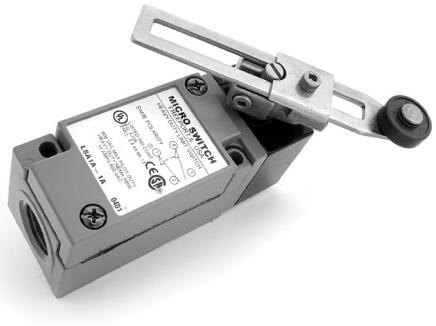
Honeywell

MICRO SWITCH™ Limit Switches Line Guide



Limitless leadership. Available with a variety of actuators, electrical specifications, terminations, circuitries and sealing ratings, Honeywell Sensing and Control's (S&C) limit switches offer superior flexibility and performance. These precision snap-action switches — sealed in rugged housings — are used to detect presence or absence in areas where physical contact is allowed.

And Honeywell S&C delivers all the benefits your applications demand:

- Reliability, repeatability, accuracy
- Impressive breadth of product offerings
- Tested-tough, for industrial machinery
- Supreme performance, through superior application understanding
- Withstanding shock, vibration, washdowns and outdoor environments

FEATURES

GLOBAL LIMIT SWITCHES

GLA Series.

Features: Metal housings for rugged applications • Galvanically isolated contacts for controlling separate circuits • Wide variety of actuators and circuitry options for increased flexibility • International conduit sizes available for global applications • Direct-acting NC contacts designed to ensure opening when actuated • 2NO version available • Gold contacts optional for low-energy switching • EN50041 mounting pattern

Benefits: Specifically designed for world-wide applications and are supported by Honeywell global resources for sale and after sale service. Applications include machine tools, material handling equipment, packaging machinery, textile machinery, construction machinery and equipment, vehicles and lift trucks.

GLS Miniature (GLD, GLC, GLE) Series.

Features: GLC metal housings or GLD plastic housings for design versatility (metal = better sealing, unaffected by UV light) • Galvanically isolated contacts for controlling two separate circuits • Direct-acting NC contacts deigned to ensure opening when actuated • Gold contacts optional for low-energy switching • 2NO version available • Wide variety of actuators and circuitry options for increased flexibility • International conduit sizes available for global applications • EN50047 mounting pattern

Benefits: Specifically designed for world-wide applications and are supported by Honeywell global resources for sale and after sale service. Applications include machine tools, material handling equipment, packaging machinery, textile machinery, construction machinery and equipment, vehicles and lift trucks.

91MCE Series.

Features: Direct-acting contacts are designed to open NC contacts when actuated • Slow-action and snap-action circuitry offers design flexibility • Nine actuator styles offer design flexibility • Pre-leaded cable and M12 connector options • Side exit (standard) and bottom exit connection options

Benefits: Miniature package size fits in applications where space is limited. Can be gang mounted for applications requiring more than two switch circuits. The 20 mm mounting pattern meets most globally accepted mounting standards. Applications include machine equipment, material handling, aerial lifts, forklifts, and off-road and outdoor equipment.

SZL-VL Series.

Features: Gold plated silver contacts standard • Integral cord grip saves time and cost • Rugged metal base with durable plastic cover • Two circuit break (1NO/1NC) • Sealed to IP64

Benefits: Designed for applications of small mounting space. A special pre-molded flexible cable gland allows for fast and simple wiring termination. Applications include machine tools, material handling, food processing machinery, conveyors, and packaging machinery.

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MICRO SWITCH™ Limit Switches Line Guide

MICRO SWITCH™ Limit Switches.
Honeywell S&C: Application-proven limit switches for any need:

Global switches meet IEC standards for worldwide acceptance — for injection molding, PLC interface, machine tooling, elevators and escalators, gaming, packaging and textile, food and beverage, industrial doors, scissor and platform lifts and electronic assembly.

Heavy-duty switches offer a rugged, die-cast body — epoxy-coated — with multiple mounting and actuator options. Low- and high-temp construction and factory-sealed, pre-wired versions are also available. Applications include food and beverage machinery, shipboard and dockside, caustic waste handling, power generating plants, pulp and paper, welding, automotive machine tools and conveyors.

Medium-duty switches feature a small metal or plastic package size. Applications include material handling, printing machinery, machine tools, agricultural equipment, overhead cranes and hoists, packaging and earthmoving, stamping, conveyors, surface transportation and textile, and printing machinery.

Global Limit Switches	GLA Series	GLS Miniature Series (GLD, GLC, GLE)
Housing type	EN 50041	EN50041/47
Sealing	IP67; NEMA 1, 3, 4, 12, 13	IP66/IP67; metal: NEMA 1, 4, 12, 13 plastic: NEMA 1, 4X, 12, 13 (Indoor use only)
Housing material	zinc die-cast	plastic, 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, CSA, CE, CCC	UL, CSA, CE, CCC
Circuitry	SPDT snap action DB, SPDT slow action BBM/MBB, DPDT snap action DB, 2NO and 2NC	GLC/GLD: SPDT snap action DB; SPDT slow action BBM/MBB; 2NO; 2NO GLE: SPDT snap action DB, SPDT slow action BBM/MBB, DPDT snap action DB, 2NO/2NC
Contacts	silver, gold	silver, gold
Amp rating	10 A (thermal)	10 A (thermal)

Global Limit Switches	91MCE Series	SZL-VL Series
Housing type	–	–
Sealing	IP67, NEMA 1, 4, 12, 13	IP64
Housing material	zinc die-cast	zinc die-cast/plastic
Actuators/levers	side rotary, top/roller plunger, panel mount actuators	side rotary, top plunger, wobble, wobble cat whisker
Termination	4-pin M12 connector, side exit cable, bottom exit cable	cable gland
Approvals	cULus, CE, CCC	UL, cUL, CE
Circuitry	1NO 1NC DO snap action, 1NC 1NO slow action: BBM	1NC 1NO SPDT; double break
Contacts	silver	gold-plated silver
Amp rating	10 A (thermal)	5.0 A

Heavy-Duty Limit Switches

	HDLS Standard Series	HDLS Stainless Steel Series	HDLS Fully Potted Series
Housing type	HDLS plug-in	stainless steel non plug-in	HDLS non plug-in
Sealing	NEMA 1, 3, 4, 4X, 6, 6P, 12, 13	NEMA 1, 3, 3R, 4, 4X, 6, 6P, 12, 13	NEMA 1, 3, 4, 6, 6P, 12, 13
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, CSA, CE, CCC	UL, CSA, CE, CCC	UL, CSA, CE, CCC
Circuitry	1NC 1NO SPDT, 1NC direct acting, 2NC 2NO DPDT, 2NC 2NO DPDT sequen.	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)

Medium-Duty Limit Switches

	14CE/914CE Series	LS Series	BZE6/V6 Series	SL1 Series
Housing type	–	compact/non-plug in; plug in	split housing, side mount split housing, flange mount	–
Sealing	IP65, IP66; NEMA 1, 3, 4, 6, 6P, 12, 13	NEMA 1, 3, 4, 6, 13	NEMA 1, 3, 4, 12	IP67; NEMA 3, 4, 13
Housing material	zinc die-cast	zinc die-cast	zinc die-cast	zinc die-cast
Actuators/levers	side rotary, top plunger, roller, pushbutton, wobble	side rotary, roller arm	top plunger, maint. with reset plunger, lever actuated, wobble	top plunger, roller arm
Termination	cable, micro-connector	0.5 in - 14NPT conduit; mini-connector	0.5 in - 14NPT (or NPSM) conduit; mini-connector, cable	cable gland
Approvals	14CE: ENEC; 914CE: UL, CSA	UL, CSA	UL, CSA, CE	UL, CSA
Circuitry	SPDT, SPSTNC, SPDTMBB, SPDTBBM	SPDT double break, DPDT double break	SPDT, DPDT	SPDT
Contacts	silver, gold	silver, gold	silver	silver, gold
Amp rating	5 A (thermal)	10 A	10 A or 15 A	5 A

MICRO SWITCH™ Limit Switches Line Guide

MICRO SWITCH™ Specialty Limit Switches.
Application-proven specialty limit switches for swing-door applications:

Relialign™ Series Residential Door Interlocks are designed specifically for swing door applications that include residential elevators, dumbwaiters, and platform lifts. The door interlock holds the door in place and prevents it from being opened when not desired (e.g. the elevator/lift car is not present at the door). A number of design features contribute to its enhanced safety, reduction of nuisance stoppages and call-backs, as well as simplified wiring and installation. Featuring a custom internal solenoid control, Relialign™ interlock can reduce complexity of the host controller, trim down power consumption for a "greener" product, extend solenoid life and reduce solenoid "time outs," lessening customer aggravation.

Relialign™ Specialty Limit Switches	Relialign™ RDI Series Residential Door Interlock	Relialign™ RDI2 Series Residential Door Interlock
Description	door interlock for swing-style doors, elevators, and vertical lifts. available with metal or plastic housing	
Housing	metal	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]	247,65 mm x 51,44 mm x 49,23 mm [9.75 in x 2.025 in x 1.938 in]

HEAVY-DUTY LIMIT SWITCHES HDLS Series (Standard, Stainless Steel, and Fully Potted).

Features: Rugged housing with electrostatic epoxy finish • Sealed to NEMA 1, 3, 4, 4X, 6, 6P, 12, 13; IP65/66/67 • Fully potted versions exceed NEMA 6P washdown • Side rotary styles may be field modified for CW and/or CCW operation • Operating heads can be rotating 90° • Factory sealed pre-wired or factory-installed connectors available • Corrosion resistant stainless steel housing available • Low temperature sealing available • High temperature, chemical resistant fluorocarbon seals available

Benefits: Includes boss-and-socket head design for secure head-to-body retention, unique all-metal drive train for consistent operating characteristics even at high temperature, and self-lifting pressure plate terminals save wiring time. Type 316 case stainless steel body is designed to minimize crevices where food particles could become trapped. Fully potted version provides an extra degree of protection in harsh environments by sealing the cavity with epoxy. Applications include machine tools, material handling, packaging, presses, shipboards/ dockside, power generating plants, food and beverage machinery, conveying equipment, and more.

MEDIUM-DUTY LIMIT SWITCHES 14CE/914CE Series.

Features: Rugged housing for harsh environments • Miniature size for smaller applications • Available with direct-acting contacts • Pre-leaded or various quick-connect terminations for design flexibility • Wide variety of actuator styles including seal-booted versions

Benefits: 14CE and 914CE Series switches incorporate fluorocarbon diaphragm sealing to provide reliable protection. Versions with boot seal also meet NEMA 12 requirements. For low temperature applications (down to -40 °C, [-40 °F]), CE switches can be supplied with low temperature seals and lubricant.14 CE versions are designed for European applications and meet the requirements of the low voltage directive. 914CE products meet UL and CSA standards, as well as European CE requirements. Applications include processing equiment, textile machinery, machine tools, robotics, and more.

LS Series.

Features: Mode of operation is field adjustable • NEMA 1, 3, 4, 6, and 13 • Wide choice of heads and actuators • Variety of operating characteristics • Captive screws • UL and CSA approved parts available

Benefits: LS fits in many places too small for any other fully adjustable limit switch. 200LS switches are the original plug-in concept for reducing downtime by making changeover simple and fast. Applications include machine tools, conveyors, material handing, and lift trucks.

BZE6/V6 Series.

Features: Rugged electrostatic epoxy-coated metal housing • Precise mechanism offers increased repeatability • Booted versions sealed to NEMA 1, 3, 4 and IP66 • Unsealed actuators sealed to NEMA 1and IP40 • Side or flange mount • Low temperature options available • Gold contacts available • Removable terminal enclosure for easy of wiring

Benefits: Offered with or without actuator seal boots. Both have a combination insulator/seal cemented inside the bottom enclosure. Lead washers are used to seal the mounting holes on side mount switches. All side mount switches are installed with #6 screws, except the BZE6-2RN7 (#8 screws). Removal of the bottom enclosure exposes the terminals for easy wiring. Applications include packaging equipment, textile machinery, construction equipment, printing machinery, and more.

SL1 Series.

Features: Ideal source of replacement parts for imported machine tools • NEMA 3, 4, 13 and IEC IP67 sealing • Smaller size saves space • Rugged zinc die-cast housing • Snap-in terminal enclosures makes mounting and wiring easy • Temperature ranges: standard and low

Benefits: Sealed, sensitive, and have a long life. Compact size makes them suitable for the total miniaturization of machinery or equipment. Applications include robotics, auto factory floor, and electronic assembly equipment.

SPECIALTY LIMIT SWITCHES Relialign™ Series (RDI and RDI2 Residential Door Interlocks).

Features: Compliant to ASME A17.1, UL standard 104, and CSA-B44.1 • Manual override for easy actuation without user hazard • Two separate mechanical actions to indicate door closure • Rugged housing (RDI: metal; RDI2: thermoplastic) • Metal key • Internal solenoid control • No open or exposed contacts • Key engagement minimizes nuisance stoppage • Door closure retention cam to hold door with minimal key-to-interlock play • Series or parallel wiring option for the door closed and door locked switches • 6-pin terminal strip or Cat 5 connection options • Configurable product platform • Universal voltage for ac and dc applications

Benefits: Meets required safety codes. Reduced potential for call-backs with reliable performance and multiple design features to minimize nuisance stoppage of applications. Simplified wiring and installation. Reduced OEM design and manufacturing costs. Applications include residential elevators, residential dumbwaiters, and platform/vertical lifts .

Warranty. 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 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.

For more information about Sensing and Control products, visit www.honeywell.com/sensing or call +1-815-235-6847
Email inquiries to info.sc@honeywell.com

⚠ 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.

⚠ WARNING
MISUSE OF DOCUMENTATION

- The information presented in this catalogue 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.

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MICRO SWITCH™ Hazardous Location Switches Line Guide

Hazardous environments demand Honeywell. When conditions are hazardous and performance is critical, Honeywell Sensing and Control (S&C) delivers exceptional performance. Our hazardous location switches are limit switches designed specifically for dangerous indoor or outdoor locations — where reliability and repeatability are essential. To comply with explosion-proof requirements, the flame path within the switch housing is designed to contain and cool escaping hot gases — fumes that otherwise could cause an explosion outside the switch.

Honeywell S&C hazardous location switches are found in applications as diverse as grain elevators, offshore drilling, petrochemical and waste treatment plants, paint booths, hazardous waste-handling facilities, pipeline valves, and maintenance equipment.

FEATURES

HAZARDOUS LOCATION LIMIT SWITCHES

EX Series.

Features: Smallest UL-listed housings available for use in hazardous locations • ATEX and IEC Ex certified • Up to 20 amp capacity • Ample wiring space • Mounts from four sides • Roller arms adjustable through 360 degrees • Non-sparking actuators • Captive cover screws • Grounding screw

Benefits: Flame paths within the housing cool exploding gases below the kindling temperature before they reach the explosive gases surrounding the housing. Potential applications include control valves and actuators, petrochemical plants, conveyors and material handling.

BX Series.

Features: UL, CSA, ATEX, and IEC Ex certified • Sealing - NEMA 1, 3, 4, 6, 13 • Diverse conduit selection for wide range of potential applications • Tracking interchangeability with MICRO SWITCH™ HDLS • Variety of heads and non-sparking actuators • 10 A continuous carry electrical rating • Choice of silver or gold contacts • Internal grounding screw

Benefits: BX enclosure sealed for protection against corrosion, water, dust and oil as defined in NEMA 1, 3, 4, 6, 13 and IP67 as defined in IEC 60529. These enclosures are certified for II 2 GD; Ex d IIC T6; Ex d tD A21 T85°C. The entire series BX complies with the ATEX Directive and is IECEx certified.

BX with conduit types 1/2-14NPT, 3/4-14NPT also meet the North American Hazardous Locations Designation: Class I, Groups B, C and D; Class II, Groups E, F and G and comply with UL Standard: UL 894, CSA Standard: C22.2 No. 25-1966, C22.2 No. 30-M1986.

For outdoor use or in adverse environments where a combination of explosion proof plus sealing requirements are needed. To comply with explosion proof requirements, the BX has flame paths within the housing, which cool exploding gases below the ignition temperature before they reach explosive gases surrounding the housing. Flame paths are (1) an extended plunger between the switch cavity and head and (2) the cover-housing threads on the front of the switch. Potential applications include control valves and actuators, petrochemical plants, waste treatment, hazardous waste handling, paint booths, mining equipment, pulp and paper coating, grain elevators, and more.

CLSX Series.

Features: Positive-opening operation of normally closed contacts • Available with up to 2NC positive-opening contacts • Cable length may be up to 200 ft in a straight line • Maintained version has broken/slacked cable detection • Tension indicator mark for easy adjustment • For use either indoors or outdoors • Sealing meets NEMA 1, 3, 4, 13 • Internal grounding screw • UL/CSA approvals

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MICRO SWITCH™ Hazardous Location Switches Line Guide

A safe and sound investment.
Best used for presence or absence detection where physical contact is permissible, Honeywell S&C hazardous location switches can be found in the most ingenious solutions and the most rugged machinery — in the most volatile environments. Designed for reliability, O-ring seals make the switch weatherproof, watertight and dust-tight, but are located outside flame paths so explosion-proof requirements are preserved.

Our corporate tradition of delivering quality and innovation is infused throughout Honeywell S&C products, ensuring you'll find our hazardous location switches loaded with the benefits your business demands:

- Exclusively manufactured for harsh environments
- Designed to be reliable, dependable, accurate
- Superior sealing and design integrity
- Comprehensive product line
- LSX/BX series are interchangeable with HDLS heavy-duty limit switches
- UL, CSA, ATEX, and IEC Ex certifications

Hazardous Location Switches	EX Series
Housing type	EX
EX approvals	UL, CSA, ATEX, IEC Ex
Sealing	NEMA 1
Designations	Div. 1, Class I, Groups B, C, & D • Div 1, Class II, Groups E, F, & G • II 2 G; EEx d IIB + H2 T6
Housing material	aluminum
Actuators/levers	side rotary, top plunger, top roller plunger, manual, wobble
Termination	0.5 in - 14NPT conduit, leadwires
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

Hazardous Location Switches	BX Series	CLSX Series
Housing type	non plug-in	–
EX approvals	UL, CSA, ATEX, IEC Ex	UL, CSA
Sealing	IP67; NEMA 1, 3, 4, 6, 13	IP67; NEMA 1, 3, 4, 6, 13
Designations	Div. 1, Class I, Groups B, C, & D • Div 1, Class II, Groups E, F, & G • II 2 G; Ex d IIC T6 • II 2 D; Ex d tD A21 T85°C	Div. 1, Class I, Groups B, C, & D Div 1, Class II, Groups E, F, & G
Housing material	zinc die-cast	zinc die-cast
Actuators/levers	side rotary, side plunger, side roller, top rotary, top plunger, top roller plunger, wobble	cable, maintained
Termination	0.5 in - 14NPT conduit; 0.75 in - 14NPT conduit; 20 mm conduit	0.5 in NTP conduit; 0.75 in NTP conduit
Circuitry	1 NC 1NO SPDT DB snap action, 2NC 2NO DPDT DB snap action	1NC direct acting; 1NO 1NO direct acting
Operating temperature	-40 °C to 70 °C [-40 °F to 158 °F]	-25 °C to 40 °C [-13 °F to 104 °F]
Amp rating	0.05 A, 10 A (thermal)	10 A (thermal)

** EX approvals pending as of July 2008.

Hazardous Location Switches

	GXE Series	14CE100 Series
Housing type	–	–
EX approvals	ATEX (CE)	ATEX (CE)
Sealing	IP66/67	IP66/67
Designations	II 2 G; EEx d IIC T6	II 2 G; Ex d IIC T6 II 2 D; Ex tD A21 T85°C
Housing material	zinc die-cast	zinc die-cast
Actuators/levers	side rotary, top plunger, top roller	top plunger, roller plunger, cross-roller
Termination	5 m cable	cable (various lengths)
Circuitry	1NC 1NO SPDT snap action	1NC 1NO SPDT snap action
Operating temperature	-25 °C to 75 °C [-13 °F to 167 °F]	0 °C to 70 °C [32 °F to 158 °F]
Amp rating	5 A (thermal)	1 A (thermal); 5 A (thermal)

Hazardous Location Switches

	CX Series	GSX Series	LSX Series
Housing type	short: 104 mm [4.09 in]; standard 145 mm [5.71 in]	non plug-in	non plug-in
Approvals	UL, CSA, ATEX, IEC Ex	cULus, ATEX, IEC Ex	UL, CSA
Sealing	IP66; NEMA 1, 3, 4, 4X, 6, 6P, 13	IP67; NEMA 1, 4, 6, 12, 13	IP67; NEMA 1, 3, 4, 6, 13
Designations	*Div. 1, Class I, Groups B, C, & D • *Div 1, Class II, Groups E, F, & G • II 2 G; Ex d IIC T6 • II 2 D; Ex d tD A21 T85°C	*Div. 1, Class I, Groups B, C, & D • *Div 1, Class II, Groups E, F, & G • II 2 G; Ex d IIC T6 • II 2 D; Ex d tD A21 T85°C	Div. 1, Class I, Groups B, C, & D Div 1, Class II, Groups E, F, & G
Housing material	NEMA 1, 3, 4, 4X, 6, 6P, 7, 9, 13	zinc die-cast	zinc die-cast
Actuators/levers	aluminum, bronze	side rotary, pin plunger, top roller plunger, top roller lever	side rotary, side plunger, side roller, top rotary, top plunger, top roller plunger, wobble
Termination	side rotary, plunger	0.5 in - 14NPT conduit	0.5 in - 14NPT conduit; 0.75 in - 14NPT conduit; 20 mm conduit
Circuitry	1NC 1NO SPDT, 2NC 2NO DPDT, 4 mA to 20 mA	SPDT, SPDT BBM, SPDT MBB, SPDT slow acting, DPDT, DPDT BBM, DPDT MBB, DPDT slow acting	1 NC 1NO SPDT DB snap action, 2NC 2NO DPDT DB snap action
Operating temperature	-25 °C to 85 °C [-13 °F to 185 °F]	-25 °C to 80 °C [-13 °F to 185 °F]	-12 °C to 121 °C [10 °F to 250 °F]
Amp rating	1 A, 10 A, 15 A, 20 A	10 A (thermal)	0.05 A, 10 A (thermal)

* most CX listings carry these designations. However, some have special ratings.

Benefits: Designed to provide emergency stop protection for conveyor lines in hazardous environments. Designed to withstand the pressure of an internal explosion and cools the exploding gases below the kindling temperature of the explosive atmosphere. Flame paths are provided by the cover housing threads and an extended plunger between the switch cavity and head. Potential applications include conveyor lines in hazardous atmospheres.

GXE Series.

Features: II 2 G EExd IIC T6 • CE marked • EN50047 mounting compatible • Rugged zinc die-cast housing • Pre-wired - 5 m of cable • Bottom exit cable • Double insulated switch element • Snap action basic switch

Benefits: Fully potted and sealing protection of IP66/67 as per IEC 60529. Complies with the ATEX Directive. Potential applications include hazardous areas Category 2 (Zone 1) or Category 3 (Zone 2), petrochemical plants, material handling, and valves.

14CE100 Series.

Features: Compact construction • Pre-wired or connector versions • Die-cast zinc housing • Wide selection of actuators • Gang mounting capability • Cable length variations • Side and bottom exit cable/ connector • Simple two-screw mounting • Low temperature variants • Fluorocarbon sealing (standard)

Benefits: Pre-wired construction allows for ease of installation where space is at premium and external operating conditions can be difficult. Approved to meet the requirements of the Low Voltage Directive, ATEX Directive, and is CE marked. Potential applications include control valves and actuators, petrochemical plants, hazardous waste handling, material handling, power generating, and grain handling.

CX Series.

Features: NEMA 1, 3, 4, 4X, 6, 6P, 13 • Watertight and dust-tight for outdoor use • Gold contacts, low-temp seals, and bronze housing options available • 4 mA to 20 mA analog output available • Rugged, cast aluminum housing • Pretravel, overtravel, and actuating sequence can be field adjusted without tools (all basics individually) • Rotary types convert in seconds to clockwise, counter-clockwise, or both-way operation

Benefits: Built especially for outdoor use in hazardous atmospheres. These enclosures are constructed to withstand the pressure of an internal explosion. Flame paths cool the exploded gases to a point less than the lowest safe operating temperature of the surrounding gas. Potential applications include control valves and actuators, petrochemical plants, grain handling, waste treatment, power generating, and paint facilities.

GSX Series.

Features: Snap action contacts with positive break in an explosion-proof housing • Positive action push plunger breaks current upon opening of door or aperature • Explosion-proof housing for hazardous locations • Sealed for protection against corrosion, water, dust, and oil as defined in NEMA 1, 3, 4, 12, and 13 and IP67 • Complies with ATEX, IECEx, and UL/CSA regulations • Simple installation • Extensive switch options and actuator styles

Benefits: To comply with explosion-proof requirements, the GSX has flame paths within the housing, which cool exploding gases below the ignition temperature before they reach explosive gases surrounding the housing. Flame paths are (1) an extended plunger between the switch cavity and head and (2) the cover-housing threads on the front of the switch. Potential applications include gates, doors, access panels, and/or cages on machinery in hydrocarbon refining, chemical processing, agricultural equipment, food processing, and grain elevators.

LSX Series.

Features: UL, CSA approvals • Sealing - NEMA 1, 3, 4, 6, 13 • Diverse conduit selection for wide range of potential applications • Tracking interchangeability with MICRO SWITCH™ HDLS • Variety of heads and non-sparking actuators • 10 A continuous carry electrical rating • Choice of silver or gold contacts • Internal grounding screw

Benefits: LSX is sealed to NEMA 1, 3, 4, 6, 13 and carries UL/CSA approvals. The LSX meets North American Hazardous Location Designations: Class I, Groups B, C, and D; Class II, Groups E, F, and G.

For outdoor use or in adverse environments where a combination of explosion proof plus sealing requirements are needed. To comply with explosion proof requirements, the LSX has flame paths within the housing, which cool exploding gases below the ignition temperature before they reach explosive gases surrounding the housing. Flame paths are (1) an extended plunger between the switch cavity and head and (2) the cover-housing threads on the front of the switch. Potential applications include control valves and actuators, petrochemical plants, waste treatment, hazardous waste handling, paint booths, mining equipment, pulp and paper coating, grain elevators, and more.

Warranty. 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 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.

For more information about Sensing and Control products, visit www.honeywell.com/sensing or call +1-815-235-6847
Email inquiries to info.sc@honeywell.com

⚠ 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.

⚠ WARNING
MISUSE OF DOCUMENTATION

- The information presented in this catalogue 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.

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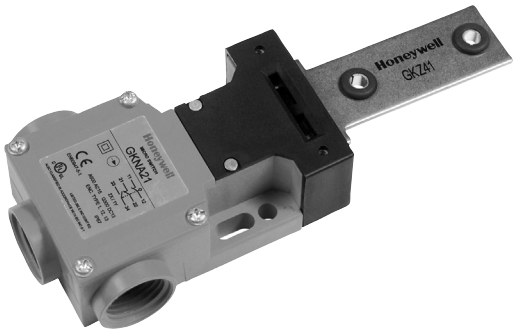
MICRO SWITCH ™ Safety Switches Line Guide



Full-Scale Offering. Solid, Robust Industry Knowledge. Equal parts common sense and creativity. Each part in Honeywell Sensing and Control's (S&C) robust offering of safety switches comes complete with amenities you'd expect from the industry leader: superior assembly techniques for enhanced performance, extended productivity, full-line flexibility – for supreme safety.

- Key-operated interlock switches
- Cable-pull switches
- Hinge-mount switches
- Trapped key and solenoid key switches
- Positive-opening contacts

End users, OEMs, everyone faces the same challenge: ensuring equipment productivity while meeting global workplace safety standards. Honeywell S&C offers solutions designed to help pass any test with the most impressive safety switch portfolio and solutions – for any important, application-specific need. It's the widest range of sizes, sealing alternatives, enclosure materials, actuator styles, and contact options available. All backed by superior Honeywell service and global support.

- Non-contact products for door detection
- Miniature switches for smaller openings
- Reduced installation time and cost
- Tamper resistant

FEATURES

GKM Series Global Miniature.

Features: Red body color • Integrated cable or connector(s) • Bottom or side-entry • Bottom, side-entry, or dual connector versions (for daisy chaining a number of switches together) • 90° or straight key • Extremely compact enclosure • Positive opening operation of normally closed contacts (conforming to IEC/EN 60947-5-1-3) • IP67 rating • Stackable design allows side-by-side mounting • Robust keys • UL listed, CSA certified, CE compliant • High current switching capabilities • Small door swing radius down to 160 mm [6.3 in]

Benefits: Reduced installation time and costs. Flexibility of mounting and actuation options. Ability to function as a final switching device for small, low-risk equipment. Operates with safety control modules for more complex applications. Fits extremely compact spaces, and is often suitable for wet applications. Simple mechanical and electrical redundancy for some options. Easy application in multiple door modular machinery (no difficulty in wiring small switch enclosures).Durable, tough design. Global acceptance.

FF and FFS Series Non-contact.

Features: Red body color (except FFS and stainless steel offerings) • Tamper-proof electronic switching • 7 mm to 10 mm [0.28 in to 0.4 in] operating distance • Guard status indication • CE, UL approvals • Options of one or two safety contacts • Tested to over 1,000,000 operations • Simple mounting (M18/30 thread mounting or frame-mountable versions • Guard status indication available • ac and dc versions

Benefits: Tolerates misalignment over lifetime of machine. Gap between sensor and actuator large, enabling non-contact switching. FFS offers superior tamper resistance. Integrates easily with control modules. Easy daisy chain configurations.

GSS Series Safety Limits.

Features: Red body color • EN50041 and EN50047 mounting and characteristics • IEC electrical standard for global applications • Positive opening operation of normally closed contacts (conforming to IEC/EN60947-5-1-3) • Rugged housing (zinc die-cast) • Full range of actuator heads and levers • Sealing up to IP67; NEMA 1, 4, 12, and 13 • Snap-action and slow-action basic switches • International conduit sizes • Galvanically isolated contacts • UL listed; CSA and CE certified

Benefits: Standard mounting and characteristics are globally available and accepted. Welded NC contacts will separate (vital security in safety applications). Range of actuation methods for detecting conditions in guarding and machine status applications. Wiring and body flexibility. Often suitable for inductive switching and safety relay interfaces.

GSX Series.

Features: Snap action contacts with positive break in an explosion-proof housing • Positive action push plunger breaks current upon opening of door or aperature • Explosion-proof housing for hazardous locations • Sealed for protection against corrosion, water, dust, and oil as defined in NEMA 1, 3, 4, 12, and 13 and IP67 • Complies with ATEX,

continued on back page

MICRO SWITCH™ Safety Switches Line Guide

The most powerful part: Possibilities.
Honeywell S&C offers one-stop convenience for engineering excellence – meaning top-notch products or completely customized creations, as well as all the possibilities that lie between. You may have 'impossible' needs and deadlines. But the experts at Honeywell are ready with powerful safety solutions.

From the factory floor to the assembly line, from packaging machinery to robot cells – from the smallest spaces to any worldwide application or mount, Honeywell delivers ultimate reliability and safety in compact, cost-effective packages.

Safety Switches

	GKM Series Global Miniature	FF and FFS Series Non-contact
Attributes	key switch – very small, cable/connector fitted	contactless door detection; very small, cable/connector fitted
Potential applications	small doors and apertures	small doors and apertures
Housing	glass-filled polyester	ABS resin-filled, stainless steel
Approvals	UL, CE	UL, CE
IEC/NEMA rating	IP66/67; NEMA 1, 12, 13; EN60529	IP67; NEMA 4
Differentiator	small footprint; connectorized; side-exit cable connector	large actuation window to reduce mis-alignment issues
Body dimensions (less levers) H x W x D mm[in]	69,4 mm x 34,0 mm x 16,0 mm [2.73 in x 1.34 in x 0.63 in]	82,5 mm x 19 mm x 17 mm [3.25 in x 0.75 in x 0.67 in]
Temperature	-25 °C to 85 °C [-13 °F to 185 °F]	-10 °C to 55 °C [14 °F to 131 °F]

Safety Switches

	GSS Hinge Mount Safety Limits	GSS Series Safety Limits	GSX Series Available Sept. 2008	GK Series Key-Operated Safety Interlock
Attributes	mounted to the door hinge – detects door angle	global safety switch	explosion-proof, safety switch	heavy-duty key switch
Potential applications	medium/large doors and apertures	medium/large doors	gates, doors, access panels, cages	large, heavy door applications
Housing	glass-filled polyester; die-cast	die-cast	die-cast	die-cast
Approvals	UL, CE	UL, CE	UL, ATEX, IECEx	UL, CE
IEC/NEMA rating	IP67; NEMA 1, 4, 12, 13	IP67; NEMA 1, 4, 12, 13	IP67; NEMA 1, 3, 4, 12, 13	IP67; NEMA 1, 4, 12, 13
Differentiator	highly visible	highly visible	IECEx approvals. More than 10000 actuator/switching combos	extremely heavy-duty, rugged
Body dimensions (less levers) H x W x D	83,0 mm x 30,5 mm x 30,0 mm [3.27 in x 1.2 in x 1.18 in]	83,0 mm x 30,5 mm x 30,0 mm [3.27 in x 1.2 in x 1.18 in]	154,2 mm x 44,5 mm x 72 mm [6.07 in x 1.75 in x 2.84 in]	121,6 mm x 42 mm x 42,6 mm [1.79 in x 1.652 in x 1.68 in]
Temperature	-25 °C to 85 °C [-13 °F to 185 °F]	-25 °C to 85 °C [-13 °F to 185 °F]	-40 °C to 70 °C [-40 °F to 158 °F]	-25 °C to 85 °C [-13 °F to 185 °F]

Safety Switches

	24CE and 924CE Series	GKE Series Dual Entry Safety	GKN Series Safety Interlock
Attributes	very small, cable/connector fitted	key switch – small, standardized housing	standard offering, three conduit, minimal variances
Potential applications	small doors and apertures	small doors and apertures	small/medium doors and apertures
Housing	Die-cast	glass-filled polyester	glass-filled polyester
Approvals	UL, CE	UL, CE, CCC	UL, CE, CCC
IEC/NEMA rating	IP67	IP66; NEMA 1, 12, 13	IP67; NEMA 1, 4, 12, 13
Differentiator	toughest safety switch available	small footprint key switch	molded 0.5 in NPT conduit
Body dimensions (less levers) H x W x D mm[in]	49,0 mm x 40,0 mm x 16,0 mm [1.93 in x 1.57 in x 0.63 in]	92,2 mm x 24,2 mm x 29,4 mm [3.63 in x 0.95 in x 1.16 in]	90,0 mm x 40,0 mm x 33,0 mm [3.55 in x 1.57 in x 1.30 in]
Temperature	0 °C to 70 °C [32 °F to 160 °F]	-25 °C to 85 °C [-13 °F to 185 °F]	-25 °C to 70 °C [-13 °F to 158 °F]

Safety Switches

	GKS Series Multi-Entry Trapped Safety Interlock	GKR/L Dual-Entry Solenoid Safety Interlock	CPS Series Cable Pull Safety Switch
Attributes	trap and hold the key until hazard has been removed	heavy-duty key switch/solenoid lock	single/dual head rope pull
Potential applications	large, heavy door applications	large, heavy door and machine apps	conveyor applications
Housing	glass-filled polyester	die-cast	die-cast
Approvals	UL, CE, CCC	UL, CE	UL, CE
IEC/NEMA rating	IP67; NEMA 1, 4, 12, 13	IP67; NEMA 1, 4, 6P, 12, 13	IP67; NEMA 1, 4, 12, 13
Differentiator	compact, trapped key design	extremely rugged trapped key switch	rugged housing, ease of installation
Body dimensions (less levers) H x W x D mm[in]	196,8 mm x 40 mm x 41 mm [7.75 in x 1.57 in x 1.61 in]	149,0 mm x 110,0 mm x 48,8 mm [5.85 in x 4.33 in x 1.92 in]	165,1 mm x 79,8 mm x 325,9 mm [6.5 in x 3.14 in x 12.75 in]
Temperature	-25 °C to 50 °C [-13 °F to 122 °F]	-25 °C to 85 °C [-13 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]

IECEx, and UL/CSA regulations • Simple installation • Extensive switch options and actuator styles

Benefits: To comply with explosion-proof requirements, the GSX has flame paths within the housing, which cool exploding gases below the ignition temperature before they reach explosive gases surrounding the housing. Flame paths are (1) an extended plunger between the switch cavity and head and (2) the cover-housing threads on the front of the switch. Potential applications include gates, doors, access panels, and/or cages on machinery in hydrocarbon refining, chemical processing, agricultural equipment, food processing, and grain elevators.

GKN Series Safety Interlock.

Features: Red body color • Positive opening operation of normally closed contacts (conforming to IEC/EN 60947-5-1-3) • Choice of actuators • Double insulated per IEC 60947-5-1 • Global approvals (cULus, CE, CCC) • Three cable entries • Large wiring cavity • Large M20 cable entry • Oblique native 0.5 in NPT conduit • Common footprint • Four-entry head

Benefits: Flexibility in positioning on door/machine. Ease of wiring/installation. No conduit or cable adapters. Meets global safety standards. Drop-in compatibility with most brands. No need to reconfigure head orientation.

GK Series Key-Operated Safety Interlock.

Features: Red body color •Positive opening operation of normally closed contacts • Standard mounting per EN50041 •Available with 2NC/2NO, 3NC/1NO or 4NC positive opening contacts • Side or top key entry • Unique friction feature for key retention • Choice of four heavy duty keys (Key sold separately) • Die-cast zinc housing • Lockout device available • UL, CSA, CE

Benefits: Designed for use on machinery where key removal brings the machine to an immediate safe condition. Potential applications include Hinged or sliding guard doors, screens, protective covers and enclosures on: machine tools machinery, metalworking machines, special purpose machinery, robotics assembly cells, and plastic molding machines.

GKE Series Dual Entry Safety Interlock.

Features: Red body color • Positive opening safety contacts • Head orientation configured to order • Rotating head • Head may be ordered in four possible orientations • Double insulation per IEC 60947-5-1 • Choice of two standard actuators • Small size • Global approvals: cULus, CE, CCC

Benefits: Small footprint. Applicable to various safety schemes, including low and high voltage/energy. May be used as final switching device for small, low-risk applications. Environmentally sealed for challenging applications.

GKN Series Safety Interlock.

Features: Red body color • Positive opening operation of normally closed contacts (conforming to IEC/EN 60947-5-1-3) • Choice of actuators • Double insulated per IEC 60947-5-1 • Global approvals (cULus, CE, CCC) • Three cable entries • Large wiring cavity • Large M20 cable entry • Oblique native 0.5 in NPT conduit • Common footprint • Four-entry head

Benefits: Flexibility in positioning on door/machine. Ease of wiring/installation. No conduit or cable adapters. Meets global safety standards. Drop-in compatibility with most brands. No need to reconfigure head orientation.

GKS Series Multi-Entry Trapped Key Safety Interlock.

Features: Red body color • Global approvals (CE, cULus, and CCC) • Glass-filled polyester body • Power-to-lock and power-to-unlock schemes for key trap • Flexible switching arrangement • 24 Vdc, 110 Vac, and 230 Vac coil voltages • Override mechanism in cover • Four head positions available • Three conduit openings (knock-out style) • Switch position provides status

Benefits: Ease of safety module integration. Tough, cost-effective, double-insulated enclosure. Choice of key trapping methodology. Four contacts can be arranged in any configuration and multiple voltages for every geography. Ability to open door (in case of power loss, etc.). Flexible wiring options. Can diagnose status of gate/door open, closed, locked.

GKR/GKL Dual-Entry Solenoid Trapped Key Safety Interlock.

Features: Metal housing • Red body color • Solenoid power to lock or power to unlock • Side or top key entry • Separate switch detection for key position and solenoid status • Available with several switch configurations • 100 mm [3.94 in] x 100 mm [3.94 in] mounting • Choice of four heavy-duty keys • Key retain force 1000 N max. • IP68 (NEMA 6P) • Two solenoid voltages available • Dual LEDs • UL listed/CSA certified/CE compliant • Fluorocarbon-sealed enclosure available

Benefits: Robust body design for harsh environments. High force resistance. Flurocarbon version often suitable for metalworking fluid-splash environment. Allows up to eight key entry positions. Standard mounting, key mounting flexibility and security. Often suitable for harsh-duty environments. Operates at standard control voltage. Global acceptance.

CPS Series Cable Pull Safety.

Features: 2CPS dual head for dual span • 1CPS single head for single span • Red body color • Direct opening action of normally closed contacts if emergency occurs • Typical cable span of 76 m [250 ft], longer spans available • Highly visible status indicator • Gold-plated contacts available • Rugged, die-cast zinc housing • Optional hardware packs

Benefits: Easy to identify tripped switch in emergency. Extremely rugged design for harsh environments or applications. Minimizes false triggers in varying temperature environments (i.e., semi-enclosed conveyor spaces). Easy wiring and installation. Simple set-up.

Warranty. 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 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.**

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⚠ 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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