

Electromechanical Limit Switches



Pushing the
limits in
performance and
innovation.

Our line of
industrial
switches
is tough
to beat.



Square D has been a leading supplier of quality limit switches for over 60 years, providing a variety of devices well-known and extensively used worldwide. With a broad range of options and accessories, as well as a long history of applications success, we provide virtually unlimited flexibility and an unmatched level of reliability. And with the addition of the Telemecanique offering of limit switches, we now offer one of the most comprehensive lines in the business, meeting

both domestic and international requirements.

Our industrial and heavy-duty limit switches are available with a wide variety of interchangeable heads and more than 200 lever styles including both side and top lever type, roller plunger, push rod, palm and wobble sticks. This ensures that you can achieve the precise sensing necessary for your application. What's more, the rugged dependability of our industrial and heavy-duty line means you can

apply them with the confidence that they'll withstand whatever your environment dishes out.

Plus, our industrial and heavy-duty switches carry the CE marking and meet most domestic and international standards including NEMA, UL, CSA, IEC, VDE and more. Please refer to the charts beginning on Page 5 for additional standards compliance and specification information.



Our
selection
of compact
and
miniature
limit
switches is
quite big.

If your application requires compact limit switches, Square D has what you need. Our line includes compacts for general, medium and heavy-duty applications, and each is available with a variety of contact configurations, operating heads and lever arms. There are even versions for safety applications, automated applications, and environments with a high incidence of shock and vibration.

Like all of our limit switches, our compact line meets most domestic and international standards including NEMA, UL, CSA, IEC, VDE and more. Please refer to Page 5 for additional standards compliance and specification information.



9007 Type MS/ML, Type XA, and Type XCM Miniature Switches

Rugged. These heavy-duty miniature switches are shock and vibration resistant, making them ideal for machine tool and heavy equipment applications.

Flexible Connection. They are fully potted and pre-wired with cable exit from either the side or bottom, with strain relief. Four and five-pin micro-connectors are available for either side or bottom connection.

Options. You can choose silver contacts in SPDT (Form C) or SPDT Double-Break (Form Z) for high current applications, or gold contacts for low current applications. You can also choose from 12 operating styles and a broad selection of levers.

Low Energy Version. Encapsulated, hermetically sealed .5 amp 9007 Type XA reed switches provide reliability in very low energy circuits associated with PLCs.

Direct Opening Contacts. XCM-B has slow-break before make direct opening contacts that meet IEC 947-5-1 requirements for positive opening contacts.



Type XCK-P Compact Switches

Compact Family. These plastic body switches are designed for general and medium-duty applications like packaging, light material handling and printing presses. The XCK-P features an integral 1/2" NPT conduit opening.

Enhanced Contact Safety. Direct opening action contacts meet IEC 947-5-1 requirements for positive opening contacts. Positive lever-to-shaft positioning ensures direct opening feature.

Options. A wide selection of contact configurations is available. The Type XCK-T wide-body version has two conduit openings. A maintained version with manual reset is also available for safety-related applications.



Type XCK-L Compact Switches

Compact Size. These heavy zinc die-cast enclosure switches are perfect for applications with limited space such as machine tool and material handling.

Enhanced Contact Safety. Direct opening action contacts meet IEC 947-5-1 requirements for positive opening contacts. Positive lever-to-shaft positioning ensures direct opening feature.

Flexible. The entire XCK switch family features a wide selection of contact configurations and a complete selection of operating heads and lever arms.

9007 Type C Industrial Switches



Versatile. Five bodies, 20 heads, and more than 200 lever styles allow many configurations.

Rugged and Dependable. Two bearings support a 3/8" shaft, the industry's largest. Wrap-around lever arm clamp prevents slipping due to impact. 90° total travel eliminates shaft breakage due to misaligned cams.

Environmentally Sealed. Complete switches are sealed against oil, water and dust to NEMA 6P as standard. VITON® QUADRING® shaft seal ensures positive sealing. Shaft is industrial chrome-plated to minimize friction and reduce seal wear.

Simple Installation and Maintenance. Built-in cavity holds excess wire. Extended shaft simplifies cam track adjustment. Mode of operation is easily converted.

Type XCK-J Industrial Switches



Precise. With excellent repeatability of .0004" (0.01mm) and a wide variety of heads and lever styles to choose from, Type XCK-J switches offer precision sensing for many industrial applications.

Contact Options. Contact configuration choices include SPDT and 2 SPDT snap action, as well as 2 SPDT slow break before make. Direct opening action contacts meet IEC 947-5-1 requirements for positive opening contacts.

Two Body Styles. Type XCK-J switches are available in plug-in and non plug-in body styles. They come standard with a 1/2" NPT conduit entry, metric available.

9007 Type T Heavy-Duty Switches



Built for Harsh Environments. 9007 Type T switches have extended operating and reset forces and heavy-duty contacts that will break 20A @ 120V. They also feature an ambient temperature range of up to 220° F and a die-cast zinc lever arm with hardened oil-impregnated sintered iron rollers.

Versatile. There are 15 different contact operating sequences, most of which may be field converted to ensure responsive delivery of required sequences.

Foundry Version. Extra long shaft bearing makes these switches extremely rugged and suitable for foundry applications. They are designed to prevent lever arm jamming due to sand build-up and they'll withstand falling sand up to 300° F.

Type L Heavy-Duty Switches



Flexible. With an extended range of options, Type L switches fit most mill and foundry applications. More than 80 contact operating sequences are available in 2-pole and 3-pole configurations including spring return, maintained, neutral position and two-step versions.

Connector Options. A choice of connector options is available including straight male 4-pin, 90° male 4-pin, and mini-style male receptacle. Sealed female plugs and cables are also offered.







Extreme Environments. Options are available for high temperature to 350° F, low temperature to -20° F, and high shock and vibration.

For an index of all Limit Switch product literature and technical information, please call the Square D Fax-on-Demand System at 1-800-557-4556 and request Document No. 27. You may also contact your local sales office or visit the Square D web site at www.squared.com.

Unlimited Product Support

Working with our sister companies in Groupe Schneider, Square D offers the most comprehensive service network in the industry. We are committed to supporting Square D and Telemecanique products in 162 markets throughout the world. So, no matter where you or your customers need sales and service, our people are there. Moreover, because we have both support personnel and manufacturing facilities worldwide, our people not only know products, they also understand the requirements of doing business in international markets.

In addition, every Square D and Groupe Schneider plant has earned ISO 9000 series certification. This means we have a common, permanent quality management system in all locations, one that increases the quality of the product as well as the entire process. It also means our products are recognized around the world for quality.




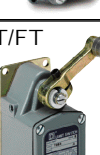

General-Duty Compact and Miniature Limit Switches	Product	Description	Contacts	Enclosure	Temperature Rating	Additional Rating
	9007 MS/ML 	Miniature enclosed switches, potted and pre-wired with cable.	<ul style="list-style-type: none"> SPDT Form C: NEMA A300 SPDT Form Z: NEMA A300 	<ul style="list-style-type: none"> NEMA Types: 1, 2, 4, 6, 6P, 12, 13 IEC Types: IP67 	<ul style="list-style-type: none"> -40°F to +221°F (-40°C to +105°C) Extended temp range version available 	Bottom or side cable entry and strain relief. Connector options available. Full range of 12 operating heads.
	9007 XA 	Miniature enclosed pre-wired switch. Reed contacts for superior low energy switching.	<ul style="list-style-type: none"> SPST reed switch: 0.5A continuous rating 	<ul style="list-style-type: none"> NEMA Types: 1, 2, 4, 6, 6P, 12, 13 	<ul style="list-style-type: none"> -20°F to +140°F (-29°C to +60°C) 	Hermetically sealed to keep contaminants out for reliable low energy switching. Three head styles with SPST-NO or SPST-NC contacts.
	XCM 	Miniature enclosed pre-wired switches designed to meet International standards.	<ul style="list-style-type: none"> SPDT NEMA A300 Standard Snap-Action contacts SPDT NEMA A300 slow-break before make contacts meet IEC 947-5-1 for positive opening contacts 	<ul style="list-style-type: none"> NEMA Types: 1, 2, 4, 6, 6P, 12, 13 IEC Types: IP67 	<ul style="list-style-type: none"> -13°F to +158°F (-25°C to +70°C) 	Meets UL/CSA and major International approvals for export. Ideal for harsh machine tool applications.
	XCK-P/T 	Compact, plastic body switches for general and medium-duty applications.	<ul style="list-style-type: none"> SPDT: NEMA A300 Meets IEC 947-5-1 for positive opening contacts 	<ul style="list-style-type: none"> NEMA Types: 1, 4, 12, 13 IEC Types: IP65 	<ul style="list-style-type: none"> -13°F to +158°F (-25°C to +70°C) 	Slim body has double-insulated enclosure. Wide body has two conduit openings. Manual reset version for safety applications.
	XCK-L 	Compact, general and medium-duty switch in rugged metal enclosure.	<ul style="list-style-type: none"> SPDT: NEMA A300 Meets IEC 947-5-1 for positive opening contacts 	<ul style="list-style-type: none"> NEMA Types: 1, 4, 12, 13 IEC Types: IP66 	<ul style="list-style-type: none"> -13°F to +158°F (-25°C to +70°C) 	Compact metal body with full selection of 12 heads. ZCK-D heads include arms. ZCK-G heads accept any XCK-J style arm.
9007 Snapswitches 	Basic contact mechanisms, with or without operators, for use where separate enclosures are not required.	<ul style="list-style-type: none"> SPST, SPDT: NEMA A600 DPST, DPDT: NEMA B600 	<ul style="list-style-type: none"> NEMA Type 1 	<ul style="list-style-type: none"> -20°F to +185°F (-29°C to +85°C) 	Broad selection of operator styles and contact arrangements in 10A and 15A versions.	

Maximum AC Contact Rating Per Pole						
NEMA Rating Designation	Maximum AC Voltage (50 or 60 Hz)	Continuous Carrying Amps		Current (Amps)	Voltamperes	
		Make	Break		Make	Break
A300	120	60.0	6.00	10	7200	720
A300	240	30.0	3.00	10	7200	720
A600	120	60.0	6.00	10	7200	720
A600	240	30.0	3.00	10	7200	720
A600	480	15.0	1.50	10	7200	720
A600	600	12.0	1.20	10	7200	720
B600	120	30.0	3.00	5	3600	360
B600	240	15.0	1.50	5	3600	360
B600	480	07.5	0.75	5	3600	360
B600	600	06.0	0.60	5	3600	360



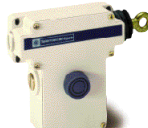
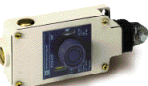
* Plunger and wobble stick versions: 0°F to +185°F (-18°C to +85°C)

† NEMA Types 3 and 4X, and IEC IP66 available on specific versions

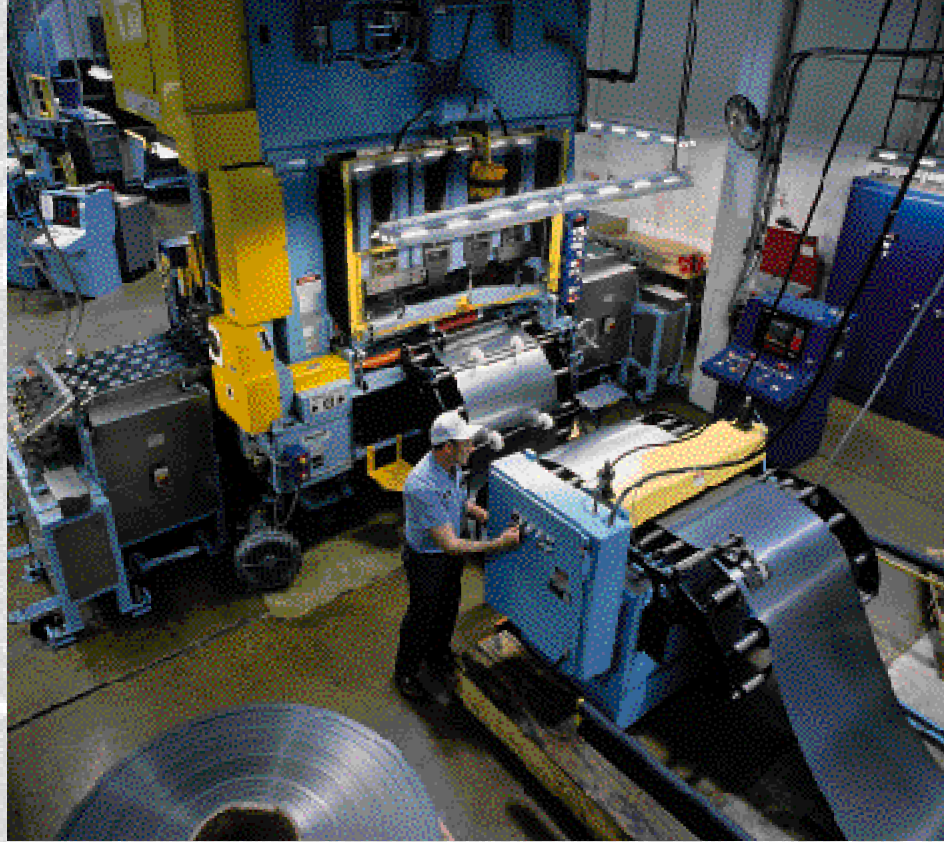
Heavy-Duty Limit Switches

Product	Description	Contacts	Enclosure	Temperature Rating	Additional Rating
9007C 	Heavy-duty, precision industrial switch featuring versatility to meet most applications.	<ul style="list-style-type: none"> ■ SPDT, DPDT: NEMA A600 ■ SPST Reed Switch: 5.0A continuous 	<ul style="list-style-type: none"> ■ NEMA Types: 1, 2, 4, 6, 6P, 12, 13 	<ul style="list-style-type: none"> ■ -20°F to +185°F (-29°C to +85°C)* ■ Low temp version available to -40°F 	20 operating heads, more than 200 arms, five body styles including compact, flush mounting and hazardous locations.
XCK-J 	Heavy-duty, precision industrial switch designed to meet international standards.	<ul style="list-style-type: none"> ■ SPDT, 2SPDT: NEMA A300 ■ Meets IEC 947-5-1 for positive opening contacts 	<ul style="list-style-type: none"> ■ NEMA Types: 1, 4, 6, 12, 13 ■ IEC Types: IP66 	<ul style="list-style-type: none"> ■ -13°F to +158°F (-25°C to +70°C) 	Meets UL/CSA and major International approvals for export requirements. Very accurate design with repeatability of 0.0004".
9007 AW 	Oil-tight, precision industrial switch. Micrometer adjustment on plunger versions.	<ul style="list-style-type: none"> ■ SPST, SPDT: NEMA A600 ■ DPST, DPDT: NEMA B600 	<ul style="list-style-type: none"> ■ NEMA Types: 1, 2, 4, 12, 13 	<ul style="list-style-type: none"> ■ Lever: -65°F to +185°F (-54°C to +85°C) ■ Plunger: 0°F to +185°F (-18°C to +85°C) 	Lever types have standard low temp rating of -65°F. Plunger versions feature precision micrometer adjustment.
9007 T/FT 	Heavy-duty mill and foundry switch for very rugged applications.	<ul style="list-style-type: none"> ■ SPDT quick make ■ SPDT slow make and break ■ 20A continuous rating 	<ul style="list-style-type: none"> ■ NEMA Types: 1, 2, 4, 12, 13 	<ul style="list-style-type: none"> ■ -10°F to +185°F (-29°C to +85°C) ■ Withstands +300°F falling sand 	Extremely rugged device designed to break 20A at 120V AC. Available with 15 field-convertible contact sequences.
Type L 	Heavy-duty mill and foundry switch with extended selection of operating sequences.	<ul style="list-style-type: none"> ■ SPDT with two or three contacts: NEMA A600 	<ul style="list-style-type: none"> ■ NEMA Types: 1, 4, 13 	<ul style="list-style-type: none"> ■ 0°F to +200°F (-18°C to +93°C) ■ Extended temp version available 	More than 80 contact sequences in two or three circuit arrangements. Options include high or low temperature and high shock.

Machine Guarding

XCS-A/C/E Interlock 	Heavy-duty, key operated switch with metal body interrupts control circuit when guard or cover is removed.	<ul style="list-style-type: none"> ■ SPDT: NEMA A300 ■ Meets IEC 947-5-1 for positive opening contacts and NEMA ICS-5 for direct opening contacts ■ Up to five contacts available 	<ul style="list-style-type: none"> ■ NEMA Types: 1, 4, 12, 13 ■ IEC Types: IP67 	<ul style="list-style-type: none"> ■ -13°F to +158°F (-25°C to +70°C) 	Difficult to defeat design. Available with electromagnetic latching, with or without voltage applied and key release available.
XCS-P/T Interlock 	Miniature, key operated switch with plastic body for interlocking small guards and doors.	<ul style="list-style-type: none"> ■ SPDT: NEMA A300 ■ Meets IEC 947-5-1 for positive opening contacts and NEMA ICS-5 for direct opening contacts 	<ul style="list-style-type: none"> ■ NEMA Types: 1, 4, 12, 13 ■ IEC Types: IP67 	<ul style="list-style-type: none"> ■ -13°F to +158°F (-25°C to +70°C) 	Difficult to defeat design. Available in double-insulated plastic slim body style, or as wide body with two conduit entries.
XY2-CE 	Heavy-duty cable pull switch for emergency or normal stop. Cable length to 165 ft.	<ul style="list-style-type: none"> ■ SPDT: NEMA A300 ■ Meets IEC 947-5-1 for positive opening contacts and NEMA ICS-5 for direct opening contacts 	<ul style="list-style-type: none"> ■ NEMA Types: 1, 2, 3, 4, 4X, 13† ■ IEC Types: IP65, IP66† 	<ul style="list-style-type: none"> ■ -13°F to +158°F (-25°C to +70°C) 	Taut cable operation with positive latching. Manual force and adjustment scales. Emergency stop and momentary versions.
XY2-CH 	Heavy-duty cable pull switch for emergency or normal stop with light operating force. Cable length to 50 ft.	<ul style="list-style-type: none"> ■ SPDT: NEMA A300 ■ Meets IEC 947-5-1 for positive opening contacts and NEMA ICS-5 for direct opening contacts 	<ul style="list-style-type: none"> ■ NEMA Types: 1, 2, 3, 4, 4X, 13† ■ IEC Types: IP65, IP66† 	<ul style="list-style-type: none"> ■ -13°F to +158°F (-25°C to +70°C) 	Taut cable operation with built-in ratchet. Through-cover visual adjustment indicators. Symmetrical body for right or left hand applications.

Our
machine
guarding
switches
help
protect
personnel.



While the demands of automated manufacturing are creating potential for operator safety problems, evolving regulations and standards are imposing more stringent safety practices. This has created a growing need for enhanced machine guarding and operator safety. Square D has an understanding of new regulations and offers the broadest range of total system safety solutions, including sensors, pushbuttons, indicating banks, safety relays and –

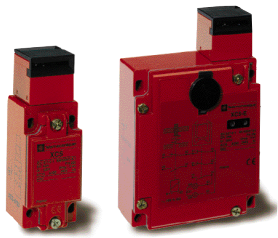
most importantly – keyed interlock switches and cable pull switches.

Interlock Switches

These key operator safety devices are designed to send a stop signal to the machine operation, protecting the operator from exposed machinery which might otherwise present mechanical, electrical, temperature or gaseous hazards. Telemecanique Type XCS safety interlock switches interrupt the control circuit when a guard, barrier or enclosure cover is removed.

Cable Pull Switches

These switches provide an emergency or normal stop signal at any point along a line. Cable devices are typically applied to conveyor systems, transfer machines, presses, wood-working equipment and painting lines. Once cable tension is set, Telemecanique Type XY2 devices will open the N.C. control contacts when the cable is pulled or if it should become slack due to stretching or breakage.

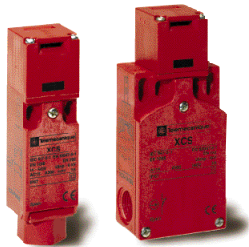


Type XCS Safety Interlock

Rugged. These heavy-duty switches are built for demanding applications. The switch and operating head are designed to be very difficult to defeat.

Advanced Contact Design. Direct opening N.C. contacts meet the IEC and EN requirements for positive opening contacts per IEC 947-5-1, EN 60947-5-1; and NEMA ICS-5, part 6 (direct opening action).

Locking Options. Type XCS switches are available with or without locking of the actuating key. Locking may be released with a key or remotely controlled through a low consumption electromagnet. Electromagnetic versions are available to lock with or without voltage applied. An emergency key lock override option is standard for versions locking without voltage.



Type XCS-P/T Safety Interlock

Compact Size. These miniature, plastic body switches provide interlocking for small doors, guards, screens, etc.

Advanced Contact Design. Direct opening N.C. contacts meet the IEC and EN requirements for positive opening contacts per IEC 947-5-1, EN 60947-5-1; and NEMA ICS-5, part 6 (direct opening action).

Dependable. The switch and operating head are designed to be very difficult to defeat. As the actuating key is inserted, a latching mechanism is triggered which requires considerable force to overcome.

Wide-Body Version. Type XCS-T versions are available which offer a wide-body design with two conduit entries.



Type XY2-CE Cable Pull Switches

Up To 165 ft Cable Length. Normal or emergency stopping for applications requiring cable lengths up to 165 feet. Wide range of accessories and hardware available for adaption to many applications.

Emergency Stop Version. Direct opening N.C. contacts meet the IEC and EN requirements for positive opening contacts per IEC 947-5-1, EN 60947-5-1; and NEMA ICS-5, part 6 (direct opening action).

Accurate Tripping. Tripping and traction force are adjusted manually using two built-in scales. Positive latching upon tripping eliminates “teasing.”

Pilot Light. Optional pilot light indicates switch status.

Corrosive Environments. Type XY2-CE switches are available in a corrosion-resistant version.



Type XY2-CH Cable Pull Switches

Up To 50 ft Cable Length. Normal or emergency stopping for applications requiring cable lengths up to 50 feet. Shorter cable requires reduced operating force for tripping.

Emergency Stop Version. Direct opening N.C. contacts meet the IEC and EN requirements for positive opening contacts per IEC 947-5-1, EN 60947-5-1; and NEMA ICS-5, part 6 (direct opening action).

Right And Left Hand. Symmetrical design allows use of one device for both right and left hand applications.

Easy Adjustment. Integral ratchet allows easy adjustment of cable tension directly at the device. An external visual tension indicator is standard.


Pilot Light. Optional pilot light indicates switch status.

Corrosive Environments. Type XY2-CH switches are available in a corrosion-resistant version.

For a *free* copy of our Electromechanical Limit Switches catalog, please contact the Square D Literature Fulfillment Center at (800) 888-2448 and request Doc. No. 9007CT9701.

This catalog illustrates one of the broadest lines of limit switches in the world. You will find application, trouble-shooting, and usage tips. Additionally, this catalog provides definitions of limit switch terminology and interpretation of catalog numbers.



Square D and  are registered trademarks of Square D Company.

VITON and QUADRING are registered trademarks of DuPont.

Order Number 9007BR9701 1/98 Printed in U.S.A.



SQUARE D
GROUPE SCHNEIDER

© 1998 Square D Company All Rights Reserved