

# BASIC, TOGGLE & ROCKER SWITCHES

Product Range Guide

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.

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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 bot- tom/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
<b>Type</b>	premium	premium	standard (coil internal spring)
<b>Amp rating</b>	0.1 A to 11 A	1 A to 7 A	0.1 A, 5 A, 10.1 A
<b>Circuitry</b>	SPDT	SPDT, SPNO	SPST, SPDT, SPNO
<b>Operating force</b>	0.04 oz to 2 oz	0.71 oz to 6 oz	0.18 oz to 8.78 oz
<b>Terminations</b>	quick connect, solder, pcb	quick connect, solder, pcb	quick connect, solder, pcb
<b>Actuators/levers</b>	pin plunger, straight, roller, sim. roller, paddle	pin plunger, straight, roller, sim. roller, offset flag, crossed roller	pin plunger, straight, roller, sim. roller
<b>Voltage</b>	115 Vac, 125 Vac, 250 Vac, 30 Vdc	125 Vac, 250 Vac, 28 Vdc	125 Vac, 250 Vac, 30 Vdc
<b>Approvals</b>	UL, CSA, ENEC, CE	UL, CSA, ENEC, CE	UL, CSA, CE
<b>Operating temperature range</b>	-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]
<b>Contacts</b>	silver, gold	silver, gold	silver, gold-plated silver, silver-tin-indium oxide
<b>Housing material</b>	phenolic	phenolic	polyamide (nylon)
<b>Measurements</b>	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 19,3 mm L [0.42 in H x 0.25 in W x 0.76 in L]
<b>Features</b>	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 contacts

# MINIATURE SEALED AND UNSEALED BASIC SWITCHES

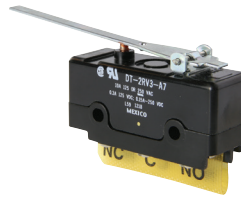
Honeywell's premium miniature sealed and unsealed basic switches have been designed for long-term reliability, up to 10 million cycles. These switches incorporate a snap-spring mechanism with more than 60 years of proven service and a high strength thermoplastic housing for durability. Available with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



SERIES	V15W WATERTIGHT	V15W2 EXPLOSION-PROOF	V7
<b>Sealing</b>	sealed	sealed	unsealed
<b>Type</b>	watertight	zone 2 hazardous area rated	premium
<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
<b>Circuitry</b>	SPDT, SPNO, SPNC	SPDT, SPNO, SPNC	SPDT, SPNO, SPNC
<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.
<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 str
<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.
<b>Voltage</b>	125 Vac, 250 Vac, 30 Vdc, 48 Vdc	125 Vac, 250 Vac	125 Vac, 250 Vac, 277 Vac
<b>Approvals</b>	UL, cUL, ENEC, CQC	UL, cUL, ENEC, CQC, IEC Ex	UL, CSA, ENEC
<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]
<b>Contacts</b>	silver nickel, gold-plated option	silver alloy, gold-plated thermal alloy	silver, silver cadmium oxide, gold
<b>Housing material</b>	PBT polyester thermoplastic	PBT polyester thermoplastic	PCT polyester thermoplastic
<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]
<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 operating temperature range; custom engineered solutions

# 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.



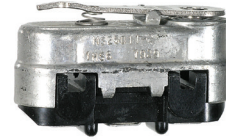
SERIES	BZ/BA/BM/BE	DT	MT	3
Type	premium large basic	specialty	specialty	sp
Amp rating	15 A (BZ), 22 A (BM), 20 A (BA), 25 A (BE)	10 A	10 A	15
Circuitry	SPDT	DPDT	SPDT	tw
Operating force	1.0 oz to 28 oz	7.0 oz to 10.0 oz	2.0 oz to 18 oz	7.
Terminations	quick connect, solder, screw	screw	screw	sc
Actuators/levers	pin plunger, overtravel plunger, straight, roller, flexible roller leaf, flexible leaf	pin plunger, straight, roller	pin plunger, straight, roller	pin
Voltage	115 Vac, 125 Vac, 250 Vac	250 Vac, 28 Vdc	125 Vac, 125 Vdc	48
Approvals	UL, CSA, ENEC, CE (varies by model)	UL, CSA	UL, CSA	UL
Operating temp. range	-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]	-5 [-6
Contacts	silver, silver cadmium oxide	silver	silver	sil
Housing material	general purpose phenolic	general purpose phenolic	arc resistant melamine	ge
Measurements	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 x C
Features	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	do life of



SERIES	8MA1	8MA2	17MA1-B	3F
Type	adjustable mounting bracket	adjustable mounting bracket	conversion mounting bracket	die- (sid
Description	adjustment slot on the left	adjustment slot on the right	-	mo side [0.1 25, [1.0
Housing material	steel	steel	corrosion-resistant metal	die-
Measurements	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, x 25 1.6
Features	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	prot term

# 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

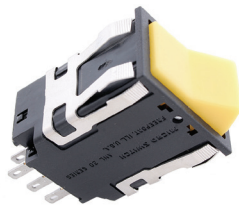


# SEALED & STANDARD TOGGLE & ROCKER SWITCHES

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	E
Type	stainless steel toggle	stainless steel, phenolic toggle	miniature stainless steel toggle	ma
Sealing	MIL-PRF-8805/26/98	-	qualified to MIL-DTL-83781	mo
Operating temp.	various	-54°C to 71°C [-65°F to 160°F]	-65°C to 71°C [-85°F to 160°F]	-6
Actuator/lever	standard, locking, tab, special design	standard	standard, locking, special design, tab	sta
Action	2-position, momentary & maintained	2- or 3-position, momentary & maintained	2- or 3-position, momentary & maintained	2-
Mounting	15/32 in bushing, 1/4 in bushing, 3-hole, above panel	15/32 in bushing	bushing 15/32 in or 1/4 in	bu
Termination	solder, solder T2, screw, quick connect, leadwire, H58	solder, screw, quick connect	IWTS, solder, screw, quick connect, H58, T2	scr
Circuitry	SPDT, DPDT, DPNO, 3PDT, 4PDT, 6PDT, 8PDT, 10PDT	SPDT, DPDT	SPST, SPDT, DPST, DPDT	SP
Contacts	silver, gold, bifurcated gold	silver tin oxide and indium oxide	fine silver, gold-plated	fin
Amp rating	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
Measurements	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
Approvals	qualified to MIL-PRF-8805/26/98	UL, CSA, CE	UL, qualified to MIL-DTL-83781	qu
Features	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	ho



SERIES	AML	TP
Housing type	non-lighted, rectangle; 1 lamp circuit, rectangle; 2 lamp circuits, rectangle	non-lighted, rectangle
Circuitry	SPST, SPDT, DPST, DPST, 4PDT	SPST, SPDT, DPDT, 4PDT
Action	2 position, 3 position	2 position, 3 position
Mounting	snap-in panel	flush mount; above panel mount
Termination	solder, quick connect, printed circuit, push-on	screw
Ampere/voltage range	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
Light	no lamp installed; incandescent 6 V, 14 V, 28 V; neon	-
LED/neon color	red, yellow, green	-
Measurements	various	various
Approvals	-	UL recognized, CSA certified, CE approved
Features	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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