

SMALL APPLIANCES

SOLUTIONS GUIDE

Our Solutions Enable Innovation in Small Home Appliances

At TE Connectivity (TE), our cost-effective connectivity solutions are helping to optimize small home appliance applications. TE has product solutions for everything from air treatment design needs to coffee makers, floor care, blenders, rice cookers and other small appliances. Small home appliances function in many different ways, but face similar engineering design challenges. Our solutions are designed to meet the daily demands of your small home appliances and bring your products to market fast.



Products for Small Appliances

	COFFEE MAKERS4-5
	BLENDERS, JUICERS AND MIXERS 5
	TOASTERS AND MICROWAVE OVENS 6
	AIR TREATMENT PRODUCTS 7-8
	RICE COOKERS AND SLOW COOKERS8-9
	FLOOR CARE10-11
	GARBAGE DISPOSALS11
	GARMENT CARE12
	GARAGE DOOR OPENERS12
	WATER TREATMENT PRODUCTS13
	FEATURED TE PRODUCTS15

COFFEE MAKER PRODUCTS



Subsystem

CONNECTORS	Maximum Voltage Rating	Mating Style	Wire Size (AWG)	Position Size Range	Current Rating	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
Economy Power 2.5 Connectors	250 VAC	WTB WTW	26-22	2-20 single, 8-40 double	4.5A	TPA, external robust locking latch, low insertion force and lubricated terminals. Colors available	●			●	●	●		
Economy Power II Connectors	600 VAC	WTB	22-18	2-12	10A	Delivers power to the board, with two levels of mechanical and electrical reliability; true locking latch prevents plug housing and post header from vibrating apart; optional Terminal Position Assurance (TPA) device helps assure terminal seating	●			●	●	●		
MTA 100/156 Connectors	250 VAC	WTW	28-22	2-28	5A	Mold ribs on the housing help prevent reverse mating errors. IDC technology	●			●	●	●		
Mini AMP-In Connectors	250 VAC	WTB	30-22	2-20	4A	Low applied cost, eliminates manual preparation of wires prior to soldering into pc board, insulation support provides strain relief for wire and protection of solder joint	●		●	●	●	●		
Mini Universal MATE-N-LOK Connectors	600 VAC	WTW WTB	30-16	2-15	9.5A	Versatile line includes splash-proof models for applications that require sealing				●		●		
RAST 2.5 Connectors	250 VAC	WTB	N/A	3-15	2A (tin plated), 6A (silver plated)	Meets RAST 2.5 standard. Vertical through hole technology headers, available with tin or silver plating, external or internal locking	●		●	●	●	●		
RAST Power Connectors	250 VAC	WTW WTB	22-12, 24-18	2-15	2-16A	Achieve high vibration performance and reliability with polarized latching receptacle, and reduce termination time with insulation displacement option	●			●				
TERMINALS AND SPLICES	Termination Type	Wire Gauge Range	Voltage Rating	Type of Material	Maximum Operating Temperature	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
FASTON Terminals and Housings	Quick Disconnect	26-8 AWG	Rated according to wire size and application	Brass, steel, phosphor bronze	250°C, 371°C (high temp)	Quick connect-disconnect receptacles and tab-type terminals. Available in both straight and flagtypes. Four series 250, 205, 187 and 110. Single- and multi-position housings	●		●	●	●	●		
Ring and Spade Terminals	Rings	26-6 AWG	Rated according to wire size and application	Brass, L-bronze, phosphor bronze, stainless steel, steel	250°C	Offered in a range of sizes, materials, configurations and platings to meet specific requirements. Versatile mating options support solid or stranded single wire connections			●	●	●	●		
SIAMEZE Terminals	Magnet Wire Terminals	36-12 AWG	Rated according to terminated winding	Brass, copper alloy	110°C	IDC provides perpendicular and parallel lead wire strain relief retention forces in excess of 20 lbs. (90N). No lead wire stripping required				●				
Ultra-Fast Terminals and Splices	Quick Disconnect	26-10 AWG	600V	Copper alloy	105°C	Pre-insulated tin plated copper alloy terminals. UL rated at +105°C. Color coded by wire size	●		●	●	●	●		
SENSORS	Accuracy	Range	Operating Temperature Range	Time Response	Output Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
TEMPERATURE SENSORS														
Digital Temperature Sensors	±1.0°C	-40 to +125°C	-40 to +125°C	1 to 10 sec	D	Provide industry leading 0.1°C accuracy and are available in miniature packages designed specifically for tight spaces, and respond quickly to changes in process temperature			●			●		
NTC Thermistor Sensors	±1.0°C	-40 to +250°C	-40 to +250°C	1-10 sec	R	Miniature size, excellent long-term stability, high accuracy and precision	●		●			●		
Thermopile Sensors	±3.0°C	-40 to +2000°C	-40 to +2000°C	5 mSec	V	Designed to measure temperature from a distance by detecting an object's infrared (IR) energy. The thermopile sensing element, composed of small thermocouples on a silicon chip, absorb the energy and produce an output signal			●			●		
HUMIDITY SENSORS														
HS1101LF Digital Humidity Sensor	±3%	0 to 100%	-60 to +140°C	10 sec	C	Robust and recognized component, suitable for most humidity applications. A highly cost effective solution			●			●		
HTU21x Series Sensors	±3%	0 to 100%	-40 to +125°C	10 sec	D	HTU21 Humidity Temperature Sensors maintain constant conditions to increase efficiency, reduce waste in appliances			●			●		
PRESSURE SENSORS														
PCB Mounted Pressure Sensor - MS4525DO	±2%	0.07 to 300psi	-40 to +125°C	1 mSec	R, A, D	Built with Measurement Specialties' proprietary UltraStable™ process, latest CMOS sensor conditioning circuitry. A low cost, high performance digital output pressure (14bit) and temperature (11bit) transducer meets the strictest requirements			●			●		
TUBING	Shrink Ratio	Operating Temperature	Standard Size Range	Colors	Flammability	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
RNF-100 Tubing	2:1	-55°C to 135°C	1.2-127.0mm	Various colors	ASTM D2671, Proc. B (Colors only); UL 224/CSA All Tubing Flame Test (Colors only)	High-performance flexible fluoropolymer tubing designed for jacketing and bundling of wires to form light-duty harnesses, especially where low profile, abrasion resistance, and flexibility are needed						●		
RNF-150 Tubing	2:1	-55°C to 150°C	1.2-25.4mm	Standard: Black; Non-standard: White	ASTM D2671, Proc. C; UL 224 VW-1	Can be used for jacketing and bundling of wires to form light-duty harnesses, especially where a low profile, abrasion resistance, and flexibility are needed			●	●				
RT-375 Tubing	2:1	-55°C to 150°C	1.2-50.8mm	Clear	ASTMD2671, Proc. C; UL 224/CSA VW-1	Exceptional clarity and clarity stability. Highly flame-resistant. Toughness, chemical resistance, and high temperature performance			●	●				
RW-175 Heat Shrink Tubing	2:1	-55°C to 175°C	1.2-50.8mm	Standard: Translucent; Non-standard: Black	ASTM D2671, Proc. C; UL 224/CSA VW-1	Highly flame-resistant, high-temperature, chemical-resistant, providing tough, semirigid, very-thin-wall insulation and strain relief of multipin connectors, solder joints and other delicate electrical connections and terminations			●	●	●	●		
SWFR Heat Shrink Tubing	2:1	-40°C to 100°C	1.0-30.0mm	Black	UL 224/CSA VW-1	Cost effective, highly flame retardant, non-halogenated single wall tubing	●		●	●	●	●		
Versafit Tubing	2:1	-55°C to 135°C	1.2-101.6mm	Various colors	ASTM D2671, Proc. C; UL 224/CSA VW-1	Highly flame-retarded, low shrink temperature polyolefin heat shrinkable tubing	●							

COFFEE MAKER PRODUCTS continued on next page.

Small Appliances Solutions Guide

COFFEE MAKER PRODUCTS, CONTINUED

SWITCHES	Terminal Features	Voltage Rating (VDC)	Current Rating	Position Size Range	Contact Material	Features	Subsystem							
							Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
Tactile Switches	PCB	24 VDC	1A	1	Copper alloy base, silver plate	Sealed and unsealed. Radial tape and ultra low profile versions	●			●	●			
RELAYS	Contact Current Rating (A)	Contact Voltage Rating	Terminal Type	Coil Voltage Rating (VDC)	Mounting Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
REL Mini PCB Relay	5A	250 VAC	THT	5-48 VDC	PCB	1 form A (NO) contacts. DC coil magnetic system and 1250VA contact switching power	●				●			

BLENDERS, MIXERS & JUICER PRODUCTS



CONNECTORS	Maximum Voltage Rating	Mating Style	Wire Size (AWG)	Position Size Range	Current Rating	Features	Subsystem							
							Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
AMP/ODU Connectors	133, 150, 250 VAC	WTW WTB BTB	20-32	1-240	1-10.5A	Reliable and economical, includes board-to-board, wire-to-board, wire-to-wire connectors, large variety of components and application possibilities, small, great quality	●							
Economy Power 2.5 Connectors	250 VAC	WTB WTW	26-22	2-20 single, 8-40 double	4.5A	TPA, external robust locking latch, low insertion force and lubricated terminals. Colors available	●			●	●	●		
FASTIN-FASTON Connectors	600 A	WTW WTB	24-10	2-10	24A	Electrically insulated terminals, allowing as many as three connections to be made at once, improves ergonomics for assembly workers	●			●				
MTA 100/156 Connectors	250 VAC	WTW	28-22	2-28	5A	Mold ribs on the housing help prevent reverse mating errors, IDC technology	●			●	●	●		
Power Double Lock Connectors	300 VAC	WTW WTB	26-18	1-12	5A	Audible click when contact is fully inserted into the housing. Board-mounted headers are compatible with resin or conformal coatings—no drain holes					●			
Power Key Connectors	300 VAC	WTB	24-16	2-6	10A	Provide wire-to-board (WTB) connections consisting of plug housings for wire and compact PCB header assemblies with a 20.7mm mated height and double lock plates as Terminal Position Assistance (TPA) devices	●		●	●				
TERMINALS AND SPLICES	Termination Type	Wire Gauge Range	Voltage Rating	Type of Material	Maximum Operating Temperature	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
AMPLIVAR Terminals and Splices	Magnet wire terminals and Splices	30-6.5 AWG	Rated according to terminated winding	Brass, phosphor bronze, copper-nickel	150°C	Cu or Al magnet wire, or a combination of both, can be terminated with no pre-stripping. Compression crimp technology in the 400 to 22,000 CMA range. Withstands -65°C to 150°C with 25 thermal shock cycles	●			●				
FASTON Terminals and Housings	Quick Disconnect	26-8 AWG	Rated according to wire size and application	Brass, steel, phosphor bronze	250°C, 371°C (high temp)	Quick connect-disconnect receptacles and tab-type terminals. Available in both straight and flagtypes. Four series 250, 205, 187 and 110. Single- and multi-position housings	●		●	●	●			
Positive Lock Terminals and Housings	Quick Disconnect	26-10 AWG	Rated according to wire size and application	Brass, phosphor bronze, stainless steel, steel, nylon	250°C	Wire-to-tab termination in brass and tin-plated brass. Ease of assembly and secure retention to mating tabs	●		●	●	●	●		
Ring and Spade Terminals	Rings	26-6 AWG	Rated according to wire size and application	Brass, L-bronze, phosphor bronze, stainless steel, steel	250°C	Offered in a range of sizes, materials, configurations and platings to meet specific requirements. Versatile mating options support solid or stranded single wire connections			●	●	●	●		
TUBING	Shrink Ratio	Operating Temperature	Standard Size Range	Colors	Flammability	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
RNF-100 Tubing	2:1	-55°C to 135°C	1.2-127.0mm	Various colors	ASTM D2671, Proc. B (Colors only); UL 224/CSA All Tubing Flame Test (Colors only)	High-performance flexible fluoropolymer tubing designed for jacketing and bundling of wires to form light-duty harnesses, especially where low profile, abrasion resistance, and flexibility are needed						●		
SWFR Heat Shrink Tubing	2:1	-40°C to +100°C	1.0-30.0mm	Black	UL 224/CSA VW-1	Cost effective, highly flame retardent, non-halogenated single wall tubing	●		●	●	●	●		
Versafit Tubing	2:1	-55°C to 135°C	1.2-101.6mm	Various colors	ASTM D2671, Proc. C; UL 224/CSA VW-1	Highly flame-retarded, low shrink temperature polyolefin heat shrinkable tubing	●				●			
SWITCHES	Terminal Features	Voltage Rating (VDC)	Current Rating	Position Size Range	Contact Material	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
Snap Action Switches	PCB	30 VDC	.1A	1	Brass and gold plating	C/O contact configuration, different actuation forces and levers, and low current versions	●				●		●	
Tactile Switches	PCB	24 VDC	1A	1	Copper alloy base, silver plate	Sealed and unsealed. Radial tape and ultra low profile versions	●			●		●		
RELAYS	Contact Current Rating (A)	Contact Voltage Rating	Terminal Type	Coil Voltage Rating (VDC)	Mounting Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
OJ/OJE Relays	3A/5A/8A/10A	250 VAC/30 VDC	THT	3-48 VDC	PCB	1 form A (NO) contacts various models support a range of loads, with contact ratings from 3 to 10 amps, plus TV-5. Both sensitive (200mW) and standard (450mW) coil options accommodate various drive circuits	●				●			

TOASTER AND MICROWAVE OVEN PRODUCTS



Subsystem

CONNECTORS	Maximum Voltage Rating	Mating Style	Wire Size (AWG)	Position Size Range	Current Rating	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
Economy Power 2.5 Connectors	250 VAC	WTB WTW	26-22	2-20 single, 8-40 double	4.5A	TPA, external robust locking latch, low insertion force and lubricated terminals. Colors available	●			●	●	●		
Economy Power II Connectors	600 VAC	WTB	22-18	2-12	10A	Well-suited to deliver power to the board and offer two levels of mechanical and electrical reliability: A true locking latch prevents the plug housing and post header from vibrating apart, while an optional Terminal Position Assurance (TPA) device helps assure terminal seating	●			●	●	●		
GRACE INERTIA 2.5 Connectors	50 VAC	WTB	22-28	2, 3, 5, 6, 8	3.0A	Advanced design concepts facilitate more stable, reliable and durable connection. The inertia locking mechanism prevents defective products caused by half mating and helps prevent connectors from being disconnected during movement or transportation	●		●	●	●			
RAST 2.5 Connectors	250 VAC	WTB	N/A	3-15	2A (tin plated), 6A (silver plated)	Meets RAST 2.5 standard. Vertical through hole technology headers, available with tin or silver plating, external or internal locking	●		●	●		●		
TERMINALS AND SPLICES	Contact Current Rating (A)	Contact Voltage Rating	Terminal Type	Coil Voltage Rating (VDC)	Mounting Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
FASTON Terminals and Housings	Quick Disconnect	26-8 AWG	Rated according to wire size and application	Brass, steel, phosphor bronze	250°C, 371°C (high temp)	Quick connect-disconnect receptacles and tab-type terminals. Available in both straight and flagtypes. Four series 250, 205, 187 and 110. Single- and multi-position housings	●		●	●	●			
Positive Lock Terminals and Housings	Quick Disconnect	26-10 AWG	Rated according to wire size and application	Brass, phosphor bronze, stainless steel, steel, nylon	250°C	Wire-to-tab termination in brass and tin-plated brass. Ease of assembly and secure retention to mating tabs	●		●	●	●	●		
Ring and Spade Terminals	Rings	26-6 AWG	Rated according to wire size and application	Brass, Lu-bronze, phosphor bronze, stainless steel, steel	250°C	Offered in a range of sizes, materials, configurations and platings to meet specific requirements. Versatile mating options support solid or stranded single wire connections			●	●	●	●		
Wire Cap Splice Accessory	Splice Accessory	N/A	N/A	Copper	105°C	Insulation support splice accessory	●				●			
SENSORS	Accuracy	Range	Operating Temperature Range	Time Response	Output Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
TEMPERATURE SENSORS														
NTC Thermistor Sensors	±1.0°C	-40 to +250°C	-40 to +250°C	1-10 sec	R	Miniature size, excellent long-term stability, high accuracy and precision	●		●			●		
TUBING	Shrink Ratio	Operating Temperature	Standard Size Range	Colors	Flammability	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
RNF-100 Tubing	2:1	-55°C to 135°C	1.2-127.0mm	Various colors	ASTM D2671, Proc. B (Colors only); UL 224/CSA All Tubing Flame Test (Colors only)	High-performance flexible fluoropolymer tubing designed for jacketing and bundling of wires to form light-duty harnesses, especially where low profile, abrasion resistance, and flexibility are needed						●		
RNF-150 Tubing	2:1	-55°C to 150°C	1.2-25.4mm	Standard: Black; Non-standard: White	ASTM D2671, Proc. C; UL 224 VW-1	Can be used for jacketing and bundling of wires to form light-duty harnesses, especially where a low profile, abrasion resistance, and flexibility are needed			●	●				
RT-375 Tubing	2:1	-55°C to 150°C	1.2-50.8mm	Clear	ASTM D2671, Proc. C; UL 224/CSA VW-1	Exceptional clarity and clarity stability. Highly flame-resistant. Toughness, chemical resistance, and high temperature performance			●	●				
RW-175 Heat Shrink Tubing	2:1	-55°C to 175°C	1.2-50.8mm	Standard: Translucent; Non-standard: Black	ASTM D2671, Proc. C; UL 224/CSA VW-1	Highly flame-resistant, high-temperature, chemical-resistant, providing tough, semirigid, very-thin-wall insulation and strain relief of multipin connectors, solder joints and other delicate electrical connections and terminations			●	●	●	●		
SWFR Heat Shrink Tubing	2:1	-40°C to 100°C	1.0-30.0mm	Black	UL 224/CSA VW-1	Cost effective, highly flame retardent, non-halogenated single wall tubing	●		●	●	●	●		
Versafit Tubing	2:1	-55°C to 135°C	1.2-101.6mm	Various colors	ASTM D2671, Proc. C; UL 224/CSA VW-1	Highly flame-retarded, low shrink temperature polyolefin heat shrinkable tubing	●				●			
SWITCHES	Terminal Features	Voltage Rating (VDC)	Current Rating	Position Size Range	Contact Material	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
Tactile Switches	PCB	24 VDC	1A	1	Copper alloy base, silver plate	Sealed and unsealed. Radial tape and ultra low profile versions	●			●		●		
RELAYS	Contact Current Rating (A)	Contact Voltage Rating	Terminal Type	Coil Voltage Rating (VDC)	Mounting Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
OJ/OJE Relays	3A/5A/8A/10A	250 VAC/30 VDC	THT	3-48 VDC	PCB	1 form A (NO) contacts various models support a range of loads, with contact ratings from 3 to 10 amps, plus TV-5. Both sensitive (200mW) and standard (450mW) coil options accommodate various drive circuits	●				●			
PB-V23088 Mini PCB Relay	6A	250 VAC	THT	5-36 VDC	PCB	1 form A (NO) contacts. DC coil magnetic system and a 2500VA Contact Switching Power	●							
PCJ Power Relays	3A/5A	250 VAC	THT	5-48 VDC	PCB	1 form A (NO) contacts. DC coil magnetic system and 1250VA Contact Switching Power		●					●	
RZF Power Relays	16A	250 VAC	THT + QC	5-48VDC	PCB	1 form A (NO) contacts. DC coil magnetic system and a 4000VA Contact Switching Power					●			●

TOASTER AND MICROWAVE OVEN PRODUCTS continued on next page.

Small Appliances Solutions Guide

TOASTER AND MICROWAVE OVEN PRODUCTS, CONTINUED

Subsystem

SENSORS	Accuracy	Range	Operating Temperature Range	Time Response	Output Type	Features	Subsystem						
							Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate
TEMPERATURE SENSORS													
Digital Temperature Sensors	±1.0°C	-40 to +125°C	-40 to +125°C	1 to 10 sec	D	Provide industry leading 0.1°C accuracy and are available in miniature packages designed specifically for tight spaces, and respond quickly to changes in process temperature			●			●	
Thermopile Sensors	±3.0°C	-40 to +2000°C	-40 to +2000°C	5 mSec	V	Designed to measure temperature from a distance by detecting an object's infrared (IR) energy. The thermopile sensing element, composed of small thermocouples on a silicon chip, absorb the energy and produce an output signal			●			●	
HUMIDITY SENSORS													
HS1101LF Digital Humidity Sensor	±3%	0 to 100%	-60 to +140°C	10 sec	C	Robust, recognized component suitable for most humidity applications. Highly cost effective solution			●			●	
HTU21x Series Sensors	±3%	0 to 100%	-40 to +125°C	10 sec	D	Maintain constant conditions to increase efficiency and reduce waste in appliances			●			●	
FORCE SENSORS													
FX19 Series Sensors	±2%	2.0 to 2000lbf	-40 to +85°C	1 mSec	M, A, D	Ultra low cost, low strain design that has an essentially unlimited cycle life			●			●	
FS20 Series Force Sensors	±2%	2.0 to 2000lbf	-40 to +85°C	2 mSec	M, A, D	Low cell design that operates at very low strains and not subject to lead die fatigue			●			●	

AIR TREATMENT PRODUCTS



Subsystem

CONNECTORS	Maximum Voltage Rating	Mating Style	Wire Size (AWG)	Position Size Range	Current Rating	Features	Subsystem							
							Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
AMP CT Connectors	125 VAC	WTW WTB	30-22	2-30	1-4A	Two termination methods: IDC and crimp, Kinked leg options for self-retention on boards	●		●	●	●	●		
AMP-In Connectors	N/A	N/A	30-26, 26-22	2-20	N/A	Low applied cost, eliminates manual preparation of wires prior to soldering into pc board, insulation support provides strain relief for wire and protection of solder joint	●			●				
AMP Mini-CT Connectors	50 VAC	WTB WTW	24-28	2-40	1-3	Two termination methods: IDC and crimp, Kinked leg options for self-retention on boards	●		●	●	●	●		
Cluster Block Connectors	varies	WTW	18-12	N/A	varies	Low-cost, fully insulated, quick-connect means of electrically connecting sealed hermetic header pins on compressors	●		●	●	●	●		
CST Connectors	250 VAC	WTW	26-22	2-28	4A	Low cost wire-to-board interconnections, wide range for single contact, mates with specified MTA and similar competitive notched headers	●			●		●		
Economy Power II Connectors	600 VAC	WTB	22-18	2-12	10A	Well-suited to deliver power to the board and offer two levels of mechanical and electrical reliability: A true locking latch prevents the plug housing and post header from vibrating apart, while an optional Terminal Position Assurance (TPA) device helps assure terminal seating	●			●	●	●		
Economy Power 2.5 Connectors	250 VAC	WTB WTW	26-22	2-20 single, 8-40 double	4.5A	TPA, external robust locking latch, low insertion force and lubricated terminals. Colors available	●			●	●	●		
GRACE INERTIA 2.5 Connectors	50 VAC	WTB	22-28	2, 3, 5, 6, 8	3.0A	Advanced design concepts facilitate more stable, reliable and durable connection. The inertia locking mechanism prevents defective products caused by half mating and helps prevent connectors from being disconnected during movement or transportation	●		●	●	●	●		
High Performance Interconnects (HPI)	250 VAC	WTB	30-22	2-32	1-3A	Low profile height with dual beam receptacle contact design. PCB mount pin header assemblies	●		●	●	●	●		
MTA 100/156 Connectors	250 VAC	WTW	28-22	2-28	5A	Mold ribs on the housing help prevent reverse mating errors. IDC technology	●			●	●	●		
Power Double Lock Connectors	300 VAC	WTW WTB	26-18	1-12	5A	Audible click when contact is fully inserted into the housing. Board-mounted headers are compatible with resin or conformal coatings—no drain holes					●			
Signal Double Lock Connectors	50 VAC	WTW WTB	20-26	2-13	3A	Provide a compact signal double lock connector with secondary locking in wire-to-wire and wire to-board configuration	●				●			
TERMINALS AND SPLICES							Subsystem							
	Contact Current Rating (A)	Contact Voltage Rating	Terminal Type	Coil Voltage Rating (VDC)	Mounting Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
FASTON Terminals and Housings	Quick Disconnect	26-8 AWG	Rated according to wire size and application	Brass, steel, phosphor bronze	250°C, 371°C (high temp)	Quick connect-disconnect receptacles and tab-type terminals. Available in both straight and flagtypes. Four series 250, 205, 187 and 110. Single- and multi-position housings	●		●	●	●			
Positive Lock Terminals and Housings	Quick Disconnect	26-10 AWG	Rated according to wire size and application	Brass, phosphor bronze, stainless steel, steel, nylon	250°C	Wire-to-tab termination in brass and tin-plated brass. Ease of assembly and secure retention to mating tabs	●		●	●	●	●		
Ring and Spade Terminals	Rings	26-6 AWG	Rated according to wire size and application	Brass, Lu-bronze, phosphor bronze, stainless steel, steel	250°C	Offered in a range of sizes, materials, configurations and platings to meet specific requirements. Versatile mating options support solid or stranded single wire connections			●	●	●	●		

AIR TREATMENT PRODUCTS continued on next page.

AIR TREATMENT PRODUCTS, CONTINUED

							Subsystem							
SENSORS	Accuracy	Range	Operating Temperature Range	Time Response	Output Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
TEMPERATURE SENSORS														
Digital Temperature Sensors	±1.0°C	-40 to +125°C	-40 to +125°C	1 to 10 sec	D	Provide industry leading 0.1°C accuracy and are available in miniature packages designed specifically for tight spaces, and respond quickly to changes in process temperature			●			●		
HUMIDITY SENSORS														
HTU21x Series Sensors	±3%	0 to 100%	-40 to +125°C	10 sec	D	HTU21 Humidity Temperature Sensors maintain constant conditions to increase efficiency and reduce waste in appliances			●			●		
							Subsystem							
TUBING	Shrink Ratio	Operating Temperature	Standard Size Range	Colors	Flammability	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
RNF-100 Tubing	2:1	-55°C to 135°C	1.2-127.0mm	Various colors	ASTM D2671, Proc. B (Colors only); UL 224/CSA All Tubing Flame Test (Colors only)	High-performance flexible fluoropolymer tubing designed for jacketing and bundling of wires to form light-duty harnesses, especially where low profile, abrasion resistance, and flexibility are needed						●		
SWFR Heat Shrink Tubing	2:1	-40°C to 100°C	1.0-30.0mm	Black	UL 224/CSA VW-1	Cost effective, highly flame retardent, non-halogenated single wall tubing	●		●	●	●	●		
Versafit Tubing	2:1	-55°C to 135°C	1.2-101.6mm	Various colors	ASTM D2671, Proc. C; UL 224/CSA VW-1	Highly flame-retarded, low shrink temperature polyolefin heat shrinkable tubing	●				●			
							Subsystem							
SWITCHES	Terminal Features	Voltage Rating (VDC)	Current Rating	Position Size Range	Contact Material	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
Tactile Switches	PCB	24 VDC	1A	1	Copper alloy base, silver plate	Sealed and unsealed. Radial tape and ultra low profile versions	●			●		●		
							Subsystem							
RELAYS	Contact Current Rating (A)	Contact Voltage Rating	Terminal Type	Coil Voltage Rating (VDC)	Mounting Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
OJ/OJE Relays	3A/5A/8A/10A	250 VAC/30 VDC	THT	3-48 VDC	PCB	1 form A (NO) contacts various models support a range of loads, with contact ratings from 3 to 10 amps, plus TV-5. Both sensitive (200mW) and standard (450mW) coil options accommodate various drive circuits	●				●			
OMIH Power Relays	16A	250 VAC/30 VDC	THT	5-48 VDC	PCB	1 form A (NO) or 1 form C (CO) contacts. DC coil magnetic system and 4000VA Contact Switching Power	●			●				
PCF Power Relays	25A	277 VAC/24 VDC	THT + QC	6-24 VDC	PCB	1 form A (NO) contacts. DC coil magnetic system and 6370VA Contact Switching Power	●			●				
PCH Power Relays	5A/10A	250 VAC/30 VDC	THT	5-48 VDC	PCB	1 form A (NO) or 1 form C (CO) contacts. DC coil magnetic system and 2500VA Contact Switching Power		●						
PCJ Power Relays	3A/5A	250 VAC	THT	5-48 VDC	PCB	1 form A (NO) contacts. DC coil magnetic system and 1250VA Contact Switching Power		●					●	
RZ Power Relays	16A	250 VAC	THT	5-48 VDC	PCB	1 form A (NO) or 1 form C (CO) contacts. DC coil magnetic system and a 4000VA Contact Switching Power					●			●
T9A Series Relays	30A	277 VAC	THT/QC2	12 VDC	PCB, panel mount	1 form A (NO) or 1 form C (CO) contacts. Designed for harsh environments and long life cycles and meets a broad range of power switching requirements	●				●			
T92 Power Relays	30A	277 VAC	THT + QC	5-48 VDC, 12-277 VDC	PCB, panel mount	2 form A (NO) or 2 form C (CO) contacts. AC or DC coil magnetic system and 7500VA Contact Switching Power	●				●			

RICE COOKER AND SLOW COOKER PRODUCTS



							Subsystem							
CONNECTORS	Maximum Voltage Rating	Mating Style	Wire Size (AWG)	Position Size Range	Current Rating	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
AMP-In Mini Connectors	250 VAC	WTB	30-22	2-20	4A	Low applied cost, eliminates manual peperation of wires prior to solderign into pc board, insulation support provides strain relief for wire and protection of solder joint	●		●	●	●	●		
CST Connectors	250 VAC	WTW	26-22	2-28	4A	Low cost wire-to-board interconnections, wide range for single contact, mates with specified MTA and similar competitive notched headers	●			●		●		
Economy Power 2.5 Connectors	250 VAC	WTB WTW	26-22	2-20 single, 8-40 double	4.5A	TPA, external robust locking latch, low insertion force and lubricated terminals. Colors available	●			●	●	●		
FFC Connectors	50 VAC	WTW WTB	N/A	2-70	0.5	High speed sequential application of multiple-crimp contacts, cable stripping and plating eliminated, and the capability of intermixing FFC cable and round wire contacts	●							
Flexible Printed Circuit Connectors	50 VAC	WTB	N/A	2-75	0.5A	Low profile height and light-weight solution. Slant insert option	●							
GRACE INERTIA 2.5 Connectors	50 VAC	WTB	22-28	2, 3, 5, 6, 8	3.0A	Advanced design concepts facilitate more stable, reliable and durable connection. The inertia locking mechanism prevents defective products caused by half mating and helps prevent connectors from being disconnected during movement or transportation	●		●	●	●			
High Performance Interconnects (HPI)	250 VAC	WTB	30-22	2-32	1-3A	Low profile height with dual beam receptacle contact design. PCB mount pin header assemblies	●		●	●	●	●		
Micro MaTch Connectors	N/A	BTB WTB	28	1-28	N/A	Unique contact-spring system helps prevent fretting corrosion by absorbing movements between male and female contacts	●					●		

RICE AND SLOW COOKER PRODUCTS continued on next page.

RICE COOKER AND SLOW COOKER PRODUCTS, CONTINUED

Subsystem

TERMINALS AND SPLICES	Contact Current Rating (A)	Contact Voltage Rating	Terminal Type	Coil Voltage Rating (VDC)	Mounting Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron	
AMPLIVAR Terminals and Splices	Magnet wire terminals and Splices	30-6.5 AWG	Rated according to terminated winding	Brass, phosphor bronze, copper-nickel	150°C	Cu or Al magnet wire, or a combination of both, can be terminated with no pre-stripping. Compression crimp technology in the 400 to 22,000 CMA range. Withstands -65°C to 150°C with 25 thermal shock cycles	●			●					
FASTON Terminals and Housings	Quick Disconnect	26-8 AWG	Rated according to wire size and application	Brass, steel, phosphor bronze	250°C, 371°C (high temp)	Quick connect-disconnect receptacles and tab-type terminals. Available in both straight and flagtypes. Four series 250, 205, 187 and 110. Single- and multi-position housings	●		●	●	●				
Positive Lock Terminals and Housings	Quick Disconnect	26-10 AWG	Rated according to wire size and application	Brass, phosphor bronze, stainless steel, steel, nylon	250°C	Wire-to-tab termination in brass and tin-plated brass. Ease of assembly and secure retention to mating tabs	●		●	●	●	●			
Ring and Spade Terminals	Rings	26-6 AWG	Rated according to wire size and application	Brass, Lu-bronze, phosphor bronze, stainless steel, steel	250°C	Offered in a range of sizes, materials, configurations and platings to meet specific requirements. Versatile mating options support solid or stranded single wire connections			●	●	●	●			
SENSORS	Accuracy	Range	Operating Temperature Range	Time Response	Output Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron	
TEMPERATURE SENSORS															
NTC Thermistor Sensors	±1.0°C	-40 to +250°C	-40 to +250°C	1-10 sec	R	Miniature size, excellent long-term stability, high accuracy and precision	●		●			●			
TUBING	Shrink Ratio	Operating Temperature	Standard Size Range	Colors	Flammability	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron	
RNF-100 Tubing	2:1	-55°C to 135°C	1.2-127.0mm	Various colors	ASTM D2671, Proc. B (Colors only); UL 224/CSA All Tubing Flame Test (Colors only)	High-performance flexible fluoropolymer tubing designed for jacketing and bundling of wires to form light-duty harnesses, especially where low profile, abrasion resistance, and flexibility are needed						●			
RNF-150 Tubing	2:1	-55°C to 150°C	1.2-25.4mm	Standard: Black; Non-standard: White	ASTM D2671, Proc. C; UL 224 VW-1	Can be used for jacketing and bundling of wires to form light-duty harnesses, especially where a low profile, abrasion resistance, and flexibility are needed			●	●					
RT-375 Tubing	2:1	-55°C to 150°C	1.2-50.8mm	Clear	ASTM D2671, Proc. C; UL 224/CSA VW-1	Exceptional clarity and clarity stability. Highly flame-resistant. Toughness, chemical resistance, and high temperature performance			●	●					
RW-175 Heat Shrink Tubing	2:1	-55°C to 175°C	1.2-50.8mm	Standard: Translucent; Non-standard: Black	ASTM D2671, Proc. C; UL 224/CSA VW-1	Highly flame-resistant, high-temperature, chemical-resistant, providing tough, semirigid, very-thin-wall insulation and strain relief of multipin connectors, solder joints and other delicate electrical connections and terminations			●	●	●				
SWFR Heat Shrink Tubing	2:1	-40°C to 100°C	1.0-30.0mm	Black	UL 224/CSA VW-1	Cost effective, highly flame retardent, non-halogenated single wall tubing	●		●	●	●	●			
Versafit Tubing	2:1	-55°C to 135°C	1.2-101.6mm	Various colors	ASTM D2671, Proc. C; UL 224/CSA VW-1	Highly flame-retarded, low shrink temperature polyolefin heat shrinkable tubing	●				●				
SWITCHES	Terminal Features	Voltage Rating (VDC)	Current Rating	Position Size Range	Contact Material	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron	
Tactile Switches	PCB	24 VDC	1A	1	Copper alloy base, silver plate	Sealed and unsealed. Radial tape and ultra low profile versions	●			●		●			
RELAYS	Contact Current Rating (A)	Contact Voltage Rating	Terminal Type	Coil Voltage Rating (VDC)	Mounting Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron	
OJ/OJE Relays	3A/5A/8A/10A	250 VAC/30 VDC	THT	3-48 VDC	PCB	1 form A (NO) contacts various models support a range of loads, with contact ratings from 3 to 10 amps, plus TV-5. Both sensitive (200mW) and standard (450mW) coil options accommodate various drive circuits	●				●				
PE Power PCB Relays	5A	250 VAC	THT	2-48 VDC	PCB	1 form C (CO) contacts. DC, monostable or bistable coil system and 1250VA contact switching power	●				●				

Small Appliances Solutions Guide

FLOOR CARE PRODUCTS



Subsystem

CONNECTORS	Maximum Voltage Rating	Mating Style	Wire Size (AWG)	Position Size Range	Current Rating	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
AMP CT Connectors	125 VAC	WTW WTB	30-22	2-30	1-4A	Two termination methods: IDC and crimp, Kinked leg options for self-retention on boards	●		●	●	●	●		
AMP Mini-CT Connectors	50 VAC	WTB WTW	24-28	2-40	1-3	Two termination methods: IDC and crimp, Kinked leg options for self-retention on boards	●		●	●	●	●		
AMPMODU Connectors	133, 150, 250 VAC	WTW WTB BTB	20-32	1-240	1-10.5A	Reliable and economical, includes board-to-board, wire-to-board and wire-to-wire connectors, large variety of components and application possibilities, small size and great quality	●							
Card Edge Connectors	1250 VAC	N/A	N/A	67	25A	Engineered for high Signal Integrity (SI) on printed circuit boards (PCBs) and provide performance reliability and design flexibility for the latest PCIe protocol solutions				●				
DIN Circular Connectors	100 VAC	N/A	Up to 3.7	2-4	Up to 40A	Feature a coupling ring for mating and are suitable for in-line, flange mount, or PCB application	●							
Economy Power 2.5 Connectors	250 VAC	WTB WTW	26-22	2-20 single, 8-40 double	4.5A	TPA, external robust locking latch, low insertion force and lubricated terminals. Colors available	●			●	●	●		
Economy Power II Connectors	600 VAC	WTB	22-18	2-12	10A	Well-suited to deliver power to the board and offer two levels of mechanical and electrical reliability: A true locking latch prevents the plug housing and post header from vibrating apart, while an optional Terminal Position Assurance (TPA) device helps assure terminal seating	●			●	●	●		
FASTIN-FASTON Connectors	600 A	WTW WTB	24-10	2-10	48A	Electrically insulated terminals, allowing as many as three connections to be made at once, improves ergonomics for assembly workers	●			●				
High Performance Interconnects (HPI)	250 VAC	WTB	30-22	2-32	1-3A	Low profile height with dual beam receptacle contact design. PCB mount pin header assemblies	●		●	●	●	●		
Micro MATE-N-LOK Connectors	250 VAC	WTW WTB	20-30	2-12 single 2-24 double	5A	Compact system includes low profile models and dual beam receptacle contact design	●		●			●		
MTA 100/156 Connectors	250 VAC	WTW	28-22	2-28	5A	Mold ribs on the housing help prevent reverse mating errors. IDC technology	●			●	●	●		
Power Double Lock Connectors	300 VAC	WTW WTB	26-18	1-12	5A	Audible click when contact is fully inserted into the housing. Board-mounted headers are compatible with resin or conformal coatings—no drain holes					●			
Power Key Connectors	300 VAC	WTB	24-16	2-6	10A	Provide wire-to-board (WTB) connections consisting of plug housings for wire and compact PCB header assemblies with a 20.7mm mated height and double lock plates as Terminal Position Assistance (TPA) devices	●		●	●				
Signal Double Lock Connectors	50 VAC	WTW WTB	20-26	2-13	3A	Provide a compact signal double lock connector with secondary locking in wire-to-wire and wire to-board configuration	●			●	●			
Spring Fingers Connectors	50 VAC	BTB	N/A	N/A	1-4.3A	Designed for soldering and pick-and-place equipment and allows for quick design changes in a small, common footprint	●							
Surface Mount Connectors	125 VAC	WTB	30-22	2-9	1-4A	Allow for simple reflow soldering and faster PCB assembly, retention features ensure secure PCB mounting	●		●	●	●	●		
VAL-U-LOK Connectors	600 VAC	WTW WTB	26-16	2-24	9A	Broad family on 4.2 pitch includes housing material options, optional TPA and mate first/break last feature on 3 position single row receptacle models	●					●		
TERMINALS AND SPLICES	Contact Current Rating (A)	Contact Voltage Rating	Terminal Type	Coil Voltage Rating (VDC)	Mounting Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
AMPLIVAR Terminals and Splices	Magnet wire terminals and splices	30-6.5 AWG	Rated according to terminated winding	Brass, phosphor bronze, copper-nickel	150°C	Cu or Al magnet wire, or a combination of both, can be terminated with no pre-stripping. Compression crimp technology in the 400 to 22,000 CMA range. Withstands -65°C to 150°C with 25 thermal shock cycles	●			●				
FASTON Terminals and Housings	Quick Disconnect	26-8 AWG	Rated according to wire size and application	Brass, steel, phosphor bronze	250°C, 371°C (high temp)	Quick connect-disconnect receptacles and tab-type terminals. Available in both straight and flagtypes. Four series 250, 205, 187 and 110. Single- and multi-position housings	●		●	●	●			
MAG-MATE Magnet Wire Terminals	Magnet wire terminals	44-12 AWG	Rated according to terminated winding	Brass, copper alloy, phosphor bronze, prefilled brass	110°C	IDC for solder-free connections with no prestripping. Available in tin-plated brass with a variety of input/output options. Cu or Al wire	●			●				
Positive Lock Terminals and Housings	Quick Disconnect	26-10 AWG	Rated according to wire size and application	Brass, phosphor bronze, stainless steel, steel, nylon	250°C	Wire-to-tab termination in brass and tin-plated brass. Ease of assembly and secure retention to mating tabs	●		●	●	●	●		
SIAMEZE Terminals	Magnet Wire Terminals	36-12 AWG	Rated according to terminated winding	Brass, copper alloy	110°C	IDC provides perpendicular and parallel lead wire strain relief retention forces in excess of 20 lbs. (90N). No lead wire stripping required				●				
Ultra-Fast Terminals and Splices	Quick Disconnect	26-10 AWG	600V	Copper alloy	105°C	Pre-insulated tin plated copper alloy terminals. UL rated at +105°C. Color coded by wire size	●		●	●	●	●		
SWITCHES	Terminal Features	Voltage Rating (VDC)	Current Rating	Position Size Range	Contact Material	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
Snap Action Switches	PCB	30 VDC	.1A	1	Brass and gold plating	C/O contact configuration, different actuation forces and levers, and low current versions	●				●		●	
Tactile Switches	PCB	24 VDC	1A	1	Copper alloy base, silver plate	Sealed and unsealed. Radial tape and ultra low profile versions	●			●		●		

FLOOR CARE PRODUCTS continued on next page.

FLOOR CARE PRODUCTS, CONTINUED

SENSORS	Accuracy	Range	Operating Temperature Range	Time Response	Output Type	Features	Subsystem							
							Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
POSITION SENSORS														
KMXP Series Magneto Resistive Sensors	±0.3°C	0 to +360°	-40 to +150°C	1mSec	M, V, D	Provides greater precision than commonly used Hall sensors and is designed to provide reliable and accurate measurements in harsh environments including high temperatures			●			●		
TUBING	Shrink Ratio	Operating Temperature	Standard Size Range	Colors	Flammability	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
RNF-100 Tubing	2:1	-55°C to 135°C	1.2-127.0mm	Various colors	ASTM D2671, Proc. B (Colors only); UL 224/CSA All Tubing Flame Test (Colors only)	High-performance flexible fluoropolymer tubing designed for jacketing and bundling of wires to form light-duty harnesses, especially where low profile, abrasion resistance, and flexibility are needed						●		
SWFR Heat Shrink Tubing	2:1	-40°C to 100°C	1.0-30.0mm	Black	UL 224/CSA VW-1	Cost effective, highly flame retardent, non-halogenated single wall tubing	●		●	●	●	●		
Versafit Tubing	2:1	-55°C to 135°C	1.2-101.6mm	Various colors	ASTM D2671, Proc. C; UL 224/CSA VW-1	Highly flame-retarded, low shrink temperature polyolefin heat shrinkable tubing	●				●			

GARBAGE DISPOSAL PRODUCTS



TERMINALS AND SPLICES	Contact Current Rating (A)	Contact Voltage Rating	Terminal Type	Coil Voltage Rating (VDC)	Mounting Type	Features	Subsystem							
							Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
AMPLIVAR Terminals and Splices	Magnet wire terminals and Splices	30-6.5 AWG	Rated according to terminated winding	Brass, phosphor bronze, copper-nickel	150°C	Cu or Al magnet wire, or a combination of both, can be terminated with no pre-stripping. Compression crimp technology in the 400 to 22,000 CMA range. Withstands -65°C to 150°C with 25 thermal shock cycles	●				●			
FASTON Terminals and Housings	Quick Disconnect	26-8 AWG	Rated according to wire size and application	Brass, steel, phosphor bronze	250°C, 371°C (high temp)	Quick connect-disconnect receptacles and tab-type terminals. Available in both straight and flagtypes. Four series 250, 205, 187 and 110. Single- and multi-position housings	●		●	●	●			
TUBING	Shrink Ratio	Operating Temperature	Standard Size Range	Colors	Flammability	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
ATUM Tubing	3:1 & 4:1	-55°C to 110°C	3:1: 3.0-40.0 4:1: 4.0 to 52.0mm	Black and Clear	ASTM D2671, Proc. B (Black only)	Environmentally seals and protects a wide variety of electrical applications, including back end connector sealing, breakouts, and connector-to-cable transitions			●		●			
DWP-125 Tubing	3:1	-40°C to 110°C	3.2-50.8mm	Standard: Black; Non-standard: White, red, blue, yellow, green and clear (non-flame-retardant)	UL 224/CSA All Tubing Flame Test (Colors only)	3:1 shrink ratio allows for insulation and sealing of irregular shapes. Medium wall provides increased mechanical protection while maintaining flexibility when installed.			●		●			
DWFR Tubing	3:1 & 4:1	-40°C to 110°C	3:1: 3.0-40.0 4:1: 4.0-52.1mm	Black	UL 224 VW-1	UL VW-1 rated dual wall product intended for applications exposed to moisture in a variety of environments across a range of industries					●			
ES1000/ES2000 Tubing	4:1	-40°C to 130°C	5.72-17.78mm	Clear and Black	N/A	4:1 shrink ratio allows a few sizes to cover a wide range of splice and component diameters. Mechanically tough providing strain relief and abrasion protection			●					
RBK-ILS/ RBK-VWS Tubing	4:1	-40°C to 125°C	5.75-18.3mm	Black	ISO6722, Clause 4.5	4:1 shrink ratio allows a few sizes to cover a wide range of splice and component diameters. Mechanically tough providing strain relief and abrasion protection. Permits inspection of substrate after application					●			
RNF-100 Tubing	2:1	-55°C to 135°C	1.2-127.0mm	Various colors	ASTM D2671, Proc. B (Colors only); UL 224/CSA All Tubing Flame Test (Colors only)	High-performance flexible fluoropolymer tubing designed for jacketing and bundling of wires to form light-duty harnesses, especially where low profile, abrasion resistance, and flexibility are needed						●		
SWFR Heat Shrink Tubing	2:1	-40°C to 100°C	1.0-30.0mm	Black	UL 224/CSA VW-1	Cost effective, highly flame retardent, non-halogenated single wall tubing	●		●	●	●	●		
Versafit Tubing	2:1	-55°C to 135°C	1.2-101.6mm	Various colors	ASTM D2671, Proc. C; UL 224/CSA VW-1	Highly flame-retarded, low shrink temperature polyolefin heat shrinkable tubing	●				●			

Small Appliances Solutions Guide

GARMENT CARE PRODUCTS

							Subsystem								
CONNECTORS	Maximum Voltage Rating	Mating Style	Wire Size (AWG)	Position Size Range	Current Rating	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron	
High Performance Interconnects (HPI)	250 VAC	WTB	30-22	2-32	1-3A	Low profile height with dual beam receptacle contact design. PCB mount pin header assemblies	●		●	●	●	●			
Mini AMP-In Connectors	250 VAC	WTB	30-22	2-20	4A	Low applied cost, eliminates manual peperation of wires prior to solderign into pc board, insulation support provides strain relief for wire and protection of solder joint	●		●	●	●	●			
TERMINALS AND SPLICES	Contact Current Rating (A)	Contact Voltage Rating	Terminal Type	Coil Voltage Rating (VDC)	Mounting Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron	
Positive Lock Terminals and Housings	Quick Disconnect	26-10 AWG	Rated according to wire size and application	Brass, phosphor bronze, stainless steel, steel, nylon	250°C	Wire-to-tab termination in brass and tin-plated brass. Ease of assembly and secure retention to mating tabs	●		●	●	●	●			
Ring and Spade Terminals	Rings	26-6 AWG	Rated according to wire size and application	Brass, Lu-bronze, phosphor bronze, stainless steel, steel	250°C	Offered in a range of sizes, materials, configurations and platings to meet specific requirements. Versatile mating options support solid or stranded single wire connections			●	●	●	●			
SENSORS	Accuracy	Range	Operating Temperature Range	Time Response	Output Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron	
TEMPERATURE SENSORS															
Platinum Temperature Sensors	±0.2°C	-40 to +800°C	-50°C to 600°C	1 to 10 sec	R	Designed to provide precise, stable measurement in extreme temperature applications, offering high value through proven design, ease-of-use, reliable performance and quick availability			●			●			
HUMIDITY SENSORS															
HTU21x Series Sensors	±3%	0 to 100%	-40 to +125°C	10 sec	D	HTU21 Humidity Temperature Sensors maintain constant conditions to increase efficiency and reduce waste in appliances			●			●			

GARAGE DOOR OPENER PRODUCTS

							Subsystem								
CONNECTORS	Maximum Voltage Rating	Mating Style	Wire Size (AWG)	Position Size Range	Current Rating	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron	
Economy Power 2.5 Connectors	250 VAC	WTB WTW	26-22	2-20 single, 8-40 double	4.5A	TPA, external robust locking latch, low insertion force and lubricated terminals. Colors available	●			●	●	●			
Economy Power II Connectors	600 VAC	WTB	22-18	2-12	10A	Well-suited to deliver power to the board and offer two levels of mechanical and electrical reliability: A true locking latch prevents the plug housing and post header from vibrating apart, while an optional Terminal Position Assurance (TPA) device helps assure terminal seating	●			●	●	●			
MTA 100/156 Connectors	250 VAC	WTW	28-22	2-28	5A	Mold ribs on the housing help prevent reverse mating errors. IDC technology	●			●	●	●			
RAST 2.5 Connectors	250 VAC	WTB	N/A	3-15	2A (tin plated), 6A (silver plated)	Meets RAST 2.5 standard. Vertical through hole technology headers, available with tin or silver plating, external or internal locking	●		●	●		●			
SENSORS	Accuracy	Range	Operating Temperature Range	Time Response	Output Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron	
TEMPERATURE SENSORS															
NTC Thermistor Sensors	±1.0°C	-40 to +250°C	-40 to +250°C	1-10 sec	R	Miniature size, excellent long-term stability, high accuracy and precision	●		●			●			
FORCE SENSORS															
FX19 Series Sensors	±2%	2.0 to 2000lbf	-40 to +85°C	1mSec	M, A, D	Ultra low cost, low strain design that has an essentially unlimited cycle life				●		●			
TUBING	Shrink Ratio	Operating Temperature	Standard Size Range	Colors	Flammability	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron	
RNF-100 Tubing	2:1	-55°C to 135°C	1.2-127.0mm	Various colors	ASTM D2671, Proc. B (Colors only); UL 224/CSA All Tubing Flame Test (Colors only)	High-performance flexible fluoropolymer tubing designed for jacketing and bundling of wires to form light-duty harnesses, especially where low profile, abrasion resistance, and flexibility are needed						●			
SWFR Heat Shrink Tubing	2:1	-40°C to 100°C	1.0-30.0mm	Black	UL 224/CSA VW-1	Cost effective, highly flame retardent, non-halogenated single wall tubing	●		●	●	●	●			
Versafit Tubing	2:1	-55°C to 135°C	1.2-101.6mm	Various colors	ASTM D2671, Proc.C;UL 224/CSA VW-1	Highly flame-retarded, low shrink temperature polyolefin heat shrinkable tubing	●					●			

WATER TREATMENT PRODUCTS

Subsystem

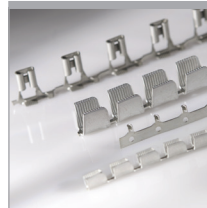
CONNECTORS	Maximum Voltage Rating	Mating Style	Wire Size (AWG)	Position Size Range	Current Rating	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
AMP CT Connectors	125 VAC	WTW WTB	30-22	2-30	1-4A	Two termination methods: IDC and crimp, Kinked leg options for self-retention on boards	●		●	●	●	●		
AMPMODU Connectors	133, 150, 250 VAC	WTW WTB BTB	20-32	1-240	1-10.5A	Reliable and economical, includes board-to-board, wire-to-board and wire-to-wire connectors, large variety of components and application possibilities, small size and great quality	●							
Economy Power 2.5 Connectors	250 VAC	WTB WTW	26-22	2-20 single, 8-40 double	4.5A	TPA, external robust locking latch, low insertion force and lubricated terminals. Colors available	●			●	●	●		
Economy Power II Connectors	600 VAC	WTB	22-18	2-12	10A	Well-suited to deliver power to the board and offer two levels of mechanical and electrical reliability: A true locking latch prevents the plug housing and post header from vibrating apart, while an optional Terminal Position Assurance (TPA) device helps assure terminal seating	●			●	●	●		
High Performance Interconnects (HPI)	250 VAC	WTB	30-22	2-32	1-3A	Low profile height with dual beam receptacle contact design, PCB mount pin header assemblies	●		●	●	●	●		
MTA 100/156 Connectors	250 VAC	WTW	28-22	2-28	5A	Mold ribs on the housing help prevent reverse mating errors, IDC technology	●			●	●	●		
Power Double Lock Connectors	300 VAC	WTW WTB	26-18	1-12	5A	Audible click when contact is fully inserted into the housing. Board-mounted headers are compatible with resin or conformal coatings—no drain holes					●			
Power Key Connectors	300 VAC	WTB	24-16	2-6	10A	Provide wire-to-board (WTB) connections consisting of plug housings for wire and compact PCB header assemblies with a 20.7mm mated height and double lock plates as Terminal Position Assistance (TPA) devices	●		●	●				
Signal Double Lock Connectors	50 VAC	WTW WTB	20-26	2-13	3A	Provide a compact signal double lock connector with secondary locking in wire-to-wire and wire to-board configuration	●			●	●			
Universal MATE-N-LOK Connectors	600 VAC	WTW WTB	30-10	1-15	19A	Utilizes a combination of pins and sockets intermixed in the plug and cap housings to achieve excellent electrical performance in a .250 [6.35] pitch design						●		
VAL-U-LOK Connectors	600 VAC	WTW WTB	26-16	2-24	9A	Broad family on 4.2 pitch includes housing material options, optional TPA and mate first/break last feature on 3 position single row receptacle models	●					●		
TERMINALS AND SPLICES	Contact Current Rating (A)	Contact Voltage Rating	Terminal Type	Coil Voltage Rating (VDC)	Mounting Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
FASTON Terminals and Housings	Quick Disconnect	26-8 AWG	Rated according to wire size and application	Brass, steel, phosphor bronze	250°C, 371°C (high temp)	Quick connect-disconnect receptacles and tab-type terminals. Available in both straight and flagtypes. Four series 250, 205, 187 and 110. Single- and multi-position housings	●		●	●	●			
SENSORS	Accuracy	Range	Operating Temperature Range	Time Response	Output Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
TEMPERATURE SENSORS														
NTC Thermistor Sensors	±1.0°C	-40 to +250°C	-40 to +250°C	1-10 sec	R	Miniature size, excellent long-term stability, high accuracy and precision	●		●			●		
TUBING	Shrink Ratio	Operating Temperature	Standard Size Range	Colors	Flammability	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
ATUM Tubing	3:1 & 4:1	-55°C to 110°C	3:1: 3.0-40.0 4:1: 4.0 to 52.0mm	Black and Clear	ASTM D2671, Proc. B (Black only)	Environmentally seals and protects a wide variety of electrical applications, including back end connector sealing, breakouts, and connector-to-cable transitions			●		●			
DWP-125 Tubing	3:1	-40°C to 110°C	3.2-50.8mm	Standard: Black; Non-standard: White, red, blue, yellow, green and clear (non-flame-retardant)	UL 224/CSA All Tubing Flame Test (Colors only)	3:1 shrink ratio allows for insulation and sealing of irregular shapes. Medium wall provides increased mechanical protection while maintaining flexibility when installed.			●		●			
DWFR Tubing	3:1 & 4:1	-40°C to 110°C	3:1: 3.0-40.0 4:1: 4.0-52.1mm	Black	UL 224 VW-1	UL VW-1 rated dual wall product intended for applications exposed to moisture in a variety of environments across a range of industries					●			
ES1000/ES2000 Tubing	4:1	-40°C to 130°C	5.72-17.78mm	Clear and Black	N/A	4:1 shrink ratio allows a few sizes to cover a wide range of splice and component diameters. Mechanically tough providing strain relief and abrasion protection			●					
RBK-ILS/RBK-VWS Tubing	4:1	-40°C to 125°C	5.75-18.3mm	Black	ISO6722, Clause 4.5	4:1 shrink ratio allows a few sizes to cover a wide range of splice and component diameters. Mechanically tough providing strain relief and abrasion protection. Permits inspection of substrate after application					●			
RNF-150 Tubing	2:1	-55°C to 150°C	1.2-25.4mm	Standard: Black; Non-standard: White	ASTM D2671, Proc. C; UL 224 VW-1	Can be used for jacketing and bundling of wires to form light-duty harnesses, especially where a low profile, abrasion resistance, and flexibility are needed				●	●	●		
Versafit Tubing	2:1	-55°C to 135°C	1.2-101.6mm	Various colors	ASTM D2671, Proc. C; UL 224/CSA VW-1	Highly flame-retarded, low shrink temperature polyolefin heat shrinkable tubing	●				●			
RELAYS	Contact Current Rating (A)	Contact Voltage Rating	Terminal Type	Coil Voltage Rating (VDC)	Mounting Type	Features	Control/UI Board	Fans	Heater	Motor	Power Cord	Sensor	Turnplate	Magnetron
PCF Power Relays	25A	277 VAC/24 VDC	THT + QC	6-24 VDC	PCB	1 form A (NO) contacts. DC coil magnetic system and 6370VA Contact Switching Power	●				●			
RZ Power Relays	16A	250 VAC	THT	5-48 VDC	PCB	1 form A (NO) or 1 form C (CO) contacts. DC coil magnetic system and a 4000VA Contact Switching Power					●			●
RZF Power Relays	16A	250 VAC	THT + QC	5-48VDC	PCB	1 form A (NO) contacts. DC coil magnetic system and a 4000VA Contact Switching Power					●			●

FEATURED PRODUCTS



AMP CT Connectors

- Two termination methods: IDC, crimp
- Kinked leg options for self-retention on boards
- IDC AWG 24-28, Crimp AWG 22-30
- RoHS compliant
- Component Program of Underwriters Laboratories Inc., File No. E28476



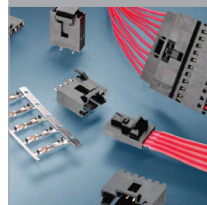
AMPLIVAR Terminals and Splices

- Up to three magnet wires plus a lead wire in the same crimp
- Cu and Al magnet wire can be combined
- Penetrates the magnet wire insulation while simultaneously terminating wire



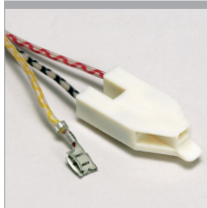
AMP Mini-CT Connectors

- CT Stands for Common Termination
- Reliably moves low power and signal through your device
- Offers design flexibility with IDC and crimp termination methods



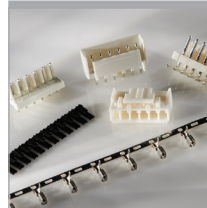
AMPMODU Connectors

- Reliable and economical, includes board-to-board, wire-to-board and wire-to-wire connectors, large variety of components and application possibilities, small size and great quality



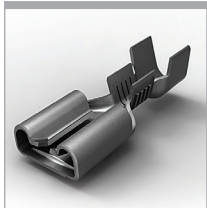
Cluster Block Connectors

- Connect to sealed hermetic headers on compressors
- Accept wire ranging from 25-10 AWG
- Versions available for 2.29 or 3.18mm header pins
- High-performance electrical and mechanical performance



Economy Power 2.5mm Connectors

- Achieve easy mating and unmating with positive audible latch
- Prevent post misalignment with polarization tabs



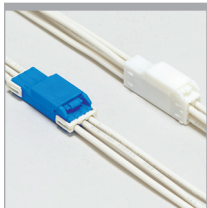
FASTON Terminals and Splices

- Insulated and uninsulated, straight and flag configurations
- Stress relieved and non-stress relieved receptacles and various plating options



Flexible Printed Circuit Connectors

- Light weight/high density designs
- Reliably connect with various retention options
- Unique designs like angled insertion to solve design challenges



GRACE INERTIA 2.5 Connectors

- Design assures proper insertion, preventing header pin deformation
- Inertia locking mechanism helps prevent unintended disconnection
- Lanceless contacts prevent snagging or entanglement



High Performance Interconnects (HPI)

- Achieve low signal/power connections in a 1.0mm to 2.5mm centerline footprint
- Prevent contact stubbing with polarized housings



MAG-MATE Terminals and Splices

- High speed, fully automated integrated systems provide uniform terminations reliably at the lowest possible applied cost



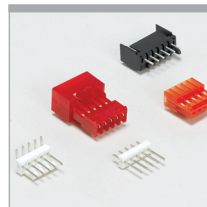
Micro MATE-N-LOK Connectors

- Low profile design
- Dual beam receptacle contact design
- PCB mount pin header assemblies



Mini AMP-In Connectors

- Centerline: 2.5mm
- Current Rating: 4A
- Voltage Rating: 250 VAC
- Flammability: UL 94 V-0



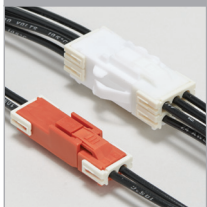
MTA-100 Connectors

- 2-28 positions, shrouded headers 2-14
- Terminates 28-22 AWG discrete wire or notched ribbon cable
- 250V, 5A rating



Power Key Connectors

- Power circuit connector with 5.0mm contact centerline
- Wire-to-board connectors consisting of plug housings for wires and PCB header assemblies
- A clear clicking sound easily confirms contact insertions. Double lock plate provides for complete loading of contacts



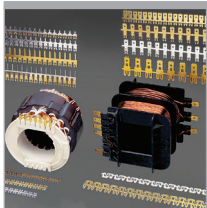
Power Double Lock Connectors

- 1-12 position WTW or WTB
- Audible click when contact is fully inserted into the housing
- Board-mounted headers are compatible with resin or conformal coatings



Ring and Spade Terminals and Splices

- Versatile mating options support solid or stranded single wire connections
- Offer a range of sizes, materials, configurations and platings to meet specific requirements



SIAMEZE Terminals

- Insulation displacement crimp (IDC) terminals interconnect copper magnet wires, lead wires, and other components
- Various types accept 36-12 AWG solid or stranded copper wire
- Manual, semi-automated, fully automated systems support efficient wire termination



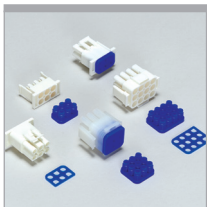
SWFR Heat Shrink Tubing

- Highly flame-retardant with UL VW-1 and CSA OFT flammability rating
- Environmentally friendly formula is essentially free of halogens, permitting use in enclosed areas where emission of toxic gasses from burning materials containing halogens is undesirable



T9A Series Relays

- Save PCB space with the smallest relay in its class while maintaining standard footprint
- Achieve a global relay solution with both UL, CQC and VDE certifications
- Help provide operator safety through increased insulation (UL 61810-1)



Universal MATE-N-LOK Connectors

- Centerline: 6.35mm
- Current Rating: 19A
- Voltage Rating: 600 VAC
- Flammability: UL 94 V-0, UL 94 V-2



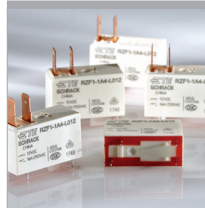
Positive Lock Terminals and Housings

- Integral lever locks receptacles onto tabs
- Low insertion force for improved ergonomics
- High temperature housings meet Glow Wire test and UL 94 V-0



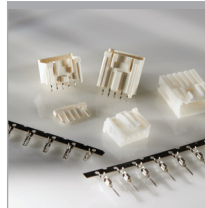
RAST 2.5 Connectors

- Product family includes AMP DUOPLUG and Monoplug connectors
- Insulation displacement connection technology supports high speed application and consistent quality
- 2.5mm and 5mm centerline pitch connectors meeting RAST 2.5 standard



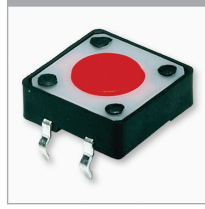
RZF Power Relays

- 1 Form A (normally open) contacts are designed for a rating of 16 amps at 250 volts AC, resistive
- With a low mounted height of only 1.09 in (27.6 mm) above the board, with terminals, and 0.705 in (17.9mm) without terminals, the RZF relay saves valuable space



Signal Double Lock Connectors

- Centerline: 2.5mm
- Current Rating: 3A
- Voltage Rating: 50 Volts AC/DC
- Flammability: GWT and UL 94 V-0



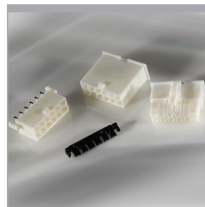
Tactile Switch

- Achieve any design with choice of actuator lengths and styles
- Support mass fabrication with several mounting options



Ultra-Fast Terminals and Splices

- Designed for full mating with a variety of tab styles including those with shoulders
- Terminate 26-10 AWG solid, fused and stranded wire (flags terminate stranded wire only)



VAL-U-LOK Connectors

- Ratings up to 9A per line in a 4.2mm pitch WTW or WTB connectors
- Mate first/break last option on 3 position single row receptacle housings
- As many as 24 positions in dual row configuration with optional TPA

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