

Section 2: Switchgear

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Low Voltage Power and DC Circuit Breakers

Low Voltage Switchgear History/Timeline

GE Low Voltage Switchgear History/Timeline

1930's-50	AE/AL Manufactured from 1930's(?) to the early 1950's
1951-75	<p>AKD AK = Power Circuit Breaker Equipment D = Drawout circuit breaker construction</p> <p>Manufactured 1951 - 1975, all bolted copper bus design, all breakers drawout, AK-1, 2, 3 - 15 / 25 / 50 / 75 / 100. 4000A max bus rating, 4 levels of bus, ring bus used in all feeder sections, main bus has provisions for future extension, sections in outdoor construction did not line up in the front, indoor construction has extended frames to allow the fronts of the sections to align. Indoor depths 49" (225 / 600A breakers), 59" (1600A breakers), 63" (3200 / 4000A breakers). Breakers had ratcheting drawout mechanism - open door drawout. Painted ANSI 61 light gray, manufactured in Philadelphia 1951 - mid-60's, Burlington mid-60's - 1975. Breaker compartment was a welded assembly, equipment frame was bolted. Breaker boxes were stacked to make a vertical section with equipment frame around the breaker boxes. No bus compartment barriers, open bus design. Ring silver plating on bolted connections.</p>
1951-60's	AKS Stationary version of AKD, manufactured 1951 - 60's
1960-77	AKD-5 Manufactured 1960 - 1977, aluminum bus with "flash-butt welded" copper to aluminum at bolted connections. AK-2A, 3A -25 / 50 / T50 / 75 / 100 ("A" signifies AKD-5 drawout). Pull-lanyard drawout mechanism on early design, replaced by single jackscrew mechanism and then replaced by double jack-screw mechanism. Closed-door drawout with inner house breaker compartment. 60" deep frame with 18" extension option. Outdoor protected aisle uses 60" deep indoor frame. Two bus levels available, ring bus used at 4000A. Welded / riveted frame, bus compartment barriers, line/load separation barriers on mains and ties, isolation barriers on transformer transitions, copper runbacks on feeder breakers, ring silver plating on copper, aluminum bus unplated (welded connections). Painted sand gray (beige), some instrument doors painted blue. AKR-30/50 in 22" wide sections introduced in AKD-5 construction in early -70's.
1977-81	AKD-6 Manufactured in Salisbury, NC 1977 - 1981. Some AKD-5 construction built in Salisbury '75 - '77 and nameplated as AKD-6. No flash-butt welded aluminum to copper. Aluminum bus is tin plated and bolted at shipping splits (welded everywhere else). Copper bus design has ring silver plating at bolted joints. Introduced AKR-75 / 100. Stab-and-finger connections on 3200 and 4000A breakers versus round primary disconnect on AKD-5. Uses inner-house drawout breaker compartment. Tuning fork primary disconnect (extrusion) on 800 - 2000A breaker compartments. Copper feeder breaker runbacks. 60" deep frames with 18" optional rear extension. Painted ANSI 61 light gray. Breakers have ECS or SST trip units.
1981-present	AKD-8 Manufactured 1981 to present. Model 1 & 2 has extruded vertical bus. Model 2 introduced in 1983 to accommodate automated wiring programs and harness routing. Model 3 introduced in 1991 using flat bar vertical bus. Breakers use MicroVersa Trip 9, RMS9, EPIC, MVT Plus, MVT PM trip units. Aluminum bus removed from design in 1996 in favor of standard tin-plated copper bus (silver plating optional). Field convertible space compartment design added to allow empty compartments to be modified to functioning breaker compartment without modifications to vertical bus.
1998-99	AKD-10 Introduced March 1998 as the successor to AKD-8. Manufactured along with AKD-8 for 1998 and 1999. Uses only WavePro low voltage power circuit breakers. Same dimensions as AKD-8. Only changes from AKD-8 are in the front breaker compartment - new drawout rails, breaker door, secondary disconnects instrument panel. No need for Remote Display for trip unit since WavePro breaker has trip unit in the escutcheon. AKD-10 can match & line-up with AKD-8 without a transition (for indoor and outdoor construction). Same bus structure, frame, options, layouts and breaker stacking as AKD-8.
2005-present	<p>Entellisys Introduced October 2005 as a new platform for low voltage switchgear. Uses non-automatic EntelliGuard breakers (similar to WavePro except no current sensors, no trip unit, and limited accessories). Entellisys uses redundant components for highest reliability and maximum up-time. Redundant CPU's perform all protection, metering, control, and monitoring functions. Other redundant components of the system include 2 UPS's, 2 network communication switches for internal communication, 2 control power throwover relays, 2 control power sources (120vAC). Each breaker cubicle is provided with an EntelliGuard Messenger, which is the interface between the CPU's and the circuit breaker operating mechanisms. The Messenger performs A/D and D/A conversions plus provides back-up overcurrent protection for the breaker if all control power and communications are lost.</p> <p>Equipment construction is the same as AKD-10 switchgear (frame, bussing, drawout cubicles, etc). Entellisys does not replace AKD-10. Both product lines are currently being produced.</p>



Low Voltage Power and DC Circuit Breakers Trip Unit Conversion Kits

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

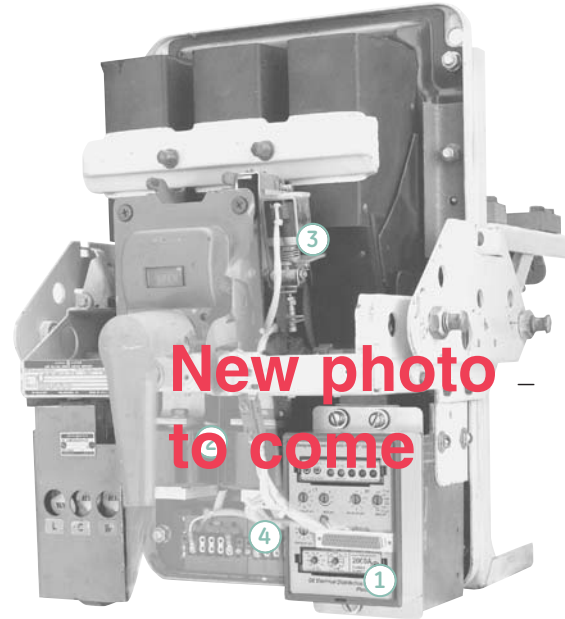
- Kit includes everything needed in one compact package
- Full-range of interchangeable rating plugs
- Trip targets for quick identification of overload, short circuit, and ground fault trips
- Sealable, see-through cover to prevent unauthorized access to trip unit settings
- Portable Trip Unit Test Kits; GTUTK20 and TVRMS2
- Eliminate costly downtime due to nuisance tripping
- Improved power system coordination and protection
- Extend life and function of existing breakers and low voltage equipment

EntelliGuard® TU Conversion Kits

- True RMS sensing with a sampling rate of 48 samples per cycle with the ability to Waveform capture 4 cycles prior and 4 cycles after an event
- Long Time, Short Time, and Instantaneous Standard on all trip units. S and I switchable on ANSI breakers
- Large backlit LCD screen, view all currents on one screen
- Trip settings and trip target information stored in non-volatile memory
- On-board lithium battery (field replaceable) for cold set-up and reading trip targets
- Status and Event Log, view the last 10 events
- Health Status LED and Thermal Memory
- Comm port for interface with set-up software and to download Waveform
- Optional metering, relaying, communications, ZSI - I, ground fault (trip & alarm), and fused shaped curves
- Plug and Play with previous generation of RMS9, EPIC, MVT and Enhanced MVT Trip Units

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



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EntelliGuard® TU Conversion Kits

Everything You Need in One Package

ProTrip™ and EntelliGuard® TU 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

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



Low Voltage Power and DC Circuit Breakers Trip Unit Conversion Kits for GE Circuit Breakers

EntelliGuard® TU Conversion Kits— Upgrade your low-voltage equipment with electronic trip unit technology.

Normal wear and tear of aging electro-mechanical trip devices on low-voltage circuit breakers increases susceptibility to loss of calibration that can subsequently jeopardize electrical power system coordination, protection and reliability.

GE has channeled its decades of circuit breaker trip system experience into the development of the EntelliGuard® TU Trip Unit. The EntelliGuard® TU builds on the past trip units by incorporating advance algorithms that enable Arc Flash and Selectivity at the same time.

ANSI C37.59 design verification tested to ensure safe, reliable operation, these kits are designed to extend the life of your mechanically sound breaker and...

- Eliminate costly downtime due to nuisance tripping. Improves on past trip units with a Waveform Recognition Instantaneous Algorithm
- Improve electrical power system coordination and protection
- Permit easy upgrades to communicating Power Management Control Systems (PMCS), open Modbus RTU protocol
- Enable the implementation of RELT and Zone Selective Interlock Instantaneous to reduce Arc Flash Energy Levels.

Standard Features

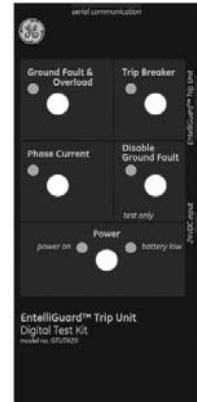
- Flexible Time Current Settings
- I²T Long Time, Long Time Delay
- Short Time, Short Time Delay, 3 Short Time I²T Slopes
- Waveform Recognition Instantaneous
- Ammeter
- Large Backlit LCD Screen¹
- Date and Time¹
- Breaker Status Indication
- Universal Rating Plugs
- Status and Event Log (10 Events)
- LED Health Status Indicator¹
- Set-up Software
- I/O - 1 Input and 1 Output¹
- Thermal Memory, Battery Back-up
- Common Interface across all versions

Optional

- Internal/External Ground Fault Trip or Alarm with 4 curves to select from (I²T, I⁴T, SGF, Definite Time Slope)¹
- Switchable Ground Fault Trip / Alarm (not UL Listed)
- Fused Long Time Curves (I⁴T)
- Modbus Open RTU Communications¹
- Waveform Capture - Enables Harmonic analysis
- Full-function Metering¹
- Protective Relaying¹
- Zone Selective Interlock - GF, S, I¹
- RELT - Reduce Energy Let Through¹
- RELT and Ground Fault Alarm Harness Kits
- Test Set GTUTK20



EntelliGuard® TU Trip Unit



Test Kit - GTUTK20

Arc Flash and Selectivity at the same time

The EntelliGuard® TU Trip Unit offers optimum circuit protection and optimum system reliability simultaneously with little or no compromise to either of these critical functions. Reliability and arc flash protection, in one package, at the same time, all the time.

Algorithms enabling arc flash protection and selectivity

- RELT - Reduced Energy Let Through
- Zone Selective Interlocking - Instantaneous (ZSI-I)
- Waveform Recognition Instantaneous - Coordinate with Current Limiting Devices and reduces Nuisance Trips
- Flexible Time Current Curves - Create the shape you need

Reliability - Health Status

- Non-volatile memory with continuous self-testing microprocessor
- Health Status LED indicates Normal Operation, Errors, Pick-up, Trip
- External Power Not Required with Long Life Lithium Battery
- Positive setpoint recognition, values flash until saved

Plug and Play

- Same Form, Fit, Function as the popular MicroVersaTrip® Trip Unit. Easily upgrade an existing converted breaker¹

Optional 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

¹Note: Some options require 24VDC, additional hardware to enable Metering, Relaying, RELT, ZSI, Modbus to be added to the Breaker, Equipment Cubicle, and Equipment Sections.



Low Voltage Power and DC Circuit Breakers ProTrip™ Trip Unit Conversion Kit Selection Guide

For GE Circuit Breakers

Product Number Structure

		PK115	D	3	F	01	08		
Breaker								Trip Functions	
AK-1-15	PK115							LSIGX- 08	
AK-15	PKO15¹								
AK-1-25	PK125								
AK-25	PKO25¹								
AKU-25									
AK-1-50	PK150								
AK-50									
AKU-50 ²									
AKT-50	PKO50¹								
AKS-50									
AKSU-50 ²									
AKST-50									
AK-75 ³	PKO75³								
AK-100 ³	PKO10³								
Model									
Generation-D									
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	
									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	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

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

²Breakers 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

³Contact 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 2-11.



Low Voltage Power and DC Circuit Breakers ProTrip™ Trip Unit Conversion Kit Selection Guide

For *I-T-E Circuit Breakers

Product Number Structure

PIK22		D	3	F	02	08	Trip Functions LSIGX- 08
Breaker							Trip Unit Functions LSIGX- Long Time, Short Time/INST. and Switchable Ground Fault (off) Not Approved for a UL Listed Breaker
K225	PIK22 ¹						
K600	PIK60 ¹						
KDON600							
K800	PIK80 ¹						
KDON800							
K1600 (black)	PIK1B ¹						
KDON1600 (black)							
K1600 (red)	PIK16 ^{1,2}						
KDON1600 (red)	PIKN ^{1,3}						
					Sensor Rating		
					150A- 01		
					225A- 02		
					400A- 04		
					600A- 06		
					800A- 08		
					1600A- 16		
						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), 800A, 1600A K1600 (red), KDON1600 (red)	
Model							
Generation-D							
Wiring							
3 Wire-3							
4 Wire-4							
Sensor Type							
Fixed CTs-F							

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

²Only applicable to breakers originally equipped with rectangular shaped primary disconnect assemblies.

³Only 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 2-11.

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



Low Voltage Power and DC Circuit Breakers ProTrip™ Trip Unit Conversion Kit Selection Guide

For *Allis-Chalmers Circuit Breakers

Product Number Structure

PSL6B		D	3	F	02	08
Breaker						Trip Functions
LA-600 (blue) LAF-600 (blue)	PSL6B					LSIGX- 08
LA-600 (gold) LAF-600 (gold)	PSL6G					Trip Unit Functions
LA-800 (gold) LAF-800 (gold)	PSL8O					LSIGX- Long Time, Short Time/INST. and Switchable Ground Fault (off)
LA-1600 (blue) LAF-1600 (blue)	PSL1B					Not Approved for a UL Listed Breaker
LA-1600 (gold) LAF-1600 (gold)	PSL1G					
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	
						Sensor Rating Selection
						Frame Breaker Product Numbers Sensors
					600	LA-600 (blue), LAF-600 (blue) LA-600 (gold), LAF-600 (gold) 150A, 225A, 600A
					800	LA-800 (gold), LAF-800 (gold) 150A, 400A, 800A
					1600	LA-1600 (blue), LAF-1600 (blue) LA-1600 (gold), LAF-1600 (gold) 800A, 1600A

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 2-11.

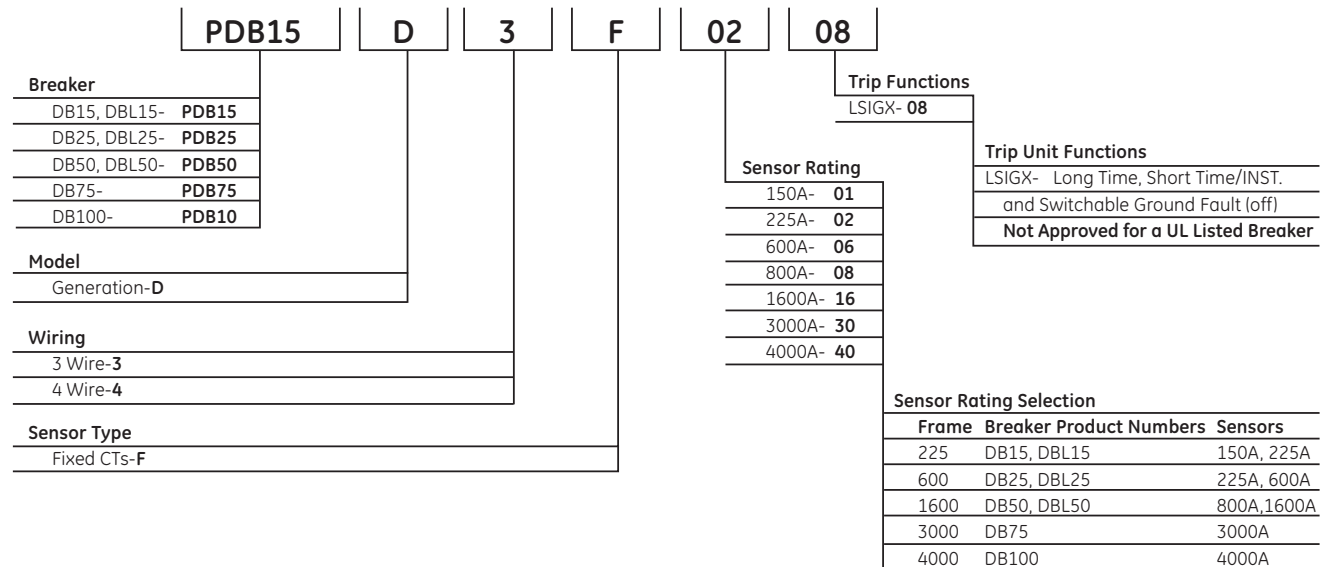
*Allis-Chalmers is a trademark of Allis-Chalmers Manufacturing Company Corporation.



Low Voltage Power and DC Circuit Breakers ProTrip™ Trip Unit Conversion Kit Selection Guide

For *Westinghouse Circuit Breakers

Product Number Structure



Switchgear 2

ProTrip™ Conversion Kits

Frame Size (Amps)	Breaker Model	Wiring	Sensor Rating	Product Number	List Price GO-104P
225	DB15, DBL15	3 Wire	150A	PDB15D3F0108	\$2250.00
225	DB15, DBL15	3 Wire	225A	PDB15D3F0208	\$2250.00
225	DB15, DBL15	4 Wire	150A	PDB15D4F0108	\$2475.00
225	DB15, DBL15	4 Wire	225A	PDB15D4F0208	\$2475.00
600	DB25, DBL25	3 Wire	150A	PDB25D3F0108	\$2350.00
600	DB25, DBL25	3 Wire	225A	PDB25D3F0208	\$2350.00
600	DB25, DBL25	3 Wire	600A	PDB25D3F0608	\$2350.00
600	DB25, DBL25	4 Wire	150A	PDB25D4F0108	\$2575.00
600	DB25, DBL25	4 Wire	225A	PDB25D4F0208	\$2575.00
600	DB25, DBL25	4 Wire	600A	PDB25D4F0608	\$2575.00
1600	DB50, DBL50	3 Wire	800A	PDB50D3F0808	\$2350.00
1600	DB50, DBL50	3 Wire	1600A	PDB50D3F1608	\$2350.00
1600	DB50, DBL50	4 Wire	800A	PDB50D4F0808	\$2575.00
1600	DB50, DBL50	4 Wire	1600A	PDB50D4F1608	\$2575.00
3000	DB75	3 Wire	3000A	PDB75D3F3008	\$2600.00
3000	DB75	4 Wire	3000A	PDB75D4F3008	\$2825.00
4000	DB100	3 Wire	4000A	PDB10D3F4008	\$2850.00
4000	DB100	4 Wire	4000A	PDB10D4F4008	\$3075.00

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 2-11.

*Westinghouse is a trademark of Westinghouse Electric Corporation.



Low Voltage Power and DC Circuit Breakers ProTrip™ Rating Plugs

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 ¹	\$149.00
225 600 800	225	150	75-165	PT225C150GFD	\$149.00
225 600 800	225	225	113-248	PT225C225GFD ¹	\$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 ¹	\$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 ¹	\$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 ¹	\$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 ¹	\$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 ¹	\$149.00

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.

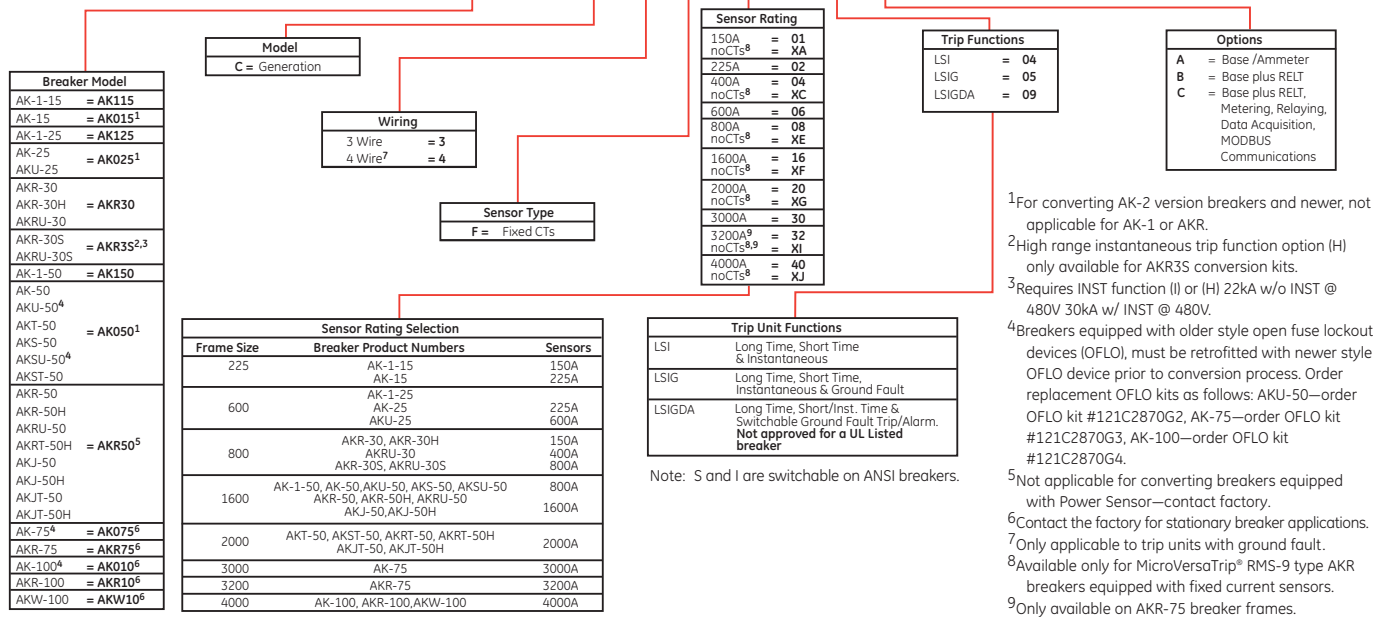


Low Voltage Power and DC Circuit Breakers EntelliGuard® TU Trip Unit Conversion Kits Selection Guide

For GE Power Circuit Breakers

Product Number Structure

AK025 C 3 F 06 04 C



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 \$200.00** from the **list price** of the kit with sensors. Please refer to the sensor rating column above for the appropriate "X" sensor code. For Zone Selective Interlock (ZSI) Short Time, Ground Fault and Instantaneous, **add \$550.00** to the list price. (Also requires purchase of ZSI module TIM1 [120 VAC control voltage], **list price \$402.00, GO-245B**.)



Low Voltage Power and DC Circuit Breakers

EntelliGuard® TU Trip Unit

Conversion Kits Selection Guide

For GE Power Circuit Breakers

EntelliGuard® TU Trip Unit Conversion Kits for 3-Phase, 3-Wire, List Price, GO-104G

Product Number	Base/Ammeter			Base plus RELT			Base plus RELT, Metering, Relaying, Data Acquisition MODBUS Communications		
	04A	05A	09A	04B	05B	09B	04C	05C	09C
AKO15C3F01	\$2520	\$3000	\$3620	\$2820	\$3300	\$3920	\$4920	\$5400	\$6020
AKO15C3F02									
AKO25C3F02									
AKO25C3F06									
AK115C3F01									
AK115C3F0									
AK125C3F02	\$2620	\$3100	\$3720	\$2920	\$3400	\$4020	\$5040	\$5520	\$6140
AK125C3F06									
AKR30C3F01									
AKR30C3F04									
AKR30C3F08									
AKR35C3F01									
AKR35C3F04									
AKR35C3F08									
AK150C3F08									
AKO50C3F08									
AKO50C3F16									
AKR50C3F08									
AK150C3F16	\$2720	\$3200	\$3820	\$3020	\$3500	\$4120	\$5140	\$5620	\$6240
AKR50C3F20									
AKO75C3F30									
AK150C3F20									
AKR50C3F20									
AKR75C3F32									
AKO10C3F40									
AKR10C3F40									
AKW10C3F40									
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 2-14.

EntelliGuard® TU Trip Unit Conversion Kits for 3-Phase, 4-Wire, List Price, GO-104G

Product Number	Base/Ammeter			Base plus RELT			Base plus RELT, Metering, Relaying, Data Acquisition MODBUS Communications		
	04A	05A	09A	04B	05B	09B	04C	05C	09C
AKO15C4F01	\$2795	\$3275	\$3895	\$3095	\$3575	\$4195	\$5195	\$5675	\$6295
AKO15C4F02									
AKO25C4F02									
AKO25C4F06									
AK115C4F01									
AK115C4F02									
AK125C4F02	\$2895	\$3375	\$3995	\$3195	\$3675	\$4295	\$5315	\$5795	\$6415
AK125C4F06									
AKR30C4F01									
AKR30C4F04									
AKR30C4F08									
AKR35C4F01									
AKR35C4F04									
AKR35C4F08									
AK150C4F08									
AKO50C4F08									
AKO50C4F16									
AKR50C4F08									
AK150C4F16	\$2995	\$3475	\$4095	\$3295	\$3775	\$4395	\$5415	\$5895	\$6515
AKR50C4F20									
AKO75C4F30									
AK150C4F20									
AKR50C4F20									
AKR75C4F32									
AKO10C4F40									
AKR10C4F40									
AKW10C4F40									
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 2-14.



Low Voltage Power and DC Circuit Breakers

EntelliGuard® TU Trip Unit

Rating Plugs

Switchgear

EntelliGuard® TU Trip Rating Plug Specifications

Trip Plug Product Number	Plug Rating	May Be Used With		List Price GO-329R
		Minimum Sensor	Maximum Sensor	
GTP0060U0101	60A ¹	150A ³	150A ³	\$130.00
GTP0080U0102	80A ¹	150A ³	200A ⁴	\$130.00
GTP0100U0102	100A ²	150A ³	200A ⁴	\$130.00
GTP0125U0102	125A ¹	150A ³	200A ⁴	\$130.00
GTP0150U0104	150A	150A ³	400A	\$130.00
GTP0200U0204	200A	200A ⁴	400A	\$130.00
GTP0225U0306	225A	225A	600A	\$130.00
GTP0250U0407	250A	400A	630A ⁵	\$130.00
GTP0300U0408	300A	400A	800A	\$130.00
GTP0350U0408	350A	400A	800A	\$130.00
GTP0400U0410	400A	400A	1000A	\$130.00
GTP0450U0612	450A	600A	1200A	\$130.00
GTP0500U0613	500A	600A	1250A ⁵	\$130.00
GTP0600U0616	600A	600A	1600A	\$130.00
GTP0700U0816	700A	800A	1600A	\$130.00
GTP0750U0820	750A	800A	2000A	\$130.00
GTP0800U0820	800A	800A	2000A	\$130.00
GTP0900U1020	900A	1000A	2000A	\$130.00
GTP1000U1025	1000A	1000A	2500A	\$130.00
GTP1100U1225	1100A	1200A	2500A	\$130.00
GTP1200U1232	1200A	1200A	3200A	\$130.00
GTP1500U1640	1500A	1600A	4000A	\$130.00
GTP1600U1640	1600A	1600A	4000A	\$130.00
GTP1900U2050	1900A	2000A	5000A	\$130.00
GTP2000U2050	2000A	2000A	5000A	\$130.00
GTP2200U2550	2200A	2500A	5000A	\$130.00
GTP2400U2564	2400A	2500A	6400A ⁵	\$130.00
GTP2500U2564	2500A	2500A	6400A ⁵	\$130.00
GTP3000U3064	3000A	3000A	6400A ⁵	\$130.00
GTP3200U3264	3200A	3200A	6400A ⁵	\$130.00
GTP3600U4064	3600A	4000A	6400A ⁵	\$130.00
GTP4000U4064	4000A	4000A	6400A ⁵	\$130.00
GTP5000U5064	5000A	5000A	6400A ⁵	\$130.00
GTP6000U6064	6000A	6000A	6400A ⁵	\$130.00

- ¹WavePro and AKR only. EntelliGuard® G min. trip plug is 150A.
- ²PowerBreak only. EntelliGuard® G min. trip plug is 150A.
- ³WavePro and AKR only. EntelliGuard® G min. sensor is 400A.
- ⁴PowerBreak only. EntelliGuard® G min. sensor is 400A.
- ⁵IEC only sensor, UL equivalents are 600A

Trip Rating Plug Codes

Sensor Designation	Sensor Rating
01	150A ⁶
02	200A ⁷
03	225A
04	400A
06	600A
07	630A ⁸
08	800A
10	1000A
12	1200A
13	1250A ⁸
16	1600A
20	2000A
25	2500A
30	3000A
32	3200A
40	4000A
50	5000A
60	6000A
64	6400A ⁸

- ⁶Sensor available in WavePro and AKR only.
- ⁷Sensor available in PowerBreak only.
- ⁸Sensor available in IEC listed circuit breaker only.

Conversion Kit Accessories and Hardware

Description	Product Number	List Price	GO Schedule
4 wire RELT & Ground Fault Alarm Harness kit. Used to add RELT or Ground Fault Alarm to an existing MVT installation in combination with an EntelliGuard® TU. Harness comes with Breaker and Cubicle side, 8 feet of wire, terminal block, and RELT Labels ⁹	GTURHA	\$150.00	GO-104G
4 wire RELT & Ground Fault Alarm Harness kit. Used to add RELT or Ground Fault Alarm to an existing MVT installation in combination with an EntelliGuard® TU. Harness comes with Breaker and Cubicle side, 8 feet of wire, terminal block, and RELT Labels. Includes 9 Pin Harness for 24VDC, Communications, and Voltage Source.	GTURHB	\$200.00	GO-104G
RELT Switch Kit - Includes the following: RELT Switch, Lockable cover, contacts, wire harness, warning labels	GTURSK	\$485.00	GO-104G
Zone Selective Interlock Module	TIM1	\$402.00	GO-245B
Power Leader Voltage Conditioners - Supplies isolated bus voltage signal to EntelliGuard® TU trip units	PLVC1G01	\$200.00/set	GO-104A
Power Leader Power Supply 1.5A power supply. Qty 15 trip units may be powered from a single power supply	PLPS4G01	\$1250.00	GO-104A
GE Portable Test Kit - Used for testing phase currents, Ground Fault, disabling Ground fault, RELT, Trip Breaker	GTUTK20	\$3000.00	GO-245B
Rating Plug Removal Tool	TRTOOL	\$12.00	GO-135S
Set-up Software	GTUSS		GO-329R

⁹RELT and Ground Fault Alarm require 24VDC. If 24VDC cable is required order GTURHB

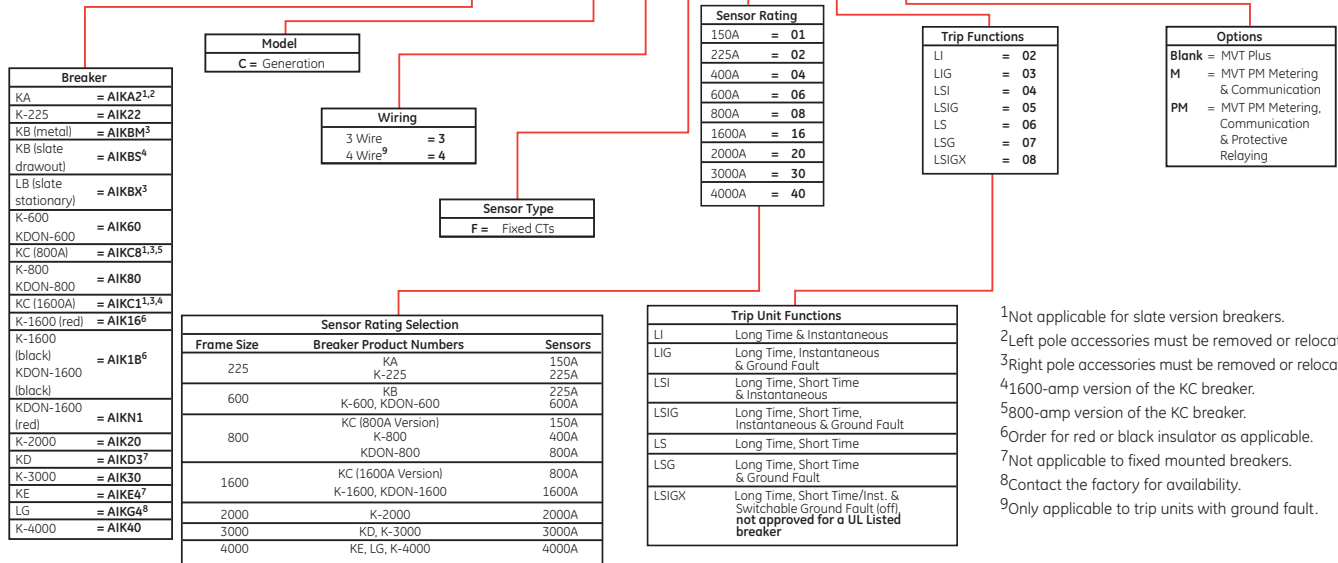


Low Voltage Power and DC Circuit Breakers MicroVersaTrip® Plus and MicroVersaTrip® PM Trip Unit Conversion Kits Selection Guide

For *I-T-E Power Circuit Breakers

Product Number Structure

AIKBM C 3 F 06 02 PM



- Not applicable for slate version breakers.
- Left pole accessories must be removed or relocated.
- Right pole accessories must be removed or relocated.
- 1600-amp version of the KC breaker.
- 800-amp version of the KC breaker.
- Order for red or black insulator as applicable.
- Not applicable to fixed mounted breakers.
- Contact the factory for availability.
- Only applicable to trip units with ground fault.

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

Product Number	MicroVersaTrip® Plus List Price, GO-104B						
	02	03	04	05	06	07	08
AIKA2C3F01							
AIKA2C3F02							
AIK22C3F01							
AIK22C3F02							
AIKBSC3F02							
AIKBSC3F06							
AIKBXC3F02	\$2820	\$3250	\$2940	\$3370	\$2940	\$3370	\$3915
AIKBXC3F06							
AIKBMC3F02							
AIKBMC3F06							
AIK60C3F02							
AIK60C3F06							
AIKC8C3F01							
AIKC8C3F04							
AIKC8C3F08							
AIK80C3F01							
AIK80C3F04							
AIK80C3F08							
AIK1C3F08	\$2970	\$3400	\$3090	\$3520	\$3090	\$3520	\$4065
AIK1C3F16							
AIK16C3F08							
AIK16C3F16							
AIKN1C3F08							
AIKN1C3F16							
AIK1BC3F08							
AIK1BC3F16							
AIK20C3F20							
AIKD3C3F30							
AIK30C3F30	\$3420	\$3850	\$3540	\$3970	\$3540	\$3970	\$4515
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 2-21.

*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

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

Switchgear 2

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								AIKA2C3F01							
AIKA2C3F02								AIKA2C3F02							
AIK22C3F01								AIK22C3F01							
AIK22C3F02								AIK22C3F02							
AIKBSC3F02								AIKBSC3F02							
AIKBSC3F06	\$4320	\$4750	\$4440	\$4870	\$4440	\$4870	\$5415	AIKBSC3F06	\$5020	\$5450	\$5140	\$5570	\$5140	\$5570	\$6115
AIKBXC3F02								AIKBXC3F02							
AIKBXC3F06								AIKBXC3F06							
AIKBMC3F02								AIKBMC3F02							
AIKBMC3F06								AIKBMC3F06							
AIK60C3F02								AIK60C3F02							
AIK60C3F06								AIK60C3F06							
AIKC8C3F01								AIKC8C3F01							
AIKC8C3F04								AIKC8C3F04							
AIKC8C3F08								AIKC8C3F08							
AIK80C3F01								AIK80C3F01							
AIK80C3F04								AIK80C3F04							
AIK80C3F08								AIK80C3F08							
AIKC1C3F08	\$4470	\$4900	\$4590	\$5020	\$4590	\$5020	\$5565	AIKC1C3F08	\$5170	\$5600	\$5290	\$5720	\$5290	\$5720	\$6265
AIKC1C3F16								AIKC1C3F16							
AIK16C3F08								AIK16C3F08							
AIK16C3F16								AIK16C3F16							
AIKN1C3F08								AIKN1C3F08							
AIKN1C3F16								AIKN1C3F16							
AIK1BC3F08								AIK1BC3F08							
AIK1BC3F16								AIK1BC3F16							
AIK20C3F20								AIK20C3F20							
AIKD3C3F30								AIKD3C3F30							
AIK30C3F30	\$4920	\$5350	\$5040	\$5470	\$5040	\$5470	\$6015	AIK30C3F30	\$5620	\$6050	\$5740	\$6170	\$5740	\$6170	\$6715
AIK4C3F40								AIK4C3F40							
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												
AIKA2C4F02												
AIK22C4F01												
AIK22C4F02												
AIKBSC4F02												
AIKBSC4F06	\$3475	\$3595	\$3595	\$4140	\$4975	\$5095	\$5095	\$5640	\$5675	\$5795	\$5795	\$6340
AIKBXC4F02												
AIKBXC4F06												
AIKBMC4F02												
AIKBMC4F06												
AIK60C4F02												
AIK60C4F06												
AIKC8C4F01												
AIKC8C4F04												
AIKC8C4F08												
AIK80C4F01												
AIK80C4F04												
AIK80C4F08												
AIKC1C4F08	\$3625	\$3745	\$3745	\$4290	\$5125	\$5245	\$5245	\$5790	\$5825	\$5945	\$5945	\$6490
AIKC1C4F16												
AIK16C4F08												
AIK16C4F16												
AIKN1C4F08												
AIKN1C4F16												
AIK1BC4F08												
AIK1BC4F16												
AIK20C4F20												
AIKD3C4F30												
AIK30C4F30	\$4075	\$4195	\$4195	\$4740	\$5575	\$5695	\$5695	\$6240	\$6275	\$6395	\$6395	\$6940
AIKE4C4F40												
AIKG4C4F40												
AIK40C4F40												

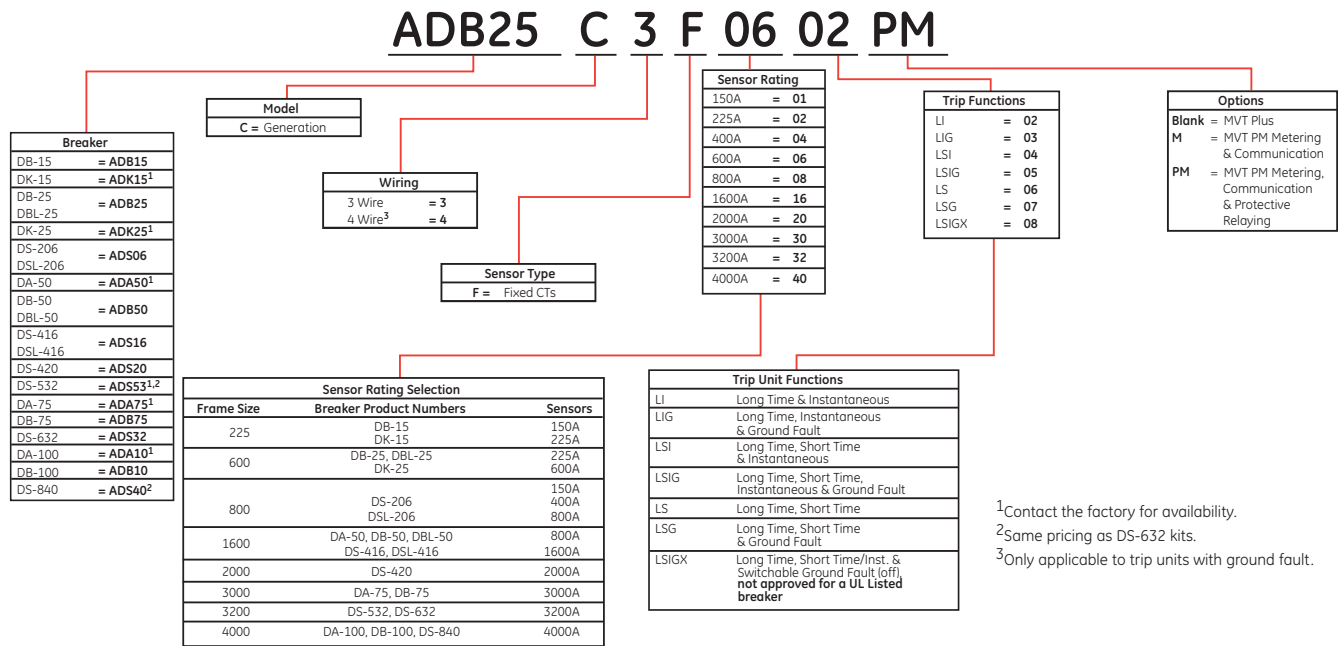
Conversion kits come standard with a rating plug that matches the current sensor. For rating plugs with different values, price and order separately. See page 2-21.
 *I-T-E is a registered trademark of Siemens Energy and Automation, Inc.



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

For *Westinghouse Power Circuit Breakers

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	\$2820	\$3250	\$2940	\$3370	\$2940	\$3370	\$3915
ADB25C3F02							
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							

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 2-21.

*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

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

Switchgear 2

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
ADB15C3F01	\$4320	\$4750	\$4440	\$4870	\$4440	\$4870	\$5415	ADB15C3F01	\$5020	\$5450	\$5140	\$5570	\$5140	\$5570	\$6115
ADB15C3F02															
ADK15C3F01															
ADK15C3F02															
ADB25C3F02															
ADB25C3F06															
ADK25C3F02															
ADK25C3F06															
ADS06C3F01															
ADS06C3F04															
ADS06C3F08	\$4470	\$4900	\$4590	\$5020	\$4590	\$5020	\$5565	ADS06C3F01	\$5170	\$5600	\$5290	\$5720	\$5290	\$5720	\$6265
ADA50C3F08															
ADA50C3F16															
ADB50C3F08															
ADB50C3F16															
ADS16C3F08															
ADS16C3F16															
ADS20C3F20															
ADA75C3F30															
ADB75C3F30															
ADS32C3F32	\$4920	\$5350	\$5040	\$5470	\$5040	\$5470	\$6015	ADS32C3F32	\$5620	\$6050	\$5740	\$6170	\$5740	\$6170	\$6715
ADA10C3F40															
ADB10C3F40															
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												
ADS06C4F01												
ADS06C4F04												
ADS06C4F08	\$3625	\$3745	\$3745	\$4290	\$5125	\$5245	\$5245	\$5790	\$5825	\$5945	\$5945	\$6490
ADA50C4F08												
ADA50C4F16												
ADB50C4F08												
ADB50C4F16												
ADS16C4F08												
ADS16C4F16												
ADS20C4F20												
ADA75C4F30												
ADB75C4F30												
ADS32C4F32	\$4075	\$4195	\$4195	\$4740	\$5575	\$5695	\$5695	\$6240	\$6275	\$6395	\$6395	\$6940
ADA10C4F40												
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 2-21.

*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

For *Allis-Chalmers Power Circuit Breakers

Product Number Structure

ASL6B C 3 F 06 02 PM

Breaker	
LA	= ASL25 ¹
LA-25A	= ASL2A ¹
LA-600(Blue)	= ASL6B ^{2,3}
LAF-600(Blue)	= ASL6B ^{2,3,4}
LA-600(Gold)	= ASL6G ^{3,5}
LAF-600(Gold)	= ASL6G ^{3,4,5}
LA-50(800A)	= ASL58 ^{1,6}
LA-800	= ASL80 ^{3,5}
LAF-800	= AKL80 ^{3,4,5}
RL-800	= ASR80 ¹
RLX-800	= ASR80 ¹
RLE-800	= ASR80 ¹
LA-50(1600A)	= ASL51 ^{1,7}
LA-50(1600A)	= ASL52 ^{1,8}
LA-1600(Blue)	= ASL1B ^{2,3}
LAF-1600(Blue)	= ASL1B ^{2,3,4}
LAF-1600(Gold)	= ASL1G ^{3,4}
LAF-1600(Gold)	= ASL1G ^{3,4,5}
RL-1600	= ASR16 ¹
RLX-1600	= ASR16 ¹
RLE-1600	= ASR16 ¹
RL-2000	= ASR0 ¹
LA-75	= ALS75 ¹
LA-3000	= ALS30 ^{1,3}
LA-3200(Blue)	= ASL3B ^{1,2,3}
LA-3200(Gold)	= ASL3G ^{1,3,4}
RL-3200	= ASR32 ¹
LA-4000(Blue)	= ASL4B ^{1,2,3}
LA-4000(Gold)	= ASL4G ^{1,3,5}
RL-4000	= ASR40 ¹

Model	
C	= Generation

Wiring	
3 Wire	= 3
4 Wire ⁹	= 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	150A
	not presently available	225A
600	LA, LA-25, LA-25A	150, 225A
	LA-600, LAF-600	600A
	LA-50(800A Version)	150A
800	LA-800, LAF-800	400A
	RL-800, RLE-800, RLX-800	800A
	LA-50(1600A Version)	1600A
1600	LA-1600, LAF-1600	800A
	RL-1600, RLE-1600, RLX-1600	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.
- ¹Contact factory for availability.
- ²Only applicable for Blue-Gray color version breakers.
- ³Applicable to both "A" and "B" version breakers.
- ⁴Applicable to both nameplated versions of integral fused breakers (i.e. LA-600F and LAF-600).
- ⁵Only applicable for Gold color version breakers.
- ⁶800-amp version of the LA-50 breaker.
- ⁷Only applicable for 1600-amp, 6-pole primary disconnect version of the LA-50 breaker.
- ⁸Only applicable for 1600-amp, 12-pole primary disconnect version of the LA-50 breaker.
- ⁹Only 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

Product Number	MicroVersaTrip® Plus List Price, GO-104B						
	02	03	04	05	06	07	08
ASL25C3F01							
ASL25C3F02							
ASL25C3F06							
ASL2AC3F01							
ASL2AC3F02							
ASL2AC3F06	\$2820	\$3250	\$2940	\$3370	\$2940	\$3370	\$3915
ASL6BC3F01							
ASL6BC3F02							
ASL6BC3F06							
ASL6GC3F01							
ASL6GC3F02							
ASL6GC3F06							
ASL58C3F01							
ASL58C3F04							
ASL58C3F08							
ASL80C3F01							
ASL80C3F04							
ASL80C3F08							
ASR80C3F01							
ASR80C3F04							
ASR80C3F08							
ASL51C3F08	\$2970	\$3400	\$3090	\$3520	\$3090	\$3520	\$4065
ASL51C3F16							
ASL52C3F08							
ASL52C3F16							
ASL1BC3F08							
ASL1BC3F16							
ASL1GC3F08							
ASL1GC3F16							
ASR16C3F08							
ASR16C3F16							
ASR0C3F20							
ASL75C3F30							
ASL30C3F30							
ASL3BC3F32							
ASL3GC3F32	\$3420	\$3850	\$3540	\$3970	\$3540	\$3970	\$4515
ASR32C3F32							
ASL4BC3F40							
ASL4GC3F40							
ASR40C3F40							

Product Number	MicroVersaTrip® PM Metering & Communication List Price, GO-104B						
	02M	03M	04M	05M	06M	07M	08M
ASL25C3F01							
ASL25C3F02							
ASL25C3F06							
ASL2AC3F01							
ASL2AC3F02							
ASL2AC3F06	\$4320	\$4750	\$4440	\$4870	\$4440	\$4870	\$5415
ASL6BC3F01							
ASL6BC3F02							
ASL6BC3F06							
ASL6GC3F01							
ASL6GC3F02							
ASL6GC3F06							
ASL58C3F01							
ASL58C3F04							
ASL58C3F08							
ASL80C3F01							
ASL80C3F04							
ASL80C3F08							
ASR80C3F01							
ASR80C3F04							
ASR80C3F08							
ASL51C3F08	\$4470	\$4900	\$4590	\$5020	\$4590	\$5020	\$5565
ASL51C3F16							
ASL52C3F08							
ASL52C3F16							
ASL1BC3F08							
ASL1BC3F16							
ASL1GC3F08							
ASL1GC3F16							
ASR16C3F08							
ASR16C3F16							
ASR0C3F20							
ASL75C3F30							
ASL30C3F30							
ASL3BC3F32							
ASL3GC3F32	\$4920	\$5350	\$5040	\$5470	\$5040	\$5470	\$6015
ASR32C3F32							
ASL4BC3F40							
ASL4GC3F40							
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 2-21.

*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 *Allis-Chalmers Power Circuit Breakers

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

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

Switchgear 2

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								ASL2AC4F06												
ASL6BC3F01	\$5020	\$5450	\$5140	\$5570	\$5140	\$5570	\$6115	ASL6BC4F01	\$3475	\$3595	\$3595	\$4140	\$4975	\$5095	\$5095	\$5640	\$5675	\$5795	\$5795	\$6340
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 2-21.

*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

MicroVersaTrip® Plus and MicroVersaTrip® PM Rating Plugs

Frame Size (Amps)	Sensor Rating (Amps)	Current Rating (Amps)	Current Range (Amps) ¹	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

¹Utilizing 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.



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

Accessories

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 (for MicroVersaTrip®)

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



Target Module

Target Module (for ProTrip™)

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

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

GE Trip Unit Portable Test Set (for MicroVersaTrip® and ProTrip™)

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

EntelliGuard® TU 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
GTUTK20	\$3000.00



EntelliGuard® TU 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 Trip Unit Conversion Kits for GE, *I-T-E, *Westinghouse, *Allis-Chalmers Circuit Breakers

Accessories

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)

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.

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

MicroVersaTrip® and EntelliGuard® Rating Plug Removal Tool

Description	Product Number	List Price GO-1355
MicroVersaTrip® and EntelliGuard® Rating Plug Removal Tool	TRTOOL	\$12.00



Low Voltage Power and DC Circuit Breakers Electrically Operated Racking Device

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)¹ 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.

¹Manufactured 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.



Low Voltage Power and DC Circuit Breakers Electrically Operated Racking Device

Technical Specifications

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)

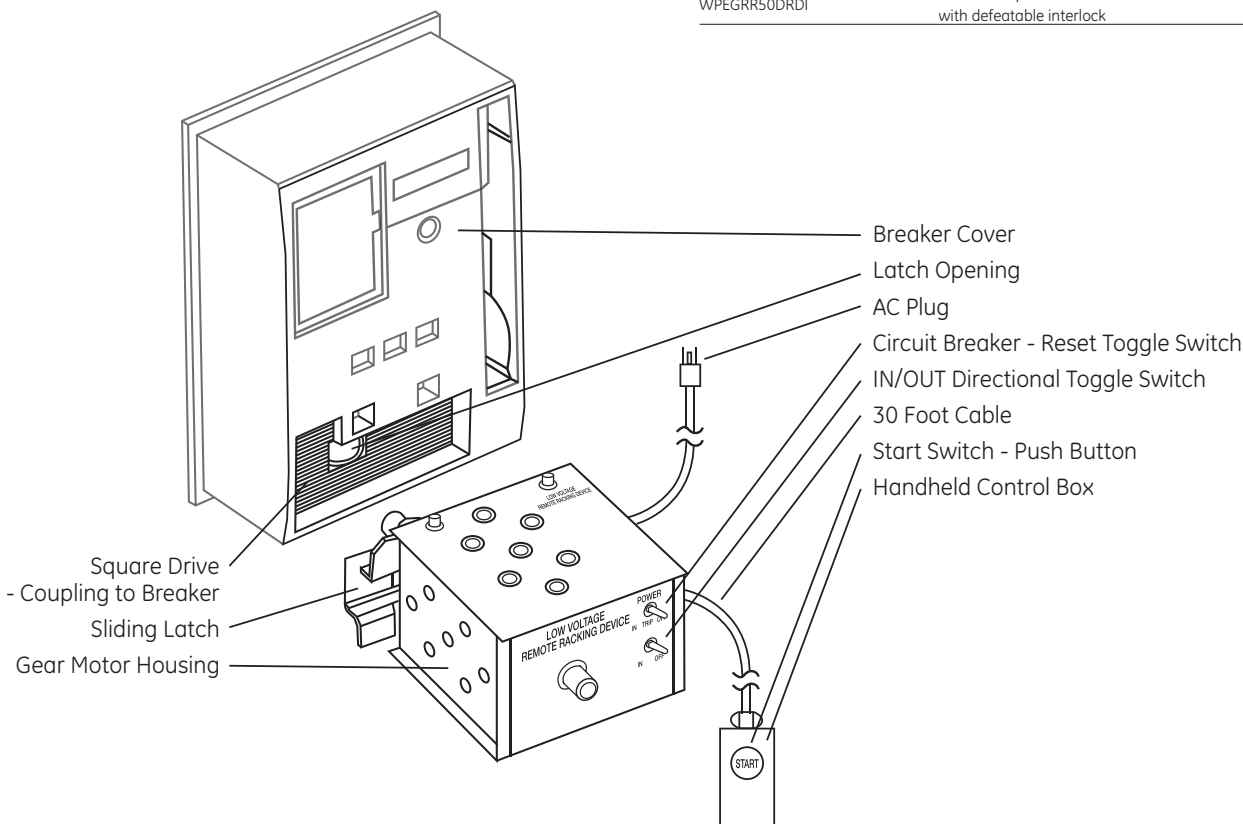
- Small Frame (800 - 2000 Amp) WavePro breakers accept the Racking Device without modification.
- Existing Large Frame (3200 - 5000 Amp) WavePro breakers compatible by simply replacing the cubicle door.
- All EntelliGuard® breakers accept the Racking Device without modifications.

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



Low Voltage Power and DC Circuit Breakers Reference Publications

General Installation and Maintenance

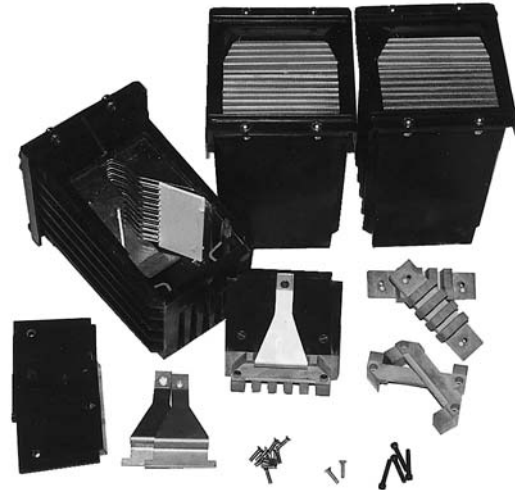
Publication Number	Publication Name
DEH-136	WavePro Small Frame Maintenance Manual, WP-08-20
DEH-137	WavePro Large Frame Maintenance Manual, WP-32-50
DEH-178	User's Guide - MicroVersaTrip® Plus/PM Trip Units
DEH-179	User's Guide - Power+ Trip Unit
GEH-5945	Power Leader® Recommended Power Supplies
GEH-5946	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



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

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

Breaker	AKO25	AQR1	G1	Application	
		Model			
AK-15		AQR1		For Asbestos Removal	G1
AK-25	AKO25 ^{1,2,3}	Arc Quencher Replacement Kit		Renewal Kit for	G2
AKU-25		Generation 1		Ceramic Arc Quenchers	
AKR-30S	AKR3S ^{1,2}				
AKR-30	AKR30				
AKRU-30	AKR30				
AKR-30H	AKR3H				
AKRU-30H	AKR3H				
AK-50					
AKT-50	AKO50 ^{2,3}				
AKU-50					
AKJ-50					
AKJT-50					
AKJU-50	AKR50				
AKR-50	AKR50				
AKRT-50					
AKRU-50					
AKJ-50H					
AKJT-50H					
AKJU-50H	AKR5H				
AKR-50H	AKR5H				
AKRT-50H					
AKRU-50H					
AKJ-50					
AKJT-50	AKD50 ⁴				
AKJU-50	AKD50 ⁴				
AKJ-50H					
AKJT-50H	AKD5H ⁴				
AKJU-50H	AKD5H ⁴				
AK-75	AKO75 ^{2,3}				
AKR-75	AKR75 ²				
AK-100	AKO10 ^{2,3}				
AKR-100	AKR10 ²				

Arc Quenchers Replacement Kit		
Product Number	List Price, GO-1048	
	G1	G2
AKO25AQR1	\$800.00	—
AKR35AQR1	\$800.00	—
AKR30AQR1	\$2000.00	\$2000.00
AKR35AQR1	\$2300.00	\$2300.00
AKO50AQR1	\$2350.00	—
AKR50AQR1	\$2000.00	\$2000.00
AKR55AQR1	\$2300.00	\$2300.00
AKD50AQR1	\$2000.00	\$2000.00
AKD55AQR1	\$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.

¹Kits contain replacement barriers only, arc quenchers do not contain asbestos.

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

³Does not apply to AK-1 series breakers.

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



