Current Sensors

Honeywell

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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Current Sensors
Digital/Inductive

Open loop current sensors provide digital output that changes from Vcc to 0.4 V when sensed current exceeds operation point. Not damaged by overcurrent in sensed conductor. Potential applications include robotics, telecommunication, power supplies, ground fault detectors, HVAC, and consumer tools.

Series	CSDA
Operate current	0.5 A.t. nom., 3.5 A.t. nom.
Sensed current type	ac, dc
Output	voltage
Response time	100 µs
Accuracy	better than 0.5 %
Mounting	pcb mounting pins or screw mount
Pinout style	3-pin pcb, 3-pin AMP connector
Operating temperature	-25 °C to 85 °C [-13 °F to 185 °F]
Supply voltage	6 Vdc to 16 Vdc
Measurements (H x W x D)	19,0 mm x 25,4 mm x 25,4 mm [0.75 in x 1.0 in x 1.0 in]
Features	open collector output; output voltage isolation from input; minimum energy dissipation

Current Sensors
Closed Loop

Closed loop current sensors use feedback control to provide output proportional to measured current. Engineered with enhanced accuracy and linearity to deliver fast response. Output relatively immune to electrical noise. Potential applications include variable speed drives, Servo, overcurrent protection, ground fault detectors, robotics, power supplies, and wattmeters.

Series	CSNX	CSNA	CSNF
Rated current	25 A	50 A	100 A
Sensing current range	±56 A	±70 A, ±90 A, ±100 A	±150 A, ±180 A, ±200 A
Sensed current type	ac, dc, impulse	ac, dc, impulse	ac, dc, impulse
Output	current	current	current
Coil turns	2000 (50 Ohm coil)	1000 (90 or 50 Ohm coil) 2000 (160 or 130 Ohm coil)	1000 (30 Ohm coil) 2000 (100 Ohm coil)
Response time	< 0.2 µs	< 1 µs	< 0.5 µs
Accuracy	±0.24 %	±0.5 %	±0.5 %
Mounting	pcb on 11-pins	pcb on 3-pins	pcb on 3-pins
Pinout style	unipolar	offset	center
Operating temperature range	-40 °C to 85 °C [-40 °F to 185 °F]	0 °C to 70 °C [32 °F to 158 °F]	-40 °C to 85 °C [-40 °F to 185 °F]
Supply voltage	4.75 Vdc to 5.25 Vdc	±13 Vdc, ±15 Vdc	±12 Vdc to ±15 Vdc
Measurements (H x W x D)	25,45 mm x 34,0 mm x 12,55 mm [1.002 in x 1.34 in x 0.494 in]	25,70 mm x 40,5 mm x 18,0 mm [1.012 in x 1.595 in x 0.709 in]	29,6 mm x 25,4 mm x 14,45 mm [1.165 in x 1.0 in x 0.569 in]
Features	rapid response; reduced overshoot; high overload capability	rapid response; reduced overshoot; high overload capability	rapid response; reduced overshoot; high overload capability

Series	CSNK	CSNL	CSNM
Rated current	500 A	300 A	500 A
Sensing current range	±1200 A	±600 A	±1000 A
Sensed current type	ac, dc, impulse	ac, dc	ac, dc
Output	current	current	current
Coil turns	5000 (50 Ohm coil)	2000	3000
Response time	< 1 µs	< 0.5 µs	< 1 µs
Accuracy	±0.5 %	±0.5 %	±0.5 %
Mounting	panel	panel	panel
Pinout style	Molex (3-way)	Molex (3-way)	Molex (3-way)
Operating temperature range	-40 °C to 85 °C [-40 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]
Supply voltage	±15 Vdc to ±18 Vdc	±12.0 Vdc to ±18.0 Vdc	±12.0 Vdc to ±18.0 Vdc
Measurements (H x W x D)	58,0 mm x 93,0 mm x 112,0 mm [2.28 in x 3.66 in x 4.41 in]	95,0 mm x 45,0 mm x 21,5 mm [3.75 in x 1.81 in x 0.85 in]	110,0 mm x 64,0 mm x 31,0 mm [4.33 in x 2.52 in x 1.22 in]
Features	rapid response; reduced overshoot; high overload capability	rapid response; reduced overshoot; high overload capability	rapid response; reduced overshoot; high overload capability

CSNB	CSNC	CSNE	CSNG	CSNJ
50 A	50 A	25 A, 50 A	100 A	300 A
±100 A	±90 A	±36 A, ±90 A	±180 A, ±200 A	±600 A
ac, dc	ac, dc	ac, dc, impulse	ac, dc	ac, dc, impulse
current	current	current	current	current
2000	1000 (50 Ohm coil)	1000 (110 Ohm or 66 Ohm coil)	2000	2000
< 1 µs	< 1 µs	< 1 µs	< 0.5 µs	< 0.5 µs
±0.5 %	±0.5 %	±0.5 %	±0.5 %	±0.5 %
pcb on 3 pins	pcb on 3 pins	pcb on 13 pins	pcb on 3 pins	panel
offset	offset	5-pin	offset	spade terminals (x 3)
0 °C to 70 °C [32 °F to 158 °F]	-25 °C to 85 °C [-13 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]
±15.0 Vdc	±13.0 Vdc	±12 Vdc to ±15 Vdc	±15.0 Vdc	±12.0 Vdc to ±18.0 Vdc
25,70 mm x 40,5 mm x 18,0 mm [1.012 in x 1.595 in x 0.709 in]	25,70 mm x 40,5 mm x 18,0 mm [1.012 in x 1.595 in x 0.709 in]	20,3 mm x 31,8 mm x 12,7 mm [0.80 in x 1.25 in x 0.5 in]	29,6 mm x 27,94 mm x 14,45 mm [1.165 in x 1.10 in x 0.569 in]	58,0 mm x 93,0 mm x 112,0 mm [2.28 in x 3.66 in x 4.41 in]
rapid response; reduced overshoot; high overload capability	rapid response; reduced overshoot; high overload capability	rapid response; reduced overshoot; high overload capability	rapid response; reduced overshoot; high overload capability	rapid response; reduced overshoot; high overload capability

CSNP	CSNS	CSNR	CSNT
50 A	100 A, 200 A, 300 A	125 A	50 A
±90 A	±320 A, ±600 A	±200 A	±150 A
ac, dc	ac, dc, impulse	ac, dc	ac, dc
current	current	current	current
1000	2000	1000, 2000	2000
< 0.5 µs	< 0.5 µs	< 0.5 µs	< 0.5 µs
±0.5 %	±0.5 %	±0.5 %	±0.5 %
pcb on 3 pins	panel	pcb on 3 pins	pcb on 3 pins
offset	Molex (3-way)	center, offset	offset
-40 °C to 85 °C [-40 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]
±12.0 Vdc to ±15.0 Vdc	±12 Vdc to ±18 Vdc	±12.0 Vdc to ±15.0 Vdc	±12.0 Vdc to ±15.0 Vdc
29,6 mm x 27,94 mm x 14,45 mm [1.165 in x 1.10 in x 0.569 in]	67,5 mm x 60,7 mm x 19,0 mm [2.66 in x 2.39 in x 0.75 in]	29,6 mm x 25,4 mm x 14,45 mm [1.165 in x 1.0 in x 0.569 in]	29,6 mm x 27,94 mm x 14,45 mm [1.165 in x 1.10 in x 0.569 in]
rapid response; reduced overshoot; high overload capability	rapid response; reduced overshoot; high overload capability	rapid response; reduced overshoot; high overload capability	rapid response; reduced overshoot; high overload capability

Current Sensors
Open Loop

Open loop current sensors provide output voltage proportional to measured current without using feedback control. They are often preferred in battery powered circuits due to their compact size and lower power consumption. Potential applications include welding machines, variable speed drives, UPS and overcurrent protection.

Open-Loop Series	CSCA-A	CSLA
Rated current	50 A, 75 A, 100 A, 200 A, 300 A, 400 A, 500 A, 600 A	–
Sensing current range	±150 A, ±300 A, ±600 A, ±900 A	±57 A to ±950 A
Sensed current type	ac, dc, impulse	ac, dc
Output	voltage	voltage
Coil turns	–	–
Response time	3 µs to 7 µs	3 µs, 8 µs
Accuracy	–	various
Mounting	Molex connector; Gallant connector	pcb on 3-pins
Pinout style	Molex/Gallant	3-pin
Operating temperature range	-10 °C to 80 °C [14 °F to 176 °F]	-25 °C to 85 °C [-13 °F to 185 °F]
Supply voltage	±15 Vdc ±5 %	8 Vdc to 16 Vdc; 6 Vdc to 12 Vdc
Measurements (H x W x D)	29,0 mm x 40 mm x 20,4 mm [1.14 in x 1.57 in x 0.80 in]	44,4 mm x 30,5 mm x 14,2 mm [1.75 in x 1.40 in x 0.56 in]
Features	competitive cost/performance ratio; low power consumption; large primary aperture	enhanced response time; output voltage isolated from input; minimum energy dissipation

**number of turns*

CSLH	CSLS	CSLT	CSLW
–	–	–	–
±9 A, ±45 A	±60 A	±100 A	±1 A, ±5 A, ±40 mA, ±200 mA
ac, dc	ac, dc	ac, dc	ac, dc
sink/source	sink/source	sink/source	sink/source
–	–	–	12, 60, 300, 1500
3 µs	3 µs	3 µs	3 µs
18.5 mV N* ±3.5 mV N* @ 5 Vdc; 282 mV N* -42, +82 mV N* @ 10 Vdc	15 mV/AT ±2 mV/AT @ 5 Vdc	15 mV/AT ±2 mV/AT @ 5 Vdc	various
pcb on 3-pins	pcb	pcb	pcb
3-pin	3-pin	3-pin	5-pin
-25 °C to 85 °C [-13 °F to 185 °F]	-25 °C to 100 °C [-13 °F to 212 °F]	-25 °C to 100 °C [-13 °F to 212 °F]	-25 °C to 100 °C [-13 °F to 212 °F]
4.5 Vdc to 10.5 Vdc	4.5 Vdc to 10.5 Vdc	4.5 Vdc to 10.5 Vdc	4.5 Vdc to 10.5 Vdc
19,8 mm x 24,6 mm x 8,9 mm [0.78 in x 0.97 in x 0.35 in]	10,0 mm x 16,4 mm x 4,6 mm [0.4 in x 0.65 in x 0.18 in]	Ø 10,6 mm x 9 mm [Ø 0.42 in x 0.35 in]	14,0 mm x 16,2 mm x 11,4 mm [0.55 in x 0.64 in x 0.45 in]
linear ratiometric output; sinking or sourcing output; no insertion loss	linear ratiometric output; sinking or sourcing output; no insertion loss	linear ratiometric output; sinking or sourcing output; no insertion loss	linear ratiometric output; sinking or sourcing output; no insertion loss

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

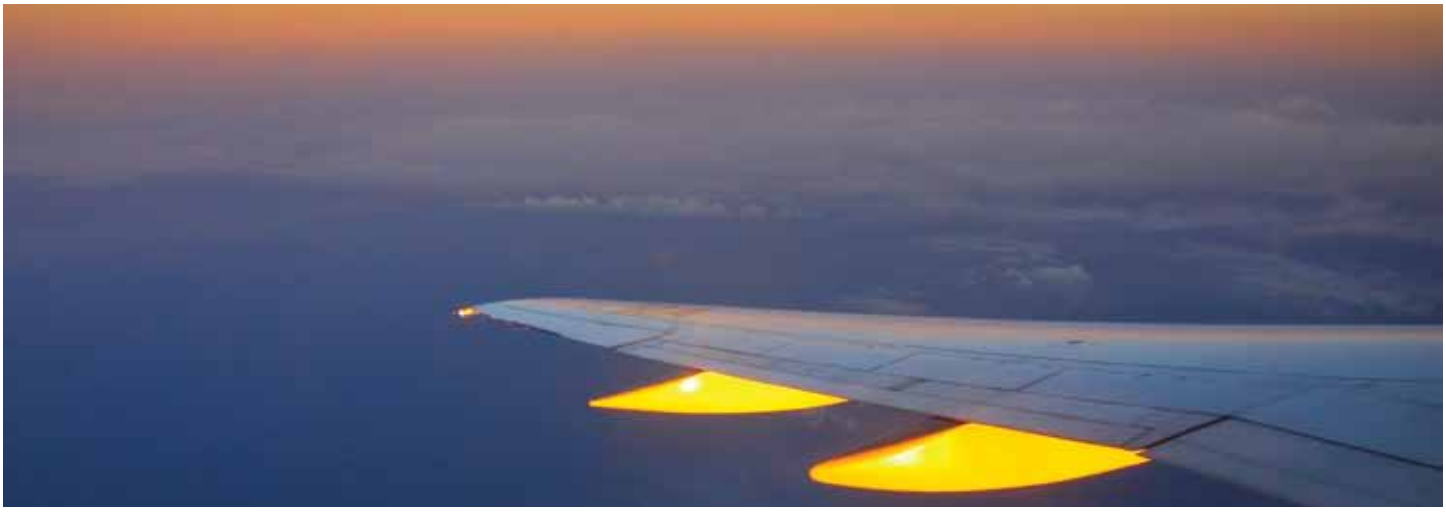
The industrial arena can be a rough one. From high-speed food processing to high-force stamping applications, reliable and cost-effective sensors and switches often help minimize repair costs, maximize system life, and reduce overall system expense. Durability can mean the difference between smooth-running 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 ±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: SMART position sensor: **S**uperior **M**easurement, **A**ccuracy, **R**eliability, and **T**hinking. The most accurate linear position sensor available in the industry (0,05 mm [0.002 in]), enabling highly accurate motion control, and improving efficiency and safety. Non-contact design eliminates mechanical failure mechanisms, reducing wear and tear, improving reliability and durability, and minimizing downtime. Robustness in most harsh environments. Easy to install, reducing set-up costs. Potentiometric sensors withstand harsh chemicals and immersion into oils or water. Extended life PTFE bearings, precious metal multi-finger contact wipers, and MYSTR® conductive plastic thick-film elements. Analog output correlated to location. **May be used in:** Injection molding, printing presses, cylinder positioning, gauges, controls, aircraft, elevators, material handling, packaging, molding, valves, wafer handling, and woodworking machinery.

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 for sensing presence of a magnetic field or rotary position. Directly compatible with other electronic circuits for application flexibility. **May be used in:** Audio and lighting, frequency, temperature, position, time, medical/instrumentation, computer peripherals, manual controls, joysticks, telecommunication, 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, contract 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 and its 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.

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 acknowledgement 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.
The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.

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.

⚠ 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.

Find out more

To learn more about Honeywell's sensing and control products, call **+1-815-235-6847**, email inquiries to **info.sc@honeywell.com**, or visit **www.honeywell.com/sensing**

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