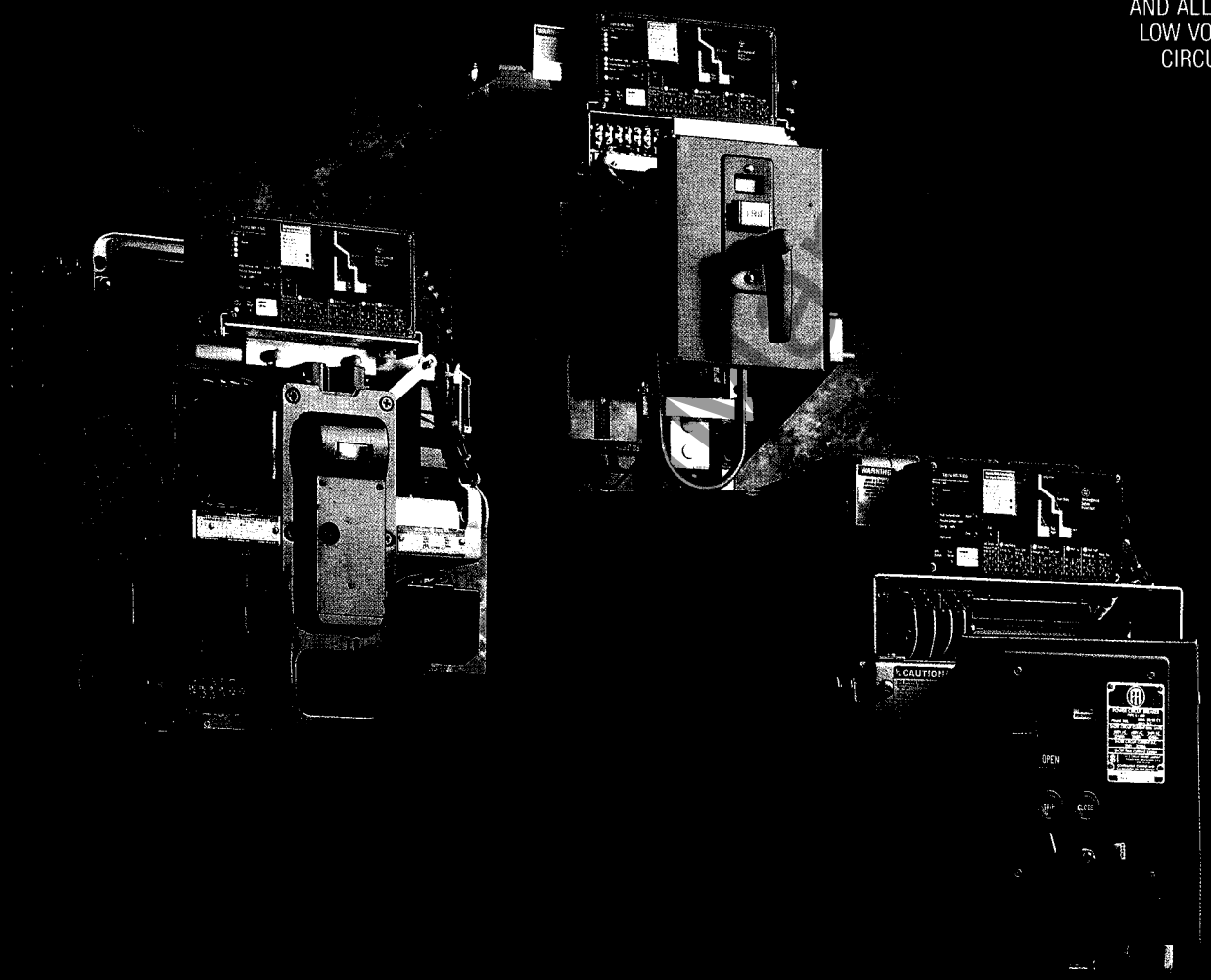
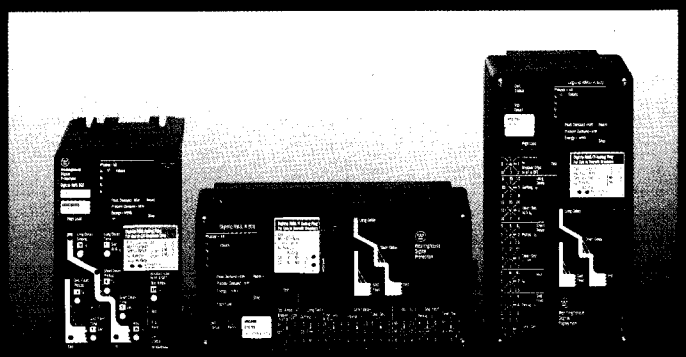
WESTINGHOUSE DIGITRIP RMS RETROFIT KITS

RETROFIT KITS
FOR WESTINGHOUSE,
GENERAL ELECTRIC, I-T-E,
AND ALLIS CHALMERS
LOW VOLTAGE POWER
CIRCUIT BREAKERS





WESTINGHOUSE DIGITRIP RMS RETROFIT KITS

Standardize On Microprocessor-Based RMS Protection for Your Electrical Distribution System

Digitrip RMS Retrofit Kits provide the opportunity to standardize and expand circuit protection... while increasing older circuit breaker and electrical distribution system reliability. Digitrip RMS Retrofit Kits provide maximum flexibility to meet specific distribution system requirements ranging from simple RMS overcurrent protection to full communications and monitoring capabilities. Digitrip RMS features include:

- True RMS current sensing.
- Integral testing.
- Flat or I^2t response on short and ground fault delay functions.
- Selective zone interlocking on short and ground fault delay functions.
- Contacts for high load and mode of trip indication.
- Alphanumeric digital display.
- Communicating, controlling, and extracting current and energy usage data.

Westinghouse, General Electric, I-T-E, and Allis Chalmers Low Voltage Power Circuit Breakers Can Be Retrofitted

If you have these low voltage power circuit breakers* on your electrical distribution system, they can be retrofitted with a Digitrip RMS Retrofit Kit:

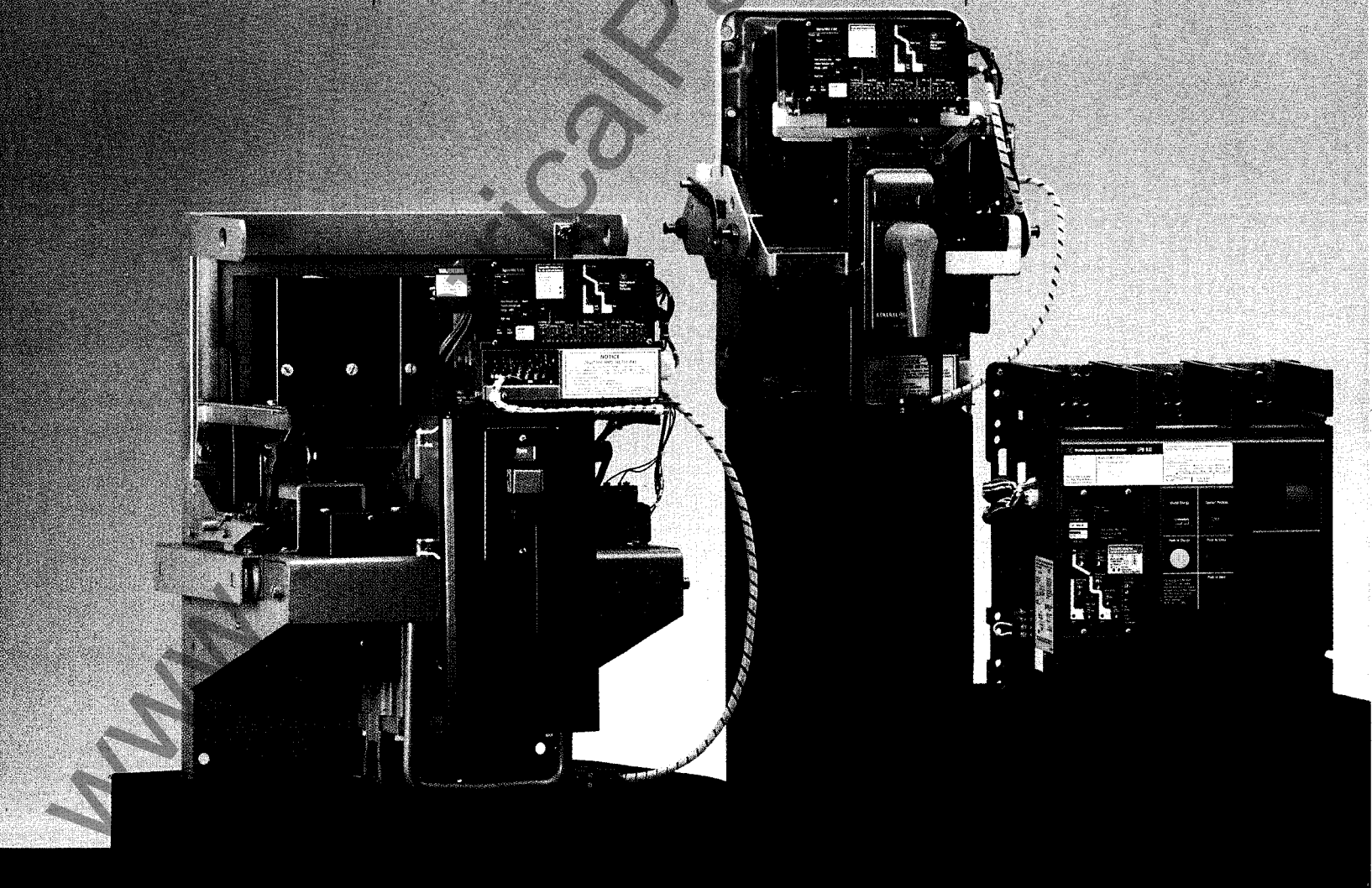
- Westinghoue Types DB, DS, DSL, SPB.
- General Electric AK-2A, AK-3A.
- I-T-E K-Line Series.
- Allis Chalmers LA Series.

*Contact your Westinghouse Distributor for information about retrofitting other low voltage power circuit breakers; or call toll free 800-525-2000.

Five Digitrip RMS Retrofit Kit Series Provide Maximum Application Flexibility

Each consecutive retrofit kit builds upon features of the RMS 500 Basic Retrofit Kit, and each other, to provide increasing levels of features and options.

- **RMS 500 Basic Retrofit Kits** provide basic RMS overcurrent protection. Six combinations of long time, short time, instantaneous, and ground fault trip functions are available for selection.
- **RMS 500 Zone Retrofit Kits** add selective zone interlocking provisions for short time and ground fault delay functions.
- **RMS 600 Retrofit Kits** add an alphanumeric digital display and a set of alarm contacts for high load and mode trip indication.
- **RMS 700 and RMS 800 Retrofit Kits** add INCOM communications and energy monitoring capabilities. These kits are identical except that the alphanumeric display is not provided on the Digitrip RMS 700 Trip Unit.



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Digitrip RMS Retrofit Kits Feature Digitrip RMS and RMS/R Trip Units

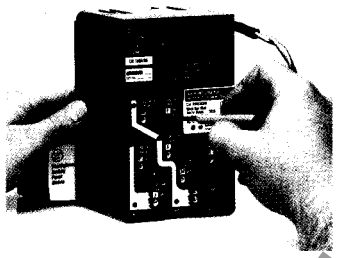
At the heart of each retrofit kit is the trip unit provided for application. Circuit breaker retrofits require flexibility in the mounting and orientation of the trip unit and other retrofit kit components.

Digitrip RMS Retrofit Kits employ both Digitrip RMS and RMS/R (RMS/Retrofit) Trip Units. Each retrofit kit applies the trip unit to best suit the circuit breaker designated for retrofitting.

Digitrip RMS and RMS/R Trip Units offer identical features, options, characteristic curve adjustments, and electrical performance. (Refer to pages 4 thru 8.) The Digitrip RMS/R (or RMS/Retrofit) Trip Unit is simply a repackaged version of the standard Digitrip RMS Trip Unit.

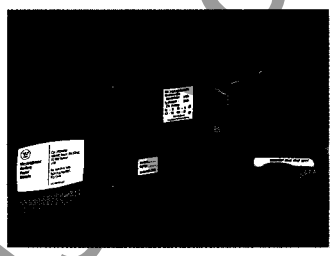
Digitrip RMS Retrofit Kits Are Easy to Install

These retrofit kits are designed for easy installation and include detailed instructions for retrofitting. Most installations can be completed in four hours or less per circuit breaker, depending on the circuit breaker and retrofit kit selected.

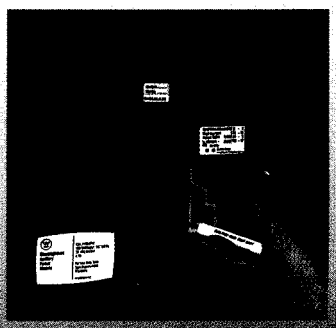


Standard Digitrip RMS Trip Units are provided in retrofit kits for Westinghouse DS, DSL, or SPB low voltage power circuit breakers.

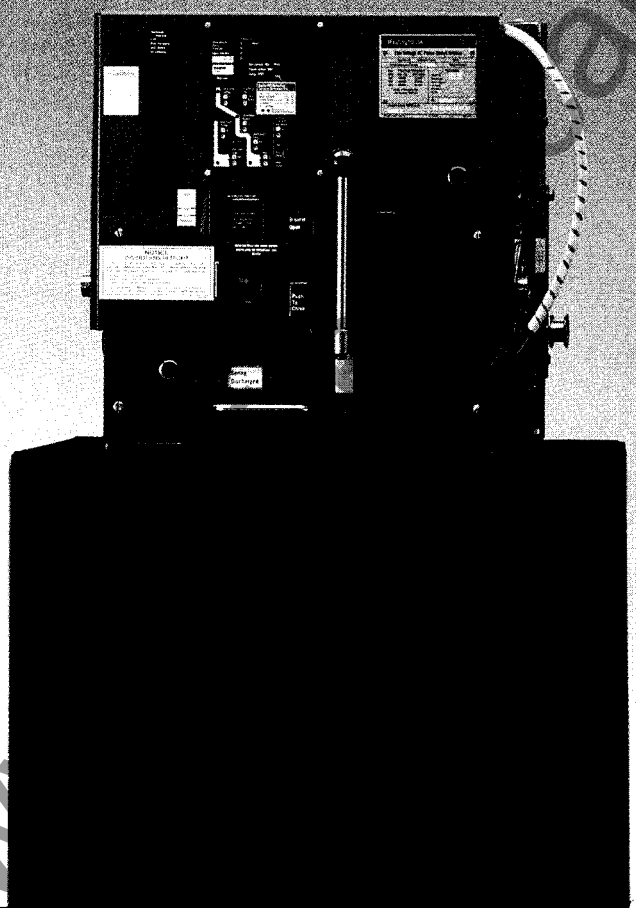
Two Digitrip RMS/R Configurations

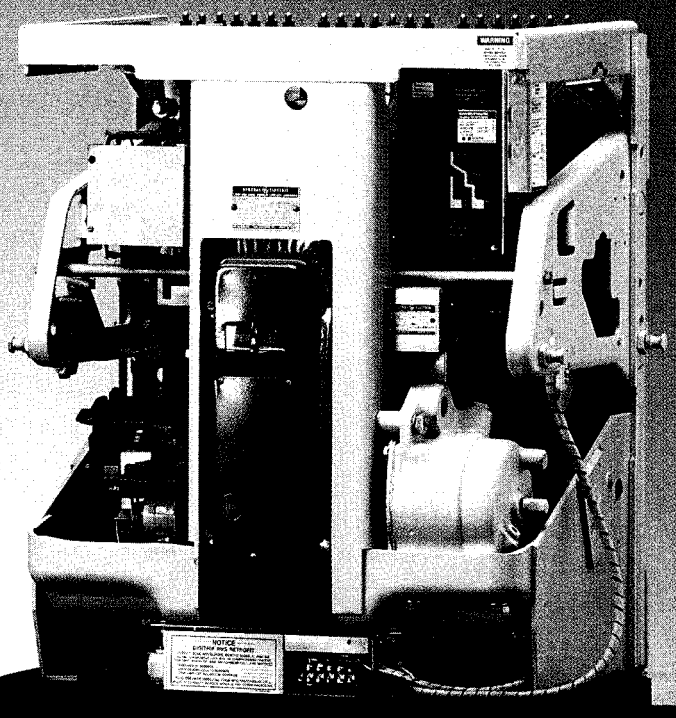


Horizontal Digitrip RMS/R Trip Units are provided in retrofit kits for Westinghouse DB, I-T-E, Allis Chalmers, and selected GE low voltage power circuit Breakers.



Vertical Digitrip RMS/R Trip Units are provided in retrofit kits for selected GE low voltage power circuit breakers.





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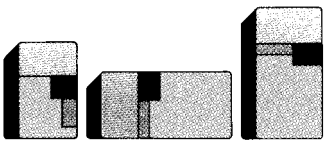
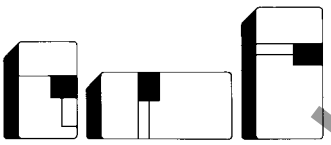
User Friendly Easier to Operate



- Systems and Troubleshooting Display Information
- Remote Communications
- Energy Monitoring
- Rating Plug
- Protection/Information
- Integral Testing

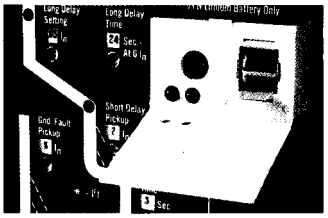
Basic Functions	RMS 500	RMS 600	RMS 700	RMS 800
Protection				
Long Time/Instantaneous	■	■	■	■
Long Time/Short Time	■	■	■	■
Long Time/Short Time/Instantaneous	■	■	■	■
Long Time/Instantaneous/Ground	■	■	■	■
Long Time/Short Time/Ground	■	■	■	■
Long Time/Short Time/Instantaneous/Ground	■	■	■	■
Information				
LED Trip Indications	■	■	■	■
Long Time Fault	■	■	■	■
Short Time Fault	■	■	■	■
Instantaneous Fault	■	■	■	■
Ground Fault	■	■	■	■
Unit Status	■	■	■	■
Battery Check	■	■	■	■
Testing				
Simulated Testing Of All Six Protection Functions	■	■	■	■
Optional Functions				
System Parameters and Troubleshooting				
Four Digit Alpha-Numeric Display With:				
Eleven Trip And Trouble Readouts		■		■
Ammeter Instrumentation		■		■
Individual Phase Current Readouts		■		■
Ground Current Readout		■		■
Trip Current Readout		■		■
High Load Indication		■		■
Remote Communications and Energy Monitoring				
Direct To Remote PC			■	■
Via AEM For Local Monitoring			■	■
Via AEM For Local Monitoring Then Into PC Remote			■	■
Energy Monitoring			■	■
Local Energy Monitoring				
Four Digit Readout Display With:				
Peak Demand (With Reset Pushbutton)				■
Present Demand				■
Energy Consumption				■



Rating Plug

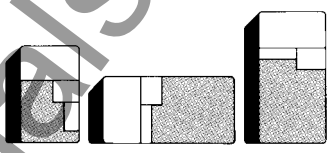
Interchangeable rating plugs establish the continuous ampere rating of the circuit breaker. Different types and ratings are available to match the desired ampere rating and type of circuit breaker into which a Digitrip RMS Trip Unit is installed. The rating plugs are frequency sensitive and specific types are available for 50 or 60 Hz system applications.

A long-life lithium battery provides power to the mode of trip LEDs following an automatic circuit breaker trip and simultaneous loss of control to the power/relay module (when provided). The battery is located in the rating plug and can be easily replaced. A battery check pushbutton, and green LED, are included to monitor battery status.



Protection, Information and Integral Testing Provided by Each Digitrip RMS Unit*

Increased Protection



Protection and Information

The standard protection function of all Digitrip RMS models is long time/instantaneous. Up to five additional protection functions, each providing progressively increased protection, are available to fit specific selective coordination system requirements. Eight protection function settings, on a rotary switch, are provided for each protection function. The switch is quickly adjusted with a small screwdriver and the value setting can be easily seen.

There are two possible time-current curve configurations for the short delay and ground fault time delay settings: flat or I^2t response. Multiple flat and I^2t response settings are available to change the time-current characteristics of the short delay pickup and ground fault pickup curves from flat into sloping I^2t configurations. Zone interlocking is optional by choice of circuit breaker wiring modification. This capability will improve system selective coordination with other protective devices.

* The Digitrip RMS/R Trip Unit is a physically repackaged version of the standard Digitrip RMS.

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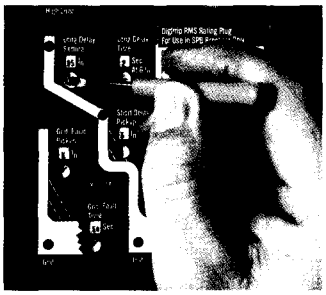
A Few Adjustments Provide Thousands of Curve Shapes

Digitrip RMS Units give the circuit breakers greater selective coordination potential and allow curve shaping adjustments over an extremely wide range with a greater degree of accuracy than possible with conventional circuit breakers equipped with conventional electronic trip units.

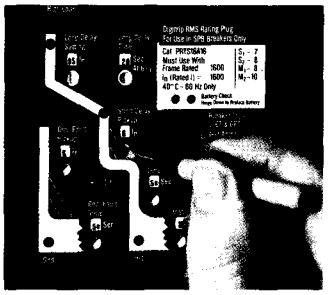
The number of curve shaping adjustments used is determined by individual distribution system requirements, but there are actually thousands of possible curves; and Digitrip RMS Trip Units show time-current curves on the faceplate.

Long Delay Adjustment



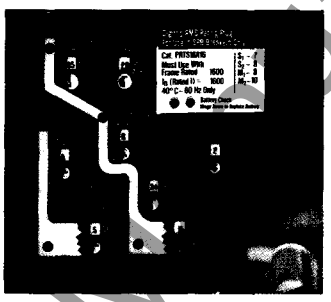
Available settings range from 0.5 to 1.0 I_n. Each setting is expressed as a multiple of the maximum ampere rating (I_n) of the installed rating plug.

Short Delay Pickup Adjustment



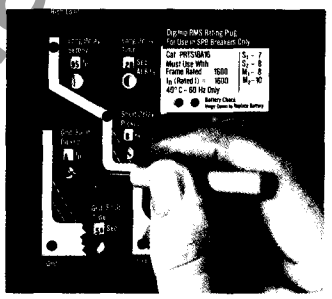
Available settings range from 2 to 6 I_n with two variable settings of S1 and S2.

Instantaneous Pickup Adjustment



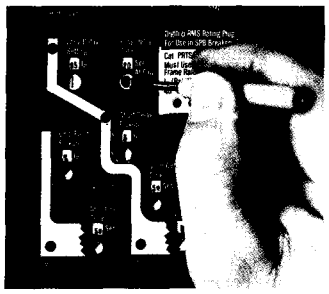
Available settings range from 2 to 6 I_n with two variable settings of M1 and M2.

Ground Fault Current Pickup Adjustment



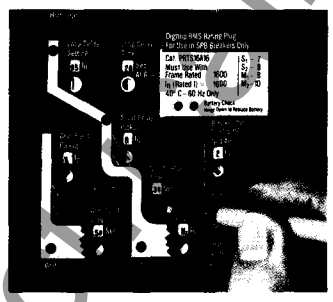
Available settings are given in alphabetical notations from A to H. Specific setting values are a function of the rating plug. Pickup settings range from 0.25 to 1.0 times the ampere rating of the installed rating plug up to a maximum pickup value of 1200 amperes.

Long Delay Time Adjustment



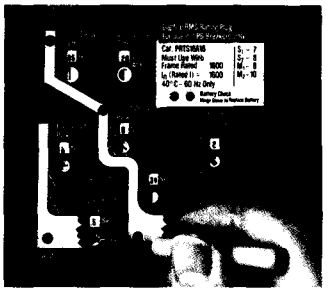
Available settings range from 2 to 24 seconds, represent total clearing times at a current value equal to six times the ampere rating of the installed rating plug.

Short Delay Time Adjustment



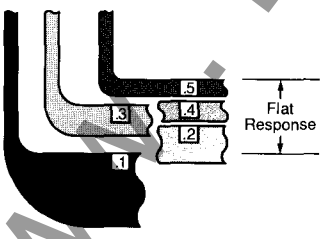
Two different curve configurations are possible: flat or I^2t response. Five flat and three I^2t response time delay settings are provided.

Ground Fault Time Delay Adjustment

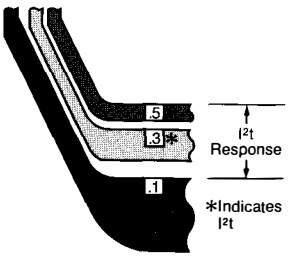


Two different curve configurations are possible: flat or I^2t response. Five flat and three I^2t response time delay settings are provided.

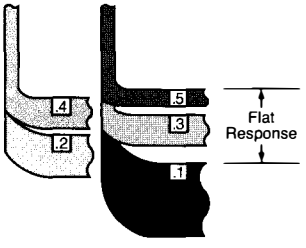
Typical Time - Current Settings



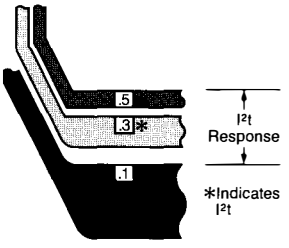
Typical (Phase) Time-Current Settings for a circuit breaker with the available short delay time flat response settings shown.



Typical (Phase) Time-Current Settings for a circuit breaker with the available short delay time I^2t response settings shown position.



Typical Ground Fault Time-Current Settings for a circuit breaker with both the available flat and I^2t response settings shown.



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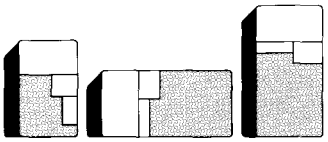
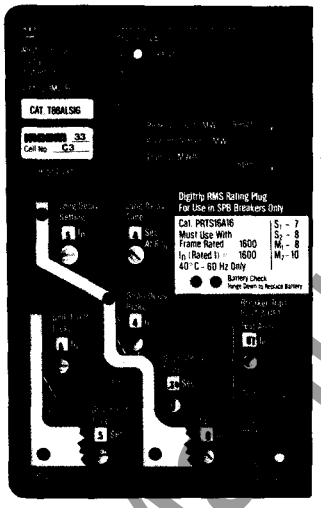
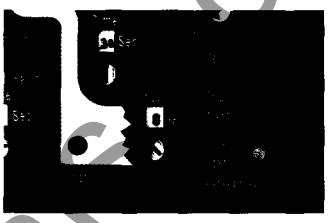
Concise Information



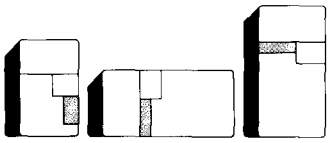
Protection and Information

Red LEDs, imbedded in the simulated time-current curves, pinpoint the mode of an automatic tripping operation. Following a trip operation, and with no control power available to the trip unit, a battery provides power for the LEDs. The trip unit operational status is provided by the "Unit Status" green LED. A flashing green status LED is an indication that the trip unit is operating properly.





Unique Testing Features



Testing

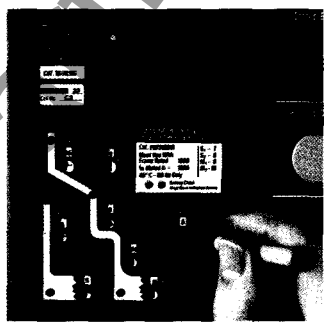
Testing features are unique to Digitrip RMS Trip Units because a fault condition can be quickly and easily simulated to show if all values are functioning properly. Any protection function can be tested. The integral test panel includes a test selector switch, and test and trip unit reset pushbuttons.

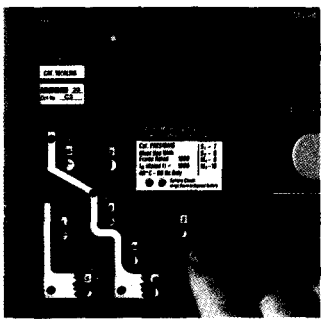
Bench testing can be conducted with the Auxiliary Power Module accessory.

Auxiliary Power Module

This module provides a 32 VDC output and is used for bench testing of Digitrip RMS Trip Units. It is equipped with a unique plug-in connector suitable only for plugging into the keyed receptacle of a Digitrip RMS Unit. This eliminates possible use of an incorrect, but similar, type power module.

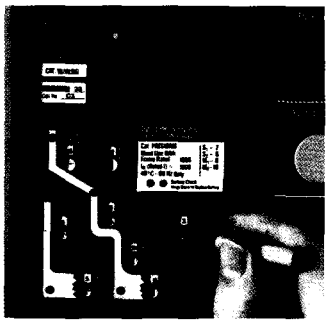
Long Delay Test - No Trip Mode Bench Test Example

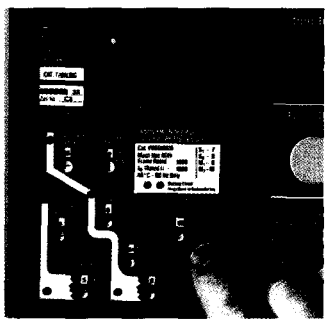




- Test value setting is selected. (Six no trip settings are available.)
- Test is initiated by pressing and releasing the test pushbutton.
- A successful test is indicated by the long delay LED turned "on," signifying the protection setting is less than the selected test value.
- Digitrip RMS is reset by pressing and releasing the trip reset pushbutton.

Instantaneous Test - Trip Mode Bench Test Example





- Test value setting is selected. (Two trip settings are available.)
- Test is initiated by pressing and releasing the test pushbutton.
- A test is successful when the breaker trips and the instantaneous LED turns "on." This signifies the protection setting is less than the selected test value.
- When readout display is provided, coded trip message will appear. The trip current (in kA) appears after pressing the Step button.
- Reset by pressing and releasing the trip reset pushbutton.

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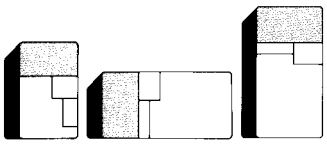
System Operating Parameters and Troubleshooting Display Information Provided by Digitrip RMS 600 and Digitrip RMS 800 Units*



Systems and Troubleshooting Display Information

Constant, up-to-date system information is obtained with the four-digit alphanumeric readout display. A power relay module provides control power for operating the display and internally mounted signal relays. A red pointer LED indicator functions as a high load alarm.

The display provides an ammeter instrumentation function under normal operating conditions, displaying individual phase and ground (if ground fault is included in the unit) current values in kA. The current value being displayed is indicated by a red pointer LED. The Step pushbutton is used to move between current values.

*The Digitrip RMS/R 600 and RMS/R 800 Trip Units are physically repackaged versions of Digitrip RMS 600 and RMS 800.

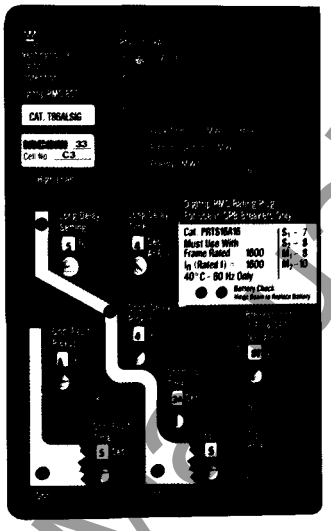
Following a trip or trouble condition, one of these messages (in alpha code) will appear in the display window:

- Overload in progress
- Overload trip
- Short delay trip
- Instantaneous trip
- Ground fault trip
- Making current release trip
- Override trip
- Test in progress
- Rating plug problem
- Data memory problem
- Program memory problem

Following an automatic trip, by pressing the Step pushbutton, the display will indicate the current value by phase (in kA) at the time of the trip.

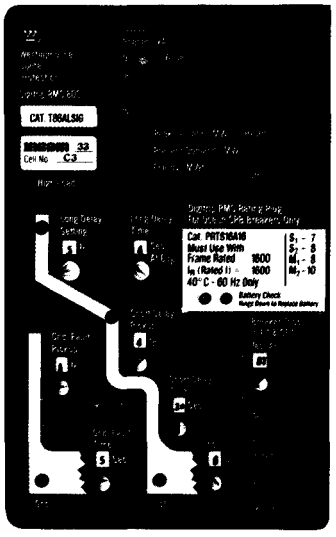
The cause of trip history is maintained by the power relay module as long as the control power supply is available. With no control power supply, only the cause of trip LEDs will be maintained by the backup battery.

Overload Troubleshooting Example



When an overload condition occurs, it will be immediately indicated by the long delay LED and the LDPU message in the display window. By pushing the Step pushbutton, the current value will be displayed by phase in the display window. This enables precise determination of the phase on which the overload occurred.

Short Circuit Troubleshooting Example



When a short occurs, it will be immediately indicated by the instantaneous LED and INST message in the display window. By pushing the Step pushbutton, the current value will be displayed by phase in the display window. This enables precise determination of the phase on which the short occurred.

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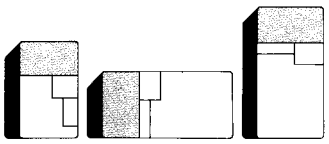
Remote Communications for Monitoring and Testing Provided by Digitrip RMS 700 and Digitrip RMS 800 Units*



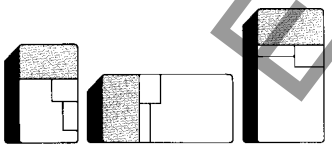
Communications

All electrical equipment fed into a system can be remotely monitored with Digitrip RMS 700 and Digitrip RMS 800 Trip Units. Breaker "open" and "close" operations can be conducted remotely over the communications network. This remote communications ability is provided by the Westinghouse developed INCOM communications chip. It makes possible highly reliable, two-way communications (even in noisy industrial environments) by using a twisted pair of conductors in one of three ways:

1. Direct to a remote mounted IBM or approved compatible personal computer.
2. Via the Assemblies Electronic Monitor accessory for local monitoring.
3. Via the Assemblies Electronic Monitor accessory for local monitoring and then onward to a remote mounted personal computer.

For individual monitoring of multiple circuit breakers, each Digitrip RMS 700 or RMS 800 Unit is equipped with an adjustable address system located behind the rating plug.

Energy Monitoring Capabilities Provided by Digitrip RMS 700 and RMS 800 Trip Units Help to Efficiently Manage Energy*



Energy Monitoring

The energy monitoring function provides for quick and easy determination of:

- Peak demand (with reset button).
- Present demand.
- Energy consumption.

Each energy parameter is monitored on the four-digit readout display. Green LEDs distinguish between parameters being displayed. The Step pushbutton is used to move between parameters.

Remote monitoring of each energy parameter is provided by both the Digitrip RMS 700 and RMS 800 Trip Units.

*The Digitrip RMS/R 700 and RMS/R 800 Trip Units are physically repackaged versions of Digitrip RMS 700 and RMS 800.

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Westinghouse

Breaker Manufacturer and Type		Digitrip RMS				Digitrip RMS/R (Horizontal)				Digitrip RMS/R (Vertical)			
		500	600	700	800	500	600	700	800	500	600	700	800
Westinghouse DS & DSL	DS-206	■	■	■	■								
	DS-416	■	■	■	■								
	DS-420	■	■	■	■								
	DS-632	■	■	■	■								
	DS-840	■	■	■	■								
SPB	SPB-50	■											
	SPB-65	■											
	SPB-100	■											
	SPB-150	■											
DB & DBL	DB-15					■	■	■	■				
	DB-25					■	■	■	■				
	DB-50					■	■	■	■				
	DB-75					■	■	■	■				
	DB-100					■	■	■	■				
GE	AK-1-15***					■	■	■	■				
	AK-1-25					■	■	■	■				
	AK-1-50									■	■	■	■
	AK-1-75									■	■	■	■
	AK-1-100									■	■	■	■
	AL-2-50***					■	■	■	■				
GE*	AK-2A/3A-15					■	■	■	■				
	AK-2A/3A-25					■	■	■	■				
	AK-2A/3A-50									■	■	■	■
	AK-2A/3A-75									■	■	■	■
	AK-2A/3A-100									■	■	■	■
I-T-E (ABB)**	K600, 600S					■	■	■	■				
	K1600, 1600S					■	■	■	■				
	K2000, 2000S					■	■	■	■				
	K3000, 3000S					■	■	■	■				
Allis** Chalmers	LA600, LA600A					■	■	■	■				
	LA1600, LA1600A					■	■	■	■				
	LA3000A					■	■	■	■				

* Consult Westinghouse for retrofitting GE AK-2/3 series breakers and all AKU series breakers with current limiters.

** Consult Westinghouse for retrofitting I-T-E K-Don and Allis Chalmers LAF series breakers with current limiters.

*** Manual only.

Circuit Breaker Umbilical Harness Reduces Installation Time

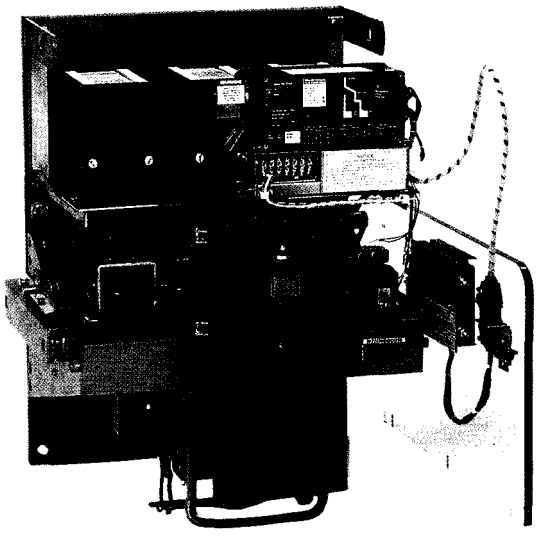
The umbilical harness eliminates the need to wire the added external trip unit signals through the circuit breaker secondary contacts. Digitrip RMS zone interlock, remote alarm contact, and communication signals are connected to the switchgear cell by the umbilical harness.

This harness also connects the external 120 VAC power source required for the Digitrip RMS 600, RMS 700, and RMS 800 Retrofit Kits. The 120 VAC powers the trip unit alpha-numeric digital display and communications functions.

A cell terminal block assembly, mounted on the right side sheet of the switchgear cell, includes terminals for customer external wiring. The umbilical harness is plugged into the terminal block to connect the required external trip unit signals.

All retrofit kits, except the RMS 500 Basic, include the umbilical harness and cell terminal block assembly. The RMS 500 Basic Retrofit Kit does not require these components.

Westinghouse Type DB-50 Circuit Breaker with umbilical wiring harness.



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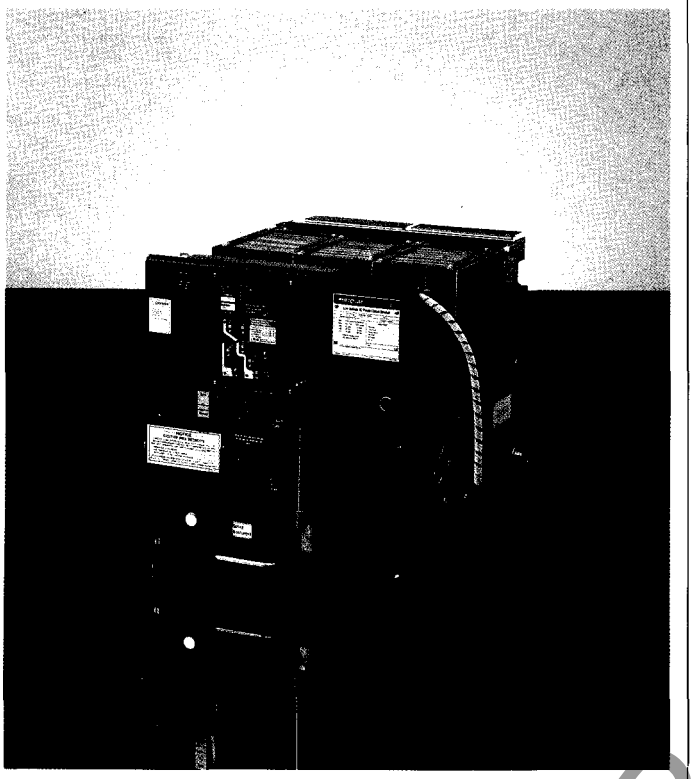


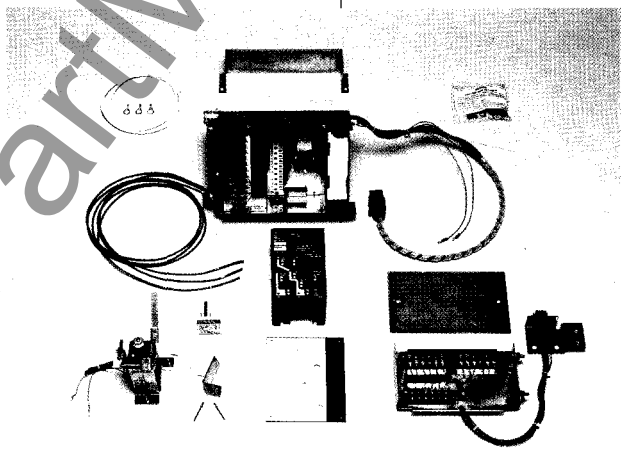
Westinghouse Type DS-416 Power Circuit Breaker

Westinghouse Type DS-206 Power Circuit Breaker

Digitrip RMS Retrofit Kits for Westinghouse DS and DSL Drawout Circuit Breakers

- Upgrade from original peak sensing Amptector™ Trip Units.
- Easy installation into space occupied by Amptector™ trip system.
- Reduce retrofit costs by using existing circuit breaker current sensors and wiring harness.
- Equipped with new Digitrip RMS DTA to replace existing Amptector™ DTA.
- Determine continuous current rating by coordinating rating plug (purchased separately) with circuit breaker sensor rating.

Westinghouse DS Power Circuit Breaker RMS 800 Retrofit Kit



A typical retrofit kit includes:

- Digitrip RMS Trip Unit.
- Trip unit box.
- Rating plug.*
- Current sensors.*
- Interconnecting wiring harnesses.
- Direct trip actuator (DTA).
- Mounting brackets and hardware.
- Circuit breaker-to-cell umbilical harness with plug.**
- Cell terminal block assembly.**
- Potential transformer module.**

* Ordered separately as required.
** Optional depending on kit.

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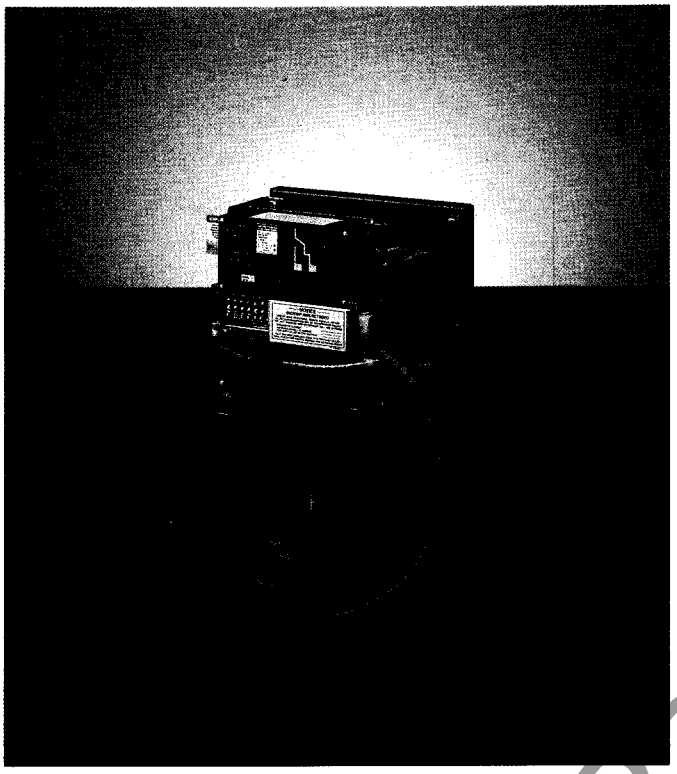
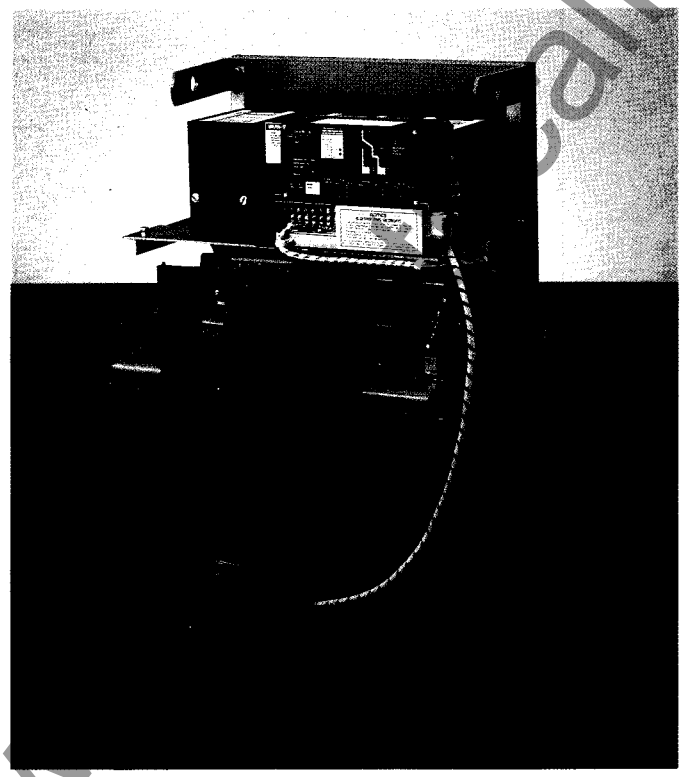


Westinghouse DB-25 Power Circuit Breaker

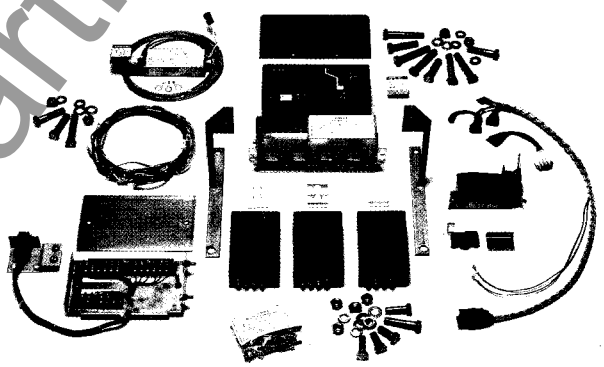


Westinghouse DB-50 Power Circuit Breaker

Digitrip RMS Retrofit Kits for Westinghouse DB and DBL Drawout Circuit Breakers

- Replace obsolete electro-mechanical trip devices.
- Easy installation on the circuit breaker.
- Application flexibility provided by multi-rating current sensors.
- Maximum current rating plug provided for the circuit breaker retrofitted. Lower current rating plugs may be purchased separately.
- Digitrip RMS DTA reliably trips the circuit breaker upon command from the trip unit and resets when the circuit breaker opens.

Westinghouse DB-25 Circuit Breaker RMS 700 Retrofit Kit



A typical retrofit kit includes:

- Digitrip RMS/R Trip Unit.
- Rating plug (maximum rating for circuit breaker frame).
- Auxiliary CT module.
- Current sensors.
- Interconnecting wiring harnesses.
- Direct trip actuator (DTA).
- Mounting brackets.
- Circuit breaker-to-cell umbilical harness with plug.*
- Cell terminal block assembly.*
- Potential transformer module.*
- Auxiliary switch kit.*

* Optional depending on kit.

Digitrip RMS Upgrade Kit

Digitrip RMS Upgrade Kits are available for DB circuit breakers previously retrofitted with Westinghouse Amptector™ or RK Retrofit Kits. These kits utilize existing sensors, connectors, bracketry, and wiring harnesses to reduce retrofit costs.

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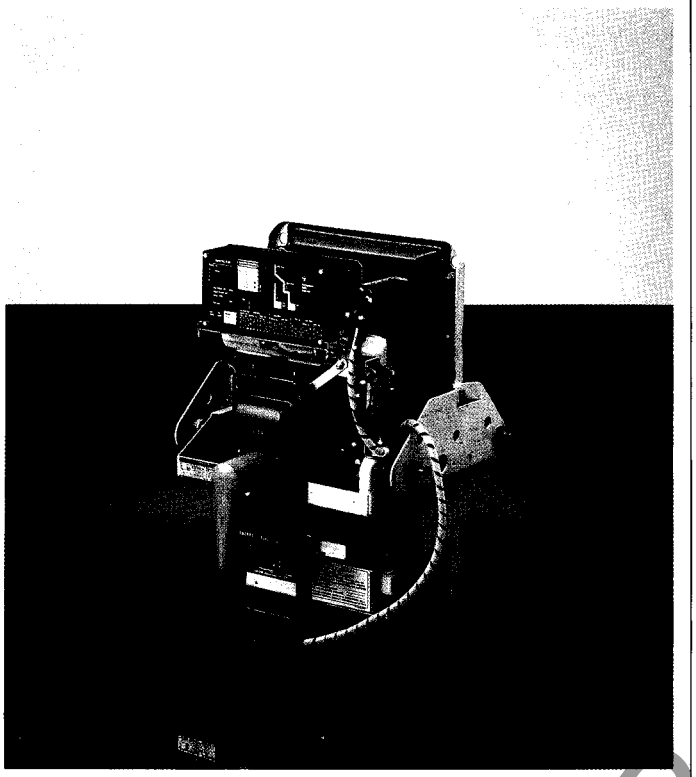
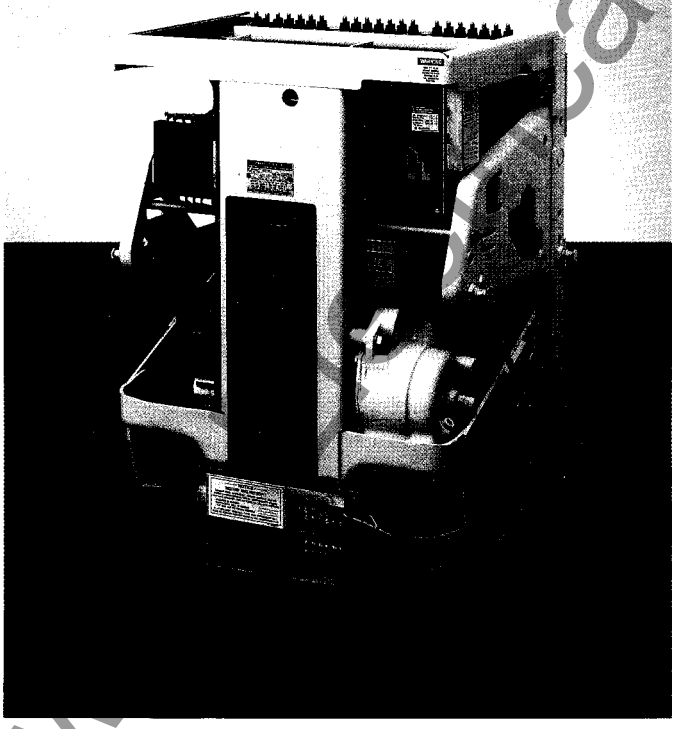
GENERAL ELECTRIC

AK-1-15*	AK-2A-15	AK-3A-15	AL-2-50*
AK-1-25	AK-2A-25	AK-3A-25	
AK-1-50	AK-2A-50	AK-3A-50	
AK-1-75	AK-2A-75	AK-3A-75	
AK-1-100	AK-2A-100	AK-3A-100	



GE AK-2A-25 Circuit Breaker

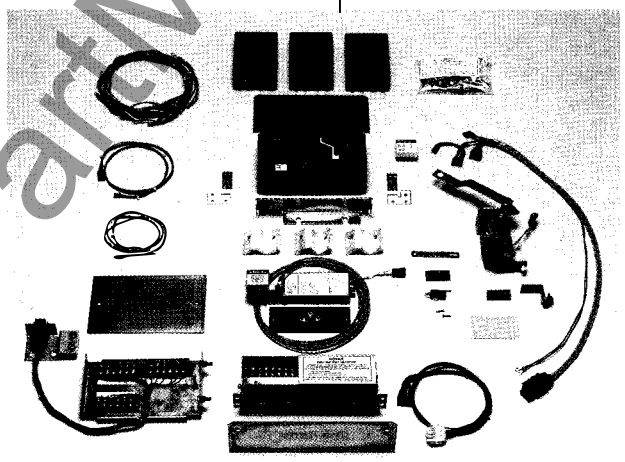


GE AK-2A-50 Circuit Breaker

Digitrip RMS Retrofit Kits for GE AK-1, AK-2A and AK-3A Drawout Circuit Breakers

- Replace obsolete GE Type EC electromechanical trip devices on AK-2A circuit breakers and peak sensing power sensor trip devices on AK-3A circuit breakers.
- Easily installed on the circuit breaker.
- Application flexibility provided by multi-rating current sensors.
- Maximum current rating plug provided for the retrofitted circuit breaker. Lower current rating plugs may be purchased separately.
- Digitrip RMS DTA reliably trips the circuit breaker upon command from the trip unit and resets when the circuit breaker opens.

GE AK-2A-25 Circuit Breaker RMS 700 Retrofit Kit



A typical retrofit kit includes:

- Digitrip RMS/R Trip Unit.
- Rating plug (maximum rating for the circuit breaker frame).
- Auxiliary CT module.
- Current sensors.
- Interconnecting wiring harnesses.
- Direct trip actuator (DTA).
- Mounting brackets.
- Circuit breaker-to-cell umbilical harness with plug.**
- Cell terminal block assembly.**
- Potential transformer module.**
- Auxiliary switch kit.**

* Manual only.
** Optional depending on kit.

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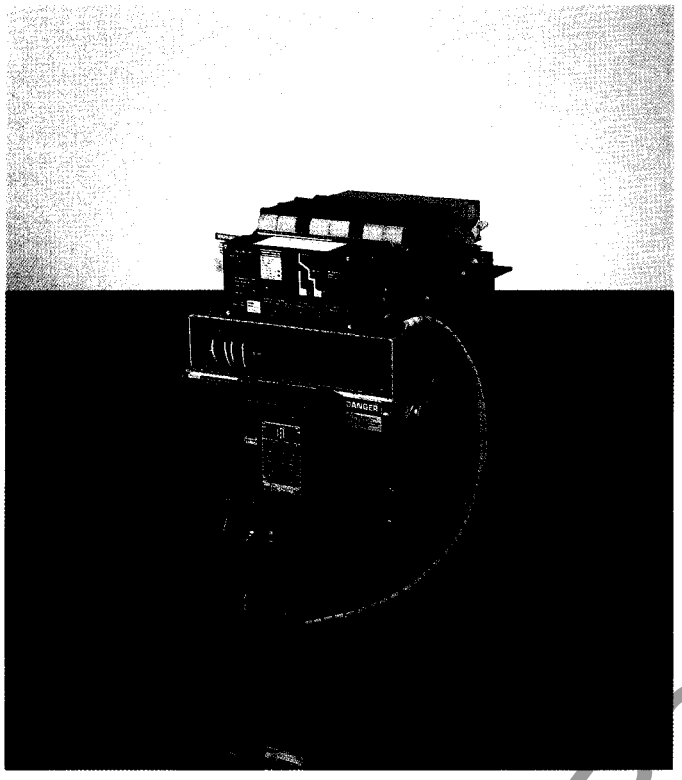
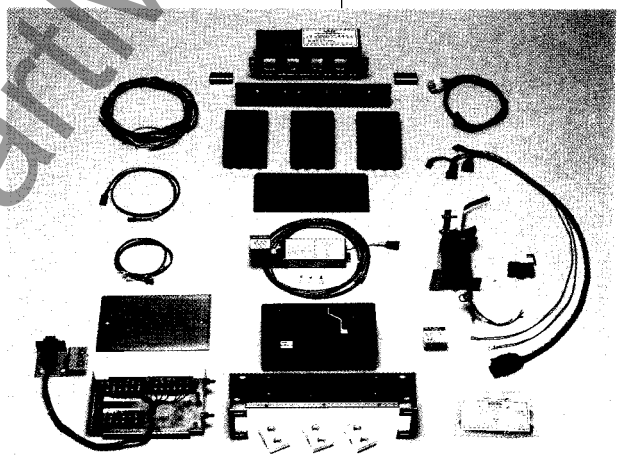


I-T-E K-600 Circuit Breaker

Digitrip RMS Retrofit Kits for I-T-E K-Line Drawout Circuit Breakers

- Replace obsolete I-T-E electro-mechanical trip devices and peak sensing power shield trip devices.
- Easy installed on the circuit breaker.
- Application flexibility provided by multi-rating current sensors.
- Maximum current rating plug provided for the retrofitted circuit breaker. Lower current rating plugs may be purchased separately.
- Digitrip RMS DTA reliably trips the circuit breaker upon command from the trip unit and resets when the circuit breaker opens.

I-T-E K-600 Circuit Breaker RMS 700 Retrofit Kit



A typical retrofit kit includes:

- Digitrip RMS/R Trip Unit.
- Rating plug (maximum rating for circuit breaker frame).
- Auxiliary CT module.
- Current sensors.
- Interconnecting wiring harnesses.
- Direct trip actuator (DTA).
- Mounting brackets.
- Circuit breaker-to-cell umbilical harness with plug.*
- Cell terminal block assembly.*
- Potential transformer module.*
- Auxiliary switch kit.*

* Optional depending on kit.

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IMPACC Integrated Monitoring Protection and Control Communications System

Westinghouse IMPACC is the unique system that ties together multiple devices in electrical distribution systems in buildings and plants.

Communications wires can be extended up to 7,500 feet from the master control unit without repeaters... and as many as 1,000 compatible devices, installed in various assemblies, can be on the IMPACC System.

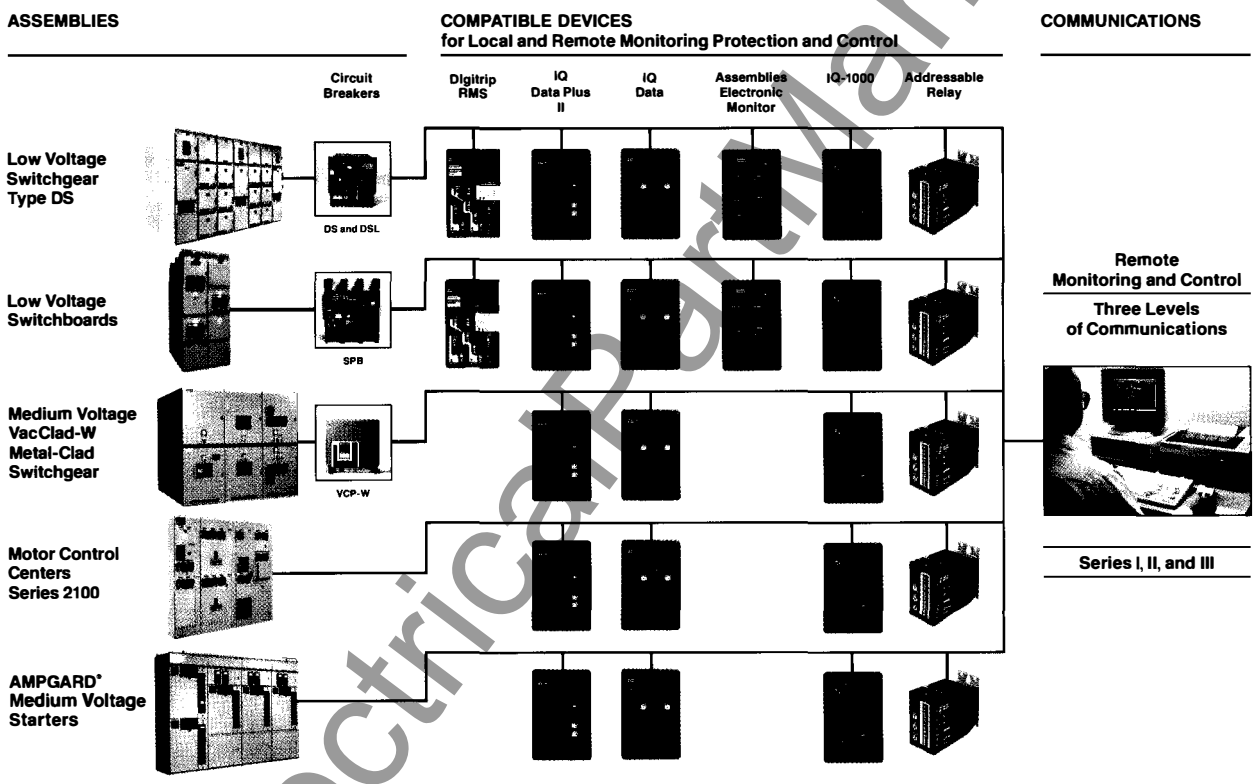
Uncomplicated Installation

Devices are connected, daisy chain style, via twisted pair conductors. Assemblies and devices are standard Westinghouse equipment.

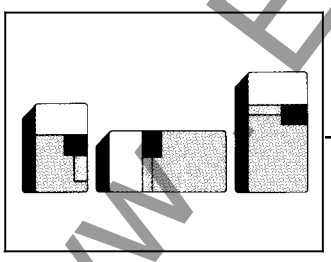
Flexibility

IMPACC can include those assemblies that are desired in a distribution system... but can be easily upgraded as new assemblies are added. A customer determines the requirements for a building's electrical distribution system, and Westinghouse provides the IMPACC System to fit those requirements.

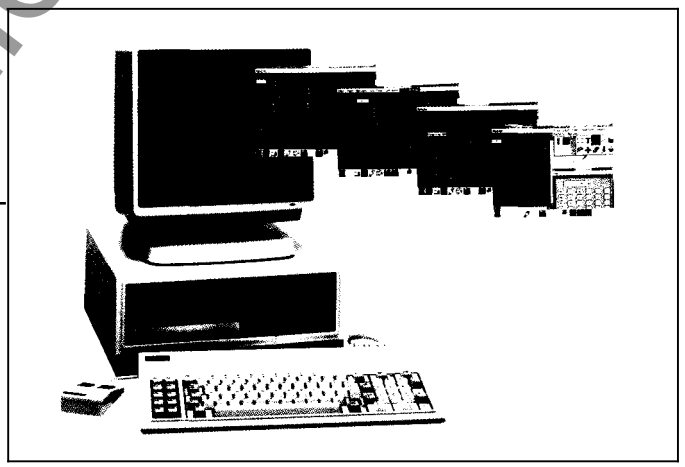
For additional information, please contact your Westinghouse Distributor. Or consult these brochures: *IMPACC* (SA-11650); *The Facts Speak for Themselves* (SA-11653); *Three Levels of Communications* (SA-11656); and *Data Communications for Electrical Distribution Systems* (SA-11670).



Your Assemblies Can Be Retrofitted for IMPACC



By retrofitting low voltage switchboards or low voltage switchgear with Digitrip RMS or Digitrip RMS/R, you gain the capability to include these assemblies in an IMPACC System.



Three Levels of Communication

IMPACC provides three different levels of communication: Series I, II, and III. They offer remote communications as standard features and are tailored to each customer's specific distribution system requirements. Remote communications provides the capability to monitor and control a building's electrical distribution system from an on-site master control unit adjacent to an assembly(s); or up to 7,500 feet from an assembly(s); or at an off-site location via a telephone modem.

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Westinghouse

Here's What an IMPACC System Provides

Standard Devices
Westinghouse assemblies are built with Westinghouse compatible devices that perform monitoring, protection, and control functions. As many as 1,000 compatible devices, installed in various assemblies, can be on an IMPACC System.

Flexibility
The capability to include those assemblies desired in a building's electrical distribution system. Additional assemblies and compatible devices can be added to the system as desired or as new products are developed for the IMPACC System.

One Person Operation
A single operator uses a personal computer as the IMPACC System master control unit to monitor, control, and communicate with compatible devices on the system.

Centralized Data Collection
The IMPACC System provides collecting, processing, and storage of all distribution system operational data.

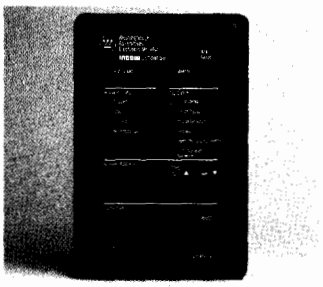
Custom Report Generation
Operational data is stored in data base format for custom report generation of any assembly or equipment on the distribution system.

Early Warning
Constant monitoring alerts an operator to potential problems before they occur, thus minimizing costly downtime while keeping the distribution system running smoothly.

Troubleshooting
Data is provided to efficiently help troubleshoot problems within a distribution system.

Schedule Maintenance
Preventive maintenance schedules can be developed easily from the stored data base to improve equipment performance and prevent downtime.

Assemblies Electronic Monitor
Centralized Monitoring and Information Display

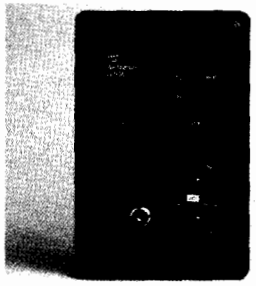


A microprocessor-based communications center that monitors up to 40 circuit breakers equipped with Digitrip RMS/R 800 or RMS/R 700 Trip Units (or RMS 800 or RMS 700) and displays status, cause of trip, and current metered values (including current at time of trip) from each monitored circuit breaker. The Assemblies Electronic Monitor device also receives and transmits data from eight IQ Data Plus II and/or IQ Data devices.

Assemblies Electronic Monitor features include:

- Local or remote monitoring.
- A centralized alternative to individually mounted and wired ammeters and ammeter switches, curcuit breaker position indicating lights, and alarm contacts.
- Separate metering transformers are not required.
- Operated from external power source - 120 VAC, 50/60 Hz.
- User friendly - functions displayed by an LED to indicate the selected function.
- Nonvolatile memory.
- Remote communications capability available within an IMPACC System.

IQ-1000™
Multifunction Motor Protective Relay



This microprocessor-based device monitors three-phase AC current and makes separate trip and alarm decisions based on preprogrammed motor current and temperature conditions. The IQ-1000 replaces conventional and short time and long time relays, instantaneous relays, instantaneous overcurrent relays, and ground relays.

IQ-1000 features include:

- Panel mounting on motor starter or switchgear.
- Simplified programming.
- Nonvolatile memory.
- True RMS calculations.
- Troubleshooting/maintenance data provided immediately prior to time of trip.
- Remote communications capability available within an IMPACC System.

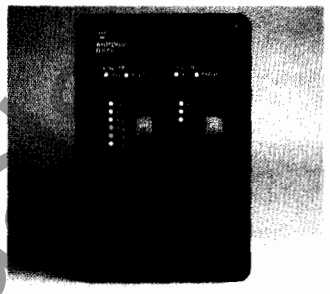
IQ Data Plus II™
Incoming Line Metering and Voltage Protection

This microprocessor-based door mounted device provides complete metering and system voltage protection. It replaces individually mounted and wired ammeters, voltmeters, ammeter and voltmeter switches, wattmeters, and watthour meters.

IQ Data Plus II features include:

- Cost and space savings through replacement of individual meters and switches.
- Direct voltage input of up to 600 volts - no additional PTs required.
- Voltage protection set by customer replaces: undervoltage relay, overvoltage relay, phase loss relay, and phase unbalance relay.
- Nonvolatile memory.
- Remote communications capability available within an IMPACC System.

IQ Data™
Voltage and Current Metering

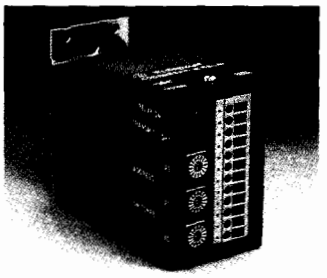


This microprocessor-based device performs only the identical voltage and current metering functions of the IQ Data Plus II.

IQ Data features include:

- Separate voltage and ammeter windows. Voltage and current can be stepped through independently.
- Auto ranging between volts and kilovolts, and amps and kiloamps.
- Remote communications capability available within an IMPACC System.

Addressable Relay
Direct On/Off Capabilities



An input/output device that is used in combination with other devices that can be utilized in an IMPACC System. The relay will turn a device on or off or will tell if the device is on or off. The Addressable Relay itself is monitored and controlled by the master control unit.

Addressable Relay features include:

- A unique address assigned to each relay by setting the three hexidecimal switches.
- LEDs show when the relay is energized and when it is sending reports.
- Two status indicating circuits which can be used to transmit the status of contacts of devices external to the Addressable Relay.
- Automatic reset that turns the relay off if communications are lost.

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