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Current Transformers (CTs)

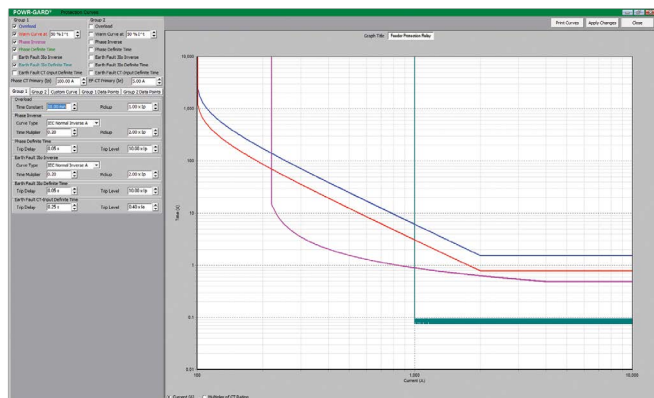
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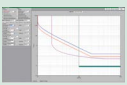
For More Information...
on Retrofits, Panel Mount Adapters
and more accessories, visit
[Littelfuse.com/relayaccessories](https://www.littelfuse.com/relayaccessories)

SOFTWARE



Protection Relays and Alarm Systems are supplied with free software. The software simplifies programming and allows the user to save setpoint files and reuse them for similar applications.

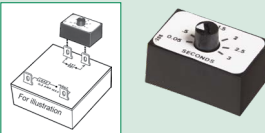
The software gives the ability to change parameters and see the impact on the protection time current curves. It also allows another device curve to be entered to view simple coordination.

SOFTWARE		
Product	Features	Accessory For
Solutions-M Relay Interface Software 	Provides the ability to configure and monitor Modbus networks. The features include data logging, real-time data monitoring and fault and event monitoring. Devices can be added and configured manually or the software can scan an existing network to identify devices which can be used as is or reconfigured by the user. Setpoints for each device can be uploaded and downloaded for easy monitoring and reconfiguration.	RS485 TCP/IP networks MotorSaver and PumpSaver Devices
SE-COMM-RIS Relay Interface Software 	Provides remote access to metering, control, data logging, and programming features. Setpoints can be accessed individually, downloaded as a file, and protective curves can be plotted. Metered data can be observed or logged for later study.	FPU-32 MPS FPS MPU-32
SE-FLASH Firmware Update Utility 	Used to update relay firmware to add new features.	FPU-32 MPS EL731 FPS MPU-32
SE-MON330 Relay Interface Software 	Used to receive data from the SE-330. It displays relay set points and measured values, and features data logging of information at a selectable interval.	SE-330 SE-330HV SE-330AU
VMPU Virtual Motor Protection Relay 	Allows the user to scroll through the MPU-32 Motor Protection Relay menu.	MPU-32
VMPS Virtual Motor Protection System 	Allows the user to scroll through the MPS Motor Protection System menu.	MPS
VFPU Virtual Feeder Protection Relay 	Allows the user to scroll through the FPU-32 Feeder Protection Relay menu.	FPU-32
MPU-32 Tutorial MPU-32 Online Self-Training Tutorial 	Online Self-Training tutorial for MPU-32 programming.	MPU-32

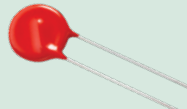
ELECTRICAL

ELECTRICAL ACCESSORIES																																		
Product	Features	Accessory For																																
PGA-1100.0010 Diode Logic Unit 	Used in installations with more than one breaker and more than one Littelfuse Arc-Flash Relay. It separates the trip paths, so the breakers can be tripped independently from each other. For full datasheet, see pg. 81	PGR-8800 D0920 AF0500 D1000 AF0100																																
P1004-XX-(X) Versa-Pot  <table><tr><th>PART NUMBER</th><th>WITH WIRE LEADS</th><th>VALUE</th></tr><tr><td>P1004-199</td><td></td><td>50 kΩ</td></tr><tr><td>P1004-174</td><td></td><td>100 kΩ</td></tr><tr><td>P1004-175</td><td></td><td>200 kΩ</td></tr><tr><td>P1004-95</td><td>P1004-95-X</td><td>100 kΩ</td></tr><tr><td>P1004-17</td><td></td><td>500 kΩ</td></tr><tr><td>P1004-16</td><td>P1004-16-X</td><td>1M Ω</td></tr><tr><td>P1004-15</td><td></td><td>1.5M Ω</td></tr><tr><td>P1004-14</td><td></td><td>2M Ω</td></tr><tr><td>P1004-12</td><td>P1004-12-X</td><td>3M Ω</td></tr><tr><td>P1004-13</td><td></td><td>5M Ω</td></tr></table> Specifications Rating0.25 W at 55 °C TaperLinear Shaft Rotation300° ±5° Tolerance±10 % Shaft Diameter0.25 in	PART NUMBER	WITH WIRE LEADS	VALUE	P1004-199		50 kΩ	P1004-174		100 kΩ	P1004-175		200 kΩ	P1004-95	P1004-95-X	100 kΩ	P1004-17		500 kΩ	P1004-16	P1004-16-X	1M Ω	P1004-15		1.5M Ω	P1004-14		2M Ω	P1004-12	P1004-12-X	3M Ω	P1004-13		5M Ω	P1004-95 & P1004-95-X: Consult individual datasheet for compatibility P1004-174 & P1004-175: PHS Series P1004-16 & P1004-16-X: Series: ERDM ERDI ERD3 TRB TRM TRS TS1 TS6 P1004-15, P1004-14, P1004-13, P1004-12, & P1004-12-X: Series: ORB ORM ORS TAC1 THD7 TRB TRM TRS TS1 TS2 TS4 TS6 TSD7 TSU2000
PART NUMBER	WITH WIRE LEADS	VALUE																																
P1004-199		50 kΩ																																
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P1004-15		1.5M Ω																																
P1004-14		2M Ω																																
P1004-12	P1004-12-X	3M Ω																																
P1004-13		5M Ω																																
P0700-7 Versa-Knob 	Versa-Knob is designed for 0.25 in (6.35 mm) shaft of Versa-Pot. Semi-gloss industrial black finish.	P1004-XX-(X)																																
P0700-8 Lock Shaft 	Fits 0.25 in (6.35 mm) potentiometer shafts. Locks by tightening nut onto four tapered/slotted fingers. Pressure on the shaft locks control against mis-adjustment. Nickel plated brass finish.	P1004-XX-(X)																																
P1004-9 P1004-10 P1004-31 Mini-Pot  <table><tr><th>PART NUMBER</th><th>VALUE</th></tr><tr><td>P1004-9</td><td>500kΩ</td></tr><tr><td>P1004-10</td><td>1MΩ</td></tr><tr><td>P1004-31</td><td>3MΩ</td></tr></table> Specifications Rating0.25 W at 55 °C TaperLinear Shaft Rotation300° ±5° Tolerance±10 % Shaft Diameter0.125 in (3.2 mm)	PART NUMBER	VALUE	P1004-9	500kΩ	P1004-10	1MΩ	P1004-31	3MΩ	A high quality, industrial potentiometer for remote time delay adjustment. The shaft extends through the timer's center hole for easy panel mounting. Use mini-mount bracket for standup mounting of timer. Adjustment by screwdriver or mini-knob. May be ordered with two 3 in (7.6 cm) wires soldered to pot (clockwise increase) and female quick connect terminals on other ends by adding suffix -X to end of part number.	Series: TAC1 TS4 TSU2000 TS1 TS6 TS2 TSD7																								
PART NUMBER	VALUE																																	
P1004-9	500kΩ																																	
P1004-10	1MΩ																																	
P1004-31	3MΩ																																	
P0700-21 Mini-Knob 	Mini-Knob is designed for 0.125 in (3.2 mm) shaft of Mini-Pot. Semi-gloss industrial black finish.	P1004-9 P1004-10 P1004-31																																

ELECTRICAL

ELECTRICAL ACCESSORIES																																																																										
Product		Features		Accessory For																																																																						
P0200-19 Heat Sink Compound 2 grams P0200-20 Heat Sink Compound 100 grams 		Single package/container of heat sink compound consisting of primarily zinc oxide and having a 12 month shelf life (EOD date on the label). P0200-19 mounts one high current, plated 2 x 2 in (50.8 x 50.8 mm) timer or flasher. P0200-20 mounts 50+ units.		Any 2 x 2 in (50.8 x 50.8 mm) plated timer or flasher.																																																																						
P1015-18 Quick Connect Screw Adaptor 		Screw adaptor terminal designed for use with all modules with 0.25 in (6.35 mm) male quick connect terminals. Screw terminal accepts ring or spade terminals.		Modules with 0.25 in (6.35 mm) male quick connect terminals. Consult the individual datasheet to determine compatibility.																																																																						
P1015-13 P1015-64 P1015-14 Female Quick Connect Terminals 		These 0.25 in (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.		Consult individual datasheet to determine compatibility.																																																																						
P0400 Time Adjustment Dials 		Dials for use with remote Versa-Pot and panel mounted Mini-Pot. Reverse screen printed on clear plastic to avoid damage to printed image.		P1004-9 P1004-13 P1004-95 P1004-10 P1004-16 P1004-12 P1004-31																																																																						
<table><thead><tr><th>PART NUMBER</th><th>RANGE</th><th>INCREMENTS</th></tr></thead><tbody><tr><td>P0400-12</td><td>0.05 - 1 s</td><td>0.1 s</td></tr><tr><td>P0400-86</td><td>0.1 - 10 m</td><td>1 m</td></tr><tr><td>P0400-82</td><td>0.1 - 10 s</td><td>1 s</td></tr><tr><td>P0400-17</td><td>1 - 30 s</td><td>5 s</td></tr><tr><td>P0400-83</td><td>1 - 60 s</td><td>10 s</td></tr><tr><td>P0400-27</td><td>0 - 10</td><td>MRD*</td></tr></tbody></table> * Multiplier Reference Dial		PART NUMBER	RANGE	INCREMENTS	P0400-12	0.05 - 1 s	0.1 s	P0400-86	0.1 - 10 m	1 m	P0400-82	0.1 - 10 s	1 s	P0400-17	1 - 30 s	5 s	P0400-83	1 - 60 s	10 s	P0400-27	0 - 10	MRD*																																																				
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VTPXX VTP 		The VTP Series mounts on modules with in-line adjustment terminals. Rated at 0.25 W at 55 °C. Available in resistance values from 5 kΩ to 5 MΩ																																																																								
<table><thead><tr><th>PART NUMBER</th><th>R_T VALUE</th><th>RANGE</th></tr></thead><tbody><tr><td>VTP0E</td><td>250 kΩ</td><td>0.5–20s</td></tr><tr><td>VTP1B</td><td>0.5 MΩ</td><td>0.05–3s</td></tr><tr><td>VTP1C</td><td>0.5 MΩ</td><td>0.1–10s</td></tr><tr><td>VTP1D</td><td>0.5 MΩ</td><td>0.5–10s</td></tr><tr><td>VTP2A</td><td>1 MΩ</td><td>0.05–1s</td></tr><tr><td>VTP2C</td><td>1 MΩ</td><td>0.1–10s</td></tr><tr><td>VTP2E</td><td>1 MΩ</td><td>0.5–20s</td></tr><tr><td>VTP2F</td><td>1 MΩ</td><td>0.5–60s</td></tr><tr><td>VTP2J</td><td>1 MΩ</td><td>2–180s</td></tr><tr><td>VTP2P</td><td>1 MΩ</td><td>1–100m</td></tr><tr><td>VTP3B</td><td>2 MΩ</td><td>0.05–3s</td></tr></tbody></table>		PART NUMBER	R _T VALUE	RANGE	VTP0E	250 kΩ	0.5–20s	VTP1B	0.5 MΩ	0.05–3s	VTP1C	0.5 MΩ	0.1–10s	VTP1D	0.5 MΩ	0.5–10s	VTP2A	1 MΩ	0.05–1s	VTP2C	1 MΩ	0.1–10s	VTP2E	1 MΩ	0.5–20s	VTP2F	1 MΩ	0.5–60s	VTP2J	1 MΩ	2–180s	VTP2P	1 MΩ	1–100m	VTP3B	2 MΩ	0.05–3s	<table><thead><tr><th>PART NUMBER</th><th>R_T VALUE</th><th>RANGE</th></tr></thead><tbody><tr><td>VTP3L</td><td>2 MΩ</td><td>0.1–4 m</td></tr><tr><td>VTP4B</td><td>3 MΩ</td><td>0.05–3 s</td></tr><tr><td>VTP4F</td><td>3 MΩ</td><td>0.5–60 s</td></tr><tr><td>VTP4J</td><td>3 MΩ</td><td>2–180 s</td></tr><tr><td>VTP4P</td><td>3 MΩ</td><td>1–100 m</td></tr><tr><td>VTP5G</td><td>5 MΩ</td><td>1–100 s</td></tr><tr><td>VTP5K</td><td>5 MΩ</td><td>10–1000 s</td></tr><tr><td>VTP5N</td><td>5 MΩ</td><td>0.1–10 m</td></tr><tr><td>VTP5P</td><td>5 MΩ</td><td>1–100 m</td></tr><tr><td>VTPDF</td><td>50 kΩ</td><td>0.5–60 s</td></tr></tbody></table>		PART NUMBER	R _T VALUE	RANGE	VTP3L	2 MΩ	0.1–4 m	VTP4B	3 MΩ	0.05–3 s	VTP4F	3 MΩ	0.5–60 s	VTP4J	3 MΩ	2–180 s	VTP4P	3 MΩ	1–100 m	VTP5G	5 MΩ	1–100 s	VTP5K	5 MΩ	10–1000 s	VTP5N	5 MΩ	0.1–10 m	VTP5P	5 MΩ	1–100 m	VTPDF	50 kΩ	0.5–60 s	Series: TAC1 TS2 THD7 TS4 THDM TS6 TS1 TSD7	
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ELECTRICAL

ELECTRICAL ACCESSORIES																	
Product			Features				Accessory For										
LPSM003ZXID Indicating Fuse Holder LPSM003Z Non-indicating Fuse Holder 			Littelfuse POWR-SAFE Dead Front holders provide optimum protection to personnel for Class CC and Midget-Style fuses. 600 V ac/dc				Class CC and Midget-Style fuses										
OKLK002.T Midget Fuse (2 Amp) 			10 x 38 fast acting, high-interrupting capacity, current-limiting type fuse. 600 V ac/500 V dc				FH3P LPSM003ZXID LPSM003Z										
VRM6048 Voltage Monitor Accessory Module 			The VRM6048 accessory module allows the voltage monitor to monitor a 3-phase 550 to 600 V ac Line. Adjustment If the measured line voltage is 575 V ac, connect as shown and adjust/select the voltage monitor for 460 V ac operation. Package Molded housing with encapsulated circuitry Mounting Surface mount with one #10 (M5 x 0.8) plastic screw. May be DIN-rail mounted using P1023-20 Adaptor. Termination Screw terminals with captive wire clamps for up to No.12 AWG wire. Operating Storage Humidity Voltage <table><tr><td>Input</td><td>Output*</td></tr><tr><td>600 V ac</td><td>480 V ac</td></tr><tr><td>575 V ac</td><td>460 V ac</td></tr><tr><td>550 V ac</td><td>440 V ac</td></tr></table> *The VRM6048 must be connected as shown. If the voltage monitor is disconnected, the VRM output voltage equals the input voltage. Series: PLM PLR PLS TVM TVW (manufactured after December 2003)				Input	Output*	600 V ac	480 V ac	575 V ac	460 V ac	550 V ac	440 V ac			
Input	Output*																
600 V ac	480 V ac																
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V150LA10AP LA Varistor 			The V150LA10AP, a transient voltage surge suppressor, is a radial leaded varistors (MOVs) that is designed to be operated continuously across ac power lines. This UL Recognized varistor requires very little mounting space.				Any of our products that operate below 150 V ac or 200 V dc.										
PRODUCT	MAX. OPERATING VOLTAGE		MAX IMPULSE CURRENT 80.20 μs CURRENT WAVE (A)	VARISTOR VOLTAGE AT 1MA DC TEST CURRENT		PEAK CLAMPING VOLTAGE WITH 80.20 μs WAVE		CAPACITANCE	DISC DIAMETER SIZE (MM)								
	AC (V)	DC (V)		MIN. (V)	MAX. (V)	V _C (V)	1 _{PK} (A)										
V150LA10AP	150	200	4500	216	264	395	50	800	14								

GR MODULES, HIGH-TENSION COUPLERS, & RELAY TESTERS

GROUND-REFERENCE MODULES		
Product	Features	Accessory For
SE-GRM024 Ground Reference Module 	Connects the SE-601 relay to an ungrounded 24 V dc bus.	SE-601
SE-GRM048 Ground Reference Module 	Connects the SE-601 relay to an ungrounded 48 V dc bus.	SE-601
SE-GRM125 Ground Reference Module 	Connects the SE-601 relay to an ungrounded 125 V dc bus.	SE-601
SE-GRM250 Ground Reference Module 	Connects the SE-601 relay to an ungrounded 250 V dc bus.	SE-601
SE-GRM500 Ground Reference Module 	Connects the SE-601 relay to an ungrounded 500 V dc bus.	SE-601
SE-GRM780 Ground Reference Module 	Connects the SE-601 relay to an ungrounded 780 V dc bus.	SE-601
SE-GRM1000 Ground Reference Module 	Connects the SE-601 relay to an ungrounded 1000 V dc bus.	SE-601

HIGH-TENSION COUPLERS		
Product	Features	Accessory For
PGH-5000 High Tension Couplers 	Allows 5 kV systems to be connected to relay.	PGR-6100 PGR-3200
PGH-6000 High Tension Couplers 	Allows 6 kV systems to be connected to relay.	PGR-6100 PGR-3200

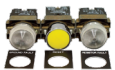
PROTECTION RELAY TESTERS		
Product	Features	Accessory For
SE-100T  Ground-Fault Relay Tester 	Tests the current pickup level ground-fault protection. Tests the entire ground-fault circuit.	Any Relay on Substations, MCCs, Central Distribution Panels, Switchboards, and Test Benches
SE-400 Ground-Fault-Relay Test Unit 	Tests the current pickup level, time delay and coordination of ground-fault protection. Tests the entire ground-fault circuit.	Any Relay on Substations, MCCs, Central Distribution Panels, Switchboards, and Test Benches

INPUT MODULES & METERS

INPUT MODULES		
Product	Features	Accessory For
MPS-RTD Temperature Input Module 	Provides 8 programmable inputs to connect Pt100, Ni100, Ni120, and Cu10 RTDs.	MPU-32 MPS
MPS-DIF Differential Current Module 	Adds motor differential protection, compatible with core balance and summation current transformer connections.	MPU-32 MPS
MPU-CIM Current Input Module 	Interface between current transformers and MPU-32 or FPU-32 series relays. Reduces potential for open CT hazard.	MPU-32 FPU-32
PGA-LS10 Point Sensor 	Line-of-sight light sensor detects an arc as small as 3 kA within a 2 m half-sphere. Local LED continually displays sensor health or trip state.	PGR-8800 AF0500 AF0100
PGA-LS20 Fiber-Optic Sensor 	Used to detect light and coordinate with current detection to eliminate nuisance tripping. 8 m (26.2 ft) active; 10 m (32.8 ft) total.	PGR-8800 AF0500 AF0100
PGA-LS30 Fiber-Optic Sensor 	Used to detect light and coordinate with current detection to eliminate nuisance tripping. 18 m (59 ft) active; 20 m (66 ft) total	PGR-8800 AF0500 AF0100
A0200/A0300 Light Sensor 	Line-of-sight light sensor detects an arc as small as 3 kA within a 2 m half-sphere. Available in both 180° and 360°.	D0920
A0220 Arc Detecting Point Sensor 	Line-of-sight light sensor detects an arc as small as 3 kA within a 2 m half-sphere. Available with 10 or 15 m cable. For full datasheet and ordering information, see pg. 80	PGR-8800 AF0500 AF0100 D0920 D1000
LCSC10T12 Toroidal Current Sensor 	Remote monitoring of currents up to 50 A. Inner diameter 9.14 mm (0.36")	DCSA Series

REMOTE INDICATION & METERS		
Product	Features	Accessory For
RK-105 Remote Indication and Reset Assembly   	Panel-mounted remote indication and reset with NEMA 1 rating.	SE-105 SE-107
RK-105I Remote Indication Assembly   	Panel-mounted remote indication with NEMA 1 rating.	SE-105 SE-107
RK-102 Industrial Remote Indication and Reset Kit   	Panel-mounted remote indication and reset, standard 22 mm mounting, with NEMA 4 and NEMA 13 rating.	SE-105 SE-107
RK-132 Industrial Remote Indication and Reset Kit   	Panel-mounted remote indication and reset, standard 22 mm mounting, with NEMA 4 and NEMA 13 rating.	SE-134C SE-135 SE-145
RK-325 Remote Indication and Reset Assembly   	Panel-mounted remote indication and reset with NEMA 1 rating.	SE-325

METERS & SENSING RESISTORS

REMOTE INDICATION & METERS		
Product	Features	Accessory For
RK-325I Remote Indication Assembly 	Panel-mounted remote indication with NEMA 1 rating.	SE-325
RK-302 Remote Indication and Reset Kit 	Panel-mounted remote indication and reset, standard 22 mm mounting with NEMA 4 and NEMA 13 rating.	SE-325
RK-332 Remote Indication and Reset Kit 	Panel-mounted remote indication and reset, standard 22 mm mounting with NEMA 4 and NEMA 13 rating.	SE-330 SE-330HV SE-330AU
PGA-0500 Analog % Current Meter 	Panel-mounted analog meter displays ground-fault current as a percentage of the set point.	SE-601 PGR-4300 PGR-6100 SE-701 SE-703 SE-704
PGA-0510 Analog Ohm Meter 	Panel-mounted analog ohmmeter displays insulation resistance from 0 Ω to infinity.	PGR-3200 PGR-6101-120 PGR-6100

SENSING RESISTORS		
Product	Features	Accessory For
ER-600VC (PGE-600V) Sensing Resistor 	Used on systems up to 1 kV. (Continuous duty)	SE-330 SE-330AU SE-325
SE-MRE-600 Enclosure 	Used in outdoor enclosures. (ER-600 VC ordered separately)	ER-600VC
ER-5KV (PGE-05KV) Sensing Resistor 	Used on systems up to 5 kV. (Continuous duty)	SE-330 SE-330AU SE-325
ER-5WP (PGE-05WV) Sensing Resistor 	Used on systems up to 5 kV, includes weather-protected terminals for use in outdoor enclosures. (Continuous duty)	SE-330 SE-330AU SE-325
ER-15KV (PGE-15KV) Sensing Resistor 	Used on systems up to 15 kV. (Non-continuous duty)	SE-330 SE-330AU SE-325 SE-330HV
ER-25KV (PGE-25KV) Sensing Resistor 	Used on systems up to 25 kV. (Non-continuous duty)	SE-330 SE-330AU SE-325 SE-330HV
ER-35KV (PGE-35KV) Sensing Resistor 	Used on systems up to 35 kV. (Non-continuous duty)	SE-330 SE-330HV SE-330AU
ER-72KV (PGE-72KV) Sensing Resistor 	Used on systems up to 72 kV. (Non-continuous duty)	SE-330HV

REMOTE INDICATION & MONITORING

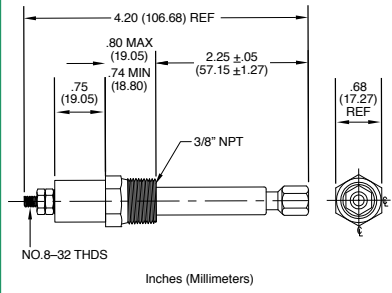
REMOTE INDICATORS & MONITORS		
Product	Features	Accessory For
RM1000 RM1000-3R RM1000 NEMA 4 Motor-monitoring Device 	Motor-monitoring device to be used in conjunction with the 777 family of products (excluding the P1 Series), 77C family of products, and the 601 voltage monitors, via Modbus protocol with a communications module. The RM1000/777 motor management system combines unsurpassed electronic motor protection and critical, user-friendly, motor monitoring. For full datasheet, see pg. 246	777 series 77C series 601 series
RM2000 RM2000CBM+ RM2000-RTDW Motor-monitoring Device 	Motor-monitoring device to be used in conjunction with the 777 family of products (excluding the P1 Series), 77C family of products and the Model 601 voltage monitors, via Modbus protocol with a communications module. The RM2000/777 motor management system combines unsurpassed electronic motor protection and critical, user-friendly, motor monitoring. For full datasheet, see pg. 248	777 series 77C series 601 series
INFORMER Remote diagnostic tool 	Hand-held diagnostic tool designed for use with single-phase pump relays. The Informer uses an infrared receiver to access information sent from the relay which can be helpful for troubleshooting the system. Comes with IR Kit-12 (12" long). For full datasheet, see pg. 250	111P 111P-ENCL 232-Insider 233P-ENCL 234-P 235P-ENCL 111-Insider-P 231-Insider-P 233P-1.5 233P-1.5-ENCL 235P
IR Kit-36 (36" long) Informer Fiber Optic Kit 	Use with the Informer. Simply attaches to the face of the unit to provide remote diagnostics without opening the panel.	LSRX1 LSRX-C 111-Insider-P 231-Insider-P 455
INFORMER-MS Remote diagnostic tool 	Hand-held diagnostic tool designed for use with the Littelfuse 455 series. The Informer-MS uses an infrared receiver to read valuable information transmitted from the 455, which can be helpful for troubleshooting the system For full datasheet, see pg. 252 http://www.littelfuse.com/littelfuse.com/informer-ms	455 series
OL-RESET Remote Reset Module 	Allows the 777 line of motor and pump relay products to be manually reset without opening the panel door. Simply connect the module to the 777 communication port, connect a wire to each of the two applicable pins on the OL-RESET and to a normally-open push-button switch (sold separately). Mount the push-button switch in a convenient location.	777 series
777-MRSW Manual Remote Reset Kit (24" long) 	Allows the 777 line of motor and pump relay products to be manually reset without opening the panel door. Simply connect the 9-pin adapter to the 777 communication port and mount the push-button switch in a convenient location.	777 series
M500 Electronic Megohmmeter 	Automatic, portable, battery-powered insulation tester. This unit is specifically designed as an inexpensive alternative to costly swing needle megohmmeters. The M500 measures insulation resistance values of motors, generators and transformers up to 1000 megohms at 500 V ac, indicating the condition of insulation on the zone scale. Its compact design and ease of use makes the M500 a great diagnostic tool for motor rewind shops, electrical maintenance personnel and pump installers.	

COMMUNICATION ADAPTERS & MODULES

COMMUNICATION ADAPTERS		
Product	Features	Accessory For
RS485-RS232 Converter with cable & plug 	Allows RS485 devices to be connected to a PC via the RS232 (serial) port. The converter provides convenient terminal blocks for making signal and dc power supply connections. An optional power supply may be required for laptops or other computers with low power serial ports, or for very large networks. Pre-wired for easy installation on the RS485MS-2W module.	RS485MS-2W
RS485-USB Converter with cable & plug/RS232:USB 	Allows RS485 devices to be connected to a PC via the USB port. The converter provides convenient terminal blocks for making signal and dc power supply connections. An optional power supply may be required for laptops or other computers with low power serial ports, or for very large networks. Pre-wired for easy installation on the RS485MS-2W module.	RS485MS-2W
AC700-CUA Communications Adapter 	Optical network-interface and firmware-upgrade communication adapter. Field-installed.	EL731
COMMUNICATION MODULES		
Product	Features	Accessory For
RS485MS-2W Communication Module 	This module is required when the RM1000, RM2000 or other Modbus capable device is used with 77X-type products. For full datasheet, see pg. 254	Series: RM1000 77X RM2000
CIO-DN-P CIO-120-DN-P Communication link to PLC/SCADA/monitoring systems 	Convenient and cost-effective Devicenet™ interfaces capable of providing discrete control and monitoring of motor starters, drives and other devices over a Devicenet network. For full datasheet, see pg. 257	777 series
CIO-EN Communication link to PLC/SCADA/monitoring systems 	The CIO-EN Module (non-POE) is a convenient and cost-effective Modbus-TCP and Modbus-RTU interface capable of providing discrete control and monitoring of an overload relay over a Modbus network. For full datasheet, see pg. 260	777 series
CIO-MB CIO-120-MB Communication link to PLC/SCADA/monitoring systems 	Convenient and cost-effective Modbus-RTU interfaces capable of providing discrete control and monitoring of an overload relay over a Modbus network. For full datasheet, see pg. 255	777 series
CIO-777-PR Communication link to PLC/SCADA/monitoring systems 	Convenient and cost-effective Profibus interface capable of providing discrete control and monitoring of motor starters, drives and other devices over a Profibus network. For full datasheet, see pg. 259	777 series ending in P, -P, or -P2
CIO-601CS-DN-P1 	Convenient and cost-effective DeviceNet device capable of providing discrete control and monitoring of motor starters, drives and other devices over a DeviceNet network.	601-CS-D-P1
COM 4-20 Communication link to PLC/SCADA/monitoring systems 	Send a 4-20 mA signal proportional to the output power. It can also be used to send the input power by setting the efficiency setting on the 777-AccuPower monitor to one. This module allows communication to a PLC with an analog input and no Modbus input. For full datasheet, see pg. 261	777-AccuPower

TERMINATIONS & ADAPTERS

TERMINATIONS & ADAPTERS			
Product		Features	Accessory For
1N5339B Termination Device		5 W axial-lead ground-check termination. Included with SE-105 and SE-107.	SE-105 SE-107
SE-TA6-SM Stud-Mount Termination Assembly		50 W ground-check termination that is robust and compact for submersible pumps. Wire lead simplifies installation. (Replacement for 1N4553B)	SE-105 SE-107
SE-TA6 Termination Assembly		50 W ground-check termination with convenient mounting holes and screw terminals.	SE-105 SE-107
SE-TA6A (PGA-0T6A) Termination Assembly		Temperature compensated 50 W ground-check termination with convenient mounting holes and screw terminals.	SE-105 SE-107 SE-134C
SE-TA6A-WL Termination Assembly		Temperature compensated 50 W ground-check termination with convenient mounting holes and screw terminals.	SE-105 SE-107 SE-134C
SE-TA6ASF-WL Small-Format Termination Assembly with Wire Leads		Temperature compensated 12 W ground-check termination, ideal for use in cable-coupler end caps and submersible pumps. Mounting holes and wire leads.	SE-105 SE-107 SE-134C
SE-TA12A Termination Assembly		Temperature compensated 50 W ground-check termination with convenient mounting holes and screw terminals.	SE-135 SE-145
SE-TA12ASF-WL Small-Format Termination Assembly with Wire Leads		Temperature compensated 12 W ground-check termination, ideal for use in cable-coupler end caps and submersible pumps. Mounting holes and wire leads.	SE-135 SE-145
SE-TA12A-WL Termination Assembly		Temperature compensated 50 W ground-check termination with convenient mounting holes and screw terminals.	SE-135 SE-145
SE-TA12A SE-TA12B Termination Assemblies		Used together to allow an SE-134C to monitor a splitter box and two cables.	SE-134C
PPI-600V Parallel Path Isolator		Parallel ground-path rejection for ground-check monitors. Eliminates intermachine arcing and prevents stray dc currents from flowing in a monitored ground wire.	SE-105 SE-134C SE-107 SE-135
RK-13 Relay Interface Module		Separate ground-fault and ground-check indication contacts for the SE-105, and separate ground-fault and resistor-fault contacts for the SE-325. Used to provide output to a PLC and operate standard pilot lights. Complete with conformally coated circuit boards.	SE-105 SE-107 SE-325
SE-485-DIN Industrial RS-485 to RS-232 Converter		Industrial network quality RS-485 to RS-232 serial converter. DIN-rail mounted, 24 V dc required.	MPS FPS
SE-485-PP Port-Powered Serial Converter		Converts an RS-485 signal to an RS-232 signal. Used for set-point programming and updating flash memory. 115.2 kbit/s maximum transfer rate.	MPU-32 FPU-32 MPS FPS
CA-945 Serial Connector Adapter Kit		Connects an RJ45 to a 9-pin serial connector. Includes 1.5 m cable and plug-in adapter.	MPU-32 FPU-32
SE-ICUSB232 USB to RS-232 Converter		Connects a 9-pin serial cable to a USB port.	SE-330 SE-330AU SE-485-PP CA-945 SE-330HV SE-485-DIN

LIQUID LEVEL CONTROL ELECTRODES								
Product	Features	Accessory For						
LLP-24 Liquid Level Probe 	Threaded stainless steel probe measuring 24 in (61 cm) long. Designed for use with PHST-38QTN liquid level control electrodes.	PHST-38QTN						
PHST-38QTN Probe Holder P0700-409 Protective Boot 	 Designed for use with all conductive liquid level controls. Composed of insulators and metal parts made of number 300 series stainless steel. These internally conductive probe holders are designed for a maximum steam pressure of 240 PSI; 400 °F maximum. Maximum voltage from electrode to ground. PHST-38QTN is UL 353 Recognized.	Series: <table> <tr> <td>LLC1</td><td>LLC2</td><td>LLC4</td></tr> <tr> <td>LLC5</td><td>LLC6</td><td>LLC8</td></tr> </table> PC-XXX-LLC-CZ PC-XXX-LLC-GM 460-15-100-LLS	LLC1	LLC2	LLC4	LLC5	LLC6	LLC8
LLC1	LLC2	LLC4						
LLC5	LLC6	LLC8						

CT SELECTION GUIDE

	PRODUCT	GROUND-FAULT CT	GROUND-FAULT TRIP LEVEL (or insulation level)	PHASE CTS	PAGE #
GROUND-FAULT PROTECTION 	SE-601	No CTs required	1–20 mA	N/A	—
	PGR-3100	No CTs required	Indication only	N/A	—
	PGR-3200	No CTs required	Warnings at 30 kΩ & 50 kΩ Alarm at 10 kΩ	N/A	—
	SE-701/SE-703	CT200 series	10–198 A	N/A	480
		EFCT series	50 mA–4.95 A		480
SE-CS30 series		300 mA–29.7 A	480		
GROUND-CONDUCTOR MONITORING 	SE-704	SE-CS30 series	10 mA–5 A	N/A	480
	EL731	EFCT series	30–5,000 mA ac and dc	N/A	480
	SE-105/SE-107	CT200 series	0.5–4 A	N/A	480
	SE-134C/SE-135	SE-CS10 series	0.5–12.5 A	N/A	480
	RESISTANCE GROUNDING 	SE-330	CT200 series	12–200 A	N/A
EFCT series			100 mA–5 A	480	
SE-CS30 series			600 mA–30 A	480	
SE-325		CT200 series	0.5–4 A	N/A	480
MOTOR & PUMP PROTECTION 		MPU-32*	CT200 series	10–200 A	N/A
	EFCT series		50 mA–5 A	480	
	SE-CS30 series		300 mA–30 A	480	
	MPS*	CT200	10–200 A	1-A, 5-A Secondary CTs	480
		EFCT series (5-A Primary) SE-CS30 series (30-A Primary)	50 mA–5 A 300 mA–30 A		480
FEEDER PROTECTION 	MPU-32-X69X-PMA16	Existing CTs can be used or same as MPU-32.			480
	MPS-469X-PMA24	Existing CTs can be used or same as MPS.			480
	FPU-32*	CT200 series	10–200 A	1-A, 5-A Secondary CTs	480
		EFCT series	50 mA–5 A		480
		SE-CS30 series	300 mA–30 A		480
ARC-FLASH PROTECTION 	FPS*	CT200	10–200 A	1-A, 5-A Secondary CTs	480
		EFCT series (5-A Primary)	50 mA–5 A		480
		SE-CS30 series (30-A Primary)	300 mA–30 A		480
	PGR-8800‡	N/A	N/A	5-A Secondary CTs (optional)	480

Note: See page 502 for additional information on CT selection. See page 482 for CT sizing chart.

*Phase CTs should be selected with a primary rating of 100–300 % of rated current to maintain specified accuracy.

†Select a CT with a primary rating approximately equal to the system's rated current.

CURRENT TRANSFORMERS

CURRENT TRANSFORMERS						
Product		Features	Inner Diameter	Accessory For		
CT200 (PGC-2056) Current Transformer		Detects phase current or ground-fault current (200-A primary)	56 mm (2.20")	FPS MPU-32 SE-330	FPU-32 PGR-8800 SE-325	MPS SE-105/107 SE-701
CT200L (PGC-2089) Current Transformer		Detects phase current or ground-fault current (200-A primary)	89 mm (3.50")	FPS MPU-32 SE-107	FPU-32 PGR-8800 SE-701	MPS SE-105
EFCT-26 (PGC-3026) Ground-Fault Current Transformer		Sensitive current transformer used to detect ground-fault current (5-A primary)	26 mm (1.02")	EL731 MPS SE-701	FPS MPU-32	FPU-32 SE-330
EFCT-1 (PGC-3082) Ground-Fault Current Transformer		Sensitive current transformer used to detect ground-fault current (5-A primary)	82 mm (3.23")	EL731 MPS SE-701	FPS MPU-32	FPU-32 SE-330
EFCT-2 (PGC-3140) Ground-Fault Current Transformer		Sensitive current transformer used to detect ground-fault current (5-A primary)	140 mm (5.50")	EL731 MPS	FPS MPU-32	FPU-32 SE-701
EFCT-1FC (PGC-31FC) Flux Conditioner		Fits in the EFCT-1 window to reduce saturation and prevent false operation due to large surge currents	70 mm (2.75")	EFCT-1		
SE-CS10-2.5 (PGC-4064) Current Sensor		Detects ground-fault current	64 mm (2.50")	SE-134C	SE-135	SE-145
SE-CS10-4 (PGC-4108) Current Sensor		Detects ground-fault current	108 mm (4.25")	SE-134C	SE-135	SE-145
SE-CS10-6 (PGC-4160) Current Sensor		Detects ground-fault current	160 mm (6.31")	SE-134C	SE-135	SE-145
SE-CS10-8 (PGC-4210) Current Sensor		Detects ground-fault current	210 mm (8.25")	SE-134C	SE-135	SE-145
SE-CS30-26 (PGC-5025) Ground-Fault Current Transformer		Current Transformer for low-level ground faults, flux conditioner is standard (30-A primary)	25 mm (0.98")	FPS MPU-32 SE-330	FPU-32 PGR-6100 SE-701	MPS PGR-6101 SE-704
SE-CS30-70 (PGC-5060) Ground-Fault Current Transformer		Current Transformer for low-level ground faults, flux conditioner is standard (30-A primary)	60 mm (2.36")	FPS MPU-32 SE-330	FPU-32 PGR-6100 SE-701	MPS PGR-6101 SE-704
SE-CS30-4 (PGC-5095) Ground-Fault Current Transformer		Current Transformer for low-level ground faults, flux conditioner is standard (30-A primary)	95 mm (3.74")	FPS MPU-32 SE-330	FPU-32 PGR-6100 SE-701	MPS PGR-6101 SE-704
SE-CS30-5 (PGC-5130) Ground-Fault Current Transformer		Current Transformer for low-level ground faults, flux conditioner is standard (30-A primary)	130 mm (5.12")	FPS MPU-32 SE-330	FPU-32 PGR-6100 SE-701	MPS PGR-6101 SE-704
SE-CS30-8 (PGC-5200) Ground-Fault Current Transformer		Current Transformer for low-level ground faults, flux conditioner is standard (30-A primary)	200 mm (7.87")	FPS MPU-32 SE-330	FPU-32 PGR-6100 SE-701	MPS PGR-6101 SE-704
SE-CS40-6 Current Sensor		Detects ground-fault current	160 mm (6.31")	SE-135	SE-145	

NOTE: Contact factory for additional CT offerings.

INSTRUMENTATION & METERING TRANSFORMERS



Donut Style

Foot Mounted

Ordering Information

DONUT MODEL	WINDOW	CURRENT RATIO
CT-0050-D10	1.0"	50:5
CT-0075-D10	1.0"	75:5
CT-0100-D10	1.0"	100:5
CT-0150-D10	1.0"	150:5
CT-0200-D10	1.0"	200:5
CT-0300-D10	1.0"	300:5
CT-0200-D20	2.0"	200:5
CT-0300-D20	2.0"	300:5
CT-0400-D20	2.0"	400:5
CT-0500-D20	2.0"	500:5

FOOTED MODEL	WINDOW	CURRENT RATIO
CT-0050-F10	1.0"	50:5
CT-0100-F10	1.0"	100:5
CT-0150-F10	1.0"	150:5
CT-0200-F10	1.0"	200:5
CT-0300-F10	1.0"	300:5
CT-1200-F15	1.5"	1200:5
CT-0150-F20	2.0"	150:5
CT-0200-F20	2.0"	200:5
CT-0300-F20	2.0"	300:5
CT-0400-F20	2.0"	400:5
CT-0600-F20	2.0"	600:5
CT-0400-F30	3.0"	400:5
CT-0800-F30	3.0"	800:5

Description

Littelfuse offers a wide array of instrument rated current transformers in 1–3 inch diameter opening.

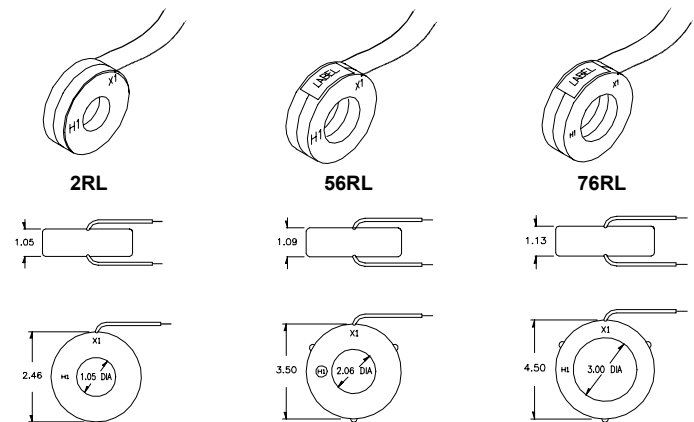
Voltage class: 600 V

BIL rating: 10 kV

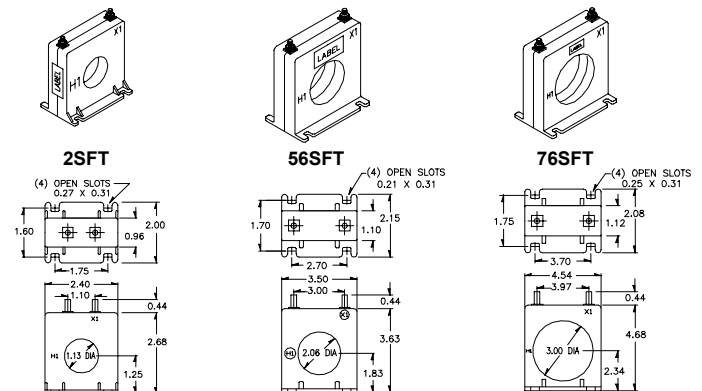
Certification: cRUus (WICC File E100575)

Dimensional Drawing

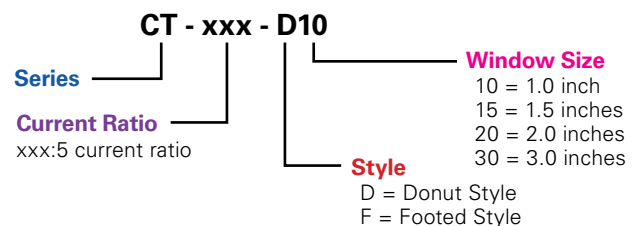
DONUT STYLE



FOOT MOUNTED WITH BRASS TERMINALS



Part Numbering System



INSTRUMENTATION & METERING TRANSFORMERS

INSTRUMENTATION AND METERING TRANSFORMERS			
Product	Features	Inner Diameter	Accessory For
CT-XXXX-DXX Series Donut Style Transformer 	Littelfuse offers a wide array of instrument rated current transformers in 1–3 inch diameter opening. For full datasheet and ordering information, see page 481.	25.4 - 76.2 mm (1 - 3")	Series: 777 DCSA ECS ECSW LSR-0 LSR-XX LSRU LSRX TCS TCSA LCSC10T12
CT-XXXX-FXX Series Footed Style Transformer 	Littelfuse offers a wide array of instrument rated current transformers in 1–3 inch diameter opening. For full datasheet and ordering information, see page 481.	25.4 - 76.2 mm (1 - 3")	Series: 777 DCSA ECS ECSW LSR-0 LSR-XX LSRU LSRX TCS TCSA LCSC10T12

Current Transformer Sizing Chart

Conductor Size (AWG/kcmil)	Minimum CT Window Size (Inner Diameter in mm)					
	Number of Conductors					
	1	3	4	6	8	12
12	4	8	9	11	13	15
10	6	10	11	14	16	19
8	7	12	14	17	20	24
6	9	15	18	22	25	31
4	11	19	22	28	32	39
3	13	22	25	31	36	44
2	14	25	28	35	40	49
1	16	28	32	39	45	55
1/0	18	31	36	44	51	62
2/0	20	35	40	49	57	69
3/0	23	39	45	55	64	78
4/0	25	44	51	62	72	88
250	28	48	55	67	78	95
350	33	56	65	80	92	113
500	39	67	78	95	110	135
750	48	82	95	117	135	165
1000	55	95	110	135	156	191

Installation Instructions:

When installing the Zero-Sequence CTs, ensure the following:

1. Only the load carrying conductors pass through the center of the CT. This means L1 + N for 1-phase and L1 + L2 + L3 for 3-phase.
2. The power conductors pass through the center of the CT and are preferably bound together to keep the conductors uniformly spaced.
3. The power conductors pass perpendicular to the CT and, where practical, continue perpendicular to the CT on both sides of the CT for 3”.
4. The power conductors should not be installed in a way that allows them to run along the side edges of the CT.
5. Where practical, locate the CT away from noise-generating devices such as transformers, frequency converters, etc.

ELCT SERIES

Current Transformer



Description

The ELCT series is a sensitive current transformer with integrated flux conditioner used with Littelfuse relays to detect low levels of earth-leakage current.

Accessories



CBLTP

Twisted-pair wire for connection to CT.
Order in desired length in meters.

Specifications

Current Rating

ELCT5: 5:0.05 A

ELCT30: 30:0.05 A

Accuracy

ELCT5: 3 % @ 0.01 VA

ELCT30: 3 % @ 0.06 VA

Frequency

50 to 400 Hz

Insulation Level

600 V

Operating Temperature

-40 °C to 55 °C (-40 °F to 131 °F)

Application

SE-701

Wire Gauge

0.05-3.3 mm² (12-30 AWG)

Tightening Torque

0.5 N-m

Certification

UL, cUL, CE

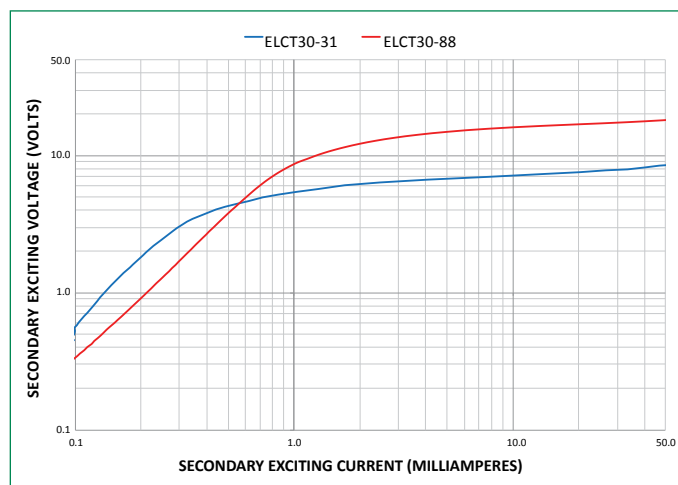
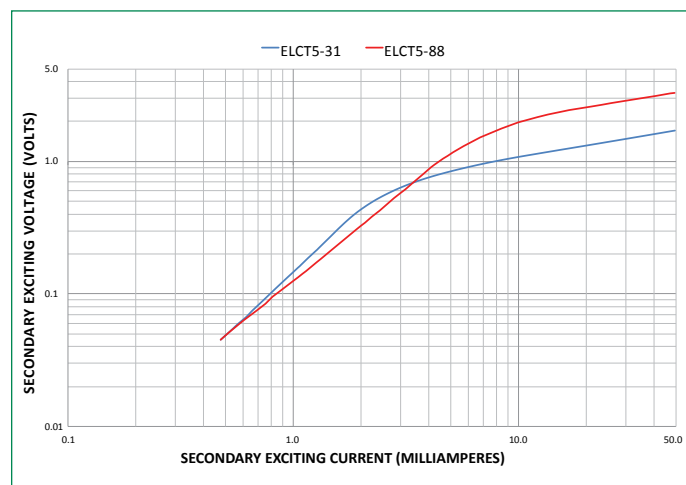
Compliance

RoHS, IEC 61869-2, ANSI/IEEE C57.13

Ordering Information

ORDERING NUMBER	TURNS RATIO	WINDOW SIZE, ID	WEIGHT
ELCT5-31	100:1	31 mm (1.22 in)	127.0 g (0.28 lbs)
ELCT5-88	100:1	88 mm (3.46 in)	635.0 g (1.40 lbs)
ELCT30-31	600:1	31 mm (1.22 in)	131.5 g (0.29 lbs)
ELCT30-88	600:1	88 mm (3.46 in)	680.4 g (1.50 lbs)

Note: One frequency response may be extended for specific product families

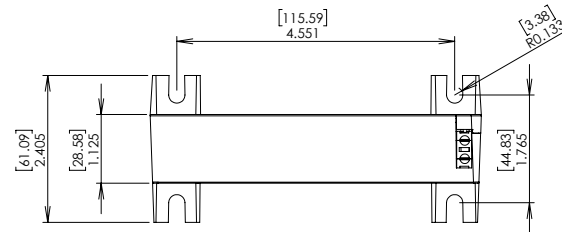
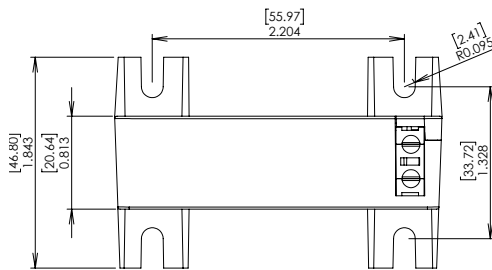


ELCT SERIES

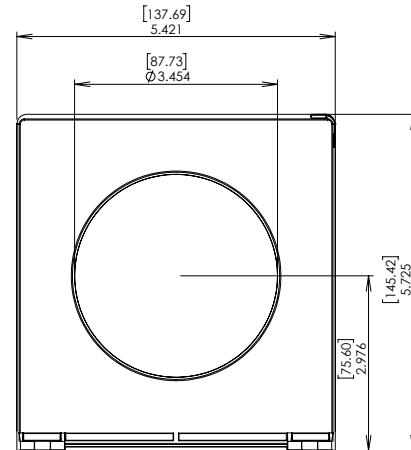
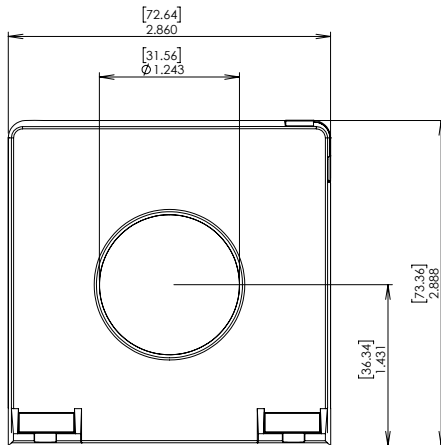
Dimensions and Mounting Diagram Inches [millimeters]

Mount the ELCT5-31 and ELCT30-31 using M5 or #10 screws.

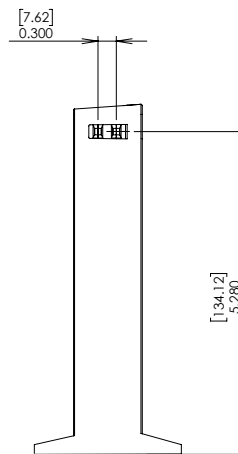
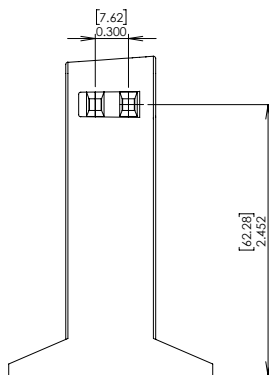
Mount the ELCT5-88 and ELCT30-88 using M6 or ¼" screws.



TOP VIEW AND MOUNTING DETAIL



FRONT VIEW



ELCT5-31 and ELCT30-31

SIDE VIEW

ELCT5-88 and ELCT30-88

ZSCT SERIES

Current Transformer



Description

The ZSCT series is a current transformer used with Littelfuse relays to detect low levels of earth-leakage current.

Accessories



CBLTP

Twisted-pair wire for connection to CT.
Order in desired length in meters.

Specifications

Current Rating

ZSCT5: 5:0.05 A

ZSCT30: 30:0.05 A

Accuracy

ZSCT5: 3 % @ 0.01 VA

ZSCT30: 3 % @ 0.06 VA

Frequency

50 to 400 Hz

Insulation Level

600 V

Operating Temperature

-40 °C to 55 °C (-40 °F to 131 °F)

Application

MP8000

Wire Gauge

0.05-3.3 mm² (12-30 AWG)

Tightening Torque

0.5 N-m

Certification

UL, cUL, CE

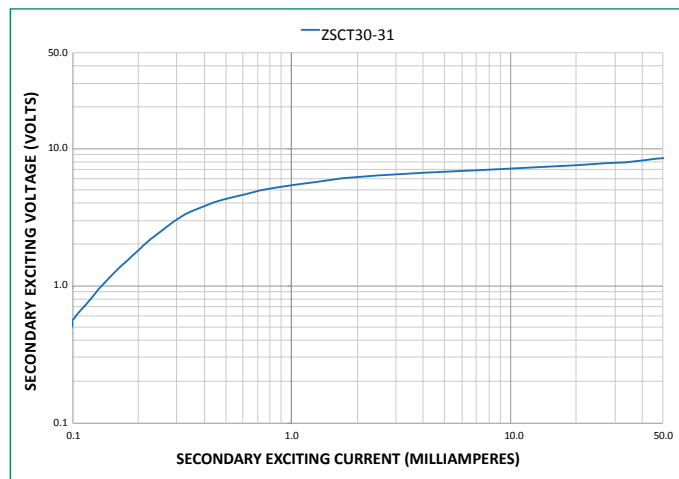
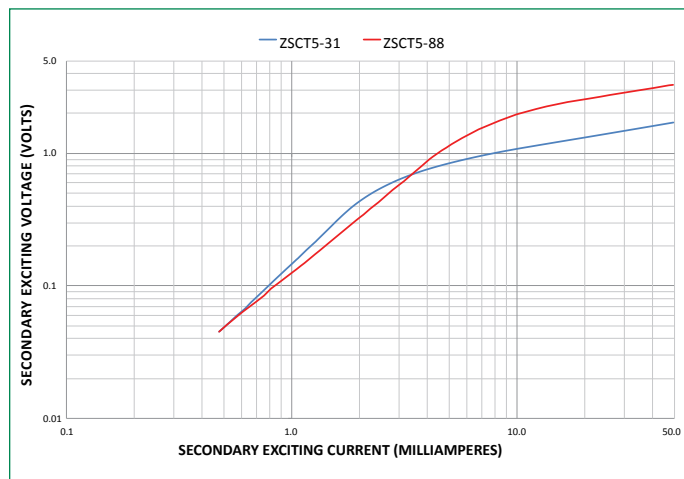
Compliance

RoHS, IEC 61869-2, ANSI/IEEE C57.13

Ordering Information

ORDERING NUMBER	TURNS RATIO	WINDOW SIZE, ID	WEIGHT
ZSCT5-31	100:1	31 mm (1.22 in)	117.9 g (0.26 lbs)
ZSCT5-88	100:1	88 mm (3.46 in)	499.0 g (1.10 lbs)
ZSCT30-31	600:1	31 mm (1.22 in)	113.4 g (0.25 lbs)

Note: One frequency response may be extended for specific product families

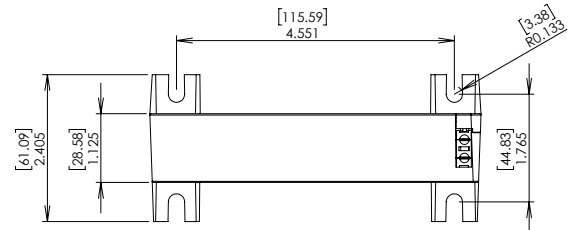
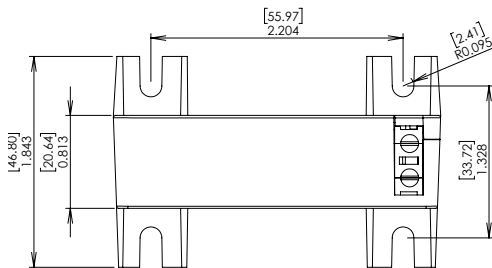


ZSCT SERIES

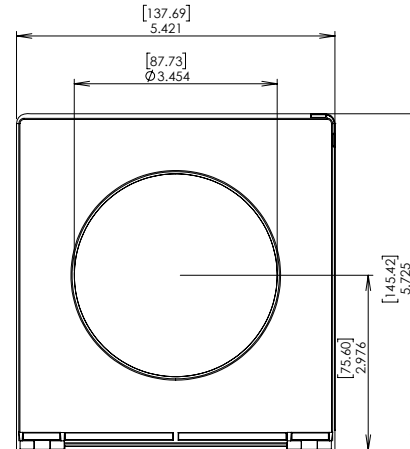
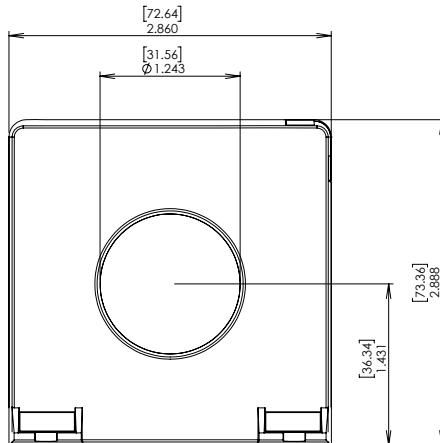
Dimensions and Mounting Diagram Inches [millimeters]

Mount the ZSCT5-31 and ZSCT30-31 using M5 or #10 screws.

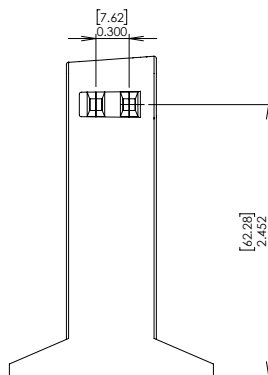
Mount the ZSCT5-88 using M6 or ¼" screws.



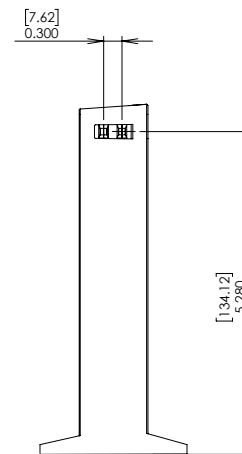
TOP VIEW AND MOUNTING DETAIL



FRONT VIEW



ZSCT5-31 and ZSCT30-31



ZSCT5-88

SIDE VIEW

PMA SERIES

Panel Mount Adapters — Retrofits

Example Shown: PMA-3



Example of a panel mount adapter (PMA-3). Relay is for illustrative purposes only and must be purchased separately from adapter plate. For more information on our complete offering of panel mount adapters see the following page.

Description

A variety of protection relay retrofit adapter plates are available for the products listed below. These adapter plates simplify the process of updating electromechanical or poorly functioning existing relays. Consult factory if you have a specific product to replace that is not featured. Adapters are available in either plate style for panel mounting or drawout style depending on the relay being replaced.

Motor, feeder and ground-fault protection upgrades are available for electromechanical or solid state relays that are nearing the end of their life.

Features & Benefits

FEATURES	BENEFITS
Mounting	Fits in existing mounting holes and panel openings
Multiple adapter sizes	Plate style or drawout style adapters are available to fit various outdated relays

Adapter Plates

RELAY TO REPLACE	PANEL MOUNT	NEW RELAY
AB BULLETIN 1406	PMA-14	MPS
FPL-GFRM	PMA-6	SE-701/SE-704
GE S1	PMA-9	MPU-32/FPU-32
GE LODTRAK III	PMA-10	MPU-32
GE MULTILIN 169, 269, or 369	PMA-13	MPS
	PMA-16	MPU-32
	PMA-16	FPU-32
GE MULTILIN 469	PMA-24	MPS
GE MULTILIN P4A	PMA-15	MPU-32/FPU-32
GEC/MCGG	PMA-3	SE-701/SE-704
GE & WESTINGHOUSE FT-11	PMA-12	MPU-32
P & B GOLDS	Contact Factory	FPU-32
WESTINGHOUSE C09 & C011	Contact Factory	FPU-32

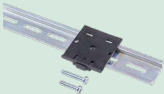
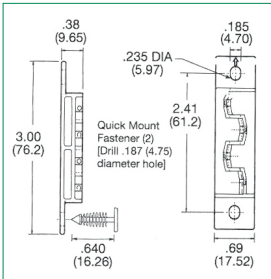
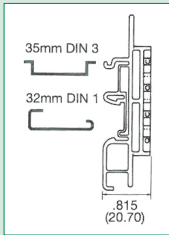
For a complete list of the Littelfuse Panel Mount Adapter Plates please see next page.

PANEL-MOUNT ADAPTERS

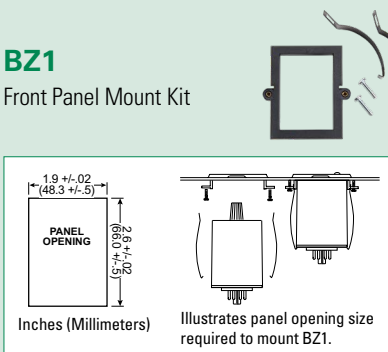
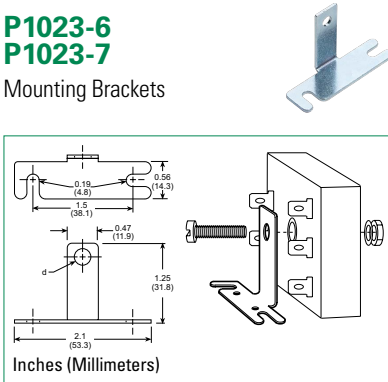
PANEL MOUNT ADAPTERS		
Product	Features	Accessory For
PMA-2 Adapter Plate	Used when replacing the AB Bulletin 1406.	MPU-32
PMA-3 Adapter Plate	Used when replacing GEC/MCGG ground-fault relays. Requires PMA-55 or PMA-60.	SE-704 SE-701
PMA-4 Adapter Plate	Used when replacing the Multilin 139/239.	MPU-32
PMA-6 Adapter Plate	Used when replacing FPL - GFRM ground-fault relays. Requires PMA-55 or PMA-60.	SE-701
PMA-7 Adapter Plate	Used when replacing the GE Lodtrak II.	MPU-32
PMA-8 Adapter Plate	Used when replacing an Atkinson Omser II with an SE-130-Series Monitor.	SE-134C SE-135
PMA-9 Adapter Plate	Used when replacing relays in the GE S1 Case. Requires PMA-55 or PMA-60.	MPU-32 FPU-32
PMA-10 Adapter Plate	Used when replacing the GE Lodtrak III.	MPU-32
PMA-12 Adapter Plate	Used when replacing GE and Westinghouse FT-11 relays.	MPU-32
PMA-13 Adapter Plate	Used when replacing the GE Multilin 169, 269, or 369.	MPS
PMA-14 Adapter Plate	Used for rough cutouts and when replacing the AB Bulletin 1406.	MPS
PMA-15 Adapter Plate	Used for rough cutouts and when replacing the GE Multilin P4A.	MPU-32 FPU-32
PMA-16 Adapter Plate PMA-16-RTDB Mounting Bracket	The PMA-16 mounting plate is used when replacing the GE Multilin 169, 269, and 369 relays. The PMA-16-RTDB is a mounting bracket for the optional MPS-RTD Temperature Input Module.	MPU-32 FPU-32
PMA-17 Adapter Plate	Used when replacing Sprecher & Schuh Cet 4.	MPU-32
PMA-18 Adapter Plate	Used when replacing Sprecher & Schuh Cet 3.	MPU-32
PMA-21 Adapter Plate	Used when replacing an ABB RACIF.	FPU-32
PMA-23 Adapter Plate	Custom mounting plate for FPU-32 to replace 3 Westinghouse C0 relays.	FPU-32
PMA-24 Adapter Plate	Used when replacing the GE Multilin 469.	MPS
PMA-55 Adapter Plate	Used to panel mount the SE-601 and SE-701.	SE-601 SE-701 PGR-4300 SE-704
PMA-60 Adapter Plate	Used to panel mount the relay; IP 53 and NEMA 3 rating, tamper resistant.	SE-601 SE-701 PGR-4300 SE-704
MPU-32-SMK Surface-Mount Kit	Used to surface mount the MPU-32 or FPU-32.	MPU-32 FPU-32

Note: Relays are not included with the PMA-Series Panel Mount Adapters.

DIN RAIL & MOUNTING ADAPTERS

DIN RAIL & MOUNTING ADAPTERS		
Product	Features	Accessory For
C103PM (AI) DIN Rail 	Industry standard 35 mm aluminum or steel DIN rail. C103PM aluminum rail is available in a 36 in. (91.4 cm) length.	Can be used with all DIN-rail compatible units.
AC700-SMK Mount Adapter 	DIN-rail and Surface-mount adapter for back-plane mounting.	EL731
D0050 DIN-Rail Adapter Clip 	Plastic clip allowing DIN-rail mounting of the PGR-8800 and AF0500 Arc-Flash Relay.	AF0500 PGR-8800
P1023-20 DIN Rail Mount Adaptor 	Allows any 2 x 2 in (50.8 x 50.8 mm) or 2 x 3 in (50.8 x 76.2 mm) module to be mounted on a 35 mm DIN type rail. Comes complete with mounting hardware (one #10 - 24 x 1.00 screw and one #10 - 24 x 1.25 screw) for 0.75 in (19 mm) and 1 in (25.4 mm) thick modules.	Consult the individual datasheet to determine part compatibility.
P0500-178 Surface Mount Adapter   Dimensions (Inches / Millimeters): Top: .38 (9.65) Bottom: .185 (4.70) Left: 3.00 (76.2) Right: 2.41 (61.2) Bottom Left: .640 (16.26) Bottom Right: .69 (17.52) Center: .235 DIA (5.97) Note: Quick Mount Fastener (2) [Drill .187 (4.75) diameter hole]	P0500-178 is surface mountable with 2 Quick Mount Fasteners.	ASXX/DSXX Series Timers
P0500-179 DIN Rail Mount Adapter   Dimensions (Inches / Millimeters): Top: 35mm DIN 3 Bottom: 32mm DIN 1 Right: .815 (20.70)	P0500-179 snaps onto DIN rail.	ASXX/DSXX Series Timers

BRACKETS & CLIPS

BRACKETS & CLIPS																																		
Product	Features	Accessory For																																
BZ1 Front Panel Mount Kit  Illustrates panel opening size required to mount BZ1.	Provides an easy method of through-the-panel mounting of 8-pin or 11-pin plug-in timers, flashers, and other controls. May be mounted in panels up to 0.125 in (3.2 mm) thick. Includes two clamps and two screws.	Series: <table><tr><td>ARP</td><td>FS500</td><td>LLC4</td><td>LLC5</td><td>LLC6</td></tr><tr><td>PLM</td><td>PLMU</td><td>PLR</td><td>PLS</td><td>PRLM</td></tr><tr><td>TDB</td><td>TDBH</td><td>TDBL</td><td>TDI</td><td>TDIH</td></tr><tr><td>TDIL</td><td>TDM</td><td>TDMB</td><td>TDMH</td><td>TDML</td></tr><tr><td>TDR</td><td>TDS</td><td>TDSH</td><td>TDSL</td><td>TRB</td></tr><tr><td>TRDU</td><td>TRM</td><td>TRS</td><td>TRU</td><td></td></tr></table>			ARP	FS500	LLC4	LLC5	LLC6	PLM	PLMU	PLR	PLS	PRLM	TDB	TDBH	TDBL	TDI	TDIH	TDIL	TDM	TDMB	TDMH	TDML	TDR	TDS	TDSH	TDSL	TRB	TRDU	TRM	TRS	TRU	
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P1023-6 P1023-7 Mounting Brackets  Inches (Millimeters)	Provides a convenient method of mounting modules. The 90 ° orientation of mounting slots makes installation/removal of modules quick and easy. Made from steel with a cadmium surface finish. <table><tr><th>PART NUMBER</th><th>MOUNTING HOLE SIZE</th><th>MOUNTING METHOD</th></tr><tr><td>P1023-6</td><td>0.19 in (4.8 mm)</td><td>#8 (M4 x 0.7) screw</td></tr><tr><td>P1023-7</td><td>0.25 in (6.35 mm)</td><td>Mini-Pot</td></tr></table>	PART NUMBER	MOUNTING HOLE SIZE	MOUNTING METHOD	P1023-6	0.19 in (4.8 mm)	#8 (M4 x 0.7) screw	P1023-7	0.25 in (6.35 mm)	Mini-Pot	Used on many 2" x 2" timers. Refer to individual series datasheet to determine if this accessory is compatible.																							
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P1023-7	0.25 in (6.35 mm)	Mini-Pot																																
PSCRB8 Hold-down Brackets 	Designed for use with P1011-6 socket. Securely mounts 8-pin plug-in controls in any position, and provides protection against vibration. Sold in pairs.	P1011-6																																
PSC8 PSC11 Hold-down Clips 	Securely mounts plug in controls in any position. Also provides protection against vibration. Select the PSC8 for use with NDS-8, or the PSC11 for use with NDS-11 sockets. Sold in pairs.	NDS-8 Socket NDS-11 Socket																																
P1023-2 P Clamp 	Removable P clamp bracket for mounting MSM series timers and FS100 and FS400 series flashers.	<table><tr><td>Timers series:</td><td>MSM</td><td></td></tr><tr><td>Flasher series:</td><td>FS100</td><td>FS400</td></tr></table>			Timers series:	MSM		Flasher series:	FS100	FS400																								
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ENCLOSURES & WATERTIGHT COVERS

ENCLOSURES		
Product	Features	Accessory For
NGRM-ENC NGR Monitor Control Panel 	NEMA 4 painted steel control panel, complete with the SE-325 or SE-330, and a fused 600/480:120 V PT for relay control power. Suitable for indoor or outdoor mounting, CSA certified. When NGR Monitor is back-plane mounted, 22 mm NEMA 4 indicators and reset button are included. Please contact factory for additional information. For full datasheet and ordering information, see pg. 67	SE-325 SE-330
NEMA-3R-L A Enclosure 	Metal NEMA-3R electrical box with lenses for viewing the single-phase PumpSaver® status lights. H 6.0" x W 6.0" x D 4.0"	Single-Phase PumpSaver
RM-1000-ENCL Enclosure 	Steel enclosure for protecting the RM1000 from weather and vandalism. Protects from UV, hail, and it seals to keep rain from contacting the RM1000 connections. The enclosure also features a built-in padlock tab (padlock not included). H 6.4" x W 6.3" x D 1.7"	RM1000

WATERTIGHT COVERS		
Product	Features	Accessory For
MPU-16A-Y92A-96N Watertight Cover 	Watertight cover for outdoor applications.	MPU-32 FPU-32
SE-IP65CVR-G Watertight Cover 	Watertight cover. Tamper-resistant. IP65 protection.	SE-134C SE-135 SE-330 SE-330AU SE-330HV SE-400
SE-IP65CVR-M Watertight Cover 	Watertight cover. Tamper-resistant. IP65 protection.	MPS FPS
SE-MRE-600 Moisture-Resistant Enclosure Kit 	Protects the connection terminals from snow and rain in outdoor applications.	ER-600VC ER-1000HV

SOCKETS

SOCKETS																												
Product		Features	Accessory For																									
OT08PC Octal Socket 8-Pin		8-pin 35 mm DIN-rail or surface mount octal socket. Rated at 10 A @ 600 V ac and has pressure clamp terminals.	AWG 12 to 22 (3.2 to 0.33 mm²) wire sizes. Consult individual datasheet for compatibility																									
NDS-8 Octal Socket 8-Pin Screw terminals with captive wire clamps		8-pin 35 mm DIN-rail or surface mount octal socket. Rated at 10 A @ 300 V ac. Surface mounted with two #6 (M 3.5 x 0.6) screws or snaps onto a 35 mm DIN rail. A spring mechanism allows easy removal. Uses PSC8 hold-down clips.	Up to two #14 AWG (2.45 mm²) wire size Series: <table><tr><td>ARP</td><td>FS500</td><td>LLC4</td><td>LLC5</td></tr><tr><td>PRLM</td><td>TDB</td><td>TDBH</td><td>TDBL</td></tr><tr><td>TDI</td><td>TDIH</td><td>TDIL</td><td>TDM</td></tr><tr><td>TDMB</td><td>TDMH</td><td>TDSL</td><td>TDR</td></tr><tr><td>TDS</td><td>TDSH</td><td>TRDU</td><td>TRM</td></tr><tr><td>TRM</td><td>TRS</td><td>TRU</td><td></td></tr></table>		ARP	FS500	LLC4	LLC5	PRLM	TDB	TDBH	TDBL	TDI	TDIH	TDIL	TDM	TDMB	TDMH	TDSL	TDR	TDS	TDSH	TRDU	TRM	TRM	TRS	TRU	
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P1011-6 Octal Socket 8-Pin		8-pin surface mount socket with binder head screw terminals. Rated at 10 A @ 600 V ac. UL Listed combination when used with TDM, TDB, TDS series timers. Uses PSCRB8 hold-down brackets.	Series: <table><tr><td>ARP</td><td>FS500</td><td>LLC4</td><td>LLC5</td></tr><tr><td>PRLM</td><td>TDB</td><td>TDM</td><td>TDMB</td></tr><tr><td>TDR</td><td>TDS</td><td>TRB</td><td>TRDU</td></tr><tr><td>TRM</td><td>TRS</td><td>TRU</td><td></td></tr></table>		ARP	FS500	LLC4	LLC5	PRLM	TDB	TDM	TDMB	TDR	TDS	TRB	TRDU	TRM	TRS	TRU									
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OT11PC Magna Socket 11-Pin		Magna Sockets are for plug-in units	11-pin Plug-in units Series: <table><tr><td>ARP</td><td>LLC6</td><td>TDB</td><td>TDBH</td></tr><tr><td>TDBL</td><td>TDMB</td><td>TDS</td><td>TDSH</td></tr><tr><td>TDSL</td><td>TRB</td><td>TRDU</td><td>TRM</td></tr><tr><td>TRS</td><td>TRU</td><td></td><td></td></tr></table>		ARP	LLC6	TDB	TDBH	TDBL	TDMB	TDS	TDSH	TDSL	TRB	TRDU	TRM	TRS	TRU										
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SD12-PC Rectangle Socket 12-pin		12-pin surface Rectangle Socket.	ACBC-120																									
NDS-11 11-pin Magna Socket Screw terminals with captive wire clamps		11 pin 35 mm DIN-rail or surface mount socket. Rated at 10 A @ 300 V ac. Surface mounted with two #6 (M 3.5 x 0.6) screws or snaps onto a 35 mm DIN rail. A spring mechanism allows easy removal. Uses PSC11 hold-down clips.	AWG 12 to 22 (3.2 to 0.33 mm²) wire sizes Series: <table><tr><td>ARP</td><td>LLC6</td><td>TDB</td><td>TDBH</td></tr><tr><td>TDBL</td><td>TDMB</td><td>TDS</td><td>TDSH</td></tr><tr><td>TDSL</td><td>TRB</td><td>TRDU</td><td>TRM</td></tr><tr><td>TRS</td><td>TRU</td><td></td><td></td></tr></table>		ARP	LLC6	TDB	TDBH	TDBL	TDMB	TDS	TDSH	TDSL	TRB	TRDU	TRM	TRS	TRU										
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