








Vertical Market Product Guide

Water/Wastewater and Irrigation








PROTECT VALUABLE EQUIPMENT

Motors and Pump Controls on lift stations, booster stations, treatment plants, water well pumps and more.
 Motor/Pump Protection on single and three phase water well pumps, center pivot irrigation, aerators.
 Timing Controls on water well pumps, center pivot irrigation.

	Littelfuse Part #, Product Descriptions	Product Images	Benefits	Features	Competitor Part #
Motor Protection	201A-AU, 460 Three-Phase Voltage Monitors	 201A-AU  460	Protects motors from adverse voltage conditions that can cause damage to the motor windings.	201A-AU 8-pin plug-in style. DIN-rail or surface mountable via octal base. 460 Standard surface or DIN-rail mountable. <ul style="list-style-type: none">Protect from phase loss, low & high voltage, voltage unbalance, phase reversal, rapid cycling conditions.Universal range from 190-480VAC & 50/60Hz.Transient protection meets IEEE & IEC standards.Four adjustment pots provide versatility for a variety of applications.Adjustable trip delay & restart delay.	201A-AU Diversified: SLAXXXASA, SUAXXXASA, SLDXXXASA, SLU 100ASA, PRA100AFA Time Mark: 257B, A257B, 258B, A258B, 257BM, A257BM Macromatic: PMPU 460 Diversified: SLBXXXALEA, SLBXXXALER, SLU100ASD, SLA230ALE, SLCXXXALE, SLJXXXALE, SLMXXXASE, SLIXXXALE, SLMXXXASE Time Mark: Series 263, 265, 200, 2642, 2652, 2644, 158, 246 Macromatic: PMDU A-1 Components: EAC-800 Series Agastat: PMA Series Crouzet: UFR2 Series Siemens (Furnas): 470A32*X1 (*=D, E, G, H, R) Watsco: EAC-800 Series RK Electronics: PVC400AR
	MP8000 Bluetooth® Enabled Overload Relay		Smart, universal enhanced overload relay can communicate directly with your smartphone or tablet via Bluetooth®. Monitor and control the relay without opening the panel.	<ul style="list-style-type: none">Stand next to motor—not relay—to monitor motor startupImprove safety: monitor your motor from 30 feet awayReduce set up time with less wiringOne model works on all single or 3-phase motors with operating voltages of 90-690 VAC	In some applications, MP8000 Series can replace some of the GE Multilin, Siemens Simocode, Eaton C441 Motor Insight, Franklin Submonitor, Square-D Tesys-T and Rockwell E-3 products. Contact tech support for details.
	777-KW/HP-P2 Three-Phase Voltage & Current Monitors		Protects Motors from adverse voltage and current conditions that can cause damage to the motor windings. Will also provide underload protection, based on power, which is ideal for pumping applications.	<ul style="list-style-type: none">Protects from overloads (any trip class), underloads (dry running pumps), high/low voltage, phase loss, phase reversal, and unbalanced voltage/currentClass II ground fault detectionOptional communications to SCADA	In some applications, 777-P2 Series can replace some of the GE Multilin, Siemens Simocode, Eaton C441 Motor Insight, Franklin Submonitor, Square-D Tesys-T and Rockwell E-3 products. Contact tech support for details.
Alternating Relays	ALT115-S-SW Duplex Alternating Relay for pumps with one float input		Alternates between 2 pumps, on every demand cycle, to balance the runtime of each.	<ul style="list-style-type: none">Input voltage 95-125VAC (24VAC & 230VAC models available)Compact design saves precious panel space, uses 8 pin base.Used in single high level float applications	Diversified: ARB120ABA, ARA120ABA Time Mark: 261S120, 261ST120 Macromatic: ARP120A6R Crouzet: PJRS110A Motor Protection Electronics: 008-120-10S
	ALT115-X-SW Cross-connected Duplex Alternating Relay for pumps with 2 float inputs		Alternates between 2 pumps, on every demand cycle, to balance the runtime of each.	<ul style="list-style-type: none">Input voltage 95-125VAC (24VAC & 230VAC models available).Compact design saves precious panel space, uses 8 pin base.Cross connected DPDT relay. Solid-state reliability.	Diversified: ARB120ACA, ARA120ACA Time Mark: 261DX120, 261DXT120 Macromatic: ARP120A3R Crouzet: PJRS110A Motor Protection Electronics: 008-120-11S Dayton: 6C052 Multicomp: MCY98 Warrick Controls: AM1A2
	PC-105 5-Channel Multiple Pump Controller & Relay Switch		Operates up to 4 pumps in a wide variety of configurations. Optional high-level, low-level, and out-of-sequence alarms are selectable. Saves panel space, reduces wiring and labor.	<ul style="list-style-type: none">Duplex, duplex SPS, triplex & quadplex pump control.Pump up or pump down functions.DIN- rail or surface mountable.	Diversified: ISO-120-AFN

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Intrinsically Safe Relays	ISS-105-ISO 5-Channel Intrinsically Safe ¹ Relay Switch		This 5 Channel relay switch is designed for applications with switch inputs in hazardous locations.	<ul style="list-style-type: none"> 5-channel intrinsically-safe switch. LEDs provide proof of input and output activation. DIN-rail mounted. 120VAC input, AC Line Frequency 50/60Hz. For a Single-Channel version use our ISS-100 or ISS-101. 	ISS-100 Single Channel Model Diversified: ISO-120-AFN ISS-105-ISO & ISS-101 Contact tech support for competitor cross references.
	ISS-105 5-Channel Intrinsically Safe Pump Controller & Relay Switch		Operates up to 4 pumps in a wide variety of configurations such as duplex, triplex, or quadplex, with selectable alarm output options.	<ul style="list-style-type: none"> DIN-rail or surface mountable. Finger safe terminals. Duplex, duplex SPS, triplex & quadplex pump control. Pump disable switches, pump up or pump down control. 	Diversified: ARM-2003, ARM-2010, ARM-2011, ARM-120-AFE, ARM-120-AFEP, ARM-120-AAE, ARM-120-ABE, RM-120-ACE, ARM-120-ADE, ARM-120-AGE, ARM-120-AHE, ARM-120-AJE.
The ISS-105 Series is designed for applications with switch inputs in hazardous locations. Prevents exposure for arc or spark to occur by limiting electrical energy available in explosive atmosphere (e.g. flammable gas in a waste plant)					
Seal-Leak Detectors	201-100-SLD Seal-Leak Detector		Detects a seal failure on submersible pumps to prevent damage.	<ul style="list-style-type: none"> LED Status Indicator. 4.7k to 100kΩ adjustable sensitivity 8-pin plug-in style. DIN-rail/surface mountable via octal base Use 460-15-100-SLD for a surface or DIN-rail mount application. 	Time Mark: 409 Macromatic: SFP120A100 Diversified: SPM120AAA100K
	PC-102CICI-DL Dual-Channel Seal-Leak Detector		Designed for use with two submersible pumps. Detects a seal failure in the pump to prevent damage.	<ul style="list-style-type: none"> Two Form C isolated contacts with LED Status Indicator. 4.7k to 100kΩ adjustable sensitivity DIN-rail or surface mountable 	Macromatic: SFP120C100 (8-pin plug in) Diversified: SPM120ABA100K (8-pin plug in) Time Mark: 4092-120 (8-pin plug in)
Flashers	FS126 & FS126RC Pump Control Panel Flasher		Used to flash an alarm indication light and/or pulse an audible alarm when a high level condition occurs.	<ul style="list-style-type: none"> Fixed flash rate 75 FPM. 1A AC, fullwave output. Input voltage 120VAC Compact size. CE & CSA Approved; UL recognized. 	FS100 Series (i.e. FS126, FS126RC) can replace multiple flashers from Airotronics TEKR, Infitec TFS, Artisan 4210, Amperite DF & Diversified's ETN Series. Contact tech support for details.
The FS126 is designed for incandescent and resistive loads like lamps or small heating elements. But, along with incandescent and resistive loads the FS126RC can also be used with inductive loads like electromechanical relays, contactors, small motors, and transformers.					
Timers	KRDM421 Delay-on-Make Timer ² KRDB421 Delay-on-Break Timer ³		Used to provide a debounce delay (for turbulence) and prevent rapid cycling of a pump, or to eliminate contactor chattering which can be caused by a bad float switch. Used to extend the runtime of a pump, if necessary, after demand has been met.	<ul style="list-style-type: none"> On board knob to adjust, delays from 1s - 100s. 10A, SPDT output contacts, 2" x 2" panel mount. Input voltages 120VAC, AC Line Frequency 50/60Hz Solid-state timing circuit provides excellent repeat accuracy and stability Fully encapsulated to protect against shock, vibration, humidity, etc. 	KRDM421 Macromatic: THR-10262-31 Airotronics: TGC10100A1 Ametek NCC: Q1T-00060-341 KRDB421 Macromatic: THR-11662-31T Airotronics: TGML10100A1 Diversified & Time Mark: Several (Contact tech support)
UL Class Fuses/Blocks	FLNR_ID, FLSR_ID, LLNRK, LLSRK_ID Series UL Class RK5/RK1 Fuses JTD_ID Series UL Class J Fuse CCMR Series UL Class CC Fuse	 Class RK5/RK1 Class CC	UL Listed fuses offer time-delay to allow for motor startups, yet provide optimal short circuit and overload protection for critical motor and pump applications.	<ul style="list-style-type: none"> Class R fuses offered in 250VAC (FLNR_ID/LLNRK) and 600VAC (FLSR_ID/LLSRK_ID) options up to 600A. Class J fuses provide similar protection to Class R but in smaller physical case sizes. Class CC fuses offer smallest 600VAC protection available up to 30A size. Extremely current-limiting to help minimize potential damage to equipment in event of short-circuit. 	FLNR_ID / FLSR_ID / LLNRK / LLSRK_ID Eaton Bussmann: FRNR / FRSR / LPNRK(SP) / LPSRK(SP) Mersen: TRNR / TRSR / A2DR / A6DR JTD_ID Eaton Bussmann: LPJ(SP) Mersen: AJT CCMR Eaton Bussmann: LPCC Mersen: ATDR

¹ Intrinsically Safe: Specially sealed relay switch for hazardous location to limit the available electrical energy to nonincendive levels so that sparks cannot occur from short circuit or failures which could cause an explosive atmosphere (i.e. flammable gas in a waste plant) to ignite.

² Delay-on-Make Timer: Upon application of input voltage, the time delay (t) begins. At the end of the time delay (t), the output is energized. Input voltage must be removed to reset the time delay relay & de-energize the output.

³ Delay-on-Break Timer: Once input voltage is applied, the time delay relay is ready to be activated. When the relay is activated, the output is energized. Then when the relay is deactivated, the time delay begins and the he output remains energized during timing. At the end of the time delay, the output becomes de-energized.

This tool is intended to be used as a guide only. The user will need to verify the part is appropriate for the application.

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