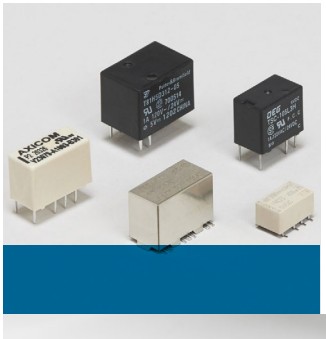
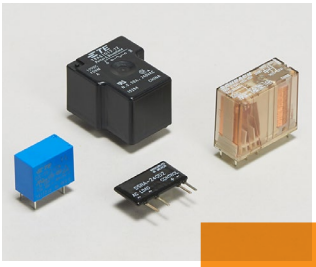




Quick Reference Guide

INDUSTRIAL RELAYS

RELAYS, CONTACTORS & CIRCUIT BREAKERS

TE Connectivity (TE) has extensive capabilities in the design and manufacture of relays and a broad portfolio of switching solutions for demanding, high performance applications. These relay products are remotely actuated to control electrical power flow by either interrupting or completing an electrical circuit.

Complying with standardized PCB footprints, TE offers a wide range of inrush current capabilities and addresses the complete spectrum of requirements for production lines, robotics, elevators, control panels, CNC machines, motion control systems, lighting, building systems, solar, HVAC, and an array of safety-critical applications. Through agency approved test labs, we ensure that our relays are tested to meet the expectations of the industry. Whether you are designing for harsh or indoor applications, TE delivers high quality relays from state-of-the-art production lines.

ROBOTICS

HVAC

BUILDING SYSTEMS

SOLAR

LIGHTING

CONTENTS

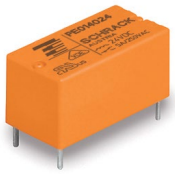
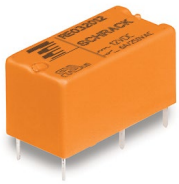
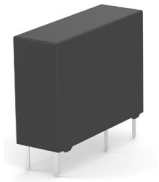
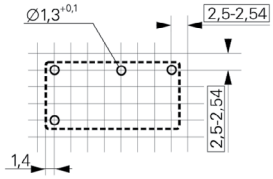
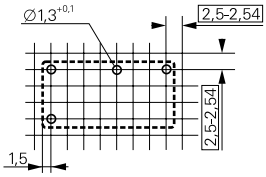
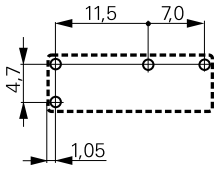
RELAYS, CONTACTORS & CIRCUIT BREAKERS

MOTION CONTROL

WHAT'S INSIDE

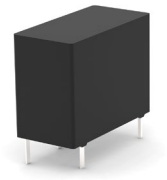
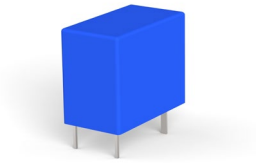
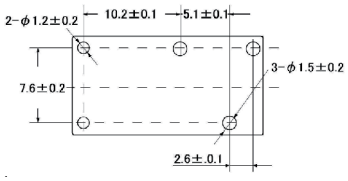
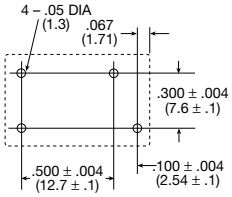
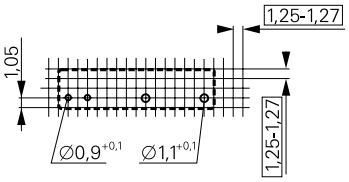
Power PCB Relays up to 16A

Relays, Contactors & Circuit Breakers

	SCHRACK PE	SCHRACK RE/REL	PCJ
Key Features	Low height 10.0mm Sensitive 200mW coil Mono-or bistable coil WG type available (IEC 60335-1)	Miniature PCB relays PCB area 200mm² Wash tight	Slim outline Sensitive coil 200mW WG type available (IEC 60335-1) Ambient temperature up to 105°C
			
Footprint 2) see footnote below			
Applications	Industrial electronics White goods Measurement and control	PLC; Timers; I/O cards Temperature control White goods	Home applications HVAC
Contact Data			
Contact arrangement	1 form C (CO)	1 form A (NO)	1 form A (NO)
Rated voltage	250VAC	250VAC	250VAC
Rated current	5A (CO) 6A (NO)	6/5A	3A/5A (WG type)
Switching power / Max. break	1250VA	1500/1250VA	750VA/1250VA (WG type)
Contact material	AgNi 90/10, $AgSnO_2$	AgNi 0.15, AgNi 90/10	AgNi
Min. recommended contact load	1) see footnote below	1) see footnote below	100mA at 5VDC
Coil Data			
Magnetic system	DC, bistable	DC	DC
Rated coil voltage	3 to 48VDC	5 to 48VDC	5 to 24VDC
Rated coil power	200mW	200/360mW	200mW
Dielectric Strength			
Initial dielectric strength			
between open contacts	1000Vrms	1000Vrms	750Vrms
between contact and coil	4000Vrms	4000/3000Vrms	4000Vrms
between adjacent contacts			
Clearance/creepage between contact and coil	3.2/4mm	4/4mm	8/>8mm
Other Data			
Ambient temperature (max.)	+ 85°C	+70°C (RE)/ + 85°C (REL)	+ 85/ +105°C (WG type)
Category of environmental protection IEC61810	RTII, RTIII	RTIII(RE), RTII(REL)	RTII, RTIII
Terminal type	THT	THT	THT
Mounting	PCB	PCB	PCB
Dimensions	20x10x10mm	20x10x10.6mm/20.7x10.7x12mm	20.4x7x15mm
Accessories			
Link to datasheet	SCHRACK PE	SCHRACK RE SCHRACK REL	PCJ

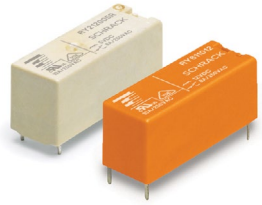
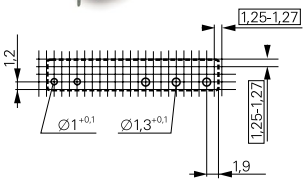
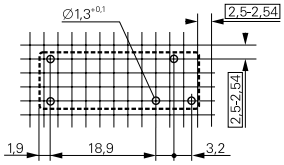
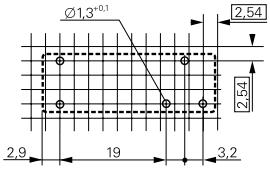
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	PCH	OJ/OJE/T77	PCN/PCNH
Key Features	Compact size WG type available (IEC 60335-1) TV-3 ratings for NO contact	Miniature size Sensitive coil 200mW 4kV coil-contacts (OJ/OJT) Meet UL TV-5 ratings (OJT)	1 pole 3A/5A Only 5mm wide Allows high function/packaging density RoHS compliant (Directive 2002/95/EC)
			
Footprint 2) see footnote below			
Applications	Appliances HVAC Refrigerators, microwave ovens	Appliances HVAC Industrial control	PLC Temperature control I/O modules
Contact Data			
Contact arrangement	1 form C (CO), 1 form A (NO)	1 form A (NO)	1 form A (NO)
Rated voltage	277VAC/30VDC	250VAC/28VDC	250VAC
Rated current	3/5/10A	3/5/8/10A	3A/5A
Switching power / Max. break	1400VA/150W (NO) 850VA/90W (NC)	720 to 2500VA/ 90 to 240W	750VA /1250VA
Contact material	$AgSnO_2$	Ag, AgCdO, $AgSnO_2$	AgNi gold plated
Min. recommended contact load	100mA at 5VDC	1) see footnote below	100mA at 5VDC
Coil Data			
Magnetic system	DC, sensitive	DC, sensitive	DC
Rated coil voltage	3 to 48VDC	3 to 48VDC	3 to 24VDC
Rated coil power	200/400mW	200/250/450mW	100mW/120mW
Dielectric Strength			
Initial dielectric strength			
between open contacts	750Vrms	750/1000Vrms	750Vrms
between contact and coil	4000Vrms	3000/4000Vrms	3000Vrms
between adjacent contacts			
Clearance/creepage			
between contact and coil	1.6/3.2mm	1.6/3.2mm and 3.2/6.4mm	3.5mm
Other Data			
Ambient temperature (max.)	+70°C (standard)/+85°C (WG type)	up to 85°C	+85°C
Category of environmental protection IEC61810	RTII, RTIII	RTII, RTIII	RTIII
Terminal type	THT	THT	THT
Mounting	PCB	PCB	PCB
Dimensions (lwh)	20x10x15.2mm	18.2x10.2x14.7mm	20x5x12.5mm
Accessories			
Link to datasheet	PCH	OJ/OJE T77	PCN

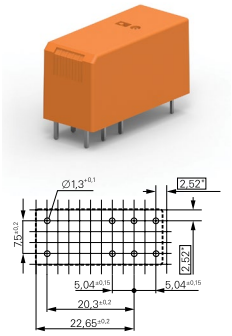
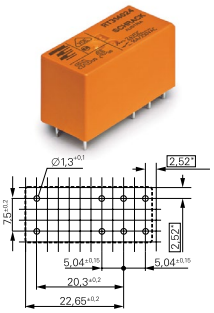
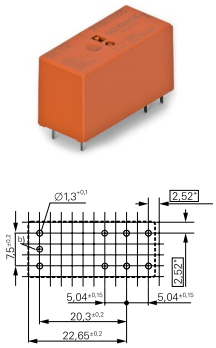
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	SCHRACK SNR	SCHRACK RYII	SCHRACK MSR/T75
Key Features	5mm wide slim outline Strong coil pins for DIN-rail socket Allows high function/ packaging density	Reflow solderable version Low height 12.3mm Reinforced insulation Pinnings 3.2mm and 5mm	High inrush currents with AgSnO contacts 4kV/8mm coil-contact Reinforced insulation
			
Footprint 2) see footnote below			
Applications	Interface technology PLC, timers, Heating control	Interface technology HVAC, PLC, Power supplies Domestic appliances	Interface technology HVAC, PLC, Power supplies Domestic appliances
Contact Data			
Contact arrangement	1 form C (CO), 1 form A (NO)	1 form C (CO), 1 form A (NO), 1 from B (NC)	1 form C (CO) 1 form A (NO)
Rated voltage	250VAC	250VAC	250VAC
Rated current	6A	8A	8/10A
Switching power / Max. break	1500VA	2000VA	2000VA
Contact material	$AgSnO_2$, $AgSnO_2$ gold plated	AgNi0.15, $AgSnO_2$, AgNi 0.15 gold plated	AgNi90/10, $AgSnO_2$
Min. recommended contact load	100mA at 12VDC	1) see footnote below	1) see footnote below
Coil Data			
Magnetic system	DC	DC	DC
Rated coil voltage	5 to 48VDC	5 to 60VDC	3 to 60VDC
Rated coil power	170/217mW	(223 - 257)mW	(212-262)mW
Dielectric Strength			
Initial dielectric strength			
between open contacts	1000Vrms	1000Vrms	1000Vrms
between contact and coil	4000Vrms	5000Vrms	4000Vrms
between adjacent contacts			
Clearance/creepage			
between contact and coil	6/8mm	8/8mm	8/8mm
Other Data			
Ambient temperature (max.)	+85°C	+70°C	+85°C
Category of environmental protection IEC61810	RTIII	RTII, RTIII	RTII, RTIII
Terminal type	THT	THT, THR	THT
Mounting	PCB or on socket	PCB or on socket	PCB
Dimensions (lwh)	28x5x15mm	28.5x10.1x12.3mm	28.6x10x15mm
Accessories	DIN rail sockets	PCB sockets	
Link to datasheet	SCHRACK SNR	SCHRACK RYII	SCHRACK MSR

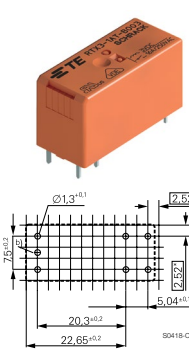
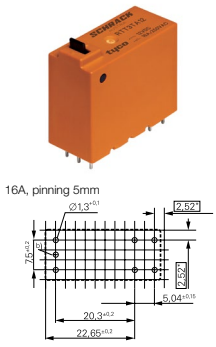
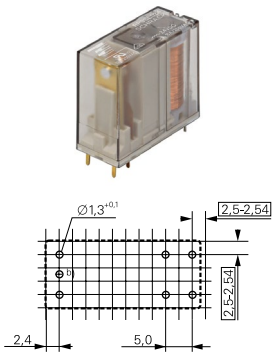
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	SCHRACK RZ	SCHRACK RT	SCHRACK RT INRUSH
Key Features	High performance version available Reinforced insulation High ambient temperature version (105°C) WG type available (IEC 60335-1) AgNi and AgSnO contact versions THR (reflow) version	DC and AC coil Mono-or bistable coil Reinforced insulation WG type available (IEC 60335-1) High ambient temperature version (105°C) THR (reflow) version Sensitive version Bifurcated contacts	For inrush peak currents up to 80A Mono-or bistable coil Reinforced insulation WG type available (IEC 60335-1)
Footprint 2) see footnote below			
Applications	Household appliances HVAC, Home automation Machine control, Energy control	HVAC, Home automation, Machine control, Energy control Switching cabinet, Interface modules	Lighting applications, Movement detectors, Motors control, Domestic appliances
Contact Data			
Contact arrangement	1 form C (CO) 1 form A (NO)	1 form C (CO), 1 from A (NO) 2 form C (CO), 2 form A (NO)	1 form C (CO) 1 from A (NO)
Rated voltage	250VAC	250VAC	250VAC
Rated current	16A	2X8/16A	16A
Switching power / Max. break	4000VA	2X2000/4000VA	4000VA
Contact material	AgNi90/10, $AgSnO_2$	AgNi90/10, $AgSnO_2$	AgNi90/10, $AgSnO_2$
Min. recommended contact load	1) see footnote below	1) see footnote below	1) see footnote below
Coil Data			
Magnetic system	DC	DC, AC, bistable	DC, bistable
Rated coil voltage	5 to 48VDC	5 to 110VDC/24 to 230VAC	5 to 11VDC
Rated coil power	400mW	400mW/0.75VA	400mW
Dielectric Strength			
Initial dielectric strength			
between open contacts	1000Vrms	1000Vrms	1000Vrms
between contact and coil	5000Vrms	5000Vrms	5000Vrms
between adjacent contacts		2500Vrms	
Clearance/creepage			
between contact and coil	>10/10mm	>10/10mm	>10/10mm
Other Data			
Ambient temperature (max.)	+85°C +105°C (HOT type) +70°C (transparent cover type)	+75°C (AC type) +85°C	+85°C
Category of environmental protection IEC61810	RTII, RTIII	RTII, RTIII	RTII
Terminal type	THT	THT, THR (DC and AC type)	THT
Mounting	PCB	PCB or on socket	PCB or socket
Dimensions (lwh)	29x12.7x15.7mm	29x12.7x15.7mm	29x12.7x15.7mm
Accessories		PCB and DIN rail sockets	
Link to datasheet	SCHRACK RZ	SCHRACK RT	SCHRACK RT INRUSH

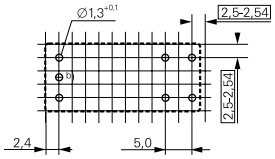
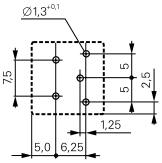
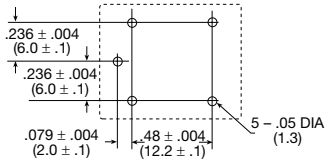
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	SCHRACK RTX	SCHRACK RT iPOWER	SCHRACK RP3SL
Key Features	Inrush peak currents up to 370A Bistable coil Reinforced insulation 16A rated fluorescent load acc. EN60669-1 8A electronic ballast acc. UL508 1 1/2 HP motor load acc. UL508	High Inrush peak currents up to 165A (20ms) and 800A (200µs) Mono-or bistable coil RTS3T: 5A Electronic ballast acc. UL508 RTSET: 8A Electronic ballast acc. UL508 Test tab (manual operator) optional for RTT3T bistable versions	Inrush peak currents up to 120A (20ms) Mono-or bistable coil Sealed version available
Footprint 2) see footnote below			
Applications	Lighting control systems Motion sensors Home automation applications	LED lighting systems, Lighting control, Movement detectors Filament and incandescent lamp Motor control	Lighting control Motor control Building automation
Contact Data			
Contact arrangement	1 from A (NO)	1 from A (NO)	1 form A, 1 NO
Rated voltage	250VAC	250VAC	250VAC
Rated current	16A	16A	16A
Switching power / Max. break	4000VA	4000VA	4000VA
Contact material	W (pre-make contact) + $AgSnO_2$	W (pre-make contact) + $AgSnO_2$ $AgSnO_2$	$AgSnO_2$
Min. recommended contact load	1) see footnote below	1) see footnote below	100mA at 12VDC
Coil Data			
Magnetic system	Bistable	DC, bistable	DC
Rated coil voltage	5 to 48VDC	5 to 11VDC	6 to 110VDC
Rated coil power	650mW/665mW	400mW	500mW
Dielectric Strength			
Initial dielectric strength			
between open contacts	1250Vrms	1250Vrms	2000Vrms
between contact and coil	5000Vrms	5000Vrms	4000Vrms
between adjacent contacts			
Clearance/creepage			
between contact and coil	min. 6/6mm	10/10mm	8/8mm
Other Data			
Ambient temperature (max.)	+70°C	RTS3L/RTS3T +105°C, RTSET +85°C	+70°C
Category of environmental protection IEC61810	RTII	RTII	RTII, RTIII
Terminal type	THT	THT	THT
Mounting	PCB	PCB	PCB
Dimensions (lwh)	29.1x12.7x16mm	29x12.7x15.7mm (RTS3T), 29x12.7x16.0mm (RTS3L)	29x12.6x25.5mm
Accessories			
Link to datasheet	SCHRACK RTX	SCHRACK RT IPOWER	SCHRACK RP3SL

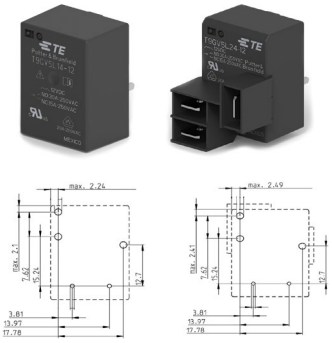
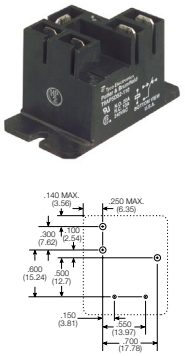
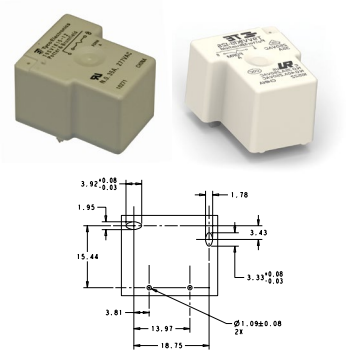
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	SCHRACK RP-2POLE 1.5MM	SCHRACK PB/PBH	SCHRACK ORWH
Key Features	2 pole 8A 1.5mm contact gap per pole Creepage distance complies with IEC 60950 Sealed version available	Compact and simple design gives high process security High ambient temperature version up to 105°C (PBH) WG type acc. IEC 60335-1	Compact relay with 1 form A and 1 form C contact arrangement 10A switching capacity
			
Footprint 2) see footnote below			
Applications	Domestic appliances UPS Solar Inverter	White goods Small home appliances Heating temperature controllers	Appliances HVAC Emergency lighting
Contact Data			
Contact arrangement	2 form A, 2 NO	1 form C (CO) 1 form A (NO)	1 form C (CO) 1 form A (NO)
Rated voltage	250VAC	250VAC	277VAC/28VDC
Rated current	8A	10A	10A
Switching power / Max. break	2000VA	2500VA	2770VA/360W
Contact material	$AgSnO_2$	AgNi90/10, AgSnO 1) see footnote below	AgZnO, AgNi
Min. recommended contact load	100mA at 12VDC		100mA at 5VDC
Coil Data			
Magnetic system	DC	DC	DC
Rated coil voltage	5 to 110VDC	5 to 48VDC	5 to 24VDC
Rated coil power	780mW	360mW/500mW	360mW
Dielectric Strength			
Initial dielectric strength			
between open contacts	25000Vrms	1000Vrms	750Vrms
between contact and coil	5000Vrms	2500Vrms	1500Vrms
between adjacent contacts	300Vrms		
Clearance/creepage			
between contact and coil	7/8mm	3/4mm / 4/5mm	3.2mm
Other Data			
Ambient temperature (max.)	+40°C	+85°C/+105°C	+85°C
Category of environmental protection IEC61810	RTII, RTIII	RTII	RTII, RTIII
Terminal type	THT	THT	THT
Mounting	PCB	PCB	PCB
Dimensions (lwh)	29x12.6x25.5mm	15x15x20mm	19.0x15.5x15.8mm
Accessories			
Link to datasheet	SCHRACK RP-2POLE 1.5MM	SCHRACK PB SCHRACK PBH	SCHRACK ORWH

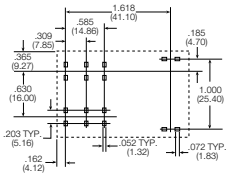
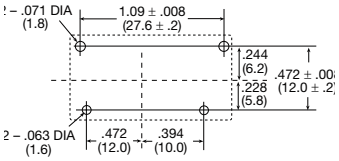
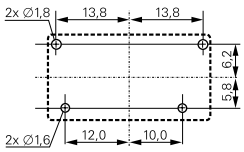
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	Potter & Brumfield T9G	Potter & Brumfield T9A	Potter & Brumfield T9S/T9V
Key Features	High breaking capacity PCB and quick connect connections 4kV/8mm coil-contact Minimum board space (29mm x 21.5mm) UL-class F as standard	High breaking capacity PCB and quick connect and chassis mount version UL-class F as standard Open version available	1 pole 35A (T9S)/40A (T9V) Contact gap 1.5mm/1.8mm min. Ambient temperature up to 85°C at 35A Production in accordance to IEC 60335-1 RoHS compliant (Directive 2002/95/EC)
Footprint 2) see footnote below			
Applications	HVAC, Appliances Industrial control Energy management	HVAC Appliances Industrial controls	Photovoltaic inverter Electrical vehicle loading stations Electrical vehicle
Contact Data			
Contact arrangement	1 form C (1 CO) 1 form B (1 NC) 1 form A (1 NO)	1 form C (1 CO) 1 form B (1 NC) 1 form A (1 NO)	1 form A (1NO)
Rated voltage	250VAC	250VAC	277VAC (1.5mm gap), 250VAC (1.8mm gap)
Rated current	30A	30A	35A (T9S) , 40A (T9V)
Switching power / Max. break		7500VA	9695VA (T9S), 10000VA (T9V)
Contact material	$AgSnO_2$	AgCdO, AgSnInO	AgNi
Min. recommended contact load	1A at 12VAC/VDC	1A at 5VDC or 12VAC	1A at 5VDC/12VAC
Coil Data			
Magnetic system	DC	DC	Monostable
Rated coil voltage	5 to 110VDC	6 to 48VDC	12VDC
Rated coil power	900mW	1W/900mW	2.25W
Dielectric Strength			
Initial dielectric strength			
between open contacts	1500Vrms	1500Vrms	2500Vrms
between contact and coil	4000Vrms	2500Vrms	4000Vrms
between adjacent contacts			
Clearance/creepage	6.4mm / 9.5mm (UL)		
between contact and coil	8mm / 8mm (IEC)	3.1/6.3mm	3/4mm
Other Data			
Ambient temperature (max.)	+105°C	+85°C	+85°C
Category of environmental protection IEC61810	RTII, RTIII	RT0, RTI, RTII, RTIII	RTII/RTIII
Terminal type	THT/Quick connect	THT/Quick connect	PCB
Mounting	PCB	PCB, panel mount	PCB
Dimensions (lwh)	29x21.5x15.7mm	32.3x27.4x20.4mm	32x27x20mm
Accessories			
Link to datasheet	Potter & Brumfield T9G	Potter & Brumfield T9A	Potter & Brumfield T9V Potter & Brumfield T9S

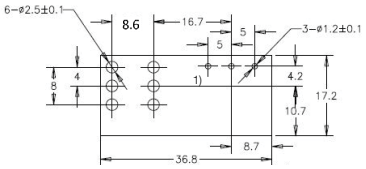
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	Potter & Brumfield T92	PCF	PCFN SOLAR
Key Features	Switching capacity 7500VA DC or AC coil 4kV/8mm coil-contact PCB or quick connect connections or chassis mount	Quick connect terminal for load (PCF only) Height 26.5mm Meet 4kV dielectric voltage between coil and contact Ambient temperature 85°C	Specially designed to meet the requirements for solar Contact gap 1.5mm/1.8mm min. 200mW hold power
			
Footprint 2) see footnote below			
Applications	HVAC Residential/commercial appliances Industrial controls	Applicances HVAC Office machines	Photovoltaic Inverter
Contact Data			
Contact arrangement	2 form C (2 CO) 2 form A (2 NO)	1 form A (1 NO)	1 form A (1 NO)
Rated voltage	400VAC	250VAC	277VAC
Rated current	30A	25A	26A
Switching power / Max. break	7500VAC	6370VA	7200VA
Contact material	AgCdO, AgSnInO	Visit TE.com for more information	$AgSnO_2$
Min. recommended contact load	500mA (NO)/ 100mA (NC) at 12VAC	100mA at 5VDC	100mA at 5VDC
Coil Data			
Magnetic system	DC, AC	DC	DC
Rated coil voltage	5 to 110VDC/12 to 240VAC	6 to 24VDC	12VDC and 24VDC
Rated coil power	1.7W/4.0VA	900mW	1.5W/200mW hold power
Dielectric Strength			
Initial dielectric strength			
between open contacts	1500Vrms	1000Vrms	2500Vrms
between contact and coil	4000Vrms	4000Vrms	4000Vrms
between adjacent contacts	2000Vrms		
Clearance/creepage			
between contact and coil	8/9.5mm	6.7/>8mm	6.1/6.1mm
Other Data			
Ambient temperature (max.)	DC Coil +85°C; AC Coil +65°C	+85°C	+85°C
Category of environmental protection IEC61810	RTI, RTII, RTIII	RTII	RTII
Terminal type	THT/Quick connect	THT/Quick connect (#250)	PCB-THT
Mounting	Panel mount, PCB	PCB	PCB
Dimensions (lwh)	52.3x34.6x30.8mm	30.4x16x26.5mm	30.4x16x26.5mm
Accessories			
Link to datasheet	Potter & Brumfield T92	PCF	PCFN SOLAR

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

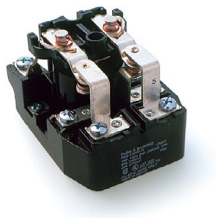
2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	EW60	EW100/120
Key Features	1 pole 60A, 1 form A (NO) contact Polarized bistable (latching) with 1 or 2 coils NEMA 410-2011, 16A, 277VAC, electronic ballast; 20A branch circuit 480A inrush, 2.1m sec	1 pole 120A, 1 form A (NO) contact Polarized bistable with two coils latching 4KV/ 8mm coil - contact Reinforced insulation
		
Footprint 2) see footnote below		Visit TE.com for more information
Applications	Lighting control, bus actuator, power distribution, circuit protection, inverter	Energy counter, prepaid power meter

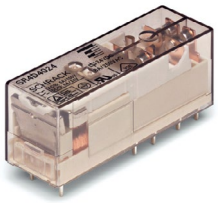
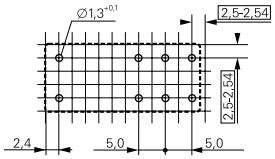
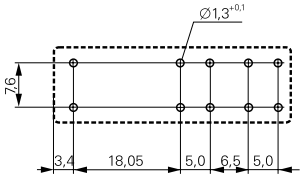
Contact Data		
Contact arrangement	1 form A (1 NO)	1 form A (1 NO)
Rated voltage	440VAC	250VAC
Rated current	60A	100A/120A
Switching power / Max. break	15000VA	30000VA
Contact material	$AgSnO_2$	$AgSnO_2$
Min. recommended contact load	Visit TE.com for more information	Visit TE.com for more information
Coil Data		
Magnetic system	Bistable	Bistable
Rated coil voltage	5 to 24VDC	6 to 24VDC
Rated coil power	1.5W/3W	4.5W
Dielectric Strength		
Initial dielectric strength		
between open contacts	1500Vrms	2000Vrms
between contact and coil	4000Vrms	4000Vrms
between adjacent contacts		
Clearance/creepage		
between contact and coil	≥6/9mm	≥10/10mm
Other Data		
Ambient temperature (max.)	+70°C	+70°C
Category of environmental protection IEC61810	RTI	RTII - flux proof
Terminal type	PCB	PCB, Copper
Mounting	PCB	Visit TE.com for more information
Dimensions (lwh)	36.8×17.2x30.4mm	36.8x21.8x41.9mm
Accessories		
Link to datasheet	EW60	EW100/120

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

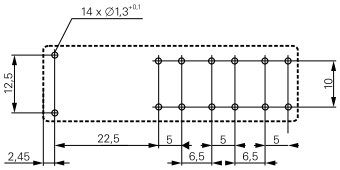
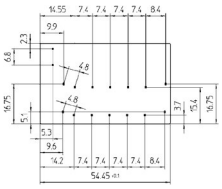
	IHV	Potter & Brumfield PRD
Key Features	Hermetically sealed - intrinsically safe Designed accordance to AIAG QS9000 No position sensitive RoHS compliance	Contact ratings to 50A Magnetic blowout available for switching DC loads SPDT auxiliary switch available Class B insulation system
		
	PCB mount not applicable. Visit TE.com for more information	PCB mount not applicable. Visit TE.com for more information
Applications	DC charging, Solar inverter, Energy store station BMS, Electrical forklift, AGV, Rail transit Circuit protection and Safety in Industrial Machinery	Industrial controls Lighting
Contact Data		
Contact arrangement	1 form X	1 form A (1 NO) 1 form C (1 CO) 1 form X (NO-DM) 2 form A (2 NO) 2 form C (2 CO)
Rated voltage	450VDC / 750VDC	600VAC, 28/125VDC
Rated current	50A/100A/150A/200A/250A/350A	50A
Switching power / Max. break		12000VA
Contact material		Ag, AgCdO
Min. recommended contact load	Visit TE.com for more information	1A at 12VDC/VAC
Coil Data		
Magnetic system	DC	DC, AC
Rated coil voltage	12VDC, 24VDC or PWM	6 to 110VDC/6 to 480VAC
Rated coil power	Visit TE.com for more information	2W/9.8VA
Dielectric Strength		
Initial dielectric strength		
between open contacts		2000Vrms
between contact and coil	2000Vrms	2000Vrms
between adjacent contacts		2000Vrms
Clearance/creepage		
between contact and coil	Visit TE.com for more information	>8mm
Other Data		
Ambient temperature (max.)	+85°C	DC +80°C AC +45°C
Category of environmental protection IEC61810	RTV	RT 0/open
Terminal type	Screw	Screw/Quick connect
Mounting	Panel mount	Panel mount
Dimensions (lwh)	Visit TE.com for more information	85.7X63.8X63.5mm
Accessories		Dust cover
Link to datasheet		Potter & Brumfield PRD

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

	SCHRACK SR2M	SCHRACK SR4 D/M
Key Features	2 pole relay with force guided contacts according to EN50205 Reinforced insulation between poles	4 pole relay with force guided contacts according to EN50205 Compact design, space efficient
		
Footprint 2) see footnote below		
Applications	Safety modules Process technology Elevator and Escalator control	Safety modules Process technology Elevator and Escalator control
Contact Data		
Contact arrangement	1 form A + 1 from B (1 NO + 1 NC) 2 form C (2 CO)	3 form A + 1 form B (3 NO + 1 NC) 2 form A + 2 form B (2 NO + 2 NC)
Rated voltage	250VAC	250VAC
Rated current	6A	8A
Switching power / Max. break	1500VA	2000VA
Contact material	AgNi	$AgSnO_2$
Min. recommended contact load	10mA at 5VDC	10mA at 5VDC
Coil Data		
Magnetic system	DC	DC
Rated coil voltage	5 to 110VDC	5 to 110VDC
Rated coil power	700mW	800mW
Dielectric Strength		
Initial dielectric strength		
between open contacts	1500Vrms	1500Vrms
between contact and coil	4000Vrms	4000Vrms
between adjacent contacts	3000Vrms	2500Vrms
Clearance/creepage		
between contact and coil	8/8mm	10/10mm
Other Data		
Ambient temperature (max.)	+70°C	+70°C
Category of environmental protection IEC61810	RTIII	RTIII
Terminal type	THT/Plug-in	THT
Mounting	PCB/Socket	PCB
Dimensions (lwh)	29x12.6x25.5mm	40x13x16.5mm
Accessories	Sockets and relay clips	
Link to datasheet	SCHRACK SR2M	SCHRACK SR4 D/M

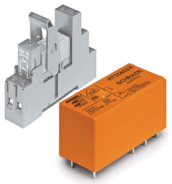
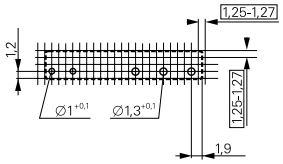
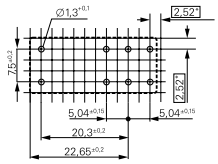
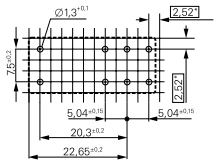
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	SCHRACK SR6	SCHRACK SRL7
Key Features	4/6 pole relay with force guided contacts according to EN50205 Reinforced insulation between all contacts depending on version	7 pole relay with force guided contacts according to EN50205
		
Footprint 2) see footnote below		
Applications	Safety modules Process technology Elevator and escalator control	Safety modules Process technology Elevator and escalator control
Contact Data		
Contact arrangement	3 form A + 1 form B (3 NO + 1 NC) 2 form A + 2 form B (2 NO + 2 NC) 3 form A + 3 form B (3 NO + 3 NC) 4 form A + 2 form B (4 NO + 2 NC) 5 form A + 1 form B (5 NO + 1 NC)	2 form B + 5 form A (2 NC + 5 NO)
Rated voltage	250VAC	250VAC
Rated current	8A	6A
Switching power / Max. break	2000VA	1500VA
Contact material	$AgSnO_2$	Ag alloy
Min. recommended contact load	10mA at 5VDC	10mA at 5VDC
Coil Data		
Magnetic system	DC	DC
Rated coil voltage	5 to 110VDC	5 to 110VDC
Rated coil power	1200/800mW	700mW
Dielectric Strength		
Initial dielectric strength		
between open contacts	1500Vrms	1000Vrms
between contact and coil	4000Vrms	2500/4000Vrms
between adjacent contacts	3000/4000Vrms	2500/4000Vrms
Clearance/creepage		
between contact and coil	5.5/5.5mm, 15/15mm	≥3/4mm and ≥5.5/5.5mm
Other Data		
Ambient temperature (max.)	+70°C	+85°C
Category of environmental protection IEC61810	RTIII	RTII
Terminal type	THT	THT
Mounting	PCB	PCB
Dimensions (lwh)	55x16.5x16.5mm	55.5x33.8x10.8mm
Accessories		
Link to datasheet	SCHRACK SR6	SCHRACK SRL7

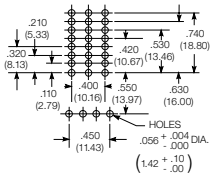
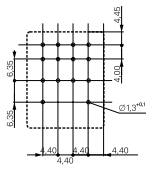
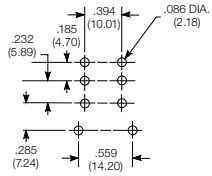
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	SCHRACK SLIM INTERFACE SNR	SCHRACK INTERFACE RELAY RT	SCHRACK INTERFACE RELAY XT
Key Features	Strong coil pins for DIN-rail socket LED and protection circuit standard 4kV coil-contact, 6/8mm clearance/ creepage System width only 6.2mm	Strengthened pins designed to plug into DIN-rail-sockets Cadmium-free contacts Complete interface solutions available Modular concept socket/relay/module	Manual test tab, optionally lockable Mechanical and electrical indicator Reinforced insulation 4kV/8mm dielectric strength between coil and contact
			
Footprint 2) see footnote below			
Applications	Interface technology Panel board Mechanical engineering	Panel board Mechanical engineering Machine Industry	Panel boards Mechanical engineering
Contact Data			
Contact arrangement	1 form C, (CO)	1 form C, (1 CO) 2 form C, (2 CO)	1 form C, (1 CO) 2 form C, (2 CO)
Rated voltage	250VAC	240VAC	240VAC
Rated current	6A	8/16A	8/16A
Switching power / Max. break	1500VA	2000/4000VA	2000/4000VA
Contact material	$AgSnO_2$, $AgSnO_2$ Au plated	$AgSnO_2$, AgNi90/10 AgNi90/10 Au plated	AgNi90/10
Min. recommended contact load	1) see footnote below	1) see footnote below	10mA at 12VDC
Coil Data			
Magnetic system	DC	DC, AC	DC, AC
Rated coil voltage	5 to 60VDC	5 to 110VDC/24 to 230VAC	12 to 110VDC/24 to 230VAC
Rated coil power	170mW	400mW/0.75VA	400mW/0.75VA
Dielectric Strength			
Initial dielectric strength			
between open contacts	1000Vrms	1000Vrms	1000Vrms
between contact and coil	4000Vrms	4000/5000Vrms	4000/5000Vrms
between adjacent contacts		2500Vrms	2500Vrms
Clearance/creepage			
between contact and coil	≥6/8mm	≥8/8mm	≥8/8mm
Other Data			
Ambient temperature (max.)	Relay +85°C, in socket +55°C	+70/+85°C	+70/+85°C
Category of environmental protection IEC61810	RTIII	RTII	RTII
Terminal type	Plug-in	Plug-in	Plug-in
Mounting	Socket	Socket	Socket
Dimensions (lwh)	28x5x15mm	29x13x15.7mm	29x13x26.7mm
Accessories	DIN rail sockets, jumper bars	DIN rail and PCB sockets, clips, marking tags, modules, jumper bars	DIN rail and PCB sockets, clips, marking tags, modules, jumper bars
Link to datasheet	SCHRACK SLIM INTERFACE SNR	SCHRACK INTERFACE RELAY RT	SCHRACK INTERFACE RELAY XT

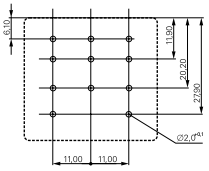
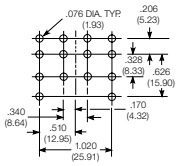
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	Potter & Brumfield R10	SCHRACK PT/ Potter & Brumfield KH	Potter & Brumfield K10
Key Features	Broad range of coil options provide sensitivity ranging from 25 to 750mW Various contacts switch from dry circuit to 7.5A Many mounting and termination options	Sensitive coil Low height 29/33mm Manual test tab, optionally lockable Mechanical indicator Optional LED, protection diode	Mounting options include socket, PCB, top flange DC and AC coils LED versions available
			
Footprint 2) see footnote below			
Applications	Coin changers Audio equipment Ultrasonic test equipment	Machine industry Elevator industry Building management	Industrial controls Motor controls Industrial timers
Contact Data			
Contact arrangement	1, 2, 3, 4, 6, 8 form C (CO)	2 form C (2 CO) 3 form C (3 CO) 4 form C (4 CO)	2 form C (2 CO)
Rated voltage	115VAC, 115VDC	240VAC	120/240VAC
Rated current	0.5/2/3/7.5A	1/2/5/6/10/12A	10/15A
Switching power / Max. break	862VA max.	1500/2500/3000VA	1800/2500VA
Contact material	Ag, AgCdO, Ag w/ Au overlay	AgNi90/10, AgNi90/10 Au plated	AgCdO, AgNi90/10
Min. recommended contact load	Dry circuit to 300mA at 12VDC	1) Bifurcated contacts for dry circuit available on KH	1) see footnote below
Coil Data			
Magnetic system	DC, AC	DC, AC	DC, AC
Rated coil voltage	3 to 115VDC/6 to 115VAC	6 to 220VDC/6 to 240VAC	6 to 220VDC/6 to 240VAC
Rated coil power	36mW to 1.6W/1.5VA	750 to 900mW/1 to 1.2VA	750 to 900mW/1 to 1.2VA
Dielectric Strength			
Initial dielectric strength			
between open contacts	500/1000Vrms	1200Vrms	1200/1000Vrms
between contact and coil	1000Vrms	2500Vrms	2500/1500Vrms
between adjacent contacts	1000Vrms	2000/2500Vrms	2500/1500Vrms
Clearance/creepage			
between contact and coil	Visit TE.com for more information	≥4/4mm	≥3.1/3.1mm
Other Data			
Ambient temperature (max.)	+75°C	+70°C	+70°C
Category of environmental protection IEC61810	RTI, RTIII	RTII	RTII
Terminal type	Solder/plug-in and PCB	THT, plug-in, Quick connect	Quick connect, solder, PCB
Mounting	Socket, panel mount and PCB	Socket, PCB	Socket and bracket mount
Dimensions (lwh)	29.6x18.7x30.2mm	28x22.5x29/30/36mm	28x22.5x29/34.9mm
Accessories	Solder/PCB sockets, clips, hold down strap, mounting strip	DIN rail and PCB sockets, clips, marking tags, modules, jumper bars	Screw, solder and PCB sockets and clips
Link to datasheet	Potter & Brumfield R10	Potter & Brumfield KHA SCHRACK PT	Potter & Brumfield K10

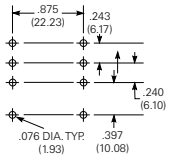
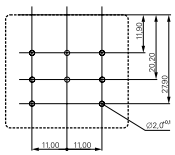
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	Potter & Brumfield KRPA/MT	SCHRACK RM2/3/7	Potter & Brumfield KUP/ KUMP/KUIP
Key Features	Industry standard octal/undecal type termination for quick installation DC and AC coils Mechanical indicator, indicator lamp and push-to-test options	Wide selection of termination and mounting styles PC terminals available Push to test button and indicator lamps Class B coil insulation	Wide selection of termination and mounting styles Broad range of contact forms PC terminals available Push to test button and indicator lamps Class B coil insulation
Footprint 2) see footnote below	 PCB mount not applicable. Visit TE.com for more information	 	 
Applications	Mechanical engineering Elevator control, Plant control Baggage handling	Elevator control Power supplies	HVAC Pump motor controls Hospital beds
Contact Data			
Contact arrangement	1 form C (1 CO) (KRPA) 2 form C (2 CO) 3 form C (3 CO)	2 form C (2 CO) 3 form C (3 CO)	1, 2, 3, 4 form C (CO) 1, 2, 3 form A (NO) 2, 3 form B (NC) 1 form X (NO-DM) 1 form Y (NC-DB) 1 from Z (CO-DM/DB)
Rated voltage	240VAC	400VAC	240VAC
Rated current	4/10A	10/16A	10/15A
Switching power / Max. break	500/2400/2500VA	3800/6000VA	2400/4155VA
Contact material	AgCdO, AgNi90/10, AgNi90/10 Au plated	AgCdO, AgNi90/10 in preparation	Ag, AgCdO, AgSnOInO
Min. recommended contact load	1) see footnote below	100mA at 12VDC	100mA at 12VDC(Ag) 300mA at 12VDC (AgCdO, AnSnOInO)
Coil Data			
Magnetic system	DC, AC	DC, AC	DC, AC
Rated coil voltage	6 to 220VDC/6 to 240VAC	6 to 220VDC/6 to 400VAC	5 to 110VDC/6 to 240VAC
Rated coil power	760mW to 1.3W/0.74 to 2.3VA	1.2 to 1.8W/2 to 2.8VA	1.2 to 1.8W/2 to 2.7VA
Dielectric Strength			
Initial dielectric strength			
between open contacts	1000/1500Vrms	1500Vrms	1200Vrms
between contact and coil	1000/2500Vrms	2500Vrms	2200/3750Vrms
between adjacent contacts	1000/2500Vrms	2500Vrms	2200Vrms
Clearance/creepage			
between contact and coil	≥2.8/4mm	≥4/14.9mm	Visit TE.com for more information
Other Data			
Ambient temperature (max.)	DC +60/+70°C AC +50/+55°C	+50/+70°C	DC +50/+70/+95°C AC +45/+55/+70°C
Category of environmental protection IEC61810	RTI	RTI	RTI
Terminal type	Plug-in	THT, Plug-in, solder, Quick connect	THT, Plug-in, solder, Quick connect
Mounting	Socket	Socket, PCB, bracket, flange mount and DIN-snap-on	Socket, PCB, bracket, flange, stud and tapped core
Dimensions (lwh)	35.7x35.7x50.8/57mm	38.5x35.5x48.5mm	38.9x35.7x48.4mm
Accessories	DIN rail and PCB sockets, clips, marking tags, modules	DIN rail and PCB sockets, clips	DIN rail, panel and PCB sockets, clips
Link to datasheet	Potter & Brumfield KRPA SCHRACK MT	SCHRACK RM2/3/7	Potter & Brumfield KUIP KUGP KUM KUMP KUP

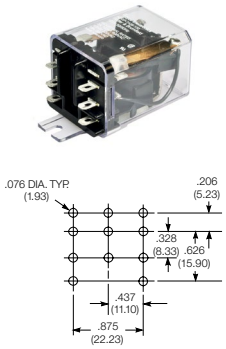
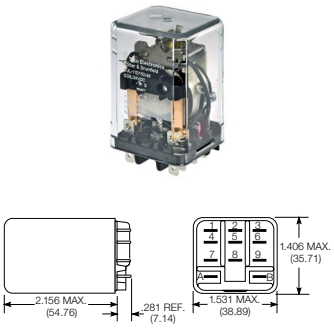
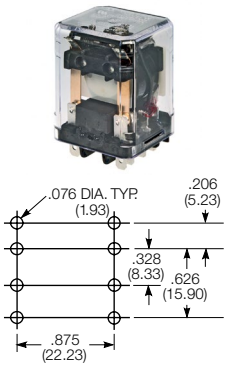
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	SCHRACK RM8/C/D	Potter & Brumfield KUHP	SCHRACK RM5/6/B 3MM
Key Features	Power relay with push-on and solder terminals Various mounting options Indicator lamps and mechanical indicator Optional push to test button	Power relay with push-on and solder terminals Various mounting options Designed to meet VDE space requirements Class B coil insulation	3mm contact gap DC or AC coil Push-to-test button Plug-in version, PCB terminals or chassis or DIN-rail mount
			
Footprint 2) see footnote below	PCB mount not applicable. Visit TE.com for more information		
Applications	Cleaning equipment Heating equipment Cooling equipment	Baggage handling motors Industrial pumps Commercial ovens	Power supplies Pump control
Contact Data			
Contact arrangement	1 form C (1 CO) 2 form C (2 CO) 1 form Z contact (1 NO + 1 NC) 1 form X contact (1 NO)	1 form C (1 CO) 2 form C (2 CO)	2 form A (2 NO) 3 form A (3NO)
Rated voltage	400VAC	240VAC, 50/60Hz; 28VDC	240/400VAC
Rated current	25/30/32A	20/30A	10/16A
Switching power / Max. break	6000/7500VA	4800/7200VA	3800/6000VA
Contact material	AgCdO, AgNi90/10	AgCdO, AgSnOInO	AgCdO, AgNi90/10 in preparation
Min. recommended contact load	100mA at 12VDC	300mA at 12VDC	100mA at 12VDC
Coil Data			
Magnetic system	DC, AC	DC, AC	DC, AC
Rated coil voltage	6 to 220VDC/6 to 400VAC	6 to 110VDC 50/60Hz. 6 to 277VAC	6 to 220VDC/6 to 400VAC
Rated coil power	1.2W/2.7VA	1.2W/2.7VA	1.2W/2.7VA
Dielectric Strength			
Initial dielectric strength			
between open contacts	1500/2000Vrms	1200Vrms	2500Vrms
between contact and coil	2500Vrms	3750Vrms	2500Vrms
between adjacent contacts	4000Vrms	3750Vrms	2500Vrms
Clearance/creepage			
between contact and coil	≥4/14.9mm	Visit TE.com for more information	≥4/14.9mm
Other Data			
Ambient temperature (max.)	DC +60/+65°C AC +40°C	DC +45°C AC +75°C	+50/+60°C
Category of environmental protection IEC61810	RTI	RTI, RT0	RTI
Terminal type	Solder/Quick connect	Solder/PCB THT/Quick connect	Plug-in, solder, Quick connect, PCB THT
Mounting	Bracket, top flange panel mount and DIN snap-on	Bracket and top flange panel mount	Socket, PCB, bracket, flange mount and DIN-snap-on
Dimensions (lwh)	38.5x35.5x48.5mm	38.9x35.7x48.4mm	38.5x35.5x48.5mm
Accessories	No sockets	No sockets	DIN rail and PCB sockets, clips
Link to datasheet	SCHRACK RM8C/D SCHRACK RM 8	Potter & Brumfield KUHP	SCHRACK RM5/6/B 3MM

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	Potter & Brumfield KUGP	Potter & Brumfield KUL	Potter & Brumfield KUEP
Key Features	3mm contact gap DC or AC coil Plug-in version, PCB terminals or chassis mount	Magnetic latching Single and dual coils Panel mounting	10A relay with various contact arrangements Magnetic blowout for 150VDC load switching Indicator lamp option
Footprint 2) see footnote below			
Applications	Voltage control units	Alarm systems Machine tools Battery chargers	DC load switvhing in industrial controls
Contact Data			
Contact arrangement	1 form C (1 CO) 2 form A (2 NO) 2 form C (2 CO) 3 form C (3 CO)	1 form C (1 CO) 2 form C (2 CO) 3 form C (3 CO)	1 form X (NO-DM) 2 form A (2 NO) 2 form C (2 CO)
Rated voltage	240/400VAC	28/240VAC	150VDC/240VAC
Rated current	10A	10A	10A
Switching power / Max. break	2400VA		1500W/2400VA
Contact material	Ag, AgCdO	Ag, AgCdO	AgCdO, AgSnOInO
Min. recommended contact load	100mA at 12VDC (Ag) 300mA at 12VDC (AgCdO)	100mA at 12VDC (Ag) 300mA at 12VDC (AgCdO)	300mA at 12VDC
Coil Data			
Magnetic system	DC, AC	DC, AC	DC, AC
Rated coil voltage	6-110VDC/6-240VAC	12 to 48VDC/24 to 120/240VAC	5 to 110VDC/6 to 240VAC
Rated coil power	1.8W/2.7VA	1.6W dual coil/1.2W single coil	1.2W to 1.8W/2 to 2.7VA
Dielectric Strength			
Initial dielectric strength			
between open contacts	3500Vrms	500Vrms	1200Vrms
between contact and coil	2200Vrms	1500Vrms	2200Vrms
between adjacent contacts	2200Vrms	1500Vrms	2200Vrms
Clearance/creepage			
between contact and coil	>8mm	Visit TE.com for more information	Visit TE.com for more information
Other Data			
Ambient temperature (max.)	DC +75°C AC +70°C	DC +70°C AC +50/+70°C	AC +55/+70°C DC +50/+70°C
Category of environmental protection IEC61810	RTI	RTI	RTI
Terminal type	THT, Plug-in, solder, Quick connect, PCB	.187 Quick connect, solder	Quick connect, solder and PCB
Mounting	Socket, PCB, bracket, flange mount	Socket, bracket	Socket, PCB, bracket and top flange mount
Dimensions (lwh)	38.9x35.7x48.4mm	38.9x35.7x54.8mm	38.9x35.7x48.4mm
Accessories	DIN rail and PCB sockets, clips	Screw, solder, PCB and Quick connect sockets and clips	DIN rail, track mount, chassis mount, and snap-in sockets, clips
Link to datasheet	Potter & Brumfield KUGP	Potter & Brumfield KUL	Potter & Brumfield KUEP

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

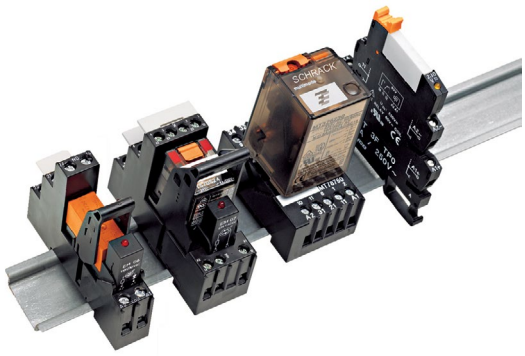
Key Features

ACCESSORIES

DIN rail and PCB sockets
Screw and screwless fingersafe terminals
Retaining and ejection clips
Marking tags, jumper bars, jumper links
LED and protection modules

SETS

Relay package consisting of relay, DIN rail socket, plastic retaining clip, marking tag and module



Applications

Contact Data

Contact arrangement	1 form C (1 CO) 2 form C (2 CO) 3 form C (3 CO) 4 form C (4 CO)	1 form C (1 CO) 2 form C (2 CO) 3 form C (3 CO) 4 form C (4 CO)
Rated voltage	240/250VAC	240/250VAC
Rated current	6 to 16A	6 to 16A
Switching power / Max. break		1500 to 4000VA
Min. recommended contact load		1) see footnote below

Coil Data

Magnetic system		DC, AC
Rated coil voltage		6 to 220VDC/6 to 230VAC
Rated coil power		170 to 700mW/0.4 to 1VA

Dielectric Strength

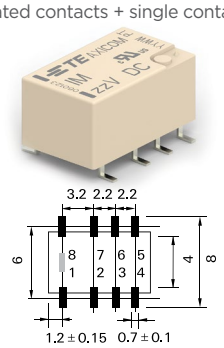
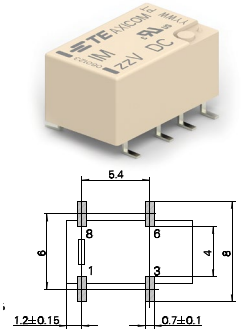
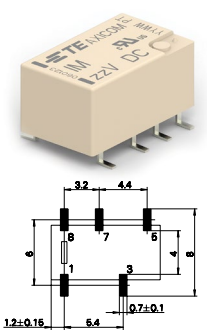
Initial dielectric strength		
between open contacts		
between contact and coil		
between adjacent contacts		
Clearance/creepage		
between contact and coil		

Other Data

Ambient temperature (max.)		
Category of environmental protection IEC61810	IP20	
Terminal type	Screw, screwless, plate mount, PCB	Screw, screwless
Mounting		
Dimensions (lwh)		

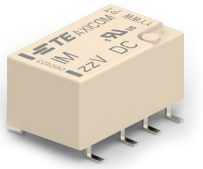
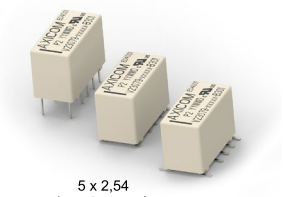
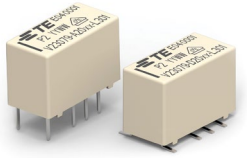
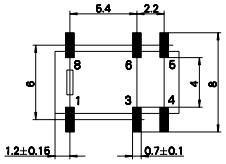
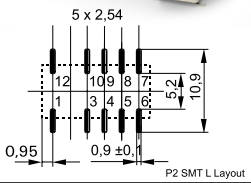
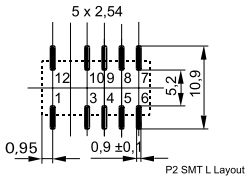
Accessories	PCB, panel mount and DIN rail	DIN, panel mount
Link to datasheet	ACCESSORIES SLIM INTERFACE RELAY SNR ACCESSORIES INDUSTRIAL POWER RELAY RT ACCESSORIES MINIATURE RELAY PT ACCESSORIES INTERFACE PLUG-IN RELAY XT	RELAY PACKAGE RT RELAY PACKAGE PT RELAY PACKAGE SNR ACCESSORIES MULTIMODE RELAY MT

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

	Axicom IM	Axicom IMB	Axicom IMC
Key Features	4G telecom/signal relay/switching relay Slim line 10x6mm, low-profile 5.65mm Switching power 60W/62.5VA Switching voltage 220VDC/250VAC Monostable + Bistable Low rated coil power High dielectric version High current version up to 5 A High contact stability version Bifurcated contacts + single contact	4G telecom/signal relay/switching relay Slim line 10x6mm, low-profile 5.65mm Switching power 60W/62.5VA Switching voltage 220VDC/250VAC Monostable + Bistable Very high dielectric version Bifurcated contacts	4G telecom/signal relay/switching relay Slim line 10x6mm, low-profile 5.65mm Switching power 60W/62.5VA Switching voltage 220VDC/250VAC Monostable + Bistable High dielectric version High current version up to 4 A Bifurcated contacts
Footprint 2) see footnote below			
Applications	Telecommunication, access and transmission equipment Thermostat controls, fire and security equipment Measurement and test equipment, Industrial controls, medical equipment	Telecommunication, access and transmission equipment Thermostat controls, fire and security equipment Measurement and test equipment, Industrial controls, medical equipment	Telecommunication, access and transmission equipment Thermostat controls, fire and security equipment Measurement and test equipment, Industrial controls, medical equipment
Contact Data			
Contact arrangement	2 form C, 2 CO Single contact + Bifurcated contacts	1 form A, 1 NO Bifurcated contacts	1 form C, 1 CO Bifurcated contacts
Rated voltage	250VAC/220VDC	250VAC/220VDC	250VAC/220VDC
Rated current	2/5A	2A	2/4A
Switching power / Max. break	60W/62.5VA	60W/62.5VA	60W/62.5VA
Min. recommended contact load	100µV/1µA	100µV/1µA	100µV/1µA
Initial contact resistance	<50mΩ at 10mA/30mV I: < 100mΩ	<100mΩ at 10mA/30mV	<50mΩ at 10mA/ 30mV
Coil Data			
Magnetic system	Polarized	Polarized	Polarized
Rated coil voltage	1.5 to 24VDC	1.5 to 24VDC	1.5 to 24VDC
Rated coil power **DC coil / bistable 1 coil/2 coils**	50 to 200mW-/-	140mW/-/-	140mW/-/-
Dielectric Strength			
Initial dielectric strength			
between open contacts	750 to 1500Vrms	2500Vrms	1000 to 1600Vrms
between contact and coil	1500 to 1800Vrms	3500Vrms	1800 to 2200Vrms
between adjacent contacts	750 to 1800Vrms		
Initial surge withstand voltage			
between open contacts	1000 to 2500V	3500V	1500 to 2200V
between contact and coil	2000 to 2500V	4900V	2500 to 3000V
between adjacent contacts	1000 to 2500V		
Isolation 100/900MHz	37.0/18.8dB	37.0/18.8dB	37.0/18.8dB
Insertion loss 100/900MHz	0.03/0.33dB	0.03/0.33dB	0.03/0.33dB
Volt. standing wave ratio 100/900MHz	1.06/1.49	1.06/1.49	1.06/1.49
Capacitance between open contacts	max. 1pF	max. 1pF	max. 1pF
Other Data			
Ambient temperature (max.)	-40 to +85°C	-40 to +85°C	-40 to +85°C
Category of environmental protection	IP67/RTV	IP67/RTV	IP67/RTV
Terminal type	THT, SMT	THT, SMT	THT, SMT
Dimension (lwh)	10x6x5.65mm	10x6x5.65mm	10x6x5.65mm
Link to datasheet	Axicom IM	Axicom IMB	Axicom IMC

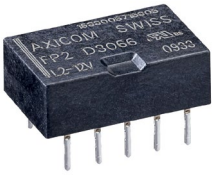
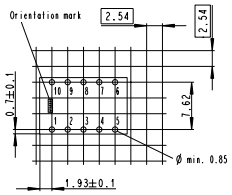
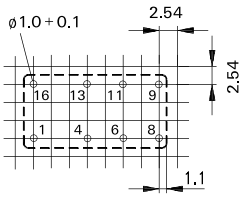
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	Axicom IMD/IME	Axicom P2 / P2 HIGH DIELECTRIC VERSION	Axicom P2 LIGHTING
Key Features	4G telecom/signal relay/switching relay Slim line 10x6mm, low-profile 5.65mm Switching power 60W/62.5VA Switching voltage 220VDC/250VAC Monostable Bifurcated contacts	Small Signal relay Slim line 15x7.5mm Switching current max. 5A High dielectric version Meets Telcordia Technologies Inc. requirements	Small signal relay Slim line 15x7.5mm Switching current max. 5A High dielectric strength 3kV VDE certified for LED tubes
			
Footprint 2) see footnote below			
Applications	Telecommunication, access and transmission equipment, fire and security equipment Thermostat controls Measurement and test equipment, Industrial controls, medical equipment	Security systems, consumer electronics, thermostats Home automation systems, communication systems Set top boxes, office equipment	LED tubes Office equipment Security systems, set top boxes
Contact Data			
Contact arrangement	2 form B, 2 NC 2 form A, 2 NO Bifurcated contacts	2 form C, 2 CO Bifurcated contacts	2 form C, 2 CO Bifurcated contacts
Rated voltage	250VAC/220VDC	250VAC/220VDC	250VAC/220VDC
Rated current	2A	2A	2A
Switching power / Max. break	60W/62.5VA	60W/62.5VA	60W/62.5VA
Min. recommended contact load	100µV/1µA	100µV/1µA	100µV/1µA
Initial contact resistance	<50mΩ at 10mA/20mV	<50mΩ at 10mA/20mV	<50mΩ at 10mA/20mV
Coil Data			
Magnetic system	Polarized	Polarized	Polarized
Rated coil voltage	1.5 to 24VDC	2.4 to 24VDC	3 to 12VDC
Rated coil power **DC coil / bistable 1 coil/2 coils**	140mW/-/-	140mW/70mW/140mW	140mW - 1 coil version
Dielectric Strength			
Initial dielectric strength			
between open contacts	1000Vrms	1000 to 1500Vrms	1500Vrms
between contact and coil	1800Vrms	1500Vrms	3000Vrms
between adjacent contacts	1000Vrms	1000 to 1500Vrms	1500Vrms
Initial surge withstand voltage			
between open contacts	1500V	2000 to 2500Vrms	
between contact and coil	2500V	2500V	6000Vrms
between adjacent contacts	1500V	2500V	
Isolation 100/900MHz	37.0/18.8dB		
Insertion loss 100/900MHz	0.03/0.33dB		
Volt. standing wave ratio 100/900MHz	1.6/1.49		
Capacitance			
between open contacts	max. 1pF		
Other Data			
Ambient temperature (max.)	-40 to +85°C	-40 to +85°C	-40 to +85°C
Category of environmental protection	IP67/RTV	RTIII	RTIII
Terminal type	THT, SMT	THT, SMT	THT, SMT
Dimension (lwh)	10x6x5.65mm	14.5x7.2x10.4mm, stnd 14.5x7.2x9.9mm, ovrmld	14.5x7.2x9.9mm, ovrmld
Link to datasheet	Axicom IMD/IME	Axicom P2 / P2 HIGH DIELECTRIC VERSION	Axicom P2 LIGHTING

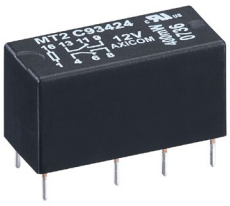
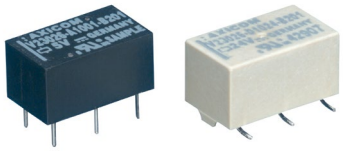
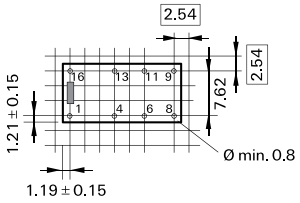
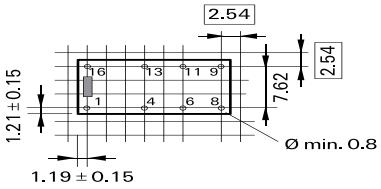
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	Axicom FP2	Axicom D2N V23105
Key Features	Slim line 14x9mm 2 form C bifurcated contacts High mechanical shock resistance, up to 1500g survival	2G telecom/signal relay 4 coil sensitivities 3A UL rating
		
Footprint 2) see footnote below		
Applications	Communication equipment Keyless entry Speaker switch, consumer electronics	Communication equipment Office equipment Measurement and control equipment
Contact Data		
Contact arrangement	1 form C (CO)	2 form C, 2 CO Single Contacts
Rated voltage	220VDC/250VAC	250VAC/220VDC
Rated current	2A	3A
Switching power / Max. break	60W/62.5VA	60W/125VA
Min. recommended contact load	100µV	100µV/10µA
Initial contact resistance	<50mΩ at 10mA	<100mΩ
Coil Data		
Magnetic system	Polarized	Non polarized
Rated coil voltage	2 to 24VDC	3 to 48VDC
Rated coil power **DC coil/bistable 1 coil/2 coils**	80mW (high sensitive), 140mW	150 to 700mW/-/-
Dielectric Strength		
Initial dielectric strength		
between open contacts	750Vrms	750Vrms
between contact and coil	1000Vrms	1000Vrms
between adjacent contacts	1000Vrms	750Vrms
Initial surge withstand voltage		
between open contacts	1100V	1500V
between contact and coil	1500V	1500V
between adjacent contacts	1500V	1500V
Isolation/Cross talk at 100MHz/900MHz	Cross talk -40.2/-22.3dB	Isolation -39.0/-20.7dB
Insertion loss 100/900MHz	0.03dB/0.25dB	-0.02/-0.27dB
Volt. standing wave ratio 100/900MHz	1.01/1.07	1.04/1.40
Capacitance between open contacts		max. 2pF
Other Data		
Ambient temperature (max.)	-40 to +85°C	-25 to +85°C
Category of environmental protection	IP67/RTIII	IP67/RTIII
Terminal type	THT	THT
Dimension (lwh)	14x9x5mm	20.2x10x11.4mm
Link to datasheet	Axicom FP2	Axicom D2N V23105

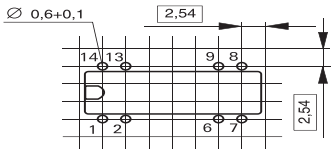
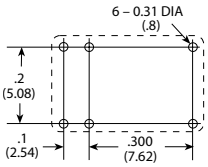
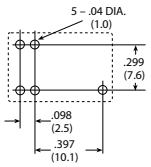
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	Axicom MT2	Axicom P1 V23026
Key Features	2G telecom/signal relay 5 coil sensitivities 2A UL rating	Very high sensitive relay Low-profile High vibration and shock resistance Version: symmetric pin layout Temperature range up to 85°C 1500Vrms across opened contacts
		
Footprint 2) see footnote below		
Applications	Communication equipment Linecard application Measurement and control equipment	Automotive equipment CAN bus Imobilizer
Contact Data		
Contact arrangement	2 form C, 2 CO Bifurcated contacts	1 form C, 1 CO Bifurcated contacts
Rated voltage	250VAC/220VDC	150VAC/125VDC
Rated current	2A	1A
Switching power / Max. break	60W/62.5VA	30W/60VA
Min. recommended contact load	100µV/1µA	100µV/1µA
Initial contact resistance	<70mΩ	<50mΩ
Coil Data		
Magnetic system	Non polarized	Polarized
Rated coil voltage	3 to 48VDC	3 to 24VDC
Rated coil power DC coil/bistable 1 coil/2 coils	150 to 550mW/-/-	65 to 130mW/30 to 130mW/70 to 200mW
Dielectric Strength		
Initial dielectric strength		
between open contacts	750Vrms	500Vrms
between contact and coil	1000Vrms	1500Vrms
between adjacent contacts	750Vrms	
Initial surge withstand voltage		
between open contacts	1500V	
between contact and coil	1500V	2500V
between adjacent contacts	1500V	
Isolation 100/900MHz	-31.8/-14.2dB	-30.0/-18.0dB
Insertion loss 100/900MHz	-0.02/-0.97dB	-0.12/-1.90dB
Volt. standing wave ratio 100/900MHz	1.03/1.31	1.06/1.75
Capacitance between open contacts	max. 2pF	max. 5pF
Other Data		
Ambient temperature (max.)	-55 to +85°C	-40 to +85°C
Category of environmental protection	IP67/RTIII	IP67/RTIII
Terminal type	THT	THT, SMT
Dimension (lwh)	20.2x10x11mm	13x7.6x6.9mm
Link to datasheet	Axicom MT2	Axicom P1 V23026

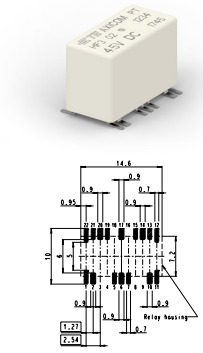
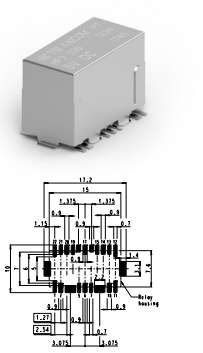
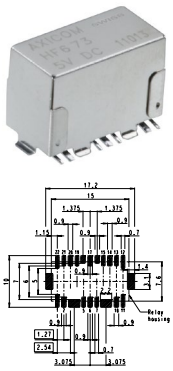
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	Axicom REED DIP/SIL	TSC	OUAZ/T81
Key Features	Direct driving with TTL signals Ultrasonic cleanable High switching speed Clamping diode Electrostatic shield	Designed for thermostat, modem Computer peripherals, video recording and security application Low coil power requirements IC compatibility	Gold overlay silver palladium alloy contact suitable for low loads High density available on PCB due to small size 2.54mm terminal pitch same as IC socket terminal pitch Sensitive and standard coils
			
Footprint 2) see footnote below			
Applications	Incircuit tester Measuring and control systems Alarm and security equipment	Telecommunications Office machine	Telecommunications Logic and process control Vending machines
Contact Data			
Contact arrangement	1 form A, 1 NO 2 form A, 2 NO 1 from C, 1 CO Reed contacts	1 form C, 1 CO	1 form C, 1 CO 1 form A, 1 NO
Rated voltage	175 to 200VAC/VDC	120VAC, 30VDC	120VAC/24VDC
Rated current	0.25 to 0.5A	1A	1A
Switching power / Max. break	3 to 10W	120VA, 24W	120VA, 30W
Min. recommended contact load	10µV/1µA	1mA at 1VDC	1mA at 1VDC
Initial contact resistance	<150mΩ	50mΩ at 100mA, 6VDC	
Coil Data			
Magnetic system	Non polarized	DC, sensitive	DC, sensitive
Rated coil voltage	5 to 24VDC	3 to 24VDC	5 to 24VDC
Rated coil power DC coil/bistable 1 coil/2 coils	50 to 300mW/-/-	150, 300mW	200, 450mW
Dielectric Strength			
Initial dielectric strength			
between open contacts	140 to 175Vrms	400Vrms	500Vrms
between contact and coil	500vdc	1000Vrms	1000Vrms
between adjacent contacts	500vdc		
Initial surge withstand voltage			
between open contacts			
between contact and coil		1500Vp (10/160µs)	1500Vp (10/160µs)
between adjacent contacts			
Isolation 100/900MHz			
Insertion loss 100/900MHz			
Volt. standing wave ratio 100/900MHz			
Capacitance between open contacts	max. 1pF		
Other Data			
Ambient temperature (max.)	-20 to +70°C	40 to +80°C	-40 to +60°C (standard)
Category of environmental protection	IP67/RTIII	RTIII/IP67	RTII, RTIII
Terminal type	THT	THT	THT
Dimension (lwh)	19.3x5.7x7.5mm/19.8x5.1x8mm	12.5x7.5x10mm	15.4x10.4x11.2mm
Link to datasheet	Axicom REED DIP/SIL	TSC	OUAZ/T81

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	Axicom HF3	Axicom HF3S	Axicom HF6
Key Features	High performance RF relay/switch for up to 3GHz Low power consumption ≤70/140 mW 50 and 75Ω version Very small design	High performance RF relay/switch for up to 3GHz Low power consumption ≤70/140mW 50 and 75Ω version RF power 100W at 2GHz Very small design	High performance RF relay/switch for up to 6GHz Low power consumption ≤70/ 140mW 50Ω version Very small design
Footprint 2) see footnote below			
Applications	Cable modems and linecards/CATV Measurement and test equipment ATE Satellite/audio/video tuners	Cable modems and linecards/CATV Measurement and test equipment ATE Satellite/audio/video tuners	Measurement and test equipment ATE Wireless base stations and antennas Wireless infrastructure
Contact Data			
Contact arrangement	1 form C, 1 CO Bridge contacts	1 form C, 1 CO Bridge contacts	1 form C, 1 CO Bridge contacts
Rated voltage	250VAC/220VDC	250VAC/220VDC	250VAC/220VDC
Rated current	2A	2A	2A
Switching power / Max. break	60W/62.5VA/50W (2.5GHz)	60W/62.5VA/50W (2.5GHz)	60W/62.5VA/50W (2.5GHz)
Min. recommended contact load	100µV/1µA	100µV/1µA	100µV/1µA
Initial contact resistance	<100mΩ	<100mΩ	<100mΩ
Coil Data			
Magnetic system	Polarized	Polarized	Polarized
Rated coil voltage	3 to 24VDC	3 to 24VDC	3 to 24VDC
Rated coil power DC coil/bistable 1 coil/2 coils	140mW/70mW/140mW	140mW/70mW/140mW	140mW/70mW/140mW
Dielectric Strength			
Initial dielectric strength			
between open contacts	600Vrms	600Vrms	600Vrms
between contact and coil between adjacent contacts	1000Vrms	1000Vrms	1000Vrms
Initial surge withstand voltage			
between open contacts	1000Vp	1000Vp	1000Vp
between contact and coil between adjacent contacts	1500Vp	1500Vp	1500Vp
Capacitance			
between open contacts	max. 1pF	max. 1pF	max. 1pF
RF Data	0.1/0.9/3GHz	0.1/0.9/3GHz	0.9/3/6GHz
Isolation	-80/-72/-DB45	-95/-80/-55dB	-80/-60/-30dB
Insertion loss	-0.03/0.12/-0.35dB	-0.03/-0.12/-0.30dB	-0.05/-0.15/-0.80dB
Voltage standing wave ratio (VSWR)	1.05/1.15/1.20	1.05/1.10/1.25	1.05/1.10/1.40
Other Data			
Ambient temperature (max.)	-55 to +85°C	-55 to +85°C	-55 to +85°C
Category of environmental protection	IP67/RTIII	IP67/RTIII	IP67/RTIII
Terminal type	SMT	SMT	SMT
Dimension (lwh)	14.6x7.2x10mm	15x7.6x10.6mm	15x7.6x10.6mm
Link to datasheet	Axicom HF3	Axicom HF3S	Axicom HF6

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

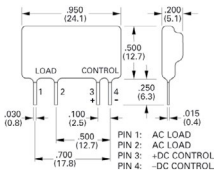
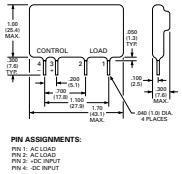
2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	Potter & Brumfield SSR	Potter & Brumfield SSRD	Potter & Brumfield SSRT
Key Features	Standard “hockey puck” package Inverse parallel SCR output 240VAC & 480VAC output types Zero voltage and random voltage turn-on versions 4,000Vrms optical isolation Cover design with anti-rotation barriers 1 Form A (SPST-NO)	Two independent AC output solid state relays Standard “hockey puck” package Inverse parallel SCR output 4000Vrms optical isolation Quick connect style termination 2 Form A (2 SPST-NO)	Standard “hockey puck” package TRIAC Output 4,000Vrms optical isolation Cover design with anti-rotation barriers 1 Form A (SPST-NO)
			
	PCB mount not applicable. Visit TE.com for more information	PCB mount not applicable. Visit TE.com for more information	PCB mount not applicable. Visit TE.com for more information
Typical Applications	Industrial machinery HVAC Building controls	Industrial machinery HVAC Building controls	Industrial machinery HVAC Building controls
Output Data			
Load Voltage	24 - 280VAC/48 - 660VAC	24 - 280VAC	24 - 280VAC
Repetitive Blocking Voltage	600VAC/1200VAC	600VAC	600VAC
Load Current Range	25A/50A/125A	25A/40A	10A/25A
Leakage Current (Off-State)	5mA	5mA	5mA
On-State Voltage Drop (Max.)	1.8V	1.8V	1.6V
Load Power Factor Rating	0.5 - 1.0	0.5 - 1.0	0.5 - 1.0
Thermal Resistance, Junction to Case (R0J-C) (Max.)	2.35/0.55/0.35	2.35/0.86	2.4/1.7
Input Data (AC/DC)			
Control Voltage Range VIN	90 - 280VAC/3 - 32VDC	4 - 15VDC	90 - 280VAC/3 - 32VDC
Must Operate Voltage VIN(OP) (Min.)	90VAC/3VDC	4VDC	90VAC/3VDC
Must release Voltage VIN(REL) (Min.)	10VAC/1VDC	1VDC	10VAC/1VDC
Input Current	2 - 26mA / 3 - 30mA	15mA @ 8VDC	25mA/20mA
Dielectric Strength			
Isolation:	4000Vrms	4000Vrms	4000Vrms
Other Data			
Dimensions	46.5x57.8x43.4mm	44.5x57.8x30.15mm	45x57.5x36.5mm
Operating Temperature	–30 to +80°C	–30 to +80°C	–30 to +80°C
Mounting	Panel	Panel	Panel
UL File No	E29244	E29244	E29244
Link to datasheet	Potter & Brumfield SSR	Potter & Brumfield SSRD	Potter & Brumfield SSRT

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

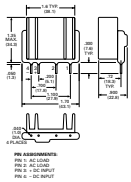
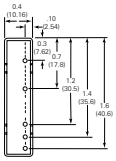
	Potter & Brumfield SSRDC	Potter & Brumfield SSRK	Potter & Brumfield SSRM
Key Features	Standard "hockey puck" package 200VDC FET output 12A, 25A and 40A load current options 1500VDC optical isolation Cover design with anti-rotation barriers 1 Form A (SPST-NO)	10-30A DIN mount Solid State Relay with integrated heat sink Narrow 22.5mm design Inverse parallel SCR output 240VAC & 600VAC output types 4,000Vrms optical isolation 1 Form A (SPST-NO)	45A-65A DIN mount Solid State Relay with integrated heat sink 44.5mm design Inverse parallel SCR output 600VAC output type 4,000Vrms optical isolation 1 Form A (SPST-NO)
			
	PCB mount not applicable. Visit TE.com for more information	PCB mount not applicable. Visit TE.com for more information	PCB mount not applicable. Visit TE.com for more information
Typical Applications	Material handling Trains Construction equipment	Industrial machinery HVAC Building controls	Industrial machinery HVAC Building controls
Output Data			
Load Voltage	200VDC	24 - 280VAC/48 - 660VAC	48 - 660VAC
Repetitive Blocking Voltage	NA	600VAC/1200VAC	1200VAC
Load Current Range	10 A/25 A/40 A	10A/20A/30A	45A/55A/65A
Leakage Current (Off-State)	12mA	5mA	1mA
On-State Voltage Drop (Max.)	2.83VDC	1.8V/1.6V	1.7V
Load Power Factor Rating	NA	0.5 - 1.0	0.5 - 1.0
Thermal Resistance, Junction to Case (R0J-C) (Max.)	0.7/0.7/0.5	-	-
Input Data (AC/DC)			
Control Voltage Range VIN	3 - 32VDC	90 - 280VAC/3 - 32VDC	90 - 140VAC/4 - 32VDC
Must Operate Voltage VIN(OP) (Min.)	3.5VDC	90VAC/3VDC	90VAC/3VDC
Must release Voltage VIN(REL) (Min.)	1VDC	10VAC/1VDC	10VAC/1VDC
Input Current	30mA	7.5mA - 16mA/18 - 30mA	15mA/14 - 30mA
Dielectric Strength			
Isolation:	1500VDC	4000Vrms	4000Vrms
Other Data			
Dimensions	45x57.8x43.4mm	22.5x82.3x111.5mm	22.5x76.2x109.2mm
Operating Temperature	–30 to +80°C	–30 to + 80°C	–40 to + 80°C
Mounting	Panel	Din Rail	Din Rail
UL File No	E29244	E29244	E29244
Link to datasheet	Potter & Brumfield SSRDC	Potter & Brumfield SSRK	Potter & Brumfield SSRM

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

	Potter & Brumfield SSRA	Potter & Brumfield SSRC
Key Features	2A Miniature, SIP Solid State Relay Inverse parallel SCR output 2500Vrms optical isolation 240VAC output 1 Form A (SPST-NO)	5A SIP Solid State Relay Inverse parallel SCR output 4000Vrms optical isolation 1 Form A (SPST-NO)
		
Footprint 2) see footnote below		
Typical Applications	Industrial machinery HVAC Building controls	Industrial machinery HVAC Building controls
Output Data		
Load Voltage	12 - 280VAC	12 - 280VAC/48 - 660VAC
Repetitive Blocking Voltage	600VAC	600VAC/1200VAC
Load Current Range	2A	5A
Leakage Current (Off-State)	0.1mA	0.1mA
On-State Voltage Drop (Max.)	1.5V	1.4V
Load Power Factor Rating	0.5 - 1.0	0.5 - 1.0
Thermal Resistance, Junction to Case (R0J-C) (Max.)	-	-
Input Data (AC/DC)		
Control Voltage Range VIN	4-10VDC	3 - 15VDC
Must Operate Voltage VIN(OP) (Min.)	4VDC	4VDC
Must release Voltage VIN(REL) (Min.)	1VDC	1VDC
Input Current	15mA	15mA
Dielectric Strength		
Isolation:	2500Vrms	4000Vrms
Other Data		
Dimensions	24.1x5.1x12.7mm	43.1x7.6x25.4mm
Operating Temperature	-30 to + 80°C	-30 to + 80°C
Mounting	PCB	PCB
UL File No	E29244	E29244
Link to datasheet	Potter & Brumfield SSRA	Potter & Brumfield SSRC

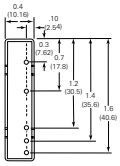
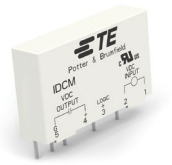
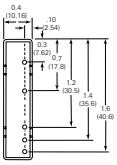
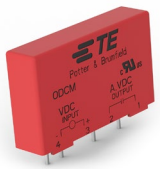
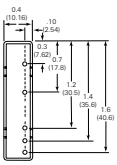
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	Potter & Brumfield SSRF	Potter & Brumfield IACM
Key Features	25A SIP Solid State Relay with integrated heat sink Inverse parallel SCR output 4000Vrms optical isolation 1 Form A (SPST-NO)	Slim Solid State AC Input Module Color coded by function - Yellow 4000V Vrms optical isolation Compatible with 2IO series mounting boards 1 Form A (SPST-NO)
		
Footprint 2) see footnote below		
Typical Applications	Industrial machinery HVAC Building controls	Industrial machinery HVAC Building controls
Output Data		
Load Voltage	12 - 280VAC/48 - 660VAC	30VDC
Repetitive Blocking Voltage	600VAC/1200VAC	-
Load Current Range	10A (CC)/25A (FAC)	50mA
Leakage Current (Off-State)	0.1mA	10uA
On-State Voltage Drop (Max.)	1.6V	0.2VDC
Load Power Factor Rating	0.5 - 1.0	-
Thermal Resistance, Junction to Case (R0J-C) (Max.)	-	-
Input Data (AC/DC)		
Control Voltage Range VIN	3 - 15VDC	24VAC/120VAC/240VAC
Must Operate Voltage VIN(OP) (Min.)	4VDC	18VAC/90VAC/280VAC
Must release Voltage VIN(REL) (Min.)	1VDC	10VAC/60VAC/60VAC
Input Current	15mA	1-5mA
Dielectric Strength		
Isolation:	4000Vrms	4000Vrms
Other Data		
Dimensions	43.1x22.8x34.3mm	43.5x10.3x25.5mm
Operating Temperature	-30 to + 80°C	-30 to 100°C
Mounting	PCB	PCB
UL File No	E29244	E29244
Link to datasheet	Potter & Brumfield SSRF	Potter & Brumfield IACM

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	Potter & Brumfield OACM	Potter & Brumfield IDCM	Potter & Brumfield ODCM
Key Features	Slim Solid State AC Output Module Color coded by function - black 4000Vrms optical isolation Compatible with 2IO series mounting boards 1 Form A (SPST-NO)	Slim Solid State DC Input Module Color coded by function - white 4000Vrms optical isolation Compatible with 2IO series mounting boards 1 Form A (SPST-NO)	Slim Solid State AC Output Module Color coded by function - red 4000Vrms optical isolation Compatible with 2IO series mounting boards 1 Form A (SPST-NO)
Footprint 2) see footnote below	 	 	 
Typical Applications	Industrial machinery HVAC Building controls	Industrial machinery HVAC Building controls	Industrial machinery HVAC Building controls
Output Data			
Load Voltage	24 - 280VAC	30VDC	60VDC
Repetitive Blocking Voltage	600VAC	-	-
Load Current Range	3A/5A	50mA	3A
Leakage Current (Off-State)	5mA	10uA	0.5mA
On-State Voltage Drop (Max.)	1.6VAC	0.2VDC	1.5VDC
Load Power Factor Rating	-	-	-
Thermal Resistance, Junction to Case (R0J-C) (Max.)	-	-	-
Input Data (AC/DC)			
Control Voltage Range VIN	3 - 8VDC / 3 - 15VDC	3 - 32VDC/10 - 60VDC	5VDC/15VDC/24VDC
Must Operate Voltage VIN(OP) (Min.)	3VDC	3VDC/10VDC	3VDC/9VDC/18VDC
Must release Voltage VIN(REL) (Min.)	1VDC	1VDC/1VDC	1VDC
Input Current	8mA	10mA	20mA
Dielectric Strength			
Isolation:	4000Vrms	4000Vrms	4000Vrms
Other Data			
Dimensions	43.5x10.3x25.5mm	43.5x10.3x25.5mm	43.5x10.3x25.5mm
Operating Temperature	-30 to 100°C	-30 to 100°C	-30 to 100°C
Mounting	PCB	PCB	PCB
UL File No	E29244	E29244	E29244
Link to datasheet	Potter & Brumfield OACM	Potter & Brumfield IDCM	Potter & Brumfield ODCM

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

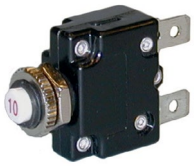
	Potter & Brumfield W28	Potter & Brumfield W23/W31
Key Features	Thermal Overload / Trip Free Operation Replaces slow blow glass cartridge fuse and holder Button provides visible trip indication Push-to-reset Snap-in mounting UL 1077, CSA, VDE, CCC (16A/20A not VDE)	Thermal Overload / Trip Free Operation Toggle or Push/Pull Actuation Cannot be reset against overload On/Off switching option UL 1077, CSA
		
	PCB mount not applicable. Visit TE.com for more information	PCB mount not applicable. Visit TE.com for more information
Typical Applications	HVAC (Transformers), General Aviation, Medical, Marine Power Supplies, Lighting, Surge Protection Audio, Pool and Spa, Appliances, Industrial Controls	Generators, General Aviation, Medical, Marine Power Supplies, Lighting, Surge Protection Audio, Pool and Spa, Appliances, Industrial Controls
Operational Data		
Type	Thermal	Thermal
Number of Poles	1	1
Circuit function	Series trip	Series trip
Ambient temperature (max.)	-20 to +60 °C	-20 to +65°C
Terminal type	Standard quick connect .250in x .032in	#8-32 screw
Mounting	Snap-in	Thru-hole 3/8"-24 threaded bushing
Manual operation Actuator	Push-to-reset	Push/pull W23 and toggle W31
Dimension L*W*H	39.0 x 15.9 x 13.7mm	40.6x17.5x35.2mm
Electrical Data		
Dielectric strength	1500Vrms	1500Vrms
Insulation Resistance		
Max Operating Voltages	32VDC 250VAC, 50/60Hz	50VDC 240VAC to (400Hz)
Rated current	0.5A to 20A	1A to 50A
Interrupt capacity	1,000 amps at 250VAC, 50/60 Hz. and 32VDC in accordance with UL standard 1077.	**With 4X Max. Series Fuse Protection** 0.5-50 amp models — 1000 amps at 240VAC. 30-50 amp models — 1000 amps at 50VDC. **Without 4X Max. Series Fuse Protection** 0.5-25 amp models — 2000 amps at 50VDC. 10-20 amp models — 2000 amps at 120VAC
Calibration	Will continuously carry 100% of rating. 3-20 amp models – may trip between 101% and 134%, but must trip at 135% of rating within one hour at +25°C. 0.25-2 amp models – may trip between 101% and 174%, but must trip at 175% of rating within one hour at +25°C.	Continuously carry 100% of rating, may trip between 101% and 134% of rating at 25°C. Must trip at 135% in one hour.
Resetable Overload Capacity	Six times rated current for 0.25 through 2 amp models. Ten times rated current for 3 through 20 amp models.	Ten times rated current.
Reset Time	180 seconds max. for 0.25 through 2 amp models. 5 to 30 seconds for 3 through 20 amp models.	
Accessories	Protective boot, push-on lockwasher	Hex nut, lockwasher, knurl nut
Link to datasheet	Potter & Brumfield W28	Potter & Brumfield W23/W31

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

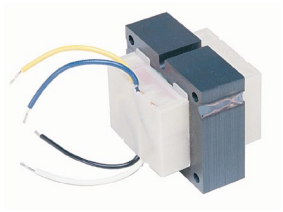
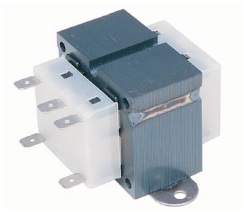
2) Footprint images are representative. For a complete selection, refer to the TE data sheet via the link above.

	Potter & Brumfield W33	Potter & Brumfield W51	Potter & Brumfield W54
Key Features	Thermal overload/trip free Operation Optional indicator lamp Optional auxiliary switch Combines on/off switching and circuit protection in a single unit UL 1077, CSA	Thermal overload/trip free operation Rocker actuated with switch overload sensing Optional indicator lamp Combines power switching and circuit protection in a single unit Compact design PCB termination options UL1077, cUL, VDE, CCC	Thermal overload/trip free operation Push to reset Visual trip indication Multiple termination options UL 1077, UL 1500, cUL, VDE, CCC, CSA. (>30A not UL1500 or CSA) (>20A not VDE)
			
	PCB mount not applicable. Visit TE.com for more information	PCB mount not applicable. Visit TE.com for more information	PCB mount not applicable. Visit TE.com for more information
Typical applications	Generators, General Aviation, Medical, Marine Power Supplies, Lighting, Surge Protection Audio, pool and spa, appliances, Industrial controls	Generators, General Aviation, Medical, Marine Power Supplies, Lighting, Surge Protection Audio, pool and spa, appliances, Industrial controls	Generators, general aviation, medical, marine Power supplies, lighting, surge protection Audio, pool and spa, appliances, Industrial controls
Operational Data			
Type	Thermal	Thermal	Thermal
Number of Poles	1-2	1	1
Circuit function	Series trip both poles; series trip 1 pole/switch only 1 pole; switch only 2 poles	Series trip	Series trip
Ambient temperature (max.)	-20 to +65 °C	0°C to + 60 °C for 10-20A models 0°C to + 50 °C for 5-8A models	0 to 60 °C
Terminal type	Standard quick connect 250in x .032in and solder option	Standard quick connect 250inx.032in/solder option/PCB	Standard quick connect 250inx.032in and #8-32 screw
Mounting	Snap-in	Snap-in, PCB	3/8"-24, M11-1.0, M12-1.0 threaded bushing
Manual operation Actuator	Rocker	Rocker	Push-to-reset
Dimension L*W*H	43.8 x 24.9 x 48.0mm	21.8 x 15.2 x 32.0mm	31.0 x 14.6 x 35.0mm (W54) 22.6 x 14.6 x 29.2mm (W57)
Electrical Data			
Dielectric strength	2000Vrms	1500VAC	1500VAC
Insulation Resistance		100M Ω	100MΩ
Max Operating Voltages	50VDC 250VAC	50VDC 125/250VAC (model dependent)	50VDC 250VAC
Rated current	2A to 20A	5A to 20A	5A to 40A
Interrupt capacity	1000A at 50VDC, 250VAC/60Hz and 125/250VAC 400Hz; 1500A at 25/250VAC/60Hz	1,000 amps in accordance with UL standard 1077	1,000 amps in accordance with UL standard 1077
Calibration	Will continuously carry 100% of rating. May trip between 101% and 134%, but must trip at 135% of rating within one hour at +25°C 150% for 5-8A models	Will continuously carry 100% of rating. May trip between 101% and 134%, but must trip at 135% of rating within one hour at +25°C. 150% for 5-8A models	Will continuously carry 100% of rating. May trip between 101% and 134%, but must trip at 135% of rating within one hour at +25°C
Resetable OverloadCapacity	Ten times rated current	Ten times rated current. Switch Endurance Cycling: Typically 6,000 operations at 100% of rating	Ten times rated current.
Reset Time		60 Seconds	60 Seconds
Accessories			Protective boot, knurl nut, hex nut, lockwasher, nameplate
Link to datasheet	Potter & Brumfield W33	Potter & Brumfield W51	Potter & Brumfield W54

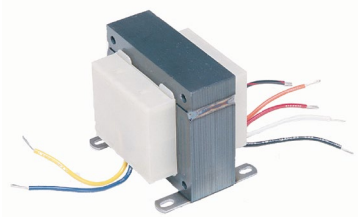
1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

	Potter & Brumfield W57	Potter & Brumfield W58	Potter & Brumfield W6/W9
Key Features	Thermal overload/trip free operation Push to reset Compact design Cannot be manually tripped PCB termination options UL 1077, UL 1500, cUL, VDE, CCC. (3A,4A,20A no VDE)	Thermal overload/trip free operation Push to reset Cannot be manually tripped Visual trip indication UL 1077, UL 1500, CSA. (30A not UL or CSA)	Magnetic hydraulic actuation/trip-free operation Several delay curve options Fungus and moisture resistant UL 1077, UL 1500, CSA, VDE
			
	PCB mount not applicable. Visit TE.com for more information	PCB mount not applicable. Visit TE.com for more information	PCB mount not applicable. Visit TE.com for more information
Applications	Generators, general aviation, medical, marine Power supplies, lighting, surge protection Audio, pool and spa, appliances, Industrial controls	Generators, general aviation, medical, marine Power supplies, lighting, surge protection Audio, pool and spa, appliances, Industrial controls	HVAC (transformers), general aviation, medical, marine Power supplies, lighting, surge protection Audio, pool and spa, appliances, Industrial controls
Operational Data			
Type	Thermal	Thermal	Magnetic/hydraulic
Number of Poles	1	1	1-4
Circuit function	Series trip	Series trip	Series trip
Ambient temperature (max.)	0 to 60°C	-25 to 65°C	-40 to +85 °C
Terminal type	Standard quick connect .250in x .032in and #8-32 screw and PCB option	Standard quick connect .250in x .032in and #8-32 screw	W6-Standard Quick Connect .250in x .032in and #8-32 or #10/32 screw. W9- #10/32 stud terminations
Mounting	3/8″-24, M11-1.0, M12-1.0 threaded bushing	7/16″-28, 15/32″-32, 3/8″-24 threaded bushing″	6-32, M3 tapped holes
Manual operation Actuator	Push-to-reset	Push-to-reset	Toggle
Dimension L*W*H	31.0 x 14.6 x 35.0mm (W54) 22.6 x 14.6 x 29.2mm (W57)	34.9 x 16.8 x 34.9mm	41.7 x 19.0 x 50.8mm (W6 per pole) 46.9 x 19.0 x 63.5mm (W9 per pole)
Electrical Data			
Dielectric strength	1500VAC	1500Vrms	50/60 Hz, 1,500V: DC, 1100V
Insulation Resistance			100 megohms at 500VDC
Max Operating Voltages	50VDC, 250VAC 50/60 Hz	50VDC, 250VAC	65VDC, 277VAC, 480VAC - 3Ø wye
Rated current	3A to 20A	0.5A to 30A	0.20A to 50A
Interrupt capacity	1000 amps in accordance with UL standard 1077	2000 amps at 50VDC (0.5 - 30 amp models) 1000 amps at 250VAC (0.5 - 30amp models). Note: 30 amp model not UL or CSA	up to 5000A with UL 1077, CSA, VDE. Up to 3000A for UL 1500
Calibration	Will continuously carry 100% of rating. May trip between 101% and 134%, but must trip at 135% of rating within one hour at +25°C	Breaker will continuously carry 100% of rated load. It may trip between 101% and 145% of rated load, but must trip at 145% at 25°C	Breakers will hold 100% rated current. May trip between 101% and 124% rated load (134% for AC/DC units) Must trip at 125% rated load (135% for AC/DC units)
Resetable Overload Capacity	Ten times rated current	Ten times rated current	Ten times rated current
Reset Time	60 Seconds		60 Seconds
Accessories	Protective boot, knurl nut, hex nut, lockwasher, nameplate	Protective boot, knurl nut, hex nut, lockwasher	Toggle guard (W6 only)
Link to datasheet	Potter & Brumfield W57	Potter & Brumfield W58	Potter & Brumfield W6/W9

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

Key Features	4000 SERIES WIRE LEAD CLASS II CONTROL TRANSFORMERS	4000 SERIES QUICK CONNECT CLASS II CONTROL TRANSFORMERS
	5VA to 75VA UL 5085-3, formerly UL 1585 Inherently/non-inherently energy limited Wire lead terminations Custom specification/design available	5VA to 75VA UL 5085-3, formerly UL 1585 Inherently/non-inherently energy limited Quick connect terminals Custom specification/design available
		
	Visit TE.com for more information	Visit TE.com for more information
Typical Applications	HVAC Industrial and residential Motor control	HVAC Industrial and residential Motor control
Specifications		
Primary Voltage- AC	120, 208, 240, 277, 380, 415, 480, 575	120, 208, 240, 277, 380, 415, 480, 575
Secondary Voltage- DC	12 or 24	12 or 24
Insulation Class	UL Class B (130°C)	UL Class B (130°C)
Wire Size	Standard 18 AWG stranded, 12in	N/A
QC size	N/A	standard .250in x .032in
Terminations	Same side - opposite side	Type BB Same side Type AB Opposite side Type AE Laydown
Frequency	50/60 Hz	50/60 Hz
Mounting Options	Type K Foot Mount Type G Panel Mount Plate Mount	Type K Foot Mount Type G Panel Mount Plate Mount
Other Data		
Secondary Fusing Requirement	60VA-75VA non-inherently energy limited	Internal fuse or integral circuit breaker 75VA standard models come with integral circuit breaker
Shielding	Internal fuse or integral circuit breaker	
Dielectric Strength	75VA standard models come with integral circuit breaker	
Link to datasheet	4000 SERIES WIRE LEAD CLASS II CONTROL TRANSFORMERS	4000 SERIES QUICK CONNECT CLASS II CONTROL TRANSFORMERS

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

	4700 SERIES GENERAL PURPOSE POWER TRANSFORMERS	4900 SERIES PRINTED CIRCUIT MOUNT POWER TRANSFORMERS
Key Features	60VA to 150VA UL 5085-1,-2 formerly UL 50 Non-fused Wire leads or quick connects Custom specification/design available	1.1VA to 36VA UL 5085-1,-2 formerly UL 506 Drop in replacement Split bobbin design Signal or dual primary voltage Custom specification/design available
		
	Visit TE.com for more information	Visit TE.com for more information
Applications	HVAC Industrial Motor control	Industrial controls, garage door openers small power supplies, control boards lighting/monitoring controls, vending machines
Specifications		
Primary Voltage- AC	120, 208, 240, 230, 277, 460, 480, 575	Single 115VAC, 6-pin Dual 115/230VAC, 8-pin
Secondary Voltage- DC	24	Series 10-120VCT Parallel 6-60VAC
Insulation Class	UL Class B (130°C)	UL Class B (130°C)
Wire Size	Standard 18 AWG stranded, 12in	N/A
QC size	Standard .250in x .032in	N/A
Terminations	Type BB same side Type AB opposite side	PCB through hole design
Frequency	50/60 Hz	50/60 Hz
Mounting Options	Type K foot mount	PCB through hole design
Other Data		
Secondary Fusing Requirement		
Shielding		Electrostatic shielding not required due to split bobbin
Dielectric Strength		1500Vrms
Link to datasheet	4700 SERIES GENERAL PURPOSE POWER TRANSFORMERS	4900 SERIES PRINTED CIRCUIT MOUNT POWER TRANSFORMERS

1) Recommended minimum load indication for contact material: AU and gold plated: 1mA at 6VDC; AgNi0.15 and AgNi90/10: 10mA at 12VDC: AgCdO and $AgSnO_2$: 100mA at 12VDC. Please contact technical support for detailed technical data.

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