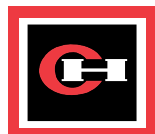


Digitrip OPTIM Enclosed Circuit Breakers

Programmable Trip Units
L-Frame 125, 250, 400, 600 Amperes
N-Frame 800, 1200 Amperes

Upgrade your electrical distribution system by adding superior programmable protection and coordination.



Cutler-Hammer

EATON

Westinghouse & Cutler-Hammer Products

Programmability A New Level of Technology

Economically Add to Existing Panelboards, Switchboards, and Motor Control Centers with Industry Leading Technology

The Digitrip® OPTIM™ programmable microprocessor-based trip unit is now provided in a factory assembled circuit breaker enclosure. This means you now have the capability to economically add superior programmable protection and coordination...plus the addition of a state-of-the-art advanced warning capability along with system diagnostics, monitoring, and communications.

OPTIM will enhance your distribution system by reducing downtime, managing energy costs, and helping you to utilize your equipment more efficiently. Enclosed circuit breakers equipped with OPTIM are suitable for use with new or previously installed Cutler-Hammer panelboards, switchboards, and motor control centers ...as well as those of other manufacturers.

Factory Assembled and Delivered Ready to Install

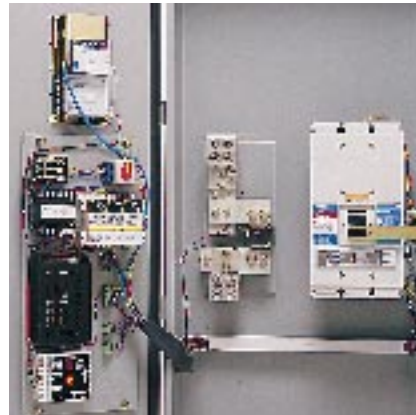
Each OPTIM Enclosed Beaker is completely factory assembled, wired, tested, and delivered ready for your electrical or maintenance contractor to install. It can be easily wall mounted next to the existing panelboard or switchboard.

An OPTIM Enclosure includes a Digitrip OPTIM Trip Unit in either a Series C® L-frame at 125, 250, 400, or 600 amperes; or a Series C N-frame at 800 or 1200 amperes. Both enclosures are NEMA 12.

Enclosure Dimensions - Inches

Enclosure	Catalog Number	Height	Width	Depth
L-frame	JLDN600OPTIM	48.32	25.00	46.57
N-frame	JNDN1200OPTIM	63.60	25.00	61.85

<p>Basic Enclosed Breaker</p> <p>Standard Features</p> <ul style="list-style-type: none"> ■ Mounted Series C L-frame or N-frame Breaker with Digitrip OPTIM 750 or 1050 Trip Unit. ■ Installed rating plug. ■ Installed terminals. ■ Wired control power unit. ■ Installed neutral bar, if required. ■ Installed PT module if Digitrip OPTIM 1050 Trip Unit is specified. <p>Optional Features</p> <ul style="list-style-type: none"> ■ Wired ground fault alarm relay. ■ Hand held OPTIMizer programmer in a soft package. (Minimum of one required for initial address settings.)
<p>Advanced Enclosed Breaker</p> <p>Standard Feature</p> <ul style="list-style-type: none"> ■ Basic OPTIM plus a wired and mounted Breaker Interface Module. <p>Optional Feature</p> <ul style="list-style-type: none"> ■ Mounted communications module.



A basic OPTIM Enclosed Breaker interior with a Series C N-frame Circuit Breaker and Digitrip OPTIM 750 Trip Unit. Each enclosure is delivered complete and pretested, ready for installation.



Superior rms Sensing for Accuracy and Reliability

Digitrip OPTIM Trip Units utilize the proprietary SuRE Plus™ Chip microprocessor to provide unparalleled accuracy for protection, systems diagnostics, load monitoring, and communications. There are two OPTIM Trip Unit models...the 750 and the 1050; the 1050 monitors power, energy, and current harmonics.



Two OPTIM Enclosed Breakers: The advanced unit with Series C L-frame Breaker (left) and basic unit with Series C N-frame Breaker (right). The L-frame enclosure is shown with a Breaker Interface Module mounted on the door. The N-frame enclosure shows a provision for future mounting of a Breaker Interface Module.

Programmability Increases Protection and Coordination Capabilities

Several unique protection and coordination features can be electronically programmed* to provide:

- **Time-current settings** with more increments that permit the user to OPTIMIZE system protection and coordination.
- **Improved accuracy** gives more selectivity and closer sensitivity in providing coordination.
- **Improved reliability** is provided by displaying time-current setpoints in actual amperes.
- **Programmable** short delay and/or instantaneous curve tripping options.
- **Selectable powered and unpowered thermal memory** as well as **selectable sure start discriminator** protection features.
- **Increased system security** is provided by the addition of programmable password protection.

Application software packages are available to configure and download setpoints to provide faster, more efficient system management.

* The breaker continuous current rating is established by the trip unit rating plug.

For improved system coordination, we have added:

- **Its long delay time slope** to the traditional nine LSIG curve shaping options.
- **Short delay and ground delay zone selective interlocking** down to a 70 ampere molded case circuit breaker.



Digitrip OPTIM Trip Units can be programmed with the hand held OPTIMizer (left) that plugs into the front of the trip unit; or with the Breaker Interface Module mounted directly on the enclosure door.

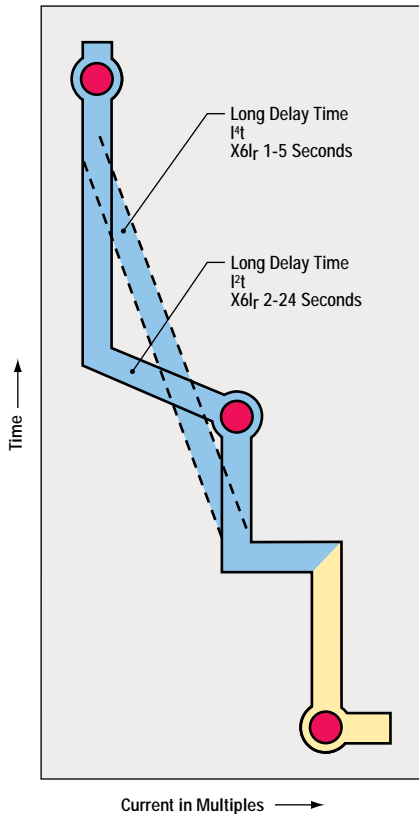
Digitrip OPTIM Enclosed Circuit Breakers

State-of-the-Art Advanced Warning, Diagnostics, and Monitoring

Advance Warning Alerts to Potential Problems

This feature helps keep your system operating and more productive.

- A programmable high load phase and neutral alarm, adjustable between 50 percent and 100 percent of I_r (LDPU setting), will signal an impending trip condition.
- An adjustable ground fault alarm that will alert the user of a ground fault condition without tripping the breaker.
- Energy alarming can be performed (such as peak demand exceeded) to reduce energy costs with OPTIM 1050 via IMPACC.
- THD alarming detects changes in power quality with OPTIM 1050 via IMPACC.



System Diagnostics Provide Reduced Downtime

Digitrip OPTIM provides a complete selection of system diagnostic capabilities.

Four cause of trip LEDs are mounted on the front of the trip unit to improve troubleshooting capabilities. They are complemented by trip event information that is stored in memory after a trip condition.

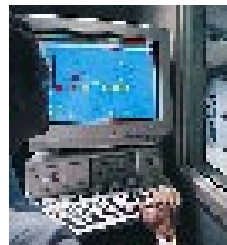
Remote breaker status indicator is provided by auxiliary and alarm switches.

The Breaker Interface Module provides trip indication information on the front of the unit itself or via relay contacts to a remote location.

System Monitoring – “If You Can’t Measure It, You Can’t Manage It”

Digitrip OPTIM has an extensive menu of system monitoring capabilities:

- Load monitoring (ABCNG).
- Power factor (OPTIM 1050).
- Power and energy (OPTIM 1050).
- Power quality – current harmonics (OPTIM 1050). Accuracy based on full scale sensor rating:
 - ± 2% Current.
 - ± 4% Power.
 - ± 5% Energy.



System Communications

OPTIM Trip Units are IMPACC compatible and can be included in the unique Cutler-Hammer IMPACC communications system, specially designed for electrical distribution applications.

All OPTIM programming, configuration, advanced warning, diagnostics, monitoring, and control capabilities can be accessed from a central PC using IMPACC software. Additional software packages can provide energy management as well as waveform capture.

Field Testing to Verify Performance

Trip or no trip testing can be performed on OPTIM Trip Units to verify operation. Testing can be completed by using a Digitrip OPTIMizer, the Breaker Interface Module, or IMPACC software. An auxiliary power module can be provided for bench testing.

Typical OPTIM Applications

When more information is required to better manage your production process.

In a critical process such as a batch reactor used in the food, chemical, pharmaceutical, and petroleum industries.

Material in the process vessel can be worth more than the equipment required to produce it. This application requires close coordination with the overall electrical distribution system, possible isolation from the main switchboard, higher levels of overload and fault protection, remote breaker status indications, controlled shutdown sequence, monitoring, and data collection.

When early warning information that reduces downtime is required.

On a critical production line such as an automatic feeder supplying subassemblies for a finished product used in the automotive industry, or by OEMs and electric product manufacturers. Automated welding and paint lines, for example, require higher levels of overload and fault protection, advanced warning of an impending trip condition, and system diagnostics which reduce the time necessary to get back on line.



When there is a concern with system obsolescence.

When upgrading your facility’s electrical distribution system, there could be a requirement to replace obsolete main or branch protection devices where space is limited. Feeders for laboratories and computer rooms could require better coordination and protection, while specialized equipment such as engine generators and variable frequency drives could also require upgraded protection.

OPTIM meets these requirements economically...because they provide high reliability and increased performance in a compact, dustproof unit that is wall mountable. Rewiring costs are minimized. A Digitrip OPTIM Enclosed Circuit Breaker can be locked in the off position to comply with OSHA lockout/tagout regulations, and meet the NEC 430 requirements for a separate disconnect means within sight of motor loads.

How to Order a Digitrip OPTIM Enclosed Circuit Breaker

- Select required breaker from the table.
 - Determine which trip unit model is required: OPTIM 750; or OPTIM 1050 which provides additional features of power, energy, and harmonics monitoring.
 - Determine if LSIA or LSIG with ground fault protection is required.
 - Determine breaker frame ampere rating based on required ampere interrupting capacity.
- Select required rating plug.
 - Based on continuous trip rating required. (All rating plugs are fixed.)
- Select required terminals.
 - Determine size and number of wires being used for load and line terminations.
- Select enclosure based on required breaker frame size.
- Select neutral if required.
 - Neutral is required for three-phase, four-wire wye systems.
- Specify voltage system to be applied.
 - For control power transformer primary in the control power unit.
- Select a minimum of one hand held OPTIMizer programmer.
 - Required for initializing the address and can be used on multiple systems.
- Select other options as required.
 - Breaker Interface Module (BIM) panel mounted user interface.
 - INCOM Communications Module allows a BIM to communicate over an IMPACC network to a remote personal computer.
 - Ground fault alarm relay unit (GFAU). Used with ground fault option to provide contacts for remote alarming.
- Enter items on Bid Manager for pricing and order entry.

Breaker Frame	Ratings	Digitrip OPTIM 750 ^①		Digitrip OPTIM 1050 ^①		Rating Plug		Terminals	
		LSIA ^②	LSIG ^②	LSIA ^②	LSIG ^②	Amp Rating	Catalog Number	Wire Range (Number of Wires)	Catalog Number
L-frame 125A	35 kA @ 480V 65 kA @ 480V 100 kA @ 480V	LD3125T77W HLD3125T77W LDC3125T77W	LD3125T76W HLD3125T76W LDC3125T76W	LD3125T107W HLD3125T107W LDC3125T107W	LD3125T106W HLD3125T106W LDC3125T106W	70	ORPL125A070	4-4/0 AWG (2) 4/0-600 KCMIL (2) 250-350 KCMIL (2) 400-500 KCMIL (2) 250-350 KCMIL Cu (2)	TA450LD 3TA401LDK TA602LD 3TA603LDK T602LD
						90	ORPL125A090		
						100	ORPL125A100		
						110	ORPL125A110		
L-frame 250A	35 kA @ 480V 65 kA @ 480V 100 kA @ 480V	LD3250T77W HLD3250T77W LDC3250T77W	LD3250T76W HLD3250T76W LDC3250T76W	LD3250T107W HLD3250T107W LDC3250T107W	LD3250T106W HLD3250T106W LDC3250T106W	125	ORPL025A125		
						150	ORPL025A150		
						175	ORPL025A175		
						200	ORPL025A200		
						225	ORPL025A225		
L-frame 400A	35 kA @ 480V 65 kA @ 480V 100 kA @ 480V	LD3400T77W HLD3400T77W LDC3400T77W	LD3400T76W HLD3400T76W LDC3400T76W	LD3400T107W HLD3400T107W LDC3400T107W	LD3400T106W HLD3400T106W LDC3400T106W	200	ORPL40A200		
						225	ORPL40A225		
						250	ORPL40A250		
						300	ORPL40A300		
						350	ORPL40A350		
L-frame 600A	35 kA @ 480V 65 kA @ 480V 100 kA @ 480V	LD3600T77W HLD3600T77W LDC3600T77W	LD3600T76W HLD3600T76W LDC3600T76W	LD3600T107W HLD3600T107W LDC3600T107W	LD3600T106W HLD3600T106W LDC3600T106W	300	ORPL60A300		
						350	ORPL60A350		
						400	ORPL60A400		
						500	ORPL60A500		
						600	ORPL60A600		
N-frame 800A	35 kA @ 480V 65 kA @ 480V 100 kA @ 480V	ND3800T77W HND3800T77W NDC3800T77W	ND3800T76W HND3800T76W NDC3800T76W	ND3800T107W HND3800T107W NDC3800T107W	ND3800T106W HND3800T106W NDC3800T106W	400	ORPN80A400	1-500 KCMIL (2) 3/0-400 KCMIL (3) 4/0-500 KCMIL (4) 500-750 KCMIL (3) 2/0-500 KCMIL Cu (2) 3/0-500 KCMIL Cu (3) 3/0-400 KCMIL Cu (4)	TA700NB1 TA1000NB1 TA1200NB1 TA1201NB1 T700NB1 T1000NB1 T1200NB3
						450	ORPN80A450		
						500	ORPN80A500		
						550	ORPN80A550		
						600	ORPN80A600		
						700	ORPN80A700		
800	ORPN80A800								
N-frame 1200A	35 kA @ 480V 65 kA @ 480V 100 kA @ 480V	ND312T77W HND312T77W NDC312T77W	ND312T76W HND312T76W NDC312T76W	ND312T107W HND312T107W NDC312T107W	ND312T106W HND312T106W NDC312T106W	600	ORPN12A600		
						700	ORPN12A700		
						800	ORPN12A800		
						900	ORPN12A900		
						1000	ORPN12A100		
						1200	ORPN12A120		

Neutrals

Ampere Rating	Description	Catalog Number
600A	Mounting for Neutral Sensor	INK600OPTIM
1200A	Mounting for Neutral Sensor	INK1200OPTIM

Options

Description	Catalog Number
Panel Mounted Interface	BIM
Communication Module	PONI
Ground Fault Alarm Relay	GFAU

Accessories

Description	Catalog Number
PT Module ^③	DOPTMLN
OPTIMizer Hand Held Unit [√]	OPTIMizer
Control Power Unit	Included with Enclosure

Enclosures

Breaker Frame	Description	Catalog Number
L-frame	NEMA 12 w/o Knockouts	JLDN600OPTIM ^⑤
N-frame	NEMA 12 w/o Knockouts	JNDN1200OPTIM ^⑤

- ^① Includes 1 auxiliary switch, 1 bell alarm.
^② Includes neutral sensor if neutral is selected.
^③ Required and installed with OPTIM 1050.
[√] Required for initial programming. One OPTIMizer included with each system.
^⑤ Includes control power unit and wiring.

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