



SENSING AND CONTROL

Product Range Guide

For innovation that's well apart, there's only Honeywell Sensing and Control.

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

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.

Our expertise in aerospace and defense, transportation, medical, and industrial industries means we offer products and solutions for a wide range of applications. But, an impressive product line is only one part. We possess unique engineering expertise and value-added capabilities.

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 worldclass product designs, technology integration, and customer-specific manufacturing.

With a 75-year legacy in the switch and sensor business, Honeywell S&C has earned a reputation for reliability and excellence. Our strong product designs, Six Sigma Plus manufacturing environment, and robust testing facilities help provide quality out of the box, as well as enhanced, sustainable performance down the line.

Global service, sourcing, and manufacturing. Industry-leading engineers. Value-added assemblies and solutions. Construction to required specifications. A one-stop, full-service, globally competitive supplier... Honeywell Sensing and Control.

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MICRO SWITCH™ Limit Switches

Heavy-Duty Limit Switches



Offer a rugged, die-cast body with multiple mounting and actuator options. Low- and high-temp construction and factory-sealed, pre-wired versions available. Potential applications include food and beverage, construction and agriculture equipment, material handling, rail, industrial valves, chemical and food processing, shipboard, caustic waste handling, and power generation.



Series	HDLS Standard	Stainless Steel	Fully Potted
Housing type	HDLS plug-in and non-plug-in	stainless steel non plug-in	HDLS non plug-in
Sealing	IP65/66/67; NEMA 1, 3, 4, 4X, 6, 6P, 12, 13	IP65/66/67; NEMA 1, 3, 3R, 4, 4X, 6, 6P, 12, 13	IP65/66/67; NEMA 1, 3, 4, 6, 6P, 12, 13
Temperature range	-12 °C to 93 °C [10 °F to 200 °F]	-12 °C to 121 °C [10 °F to 250 °F]	-12 °C to 121 °C [10 °F to 250 °F]
Housing material	zinc die-cast	stainless steel	zinc die-cast
Actuators/levers	top plunger, top roller, top rotary, side rotary, side plunger, side rotary, wobble	top plunger, top roller, top rotary, side rotary, side plunger, side rotary, wobble	top plunger, top roller, top rotary, side rotary, side plunger, side rotary, wobble
Termination	0.5 in/0.75 in - 14NPT conduit; 20 mm conduit; PG13.5; 12 ft cable; 4, 5, and 9-pin mini- connector	0.5 in/0.75 in - 14NPT conduit; 20 mm conduit; PG13.5; 12 ft cable; 4, 5, and 9-pin mini- connector	cable (various lengths); 4-pin; 5-pin; 9-pin; 20-pin mini-connector
Approvals	UL, CE, CSA, CCC, EN60947-1, EN60947-5-1	UL, CE, CSA, CCC, EN60947-1, EN60947-5-1	UL, CE, CSA, CCC, EN60947-1, EN60947-5-1
Circuitry	1NC 1NO SPDT, 1NC direct act- ing; 2NC 2NO DPDT, 2NC 2NO DPDT sequential	1NC 1NO SPDT, 1NC direct acting; 2NC 2NO DPDT	1NC 1NO SPDT; 2NC 2NO DPDT
Contacts	silver, gold	silver, gold	silver, gold
Amp rating	10 A (thermal)	10 A (thermal)	10 A (thermal)
Measurements (H x W x D)	106,7 mm x 29,4 mm x 44,4 mm [4.20 in x 1.16 in x 1.75 in]	122,9 mm x 29,5 mm x 45,2 mm [4.84 in x 1.16 in x 1.78 in]	106,7 mm x 29,4 mm x 44,4 mm [4.20 in x 1.16 in x 1.75 in]
Features	wide variety of actuators, cir- cuitry options, and connectivity	series 300 stainless steel housing suitable for corrosive environment and wash down food and beverage applications	construction eliminates fluid pen- etration into switch body; suitable for harsh-duty applications

MICRO SWITCH™ Limit Switches

Global Limit Switches



Meet IEC standards for world-wide acceptance – often used in injection molding, PLC interface, machine tooling, escalators, packaging, food and beverage, industrial, lifts and elevators, electronic assembly, construction and agriculture equipment, material handling, and rail.



Series	GLA	GLC
Housing type	EN 50041	EN 50047
Sealing	IP67; NEMA 1, 3, 4, 12, 13	IP66/IP67; NEMA 1, 4, 12, 13
Temperature range	-25 °C to 85 °C [-13 °F to 185 °F] side rotary: -40 °C to 85 °C [-40 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]
Housing material	zinc die-cast	zinc die-cast
Actuators/levers	side rotary, top plunger, top roller, wobble	side rotary, top plunger, top roller, wobble
Termination	0.5 in - 14NPT conduit, 20 mm, PG13.5	0.5 in - 14NPT conduit, 20 mm, PG13.5
Approvals	UL, CE, CSA, CCC, IEC 947-5-1, EN60947-5-1, UL508	UL, CE, CSA, CCC, IEC 947-5-1, EN60947-5-1, UL508
Circuitry	SPDT snap action DB, SPDT slow action BBM/MBB, DPDT snap action DB, 2NO and 2NC	SPDT snap action DB, SPDT slow action BBM/MBB
Contacts	silver, gold	silver, gold
Amp rating	10 A (thermal)	10 A (thermal)
Measurements (H x W x D)	82,0 mm x 42,0 mm x 42,0 mm [3.23 in x 1.65 in x 1.65 in]	55 mm x 30,5 mm x 30 mm [2.16 in x 1.20 in x 1.18 in]
Features	direct-acting NC contacts	direct-acting NC contacts



GLD	GLE	91MCE	SZL-VL
EN 50047	EN 50047 compatible	—	—
IP66/IP67; NEMA 1, 12, 13	IP66; NEMA 1, 4, 12, 13	IP67; NEMA 1, 4, 12, 13	IP64
-40 °C to 85 °C [-40 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]	-25 °C to 85 °C [-13 °F to 185 °F]	-20 °C to 60 °C [-4 °F to 140 °F]
plastic	zinc die-cast	zinc die-cast	zinc die-cast/plastic
side rotary, top plunger, top roller, wobble	side rotary, top plunger, top roller, wobble	side rotary, top/roller plunger, panel mount actuators	side rotary, top plunger, wobble, wobble cat whisker
0.5 in - 14NPT conduit, 20 mm, PG13.5	0.5 in - 14NPT conduit, 20 mm, PG13.5	4-pin M12 connector, side exit cable, bottom exit cable	cable gland
UL, CE, CSA, CCC, IEC 947-5-1, EN60947-5-1, UL508, UL746-C	UL, CE, CSA, CCC, IEC 947-5-1, EN60947-5-1, UL508	cULus, CE, CCC	UL, cULus, CE, CCC
SPDT snap action DB SPDT slow action BBM/MBB	SPDT snap action DB, SPDT slow action BBM/MBB, DPDT snap action DB, 2NO and 2NC	1NO 1NC DO snap action, 1NC 1NO slow action: BBM	1NC 1NO SPDT double break
silver, gold	silver, gold	silver	gold-plated silver
10 A (thermal)	10 A (thermal)	10 A (thermal)	5.0 A
55 mm x 30,5 mm x 30 mm [2.16 in x 1.20 in x 1.18 in]	50 mm x 65 mm x 30 mm [2.37 in x 2.56 in x 1.18 in]	59,8 mm x 30 mm x 16 mm [2.35 in x 1.18 in x 0.63 in]	64 mm x 28 mm x 38.1 mm [2.52 in x 1.102 in x 1.5 in]
direct-acting NC contacts	direct-acting NC contacts	direct-acting NC contacts; side and bottom exit connection options	integral cord grip; gold-plated silver contacts

MICRO SWITCH™ Limit Switches

Medium-Duty Limit Switches



Featuring a small metal package size. Potential applications include material handling, printing, machine tools, agricultural equipment, cranes, packaging, earth moving, conveyors, surtran, textile, and printing.



Series	14CE/914CE	LS
Housing type	–	compact/non-plug-in, plug-in
Sealing	IP65, IP66; NEMA 1, 3, 4, 6, 6P, 12, 13	NEMA 1, 3, 4, 6, 13
Temperature range	0 °C to 70 °C [35 °F to 160 °F]	-29 °C to 71 °C [-20 °F to 160 °F]
Housing material	zinc die-cast	zinc die-cast
Actuators/levers	side rotary, top plunger, roller, pushbutton, wobble	side rotary, roller arm
Termination	cable, micro-connector	0.5 in - 14NPT conduit, mini-connector
Approvals	14CE: CE, IEC947-5-1, EN60947-5-1 914CE: UL, CE, CSA, IEC947-5-1, EN60947-5-1	UL, CSA
Circuitry	SPDT, SPSTNC, SPDTMBB, SPDTBBM	SPDT double break, DPDT double break
Contacts	silver, gold	silver, gold
Amp rating	5 A (thermal)	10 A
Measurements (H x W x D)	49 mm x 40 mm x 16 mm [1.93 in x 1.58 in x 0.63 in]	102,9 mm x 30,2 mm x 28,7 mm [4.05 in x 1.19 in x 1.13 in]
Features	rugged housing; miniature size; direct-acting contacts available; pre-leaded or various quick-connect terminations	mode of operation is field adjustable; variety of operating characteristics



BZE6/V6

split housing, side mount; split housing, flange mount

NEMA 1, 3, 4, 12
E6/V6-RQ: IP40; NEMA 1
E6/V6-RN: IP66; NEMA 1, 3, 4

-32 °C to 71 °C [-25 °F to 160 °F]

zinc die-cast

top plunger, maint. with reset plunger; lever actuated; wobble

0.5 in - 14NPT (or NPSM) conduit, mini-connector, cable

UL, CSA

SPDT, DPDT

silver

10 A or 15 A

63,5 mm x 25,4 mm x 77,2 mm]
[2.50 in x 1.00 in x 3.04 in]

rugged electrostatic, epoxy-coated housing; booted versions sealed to IP66;
unsealed actuators sealed to IP40; side or flange mount; low temperature options



SL1

—

IP67; NEMA 3, 4, 13

-10 °C to 70 °C [14 °F to 160 °F]

zinc die-cast

top plunger, roller arm

cable gland

UL, CSA

SPDT

silver, gold

5 A

59,8 mm x 44,2 mm x 18 mm
[2.35 in x 1.74 in x 0.71 in]

often ideal source for replacement parts for machine tools; rugged housing;
snap-in terminal enclosures; standard and low temperature ranges

MICRO SWITCH™ Hazardous Area Switches

Hazardous Area Switches



Designed to extinguish the flame path in a potentially explosive environment, MICRO SWITCH™ hazardous area switches are weatherproof, water-tight, and dust-tight. These highly reliable, rugged switches are often used in control valves, petrochemical, conveyors, grain elevators, and material handling.



Series	EX
Approvals	UL, CSA, ATEX (CE), IEC Ex
Designations	Div. 1 & 2, Class I, Groups B, C, & D Div. 1 & 2, Class II, Groups E, F, & G II 2 G; EEx d IIB + H2 T6
Sealing	NEMA 1, 7, 9
Housing material	aluminum
Actuators/levers	side rotary, top plunger, top roller plunger, manual
Termination	0.5 in - 14NPT conduit, lead wires
Circuitry	1NC 1NO SPDT snap action; 1NC 1NO SPDT maintained; 2NC 2NO DPDT snap action
Operating temperature	-40 °C to 71 °C [-40 °F to 160 °F]
Amp rating	1 A, 10 A, 15 A, 20 A
Measurements (H x W x D)	65,0 mm x 70,6 mm x 51,3 mm [2.56 in x 2.78 in x 2.02 in]
Features	smallest housing used only in indoor applications; ample wiring space; mounts from any of four sides; used in temperature range of -40 °C to 71 °C [-40 °F to 160 °F]



GXE	14CE100	CX
ATEX (CE)	ATEX (CE)	UL, CSA, ATEX (CE), IEC Ex (consult factory for applicable listings)
II 2 G; EEx d IIC T6 II 2 D; Ex tD A21 T85°C	II 2 G; Ex d IIC T6 II 2 D; Ex tD A21 T85°C	Div. 1 & 2, Class I, Groups B, C, & D Div. 1 & 2, Class II, Groups E, F, & G II 2 G; Ex d IIC T6 II 2 D; Ex d tD A21 T85°C
IP66/67	IP65, IP66, IP66/67	IP66; NEMA 1, 3, 4, 4X, 6, 6P, 7, 9, 13
zinc	zinc	aluminum, bronze
side rotary, top plunger, top roller	top plunger, roller plunger, cross-roller	side rotary, plunger only
5 m cable	cable (various lengths)	0.75 in - 14 NPT conduit, 25 mm conduit
1NC 1NO SPDT snap action	1NC 1NO SPDT snap action	1NC 1NO SPDT; 2NC 2NO DPDT; 4 mA to 20 mA; analog output: 4NC 4NO
-20 °C to 75 °C [-4 °F to 167 °F]	0 °C to 70 °C [32 °F to 158 °F]	-25 °C to 85 °C [-13 °F to 185 °F]
5 A (thermal)	1 A (thermal), 5 A (thermal)	1 A, 10 A, 15 A, 20 A
91,0 mm x 45 mm x 24,7 mm [3.58 in x 1.77 in x 0.97 in]	49,0 mm x 40,0 mm x 16,0 mm [1.93 in x 1.57 in x 0.63 in]	short: 101,6 mm x 101,6 mm x 104 mm [4.00 in x 4.00 in x 4.09 in] standard: 101,6 mm x 101,6 mm x 145,0 mm [4.00 in x 4.00 in x 5.71 in]
EN 50047 mounting compatible; double-insulated switch element; snap-action basic switch	pre-wired or connector versions; gang-mounting capability; cable length variations; simple two screw mounting	rotary models convert in seconds; low temp seals; available models for on/off position switching or continuous analog output sensing; single or double pole, double-throw available

MICRO SWITCH™ Hazardous Area Switches

Hazardous Area Switches



Designed to extinguish the flame path in a potentially explosive environment, MICRO SWITCH™ hazardous area switches are weatherproof, water-tight, and dust-tight. These highly reliable, rugged switches are often used in control valves, petrochemical, conveyors, grain elevators, and material handling.



Series	LSX	BX
Approvals	UL, CSA	BX (1/2 NPT or 3/4 NPT): UL, CSA, ATEX, IEC Ex BX (20 mm): ATEX, IEC Ex
Designations	Div. 1 & 2, Class I, Groups B, C, & D Div. 1 & 2, Class II, Groups E, F, & G	Div. 1 & 2, Class I, Groups B, C, & D Div. 1 & 2, Class II, Groups E, F, & G II 2 G; Ex d IIC T6 II 2 D; Ex d tD A21 T85°C
Sealing	IP67; NEMA 1, 3, 4, 6, 13	BX: IP67; NEMA 1, 3, 4, 6, 13 BX (1/2-14 NPT, 3/4-NPT): IP67; NEMA 1, 3, 4, 6, 7, 9, 13
Housing material	aluminum	aluminum
Actuators/levers	side rotary, side plunger, side roller, top rotary, top plunger, top roller plunger, wobble	side rotary, side plunger, side roller, top rotary, top plunger, top roller plunger, wobble
Termination	0.5 in - 14NPT conduit, 0.75 in - 14NPT conduit, 20 mm conduit	1/2-14NPT conduit, 3/4-14NPT conduit, 20 mm conduit
Circuitry	1NC 1NO SPDT DB snap action; 2NC 2NO DPDT DB snap action	1NC 1NO SPDT DB snap action; 2NC 2NO DPDT DB snap action
Operating temperature	-12 °C to 121 °C [10 °F to 250 °F]	-40 °C to 70 °C [-40 °F to 158 °F]
Amp rating	0.05 A, 10 A (thermal)	0.05 A, 10 A (thermal)
Measurements (H x W x D)	146,1 mm x 50,8 mm x 62,0 mm] [5.75 in x 2.00 in x 2.44 in]	146,1 mm x 50,8 mm x 62,0 mm] [5.75 in x 2.00 in x 2.44 in]
Features	10 A continuous carry electrical rating; variety of actuators and circuitry options; silver or gold contacts; field adjustable to meet various application needs	diverse conduit selection; compatible with LSX; tracking interchangeability with MICRO SWITCH™ ML-E1 and HDLS; variety of heads and non-sparking actuators; 10 A continuous carry electrical current; silver or gold contacts; ATEX-required internal mounting screw



BX2	GSX	CLSX
BX2 (1/2 NPT, 3/4 NPT, 20 mm): UL, cUL, ATEX and IEC Ex	cULus, ATEX, IEC Ex	UL, CSA
Div. 1 & 2, Class I, Groups B, C, & D Div. 1 & 2, Class II, Groups E, F, & G II 2 G; Ex d IIC T6 II 2 D; Ex d tD A21 T85°C	Div. 1 & 2, Class I, Groups B, C, & D Div. 1 & 2, Class II, Groups E, F, & G II 2 G; Ex d IIC T6 II 2 D; Ex d tD A21 T85°C	Div. 1 & 2, Class I, Groups B, C, & D Div. 1 & 2, Class II, Groups E, F, & G
IP67; NEMA 1, 3, 4, 6, 7, 9, 13	IP67; NEMA 1, 4, 6, 7, 9, 12, 13	NEMA 1, 3, 4, 7, 9, 13
stainless steel	aluminum	aluminum
side rotary, top plunger, top roller plunger	side rotary, pin plunger, top roller plunger, top roller lever	lever, maintained
1/2-14NPT conduit, 3/4-14NPT conduit, 20 mm conduit	0.5 in - 14NPT conduit, 20 mm conduit	0.5 in - 14NPT conduit, 20 mm conduit
1NC 1NO SPDT DB snap action; 2NC 2NO DPDT DB snap action	SPDT; SPDT BBM; SPDT MBB; SPDT slow acting; DPDT; DPDT BBM; DPDT MBB; DPDT slow acting	1NC direct acting; 1NO 1NO direct acting
-40 °C to 70 °C [-40 °F to 158 °F]	-40 °C to 70 °C [-40 °F to 158 °F]	-1 °C to 70 °C [-30 °F to 158 °F]
0.05 A, 10 A (thermal)	10 A (thermal)	10 A (thermal)
146,1 mm x 50,8 mm x 62,0 mm] [5.75 in x 2.00 in x 2.44 in]	154,2 mm x 44,5 mm x 72 mm [6.07 in x 1.75 in x 2.84 in]	128,7 mm x 50,8 mm x 73,2 mm [5.07 in x 2.00 in x 2.88 in]
corrosion-resistant stainless steel housing; diverse conduit selection; tracking interchangeability with MICRO SWITCH™ LSX and BX series products; variety of heads and non-sparking actuators; 10 A continuous carry electrical current; silver or gold contacts; ATEX-required internal mounting screw	snap-action contacts with positive break; simple installation; positive action push plunger	positive-opening operating of NC contacts; cable length may be 200 ft in straight line; internal grounding screw

Limitless™ Components

Wireless Limit Switches and Monitors



New alternative enables designers to work without limitations of traditional tethered devices. Enables presence, absence, or position in applications where wired products are not feasible due to functionality and/or cost. Potential applications include door position, construction/ag machines, conveyors, cranes, grain diverters, lifts, material handling, presses, and valves.



Series	WGLA	WLS
Housing type	EN 50041	EN 50041 and back-mounting
Housing material	powder-coated, zinc die-cast	powder-coated phosphate epoxy finish, zinc die-cast
Radio	WPAN 802.15.4; 2.4 GHz	WPAN 802.15.4; 2.4 GHz
Signal range	1000 ft [305 m] in US/Canada	1000 ft [305 m] in US/Canada
Sealing	IP67; NEMA 1, 4, 12, 13	IP67/IP68; NEMA 1, 3, 4, 6, 6P, 12, 13
Actuators/ operating heads	side rotary, top plunger, top roller, top roller lever	over 15 side rotary actuators; pin/roller plunger, side/top rotary (with more than 15 levers), cat whisker, wobble stick, side shaft eyelet pull, maintained/momentary side plunger, and cable pull operating heads
Antenna types	direct or remote mounts, omni-directional	direct or remote mounts, omni-directional
Supply voltage	—	—
Supply current	—	—
Measurements (H x W x D) (without antenna)	102.85 mm x 42 mm x 62.1 mm [4.05 in x 1.65 in x 2.44 in]	106.68 mm x 41.15 mm x 62.61 mm [4.20 in x 1.62 in x 2.47 in]
Features	reliable, flexible, and secure wireless transmission; EN 50041 die-cast metal enclosure; WPAN 802.15.4 2.4 GHz point-to-point; FCC 15, IC, ACMA, & ETSI; EMI immunity; full complement of operating heads and levers; direct or remote mount antenna options	operating head rotary tested in excess of 50 million cycles; diaphragm seal between head and body cavity; twin shaft seals protect head and internal components from corrosion and debris; reliable, flexible, and secure wireless transmission; EN 50041 die-cast metal enclosure; WPAN 802.15.4 2.4 GHz point-to-point; FCC 15, IC, ACMA, & ETSI; EMI immunity; direct or remote mount antenna options



WPMW	WDRR
snap-in panel or screw mount design	din-rail or screw mount design
LCP, VECTRA E130i	flame retardant ABS (acrylonitrile butadiene styrene)
—	WPAN 802.15.4; 2.4 GHz
1000 ft [305 m] in US/Canada	1000 ft [305 m] in US/Canada
IP67	IP20
—	—
direct or remote mounts, omni-directional	direct or remote mounts, omni-directional
10 Vdc to 30 Vdc	10 Vdc to 28 Vdc
750 mA	500 mA max.
31,75 mm x 53,84 mm x 74,30 mm [1.250 in x 2.120 in x 2.925 in]	88,9 mm x 152,4 mm x 38,1 mm [3.5 in x 6 in x 1.5 in]
reliable, flexible, and secure wireless transmission; can potentially monitor up to 16 Limitless™ switches; field pairing function allows for rapid configuration (adding or subtracting switches); WPAN 802.15.4 2.4 GHz point-to-point; FCC 15, IC, ACMA, & ETSI; EMI immunity; direct or remote mount antenna options	selectable npn or pnp output; configurable normally open or normally closed output for up to 14 Limitless™ inputs; WPAN 802.15.4 2.4 GHz point-to-point; FCC 15, IC, ACMA, & ETSI; EMI immunity; LEDs indicate change of status, low battery, RF signal loss, pairing function, and diagnostic functions; eliminates issues with wire connection integrity on moving equipment

OneWireless™ XYR6000 Components

Wireless Position Sensors



Allows remote, reliable monitoring in a variety of applications to avoid the time and safety risk of manually monitoring in hazardous areas and remote installations. Wireless technology eliminates the need for communications cabling or power line installation, saving both time and money. Potential applications include positioners, manual process valves, eye bath stations, emergency showers, tank level, steam traps, louvers, relief valve doors, dampers, mining conveyor applications, and grain diverters.



Series	XYR6000
Housing	A 380 die-cast aluminum alloy
Radio	FCC Par 15.247 subpart s "B" & "C"
Signal range	1000 ft [304 m]
Sealing	IP66/67; NEMA 1, 3, 4, 6, 6P, 13
Hazardous ratings	U.S. and Canadian (cCSAus) for Division 1, Class I - Groups A, B, C, & D; Class II - Groups E, F, & G; Class III ATEX/IEC Ex - Ex d [ia] IIC T6 Gb; Ex tb IIIC T85C IP66/67 Db
Accuracy	±5 % over 250° when centered between a slip clutch
Operating temperature	-40 °C to 70 °C [-40 °F to 158 °F]
Measurements (H x W x D)	101,6 mm x 101,6 mm x 142,75 mm [4.00 in x 4.00 in x 5.62 in]
Features	enhances safety by reducing the need for human site monitoring in areas that pose a safety risk; reduces the potential for environmental incidence through the explosion-proof packaging of the sensor mechanism; improves efficiency of scheduled maintenance by targeting valves that have degraded; communicates with Honeywell's OneWireless™ (ISA100) network and WiFi devices simultaneously; full UL, ATEX, and IEC Ex approvals; universal mounting

Specialty Limit Switches

Relialign™ Door Interlock Switches



Designed specifically for swing door applications, including residential elevators, dumbwaiters, and platform lifts. Holds the door in place and prevents it from being opened when not desired. Design features contribute to increase safety, reduce nuisance stoppages and call-backs, and contribute to simplified wiring and installation.



Residential Door Interlock	Relialign™ RDI Series	Relialign™ RDI2 Series
Description	door interlock for swing-style doors, elevators, and vertical lifts. available with metal or plastic housing	
Housing	metal (white and architectural bronze)	thermoplastic
Approvals	compliant to ASME A17.1 and UL 104	compliant to ASME A17.1 and UL 104
Voltage	24 Vdc; 24 Vac	24 Vdc; 24 Vac
Connection	terminal strip or cat 5 available	terminal strip or cat 5 available
Measurements (H x W x D)	247,65 mm x 51,44 mm x 49,23 mm [9.75 in x 2.025 in x 1.938 in]	273,05 mm x 51,44 mm x 49,23 mm [10.75 in x 2.025 in x 1.938 in]
Features	two separate mechanisms to indicate door closure; metal key; internal solenoid control; no open or exposed contacts; configurable product platform	

Machine Safety

MICRO SWITCH™ Safety Switches

From factory floor to assembly line, from packaging machinery to robot cells, Honeywell delivers reliability and safety in compact, cost-effective safety switches. Enhanced performance, extended productivity, and full-line flexibility. Most models are SIL 3 capable.



Series	FF and FFS	GKM
Attributes	non-contact safety switches either magnetically operated or by electronically coded magnets providing high degree of tamper-proof, reliable operation	most compact key-operated safety product available; fully sealed construction
Potential applications	small doors and apertures	small doors and apertures
Housing	ABS resin-filled, stainless steel	glass-filled polyester
Approvals	UL, CE	UL, CSA, CE, S-mark, SIL 3 capable
Sealing	IP67, NEMA 4	IP67; NEMA 1, 12, 13
Differentiator	large actuation window from almost any angle (ranges ~6 mm to 20 mm); sealed, compact and rugged design	can be used for doors as small as 160 mm [6.3 in] with small closed radius; available cabled or with integrated M12 connectors for plug-and-play install
Measurements (less levers) H x W x D	82,5 mm x 19 mm x 17 mm [3.25 in x 0.75 in x 0.67 in]	69,4 mm x 34,0 mm x 16,0 mm [2.73 in x 1.34 in x 0.63 in]
Temperature	-10 °C to 55 °C [14 °F to 131 °F]	25 °C to 85 °C [-13 °F to 185 °F]
Features	DIN rail mounting; guard status indication; small, easy to mount; either pre-wired or connector fitted	double insulated, no ground wiring required; wiring entrance options from bottom, side, or both (dual entry GKME for daisy chain capability); variety of keys available for top or front entry options.



GKN	GKE	GKS	GSX
common footprint safety switch for multiple applicability; multiple contacts, multiple key and wiring entry points	compact housing size, standard IEC 20 mm mounting	solenoid trapped key interlock switch designed not to release until hazard has been removed	heavy-duty metal body, explosion-proof safety switch designed for hazardous area applications
small/medium doors and apertures	small doors and apertures	medium to large door applications	gates, doors, access panels, cages
glass-filled polyester	glass-filled polyester	glass-filled polyester	aluminum
cULus, CE, CCC, S-mark, SIL 3 capable	cULus, CE, S-mark, SIL 3 capable	cULus, CE, CCC, S-mark, SIL 3 capable	cULus, ATEX, IEC Ex, SIL 3 capable
IP67; NEMA 1, 4, 12, 13	IP66; NEMA 1, 12, 13	IP67; NEMA 1, 4X, 12, 13	IP67; NEMA 1, 4, 6, 7, 9, 12, 13
one switch stocking for multiple contact, key entry, and wiring application combinations; large wiring cavity	small MIN-DIN footprint; simple wiring and mounting; double insulated	simple-to-mount, slim-mount glass filled polyester body; available with key entry (four available square positions); up to four contacts	explosion-proof and positive-break safety switch with cULus, ATEX, IEC Ex approvals
90,0 mm x 40,0 mm x 33,0 mm [3.55 in x 1.57 in x 1.30 in]	92,2 mm x 24,2 mm x 29,4 mm [3.63 in x 0.95 in x 1.16 in]	196,8 mm x 40 mm x 41 mm [7.75 in x 1.57 in x 1.61 in]	154,2 mm x 44,5 mm x 72 mm [6.07 in x 1.75 in x 2.84 in]
-25 °C to 70 °C [-13 °F to 158 °F]	-25 °C to 85 °C [-13 °F to 185 °F]	-25 °C to 50 °C [-13 °F to 122 °F]	-40 °C to 70 °C [-40 °F to 158 °F]
multi-use, multi-option; up to 3 contacts for additional monitoring; 4 key head entries; knock-out points for wiring entry; double insulated body; rigid and flexible key options available	medium duty switch covers most common 1NC/1NO and 2NC applications key entry from top and front	power-to-lock or power-to-unlock for key trap; override mechanism on cover; three knock out conduit openings for wiring flexibility (sides + bottom); optional LED indicator.	extensive switching and actuating options; designed so even welded contacts will open and machine will stop in emergency with positive opening NC snap action contacts (direct mechanical linkage)

Machine Safety

MICRO SWITCH™ Safety Switches



Designed to help pass any test with the most impressive safety switch portfolio and solutions for application-specific needs. Widest range of sizing, sealing alternatives, enclosure materials, actuator styles, and contact options available.



Series	24CE/924CE	GK
Attributes	miniature, compact die-cast zinc housing construction with a wide variety of actuators	heavy duty metal body keyed interlock switch designed for large doors and cages
Potential applications	small doors and apertures	large, heavy door cage and gate applications
Housing	zinc	zinc
Approvals	24CE: CE; 924CE: UL, CE, SIL 3 capable	UL, CSA, CE, S-mark, SIL 3 capable
Sealing	IP66	IP67; NEMA 1, 4, 12, 13
Differentiator	tough and rugged switch, designed to operate in harsh operating environments	unique friction feature for key retention; rugged design withstands vibration, harsh environments, and provides long-term durability (tested 15 million cycles)
Measurements (less levers) H x W x D	49,0 mm x 40,0 mm x 16,0 mm [1.93 in x 1.57 in x 0.63 in]	121,6 mm x 42 mm x 42,6 mm [1.79 in x 1.652 in x 1.68 in]
Temperature	0 °C to 70 °C [32 °F to 160 °F]	-25 °C to 85 °C [-13 °F to 185 °F]
Features	flexible attachment with simple two screw mounting; available pre-wired with choice of cable lengths or connector fitted; side and bottom cable entry	multiple key (8 top or side entry) and lockout device options available; LED indicator; up to four contacts



GKR/L	GSS	GSS Hinge	CPS/2CPS
heavy-duty metal body solenoid trapped key interlock switch designed not to release until hazard has been removed; for large doors/cages	rugged metal housing handles multiple broad applications	metal or plastic housing for access door safety hinge applications	single/dual head cable pull designed to provide emergency stop protection; often used for exposed conveyor and assembly lines
large, heavy door, cage and gate machine apps	medium/large doors and apertures	medium/large doors	conveyor applications
zinc	glass-filled polyester, zinc	glass-filled polyester, zinc	zinc
UL, CSA, CE, S-mark, SIL 3 capable	UL, CSA, CE, SIL 3 capable	UL, CSA, CE, SIL 3 capable	UL, CSA, CE, SIL 3 capable
IP68; NEMA 1, 4, 6P, 12, 13	IP67; NEMA 1, 4, 12, 13	IP67; NEMA 1, 4, 12, 13	IP67; NEMA 1, 4, 12, 13
rugged design withstands vibration, harsh environments; provides long-term durability (tested 15 million cycles)	highly visible red housing; snap action and slow action basic switches	highly visible red housing; actuator head may be rotated in 90° increments	rugged, sealed, large wiring cavity; indicators; wide temperature tolerance; longest span available (up to 500 feet/152m on dual head 2CPS)
149,0 mm x 110,0 mm x 48,8 mm [5.85 in x 4.33 in x 1.92 in]	83,0 mm x 30,5 mm x 30,0 mm [3.27 in x 1.20 in x 1.18 in]	83,0 mm x 30,5 mm x 30,0 mm [3.27 in x 1.20 in x 1.18 in]	165,1 mm x 79,8 mm x 325,9 mm [6.5 in x 3.14 in x 12.75 in]
-25 °C to 85 °C [-13 °F to 185 °F]	-25 °C to 85 °C [-13 °F to 185 °F]	-25 °C to 85 °C [-13 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]
solenoid power-to-lock or power-to-unlock; key retain force 1000 N max; multiple key and lockout devices; dual LED indicator; available with key entry (4 face orientations); up to 4 contacts; manual override	multiple contact options (up to 4 MBB); full range of actuator heads and levers; reliable low energy switching; tested to 15 million operations	low profile design; available with 3 actuator styles (left, center, right); multiple contact options; reliable low energy switching	optional hardware packs; heavy-duty terminals: gold contacts; direct opening action of NC contacts (up to 4 contacts); LED status lights

Machine Safety

Safety Sensors



Photoelectric barriers composed of several infrared beams aligned on an emitting column and a receiving column. Separate or self-contained control units, various housing sizes, resolutions, scanning ranges, and protection heights are available. Designed to meet the specifications of potential machine guarding applications from point-of-operation protection, access detection, and presence sensing to electrical-to-machine-circuitry interfacing.



Series	FF-ST2 Standard A	FF-ST2 Standard M	FF-ST4 Basic
Safety category	Type 2 per IEC61496 (similar to SIL2 per IEC61508)	Type 2 per IEC61496 (similar to SIL2 per IEC61508)	Type 4 per IEC61496 (similar to SIL3 per IEC61508)
Application (resolution)	finger (18 mm [0.71 in]) hand (30 mm [1.18 in]) limb and body (80 mm [3.15 in])	finger (18 mm [0.71 in]) hand (30 mm [1.18 in]) limb and body (80 mm [3.15 in])	finger (14 mm [0.55 in] and 18 mm [0.71 in]) hand (30 mm [1.18 in]) limb and body (80 mm [3.15 in])
Scanning range (resolution)	0,25 m to 10 m [0.82 ft to 32.81 ft]	0,25 m to 10 m [0.82 ft to 32.81 ft]	0 m to 3.5 m [0 ft to 11.48 ft] (14 mm [0.55 in]); 0,25 m to 10 m [0.82 ft to 32.81 ft]
Beam separation distance	—	—	—
Product cross section	42 mm x 55 mm [1.65 in x 2.17 in]	42 mm x 55 mm [1.65 in x 2.17 in]	42 mm x 55 mm [1.65 in x 2.17 in]
Protected height (resolution)	200 mm to 1400 mm [7.87 in to 55.12 in] (18 mm [0.71 in]); 200 mm to 1800 mm [7.87 in to 70.87 in] (30 mm [1.18 in] and 80 mm [3.15 in])	200 mm to 1400 mm [7.87 in to 55.12 in] (18 mm [0.71 in]); 200 mm to 1800 mm [7.87 in to 70.87 in] (30 mm [1.18 in] and 80 mm [3.15 in])	200 mm to 1400 mm [7.87 in to 55.12 in] (14 mm [0.55 in] and 18 mm [0.71 in]); 200 mm to 1800 mm [7.87 in to 70.87 in] (30 mm [1.18 in] and 80 mm [3.15 in])
Differentiator	robust housing	robust housing	robust housing
Connectors	M12/5 pole (100 m [328.08 ft])	M12/5 pole (100 m [328.08 ft])	M12/5 pole (100 m [328.08 ft])
Basic interface module	FF-SRE60292	FF-SRE60292	FF-SRL60252 or AS-i Safe
External device monitoring (EDM)	yes	yes	no
Automatic restart	yes	no	yes
Restart interlock	no	yes	no
Muting (or bypass)	—	—	no
1- or 2-beam floating blanking	—	—	no
AS-i safe module	—	—	yes
PSDI¹ module	—	—	yes
Emergency stop auxiliary inputs	—	—	no

¹ For the automatic machine cycle start upon beam clearance (Presence Sensing Device Initiation).



FF-ST4 Standard	FF-ST4 Advanced B	FF-ST4 Advanced M	FF-SYB (point of op.)	FF-SYB (long range)	FF-SYB (short range)
Type 4 per IEC61496 (similar to SIL3 per IEC61508)	Type 4 per IEC61496 (similar to SIL3 per IEC61508)	Type 4 per IEC61496 (similar to SIL3 per IEC61508)	Type 4 per IEC61496 (similar to SIL3 per IEC61508)	Type 4 per IEC61496 (similar to SIL3 per IEC61508)	Type 4 per IEC61496 (similar to SIL3 per IEC61508)
finger (14 mm [0.55 in] and 18 mm [0.71 in]); hand (30 mm [1.18 in]); limb and body (80 mm [3.15 in])	finger (14 mm [0.55 in] and 18 mm [0.71 in]); hand (30 mm [1.18 in])	finger (14 mm [0.55 in] and 18 mm [0.71 in]); hand (30 mm [1.18 in]); limb and body (80 mm [3.15 in])	finger (14 mm [0.55 in]) hand (30 mm [1.18 in])	body (2, 3, or 4 beams)	body (2 beams)
0 m to 3.5 m [0 ft to 11.48 ft] (14 mm [0.55 in]); 0,25 m to 10 m [0.82 ft to 32.81 ft]	0 m to 3.5 m [0 ft to 11.48 ft] (14 mm [0.55 in]); 0,25 m to 10 m [0.82 ft to 32.81 ft]	0 m to 3.5 m [0 ft to 11.48 ft] (14 mm [0.55 in]); 0,25 m to 10 m [0.82 ft to 32.81 ft]	0 m to 6 m [0 ft to 19.69 ft] (14 mm [0.55 in]); 0 m to 20 m [0 ft to 65.62 ft] (30 mm [1.18 in])	0 m to 30 m [0 ft to 98.43 ft] (standard range) 5 m to 80 m [16.40 ft to 262.47 ft] (long range)	0 m to 7 m [0 ft to 22.97 ft] with passive mirrors
–	–	–	–	2-beam: 500 mm [19.69 in] spacing (body/access) 3-beam: 400 mm [15.75 in] spacing (body/access) 4-beam: 300 mm [11.81 in] spacing (body/access)	2-beam: 500 mm [19.69 in] beam spacing (body/access)
42 mm [1.65 in] x 55 mm [2.17 in]	42 mm [1.65 in] x 55 mm [2.17 in]	42 mm [1.65 in] x 55 mm [2.17 in]	42 mm [1.65 in] x 55 mm [2.17 in]	42 mm [1.65 in] x 55 mm [2.17 in]	42 mm [1.65 in] x 55 mm [2.17 in]
200 mm to 1400 mm [7.87 in to 55.12 in] (14 mm [0.55 in] and 18 mm [0.71 in]); 200 mm to 1800 mm [7.87 in to 70.87 in] (30 mm [1.18 in] and 80 mm [3.15 in])	200 mm to 1400 mm [7.87 in to 55.12 in] (14 mm [0.55 in] and 18 mm [0.71 in]); 200 mm to 1800 mm [7.87 in to 70.87 in] (30 mm [1.18 in])	200 mm to 1400 mm [7.87 in to 55.12 in] (14 mm [0.55 in] and 18 mm [0.71 in]); 200 mm to 1800 mm [7.87 in to 70.87 in] (30 mm [1.18 in] and 80 mm [3.15 in])	300 mm to 1800 mm [11.81 in to 70.87 in] (14 mm [0.55 in], 30 mm [1.18 in])	–	–
robust housing, selection through wiring	robust housing, selection through wiring	robust housing, selection through wiring	fully bundled functionality, selections through micro-cards, long scanning ranges	fully bundled functionality, selections through micro-cards	fully bundled functionality, selections through micro-cards
M12/5 and 8 pole (100 m [328.08 ft])	M12/5 and 8 pole (100 m [328.08 ft])	M12/5 and 8 pole (100 m [328.08 ft])	M12/5 and 8 pole (100 m [328.08 ft])	M12/5 and 8 pole (100 m [328.08 ft])	M12/8 pole (100 m [328.08 ft])
FF-SRE60292	FF-SRE60292	FF-SRE60292	FF-SRE60292	FF-SRE60292	FF-SRE60292
yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes
no	no	yes	yes	yes	yes
no	yes	no	yes	yes	no
no	no	no	yes	–	–
no	no	no	yes	–	–
no	no	no	yes	yes	yes

Machine Safety

Safety Modules



Provide an interface between safety sensors and machine control circuitry. Module functionality includes safety door monitoring, emergency stop, two-hand control, extension, standstill and low speed monitoring, time delay, and muting.



Series	FF-SRS Emergency Stop	FF-SRST Emerg. Stop (del. contacts)	FF-SR2 Two-hand Controls
Potential applications	emergency stop device; door monitoring	delayed emergency stop device; door monitoring with solenoid key switch	machine cycle start
Safety category	Cat. 2 or 4 per EN954-1	Cat. 3 and 4 per EN954-1	Cat. IIIA and IIIC per EN574
Housing width	22,5 mm [0.89 in] 45 mm [1.77 in] 100 mm [3.94 in]	45 mm [1.77 in]	22,5 mm [0.89 in], 45 mm [1.77 in]
Supply voltage	24 Vdc, 120 Vac, 230 Vac	24 Vac/dc	24 Vdc, 120 Vac, 230 Vac
Output contact	3 NO/1 NC, 6 NO/1 NC	2 NO/1 NC direct, 2 NO/1 NC delayed	2 NO, 2 NO/1 NC, 3 NO/1 NC
Switching capacity	10 mA to 5 A, 1 mA to 10 A	1 mA to 5 A	1 mA to 5 A, 1 mA to 10 A
Embedded functions	input short-circuit and cross- fault detection; manual/auto restart with EDM loop	manual/auto restart with EDM loop; selectable time ranges	0.5 s input time monitoring
Differentiator	removable terminal strips; enhanced switching capacity; ac supply voltages	removable terminal strips	removable terminal strips; enhanced switching capacity; ac supply voltages
Approvals	complies with EU directive for machines 98/37/EC, IEC/EN 60501, DIN VDE 0113, and UL 508	complies with EU directive for machines 98/37/EC, IEC/EN 60501, DIN VDE 0113, and UL 508	complies with machinery direc- tive 98/37/EC and UL 508



FF-SR0 Standstill Monitoring

FF-SRT Delayed Extension

FF-SRL Basic

FF-SRL59022 PSDI

FF-SRM Muting

FF-SRE Extension

motor control	delayed emergency stop device; contact multiplication; current switching capacity	safety device with solid state outputs	automatic machine cycle start	momentary deactivation of the safety light curtain	contact multiplication; current switching capacity
Cat. 1 and 3 per EN954-1	Cat. 1 per EN954-1	Cat. 4 per EN954-1	Cat. 4 per EN954-1	Cat. 4 per EN954-1	Cat. 1 per EN954-1
45 mm [1.77 in]	45 mm [1.77 in]	22,5 mm [0.89 in] 45 mm [1.77 in]	45 mm [1.77 in]	45 mm [1.77 in]	22,5 mm [0.89 in], 100 mm [3.94 in]
24 Vdc, 120 Vac, 230 Vac	24 Vdc	24 Vdc	24 Vdc	24 Vdc	24 Vac/dc, 120 Vac, 230 Vac
2 NO/1 NC, 2 NO/2 NC	1 NO/1 NC	3 NO/1 NC	3 NO	3 NO	4 NO + 2 NC, 7 NO + 1 NC
1 mA to 4 A, 10 mA to 10 A	Up to 8 A	10 mA to 5 A, 1 mA to 10 A	1 mA to 5 A	1 mA to 5 A	10 mA to 5 A, 1 mA to 10 mA
motor back EMF monitoring or rotation frequency measurement	selectable time ranges	manual/auto restart with EDM loop	manual restart with EDM loop; presence sensing device initiation: single or dual stroke with selectable time window	manual/auto restart with EDM loop; 2 or 4 muting inputs; 1 or 2 light curtains; muting lamp; auxiliary emergency stop circuit	redundant relay outputs (pair of safety relays with guided contacts)
removable terminal strips; enhanced switching capacity; ac supply voltages	dual timing circuit	removable terminal strips; enhanced switching capacity	removable terminal strips	removable terminal strips	removable terminal strips; high switching capacity; ac supply voltages
complies with machinery 98/37/EC and UL 508; designed for category 1 emergency stop functions per EN 418 and NFPA79	complies with machinery directive 98/37/EC, IEC 255, VDE 0435 and UL 508	complies with EU machinery directive 98/37/EC, IEC 204, EN 60204, DIN VDE 0113	complies with IEC 61508 and EN 61496-1 European standards; meets applicable parts of the US and Canadian regulations and standards	per the EN 354-1 and EN 61496-1 European standards; meets applicable parts of the US and Canadian regulations and standards ANSI/RIA/OSHA	complies with the machinery directive 98/37/EC, IEC 204, EN 60204, DIN VDC 0113, and UL 508



As one of the world's leading providers of sensors and switches, Honeywell understands and meets the requirements of a wide variety of industries.

Honeywell Sensing and Control is a global leader in providing reliable, cost-effective sensing and switching solutions for our customers' applications. We serve thousands of customers in four core industry segments: industrial, medical equipment, transportation, and aerospace/military products.

Aerospace

Aerospace applications are among the most demanding for any type of product. Rigorous FAA requirements, extreme environments (temperature, shock, vibration, the need for hermetic sealing), and the ability to customize devices are just a few of the parameters often required of sensors and switches in these applications. Aerospace customers typically value speed in prototyping and development, and Honeywell's vertically integrated, AS9100-approved manufacturing locations enhance our ability to produce devices in a wide variety of packages. The precision output of our products helps reduce risk and cost in key applications while also minimizing the need for unscheduled maintenance.

Honeywell's in-depth aerospace engineering experience allows us to work with customers in the design and development of

products that best meet the specified requirements of their individual applications. Making products simple to install makes the job easier every step of the way. And, the odds are that Honeywell is already on the list of trusted suppliers for many aerospace companies, underscoring the decades of experience we bring to this field.

Honeywell products for this industry (many of them PMA-certified) include force sensors, load cells, potentiometers, pilot controls, pressure sensors, pressure switches, resolvers, sensor/actuator assemblies for systems ranging from aerostructures to fuel control to flight surfaces, speed sensors, temperature probes, thermostats, torque sensors, y-guides for cargo systems, MICRO SWITCH™ sealed and high-accuracy switches, MICRO SWITCH™ pushbutton switches, and MICRO SWITCH™ rocker and toggle switches.

Medical

Medical applications typically require sensors and switches that are highly stable and extremely reliable to enhance patient safety and comfort. Stability is often essential to minimize long term drift, reduce the need for recalibration, and improve ease of use for medical equipment operators. Reliability enhances patient safety in life-critical applications, reduces downtime, and improves test throughput in applications such as clinical diagnostics. The product needs to be easy to use and easy to design into a system, so Honeywell's extensive customization and built-in calibration/amplification capabilities are strong benefits. Confidence in Honeywell's product performance, reliability, and availability provide peace of mind for medical equipment manufacturers who choose Honeywell.

Honeywell offerings for this industry include airflow sensors, silicon and stainless steel media isolated pressure sensors, Hall-effect magnetic position sensors, humidity sensors, flexible heaters, force sensors, thermostats, commercial solid state sensors, infrared sensors, oxygen sensors, pressure and vacuum switches, potentiometers and encoders, MICRO SWITCH™ pushbutton, rocker, and toggle switches, and hour meters.

Industrial

The industrial arena can be a rough one. From high-speed food processing to high-force stamping applications, reliable and cost-effective sensors and switches often help minimize repair costs, maximize system life, and reduce overall system expense. Durability can mean the difference between smooth-running processes and expensive downtime. Accurate, repeatable sensor or switch output can reduce the need for calibration once the device is applied. Because of the wide variety of potential applications, Honeywell's ability to deliver a customized product that can meet virtually any size, weight, and power requirement – as well as any packaging stipulations for tough, harsh environments – often makes it easy to incorporate and use our

devices. Safety is another important consideration for industrial users, and our products meet a wide variety of regulatory safety requirements.

Honeywell's industrial product line includes airflow sensors, current sensors, humidity sensors, fiber-optic and liquid-level sensors, linear position sensors, oxygen sensors, pressure sensors, potentiometers and encoders, speed sensors, temperature probes, ultrasonic sensors, wirewound resistors, thermostats, commercial solid state sensors, flex heaters, SMART position sensors, silicon and stainless steel media isolated pressure sensors, force sensors, safety light curtains, push-pull switches, and MICRO SWITCH™ snap-action switches, hazardous area switches, safety switches, key and rotary switches, limit switches, sealed and high-accuracy switches, pushbutton, rocker, toggle switches, and relays.

Transportation

Getting from Point A to Point B is often challenging for end-customers of transportation providers – Honeywell aims to make the trip easier with highly reliable, cost-effective switches and sensors. Our products are designed to support rigorous engine requirements, and their efficiency can also help optimize engine performance. Customization is often required to allow a switch or sensor to be mounted in tight or challenging environments including vibration, temperature extremes, and road contamination. The durability of Honeywell products enhances system reliability, which is also boosted by the stable, accurate output of our devices. All of these capabilities allow demanding customers to rely on Honeywell's many years of experience in the transportation industry.

Honeywell products for transportation applications include Hall-effect rotary position sensors, inertial measurement units, infrared sensors, keyless entry sensors, magnetic position sensors, pressure sensors, speed and direction sensors, ultrasonic sensors, thermostats, temperature probes, commercial solid state sensors, SMART position sensors, and MICRO SWITCH™ pushbutton, rocker, and toggle switches.



Sensing and Control Product Portfolio

Product reliability. Industry knowledge. Expertise. Standard with every order.

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

SENSORS



Airflow sensors: Advanced microstructure technology. Sensitive and fast response to flow, amount/direction of air or other gas. Proportional output voltage. Thin-film, thermally isolated bridge structure consists of a heater and temperature sensing elements. **May be used in:** HVAC, respirators, process control, oxygen concentrators, gas metering, chromatography, leak detection equipment, medical/analytical instrumentation, and ventilation equipment.



Current sensors: Accurate and fast response. Almost no thermal drift or offset with temperature. Adjustable linear, null balance, digital, and linear current sensors. **May be used in:** Variable speed drives, overcurrent protection, power supplies, ground fault detectors, robotics, industrial process control, and wattmeters.



Flexible heaters: Flat, molded-to-shape, spiral wrap, transparent, composite, and high temperature configurations with single, multiple, and variable watt densities. Can be bonded parts or combined. **May be used in:** Airborne valves, outdoor cameras, LCD displays, scanners, and telecommunication.



Force sensors: Variety of package styles and various electrical interconnects including pre-wired connectors, printed circuit board mounting, and surface mounting for flexibility. **May be used in:** Infusion and syringe pumps, blood pressure equipment, pump pressure, drug delivery systems, occlusion detection, and kidney dialysis machines.



Humidity sensors: Configured with integrated circuitry. Provide on-chip signal conditioning with interchangeability of $\pm 3\%$ accuracy and out-of-the-box reliability. Standardized, platform-based sensors. **May be used in:** Air compressors, food and beverage packaging and processing, HVAC, printing presses, and office equipment.



Infrared sensors: IREDs, sensors, and assemblies for object presence, limit and motion sensing, position encoding, and movement encoding. Variety of package styles, materials, and terminations. **May be used in:** Printers/copiers, motion control systems, metering, data storage systems, scanning, automated transaction, drop sensors, and non-invasive medical equipment.



Magnetic sensors: Digital and analog Hall-effect position ICs, magnetoresistive position ICs, Hall-effect vane, gear-tooth, and magnetic sensors. **May be used in:** Speed and RPM sensing, motor/fan control, magnetic encoding, disc speed, tape, flow-rate sensing, conveyors, ignitions, motion control/detection, power/position, magnetic code reading, vibration, and weight sensing.



Position sensors: The **SMART position sensor** measures linear or angular position of a magnet attached to a moving object so that the object's position can be determined or controlled. Its simple, non-contact design eliminates mechanical failure mechanisms, reduces wear and tear, improves reliability and durability, enhances operation efficiency and safety, and minimizes downtime. **May be used in:** valve position, material handling, plastic molding, cutting/slitting, wafer handling, CNC machines, passenger bus level position, truck-mounted crane outrigger position, heavy equipment attachment identification, aerial work lift platform, front loader and digger/excavation boom position, robotically assisted surgery equipment position. **Potentiometer sensors** measure linear, rotary position or displacement. Honeywell's proprietary conductive plastic delivers extensive temperature range and infinite resolution, and provides precision position measurement. **May be used in:** robotic motion control, marine steering, and in-tank level sensing. **Ultrasonic sensors** measure time delays between emitted and echo pulses, often accurately determining the sensor-to-target distance. These non-contact-based products solve the toughest sensing problems by detecting targets made of virtually any material, regardless of color, transparency, shine or opacity. **May be used in:** level measurement, height and thickness sensing, and diameter control.



Pressure sensors - silicon: Full line of industrial-grade sensors: media-isolating design, multiple ports and outlets, and electrical configurations. **May be used in:** Pneumatic controls, air compressors, process monitoring, hydraulic controls, VAV controls, clogged filter detection, presence/absence of flow, transmissions, and refrigeration.



Pressure sensors - stainless steel media isolated: Bonded strain gage technology. Very resistant to effects of shock, vibration, and hostile environments. **May be used in:** HVAC, hydraulic controls, suspensions, agricultural equipment, engines, compressors, robotics, industrial and automotive systems, pressure transmitters, process controls, and medical diagnostics.



Proximity sensors: Designed to meet demanding temperature, vibration, shock, and EMI/EMP interference requirements. Number of housing materials and termination styles. **May be used in:** Aircraft landing gear, gun turret position control, and door and hatch open/closed monitoring.



Rotary position sensors: Digital and analog Hall-effect, magnetoresistive, and potentiometric devices and resolvers for sensing presence of a magnetic field or rotary position. Directly compatible with electronic circuits for application flexibility. **May be used in:** Audio and lighting, frequency, temperature, position, medical/instrumentation, computer peripherals, manual controls, joysticks, telecom, welding, heating, and aerospace.



Speed sensors: Measure speed, position, and presence detection utilizing magnetoresistive, variable reluctance, Hall-effect, variable inductance, and Spiral technologies. **May be used in:** Cam and crankshafts, transmissions, fans, pumps, mixers, rollers, compressors, industrial process control, engines/motors, wheels, and tachometers.



Temperature sensors: Customized probes, thermistors, and RTD sensors. Plastic/ceramic, miniaturized, surface-mount housings, and printed circuit board terminations. **May be used in:** Semi-conductor protection, vending machines, power generation, hydraulic systems, thermal management, and temperature compensation.



Thermostats: Commercial and precision snap-action. Automatic or manual reset options, phenolic or ceramic housings. **May be used in:** Telecommunications, battery heater controls, computers, copy machines, fax machines, food service, food carts, small and major appliances, heat and smoke detectors, and HVAC equipment.

ELECTROMECHANICAL SWITCHES



MICRO SWITCH™ snap-action series: Snap-action precision switches. Compact. Lightweight. Designed for repeatability and enhanced life. Premium and standard snap-action switches: standard, miniature, subminiature, hermetically sealed, and high-temperature versions. **May be used in:** Vending machines, communication equipment, HVAC, appliances, electronic gaming machinery, valve controls, irrigation systems, foot switches, pressure, and temperature controls.



MICRO SWITCH™ hazardous area switches: Flame path designed to contain and cool escaping hot gases that could cause an explosion. MICRO SWITCH™ EX, BX, CX, and LSX Series. **May be used in:** Grain elevators and conveyors, off-shore drilling, petrochemical, waste-treatment plants, control valves, paint booths, and hazardous waste handling facilities.



Key and rotary switches: Used on machinery in harsh environments. O-rings help keep dirt and moisture out and prolong life. **May be used in:** All-terrain vehicles, golf carts, snowmobiles, scissor lifts, telehandlers, construction and marine equipment, skid loaders, agricultural equipment, material handlers.



MICRO SWITCH™ limit switches: Broadest and deepest limit switch portfolio. Rugged, dependable position detection solutions. MICRO SWITCH™ heavy-duty limit switches (HDLS) and global limit switches. Hermetically and environmentally sealed switches. **May be used in:** Machine tools, woodworking, textile, and printing machinery, metal fabrication, balers/compactors, forklifts, bridges, robotics, wind turbines, elevators, moving stairs, doors, dock locks/levelers, aerial lifts, cranes, conveyors, rail, shipboards, and dock side.



MICRO SWITCH™ sealed and high accuracy switches: Precision 'snap action' mechanisms. Wide variety of actuators, terminations, circuitry configurations, electrical ratings, contact materials, and operating characteristics. **May be used in:** Landing gear, flap/stabilizer controls, thrust reversers, space vehicles, armored personnel carriers, de-icer controls, wingfold actuators, industrial environments, valves, and underwater.



MICRO SWITCH™ pushbutton switches: Lighted or unlighted. Wide range of electrical and display design, pushbuttons, and manual switches. Many shapes, sizes, and configurations. Easy to apply, operate, and maintain. **May be used in:** Control boards and panels, industrial and test equipment, computers, medical instrumentation, and aerospace.



MICRO SWITCH™ rocker switches: Wide range of electrical and display design. Many shapes, sizes, and configurations to enhance manual operation. **May be used in:** Transportation, agricultural and construction equipment, test equipment, heavy-duty machinery, marine equipment, small appliances, telecom, medical instrumentation, and commercial aviation.



MICRO SWITCH™ toggle switches: Wide range of electrical and display design. Available in many shapes, sizes, and configurations. **May be used in:** Aerial lifts, construction equipment, agriculture and material-handling equipment, factory-floor controls, process control, medical instrumentation, test instruments, and military/commercial aviation.



MICRO SWITCH™ aerospace-grade pressure switches: lightweight, compact pressure switches sense changes in gas/pressure. Qualified to MIL-PFR-8805. Lower operating force provides application versatility with enhanced precision. Design modularity allows for configuration of the switch, facilitating rapid customization to the precise, demanding requirements. **May be used in:** aerospace systems -including engines, fuel pressure, and hydraulic systems, military ground vehicles, ordnance and munitions release systems, military maritime systems.



Pressure and vacuum switches: Feature set points from 0.5 psi to 3000 psi. Rugged components have enhanced repeatability, flexibility, and wide media capability. **May be used in:** Transmissions, hydraulics, brakes, steering, generators/compressors, dental air, embalming equipment, oxygen concentrators, air cleaners, fuel filters, and pool water pressure.

WIRELESS SWITCHES



Limitless™ Series: Combines the best of MICRO SWITCH™ limit switches with the latest commercial wireless technology. Beneficial for remote monitoring where wiring/maintenance is not physically possible or economically feasible. Used for position sensing and presence/absence detection. **May be used in:** valve position, crane boom/jib/skew position, lifts, material handling, presses, construction/ag machines, conveyors, remote/temporary equipment, grain diverters or flaps, and door position.

SAFETY PRODUCTS



MICRO SWITCH™ safety switches: For operator point-of-operation protection, access detection, presence sensing, gate monitoring, and electrical interfacing. High-quality, dependable, cost-effective solutions. **May be used in:** Packaging and semi-conductor equipment, plastic-molding machinery, machine tools, textile machines, lifts, industrial doors, bailers, compactors, aircraft bridges, telescopic handlers, refuse vehicles.



Safety light curtains: Different resolutions permit detection of an approaching finger, hand, limb, or body. Separate or self-contained control units, various housing sizes, resolutions, scanning ranges, and protection heights. **May be used in:** Point-of-operation protection, access detection, presence sensing, gate monitoring, electrical-to-machine-circuitry interfacing, emergency stop circuits on machines, sliding door protection, conveyors, and transfer lines.

Warranty/Remedy

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgment or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective.

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While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

Find out more

To learn more about Honeywell's sensing and control products, call

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info.sc@honeywell.com, or visit

www.honeywell.com/sensing

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WARNING

MISUSE OF DOCUMENTATION

- The information presented in this literature is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

For products not designed for safety applications:

WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

For products designed for safety applications:

WARNING

RISK TO LIFE OR PROPERTY

Never use this product for an application involving serious risk to life or property without ensuring that the system as a whole has been designed to address the risks, and that this product is properly rated and installed for the intended use within the overall system.

Failure to comply with these instructions could result in death or serious injury.

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