

# BASIC, TOGGLE & ROCKER SWITCHES

Product Range Guide

A photograph of two industrial workers in a factory setting. They are wearing white hard hats, safety glasses, and high-visibility orange and yellow vests. The woman on the left is holding a blue clipboard and a pen, looking at it. The man on the right is also looking at the clipboard. They are standing next to a large industrial valve with a handwheel. The background shows various pipes and machinery in a brightly lit industrial environment.

**Honeywell**

# FOR INNOVATION THAT'S WELL APART, THERE'S ONLY HONEYWELL.

With more than 50,000 products ranging from snap-action, limit, toggle, and pressure switches to position, speed, pressure, and airflow sensors, Honeywell has one of the broadest sensing and switching portfolios.

Honeywell sensor, switch, and control components are tailored to exact specifications for stronger performance, longer productivity, and increased safety. Enhanced accuracy and durability are built into every part, improving output and endurance. For our customers, this can reduce expenditures and operational costs. Our global footprint and channels help to competitively price such components for your chosen application and provide immediate technical support.

While Honeywell's switch and sensor solutions are suitable for a wide array of basic and complex applications, our custom-engineered solutions offer enhanced precision, repeatability, and ruggedness. We offer domain knowledge and technology resources, along with a close working relationship, to develop and deliver cost-effective, individually tailored solutions. Whether clean-slate development or simple modifications to an existing design are needed, our expertly engineered solutions help to meet the most stringent requirements with world-class product designs, technology integration, and customer-specific manufacturing.

Global service, sourcing, and manufacturing. Industry-leading engineers. Value-added assemblies and solutions. A one-stop, full-service, globally competitive supplier.

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# SUBMINIATURE SEALED BASIC SWITCHES

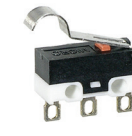
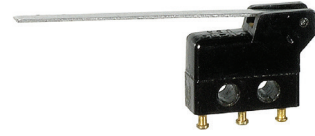
Although small in size, the HD, HD1, ZD and ZW Series are rated for controlling electrical loads ranging from logic-level to power-duty switching. When provided with integral wire leads, switches are sealed to IP67 and suitable for applications where the switch assembly would be exposed to liquids or environmental particulate contaminants from indoor or outdoor use.



SERIES	HD	HD1	ZD	ZW
<b>Type</b>	standard sealed	standard sealed	standard sealed	standard sealed
<b>Amp rating</b>	0.1 A & 3 A	0.1 A	0.1 A, 3 A	0.1 A, 6 A
<b>Circuitry</b>	SPDT, SPST-NO, SPST-NC	SPNC, SPNO	SPDT	SPDT, SPNO, SPNC
<b>Operating force</b>	130 gf max.	100 gf max., 130 gf max., 200 gf max.	130 gf to 195 gf	1.94 oz to 7.16 oz
<b>Terminations</b>	wired: straight, right, left solder: 2,5 mm x 2,5 mm with 1,3 mm dia. hole pcb: 0,6 mm x 3,5 mm pcb: left corner, right corner long solder: with 1,3 mm dia. hole straight solder: 2,0 mm x 2,5 mm	wired: downward, side pcb: straight, angle long solder clips special	solder, pcb straight, pcb left angle, pcb right angle, pre-wired	quick connect, solder, cable bottom/end, cable side exit
<b>Actuators/levers</b>	pin plunger, lever, simulated roller lever, formed lever	pin plunger, special	pin plunger, straight, sim. roller	pin plunger, straight, roller, sim. roller
<b>Voltage</b>	125 Vac, 12 Vdc	12 Vdc	125 Vac, 12 Vdc	125 Vac, 250 Vac
<b>Approvals</b>	UL, cUL, ENEC, CQC	UL, cUL, ENEC, CQC	UL, cUL, CE, ENEC	UL, cUL, CE, ENEC
<b>Operating temperature range</b>	terminal type S: -40°C to 125°C [-40°F to 257°F] wired type S (UL 1007/UL 1061): -20°C to 80°C [-4°F to 176°F] wired type S (UL 1430): -20°C to 85°C [-4°F to 185°F] wired type S (AVSS): -40°C to 85°C [-40°F to 185°F]	terminal type: -40°C to 85°C [-40°F to 185°F] wired type (UL 1007/UL 1061): -20°C to 80°C [-4°F to 176°F] wired type (UL 1430): -20°C to 85°C [-4°F to 185°F] wired type (AVSS): -40°C to 85°C [-40°F to 185°F]	-40°C to 85°C [-40°F to 185°F]	-25°C to 70°C [-13°F to 158°F] (with wires) -25°C to 120°C [-13°F to 248°F] (without wires)
<b>Contacts</b>	silver alloy	silver-plated copper alloy	silver, gold-plated silver	silver, gold-plated silver
<b>Housing material</b>	nylon	PBT	PBT polyester	PBT (polyester)
<b>Measurements</b>	Various: 14,70 mm W x 5,40 mm D [0.579 in W x 0.213 in D]	Various: 8,30 mm W x 5,30 mm D [0.327 in W x 0.209 in D]	10,6 mm H x 6,35 mm W x 19,8 mm L [0.42 in H x 0.25 in W x 0.78 in L]	9,0 mm H x 6,4 mm W x 19,8 mm L [0.36 in H x 0.25 in W x 0.78 in L]
<b>Features</b>	>500K mechanical operations; integrated pillars and mounting holes in switch housing; wiring, molding, and connector value-added capabilities available	slow-acting switching mechanism; integrated pillars and mounting holes in switch housing; wiring, molding, and connector value-added capabilities available	low energy or power-duty electrical ratings; gold-plated or silver contacts; PBT polyester housing material	IP67 available; low energy or power-duty electrical ratings; gold-plated or silver contacts; BT polyester housing material

# SUBMINIATURE UNSEALED BASIC SWITCHES

The package size of the subminiature switch is ideal for applications where space on the equipment is at a premium. The overall length is approximately 20 mm [0.78 in]. As with all snap-action switches, the audible click when actuated promotes ease of installation and set-up of the switches. A wide variety of integral stainless steel levers are available and when combined with the subminiature package size, may adapt the switch to a wide variety of applications.



SERIES	SM	SX	ZM	ZM1	ZX	Type
Type	premium	premium	standard (coil internal spring)	standard (flat internal spring)	standard	Type
Amp rating	0.1 A to 11 A	1 A to 7 A	0.1 A, 5 A, 10.1 A	0.1 A, 3 A, 6 A, 10.1 A, 16 A	0.1 A, 3 A	Amp rating
Circuitry	SPDT	SPDT, SPNO	SPST, SPDT, SPNO	SPDT, SPNO, SPNC	SPDT	Circuitry
Operating force	0.04 oz to 2 oz	0.71 oz to 6 oz	0.18 oz to 8.78 oz	12 gf to 355 gf	0.53 oz to 5.3 oz	Operating force
Terminations	quick connect, solder, pcb	quick connect, solder, pcb	quick connect, solder, pcb	quick connect, solder, pcb	solder, pcb snap-in, pcb left angle, pcb right angle	Terminations
Actuators/levers	pin plunger, straight, roller, sim. roller, paddle	pin plunger, straight, roller, sim. roller, offset flag, crossed roller	pin plunger, straight, roller, sim. roller, L-shaped	pin plunger, straight, roller, sim. roller, L-shaped	pin plunger, straight, sim. roller, special	Actuators/levers
Voltage	115 Vac, 125 Vac, 250 Vac, 30 Vdc	125 Vac, 250 Vac, 28 Vdc	125 Vac, 250 Vac, 30 Vdc	125 Vac, 250 Vac	125 Vac, 48 Vdc	Voltage
Approvals	UL, CSA, ENEC, CE	UL, CSA, ENEC, CE	UL, CSA, CE	UL, cUL, ENEC	UL, CSA	Approvals
Operating temperature range	-55°C to 121°C [-67°F to 250°F] high temperature options to 204°C [400°F]	-55°C to 121°C [-67°F to 250°F] high temperature options to 204°C [400°F]	-40°C to 120°C [-40°F to 248°F]	-40°C to 125°C [-40°F to 257°F]	-40°C to 65°C [-40°F to 149°F]	Operating temperature range
Contacts	silver, gold	silver, gold	silver, gold-plated silver, silver-tin-indium oxide	silver, gold-plated silver, gold-plated brass, silver-tin-indium oxide	silver, gold-plated silver	Contacts
Housing material	phenolic	phenolic	polyamide (nylon)	polyamide (nylon)	polyamide (nylon)	Housing material
Measurements	12,7 mm H x 6,35 mm W x 20,3 mm L [0.5 in H x 0.25 in W x 0.8 in L]	12,7 mm H x 6,35 mm W x 20,3 mm L [0.5 in H x 0.25 in W x 0.8 in L]	10,6 mm H x 6,4 mm W x 19,8 mm L [0.42 in H x 0.25 in W x 0.78 in L]	10,6 mm H x 6,4 mm W x 19,8 mm L [0.42 in H x 0.25 in W x 0.78 in L]	6,5 mm H x 5,7 mm W x 12,7 mm L [0.26 in H x 0.22 in W x 0.50 in L]	Measurements
Features	extended operating life; elongated mounting holes; MIL-PRF-8805 qualified listings available	extended operating life; elongated mounting holes; MIL-PRF-8805 qualified listings available	low energy or power-duty electrical ratings; gold-plated or silver contacts	low energy or power-duty electrical ratings; gold-plated or silver contacts	low energy or power-duty electrical ratings; gold-plated or silver contacts; polybutylene terephthalate housing	Features

# MINIATURE SEALED AND UNSEALED BASIC SWITCHES

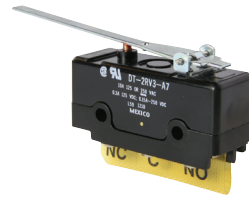
Honeywell's premium miniature sealed and unsealed basic switches have been designed for long-term reliability, up to 10 million cycles. These switches incorporate a snap-spring mechanism with more than 60 years of proven service and a high strength thermoplastic housing for durability. Available with custom-engineered solutions and multiple lever/termination options, Honeywell also makes available switches with RAST connectors.



SERIES	V15W WATERTIGHT	V15W2 EXPLOSION-PROOF	V7	V15	V19	SERIES
<b>Sealing</b>	sealed	sealed	unsealed	unsealed	unsealed	<b>Sealing</b>
<b>Type</b>	watertight	zone 2 hazardous area rated	premium	standard	standard	<b>Type</b>
<b>Amp rating</b>	0.1 A, 5 A, 10 A	5 A, 1/10 HP @ 125 Vac/250 Vac	0.1 A to 25 A	5 A to 26 A	5 A, 16 A	<b>Amp rating</b>
<b>Circuitry</b>	SPDT, SPNO, SPNC	SPDT, SPNO, SPNC	SPDT, SPNO, SPNC	SPDT, SPNO, SPNC	SPDT, SPNO, SPNC	<b>Circuitry</b>
<b>Operating force</b>	15 g, 25 g, 50 g, 100 g, 200 g	100 g, 200 g	0.7 oz max. to 14.6 oz max.	US: ≥ 100 g (16 A to 26 A) AP: 15 g to 400 g (5 A to 26 A)	2 g to 200 g	<b>Operating force</b>
<b>Terminations</b>	preleaded; terminals: 4,8 mm x 0,8 mm or 4,8 mm x 0,5 mm	quick connect: 4,8 mm x 0,5 mm	quick connect, pc board, pcb straight angle left	quick connect, screw, solder, RAST 5 & 7	quick connect; RAST-5 250#; RAST-7 250#; RAST-2.5; straight PCB	<b>Terminations</b>
<b>Actuators/levers</b>	pin plunger, straight, roller, sim. roller	pin plunger, roller plunger; other actuators/levers available for special order	pin plunger, straight, roller, sim. roller	pin plunger, straight, roller, sim. roller	pin plunger, straight, roller, sim. roller	<b>Actuators/levers</b>
<b>Voltage</b>	125 Vac, 250 Vac, 30 Vdc, 48 Vdc	125 Vac, 250 Vac	125 Vac, 250 Vac, 277 Vac	125 Vac, 250 Vac	125 Vac, 250 Vac	<b>Voltage</b>
<b>Approvals</b>	UL, cUL, ENEC, CQC	UL, cUL, ENEC, CQC, IEC Ex	UL, CSA, ENEC	UL, cUL, ENEC, CQC	ENEC, CQC, UL, cUL	<b>Approvals</b>
<b>Operating temperature range</b>	-40°C to 85°C [-40°F to 185°F]	-25 °C to 85 °C [-13 °F to 185 °F]	-40°C to 150°C [-40°F to 302°F]	-25°C to 150°C [-13°F to 300°F]	code S: -25°C to 85°C [-13°F to 185°F] code T: -25°C to 125°C [-13°F to 257°F]	<b>Operating temperature range</b>
<b>Contacts</b>	silver nickel, gold-plated option	silver alloy, gold-plated thermal alloy	silver, silver cadmium oxide, gold	silver, silver cadmium oxide, gold-plated silver	cadmium-free silver alloy	<b>Contacts</b>
<b>Housing material</b>	PBT polyester thermoplastic	PBT polyester thermoplastic	PCT polyester thermoplastic	PBT polyester thermoplastic	PBT thermoplastic polyester	<b>Housing material</b>
<b>Measurements</b>	15,9 mm H x 10,3 mm W x 33 mm L [0.63 in H x 0.41 in W x 1.3 in L]	15,9 mm H x 10,3 mm W x 33 mm L [0.63 in H x 0.41 in W x 1.3 in L]	15,9 mm H x 10,2 mm W x 28,8 mm L [0.63 in H x 0.4 in W x 1.14 in L]	15,9 mm H x 10,3 mm W x 27,8 mm L [0.63 in H x 0.41 in W x 1.09 in L]	15,9 mm H x 10,3 mm W x 27,8 mm L [0.63 in H x 0.41 in W x 1.09 in L]	<b>Measurements</b>
<b>Features</b>	designed for harsh-duty, wash down areas; high sealing capability with an IP67 rating (pre-leaded only)	approved for use in Zone 2 hazardous locations with an IP67 rating (pre-leaded only)	extended mechanical and electrical life; wide temperature range; custom engineered solutions	broad range of electrical loads; wide temperature range; limited configuration options available	>1 M mechanical operations; cadmium-free contacts; RAST 2.5 termination and housing	<b>Features</b>

# LARGE BASIC & SPECIALTY SWITCHES AND ACCESSORIES

Often ideal for high cost-of-failure applications. Low operating force and differential travel. Current ratings from 10 A to 25 A. Designed to withstand 100K operations at full load or 10M for mechanical life. Have been used in a variety of applications including irrigation, transportation, medical/dental, valves, office equipment, presses, machine tools, and HVAC.



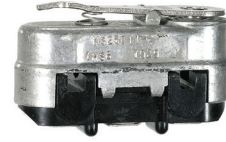
SERIES	BZ/BA/BM/BE	DT	MT	3MN	6AS	AC	DM	Type
<b>Type</b>	premium large basic	specialty	specialty	specialty	specialty	specialty	specialty	<b>Type</b>
<b>Amp rating</b>	15 A (BZ), 22 A (BM), 20 A (BA), 25 A (BE)	10 A	10 A	15 A	10 A, 15 A, 20 A	5 A to 25 A	10 A, 16 A	<b>Amp rating</b>
<b>Circuitry</b>	SPDT	DPDT	SPDT	two circuit, double break (2 CKT DB)	SPDT	SPDT	SPDT, DPDT	<b>Circuitry</b>
<b>Operating force</b>	1.0 oz to 28 oz	7.0 oz to 10.0 oz	2.0 oz to 18 oz	7.0 oz to 20 oz	8 oz to 14 oz	-	4,17 N [15 oz] max.	<b>Operating force</b>
<b>Terminations</b>	quick connect, solder, screw	screw	screw	screw	solder, screw, A2, T	turret-solder, screw, flying leads	quick connect	<b>Terminations</b>
<b>Actuators/levers</b>	pin plunger, overtravel plunger, straight, roller, flexible roller leaf, flexible leaf	pin plunger, straight, roller	pin plunger, straight, roller	pin plunger	straight, roller, leaf	rod	bullet nose, concave, pull-to-cheat plungers	<b>Actuators/levers</b>
<b>Voltage</b>	115 Vac, 125 Vac, 250 Vac	250 Vac, 28 Vdc	125 Vac, 125 Vdc	480 Vac	125 Vac, 250 Vac, 480 Vac	125 Vac, 250 Vac, 480 Vac, 30 Vdc	125 Vac, 250 Vac, 277 Vac	<b>Voltage</b>
<b>Approvals</b>	UL, CSA, ENEC, CE (varies by model)	UL, CSA	UL, CSA	UL, CSA	UL	UL versions available	UL, CSA	<b>Approvals</b>
<b>Operating temp. range</b>	-55°C to 85°C [-67°F to 185°F] 121°C [250°F] and 204°C [400°F] options available	-55°C to 85°C [-67°F to 185°F]	-55°C to 82°C [-67°F to 180°F]	-55°C to 85°C [-67°F to 185°F]	-55°C to 85°C [-67°F to 185°F]	-54°C to 121°C [-65°F to 250°F]	-37°C to 82°C [-35°F to 180°F]	<b>Operating temp. range</b>
<b>Contacts</b>	silver, silver cadmium oxide	silver	silver	silver	silver	silver	silver	<b>Contacts</b>
<b>Housing material</b>	general purpose phenolic	general purpose phenolic	arc resistant melamine	general purpose phenolic	general purpose phenolic	die-cast stainless steel bracket, stainless steel or polyester rod	polyester	<b>Housing material</b>
<b>Measurements</b>	25,4 mm H x 17,8 mm W x 50,8 mm L [1.0 in H x 0.7 in W x 2.0 in L]	25,4 mm H x 17,8 mm W x 50,8 mm L [1.0 in H x 0.7 in W x 2.0 in L]	25,4 mm H x 17,8 mm W x 50,8 mm L [1.0 in H x 0.7 in W x 2.0 in L]	25,4 mm H x 17,8 mm W x 50,8 mm L [1.0 in H x 0.7 in W x 2.0 in L]	20,1 mm H x 35,1 mm W x 49,3 mm L [0.79 in H x 1.38 in W x 1.94 in L]	varies by model	48,8 mm H x 31,8 mm W x 14,0 mm D [1.93 in H x 1.25 in W x 0.55 in D]	<b>Measurements</b>
<b>Features</b>	worldwide standard "large basic" switch; low operating force and travel; extended mechanical life; momentary or maintained actions	mounting interchangeability with BZ Series switches; permits several wiring combinations	mounting interchangeability with BZ/BA Series switches; arc-extinguishing design in contact area; arc-resistant case	double-break circuitry; extended mechanical life; space between terminals reduces possibility of shorting; arc-resistant plastic	tandem switch assembly; field adjustable operating point on one or both basic switches	cuts power when door/drawer is opened; momentary, maintained, or pull-to-cheat actuation; one or two SPDT switches	easy installation; momentary, alternate push-pull, or pull-to-cheat operation; expected mechanical life: 1 million operations	<b>Features</b>



SERIES	8MA1	8MA2	17MA1-B	3PA1	3PA28	3PA2	5PA1	5PA2	5PA3	Type
<b>Type</b>	adjustable mounting bracket	adjustable mounting bracket	conversion mounting bracket	die-cast zinc enclosure (side mount)	die-cast zinc enclosure (side mount)	die-cast zinc enclosure (flange mount)	plastic terminal enclosure	plastic terminal enclosure	plastic terminal enclosure	<b>Type</b>
<b>Description</b>	adjustment slot on the left	adjustment slot on the right	-	mounted from either side through 3,55 mm [0.140 in] dia. holes on 25,4 mm [1.0 in] centers	mounted from either side through 3,55 mm [0.140 in] dia. holes on 25,4 mm [1.0 in] centers. 1/2-14 NPSM internal thread conduit hub	switch secured in enclosure; two 4,37 mm [0.172 in] dia. holes in flange accept #8 screws for mounting on 41,3 mm [1.625 in] centers	used with solder terminal switches	use with screw terminal switches	used with either solder or screw terminal switches with auxiliary actuators assembled	<b>Description</b>
<b>Housing material</b>	steel	steel	corrosion-resistant metal	die-cast zinc	die-cast zinc	die-cast zinc	plastic	plastic	plastic	<b>Housing material</b>
<b>Measurements</b>	60,2 mm W x 21,3 mm H x 7,4 mm D [2.37 in W x 0.84 in H x 0.29 in D]	60,2 mm W x 21,3 mm H x 7,4 mm D [2.37 in W x 0.84 in H x 0.29 in D]	66,8 mm W x 19,0 mm D [2.63 in W x 0.75 in D]	74,8 mm W x 42,9 mm H x 25,4 mm D [2.95 in W x 1.69 in H x 1.00 in D]	74,8 mm W x 42,9 mm H x 25,4 mm D [2.95 in W x 1.69 in H x 1.00 in D]	74,8 mm W x 42,9 mm H x 25,4 mm D [2.95 in W x 1.69 in H x 1.00 in D]	52,8 mm W x 16,1 mm H [2.08 in W x 0.64 in H]	52,8 mm W x 20,2 mm H x 21,0 mm D [2.08 in W x 0.80 in H x 0.83 in D]	52,8 mm W x 20,2 mm H x 21,0 mm D [2.08 in W x 0.80 in H x 0.83 in D]	<b>Measurements</b>
<b>Features</b>	sturdy plated steel construction; fast, easy screwdriver adjustment; can be used with all standard basic switches		converts standard basic switches from side to top mount; snaps into mounting holes without tools	protects the switch from physical abuse and personnel from contact with exposed terminals			easy to use; screw and solder terminal versions; protect personnel from contact with exposed terminals			<b>Features</b>

# SPECIALTY AEROSPACE BASIC SWITCHES

Sealed switches are snap-action precision switches enclosed within a corrosion-resistant housing that seals the switch contacts from contamination. These sealed switches have often been used in aerospace, ordnance, industrial, marine, and transportation applications.



SERIES	SE/XE	HM	HS
<b>Type</b>	anodized aluminum	stainless steel	stainless steel, phenolic
<b>Sealing</b>	MIL-PRF-8805, symbol 3, watertight	MIL-PRF-8805, symbol 5, hermetic	MIL-PRF-8805, symbol 5, hermetic
<b>Operating temperature range</b>	-53°C to 105°C [-65°F to 221°F]	-65°C to 121°C [-85°F to 250°F] high temp available: 500°F	-54°C to 121°C [-65°F to 250°F]
<b>Actuators/levers</b>	auxiliary actuators available	integral lever; aux. actuators: leaf, roller leaf, straight, roller lever	integral lever
<b>Termination</b>	solder, leadwire	solder, leadwire	screw, leadwire
<b>Circuitry</b>	SPDT	SPDT	SPDT
<b>Contacts</b>	silver, gold, bifurcated gold	silver, gold, bifurcated gold	silver
<b>Amp rating</b>	0.5 A to 7 A	0.5 A to 3 A	1 A to 25 A
<b>Approvals</b>	CE, UL/CSA, MIL-PRF-8805 (selected listings)	MIL-PRF-8805 (select listings qualified)	UL, CSA, MIL-PRF-8805 (select listings qualified)
<b>Measurements</b>	SE: 19,05 mm H x 8,64 mm W x 22,35 mm L [0.75 in H x 0.34 in W x 0.88 in L] XE: 19,05 mm H x 8,13 mm W x 15,75 mm L [0.75 in H x 0.32 in W x 0.62 in L]	12,7 mm H x 6,35 mm W x 20,3 mm L [0.5 in H x 0.25 in W x 0.8 in L]	25,4 mm H x 17,8 mm W x 50,8 mm L [1.0 in H x 0.7 in W x 2.0 in L]
<b>Features</b>	watertight and military standard construction per MIL-PRF-8805; corrosion-resistant aluminum housing	hermetically sealed per MIL-PRF-8805; high temperature construction; reduced sensitivity to changes in altitude or pressure	hermetically sealed per MIL-PRF-8805; high temperature construction; reduced sensitivity to changes in altitude or pressure

# LIT & UNLIT PUSHBUTTON SWITCHES



Lighted or unlighted, pushbuttons are designed to enhance manual operation with a flexible and attractive interface. Snap-in surface products are easy to apply, operate, and maintain. Potential applications include control boards and panels found in industrial machinery, instrumentation, flight decks, and test equipment.

SERIES	PB
Panel area	20,32 mm x 35,56 mm [0.8 in x 1.4 in] max. (behind panel)
Display	8,1 mm [0.32 in] and other button sizes
Colored buttons	available
Mounting	threaded bushing
Termination	solder, H58, quick connect
Sealing	panel-sealed and hermetic-sealed switches available
Electrical	0.5 A to 5 A; 125/250 Vac, 28 Vdc
Approvals	UL, CSA, some meet MIL-PRF-8805/23
Features	up to four poles - double throw; compact size



SERIES	AML	MML
Panel area	20,5 mm [0.80 in] square; 20,5 mm x 30,5 mm [0.80 in x 1.20 in] rectangular	15 mm x 9,9 mm [0.59 in x 0.39 in] rectangular; 17,8 mm x 12,7 mm [0.70 in x 0.50 in] rectangular; 9,9 mm [0.39 in] square
Display	15,0 mm [0.59 in] square; 15 mm x 25 mm [0.59 in x 0.99 in] buttons	13 mm x 6,6 mm [0.51 in x 0.26 in] rectangular; 6,8 mm [0.27 in] square
Illumination	incandescent T-1-3/4 lamps – 6 V, 14 V, 28 V; LEDs – 2 V, 4 V, 5 V, 10 V, 15 V; neon lamps – 125 V, 250 V	T-1 – 5 V, 28 V; incandescent T-1-3/4 LEDs – 2 V, 2.5 V, 3 V
Behind panel	43,1 mm [1.7 in]	17,0 mm [0.67 in]
Mounting	snap-in individual, strip, matrix, sub-panel, pcb	snap-in individual, strip, sub-panel, pcb, bezel
Termination	solder, quick connect, pc board, push-on	solder, quick connect, printed wiring board
Sealing	optional panel seal	–
Electrical	electronic control: up to 3 A, 125 Vac	silver contacts: up to 1 A, 125 Vac; 6 A @ 125 Vac, 250 Vac; 2 A @ 30 Vdc; 1 A @ 125 Vdc; 1/10 hp @ 125 Vac; gold contacts: up to 0.25 A, 30 Vdc; UL rating 0.10 A
Approvals	UL, CSA, VDE, CE (selected products)	UL, CSA
Features	silver or gold contacts; full guard bezel option; lamp circuit independent of switch circuit	silver or gold contacts; pwb or panel-mount switches; multi-unit strip mounting available



# SEALED & STANDARD TOGGLE & ROCKER SWITCHES

Hermetic and environmentally sealed toggle switches offer enhanced reliability with MICRO SWITCH technology. Can be used in a variety of applications where a panel-mount switch with an environment-proof rating is needed, including industrial equipment, military and commercial aviation, agriculture, process control, and medical.



SERIES	AT	TS	TW	ET	MT	NT	TL	
<b>Type</b>	stainless steel toggle	stainless steel, phenolic toggle	miniature stainless steel toggle	magnetically held toggle	miniature toggle	commercial-grade toggle	military-grade toggle	<b>Type</b>
<b>Sealing</b>	MIL-PRF-8805/26/98	-	qualified to MIL-DTL-83781	most listings qualified to MIL-S-5594	IEC 60529-2001, IP67, IP68	IP67/68; NEMA 3, 3R, 4 and 13	qualified to MIL-DTL-3950	<b>Sealing</b>
<b>Operating temp.</b>	various	-54°C to 71°C [-65°F to 160°F]	-65°C to 71°C [-85°F to 160°F]	-65°C to 71°C [-85°F to 160°F]	-40°C to 85°C [-40°F to 185°F]	-40°C to 71°C [-40°F to 160°F]	-65°C to 71°C [-85°F to 160°F]	<b>Operating temp.</b>
<b>Actuator/lever</b>	standard, locking, tab, special design	standard	standard, locking, special design, tab	standard, pull/push-to-unlock, tab	standard	standard, locking, special design, tab	standard, special design, tab, paddle, none	<b>Actuator/lever</b>
<b>Action</b>	2-position, momentary & maintained	2- or 3-position, momentary & maintained	2- or 3-position, momentary & maintained	2- or 3-position, momentary & maintained	2- or 3-position, momentary & maintained	2- or 3-position, momentary & maintained	2- or 3-position, momentary & maintained	<b>Action</b>
<b>Mounting</b>	15/32 in bushing, 1/4 in bushing, 3-hole, above panel	15/32 in bushing	bushing 15/32 in or 1/4 in	bushing 15/32 in	bushing 15/32 in	bushing 15/32 in	bushing 15/32 in	<b>Mounting</b>
<b>Termination</b>	solder, solder T2, screw, quick connect, leadwire, H58	solder, screw, quick connect	IWTS, solder, screw, quick connect, H58, T2	screw, leadwire, turret	solder	solder, screw, quick connect	IWTS, solder, screw, quick connect, leadwire	<b>Termination</b>
<b>Circuitry</b>	SPDT, DPDT, DPNO, 3PDT, 4PDT, 6PDT, 8PDT, 10PDT	SPDT, DPDT	SPST, SPDT, DPST, DPDT	SPDT, DPDT, 4PDT	SPST, SPDT, DPST, DPDT	SPST, SPDT, DPST, DPDT, 4PST, 4PDT	SPST, SPDT, DPST, DPDT, 3PST, 3PDT, 4PST, 4PDT	<b>Circuitry</b>
<b>Contacts</b>	silver, gold, bifurcated gold	silver tin oxide and indium oxide	fine silver, gold-plated	fine silver	silver, gold-plated	silver alloy, gold-plated	silver alloy, gold-plated	<b>Contacts</b>
<b>Amp rating</b>	0.01 A to 5 A (resistive)	0.4 A to 10 A @ 126 Vac to 277 Vac 0.4 A to 20 A @ 0.5 Vac to 125 Vac	0.1 A to 5.0 A @ 0.5 Vdc to 28 Vdc; 0.1 A to 5.0 A @ 0.5 Vac to 115 Vac	7 A max. (resistive)	5 A, 28 Vdc (silver contacts) 100 mA, 28 Vdc (gold-plated contacts)	up to 20 A (resistive)	up to 20 A (resistive)	<b>Amp rating</b>
<b>Measurements</b>	various	various	49,78 mm H x 14,61 mm W x 14,61 mm D [1.96 in H x 0.575 in W x 0.575 in D]	51,56 mm H x 25,4 mm W x 25,4 mm D [2.03 in H x 1.0 in W x 1.0 in D]	43,1 mm H x 19,05 mm W x 14,55 mm D [1.697 in H x 0.75 in W x 0.573 in D]	58,4 mm H x 33,5 mm W x 22,6 mm D [2.3 in H x 1.32 in W x 0.89 in D]	58,4 mm H x 33,5 mm W x 22,6 mm D [2.3 in H x 1.32 in W x 0.89 in D]	<b>Measurements</b>
<b>Approvals</b>	qualified to MIL-PRF-8805/26/98	UL, CSA, CE	UL, qualified to MIL-DTL-83781	qualified to MIL-S-5594	UL, CE	UL, CSA, CE	UL, CSA, CE, qualified to MIL-DTL-3950	<b>Approvals</b>
<b>Features</b>	choice of sealed bushing; short behind panel depth	optional step-case design provides added space between terminals to prevent shorting	saves space and weight; sealed bushing versions	holding coil replaces mechanical holding mechanisms to maintain toggle in operate	high seal rating to protect from water ingress, 60k life cycle offers enhanced application life	completely sealed switching chamber; enhanced tactile feedback	environment-proof sealing; qualified to MIL-DTL-3950	<b>Features</b>



SERIES	AML	TP
<b>Housing type</b>	non-lighted, rectangle; 1 lamp circuit, rectangle; 2 lamp circuits, rectangle	non-lighted, rectangle
<b>Circuitry</b>	SPST, SPDT, DPST, DPST, 4PDT	SPST, SPDT, DPDT, 4PDT
<b>Action</b>	2 position, 3 position	2 position, 3 position
<b>Mounting</b>	snap-in panel	flush mount; above panel mount
<b>Termination</b>	solder, quick connect, printed circuit, push-on	screw
<b>Ampere/voltage range</b>	0.4 A to 2 A @ 0.5 Vdc to 30 Vdc; 0.4 A to 3 A @ 0.5 Vac to 125 Vac; 0.4 A to 2 A @ 0.5 Vac to 250 Vac	silver alloy
<b>Light</b>	no lamp installed; incandescent 6 V, 14 V, 28 V; neon	-
<b>LED/neon color</b>	red, yellow, green	-
<b>Measurements</b>	various	various
<b>Approvals</b>	-	UL recognized, CSA certified, CE approved
<b>Features</b>	silver and gold contacts; available with or without diode protection for LEDs; lamp circuit independent of switch circuit	2- or 3-position operating action; various button colors; dust and splash-proof sealed; silver or gold contacts available; can be provided with or without buttons

## WARRANTY/REMEDY

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