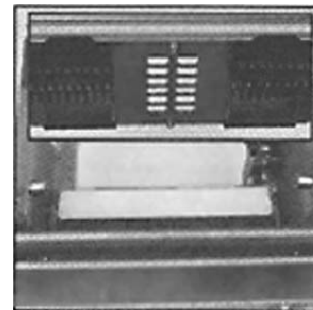
### Breaker Substructures Accessories

Substructure accessories shown assembled are shipped separately for field installation.

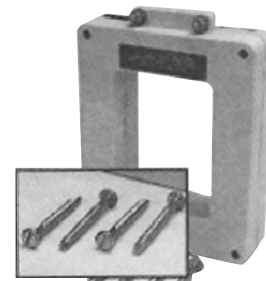
Substructure Product Number	Accessory	Accessory Product Number	List Price GO-128W
WPS08SUBSH1 WPH08SUBSH1 WPX08SUBSH1	Secondary Disconnect (bracket only)	WPSDSFSH1	\$75.00
	Secondary Disconnect (one 36-pin block)	WPSDSUBM1	\$350.00
	CT Hardware Mounting Kit, Metering Type (for 3 CTs)	WPCTMTG1	\$50.00
	CT Hardware Mounting Kit, Relaying Type (for 3 CTs)	WPCTMTG2	\$50.00
	One-stage Position Switch Kit	WPPSMTG1	\$375.00
	Three-stage Position Switch Kit	WPPSMTG2	\$475.00
	Shutter Kit	WPSHMTG1	\$515.00
	Padlock Kit	Standard on breaker	—
	Keylock Mounting Kit (bracket only)	WPSKMTG1	\$390.00
	Door Interlock Kit	WPDIMTG1	\$125.00
WPS08SUBDP1 WPH08SUBDP1 WPX08SUBDP1	Secondary Disconnect (bracket only)	WPSDSFDP1	\$75.00
	Secondary Disconnect (one 36-pin block)	WPSDSUBM1	\$350.00
	CT Hardware Mounting Kit, Metering Type (for 3 CTs)	WPCTMTG1	\$50.00
	CT Hardware Mounting Kit, Relaying Type (for 3 CTs)	WPCTMTG2	\$50.00
	One-stage Position Switch Kit	WPPSMTG3	\$375.00
	Three-stage Position Switch Kit	WPPSMTG4	\$475.00
	Shutter Kit	WPSHMTG2	\$515.00
	Padlock Kit	Standard on breaker	—
	Keylock Mounting Kit (bracket only)	WPSKMTG1	\$390.00
	Door Interlock Kit	WPDIMTG1	\$125.00
WPF08SUBDP1	Secondary Disconnect (bracket only)	WPSDSFDP1	\$75.00
	Secondary Disconnect (one 36-pin block)	WPSDSUBM1	\$350.00
	CT Hardware Mounting Kit, Metering Type (for 3 CTs)	WPCTMTG1	\$50.00
	CT Hardware Mounting Kit, Relaying Type (for 3 CTs)	WPCTMTG2	\$50.00
	One-stage Position Switch Kit	WPPSMTG5	\$375.00
	Three-stage Position Switch Kit	WPPSMTG6	\$475.00
	Shutter Kit	WPSHMTG3	\$515.00
	Padlock Kit	Standard on breaker	—
	Keylock Mounting Kit (bracket only)	WPSKMTG1	\$390.00
	Door Interlock Kit	WPDIMTG1	\$125.00



**Secondary disconnect blocks**



**Secondary disconnect bracket with disconnects installed**



**CT mounting hardware kit**



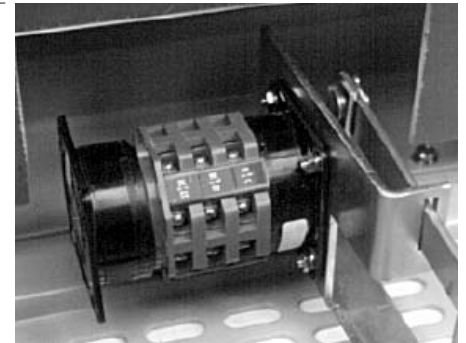
# Low Voltage Power and DC Circuit Breakers OEM Substructures and Substructure Accessories

## Section 6

**Table B-3 (continued)**

Breaker Substructures Accessories (cont.)

Substructure Product Number	Accessory	Accessory Product Number	List Price GO-128W
WPS16SUBSH1 WPH16SUBSH1	Secondary Disconnect (bracket only)	WPSDSFSH1	\$75.00
	Secondary Disconnect (one 36-pin block)	WPSDSUBM1	\$350.00
	CT Hardware Mounting Kit, Metering Type (for 3 CTs)	WPCTMTG1	\$50.00
	CT Hardware Mounting Kit, Relaying Type (for 3 CTs)	WPCTMTG2	\$50.00
	One-stage Position Switch Kit	WPPSMTG1	\$375.00
	Three-stage Position Switch Kit	WPPSMTG2	\$475.00
	Shutter Kit	WPSHMTG1	\$515.00
	Padlock Kit	Standard on breaker	—
	Keylock Mounting Kit (bracket only)	WPSKLMTG1	\$390.00
WPS16SUBDP1 WPH16SUBDP1	Door Interlock Kit	WPDIMTG1	\$125.00
	Secondary Disconnect (bracket only)	WPSDSFDP1	\$75.00
	Secondary Disconnect (one 36-pin block)	WPSDSUBM1	\$350.00
	CT Hardware Mounting Kit, Metering Type (for 3 CTs)	WPCTMTG1	\$50.00
	CT Hardware Mounting Kit, Relaying Type (for 3 CTs)	WPCTMTG2	\$50.00
	One-stage Position Switch Kit	WPPSMTG3	\$375.00
	Three-stage Position Switch Kit	WPPSMTG4	\$475.00
	Shutter Kit	WPSHMTG2	\$515.00
	Padlock Kit	Standard on breaker	—
WPF16SUBDP1 (Fuse <2500A)	Keylock Mounting Kit (bracket only)	WPSKLMTG1	\$390.00
	Door Interlock Kit	WPDIMTG1	\$125.00
	Secondary Disconnect (bracket only)	WPSDSFDP1	\$75.00
	Secondary Disconnect (one 36-pin block)	WPSDSUBM1	\$350.00
	CT Hardware Mounting Kit, Metering Type (for 3 CTs)	WPCTMTG1	\$50.00
	CT Hardware Mounting Kit, Relaying Type (for 3 CTs)	WPCTMTG2	\$50.00
	One-stage Position Switch Kit	WPPSMTG5	\$375.00
	Three-stage Position Switch Kit	WPPSMTG6	\$475.00
	Shutter Kit	WPSHMTG3	\$515.00
WPF16SUBDP2 (Fuse = 2500A)	Padlock Kit	Standard on breaker	—
	Keylock Mounting Kit (bracket only)	WPSKLMTG1	\$390.00
	Door Interlock Kit	WPDIMTG1	\$125.00
	Secondary Disconnect (bracket only)	WPSDSFDP1	\$75.00
	Secondary Disconnect (one 36-pin block)	WPSDSUBM1	\$350.00
	CT Hardware Mounting Kit, Metering Type (for 3 CTs)	WPCTMTG1	\$50.00
	CT Hardware Mounting Kit, Relaying Type (for 3 CTs)	WPCTMTG2	\$50.00
	One-stage Position Switch Kit	WPPSMTG7	\$375.00
	Three-stage Position Switch Kit	WPPSMTG8	\$475.00
	Shutter Kit	Contact factory	—
	Padlock Kit	Standard on breaker	—
	Keylock Mounting Kit (bracket only)	WPSKLMTG1	\$390.00
	Door Interlock Kit	WPDIMTG1	\$125.00



Position switch kit



Shutter kit as installed on substructure



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

**Table B-3. Continued**

Breaker Substructures Accessories (cont.)

Substructure Product Number	Accessory	Accessory Product Number	List Price GO-128W
WPS20SUBSH1 WPS20SUBSH2	Secondary Disconnect (bracket only)	WPSDSFSH1	\$75.00
	Secondary Disconnect (one 36-pin block)	WPSDSUBM1	\$350.00
	CT Hardware Mounting Kit, Metering Type (for 3 CTs)	WPCTMTG1	\$50.00
	CT Hardware Mounting Kit, Relaying Type (for 3 CTs)	WPCTMTG2	\$50.00
	One-stage Position Switch Kit	WPPSMTG1	\$375.00
	Three-stage Position Switch Kit	WPPSMTG2	\$475.00
	Shutter Kit	WPSHMTG1	\$515.00
	Padlock Kit	Standard on breaker	—
	Keylock Mounting Kit (bracket only)	WPSKLMTG1	\$390.00
WPS20SUBDP1 WPS20SUBDP2	Secondary Disconnect (bracket only)	WPSDSFDP1	\$75.00
	Secondary Disconnect (one 36-pin block)	WPSDSUBM1	\$350.00
	CT Hardware Mounting Kit, Metering Type (for 3 CTs)	WPCTM1G1	\$50.00
	CT Hardware Mounting Kit, Relaying Type (for 3 CTs)	WPCTMTG2	\$50.00
	One-stage Position Switch Kit	WPPSMTG3	\$375.00
	Three-stage Position Switch Kit	WPPSMTG4	\$475.00
	Shutter Kit	WPSHMTG2	\$515.00
	Padlock Kit	Standard on breaker	—
	Keylock Mounting Kit (bracket only)	WPSKLMTG1	\$390.00
WPS32SUBSH1 WPS32SUBSH2 WPH32SUBSH1 WPX32SUBSH1	Secondary Disconnect (bracket only)	WPSDLFSH1	\$75.00
	Secondary Disconnect (one 36-pin block)	WPSDSUBM2	\$375.00
	CT Hardware Mounting Kit, Metering Type (for 3 CTs)	WPCTMTG1	\$50.00
	CT Hardware Mounting Kit, Relaying Type (for 3 CTs)	WPCTMTG2	\$50.00
	One-stage Position Switch Kit	WPPSMTG9	\$375.00
	Three-stage Position Switch Kit	WPPSMTG10	\$475.00
	Shutter Kit	WPSHMTG4	\$575.00
	Padlock Kit	WPPKMTG1	\$175.00
	Keylock Mounting Kit (bracket only)	WPSKLMTG2	\$475.00
WPS40SUBSH1 WPS40SUBSH2 WPX40SUBSH1	Secondary Disconnect (bracket only)	WPSDLFSH1	\$75.00
	Secondary Disconnect (one 36-pin block)	WPSDSUBM2	\$375.00
	CT Hardware Mounting Kit, Metering Type (for 3 CTs)	WPCTMTG1	\$50.00
	CT Hardware Mounting Kit, Relaying Type (for 3 CTs)	WPCTMTG2	\$50.00
	One-stage Position Switch Kit	WPPSMTG9	\$375.00
	Three-stage Position Switch Kit	WPPSMTG10	\$475.00
	Shutter Kit	WPSHMTG4	\$575.00
	Padlock Kit	WPPKMTG1	\$175.00
	Keylock Mounting Kit (bracket only)	WPSKLMTG2	\$475.00
WPS50SUBDP1 WPS50SUBDP2 WPX50SUBDP1	Secondary Disconnect (bracket only)	WPSDLFDP1	\$75.00
	Secondary Disconnect (one 36-pin block)	WPSDSUBM2	\$375.00
	CT Hardware Mounting Kit, Metering Type (for 3 CTs)	WPCTMTG3	\$50.00
	CT Hardware Mounting Kit, Relaying Type (for 3 CTs)	Contact factory	—
	One-stage Position Switch Kit	WPPSMTG9	\$375.00
	Three-stage Position Switch Kit	WPPSMTG10	\$475.00
	Shutter Kit	WPSHMTG5	\$575.00
	Padlock Kit	WPPKMTG2	\$175.00
	Keylock Mounting Kit (bracket only)	WPSKLMTG3	\$475.00
	Door Interlock Kit	WPDIMTG3	\$180.00



Padlock kit (standard on small frame breakers, optional on large frame breakers)



Keylock mounting kit bracket



Door interlock kit

Continued on next page



**Table B-4.**

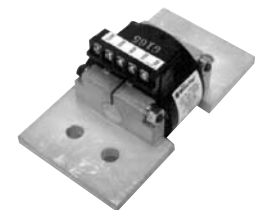
### Fuse Rollout Substructure Accessories

Substructure Product Number	Accessory	Accessory Product No.	List Price GO-128W
WP32FRSUBSH1 WP40FRSUBSH1	Secondary Disconnect (bracket only)	WPSDLFSH1	\$75.00
	Secondary Disconnect (one 36-pin block)	WPSDSUBM2	\$375.00
	Metering CT Hardware Mounting Kit (for three CTs)	WPCTMTG1	\$50.00
	Relaying CT Hardware Mounting Kit (for three CTs)	WPCTMTG2	\$50.00
	One-stage Position Switch Kit	WPPSMTG9	\$375.00
	Three-stage Position Switch Kit	WPPSMTG10	\$475.00
	Shutter Kit	WPSHMTG4	\$575.00
	Padlock Kit	WPPKMTG1	\$175.00
	Keylock Mounting Kit (bracket only)	Part of substructure	—
WP50FRSUBSH1	Door Interlock Kit	WPDIMTG2	\$155.00
	Secondary Disconnect (bracket only)	WPSDLFDP1	\$75.00
	Secondary Disconnect (one 36-pin block)	WPSDSUBM2	\$375.00
	Metering CT Hardware Mounting Kit (for three CTs)	WPCTMTG3	\$50.00
	Relaying CT Hardware Mounting Kit (for three CTs)	Not available	—
	One-stage Position Switch Kit	WPPSMTG9	\$375.00
	Three-stage Position Switch Kit	WPPSMTG10	\$475.00
	Shutter Kit	WPSHMTG5	\$575.00
	Padlock Kit	WPPKMTG2	\$175.00
	Keylock Mounting Kit (bracket only)	Part of substructure	—
	Door Interlock Kit	WPDIMTG3	\$180.00

**Table B-5.**

### Neutral Current Transformers (required with 4-wire ground fault).

Frame (Amps)	Circuit Breaker Sensor Amps Rating	Neutral Sensor Rating (Amps)	Product Number	List Price GO-128C
800	150	100-300	TSVG303B	\$805.00
	400, 800	300-800	TSVG508B	\$805.00
1600	800	300-800	TSVG508B	\$805.00
	1600	600-1600	TSVG516B	\$805.00
2000	2000	800-2000	TSVG620B	\$1417.00
3200	3200	1200-3200	TSVG832B	\$1962.00
4000	4000	1600-4000	TSVG940B	\$1962.00
5000	5000	5000	TSVG950B	\$1962.00



**Neutral Current Transformer**

**Table B-6.**

### Static Time Delays for Undervoltage Option

Voltage	Static Time Delay Product No. <sup>1</sup>	List Price GO-128W
125Vdc	TAKYUVT1	\$1091.00
250Vdc	TAKYUVT2	\$1091.00
208 Vac (50/60 Hz)	TAKYUVT5	\$1091.00
240 Vac (50/60 Hz)	TAKYUVT4	\$1091.00

<sup>1</sup> Must be ordered in conjunction with "Undervoltage with Time Delay" option in Step 6 on page 6-14.

**Table B-7.**

### Miscellaneous Accessories

Accessory	Product Number	List Price GO-128W
Breaker Racking Handle—Std 30" Long - Non Swivel	0324B4721G001	\$175.00
Breaker Racking Handle—64" Long - Non Swivel	0324B4721G002	\$240.00
Breaker Racking Handle—30" Long - Swivel Socket	0324B4724G001	\$250.00
Maintenance Closing Handle	568B386G1	\$325.00
Small Frame Lifting Assembly, WP08, 16, 20	0324B4551G001	\$85.00
Large Frame Lifting Assembly, WP32, 40	0247B8961G001	\$95.00
Extra Large Frame Lifting Assembly, WP50	0247B8961G003	\$105.00
Fuse Rollout Out Element Lifting Assembly, 3200A & 4000A	0247B8961G004	\$95.00
Fuse Rollout Element Lifting Assembly, 5000A	0247B8961G005	\$105.00
WavePro Breaker Maintenance Video (Approx. 40 minutes, VHS format) <sup>2</sup>	DEV-042	\$2500.00

<sup>2</sup> Order only from Burlington OEM marketing.



**Static Time Delay**



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

**Table B-8.**

### POWER LEADER® Power Supply

The POWER LEADER® power supply provides 24Vdc control power to MicroVersaTrip® PM trips units used on WavePro low voltage power circuit breakers. The control power is required for the trip unit's communication and protective relay functions.

Description	Product Number	List Price GO-104A	System Requirements (Not included with power supply)
1.5A power supply. Maximum wire length from power supply to trip device is 100 feet. A maximum of 45 trip units may be powered from a single power supply.	PLPS4G01	\$1250.00	Input power, 100VA (85-265 Vac or 100-370 Vdc)

**Table B-9.**

### POWER LEADER® Voltage Conditioner

Conditions and scales 120Vac to 1.76Vac for use by the trip unit for voltage sensing. Provides transient protection. Requires isolation PTs with 120 volt secondary. Supports up to 15 trip units at a maximum distance of 20 feet. Required for PM trip units only.

Description	Product Number	List Price GO-104A	System Requirements (Not included with voltage conditioners)
Supplies isolated bus voltage signal to MicroVersaTrip® PM trip units.	PLVC1G01	\$200.00/set	One set of 3 voltage conditioners required for each sensing location. PTs also required.

**Table B-10.**

### MicroVersaTrip® Portable Power Pack

The MicroVersaTrip® Portable Battery Pack is a maintenance power source used to power up trip units for setting or adjusting trip set points or for reading trip targets when the trip unit is not otherwise energized. It is a redundant power source to the onboard battery supplied with the Enhanced MicroVersaTrip® Plus and PM (5-button keypad) trip units. The portable battery pack connects to the trip unit through the rating plug test jack. It requires three (3) standard 9Vdc alkaline batteries (not included).

Description	Product Number	List Price GO-245A
MicroVersaTrip® Portable Power Pack	TVPBP	\$75.00

**Table B-11.**

### MicroVersaTrip® Rating Plug Removal Tool

Description	Product Number	List Price GO-135S
MicroVersaTrip® Rating Plug Removal Tool	TRTOOL	\$12.00

**Table B-12.**

### GE Trip Unit Portable Test Set

This portable, battery- or ac-powered test kit allows for self-tests and functioning trip/no trip tests on Power+, MicroVersaTrip® Plus and MicroVersaTrip® PM trip units (excluding 4- or 9-function MicroVersaTrip® trip units). It can also defeat the ground fault function and be used in conjunction with high current test equipment. The interface is via a jack on the front of the trip units, and tests can be conducted with the breaker in service. The Test Set uses six rechargeable nickel-cadmium or standard alkaline D cell batteries (not included), or it can be powered by a 120Vac source.

Description	Product Number	List Price GO-245B
Portable Test Set that may also be used to temporarily defeat ground fault function when using primary injection (high current test set).	TVRMS2	\$3000.00



**GE Trip Unit Portable Test Set**

**Table B-13.**

Metering and Relaying Current Transformers for 800-5000A Substructures, 600 Vac, 50/60 Hz

Breaker Frame Size	Ampere Ratio (I:5)	Metering Product Number	List Price GO-128	Metering & Relaying Product Number	List Price GO-128
800A 1600A 2000A	100	75C149640P001	\$375.00	75C149640P025	\$500.00
	150	75C149640P002		75C149640P026	
	200	75C149640P003		75C149640P027	
	250	75C149640P004		75C149640P028	
	300	75C149640P005		75C149640P029	
	400	75C149640P006		75C149640P030	
	500	75C149640P007		75C149640P031	
	600	75C149640P008		75C149640P032	
	800	75C149640P010		75C149640P034	
	1000	75C149640P011	\$425.00	75C149640P035	\$500.00
	1200	75C149640P012		75C149640P036	
	1500	75C149640P013		75C149640P037	
	1600	75C149640P014		75C149640P038	
	2000	75C149640P015		75C149640P039	
	2500	75C149640P016		75C149640P040	
3200A 4000A	2000	75C149640P020	\$475.00	75C149640P044	\$550.00
	2500	75C149640P021		75C149640P045	
	3000	75C149640P022		75C149640P046	
	3200	75C149640P023		75C149640P047	
	4000	75C149640P024		75C149640P048	
5000A	5000	75C149640P049	\$700.00	Consult Factory	





GE offers a complete line of trip unit upgrade kits for low voltage power circuit breakers manufactured by GE, as well as by Westinghouse, I-T-E, and Allis-Chalmers. These conversion kits contain everything necessary to convert an old-style electro-mechanical or solid-state trip unit to today's latest electronic, digital technology—including the addition of metering, protective relay, and communication functions. All conversion kits designed by GE are tested to ANSI C37.59 standards for each breaker type so customers have the assurance of safe, reliable operation.

### Features and Benefits—All Kits

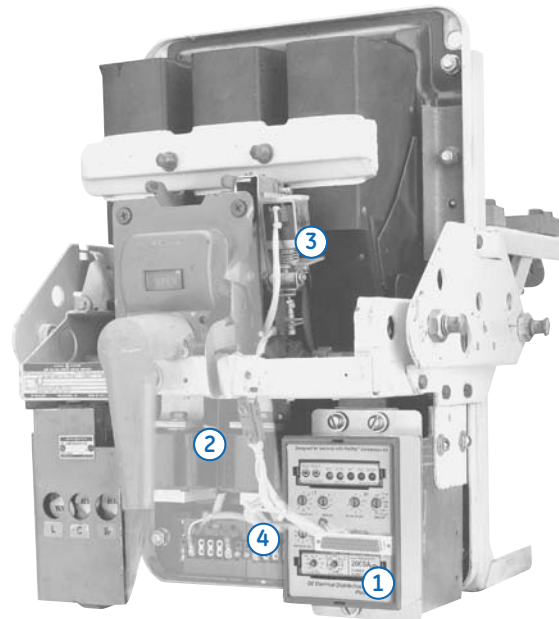
- Kit includes everything needed in one compact package
- Full-range of interchangeable rating plugs
- Trip targets for quick identification of overload, short circuit, and ground fault trips
- Sealable, see-through cover to prevent unauthorized access to trip unit settings
- Test jack for TVRMS2 portable trip unit test kit
- Eliminate costly downtime due to nuisance tripping
- Improved power system coordination and protection
- Extend life and function of existing breakers and low voltage equipment

### MicroVersaTrip® Plus and PM Conversion Kits

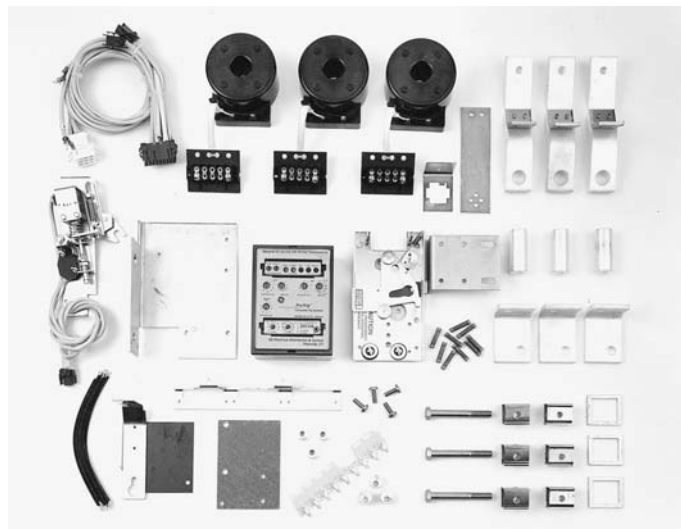
- True RMS sensing with a sampling rate of 64 samples per cycle for accurate waveform measurements through the 31st harmonic—provides superior protection of systems with AC and DC variable speed drives, rectifiers, induction heaters and other loads that contribute to non-sinusoidal (high harmonic) current waveforms
- Long time pickup and delay, instantaneous pickup - standard
- High-visibility Liquid Crystal Display with phase selectable ammeter and trip targets
- Trip settings and trip target information stored in non-volatile memory
- On-board lithium battery (field replaceable) for cold setup and reading trip targets
- Optional short time pickup and delay, ground fault pickup and delay, high range instantaneous
- Optional switchable short time, instantaneous, and ground fault functions
- Optional communications, expanded metering, and protective relaying functions (PM trip units)
- Easy field upgrades for interface with GE's Power Management Control System (PMCS)
- Safe, convenient, closed-door local metering via the optional Remote Display

### ProTrip™ Conversion Kits

- Cost-effective upgrade with standard adjustable long time, short time, instantaneous, and defeatable ground fault functions
- Simple-to-use rotary switches for selecting the trip unit pickup and delay settings
- True RMS sensing with sampling rate of 48 times per cycle per phase - accurate waveform measurements through the 11th harmonic
- Standard target module with individual LEDs for overload pickup, overload trip, short circuit trip, ground fault trip, and target module battery monitor



**AKU-2A-25-1 breaker with ProTrip™ Complete Trip System**  
ProTrip™ complete trip systems come with everything you need:  
1 - trip unit, 2 - current sensors, 3 - flux shifter, 4 - wiring harness and all required hardware



**ProTrip™ Conversion Kits**

### Everything You Need in One Package

ProTrip™, MicroVersaTrip® Plus, and MicroVersaTrip® PM conversion kits for the breakers listed in the following pages are shipped complete with detailed installation instructions and everything needed for fast and easy trip unit conversions.

- Digital solid-state trip with quick disconnect
- Direct-acting flux shift trip actuator with automatic reset
- Epoxy encapsulated high-accuracy current sensors
- Interchangeable rating plug (order separately)
- Specially designed mounting hardware and wire harnesses for each breaker frame





# Low Voltage Power and DC Circuit Breakers Trip Unit Conversion Kits for GE, I-T-E, Westinghouse, Allis-Chalmers Circuit Breakers

## Section 6

### MicroVersaTrip® PM Conversion Kits— Power Management Made Easy

The MicroVersaTrip® PM trip unit's standard communication port opens a new world of information. When connected to a GE Power Management system, it gives you the power to increase productivity and reduce costs, while meeting all your electrical system monitoring needs.

The POWER LEADER® Modbus Concentrator can be connected to MicroVersaTrip® PM trip units, allowing communication with the GE Power Management Control System (PMCS) software. With PMCS, you'll see how easy it is to:

- View custom metering screens and CAD drawings of our system
- Analyze energy consumption and power factor trends to minimize utility demand and PF charges or provide cost allocations
- Collect precise sequence of event and alarm information to speed diagnosis and minimize downtime
- Utilize alarm and event logs to assist with maintenance interval planning
- Analyze system harmonics (with data from the POWER LEADER® family of meters)
- Use the POWER LEADER® Modbus Concentrator to communicate with MicroVersaTrip® PM trip units on Spectra Series molded case circuit breakers, Power Break II insulated case circuit breakers, and AKR/WavePro power circuit breakers (refer to BuyLog® Section 18 for network architecture)
- Communicate with Modbus RTU-supported electronic meters and relays

### Additional Features

Full-function metering including

- current (Amps, kAmps)
- voltage (Ph-Ph, Ph-N)
- energy (kWh, MWh, GWh)
- real power (kW, MW)
- total power (kVA, MVA)
- frequency (Hz)
- demand (avg. kW, MW) and peak demand

Optional protective relaying functions include

- undervoltage
- overvoltage
- voltage unbalance
- current unbalance
- power reversal
- power direction setup



Refer to BuyLog® Section 18 for additional Power Management components not supplied with the MicroVersaTrip® PM conversion kits (voltage transformers, voltage conditioners, 24 VDC power supplies, Modbus Concentrator, interconnection cables, and PMCS software)

### Reference Publications

GE MVT Plus and PM Conversion Kits	DET-066
I-T-E MVT Plus and PM Conversion Kits	DET-067
Westinghouse MVT Plus and PM Conversion Kits	DET-093
Allis-Chalmers MVT Plus and PM Conversion Kits	DET-226
GE ProTrip™ Conversion Kits	DET-228
I-T-E ProTrip™ Conversion Kits	DET-229
Westinghouse ProTrip™ Conversion Kits	DET-230
Allis-Chalmers ProTrip™ Conversion Kits	DET-231



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

# Low Voltage Power and DC Circuit Breakers

## ProTrip™ Trip Unit Conversion Kit Selection Guide

For GE Circuit Breakers

## Section 6

### Product Number Structure

PK115		D	3	F	01	08
Breaker						Trip Functions
AK-1-15	PK115					LSIGX- 08
AK-15	PKO15 <sup>1</sup>					Trip Unit Functions LSIGX- Long Time, Short Time/INST. and Switchable Ground Fault (off) Not Approved for a UL Listed Breaker
AK-1-25	PK125					
AK-25	PKO25 <sup>1</sup>					
AKU-25	PKO50 <sup>1</sup>					
AK-1-50						
AK-50						
AKU-50 <sup>2</sup>						
AKT-50						
AKS-50						
AKSU-50 <sup>2</sup>						
AKST-50						
AK-75 <sup>3</sup>	PKO75 <sup>3</sup>					
AK-100 <sup>3</sup>	PKO10 <sup>3</sup>					
Model						Sensor Rating Selection
Generation-D						Frame Breaker Product Numbers Sensors
						225 AK-1-15, AK-15 150A, 225A
						600 AK-1-25, AK-25, AKU-25 150A, 225A, 600A
						1600 AK-1-50, AK-50, AKU-50, AKS-50, AKSU-50 800A, 1600A
						2000 AKT-50, AKST-50 2000A
						3000 AK-75 3000A
						4000 AK-100 4000A
Wiring						
3 Wire-3						
4 Wire-4						
Sensor Type						
Fixed CTs-F						

#### Sensor Rating

150A-	01
225A-	02
600A-	06
800A-	08
1600A-	16
2000A-	20
3000A-	30
4000A-	40

#### Sensor Rating Selection

Frame	Breaker	Product Numbers	Sensors
225	AK-1-15, AK-15	150A, 225A	
600	AK-1-25, AK-25, AKU-25	150A, 225A, 600A	
1600	AK-1-50, AK-50, AKU-50, AKS-50, AKSU-50	800A, 1600A	
2000	AKT-50, AKST-50	2000A	
3000	AK-75	3000A	
4000	AK-100	4000A	

<sup>1</sup> For converting AK-2 version breakers and newer, not applicable for AK-1 or AKR

<sup>2</sup> Breakers equipped with older style open fuse lockout devices (OFLO), must be retrofitted with newer style OFLO device prior to conversion process.  
Order replacement OFLO kits as follows: AKU-50 - order OFLO kit #121C287OG2, AK-75 - order OFLO kit #121C287OG3, AK-100 - order OFLO kit #121C287OG4

<sup>3</sup> Contact the factory for stationary breaker applications

### ProTrip™ Conversion Kits

Frame Size (Amps)	Breaker Model	Wiring	Sensor Rating	Product Number	List Price GO-104P
225	AK-1-15	3 Wire	150A	PK115D3F0108	\$2550.00
225	AK-1-15	3 Wire	225A	PK115D3F0208	\$2550.00
225	AK-1-15	4 Wire	150A	PK115D4F0108	\$2775.00
225	AK-1-15	4 Wire	225A	PK115D4F0208	\$2775.00
225	AK-15	3 Wire	150A	PKO15D3F0108	\$2550.00
225	AK-15	3 Wire	225A	PKO15D3F0208	\$2550.00
225	AK-15	4 Wire	150A	PKO15D4F0108	\$2775.00
225	AK-15	4 Wire	225A	PKO15D4F0208	\$2775.00
600	AK-1-25	3 Wire	150A	PK125D3F0108	\$2550.00
600	AK-1-25	3 Wire	225A	PK125D3F0208	\$2550.00
600	AK-1-25	3 Wire	600A	PK125D3F0608	\$2550.00
600	AK-1-25	4 Wire	150A	PK125D4F0108	\$2775.00
600	AK-1-25	4 Wire	225A	PK125D4F0208	\$2775.00
600	AK-1-25	4 Wire	600A	PK125D4F0608	\$2775.00
600	AK-25, AKU-25	3 Wire	150A	PKO25D3F0108	\$2550.00
600	AK-25, AKU-25	3 Wire	225A	PKO25D3F0208	\$2550.00
600	AK-25, AKU-25	3 Wire	600A	PKO25D3F0608	\$2550.00
600	AK-25, AKU-25	4 Wire	150A	PKO25D4F0108	\$2775.00
600	AK-25, AKU-25	4 Wire	225A	PKO25D4F0208	\$2775.00
600	AK-25, AKU-25	4 Wire	600A	PKO25D4F0608	\$2775.00
1600	AK-1-50	3 Wire	800A	PK150D3F0808	\$2800.00
1600	AK-1-50	3 Wire	1600A	PK150D3F1608	\$2800.00
1600	AK-1-50	4 Wire	800A	PK150D4F0808	\$3025.00
1600	AK-1-50	4 Wire	1600A	PK150D4F1608	\$3025.00
1600	AK-50, AKU-50, AKT-50, AKS-50, AKSU-50, AKST-50	3 Wire	800A	PKO50D3F0808	\$2800.00
1600	AK-50, AKU-50, AKT-50, AKS-50, AKSU-50, AKST-50	3 Wire	1600A	PKO50D3F1608	\$2800.00
1600	AK-50, AKU-50, AKT-50, AKS-50, AKSU-50, AKST-50	3 Wire	2000A	PKO50D3F2008	\$2800.00
1600	AK-50, AKU-50, AKT-50, AKS-50, AKSU-50, AKST-50	4 Wire	800A	PKO50D4F0808	\$3025.00
1600	AK-50, AKU-50, AKT-50, AKS-50, AKSU-50, AKST-50	4 Wire	1600A	PKO50D4F1608	\$3025.00
1600	AK-50, AKU-50, AKT-50, AKS-50, AKSU-50, AKST-50	4 Wire	2000A	PKO50D4F2008	\$3025.00
3000	AK-75	3 Wire	3000A	PKO75D3F3008	\$2800.00
3000	AK-75	4 Wire	3000A	PKO75D4F3008	\$3025.00
4000	AK-100	3 Wire	4000A	PKO10D3F4008	\$3050.00
4000	AK-100	4 Wire	4000A	PKO10D4F4008	\$3275.00

Conversion kits come standard with a rating plug that matches the current sensor. For rating plugs with different values, price and order separately. See page 6-30.



# Low Voltage Power and DC Circuit Breakers

## ProTrip™ Trip Unit Conversion Kit Selection Guide

For \*I-T-E Circuit Breakers

## Section 6

### Product Number Structure

PIK22		D	3	F	02	08		
Breaker							Trip Functions	
K225	PIK22 <sup>1</sup>						LSIGX- 08	
K600	PIK60 <sup>1</sup>							
KDON600								
K800	PIK80 <sup>1</sup>							
KDON800								
K1600 (black)	PIK1B <sup>1</sup>							
KDON1600 (black)								
K1600 (red)	PIK16 <sup>1,2</sup>							
KDON1600 (red)	PIKN <sup>1,3</sup>							
Model								
Generation-D								
Wiring								
3 Wire-3								
4 Wire-4								
Sensor Type								
Fixed CTs-F								

Sensor Rating	
150A-	01
225A-	02
400A-	04
600A-	06
800A-	08
1600A-	16

Trip Unit Functions	
LSIGX- Long Time, Short Time/INST. and Switchable Ground Fault (off)	
Not Approved for a UL Listed Breaker	

Sensor Rating Selection			
Frame	Breaker	Product Numbers	Sensors
225	K225		150A, 225A
600	K600, KDON600		150A, 225A, 600A
800	K800, KDON800		150A, 400A, 800A
1600	K1600 (black), KDON1600 (black), K1600 (red), KDON1600 (red)		800A, 1600A

<sup>1</sup> Applicable to breakers originally equipped with either electro-mechanical trip devices or with solid state trip devices ("S" version breakers).

<sup>2</sup> Only applicable to breakers originally equipped with rectangular shaped primary disconnect assemblies.

<sup>3</sup> Only applicable to breakers originally equipped with circular shaped primary disconnect assemblies.

### ProTrip™ Conversion Kits

Frame Size (Amps)	Breaker Model	Wiring	Sensor Rating	Product Number	List Price GO-104P
225	K225	3 Wire	150A	PIK22D3F0108	\$2450.00
225	K225	3 Wire	225A	PIK22D3F0208	\$2450.00
225	K225	4 Wire	150A	PIK22D4F0108	\$2675.00
225	K225	4 Wire	225A	PIK22D4F0208	\$2675.00
600	K600, KDON600	3 Wire	150A	PIK60D3F0108	\$2350.00
600	K600, KDON600	3 Wire	225A	PIK60D3F0208	\$2350.00
600	K600, KDON600	3 Wire	600A	PIK60D3F0608	\$2350.00
600	K600, KDON600	4 Wire	150A	PIK60D4F0108	\$2575.00
600	K600, KDON600	4 Wire	225A	PIK60D4F0208	\$2575.00
600	K600, KDON600	4 Wire	600A	PIK60D4F0608	\$2575.00
800	K800, KDON800	3 Wire	150A	PIK80D3F0108	\$2350.00
800	K800, KDON800	3 Wire	400A	PIK80D3F0408	\$2350.00
800	K800, KDON800	3 Wire	800A	PIK80D3F0808	\$2350.00
800	K800, KDON800	4 Wire	150A	PIK80D4F0108	\$2575.00
800	K800, KDON800	4 Wire	400A	PIK80D4F0408	\$2575.00
800	K800, KDON800	4 Wire	800A	PIK80D4F0808	\$2575.00
1600	K1600 (black), KDON1600 (black)	3 Wire	800A	PIK16D3F0808	\$2700.00
1600	K1600 (black), KDON1600 (black)	3 Wire	1600A	PIK16D3F1608	\$2700.00
1600	K1600 (black), KDON1600 (black)	4 Wire	800A	PIK16D4F0808	\$2925.00
1600	K1600 (black), KDON1600 (black)	4 Wire	1600A	PIK16D4F1608	\$2925.00
1600	K1600 (red)	3 Wire	800A	PIK16D3F0808	\$2700.00
1600	K1600 (red)	3 Wire	1600A	PIK16D3F1608	\$2700.00
1600	K1600 (red)	4 Wire	800A	PIK16D4F0808	\$2925.00
1600	K1600 (red)	4 Wire	1600A	PIK16D4F1608	\$2925.00
1600	KDON1600 (red)	3 Wire	800A	PIKN1D3F0808	\$2700.00
1600	KDON1600 (red)	3 Wire	1600A	PIKN1D3F1608	\$2700.00
1600	KDON1600 (red)	4 Wire	800A	PIKN1D4F0808	\$2925.00
1600	KDON1600 (red)	4 Wire	1600A	PIKN1D4F1608	\$2925.00

Conversion kits come standard with a rating plug that matches the current sensor. For rating plugs with different values, price and order separately. See page 6-30.

\*I-T-E is a registered trademark of Siemens Energy and Automation, Inc.



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

# Low Voltage Power and DC Circuit Breakers

## ProTrip™ Trip Unit Conversion Kit Selection Guide

For \*Allis-Chalmers Circuit Breakers

## Section 6

### Product Number Structure

PSL6B		D	3	F	02	08		
<b>Breaker</b>						<b>Trip Functions</b>		
LA-600 (blue) LAF-600 (blue)		PSL6B				LSIGX- 08		
LA-600 (gold) LAF-600 (gold)		PSL6G				<b>Trip Unit Functions</b>		
LA-800 (gold) LAF-800 (gold)		PSL8O						
LA-1600 (blue) LAF-1600 (blue)		PSL1B				<b>Not Approved for a UL Listed Breaker</b>		
LA-1600 (gold) LAF-1600 (gold)		PSL1G						
<b>Model</b>								
Generation-D								
<b>Wiring</b>								
3 Wire-3								
4 Wire-4								
<b>Sensor Type</b>								
Fixed CTS-F								

<b>Sensor Rating</b>	
150A-	01
225A-	02
400A-	04
600A-	06
800A-	08
1600A-	16

<b>Sensor Rating Selection</b>		
Frame	Breaker Product Numbers	Sensors
600	LA-600 (blue), LAF-600 (blue)	150A, 225A, 600A
	LA-600 (gold), LAF-600 (gold)	
800	LA-800 (gold), LAF-800 (gold)	150A, 400A, 800A
1600	LA-1600 (blue), LAF-1600 (blue)	800A, 1600A
	LA-1600 (gold), LAF-1600 (gold)	

### ProTrip™ Conversion Kits

Frame Size (Amps)	Breaker Model	Wiring	Sensor Rating	Product Number	List Price GO-104P
600	LA-600 (blue), LAF-600 (blue)	3 Wire	150A	PSL6BD3F0108	\$2350.00
600	LA-600 (blue), LAF-600 (blue)	3 Wire	225A	PSL6BD3F0208	\$2350.00
600	LA-600 (blue), LAF-600 (blue)	3 Wire	600A	PSL6BD3F0608	\$2350.00
600	LA-600 (blue), LAF-600 (blue)	4 Wire	150A	PSL6BD4F0108	\$2575.00
600	LA-600 (blue), LAF-600 (blue)	4 Wire	225A	PSL6BD4F0208	\$2575.00
600	LA-600 (blue), LAF-600 (blue)	4 Wire	600A	PSL6BD4F0608	\$2575.00
600	LA-600 (gold), LAF-600 (gold)	3 Wire	150A	PSL6GD3F0108	\$2350.00
600	LA-600 (gold), LAF-600 (gold)	3 Wire	225A	PSL6GD3F0208	\$2350.00
600	LA-600 (gold), LAF-600 (gold)	3 Wire	600A	PSL6GD3F0608	\$2350.00
600	LA-600 (gold), LAF-600 (gold)	4 Wire	150A	PSL6GD4F0108	\$2575.00
600	LA-600 (gold), LAF-600 (gold)	4 Wire	225A	PSL6GD4F0208	\$2575.00
600	LA-600 (gold), LAF-600 (gold)	4 Wire	600A	PSL6GD4F0608	\$2575.00
800	LA-800 (gold)	3 Wire	150A	PSL80D3F0108	\$2500.00
800	LA-800 (gold)	3 Wire	400A	PSL80D3F0408	\$2500.00
800	LA-800 (gold)	3 Wire	800A	PSL80D3F0808	\$2500.00
800	LA-800 (gold)	4 Wire	150A	PSL80D4F0108	\$2725.00
800	LA-800 (gold)	4 Wire	400A	PSL80D4F0408	\$2725.00
800	LA-800 (gold)	4 Wire	800A	PSL80D4F0808	\$2725.00
1600	LA-1600 (blue), LAF-1600 (blue)	3 Wire	800A	PSL1BD3F0808	\$2700.00
1600	LA-1600 (blue), LAF-1600 (blue)	3 Wire	1600A	PSL1BD3F1608	\$2700.00
1600	LA-1600 (blue), LAF-1600 (blue)	4 Wire	800A	PSL1BD4F0808	\$2925.00
1600	LA-1600 (blue), LAF-1600 (blue)	4 Wire	1600A	PSL1BD4F1608	\$2925.00
1600	LA-1600 (gold), LAF-1600 (gold)	3 Wire	800A	PSL1GD3F0808	\$2700.00
1600	LA-1600 (gold), LAF-1600 (gold)	3 Wire	1600A	PSL1GD3F1608	\$2700.00
1600	LA-1600 (gold), LAF-1600 (gold)	4 Wire	800A	PSL1GD4F0808	\$2925.00
1600	LA-1600 (gold), LAF-1600 (gold)	4 Wire	1600A	PSL1GD4F1608	\$2925.00

Conversion kits come standard with a rating plug that matches the current sensor. For rating plugs with different values, price and order separately. See page 6-30.

\*Allis-Chalmers is a trademark of Allis-Chalmers Manufacturing Company Corporation.



# Low Voltage Power and DC Circuit Breakers

## ProTrip™ Trip Unit Conversion Kit Selection Guide

For \*Westinghouse Circuit Breakers

## Section 6

### Product Number Structure

<b>PDB15</b>		<b>D</b>	<b>3</b>	<b>F</b>	<b>02</b>	<b>08</b>		
<b>Breaker</b>						<b>Trip Functions</b>		
DB15, DBL15-		<b>PDB15</b>				LSIGX- <b>08</b>		
DB25, DBL25-		<b>PDB25</b>						
DB50, DBL50-		<b>PDB50</b>						
DB75-		<b>PDB75</b>						
DB100-		<b>PDB10</b>						
<b>Model</b>						<b>Sensor Rating</b>		
Generation-D						150A- <b>01</b>		
						225A- <b>02</b>		
						600A- <b>06</b>		
						800A- <b>08</b>		
						1600A- <b>16</b>		
						3000A- <b>30</b>		
						4000A- <b>40</b>		
<b>Wiring</b>								
3 Wire-3								
4 Wire-4								
<b>Sensor Type</b>								
Fixed CTS-F								
						<b>Trip Unit Functions</b>		
						LSIGX- Long Time, Short Time/INST.		
						and Switchable Ground Fault (off)		
						<b>Not Approved for a UL Listed Breaker</b>		
						<b>Sensor Rating Selection</b>		

# Low Voltage Power and DC Circuit Breakers

## ProTrip™ Rating Plugs

## Section 6

ProTrip™ conversion kits come standard with a rating plug that matches the current sensor. For rating plugs with different values, price and order separately.

### Reference Publications

ProTrip™ Trip Unit Conversion Kits for	
GE Power Circuit Breakers - Fact Sheet	DET-228
ProTrip™ Trip Unit Conversion Kits for	
*Westinghouse Power Circuit Breakers - Fact Sheet	DET-230
ProTrip™ Trip Unit Conversion Kits for	
*Allis-Chalmers Power Circuit Breakers - Fact Sheet	DET-231
ProTrip™ Trip Unit Conversion Kits for	
*I-T-E Power Circuit Breakers - Fact Sheet	DET-229



Rating Plug

### Rating Plugs

Frame Size (Amps)	Sensor Rating (Amps)	Current Rating (Amps)	Current Range (Amps)	Product Number	List Price GO-104P
225 600 800	150	80	40-88	PT1C80GFD	\$149.00
225 600 800	150	100	50-110	PT1C100GFD	\$149.00
225 600 800	150	125	63-138	PT1C125GFD	\$149.00
225 600 800	150	150	75-165	PT1C150GFD <sup>1</sup>	\$149.00
225 600 800	225	150	75-165	PT225C150GFD	\$149.00
225 600 800	225	225	113-248	PT225C225GFD <sup>1</sup>	\$149.00
600	600	300	150-330	PT6C300GFD	\$149.00
600	600	400	200-440	PT6C400GFD	\$149.00
600	600	450	225-495	PT6C450GFD	\$149.00
600	600	500	250-550	PT6C500GFD	\$149.00
600	600	600	300-660	PT6C600GFD <sup>1</sup>	\$149.00
800	400	200	100-220	PT4C200GFD	\$149.00
800	400	225	113-248	PT4C225GFD	\$149.00
800	400	250	125-275	PT4C250GFD	\$149.00
800	400	300	150-330	PT4C300GFD	\$149.00
800	400	400	200-440	PT4C400GFD <sup>1</sup>	\$149.00
800 1600	800	400	200-440	PT8C400GFD	\$149.00
800 1600	800	450	225-495	PT8C450GFD	\$149.00
800 1600	800	500	250-550	PT8C500GFD	\$149.00
800 1600	800	600	300-660	PT8C600GFD	\$149.00
800 1600	800	700	350-770	PT8C700GFD	\$149.00
800 1600	800	800	400-880	PT8C800GFD <sup>1</sup>	\$149.00
1600	1600	800	400-880	PT16C800GFD	\$149.00
1600	1600	1000	500-1100	PT16C1000GFD	\$149.00
1600	1600	1100	550-1210	PT16C1100GFD	\$149.00
1600	1600	1200	600-1320	PT16C1200GFD	\$149.00
1600	1600	1600	800-1760	PT16C1600GFD	\$149.00
2000	2000	1000	500-1100	PT20C1000GFD	\$149.00
2000	2000	1200	600-1320	PT20C1200GFD	\$149.00
2000	2000	1500	750-1650	PT20C1500GFD	\$149.00
2000	2000	1600	800-1760	PT20C1600GFD	\$149.00
2000	2000	2000	1000-2200	PT20C2000GFD	\$149.00
3000	3000	1200	600-1320	PT30C1200GFD	\$149.00
3000	3000	1600	800-1760	PT30C1600GFD	\$149.00
3000	3000	2000	1000-2200	PT30C2000GFD	\$149.00
3000	3000	2500	1250-2750	PT30C2500GFD	\$149.00
3000	3000	3000	1500-3300	PT30C3000GFD <sup>1</sup>	\$149.00
4000	4000	1600	800-1760	PT40C1600GFD	\$149.00
4000	4000	2000	1000-2200	PT40C2000GFD	\$149.00
4000	4000	2500	1250-2750	PT40C2500GFD	\$149.00
4000	4000	3000	1500-3300	PT40C3000GFD	\$149.00
4000	4000	3600	1800-3960	PT40C3600GFD	\$149.00
4000	4000	4000	2000-4000	PT40C4000GFD <sup>1</sup>	\$149.00

<sup>1</sup>Rating Plug furnished with conversion kit.

Note: Long Time pickup range is 0.5-1.1 times the rating plug value. 1.1 setting allows the breaker to carry 100% of the rating plug current value, not to exceed the continuous current (frame) rating of the breaker.

\*I-T-E is a registered trademark of Siemens Energy and Automation, Inc.

\*Westinghouse is a trademark of Westinghouse Electric Corporation.

\*Allis-Chalmers is a trademark of Allis-Chalmers Manufacturing Company Corporation.



# Low Voltage Power and DC Circuit Breakers

## MicroVersaTrip® Plus and MicroVersaTrip® PM Trip Unit

### Conversion Kits Selection Guide

For GE Power Circuit Breakers

## Section 6

### Product Number Structure

**AKO25 C 3 F 06 02 PM**

**Breaker Model**

AK-1-15	= AK115
AK-15	= AK015 <sup>1</sup>
AK-1-25	= AK125
AK-25	= AK025 <sup>1</sup>
AKU-25	= AK150
AKR-30	= AKR30
AKR-30H	
AKRU-30	
AKR-30S	= AKR30S <sup>2,3</sup>
AKRU-30S	
AK-1-50	= AK150
AK-50	
AKU-50 <sup>4</sup>	
AKT-50	= AK050 <sup>1</sup>
AKS-50	
AKSU-50 <sup>4</sup>	
AKST-50	
AKR-50	
AKR-50H	
AKRU-50	
AKRT-50H	= AKR50 <sup>5</sup>
AKJ-50	
AKJ-50H	
AKJT-50	
AKJT-50H	
AK-75 <sup>4</sup>	= AK075 <sup>6</sup>
AKR-75	= AKR75 <sup>6</sup>
AK-100 <sup>4</sup>	= AK010 <sup>6</sup>
AKR-100	= AKR10 <sup>6</sup>
AKW-100	= AW10 <sup>6</sup>

**Model**

C = Generation

**Wiring**

3 Wire = 3

4 Wire<sup>7</sup> = 4

**Sensor Type**

F = Fixed CTs

**Sensor Rating**

150A	= 01
noCTs <sup>8</sup>	= XA
225A	= 02
400A	= 04
noCTs <sup>8</sup>	= XC
600A	= 06
800A	= 08
noCTs <sup>8</sup>	= XE
1600A	= 16
noCTs <sup>8</sup>	= XF
2000A	= 20
noCTs <sup>8</sup>	= XG
3000A	= 30
3200A <sup>9</sup>	= 32
noCTs <sup>8,9</sup>	= XI
4000A	= 40
noCTs <sup>8</sup>	= XJ

**Trip Functions**

LI	= 02
LIG	= 03
LSI	= 04
LSIG	= 05
LS	= 06
LSG	= 07
LSIGX	= 08
LSH <sup>2</sup>	= 11
LSHG <sup>2</sup>	= 12

**Options**

**Blank** = MVT Plus

**M** = MVT PM Metering & Communication

**PM** = MVT PM Metering, Communication & Protective Relaying

**Sensor Rating Selection**

Frame Size	Breaker Product Numbers	Sensors
225	AK-1-15 AK-15	150A 225A
600	AK-1-25 AK-25 AKU-25	225A 600A
800	AKR-30, AKR-30H AKRU-30 AKR-30S, AKRU-30S	150A 400A 800A
1600	AK-1-50, AK-50, AKU-50, AKS-50, AKSU-50 AKR-50, AKR-50H, AKRU-50 AKJ-50, AKJ-50H	800A 1600A
2000	AKT-50, AKST-50, AKRT-50, AKRT-50H AKJT-50, AKJT-50H	2000A
3000	AK-75	3000A
3200	AKR-75	3200A
4000	AK-100, AKR-100, AKW-100	4000A

**Trip Unit Functions**

LI	Long Time & Instantaneous
LIG	Long Time, Instantaneous & Ground Fault
LSI	Long Time, Short Time & Instantaneous
LSIG	Long Time, Short Time, Instantaneous & Ground Fault
LS	Long Time, Short Time
LSG	Long Time, Short Time & Ground Fault
LSIGX	Long Time, Short Time/Inst. & Switchable Ground Fault (off) not approved for a UL Listed breaker
LSH	Long Time, Short Time & High-Range Instantaneous
LSHG	Long Time, Short Time, High-Range Instantaneous & Ground Fault

<sup>1</sup>For converting AK-2 version breakers and newer, not applicable for AK-1 or AKR.

<sup>2</sup>High range instantaneous trip function option (IH) only available for AKR3S conversion kits.

<sup>3</sup>Requires INST function (I) or (IH) 22kA w/o INST @ 480V 30kA w/ INST @ 480V.

<sup>4</sup>Breakers equipped with older style open fuse lockout devices (OFLO), must be retrofitted with newer style OFLO device prior to conversion process. Order replacement OFLO kits as follows: AKU-50—order OFLO kit #121C2870G2, AK-75—order OFLO kit #121C2870G3, AK-100—order OFLO kit #121C2870G4.

<sup>5</sup>Not applicable for converting breakers equipped with Power Sensor—contact factory.

<sup>6</sup>Contact the factory for stationary breaker applications.

<sup>7</sup>Only applicable to trip units with ground fault.

<sup>8</sup>Available only for MicroVersaTrip® RMS-9 type AKR breakers equipped with fixed current sensors.

<sup>9</sup>Only available on AKR-75 breaker frames.

### Price Selection

Select the desired product number from the chart above. Match the product prefix with the product numbers in the first column of the 3-wire or 4-wire table. Select the options column that matches the product suffix chosen. The list price is found in the intersecting box.

### Kits Without Sensors

For kits ordered without sensors, **deduct \$450.00** from the **list price** of the kit with sensors. Please refer to the sensor rating column above for the appropriate "X" sensor code.

### MicroVersaTrip® Trip Unit Conversion Kits for 3-Phase, 3-Wire, List Price, GO-104B

Product Number	MicroVersaTrip® Plus									Product Number	MicroVersaTrip® PM Metering & Communication									
	02	03	04	05	06	07	08	11	12		02M	03M	04M	05M	06M	07M	08M	11M	12M	
AKO15C3F01	\$2920	\$3350	\$3040	\$3470	\$3040	\$3470	\$4015	\$3590 AKR3S KITS ONLY	\$3890 AKR3S KITS ONLY	AKO15C3F01	\$4420	\$4850	\$4540	\$4970	\$4540	\$4970	\$5515	\$5090 AKR3S KITS ONLY	\$5390 AKR3S KITS ONLY	
AKO15C3F02																				
AK115C3F01																				
AK115C3F02																				
AKO25C3F02																				
AKO25C3F06																				
AK125C3F02																				
AK125C3F06																				
AKR30C3F01	\$3070	\$3500	\$3190	\$3620	\$3190	\$3620	\$4165	—	—	AKR30C3F01	\$4570	\$5000	\$4690	\$5120	\$4690	\$5120	\$5665	—	—	
AKR30C3F04																				
AKR30C3F08																				
AKR35C3F01																				
AKR35C3F04																				
AKR35C3F08																				
AKR35C3F08																				
AK150CF16																				
AK150C3F16																				
AKO50C3F08																				
AKO50C3F16																				
AKR50C3F08																				
AKR50C3F16																				
AKO50C3F20	\$3220	\$3650	\$3340	\$3770	\$3340	\$3770	\$4315	—	—	AKO50C3F20	\$4720	\$5150	\$4840	\$5270	\$4840	\$5270	\$5815	—	—	
AKR50C3F20																				
AKO75C3F30																				
AKR75C3F32																				
AKO10C3F40																				
AKR10C3F40																				
AKW10C3F40																				

Conversion kits come standard with a rating plug that matches the current sensor. For rating plugs with different values, price and order separately. See page 6-39.



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications



# Low Voltage Power and DC Circuit Breakers

## MicroVersaTrip® Plus and MicroVersaTrip® PM Trip Unit

### Conversion Kits Selection Guide

## Section 6

For GE Power Circuit Breakers

#### MicroVersaTrip® Conversion Kits for 3-Phase, 3-Wire

Product Number	MicroVersaTrip® PM Metering, Communication & Protective Relay List Price, GO-104B								
	02PM	03PM	04PM	05PM	06PM	07PM	08PM	11PM	12PM
AKO15C3F01	\$5120	\$5550	\$5240	\$5670	\$5240	\$5670	\$6215	\$5790	\$6090
AKO15C3F02									
AK115C3F01									
AK115C3F02									
AKO25C3F02									
AKO25C3F06									
AK125C3F02									
AK125C3F06									
AKR30C3F01	\$5270	\$5700	\$5390	\$5820	\$5390	\$5820	\$6365	—	—
AKR30C3F04									
AKR30C3F08									
AKR35C3F01									
AKR35C3F04									
AKR35C3F08									
AKR35C3F08									
AK150CF16									
AK150C3F16									
AKO50C3F08									
AKO50C3F16	\$5420	\$5850	\$5540	\$5970	\$5540	\$5970	\$6515	—	—
AKR50C3F08									
AKR50C3F16									
AKO50C3F20									
AKR50C3F20									
AKO75C3F30									
AKR75C3F32									
AKO10C3F40	\$5420	\$5850	\$5540	\$5970	\$5540	\$5970	\$6515	—	—
AKR10C3F40									
AKW10C3F40									

#### MicroVersaTrip® Conversion Kits for 3-Phase, 4-Wire

Product Number	MicroVersaTrip® Plus List Price, GO-104B				
	03	05	07	08	12
AKO15C4F01	\$3575	\$3695	\$3695	\$4240	\$4545
AKO15C4F02					
AK115C4F01					
AK115C4F02					
AKO25C4F02					
AKO25C4F06					
AK125C4F02					
AK125C4F06	\$3725	\$3845	\$3845	\$4390	—
AKR30C4F01					
AKR30C4F04					
AKR30C4F08					
AKR35C4F01					
AKR35C4F04					
AKR35C4F08					
AK150C4F08					
AK150C4F16					
AKO50C4F08	\$3875	\$3995	\$3995	\$4540	—
AKO50C4F16					
AKR50C4F08					
AKR50C4F16					
AKO50C4F20					
AKR50C4F20					
AKO75C4F30					
AKR75C4F32	\$3875	\$3995	\$3995	\$4540	—
AKO10C4F40					
AKR10C4F40					
AKW10C4F40					

#### MicroVersaTrip® Conversion Kits for 3-Phase, 4-Wire

Product Number	MicroVersaTrip® PM Metering & Communication List Price, GO-104B				
	03M	05M	07M	08M	12M
AKO15C4F01	\$5075	\$5195	\$5195	\$5740	\$6045
AKO15C4F02					
AK115C4F01					
AK115C4F02					
AKO25C4F02					
AKO25C4F06					
AK125C4F02					
AK125C4F06	\$5225	\$5345	\$5345	\$5890	—
AKR30C4F01					
AKR30C4F04					
AKR30C4F08					
AKR35C4F01					
AKR35C4F04					
AKR35C4F08					
AK150C4F08					
AK150C4F16					
AKO50C4F08	\$5375	\$5495	\$5495	\$6040	—
AKO50C4F16					
AKR50C4F08					
AKR50C4F16					
AKO50C4F20					
AKR50C4F20					
AKO75C4F30					
AKR75C4F32	\$5375	\$5495	\$5495	\$6040	—
AKO10C4F40					
AKR10C4F40					
AKW10C4F40					

Product Number	MicroVersaTrip® PM Metering, Communication & Protective Relay List Price, GO-104B				
	03PM	05PM	07PM	08PM	12PM
AKO15C4F01	\$5775	\$5895	\$5895	\$6440	\$6745
AKO15C4F02					
AK115C4F01					
AK115C4F02					
AKO25C4F02					
AKO25C4F06					
AK125C4F02					
AK125C4F06	\$5925	\$6045	\$6045	\$6590	—
AKR30C4F01					
AKR30C4F04					
AKR30C4F08					
AKR35C4F01					
AKR35C4F04					
AKR35C4F08					
AK150C4F08					
AK150C4F16					
AKO50C4F08	\$6075	\$6195	\$6195	\$6740	—
AKO50C4F16					
AKR50C4F08					
AKR50C4F16					
AKO50C4F20					
AKR50C4F20					
AKO75C4F30					
AKR75C4F32	\$6075	\$6195	\$6195	\$6740	—
AKO10C4F40					
AKR10C4F40					
AKW10C4F40					

Conversion kits come standard with a rating plug that matches the current sensor. For rating plugs with different values, price and order separately. See page 6-39.



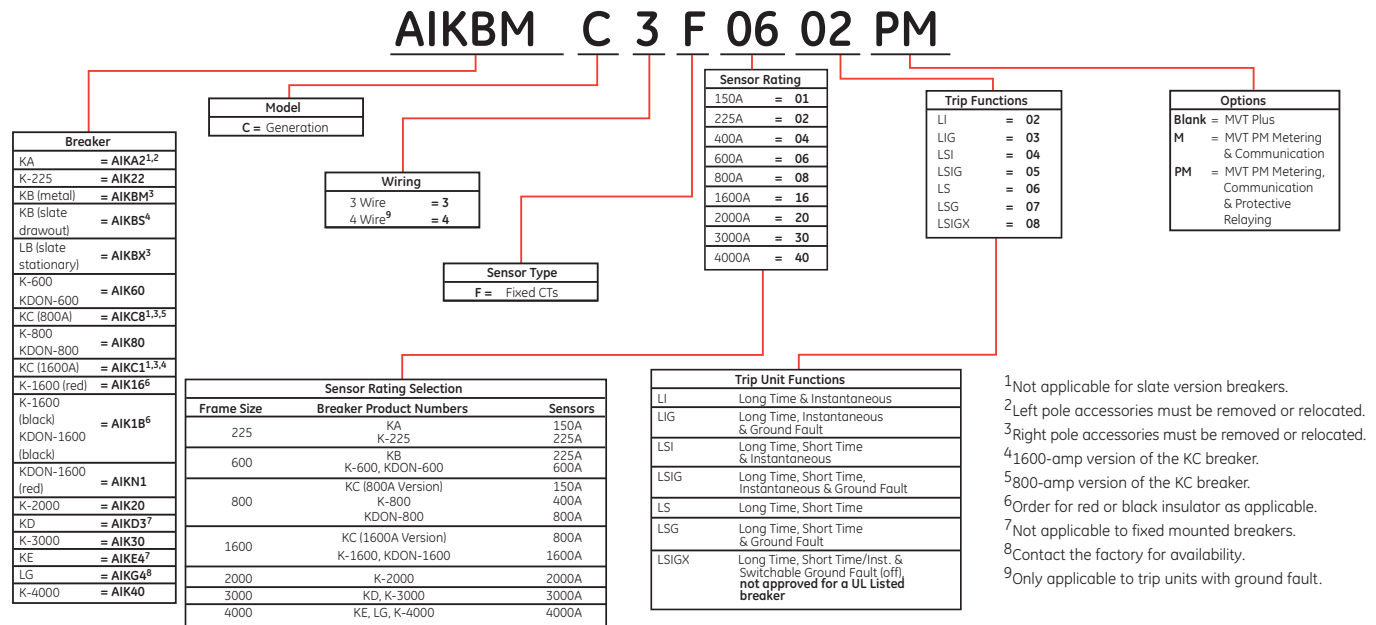


# Low Voltage Power and DC Circuit Breakers MicroVersaTrip® Plus and MicroVersaTrip® PM Trip Unit Conversion Kits Selection Guide

For \*I-T-E Power Circuit Breakers

## Product Number Structure

## Section 6



## MicroVersaTrip® Trip Unit Conversion Kits for \*I-T-E Power Circuit Breakers, 3-Phase, 3-Wire

Product Number	MicroVersaTrip® Plus List Price, GO-1048						
	02	03	04	05	06	07	08
AIKA2C3F01	\$2820	\$3250	\$2940	\$3370	\$2940	\$3370	\$3915
AIKA2C3F02							
AIK22C3F01							
AIK22C3F02							
AIKBSC3F02							
AIKBSC3F06							
AIKBXC3F02							
AIKBXC3F06							
AIKBMC3F02							
AIKBMC3F06							
AIK60C3F02	\$2970	\$3400	\$3090	\$3520	\$3090	\$3520	\$4065
AIK60C3F06							
AIKC8C3F01							
AIKC8C3F04							
AIKC8C3F08							
AIK80C3F01							
AIK80C3F04							
AIK80C3F08							
AIK1C3F08							
AIK1C3F16							
AIK16C3F08	\$3420	\$3850	\$3540	\$3970	\$3540	\$3970	\$4515
AIK16C3F16							
AIKN1C3F08							
AIKN1C3F16							
AIK1BC3F08							
AIK1BC3F16							
AIK20C3F20							
AIKD3C3F30							
AIK30C3F30							
AIKE4C3F40							
AIKG4C3F40							
AIK40C3F40							

### Price Selection

Select the desired product number from the chart above. Match the product prefix with the product numbers in the first column of the 3-wire or 4-wire table. Select the options column that matches the product suffix chosen. The list price is found in the intersecting box.

Conversion kits come standard with a rating plug that matches the current sensor.  
For rating plugs with different values, price and order separately. See page 6-39.

\*I-T-E is a registered trademark of Siemens Energy and Automation, Inc.



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

# Low Voltage Power and DC Circuit Breakers

## MicroVersaTrip® Plus and MicroVersaTrip® PM Trip Unit Conversion Kits Selection Guide

## Section 6

### MicroVersaTrip® Trip Unit Conversion Kits for \*I-T-E Power Circuit Breakers, 3-Phase, 3-Wire Continued

Product Number	MicroVersaTrip® PM Metering & Communication List Price, GO-104B							Product Number	MicroVersaTrip® PM Metering, Communication & Protective Relay List Price, GO-104B						
	02M	03M	04M	05M	06M	07M	08M		02PM	03PM	04PM	05PM	06PM	07PM	08PM
AIKA2C3F01	\$4320	\$4750	\$4440	\$4870	\$4440	\$4870	\$5415	AIKA2C3F01	\$5020	\$5450	\$5140	\$5570	\$5140	\$5570	\$6115
AIKA2C3F02								AIKA2C3F02							
AIK22C3F01								AIK22C3F01							
AIK22C3F02								AIK22C3F02							
AIKBSC3F02								AIKBSC3F02							
AIKBSC3F06								AIKBSC3F06							
AIKBXC3F02								AIKBXC3F02							
AIKBXC3F06								AIKBXC3F06							
AIKBMC3F02								AIKBMC3F02							
AIKBMC3F06								AIKBMC3F06							
AIK60C3F02								AIK60C3F02							
AIK60C3F06								AIK60C3F06							
AIKC8C3F01	\$4470	\$4900	\$4590	\$5020	\$4590	\$5020	\$5565	AIKC8C3F01	\$5170	\$5600	\$5290	\$5720	\$5290	\$5720	\$6265
AIKC8C3F04								AIKC8C3F04							
AIKC8C3F08								AIKC8C3F08							
AIK80C3F01								AIK80C3F01							
AIK80C3F04								AIK80C3F04							
AIK80C3F08								AIK80C3F08							
AIKC1C3F08								AIKC1C3F08							
AIKC1C3F16								AIKC1C3F16							
AIK16C3F08								AIK16C3F08							
AIK16C3F16								AIK16C3F16							
AIKN1C3F08								AIKN1C3F08							
AIKN1C3F16								AIKN1C3F16							
AIK1BC3F08	\$4920	\$5350	\$5040	\$5470	\$5040	\$5470	\$6015	AIK1BC3F08	\$5620	\$6050	\$5740	\$6170	\$5740	\$6170	\$6715
AIK1BC3F16								AIK1BC3F16							
AIK20C3F20								AIK20C3F20							
AIKD3C3F30								AIKD3C3F30							
AIK30C3F30								AIK30C3F30							
AIKE4C3F40								AIKE4C3F40							
AIKG4C3F40								AIKG4C3F40							
AIK40C3F40								AIK40C3F40							

### MicroVersaTrip® Conversion Kits for 3-Phase, 4-Wire

Product Number	MicroVersaTrip® Plus List Price, GO-104B				MicroVersaTrip® PM Metering & Communication List Price, GO-104B				MicroVersaTrip® PM Metering, Communication & Protective Relay List Price, GO-104B			
	03	05	07	08	03M	05M	07M	08M	03PM	05PM	07PM	08PM
AIKA2C4F01	\$3475	\$3595	\$3595	\$4140	\$4975	\$5095	\$5095	\$5640	\$5675	\$5795	\$5795	\$6340
AIKA2C4F02												
AIK22C4F01												
AIK22C4F02												
AIKBSC4F02												
AIKBSC4F06												
AIKBXC4F02												
AIKBXC4F06												
AIKBMC4F02												
AIKBMC4F06												
AIK60C4F02												
AIK60C4F06												
AIKC8C4F01	\$3625	\$3745	\$3745	\$4290	\$5125	\$5245	\$5245	\$5790	\$5825	\$5945	\$5945	\$6490
AIKC8C4F04												
AIKC8C4F08												
AIK80C4F01												
AIK80C4F04												
AIK80C4F08												
AIKC1C4F08												
AIKC1C4F16												
AIK16C4F08												
AIK16C4F16												
AIKN1C4F08	\$4075	\$4195	\$4195	\$4740	\$5575	\$5695	\$5695	\$6240	\$6275	\$6395	\$6395	\$6940
AIKN1C4F16												
AIK1BC4F08												
AIK1BC4F16												
AIK20C4F20												
AIKD3C4F30												
AIK30C4F30												
AIKE4C4F40												
AIKG4C4F40												
AIK40C4F40												

Conversion kits come standard with a rating plug that matches the current sensor. For rating plugs with different values, price and order separately. See page 6-39.  
\*I-T-E is a registered trademark of Siemens Energy and Automation, Inc.



# Low Voltage Power and DC Circuit Breakers

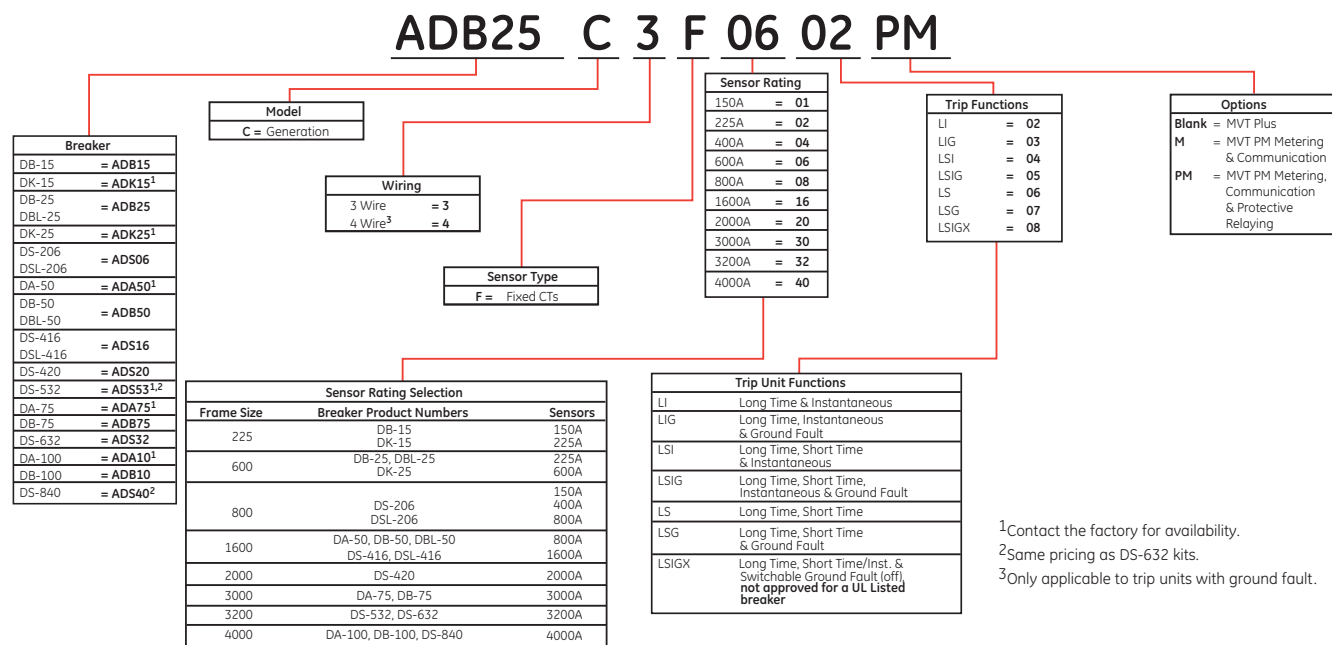
## MicroVersaTrip® Plus and MicroVersaTrip® PM Trip Unit

### Conversion Kits Selection Guide

For \*Westinghouse Power Circuit Breakers

## Section 6

### Product Number Structure



### MicroVersaTrip® Trip Unit Conversion Kits for \*Westinghouse Power Circuit Breakers, 3-Phase, 3-Wire

Product Number	MicroVersaTrip® Plus List Price, GO-104B						
	02	03	04	05	06	07	08
ADB15C3F01							
ADB15C3F02							
ADK15C3F01							
ADK15C3F02							
ADB25C3F02	\$2820	\$3250	\$2940	\$3370	\$2940	\$3370	\$3915
ADB25C3F06							
ADK25C3F02							
ADK25C3F06							
ADS06C3F01							
ADS06C3F04							
ADS06C3F08							
ADA50C3F08							
ADA50C3F16	\$2970	\$3400	\$3090	\$3520	\$3090	\$3520	\$4065
ADB50C3F08							
ADB50C3F16							
ADS16C3F08							
ADS16C3F16							
ADS20C3F20							
ADA75C3F30							
ADB75C3F30							
ADS32C3F32	\$3420	\$3850	\$3540	\$3970	\$3540	\$3970	\$4515
ADA10C3F40							
ADB10C3F40							
ADS40C3F40							

Conversion kits come standard with a rating plug that matches the current sensor.  
For rating plugs with different values, price and order separately. See page 6-39.

### Price Selection

Select the desired product number from the chart above. Match the product prefix with the product numbers in the first column of the 3-wire or 4-wire table. Select the options column that matches the product suffix chosen. The list price is found in the intersecting box.

\*Westinghouse is a trademark of Westinghouse Electric Corporation.



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

# Low Voltage Power and DC Circuit Breakers

## MicroVersaTrip® Plus and MicroVersaTrip® PM Trip Unit Conversion Kits Selection Guide

## Section 6

### MicroVersaTrip® Trip Unit Conversion Kits for \*Westinghouse Power Circuit Breakers, 3-Phase, 3-Wire Continued

MicroVersaTrip® PM Metering & Communication List Price, GO-104B								MicroVersaTrip® PM Metering, Communication & Protective Relay List Price, GO-104B							
Product Number	02M	03M	04M	05M	06M	07M	08M	Product Number	02PM	03PM	04PM	05PM	06PM	07PM	08PM
ADB15C3F01	\$4320	\$4750	\$4440	\$4870	\$4440	\$4870	\$5415	ADB15C3F01	\$5020	\$5450	\$5140	\$5570	\$5140	\$5570	\$6115
ADB15C3F02								ADB15C3F02							
ADK15C3F01								ADK15C3F01							
ADK15C3F02								ADK15C3F02							
ADB25C3F02								ADB25C3F02							
ADB25C3F06								ADB25C3F06							
ADK25C3F02								ADK25C3F02							
ADK25C3F06								ADK25C3F06							
ADS06C3F01	\$4470	\$4900	\$4590	\$5020	\$4590	\$5020	\$5565	ADS06C3F01	\$5170	\$5600	\$5290	\$5720	\$5290	\$5720	\$6265
ADS06C3F04								ADS06C3F04							
ADS06C3F08								ADS06C3F08							
ADA50C3F08								ADA50C3F08							
ADA50C3F16								ADA50C3F16							
ADB50C3F08								ADB50C3F08							
ADB50C3F16								ADB50C3F16							
ADS16C3F08	\$4920	\$5350	\$5040	\$5470	\$5040	\$5470	\$6015	ADS16C3F08	\$5620	\$6050	\$5740	\$6170	\$5740	\$6170	\$6715
ADS16C3F16								ADS16C3F16							
ADS20C3F20								ADS20C3F20							
ADA75C3F30								ADA75C3F30							
ADB75C3F30								ADB75C3F30							
ADS32C3F32								ADS32C3F32							
ADA10C3F40								ADA10C3F40							
ADB10C3F40	\$4075	\$4195	\$4195	\$4740	\$5575	\$5695	\$5695	ADB10C3F40	\$6240	\$6275	\$6395	\$6395	\$6395	\$6395	\$6940
ADS40C3F40								ADS40C3F40							

### MicroVersaTrip® Conversion Kits for 3-Phase, 4-Wire

Product Number	MicroVersaTrip® Plus List Price, GO-104B				MicroVersaTrip® PM Metering & Communication List Price, GO-104B				MicroVersaTrip® PM Metering, Communication & Protective Relay List Price, GO-104B			
	03	05	07	08	03M	05M	07M	08M	03PM	05PM	07PM	08PM
ADB15C4F01	\$3475	\$3595	\$3595	\$4140	\$4975	\$5095	\$5095	\$5640	\$5675	\$5795	\$5795	\$6340
ADB15C4F02												
ADK15C4F01												
ADK15C4F02												
ADB25C4F02												
ADB25C4F06												
ADK25C4F02												
ADK25C4F06	\$3625	\$3745	\$3745	\$4290	\$5125	\$5245	\$5245	\$5790	\$5825	\$5945	\$5945	\$6490
ADS06C4F01												
ADS06C4F04												
ADS06C4F08												
ADA50C4F08												
ADA50C4F16												
ADB50C4F08												
ADB50C4F16	\$4075	\$4195	\$4195	\$4740	\$5575	\$5695	\$5695	\$6240	\$6275	\$6395	\$6395	\$6940
ADS16C4F08												
ADS16C4F16												
ADS20C4F20												
ADA75C4F30												
ADB75C4F30												
ADS32C4F32												
ADA10C4F40	\$4075	\$4195	\$4195	\$4740	\$5575	\$5695	\$5695	\$6240	\$6275	\$6395	\$6395	\$6940
ADB10C4F40												
ADS40C4F40												

Conversion kits come standard with a rating plug that matches the current sensor. For rating plugs with different values, price and order separately. See page 6-39.

\*Westinghouse is a trademark of Westinghouse Electric Corporation.



# Low Voltage Power and DC Circuit Breakers

## MicroVersaTrip® Plus and MicroVersaTrip® PM Trip Unit

### Conversion Kits Selection Guide

## Section 6

For \*Allis-Chalmers Power Circuit Breakers

Product Number Structure

**ASL6B C 3 F 06 02 PM**

Breaker
LA = ASL25 <sup>1</sup>
LA-25A = ASL2A <sup>1</sup>
LA-600(Blue) = ASL6B <sup>2,3</sup>
LAF-600(Blue) = ASL6B <sup>2,3,4</sup>
LA-600(Gold) = ASL6G <sup>3,5</sup>
LAF-600(Gold) = ASL6G <sup>3,4,5</sup>
LA-50(800A) = ASL5 <sup>1,6</sup>
LA-800 = ASL80 <sup>3,5</sup>
LAF-800 = AKL80 <sup>3,4,5</sup>
RL-800 = ASR80 <sup>1</sup>
RLX-800 = ASR80 <sup>1</sup>
RLE-800 = ASR80 <sup>1</sup>
LA-50(1600A) = ASL51 <sup>1,7</sup>
LA-50(1600A) = ASL52 <sup>1,8</sup>
LA-1600(Blue) = ASL1B <sup>2,3</sup>
LAF-1600(Blue) = ASL1B <sup>2,3,4</sup>
LAF-1600(Gold) = ASL1G <sup>3,4</sup>
LAF-1600(Gold) = ASL1G <sup>3,4,5</sup>
RL-1600 = ASR16 <sup>1</sup>
RLX-1600 = ASR16 <sup>1</sup>
RLE-1600 = ASR16 <sup>1</sup>
RL-2000 = ASR0 <sup>1</sup>
LA-75 = ASL75 <sup>1</sup>
LA-3000 = ASL30 <sup>1,3</sup>
LA-3200(Blue) = ASL3B <sup>1,2,3</sup>
LA-3200(Gold) = ASL3G <sup>1,3,4</sup>
RL-3200 = ASR32 <sup>1</sup>
LA-4000(Blue) = ASL4B <sup>1,2,3</sup>
LA-4000(Gold) = ASL4G <sup>1,3,5</sup>
RL-4000 = ASR40 <sup>1</sup>

Model
C = Generation

Wiring
3 Wire = 3
4 Wire <sup>9</sup> = 4

Sensor Type
F = Fixed CTs

Sensor Rating
150A = 01
225A = 02
400A = 04
600A = 06
800A = 08
1600A = 16
2000A = 20
3000A = 30
3200A = 32
4000A = 40

Trip Functions
LI = 02
LIG = 03
LSI = 04
LSIG = 05
LS = 06
LSG = 07
LSIGX = 08

Options
Blank = MVT Plus
M = MVT PM Metering & Communication
PM = MVT PM Metering, Communication & Protective Relaying

Sensor Rating Selection		
Frame	Breaker Product Numbers	Sensors
225	Frame Rating not presently available	150A 225A
600	LA, LA-25, LA-25A LA-600, LAF-600	150, 225A 600A
800	LA-50(800A Version) LA-800, LAF-800 RL-800, RLE-800, RLX-800	150A 400A 800A
1600	LA-50(1600A Version)LA-1600, LAF-1600 RL-1600, RLE-1600, RLX-1600	800A 1600A
2000	RL-2000	2000A
3000	LA-75, LA-3000	3000A
3200	LA-3200, RL-3200	3200A
4000	LA-4000, RL-4000	4000A

Trip Unit Functions	
LI	Long Time & Instantaneous
LIG	Long Time, Instantaneous & Ground Fault
LSI	Long Time, Short Time & Instantaneous
LSIG	Long Time, Short Time Instantaneous & Ground Fault
LS	Long Time, Short Time
LSG	Long Time, Short Time & Ground Fault
LSIGX	Long Time, Short Time/Inst. & Switchable Ground Fault (off), not approved for a UL Listed breaker

**Definitions:**

Blue = Blue-Gray color version breaker with plastic escutcheon.

Gold = Gold color version breaker with metal escutcheon.

<sup>1</sup>Contact factory for availability.

<sup>2</sup>Only applicable for Blue-Gray color version breakers.

<sup>3</sup>Applicable to both "A" and "B" version breakers.

<sup>4</sup>Applicable to both nameplated versions of integral fused breakers (i.e. LA-600F and LAF-600).

<sup>5</sup>Only applicable for Gold color version breakers.

<sup>6</sup>800-amp version of the LA-50 breaker.

<sup>7</sup>Only applicable for 1600-amp, 6-pole primary disconnect version of the LA-50 breaker.

<sup>8</sup>Only applicable for 1600-amp, 12-pole primary disconnect version of the LA-50 breaker.

<sup>9</sup>Only applicable to trip units with ground fault.

#### Price Selection

Select the desired product number from the chart above. Match the product prefix with the product numbers in the first column of the 3-wire or 4-wire table. Select the options column that matches the product suffix chosen. The list price is found in the intersecting box.

#### Kits Without Sensors

For kits ordered without sensors, **deduct \$450.00** from the **list price** of the kit with sensors. Please refer to the sensor rating column above for the appropriate "X" sensor code.

#### MicroVersaTrip® Trip Unit Conversion Kits for 3-Phase, 3-Wire

MicroVersaTrip® Plus List Price, GO-104B								MicroVersaTrip® PM Metering & Communication List Price, GO-104B							
Product Number	02	03	04	05	06	07	08	Product Number	02M	03M	04M	05M	06M	07M	08M
ASL25C3F01								ASL25C3F01							
ASL25C3F02								ASL25C3F02							
ASL25C3F06								ASL25C3F06							
ASL2AC3F01								ASL2AC3F01							
ASL2AC3F02								ASL2AC3F02							
ASL2AC3F06	\$2820	\$3250	\$2940	\$3370	\$2940	\$3370	\$3915	ASL2AC3F06	\$4320	\$4750	\$4440	\$4870	\$4440	\$4870	\$5415
ASL6BC3F01								ASL6BC3F01							
ASL6BC3F02								ASL6BC3F02							
ASL6BC3F06								ASL6BC3F06							
ASL6GC3F01								ASL6GC3F01							
ASL6GC3F02								ASL6GC3F02							
ASL6GC3F06								ASL6GC3F06							
ASL58C3F01								ASL58C3F01							
ASL58C3F04								ASL58C3F04							
ASL58C3F08								ASL58C3F08							
ASL80C3F01								ASL80C3F01							
ASL80C3F04								ASL80C3F04							
ASL80C3F08								ASL80C3F08							
ASR80C3F01								ASR80C3F01							
ASR80C3F04								ASR80C3F04							
ASR80C3F08								ASR80C3F08							
ASL51C3F08	\$2970	\$3400	\$3090	\$3520	\$3090	\$3520	\$4065	ASL51C3F08	\$4470	\$4900	\$4590	\$5020	\$4590	\$5020	\$5565
ASL51C3F16								ASL51C3F16							
ASL52C3F08								ASL52C3F08							
ASL52C3F16								ASL52C3F16							
ASL1BC3F08								ASL1BC3F08							
ASL1BC3F16								ASL1BC3F16							
ASL1GC3F08								ASL1GC3F08							
ASL1GC3F16								ASL1GC3F16							
ASR16C3F08								ASR16C3F08							
ASR16C3F16								ASR16C3F16							
ASR0C3F20								ASR0C3F20							
ASL75C3F30								ASL75C3F30							
ASL30C3F30								ASL30C3F30							
ASL3BC3F32								ASL3BC3F32							
ASL3GC3F32	\$3420	\$3850	\$3540	\$3970	\$3540	\$3970	\$4515	ASL3GC3F32	\$4920	\$5350	\$5040	\$5470	\$5040	\$5470	\$6015
ASR32C3F32								ASR32C3F32							
ASL4BC3F40								ASL4BC3F40							
ASL4GC3F40								ASL4GC3F40							
ASR40C3F40								ASR40C3F40							

Conversion kits come standard with a rating plug that matches the current sensor. For rating plugs with different values, price and order separately. See page 6-39.

\*Allis-Chalmers is a trademark of Allis-Chalmers Manufacturing Company Corporation.



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

# Low Voltage Power and DC Circuit Breakers

## MicroVersaTrip® Plus and MicroVersaTrip® PM Trip Unit

### Conversion Kits Selection Guide

For \*Allis-Chalmers Power Circuit Breakers

## Section 6

### MicroVersaTrip® Trip Unit Conversion Kits for 3-Phase, 3-Wire

### MicroVersaTrip® Trip Unit Conversion Kits for 3-Phase, 4-Wire

Product Number	MicroVersaTrip® PM Metering, Communication, and Protective Relay List Price, GO-104B							Product Number	MicroVersaTrip® Plus List Price, GO-104B				MVT PM Metering & Communication List Price, GO-104B				MVT PM Metering, Comm. & Prot. Relay List Price, GO-104B			
	02PM	03PM	04PM	05PM	06PM	07PM	08PM		03	05	07	08	03M	05M	07M	08M	03PM	05PM	07PM	08PM
ASL25C3F01								ASL25C4F01												
ASL25C3F02								ASL25C4F02												
ASL25C3F06								ASL25C4F06												
ASL2AC3F01								ASL2AC4F01												
ASL2AC3F02								ASL2AC4F02												
ASL2AC3F06	\$5020	\$5450	\$5140	\$5570	\$5140	\$5570	\$6115	ASL2AC4F06	\$3475	\$3595	\$3595	\$4140	\$4975	\$5095	\$5095	\$5640	\$5675	\$5795	\$5795	\$6340
ASL6BC3F01								ASL6BC4F01												
ASL6BC3F02								ASL6BC4F02												
ASL6BC3F06								ASL6BC4F06												
ASL6GC3F01								ASL6GC4F01												
ASL6GC3F02								ASL6GC4F02												
ASL6GC3F06								ASL6GC4F06												
ASL58C3F01								ASL58C4F01												
ASL58C3F04								ASL58C4F04												
ASL58C3F08								ASL58C4F08												
ASL80C3F01								ASL80C4F01												
ASL80C3F04								ASL80C4F04												
ASL80C3F08								ASL80C4F08												
ASR80C3F01								ASR80C4F01												
ASR80C3F04								ASR80C4F04												
ASR80C3F08								ASR80C4F08												
ASL51C3F08	\$5170	\$5600	\$5290	\$5720	\$5290	\$5720	\$6265	ASL51C4F08	\$3625	\$3745	\$3745	\$4290	\$5125	\$5245	\$5245	\$5790	\$5825	\$5945	\$5945	\$6490
ASL51C3F16								ASL51C4F16												
ASL52C3F08								ASL52C4F08												
ASL52C3F16								ASL52C4F16												
ASL1BC3F08								ASL1BC4F08												
ASL1BC3F16								ASL1BC4F16												
ASL1GC3F08								ASL1GC4F08												
ASL1GC3F16								ASL1GC4F16												
ASR16C3F08								ASR16C4F08												
ASR16C3F16								ASR16C4F16												
ASR0C3F20								ASR0C4F20												
ASL75C3F30								ASL75C4F30												
ASL30C3F30								ASL30C4F30												
ASL3BC3F32								ASL3BC4F32												
ASL3GC3F32	\$5620	\$6050	\$5740	\$6170	\$5740	\$6170	\$6715	ASL3GC4F32	\$4075	\$4195	\$4195	\$4740	\$5575	\$5695	\$5695	\$6240	\$6275	\$6395	\$6395	\$6940
ASR32C3F32								ASR32C4F32												
ASL4BC3F40								ASL4BC4F40												
ASL4GC3F40								ASL4GC4F40												
ASR40C3F40								ASR40C4F40												

Conversion kits come standard with a rating plug that matches the current sensor. For rating plugs with different values, price and order separately. See page 6-39.

\*Allis-Chalmers is a trademark of Allis-Chalmers Manufacturing Company Corporation.



# Low Voltage Power and DC Circuit Breakers

## MicroVersaTrip® Plus and MicroVersaTrip® PM Trip Unit Rating Plugs

## Section 6

### MicroVersaTrip® Plus and MicroVersaTrip® PM Rating Plugs

Frame Size (Amps)	Sensor Rating (Amps)	Current Rating (Amps)	Current Range (Amps) <sup>1</sup>	Product Number	List Price GO-245A
225 or 800	150	60	30-66	TR1B60	\$89.00
225 or 800	150	80	40-88	TR1B80	\$89.00
225 or 800	150	100	50-110	TR1B100	\$89.00
225 or 800	150	125	63-138	TR1B125	\$89.00
225 or 800	150	150	75-165	TR1B150	\$89.00
225 or 600	225	100	50-110	TR225B100	\$89.00
225 or 600	225	150	75-165	TR225B150	\$89.00
225 or 600	225	225	113-248	TR225B225	\$89.00
600	600	300	150-330	TR6B300	\$89.00
600	600	400	200-400	TR6B400	\$89.00
600	600	450	225-495	TR6B450	\$89.00
600	600	500	250-550	TR6B500	\$89.00
600	600	600	300-660	TR6B600	\$89.00
800	400	150	75-165	TR4B150	\$89.00
800	400	200	100-220	TR4B200	\$89.00
800	400	225	113-248	TR4B225	\$89.00
800	400	250	125-275	TR4B250	\$89.00
800	400	300	150-330	TR4B300	\$89.00
800	400	400	200-440	TR4B400	\$89.00
800 or 1600	800	300	150-330	TR8B300	\$89.00
800 or 1600	800	400	200-440	TR8B400	\$89.00
800 or 1600	800	450	225-495	TR8B450	\$89.00
800 or 1600	800	500	250-550	TR8B500	\$89.00
800 or 1600	800	600	300-660	TR8B600	\$89.00
800 or 1600	800	700	350-770	TR8B700	\$89.00
800 or 1600	800	800	400-880	TR8B800	\$89.00
1600	1600	600	300-660	TR16B600	\$89.00
1600	1600	800	400-880	TR16B800	\$89.00
1600	1600	1000	500-1100	TR16B1000	\$89.00
1600	1600	1100	550-1210	TR16B1100	\$89.00
1600	1600	1200	600-1320	TR16B1200	\$89.00
1600	1600	1600	800-1760	TR16B1600	\$89.00
2000	2000	800	400-800	TR20B800	\$89.00
2000	2000	1000	500-1100	TR20B1000	\$89.00
2000	2000	1200	600-1320	TR20B1200	\$89.00
2000	2000	1500	750-1650	TR20B1500	\$89.00
2000	2000	1600	800-1760	TR20B1600	\$89.00
2000	2000	2000	1000-2200	TR20B2000	\$89.00
3000	3000	1200	600-1320	TR30B1200	\$89.00
3000	3000	1600	800-1760	TR30B1600	\$89.00
3000	3000	2000	1000-2200	TR30B2000	\$89.00
3000	3000	2500	1250-2750	TR30B2500	\$89.00
3000	3000	3000	1500-3300	TR30B3000	\$89.00
3200	3200	1200	600-1320	TR32B1200	\$89.00
3200	3200	1600	800-1760	TR32B1600	\$89.00
3200	3200	2400	1200-2640	TR32B2400	\$89.00
3200	3200	3200	1600-3520	TR32B3200	\$89.00
4000	4000	1600	800-1760	TR40B1600	\$89.00
4000	4000	2000	1000-2200	TR40B2000	\$89.00
4000	4000	2500	1250-2750	TR40B2500	\$89.00
4000	4000	3000	1500-3300	TR40B3000	\$89.00
4000	4000	3600	1800-3960	TR40B3600	\$89.00
4000	4000	4000	2000-4400	TR40B4000	\$89.00

<sup>1</sup>Utilizing longtime pick-up adjustment of 0.5-1.1 times the rating plug value. Trip rating not to exceed the breaker frame rating.

Note: Rating plugs ordered and priced separately.



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

Low Voltage Power and DC Circuit Breakers  
Trip Unit Conversion Kits for GE, \*I-T-E,  
\*Westinghouse, \*Allis-Chalmers Circuit Breakers  
Accessories

Section 6

Optional Remote Display—Features

- Provides safe, convenient closed-door access to breaker metering, status and setup functions
- Available for use with either MicroVersaTrip® Plus or MicroVersaTrip® PM trip units
- Rugged plastic NEMA Type 1 enclosure with LCD and keypad
- Mounts easily on outside of breaker compartment door
- Sealable, clear LEXAN protective cover over display and "Enter" key prohibits unauthorized trip setting changes
- Connects to breaker trip unit via 20-pin plug-in cable for fast installation
- Breaker trip unit operates independently if cable is disconnected



Optional Remote Display

Optional Remote Display

Accessory Type	Product Number	List Price GO-104B
Remote Display w/ 6' Cable	REMDIS1	\$350.00
Replacement Cable	REMDIS2	\$35.00

Target Module

All ProTrip™ conversion kits come with a target module.  
Order another only for renewal purposes.

Product Number	List Price GO-104P
TARGET02P	\$285.00



Target Module

GE Trip Unit Portable Test Set

Allows for self-tests and functioning trip/no trip tests. Operates on batteries (not included) or 120 VAC source.

Product Number	List Price GO-245B
TVRMS2	\$3000.00



GE Trip Unit Portable Test Set

\*I-T-E is a registered trademark of Siemens Energy and Automation, Inc.  
\*Westinghouse is a trademark of Westinghouse Electric Corporation.  
\*Allis-Chalmers is a trademark of Allis-Chalmers Manufacturing Company Corporation.



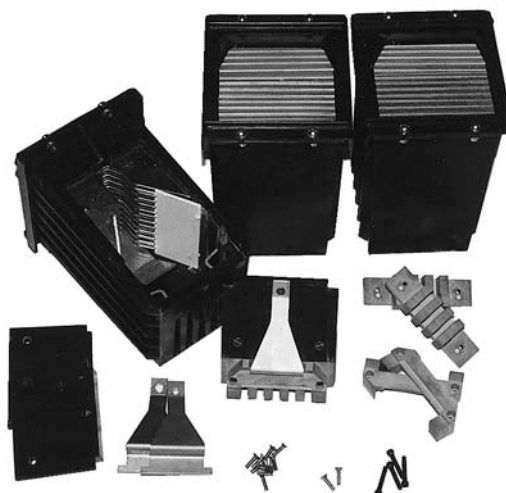


# Low Voltage Power and DC Circuit Breakers Asbestos Free Arc Quencher Replacement Kits

## Section 6

GE's Asbestos Free Arc Quencher Replacement Kits are designed to replace asbestos plate style arc quenchers on AK and early AKR power circuit breakers with reliable, proven steel plate style arc quenchers used on modern AKR breakers. The kits have been ANSI C37.59 tested for dielectric and short circuit ensuring breaker performance to original specifications. On most AK series breakers, no modifications are needed to install the arc quencher replacement kit. Installation is typically done in less than one hour (see Installation Instructions GEH-6464). Asbestos Free Arc Quencher replacement kits are shipped complete with detailed installation instructions and everything you need for fast and easy arc quencher replacement:

- Asbestos free metal plate or ceramic arc quenchers
- Contact guides and arc runners (when required)
- Asbestos free replacement barriers (when required)
- All required mounting hardware



### Reference Publications

Asbestos Free Arc Quencher Replacement Kits	DET-096
Installation Instructions	GEH-6464

### Product Number Selection

AKO25

Breaker

AK-15  
AK-25  
AKU-25  
AKR-30S  
AKR-30  
AKRU-30  
AKR-30H  
AKRU-30H  
AK-50  
AKT-50  
AKU-50  
AKJ-50  
AKJT-50  
AKJU-50  
AKR-50  
AKRT-50  
AKRU-50  
AKJ-50H  
AKJT-50H  
AKJU-50H  
AKR-50H  
AKRT-50H  
AKRU-50H  
AKJ-50  
AKJT-50  
AKJU-50  
AKJ-50H  
AKJT-50H  
AKJU-50H  
AK-75  
AKR-75  
AK-100  
AKR-100

AKO25<sup>1,2,3</sup>  
AKR3S<sup>1,2</sup>  
AKR30  
AKR3H  
AKO50<sup>2,3</sup>  
AKR50  
AKR5H  
AKD50<sup>4</sup>  
AKD5H<sup>4</sup>  
AKO75<sup>2,3</sup>  
AKR75<sup>2</sup>  
AKO10<sup>2,3</sup>  
AKR10<sup>2</sup>

AQR1

Model

AQR1  
Arc Quencher Replacement Kit  
Generation 1

G1

Application

For Asbestos Removal  
Renewal Kit for  
Ceramic Arc Quenchers

G1  
G2

Arc Quenchers Replacement Kit

List Price, GO-104B

Product Number	G1	G2
AKO25AQR1	\$800.00	—
AKR3SAQR1	\$800.00	—
AKR30AQR1	\$2000.00	\$2000.00
AKR3HAQR1	\$2300.00	\$2300.00
AKO50AQR1	\$2350.00	—
AKR50AQR1	\$2000.00	\$2000.00
AKR5HAQR1	\$2300.00	\$2300.00
AKD50AQR1	\$2000.00	\$2000.00
AKD5HAQR1	\$2300.00	\$2300.00
AKO75AQR1	\$2900.00	—
AKR75AQR1	\$2700.00	—
AKO10AQR1	\$3600.00	—
AKR10AQR1	\$3250.00	—

Price Selection

Select the desired product number from the above chart. Match the product prefix with the product number in the first column of the pricing table. Select the application column that matches the product suffix chosen. The price is found in the intersecting box.

### Arc Quenchers Replacement Kit

Product Number	List Price, GO-1048	
	G1	G2
AKO25AQR1	\$800.00	—
AKR35AQR1	\$800.00	—
AKR30AQR1	\$2000.00	\$2000.00
AKR3HAQR1	\$2300.00	\$2300.00
AKO50AQR1	\$2350.00	—
AKR50AQR1	\$2000.00	\$2000.00
AKR5HAQR1	\$2300.00	\$2300.00
AKD50AQR1	\$2000.00	\$2000.00
AKD5HAQR1	\$2300.00	\$2300.00
AKO75AQR1	\$2900.00	—
AKR75AQR1	\$2700.00	—
AKO10AQR1	\$3600.00	—
AKR10AQR1	\$3250.00	—

### Price Selection

Select the desired product number from the above chart. Match the product prefix with the product number in the first column of the pricing table. Select the application column that matches the product suffix chosen. The price is found in the intersecting box.

<sup>1</sup>Kits contain replacement barriers only, arc quenchers do not contain asbestos.

<sup>2</sup>G2 kits are not available for these breakers, please contact the factory for individual replacement arc quenchers.

<sup>3</sup>Does not apply to AK-1 series breakers.

<sup>4</sup>These kits are for use on breakers used in AKD and AKD-5 switchgear and substructures.



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

The electrically operated racking device allows maintenance personnel the ability to be up to 30 feet away from a draw-out breaker during the racking operation. This was typically only an option with medium voltage switchgear. Now, GE offers this as an option with low voltage switchgear.

The electric motor is operated using convenient 115V AC power with a plug-in power cord. The gearbox is easily attached to the front of the breaker with a sliding latch connection.

The low voltage racking devices can be used with any WavePro or EntelliGuard® breaker. Large frame WavePro breakers (3200 Amp and above)<sup>1</sup> require an accessory kit and a retrofit door to accommodate the device.

Allowing the user to be physically removed from the breaker racking mechanics during operation provides a peace of mind not usually available in a low voltage application.

<sup>1</sup>Manufactured before 9/1/05.



### Easy and Safe Operation



**PRESS!**

A push of the button on a handheld remote operator draws the breaker out with a 115V AC motor in the gear box.



**PRESS!**

Another push of the button racks the breaker back into place.



### Remote operation through a cable-connected handheld control

- Permits control of gearbox and racking motor from remote location, allowing the user to be remote from the breaker during the racking procedure.
- Cable allows user to be up to 30 feet away from the breaker and away from the arc flash center.
- Allows user to determine their location based on room layout.
- Simple start switch push button in handheld box.

### Portable gearbox with full operator control

- Allows the user to easily move a draw-out circuit breaker between CONNECT and DISCONNECT positions.
- Can be used with WavePro or EntelliGuard® breakers in Entellisys®, AKD-10 or Power Break® switchboard line-ups (with WavePro breakers).
- Motor directional switch for IN/OUT racking control.
- Circuit breaker reset toggle switch for control power.

### Racking Device

- Electrically powered with 115V AC power (4 foot cord).
- Sliding latch allowing device to be easily attached to front of breakers (WavePro or EntelliGuard®).

### Retrofits (Product shipped before June 2005)

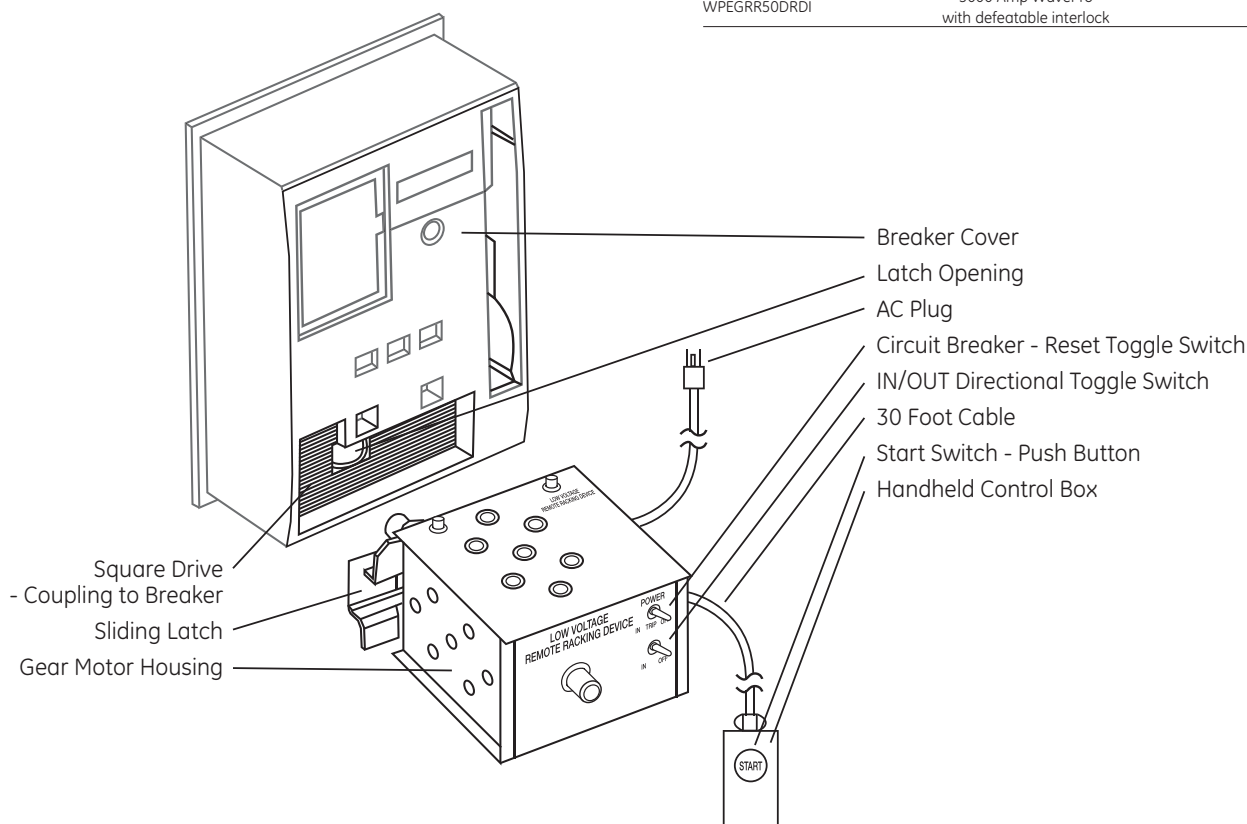
- Small Frame (800 - 2000 Amp) WavePro breakers accept the Racking Device without modification.
- Existing Large Frame (3200 - 5000 Amp) WavePro breakers compatible by simply replacing the cubicle door.
- All EntelliGuard® breakers accept the Racking Device without modifications.

### Racking Devices

Product Number	Description
WPEGRRLV	Remote Racking Device
WPEGRRMODL	Large Frame Breaker Modification Kit (3200-5000 Amp)

### Retrofit Doors for Large Frame WavePro

Product Number	Description
WPEGRRLFDR	3200/4000 Amp WavePro
WPEGRRLFDRDI	3200/4000 Amp WavePro with defeatable interlock
WPEGRR50DR	5000 Amp WavePro
WPEGRR50DRDI	5000 Amp WavePro with defeatable interlock



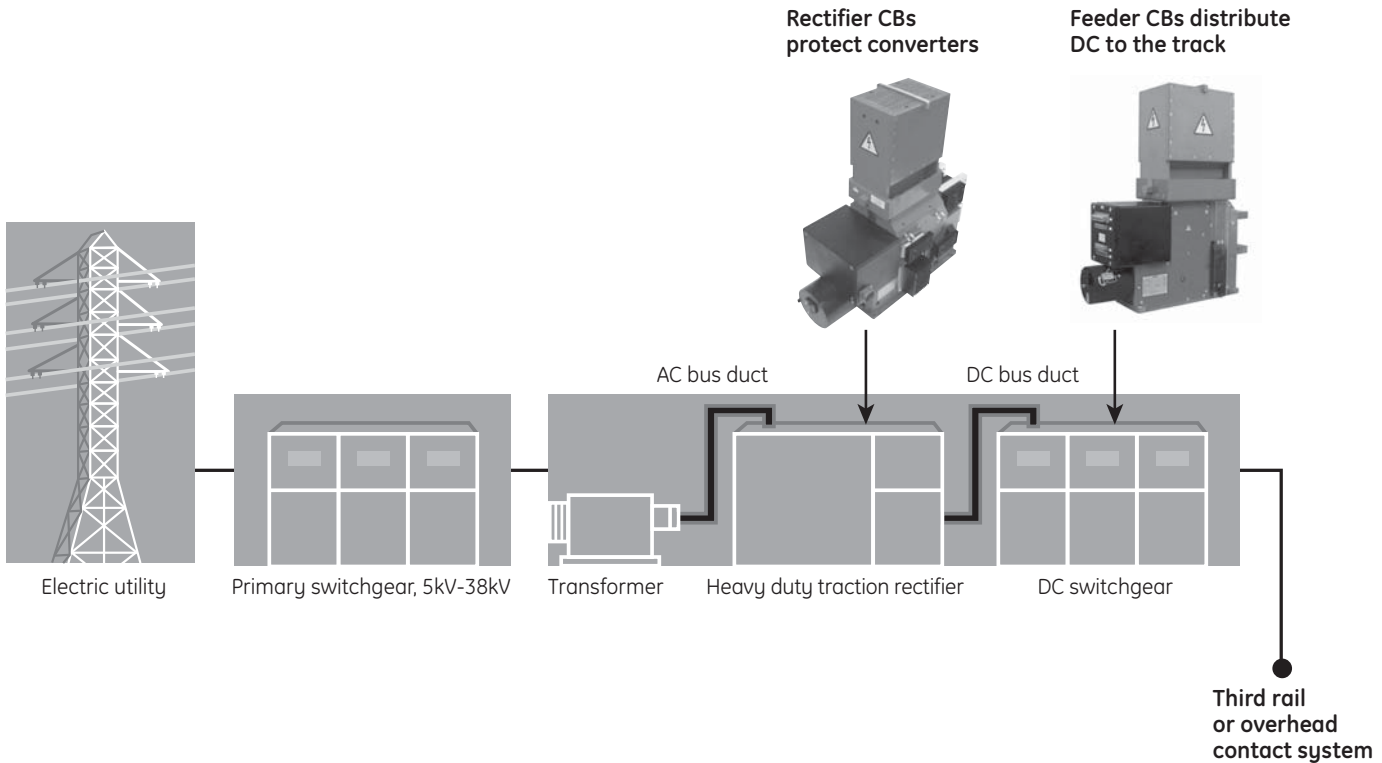
**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

# Low Voltage Power and DC Circuit Breakers

## Gerapid High Speed DC Circuit Breakers

## Section 6

### Typical Traction Electric Power System



### Circuit Breaker Features and Accessories

- Insulated side plates with insulated toggle for setting over current trip (OCT) for feeder breakers
- Mechanical forced tripping
- Electrodynamic trip device (with or without capacitor and charging unit)
- Shunt trip
- No-voltage release
- Auxiliary contacts
- Different auxiliary contacts for signaling (optional)
- Flexible main terminal configurations
- Plug connectors for auxiliary circuits (optional)
- Hand lever for manual actuation from front (for maintenance purposes only)
- Position indication (optional)
- Manual operation for maintenance
- Internal power supply with a wide range of supply voltage options
- Integrated current measurement unit (SEL) (optional)
- Rectifier breaker mechanical counter

### Key Benefits

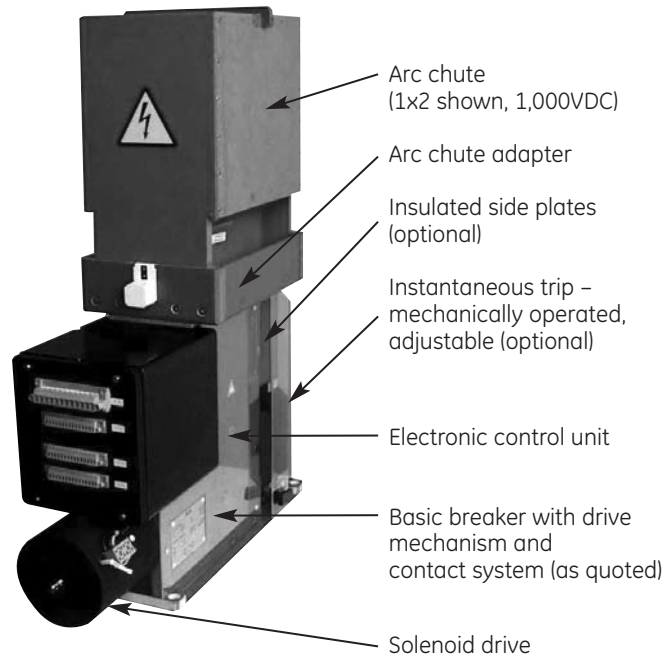
- Standard dimensions from 2,600A to 6,000A (feeder models GER2607 – GER6007)
- Operating voltages from 1,000 to 3,900VDC
- Mining and traction compliant (ANSI C37.14, IEC 947-2, EN 50123-2)
- High speed OPEN/TRIP (opening delay <3ms)
- Direct acting instantaneous and adjustable trip unit works without imported energy and is available as bidirectional symmetrical (for line feeder) or unidirectional (for rectifier breaker)
- High speed CLOSE (approximately 150 ms)
- Solenoid drive (integral control unit, mechanically latched, no auxiliary power required to keep contacts closed)
- 2-stage contact system
- Compact, enclosed construction
- Modular, serviceable design
- Flexible power terminations
- Easily accessible control and auxiliary connections
- Fixed and draw-out versions
- Extensive accessories

### General Information

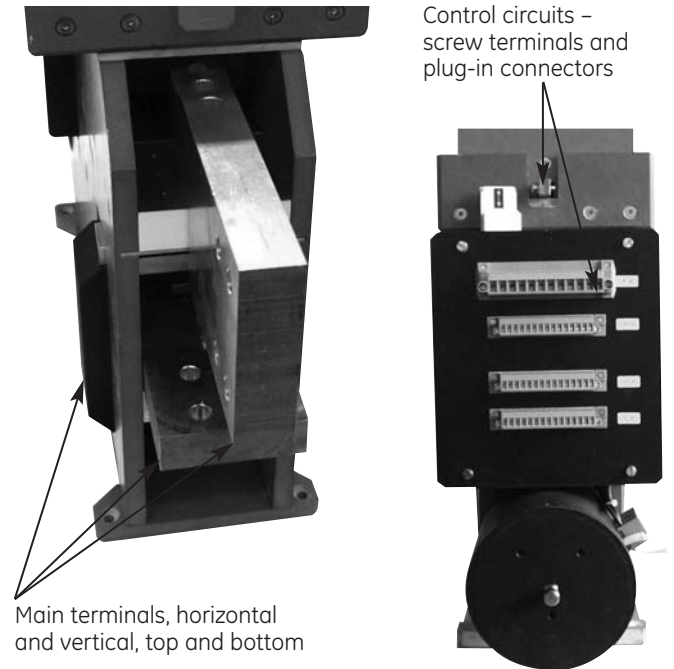
Rated Temperature	-5° to 40°C ambient (55°C with reduced ratings)
Relative Humidity	90% @ T<20°C; RH=130-2*T @ T>20 °C
Altitude	-120m to 2000m above sea level



### Gerapid Breaker Modules



### Power and Control Connections



### Type SEL Current Measurement System (optional)

- Current measurement at the breaker
- Factory-equipped or field-installable
- No additional space required or breaker modifications
- Ranges 6kA and 12kA
- To 4,000VDC
- Signal output via 3 interfaces
  - 4...20mA
  - +/- 20mA
  - +/- 10V
- Watchdog function standard



Technical Data for Feeder Circuit Breaker Models 2607 and 4207

Breaker type	Gerapid 2607					Gerapid 4207				
Arc chute type	1x2	1x4	2x2	2x3	2x4	1x2	1x4	2x2	2x3	2x4
Rated current	In/A	2,600	2,600	2,600	2,600	2,600	4,200	4,200	4,200	4,200
Rated operating voltage	Ue/V	1,000	2,000	2,000	3,000	3,600	1,000	2,000	2,000	3,000
Rated insulation voltage	Ui/V	2,000	2,000	2,000	3,000	4,000	2,000	2,000	2,000	3,000
Short time current	120 min./A	3,150	3,150	3,150	3,150	3,150	5,000	5,000	5,000	5,000
	2 min./A	5,200	5,200	5,200	5,200	5,200	8,500	8,500	8,500	8,500
	20 sec./A	7,800	7,800	7,800	7,800	7,800	12,600	12,600	12,600	12,600
Mechanical endurance	ops.	20,000 <sup>1</sup>	20,000 <sup>1</sup>	20,000 <sup>1</sup>	20,000 <sup>1</sup>	20,000 <sup>1</sup>	20,000 <sup>1</sup>	20,000 <sup>1</sup>	20,000 <sup>1</sup>	20,000 <sup>1</sup>
Total weight approx.	kg	120	120	160	160	160	120	120	160	160

<sup>1</sup>With regular maintenance 100,000 ops.

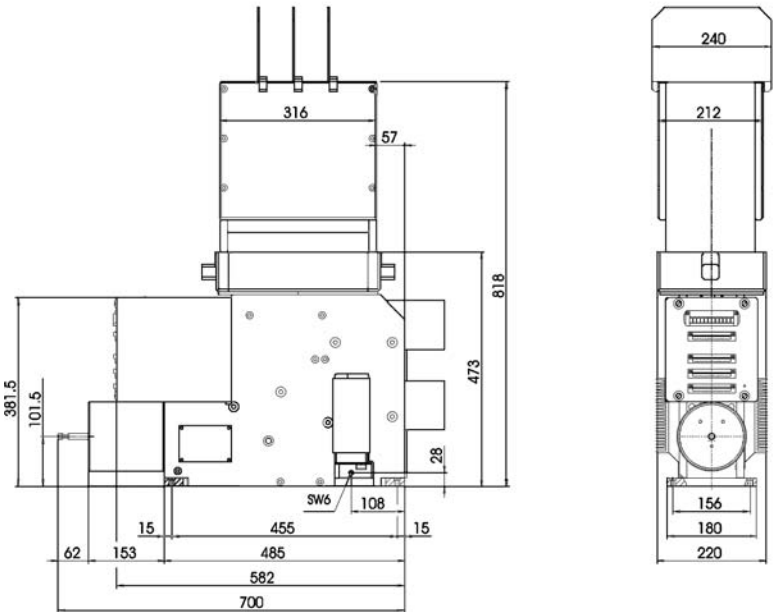


Figure 1. Models 2607 - 6007 Feeder CBs, 1X4 Arc Chute, 2,000VDC (Dimensions in mm)

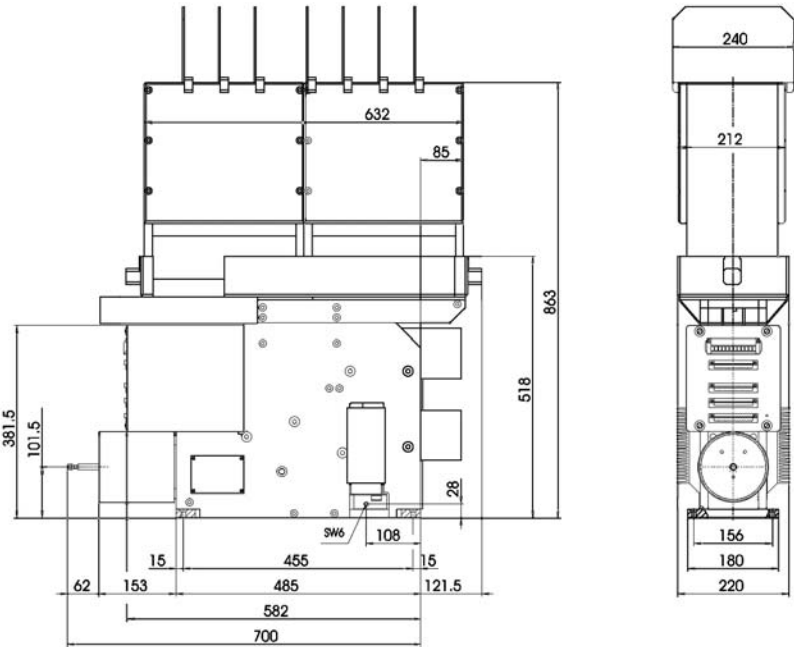


Figure 1A. Models 2607 - 6007 Feeder CBs, 2X4 Arc Chute, 3,600VDC (Dimensions in mm)





### Technical Data for Feeder Circuit Breaker Models 6007 and 8007

Breaker type		Gerapid 6007					Gerapid 8007		
Arc chute type		1x2	1x4	2x2	2x3	2x4	1x2	2x2	2x3
Rated current	In/A	6,000	6,000	6,000	6,000	6,000	8,000	8,000	8,000
Rated operating voltage	Ue/V	1,000	2,000	2,000	3,000	3,600	1,000	2,000	3,000
Rated insulation voltage	Ui/V	2,000	2,000	2,000	3,000	4,000	2,000	2,000	3,000
	120 min./A	7,200	7,200	7,200	7,200	7,200	9,600	9,600	9,600
Short time current	2 min./A	12,000	12,000	12,000	12,000	12,000	16,000	16,000	16,000
	20 sec./A	18,000	18,000	18,000	18,000	18,000	24,000	24,000	24,000
Mechanical endurance	ops.	20,000 <sup>1</sup>	20,000 <sup>1</sup>	20,000 <sup>1</sup>	20,000 <sup>1</sup>	20,000 <sup>1</sup>	20,000 <sup>1</sup>	20,000 <sup>1</sup>	20,000 <sup>1</sup>
Total weight approx.	kg	150	150	190	190	190	190	210	210

<sup>1</sup>With regular maintenance 100,000 ops.

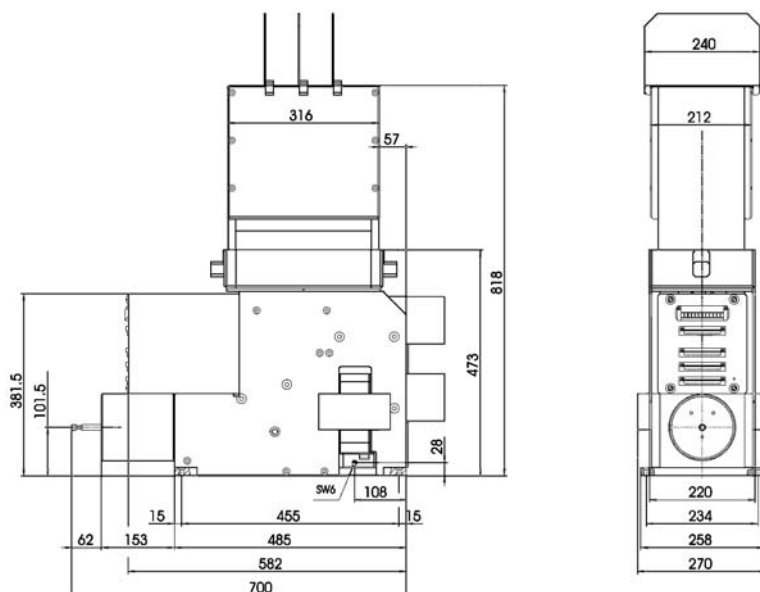


Figure 2. Gerapid 8007 Feeder CBs, 1X4 Arc Chute, 2,000VDC (Dimensions in mm)

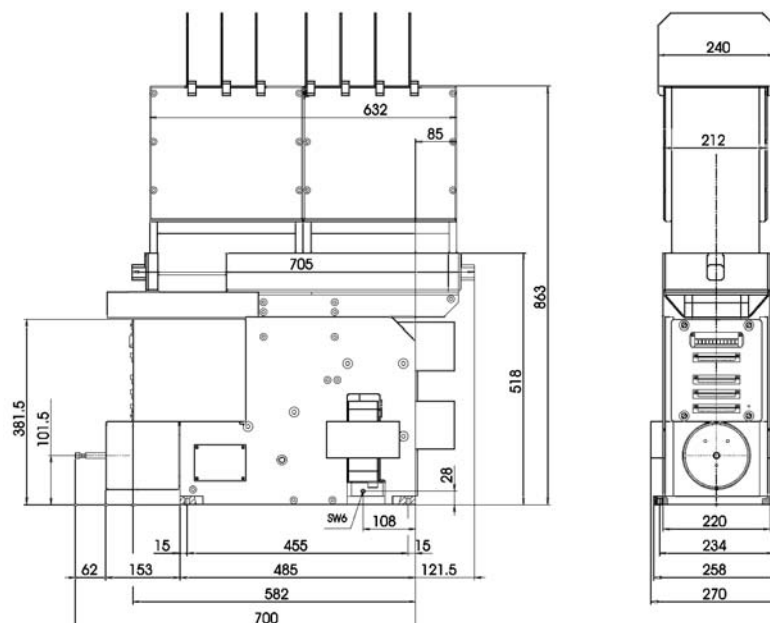


Figure 2A. Gerapid 8007 Feeder CBs, 2X4 Arc Chute, 3,600VDC (Dimensions in mm)



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications



Breaker type		Gerapid 8007R		Gerapid 1007R	
Arc chute type		1x2	1x3	1x2	1x3
Rated current	In/A	6,000	6,000	8,000	8,000
Rated operating voltage	Ue/V	800	1,200	800	1,200
Rated insulation voltage	Ui/V	2,000	2,000	2,000	2,000
Short time current	120 min./A	7,200	7,200	9,600	9,600
	2 min./A	8,000	8,000	16,000	16,000
	20 sec./A	12,000	12,000	24,000	24,000
Mechanical endurance	ops.	10,000 <sup>1</sup>	10,000 <sup>1</sup>	10,000 <sup>1</sup>	10,000 <sup>1</sup>
Total weight approx.	kg	220	220	220	220

[illegible]

### General Installation and Maintenance

Publication Number	Publication Name
DEH-136	WavePro Small Frame Maintenance Manual, WP-08-20
DEH-137	WavePro Large Frame Maintenance Manual, WP-32-50
DEH-178	User's Guide - MicroVersaTrip® Plus/PM Trip Units
DEH-179	User's Guide - Power+ Trip Unit
GEH-5945	Power Leader® Recommended Power Supplies
GEH-5946	Power Leader® Voltage Conditioner
DEJ-001	Portable Battery Power Pack
GEK-64467	Zone Selective Interlock Module
DEH-134	WavePro Small Frame User's Manual, WP-08-20
DEH-135	WavePro Large Frame User's Manual, WP-32-50
GEK-97367A	User's Guide TVRMS2 Programmer Portable Test Set
DEF-004	WavePro Small Frame (800-2000A) Renewal Parts Guide
DEF-005	WavePro Large Frame (3200-5000A) Renewal Parts Guide
DES-001	WavePro Time-Current Curves (LSI)
DES-002	WavePro Time-Current Curves (GF)
DES-026	WavePro Time-Current Curves (Special GF)
DET-167	WavePro Breaker Application Guide
DEP-080	WavePro Selection and Pricing Guide
DEE-194	WavePro User Publications Summary—WavePro Breakers and AKD-10 Switchgear



**Publications and Reference:** See Section 22 for a complete list of additional product-related publications

NOTES:

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