



GROUND-FAULT PROTECTION



GROUND-CONDUCTOR MONITORING



RESISTANCE GROUNDING/NGR MONITORING



FEEDER PROTECTION



ARC-FLASH PROTECTION



SWITCHING RELAYS & CONTROLS



MOTOR & PUMP PROTECTION



PUMP CONTROLLERS



AC SYSTEM MONITORS/LOAD SENSORS



TIMERS

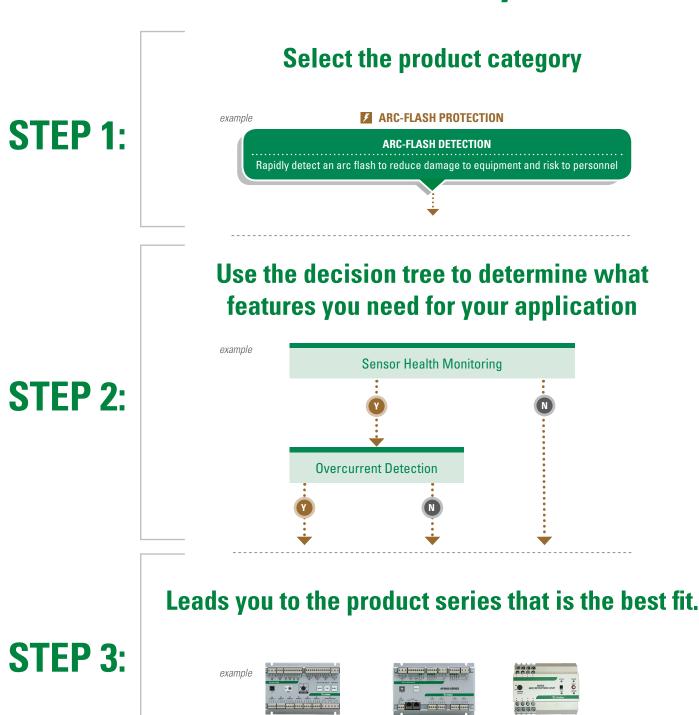


FLASHERS, TOWER & OBSTRUCTION LIGHTING CONTROL



Over 225 Relay Product Series are contained in this handy guide.

Product Selection as Easy as 1-2-3

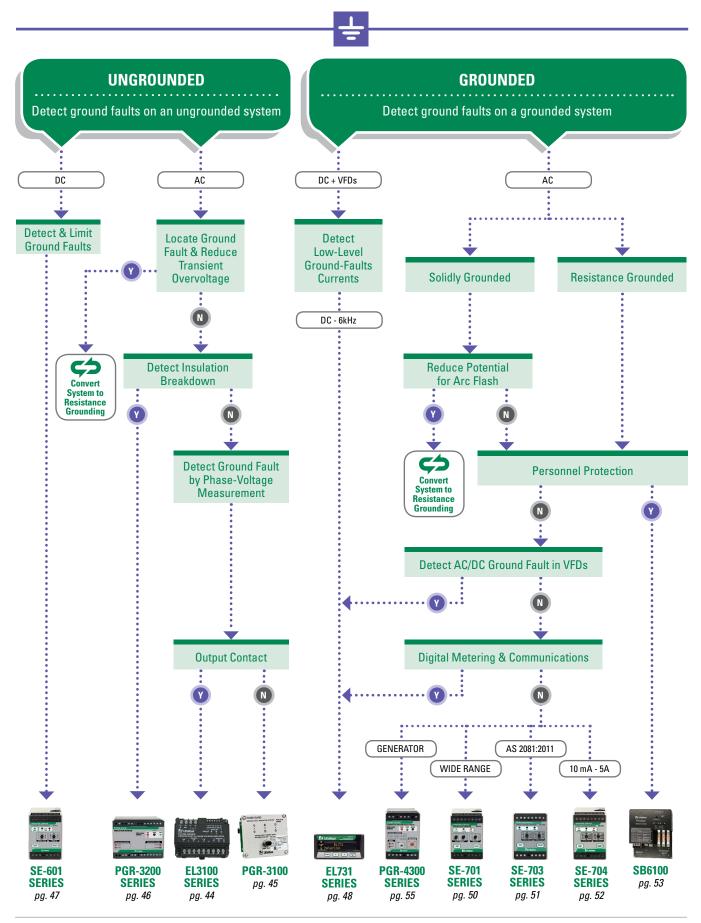




PRODUCT SELECTION GUIDE

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GROUND-FAULT PROTECTION



Ground-Fault Protection Relays



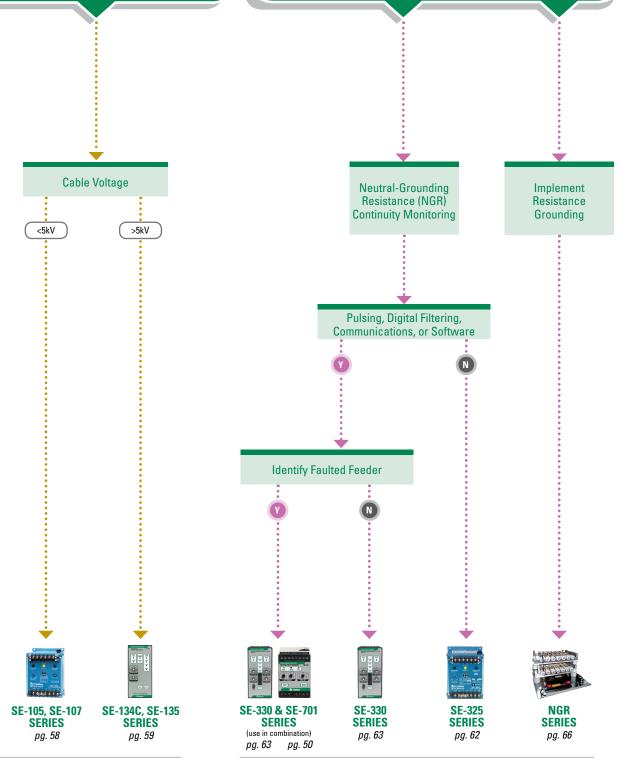


GROUND-FAULT & GROUND-CHECK

Ensure ground- conductor continuity for portable equipment and submersible pumps, and detect ground faults

RESISTANCE-GROUNDED AC

Solve problems commonly associated with ungrounded and solidly grounded systems and monitor the neutral-to-ground connection



Ground-Conductor Monitoring Relays

Resistance Grounding Systems & NGR Monitors





F

STANDARD

Protect distribution feeders in processing, manufacturing, petroleum, chemical, and wastewater treatment facilities

ADVANCED

Monitor voltage and current using a modular system with integrated protection, breaker control, metering, and data-logging functions

ARC-FLASH DETECTION

Rapidly detect an arc flash to reduce damage to equipment and risk to personnel

Current Protection & Metering IEEE/IEC Overcurrent Current Protection, Voltage Protection, & Metering IEEE/IEC Overcurrent

Sensor Health Monitoring **Overcurrent Detection** Multiple Zones, Communications, & Data Logging **********

Feeder Protection Relays

FPU-32

SERIES

pg. 70

Arc-Flash Relays

AF0500

SERIES

pg. 77

AF0100

SERIES

pg. 79

D0920

pg. 74

PGR-8800

SERIES

pg. 75

FPS

SERIES

pg. 70

SWITCHING RELAYS & CONTROLS



SOLID-STATE RELAYS

Designed for industrial applications requiring rugged, reliable operation

PHASE CONTROL

Designed for changing lamp intensity, varying the speed of a fan, or controlling the temperature of a heater

TEMPERATURE CONTROL

A single set point controller with high current, solid state output for resistive loads







Random Switching for Inductive Loads





Solid-State Switching Relays

SIR2

SERIES

pg. 86

SLR

SERIES

pg. 88

SIR1

SERIES

pg. 86



PHS SERIES pg. 84



TCR9C pg. 90

Phase Control Switching Relays

Temperature Control Relays



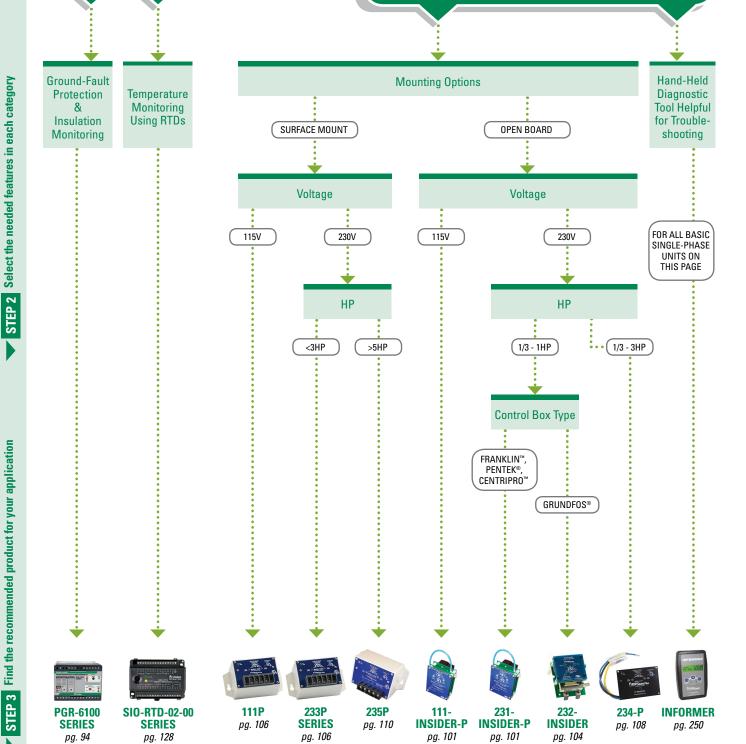


SUPPLEMENTAL PROTECTION (MOTOR)

Protection for motors against insulation degradation, overheating, or ventilation failure

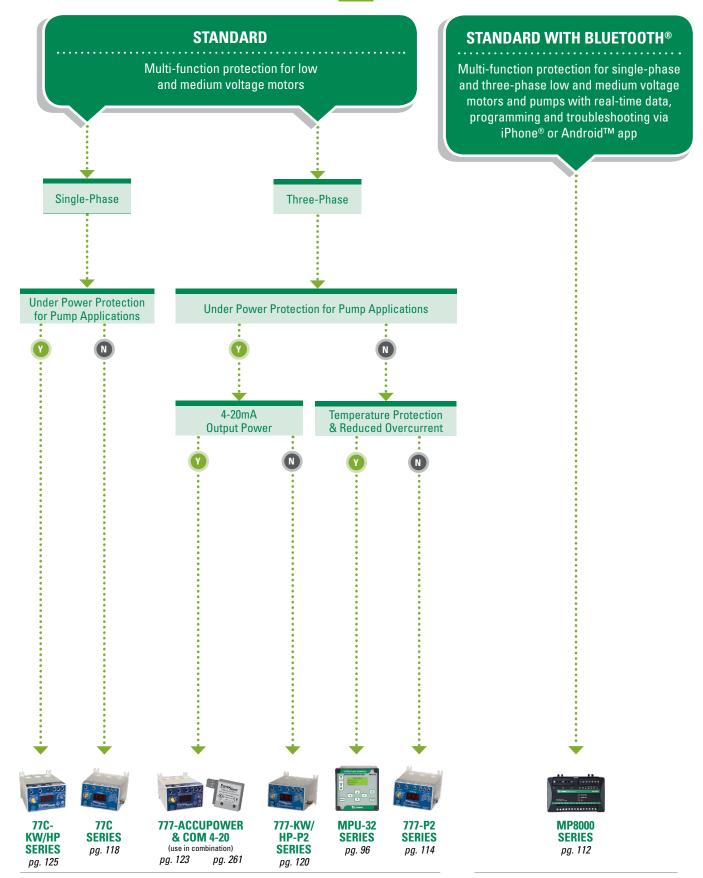
BASIC (PUMP)

Protection of single-phase pumps against dry-well, dead-head, jammed impeller, rapid-cycling and over/under voltage



MOTOR & PUMP PROTECTION





Standard Motor & Pump Protection

Standard Motor & Pump Protection with Bluetooth®

MOTOR & PUMP PROTECTION







ADVANCED

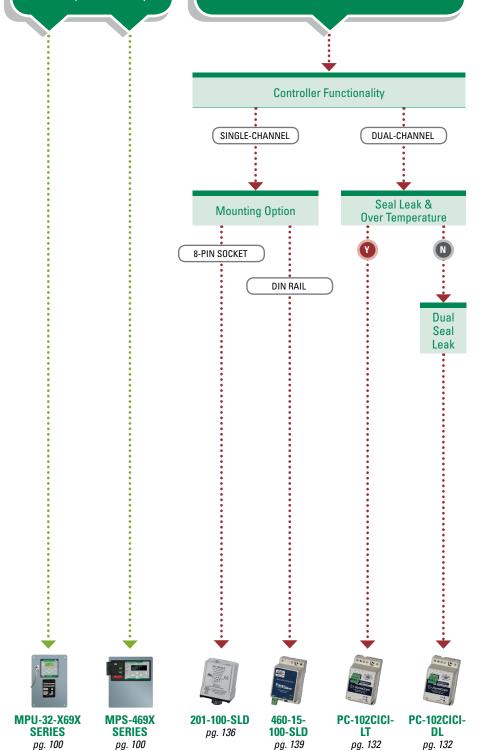
Comprehensive voltage protection and starter control for medium voltage motors and pumps

RETROFITS

Pre-wired plug & play replacement for obsolete and competitors' relays

SEAL LEAK DETECTORS

Detect pump seal leaks & motor overheating on submersible pumps



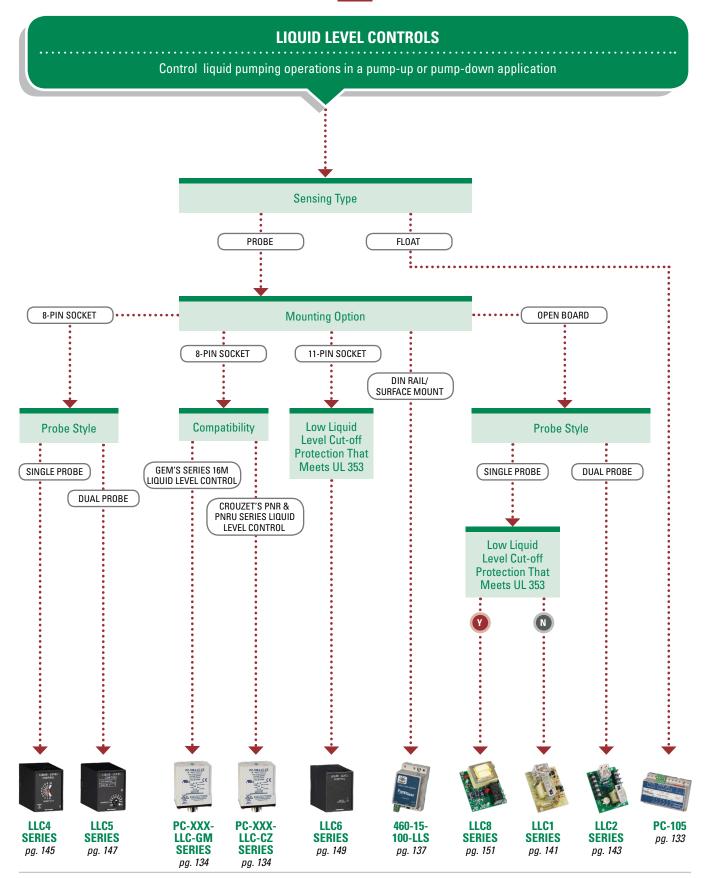


Retrofits

Seal Leak Detection

PUMP CONTROLLERS





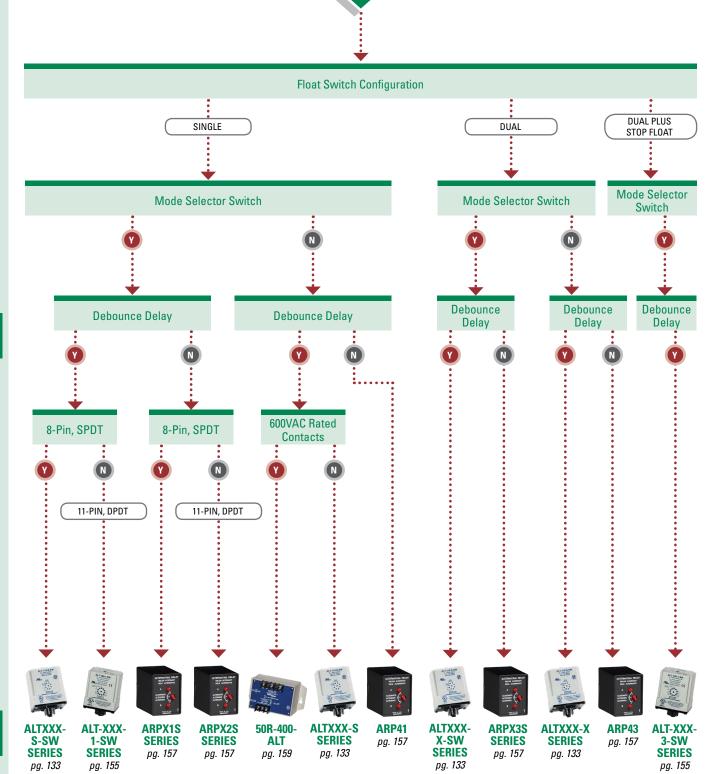
Liquid Level Controls

PUMP CONTROLLERS



ALTERNATING RELAYS

Used in duplex pumping applications to balance the run time of both pumps



Alternating Relays

PUMP CONTROLLERS



ALARM CONTROLS/ BATTERY CHARGERS

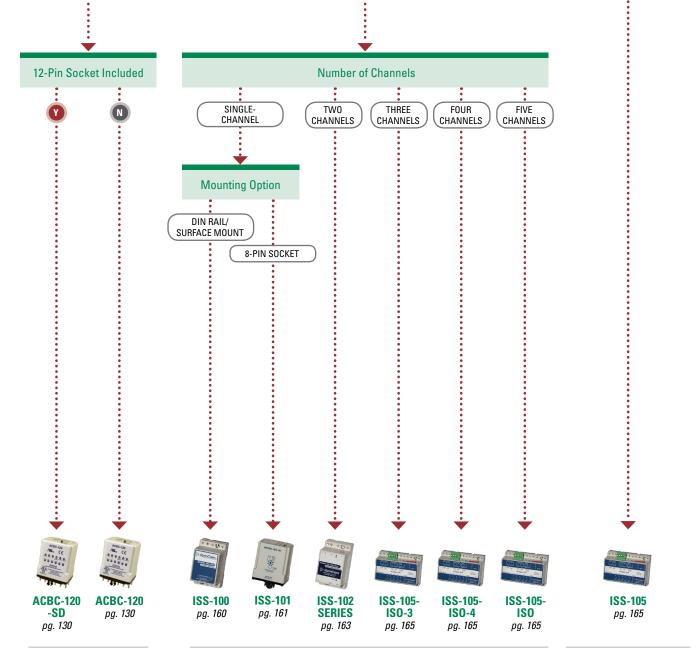
Dual-purpose alarm control/battery charger for pump control panels

INTRINSICALLY SAFE RELAYS

Used to interface between hazardous and non-hazardous and

INTRINSICALLY SAFE PUMP CONTROLLER

Programmable to control/equalize run time of 2, 3, or 4 pumps, with the ability to interface between hazardous and non-hazardous areas



Alarm Control/Battery Charger

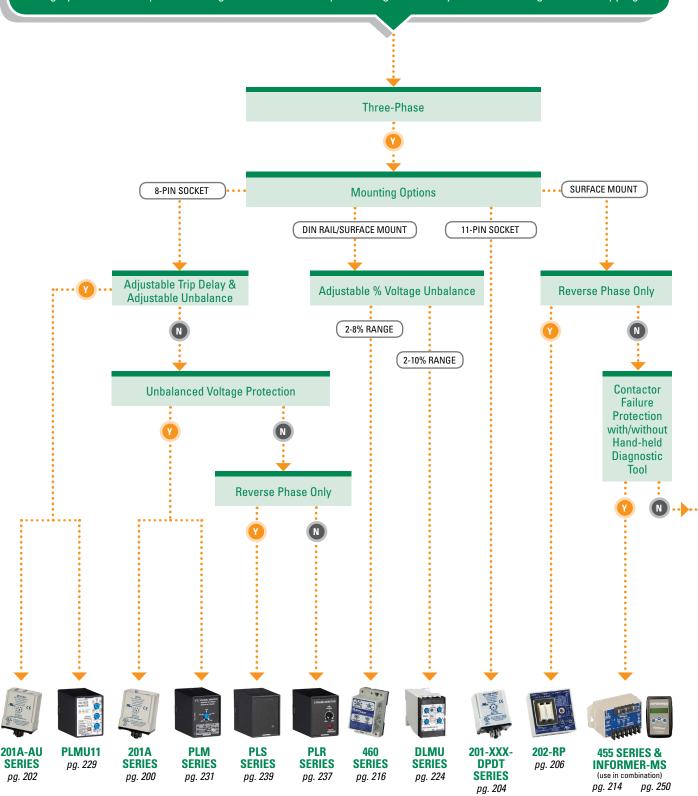
Intrinsically Safe Relays

Intrinsically Safe Pump Controller



VOLTAGE MONITORS (1 of 2)

Highly accurate and precise voltage measurements to provide high sensitivity while minimizing nuisance tripping

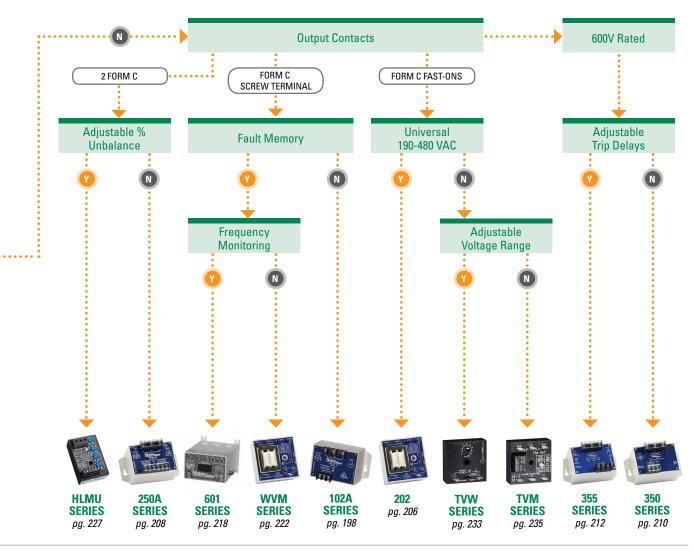


Voltage Monitoring Relays

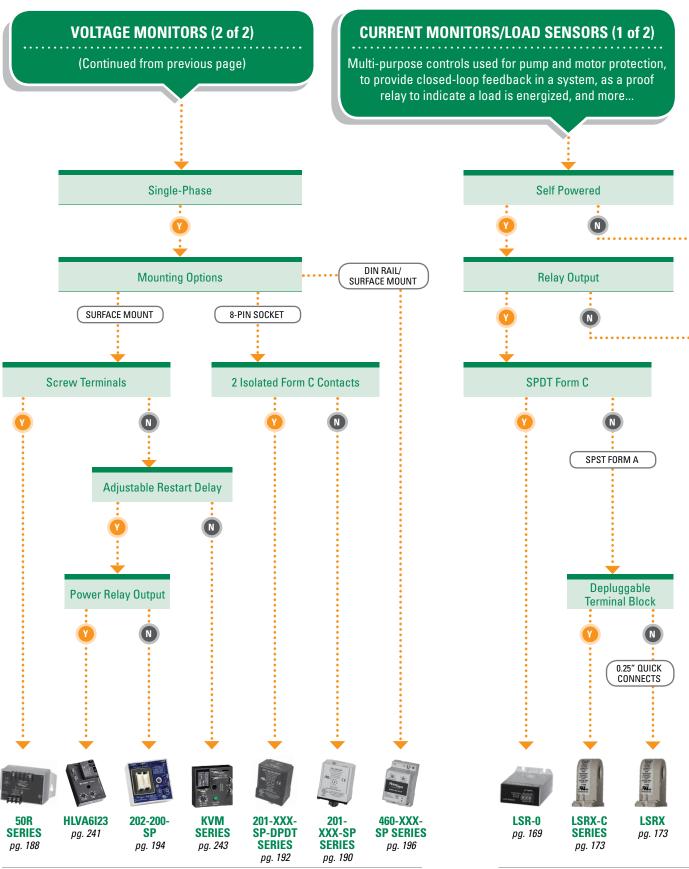


VOLTAGE MONITORS (1 of 2)

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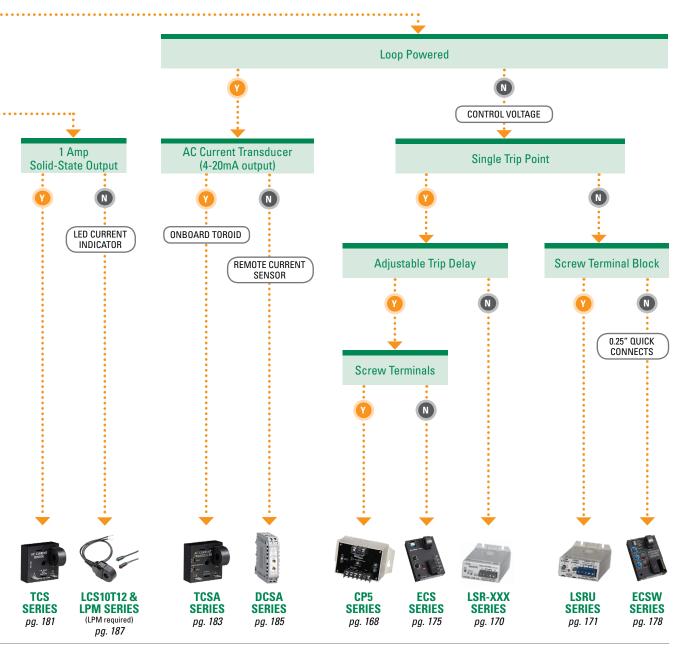
Voltage Monitoring Relays

Current Monitoring/Load Sensing Relays



CURRENT MONITORS/LOAD SENSORS (2 of 2)

(Continued from previous page)



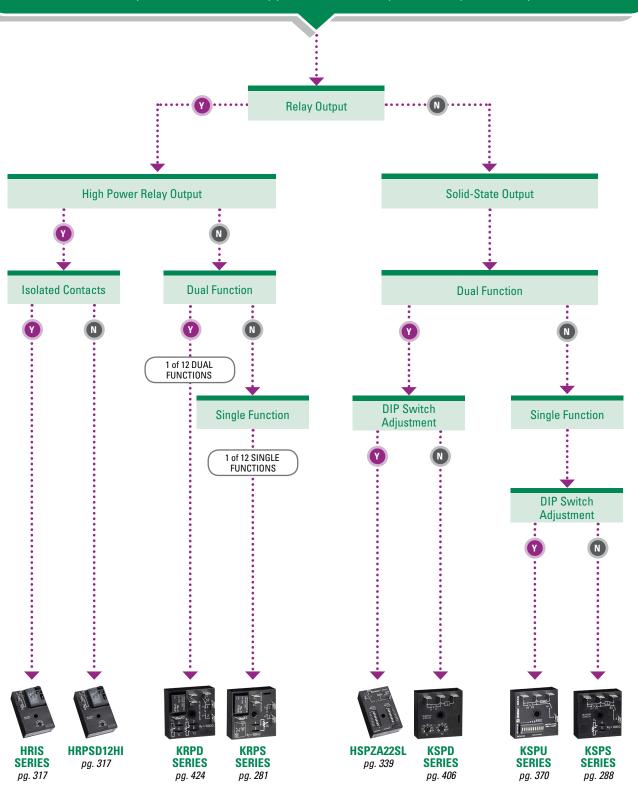
Current Monitoring/Load Sensing Relays





FACTORY PROGRAMMABLE

Microprocessor based circuitry provides excellent repeat accuracy and stability



TIMERS



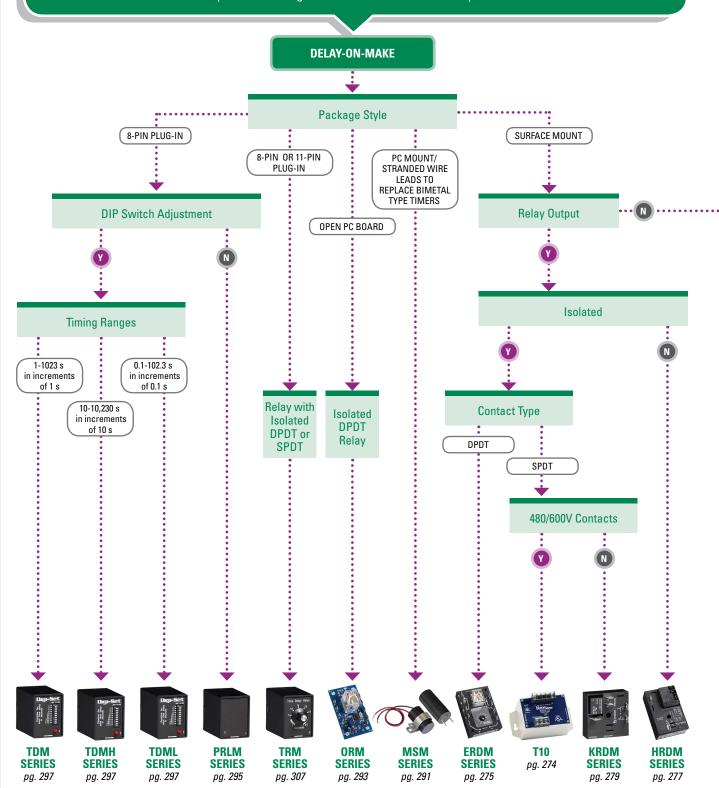
MULTIFUNCTION Universal and fully programmable timing relays Relay Output Timing Functions Available Solid-State Output 21 6 Timing Adjustment ON-BOARD KNOB **DIP SWITCH Termination Style Termination Style** QUICK QUICK CONNECTS CONNECTS TERMINAL BLOCKS TERMINAL BLOCKS **TRDU TRU ASQU** DSQU **ASTU DSTU SERIES SERIES SERIES SERIES SERIES SERIES** pg. 272 pg. 265 pg. 268 pg. 270 pg. 270 pg. 272

Multifunction Timers





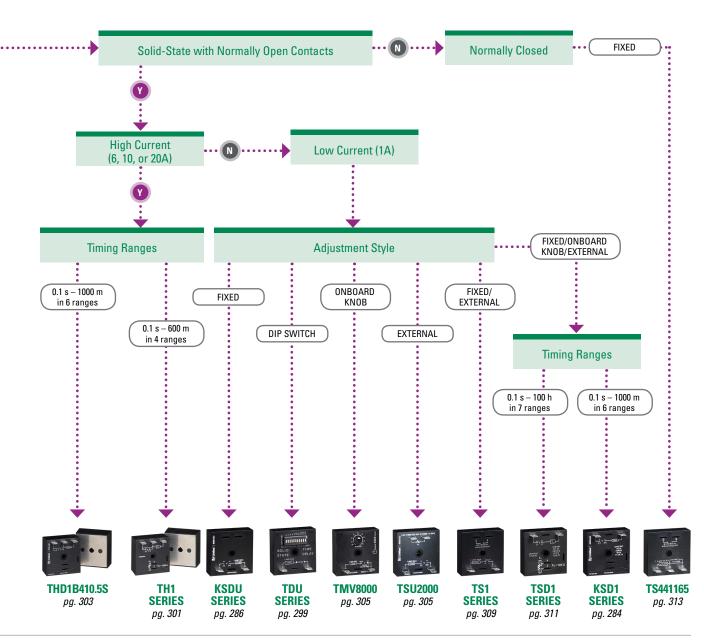
Wide product offering to meet OEM and industrial requirements



Delay-on-Make Timers



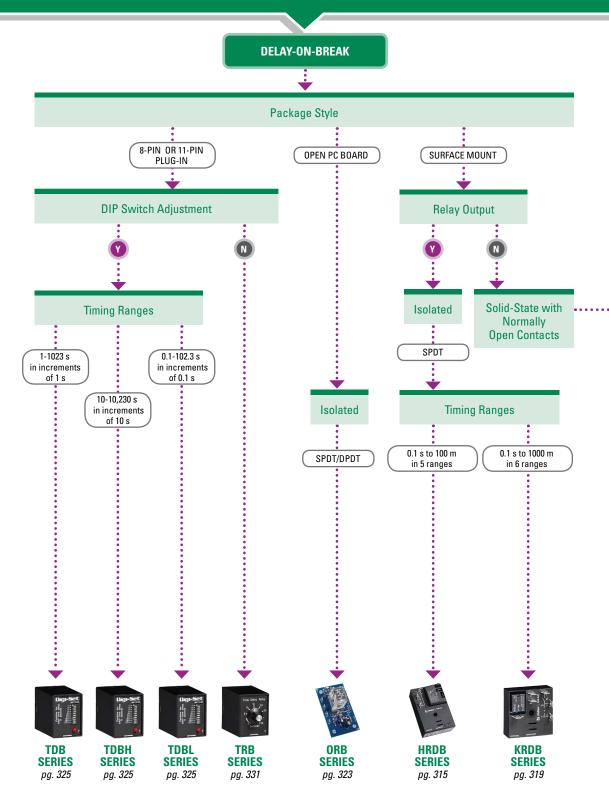
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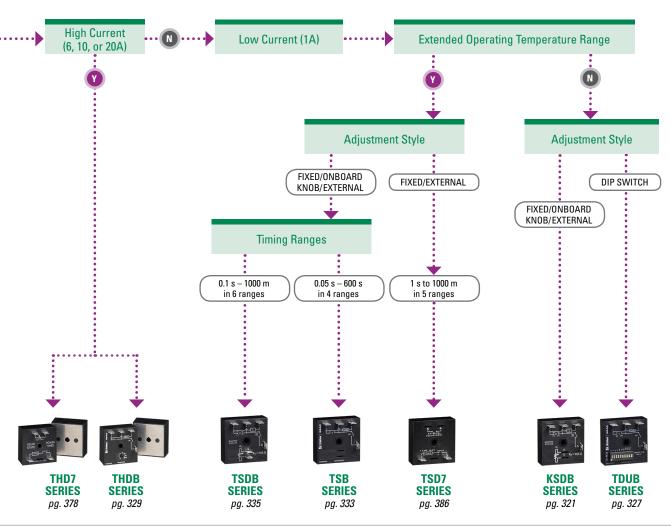
Wide product offering to meet OEM and industrial requirements



Delay-on-Break Timers



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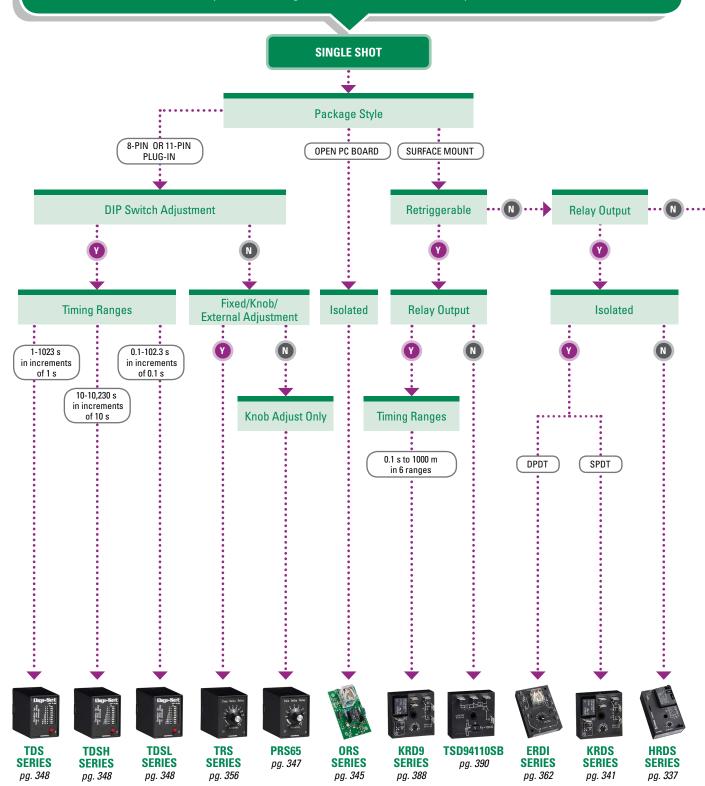


Delay-on-Break Timers



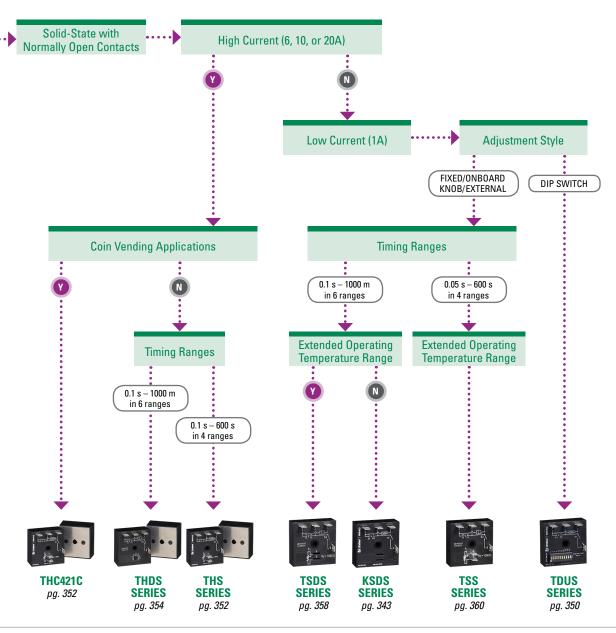


Wide product offering to meet OEM and industrial requirements





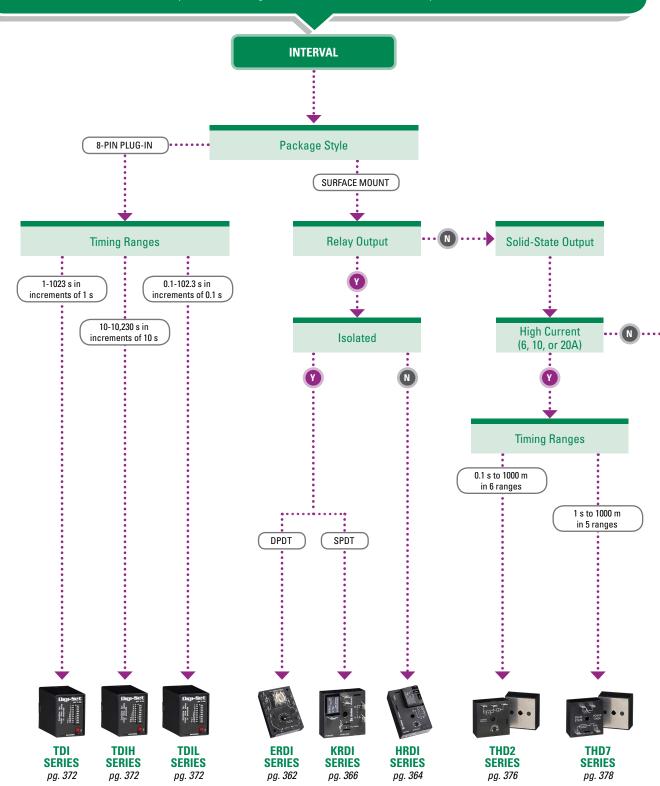
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Wide product offering to meet OEM and industrial requirements



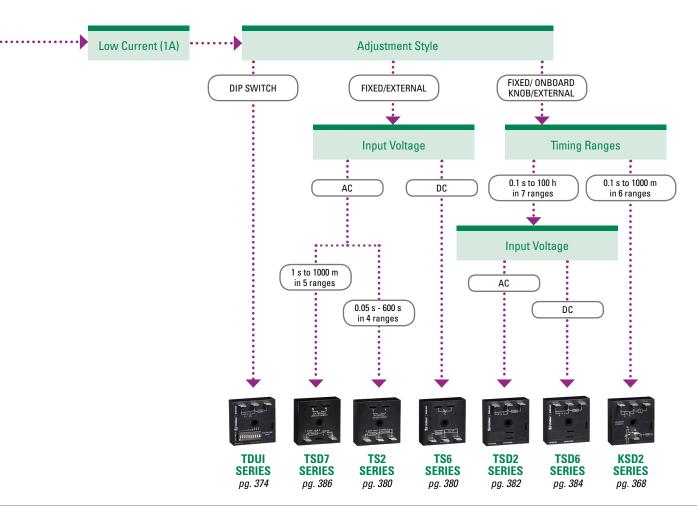
Interval Timers

TIMERS



DEDICATED — SINGLE FUNCTION

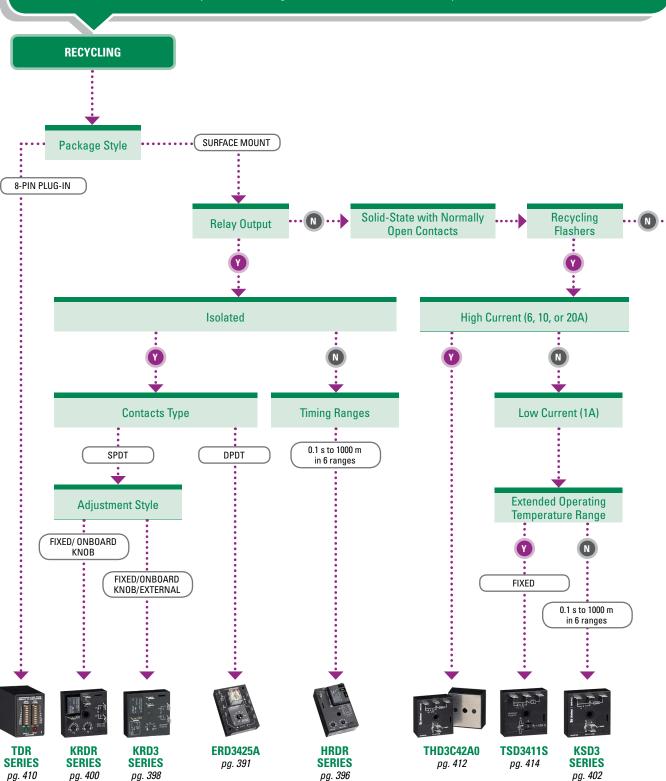
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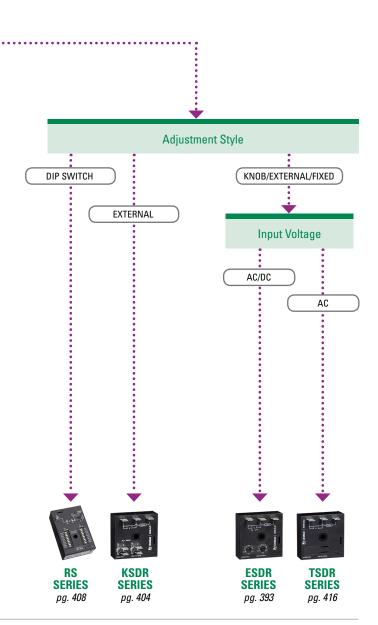
Wide product offering to meet OEM and industrial requirements





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PERCENTAGE



PTHF4900DK

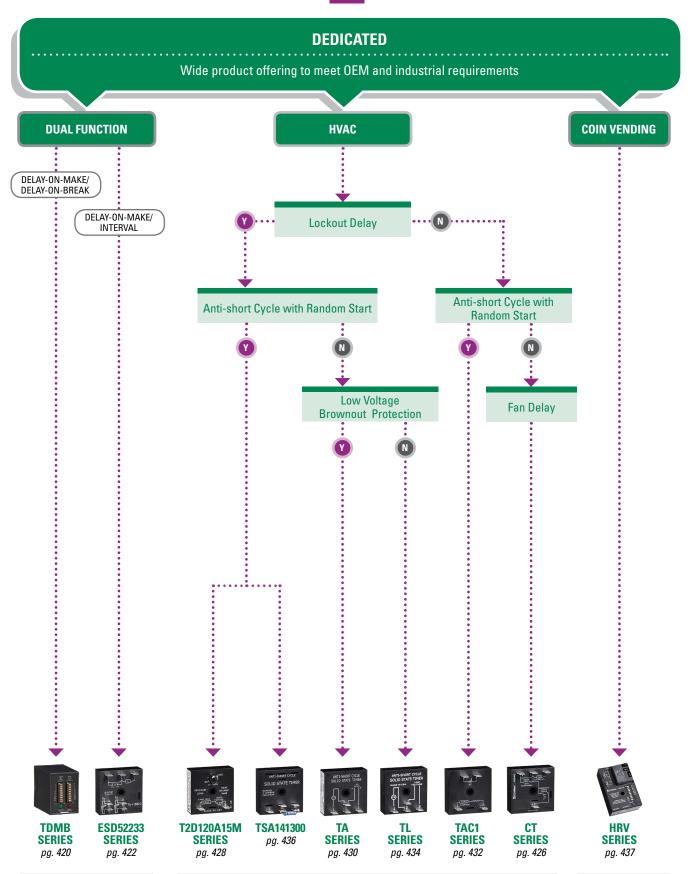
pg. 418

Recycling Timers

Percentage Timers

TIMERS





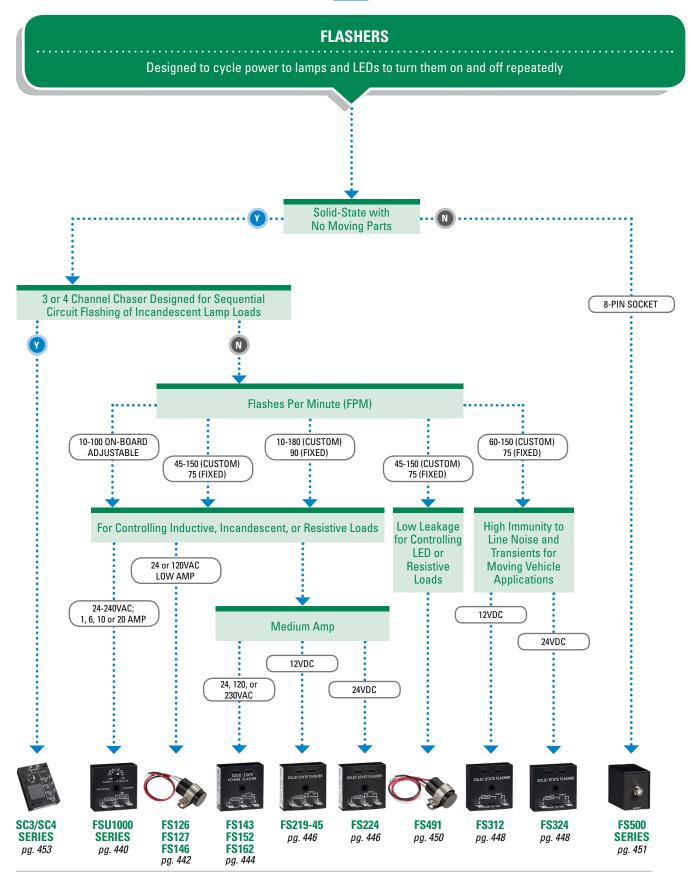
Dedicated Timers - Dual Function

Dedicated Timers - HVAC

Dedicated Timers - Coin Vending

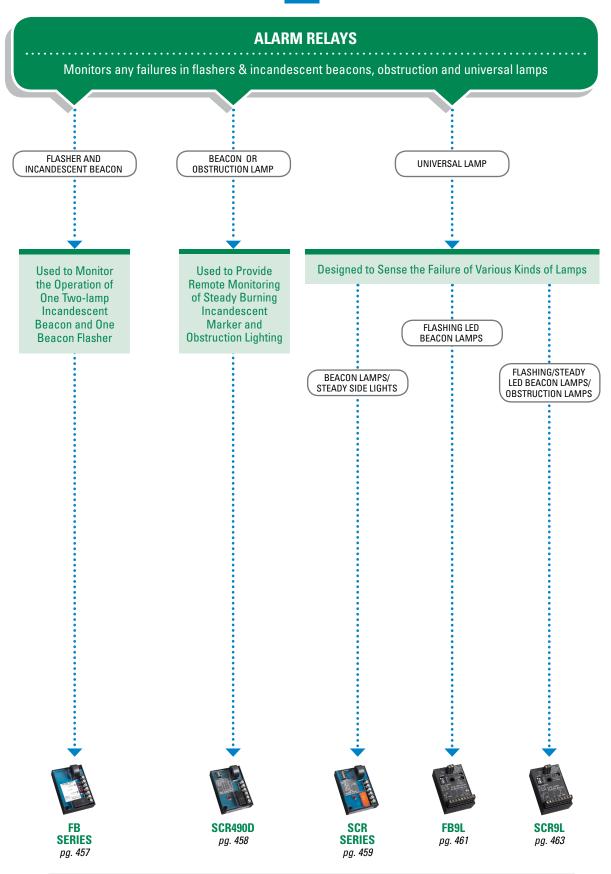
FLASHERS, TOWER & OBSTRUCTION LIGHTING CONTROL





FLASHERS, TOWER & OBSTRUCTION LIGHTING CONTROL





Alarm Relays

FLASHERS, TOWER & OBSTRUCTION LIGHTING CONTROL



BEACON TOWER FLASHERS

Designed for use on communication towers, smoke stacks, cooling towers, tall buildings, bridges, and utility towers

FLASHER (OFF FIRST)

AUXILIARY MODULES

PHOTO CONTROL

Designed to meet the demands of the most vigorous requirement tower & obstruction lighting control. Factory calibrated to meet FAA and FCC specifications



PCR SERIES pg. 465

Beacon Tower Flashers

SERIES

pg. 455

FS SERIES

pg. 455

Photo Control

INDUSTRIAL SUCCESS STORIES



HVACR: Climate of Reliability

A major furnace manufacturer has a reputation for extreme environmental testing of their products before the design makes it to market. They know to trust the reliability of Littelfuse fuse, relay and timer components in their designs to provide the ultimate protection that stands up to rigorous testing. Our OEM customers rely on the Littelfuse reputation for making extreme reliability an everyday practice.



Manufacturing: Assembly of Protection

A brick manufacturing plant in the western United States processes clay into bricks and other building materials for residential and commercial projects. The Littelfuse SB6100 is installed between the MCC and the wet saws on the factory floor as shock protection for their workers. High-speed fuses and the PGR-8800 arc-flash relays are found in their switchgear for advanced circuit protection and improved worker safety from arc-flash incidents.



Oil & Gas: Refined Power Protection

Littelfuse industrial products such as ground-check monitors are used by one of the largest producers of crude oil from oil sands. Our high resistance grounding packages are found on oil and gas drilling rigs to reduce ground-fault troubleshooting time by 90%. Refineries producing 140,000 barrels a day rely on Littelfuse to protect their VFD drives from ground faults. Fracking firms depend on Littelfuse circuit protection for service mains and injection panels. Upstream, midstream, or downstream. No matter where safety is needed, Littelfuse is there to deliver reliable protection.



Mining: Power and Protection Run Deep

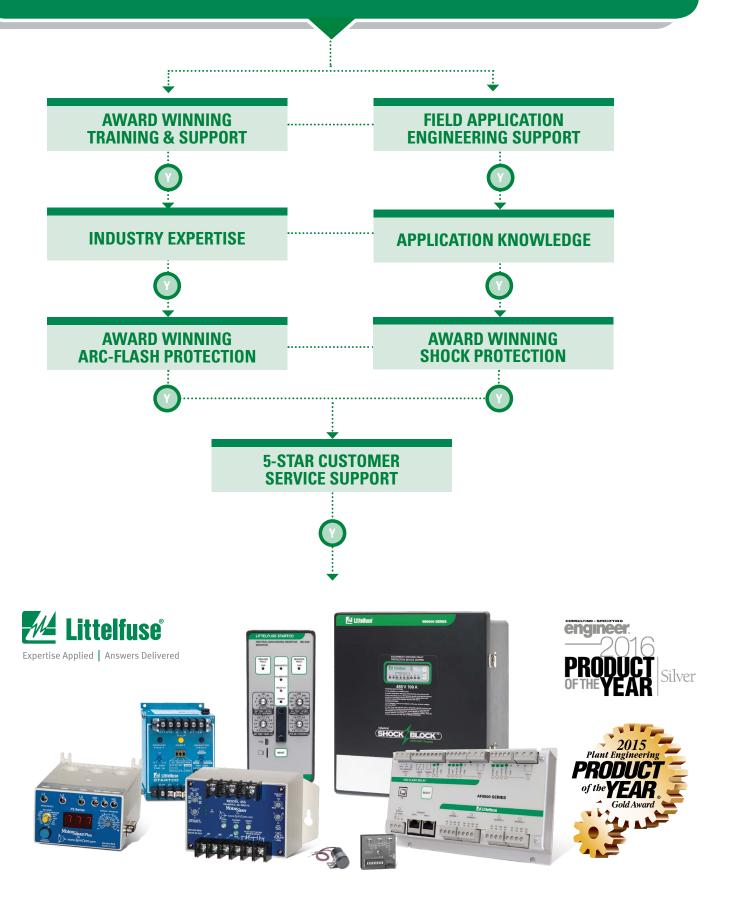
When the world's largest fertilizer company is mining for potash 1000 meters below the surface, they come to Littelfuse because of our reputation for quality and engineering expertise. There is no room for poor quality in mining. Littelfuse products are an integral part of the electrical systems that power and protect critical applications in the harshest underground and above ground mining environments. The world's top mining companies trust Littelfuse for custom power distribution centers, substations, switchgear, mining machine controls and protection relays.



Water/Wastewater: Reclaiming Productivity and Protection

One of the Top 200 Electrical Wholesalers recommends Littelfuse MotorSaver® and PumpSaver relays with confidence because it saved their customer from replacing a 200 hp motor valued at \$30,000. Their customer experienced a phase loss situation and thankfully had a MotorSaver 201A-AU installed on a motor in their treatment plant. The MotorSaver relay was a wise investment that saved the cost of the motor and kept the plant humming.

PARTNER SELECTION GUIDE



PROTECTING CRITICAL INDUSTRIAL APPLICATIONS



CONSTRUCTION



CONTRACTOR



FOOD & BEVERAGE



GENERAL INDUSTRIAL



HVAC/R



MINING



OEM



OIL & GAS



PANEL SHOP



PORTS & MARINA



WATER/WASTEWATER



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