Proximity Sensors and Limit Switches

Time-tested, Robust and Reliable Control

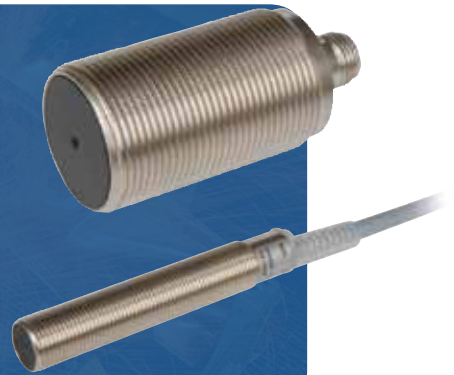Allen-Bradley · Rockwell Software

**Rockwell
Automation**

INDUCTIVE SENSOR
PRODUCT
SPOTLIGHT

Allen-Bradley® proximity sensors set the standard for ruggedness, reliability and application flexibility. Choose from one of the industry's widest selections of proximity sensor models, all of which offer you non-contact object detection. This diverse offering serves the full spectrum of your needs, from light-duty packaging applications to the punishing environments on automotive welding equipment or the harsh washdowns in food processing plants.

Bulletin 872C and 872CP WorldProx™

Cost-effective global solutions for general purpose applications

- 872C models designed with Nickel-plated brass housings and plastic sensing face
- 872CP models designed with an all plastic housing and sensing face
- Standard and short barrel versions
- Multiple operating voltages and output types
- Output indicator with 360° visibility for easy setup and maintenance
- IP67 Environmental rating
- Extended and long range versions available

Bulletin 871P - VersaCube™

Long-range sensing, versatility and durability

- Sensing ranges of up to 40 mm for general purpose/weld-field immune models
- A unique five-way mount makes them easy to mount and adjust
- Same mounting hole pattern as similar cube- and limit switch-style sensors for easy retrofitting
- Equal sensing versions available

Bulletin 871TS

A tough new solution for the food and beverage industry

- 316L stainless steel barrel with FDA Certified PPS sensing face
- ECOLAB certified
- IP67, IP68 and IP69K enclosure ratings
- Extended temperature rating (-40…+80 °C (-40…+176 °F)
- Standard and extended sensing versions available
- Laser-etched product markings
- Threaded or smooth barrel

Bulletin 871TM All-Stainless Steel

The industry benchmark for harsh-duty inductive sensing

- Stainless steel face and barrel for high impact and abrasion resistance
- 1200 psi washdown capability for contaminant and fluid ingress resistance (selected units meet IP69K requirements)
- Standard sensing, equal sensing and intrinsically safe versions
- Available with abrasion resistant, fire retardant ToughLink™ cable that meets SOOW-A requirements
- Extended range models available

LIMIT SWITCH
PRODUCT
SPOTLIGHT

Rockwell Automation® offers one of the broadest and most durable lines of limit switches in the industry. Allen-Bradley® limit switches are used in a variety of applications and environments because of their ruggedness, simple, visible operation, ease of installation and reliability.

Bulletin 802T NEMA Style
Time-tested durability, versatility and reliability

- Plug-in versions reduce downtime by eliminating the need for re-wiring (head and switch body can be replaced while leaving the base, with wiring chamber, in place)
- NEMA Type 4 and 13 oil-tight (6P on select rotary shaft models)
- A wide variety of operating heads and levers available
- Operator heads can be rotated in 90˚ increments
- 2 or 4 Circuit versions
- -18 ˚ to 110 ˚C Temperature rating (-40˚ to 110 ˚C available as an option)
- Optional LED output indication
- Standard ½" NPT Conduit Entry
- Pre-wired cable units and mini connector versions

Bulletin 802M/802MC Pre-wired
Factory sealed for demanding industrial environments

- NEMA 4, 4X, 6P and IP69K enclosure ratings
- Polymeric housings are highly resistant to moisture as well as volatile cleaning agents
- 802MC corrosion-resistant versions are factory sealed and all exposed metal parts are constructed of stainless steel 316
- 2- and 4-Circuit versions available (only 2 circuit available for 802MC)
- Optional LED Output indication
- Standard pre-wired cable is a 5 ft STOOW-A (oil resistant for indoor and outdoor use) cable
- Extended cable lengths and other connector options available

Bulletin 802B Compact, Precision and Small Precision
The ideal solution for areas too small for traditional NEMA-style limit switches

- Compact, Precision and Small Precision models
- Precision and Small Precision units offer low trip and reset points for more precise sensing
- Rugged die-cast housings with industry standard dimensions
- Wide range of operating voltages and current ratings
- All units available with a wide variety of operating heads

Compact

Small Precision

Precision

440P and 802K IEC Style
A full range of IEC style solutions for both safety and standard sensing applications

- Cat. 1 devices per En954-1, dual channel interlocks suitable for Cat. 3 or 4 systems
- Four body styles: 30 mm metal, 22 mm metal, 22 mm plastic and 15 mm plastic
- Positive operation, forced disconnection of contacts (direct opening action)
- Snap-acting or slow make/break contact arrangements
- Wide variety of operating heads (all lever-type switches are provided with their respective actuator arm)

30 mm Metal

22 mm Plastic

22 mm Metal

INDUCTIVE SENSOR
QUICK SELECTION GUIDE

Product Family	Product Features	Housing Diameter/ Dimensions (mm)	Sensing Range Shielded (mm)	Sensing Range Unshielded (mm)	Enclosure Ratings	2-wire DC	3-wire DC	4-wire DC	2-wire AC	2-wire AC/DC
General Purpose										
872C WorldProx™ • Nickel-plated brass barrel with plastic face • Standard length and short barrel versions (3-wire DC versions) • Extended range versions available (3-wire DC and 2-wire AC) • Wide variety of cable and connector options		6.5	2 & 3	3	IP67	✔	✔	✔	✔	✔
		8	2 & 3	3, 4, 6						
		12	3, 4, 6	4, 8, 10						
		18	5, 8, 12	8, 12, 20						
		30	10, 15, 22	15, 20, 40						
872C/871C Plastic Housing • Plastic barrel and sensing face • Cable and QD models (AC units only available with cable) • AC units available in 871C product family		12	3	4	IP67		✔		✔	
		18	5	8						
		30	10	15						
Harsh Duty										
871TM • Rugged stainless steel 304 barrel and sensing face • Extended Range units available (3-wire DC versions) • Wide variety of sensing types available (standard inductive, submersible units, low energy AC/DC units, and intrinsically safe versions)		8	3	6	All units IP67 & 1200 psi wash down rated (Selected units meet IP69K)	✔	✔		✔	✔
		12	2 & 6	4 & 10						
		18	5 & 10	8 & 20						
		30	10 & 20	15 & 40						
871T Ferrous • Rugged stainless steel 304 barrel and sensing face • Ferrous versions only sense ferrous materials		18	5	NA	All units IP67				✔	
Food & Beverage										
871TS • Stainless steel 316L barrel and FDA approved PPS plastic sensing face • ECOLAB certified • Extended temperature ratings (-40˚ to 100 ˚C) • Extended range units available • Laser engraved part numbers • Threaded or smooth barrel		12	2 & 4	4 & 8	IP67, IP68 & IP69K		✔			
		18	5 & 8	8 & 12						
871T • Stainless steel 304 barrel with plastic sensing face • AC housing and sensing face constructed of stainless steel 304 • Extended low end temperature ratings (-40˚ to 70 ˚C)		12	2	4	IP67		✔		✔	
		18	5	8						
871C Extended Temperature • Nickel-plated brass barrel and plastic sensing face • Operating temperature from -40˚ to 100 ˚C • PUR cable and QD connector options		12	2	4	IP67		✔			
		18	5	8						
		30	10	15						
Hazardous Locations										
871C NAMUR • Conform to NAMUR specifications (DIN 19 234) • Sensors are appropriate for intrinsically safe applications when used with NAMUR style isolators/amplifiers		8	1	2	IP67	✔				
		12	2	4						
		18	5	8						
		30	10	15						

Specialty Solutions

871D WorldClamp™
• Designed for use in power clamp and gripper applications to indicate open and closed position
• Weld Field Immune
• 2 different sensor head styles
• 3-wire DC and 2-wire AC/DC versions

871D Cylinder Position Indicator
• Designed to detect the extended or retracted position of a hydraulic or pneumatic cylinder
• Weld Field Immune
• Multiple probe lengths to accommodate different size cylinders
• 3-wire DC and 2-wire AC/DC versions

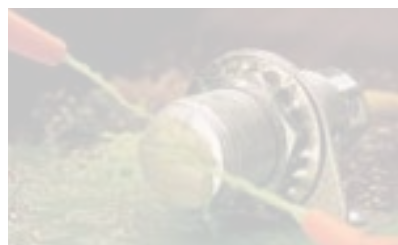# INDUCTIVE SENSOR
QUICK SELECTION GUIDE

	Product Family	Product Features	Housing Diameter/ Dimensions (mm)	Sensing Range Shielded (mm)	Sensing Range Unshielded (mm)	Enclosure Ratings	2-wire DC	3-wire DC	4-wire DC	2-wire AC	2-wire AC/DC
Welding	**871Z**	• Weld Field Immune • PTFE coated brass housing • Cable versions available with SOOW cable for excellent weld splatter protection	12	2	4	IP67		✔			✔
			18	5	8						
			30	10	15						
	871ZT	• Weld Field Immune • PTFE coated brass housing • Equal sensing (detects all metals at the same sensing distance) • Unshielded versions offer extended range	12	3	8	IP67		✔			
			18	5	12						
			30	10	20						
Material Handling & Welding	**871P VersaCube™**	• Head can be rotated in 5 different sensing positions • Standard sensing and Weld Field Immune versions • Optional Toughcoat™ slag resistant coating available on specific models	40x40	20	40	All units IP67 & 1200 psi wash down rated (Selected units meet IP69K)			✔		✔
			40x40 WFI	15 & 20	25 & 40						
	871F Flat Pack	• Large Flat Pack style sensor for applications that require extremely long sensing range • Standard sensing and Weld Field Immune versions	80x80	50	65	All units IP67 & 1200 psi wash down rated (Selected units meet IP69K)	✔				✔
			80x80 WFI	40	50						
	871L and 872L	• Head can be rotated in 17 different positions • Standard NEMA limit switch mounting pattern • Switch selectable N.O. or N.C. outputs on 871L • Programmable N.O. or N.C. outputs (via jumper) on 872L	40x40x120	20	40	IP67	✔			✔	✔
Automated Assembly & Robotics	**871C Mini Tubular**	• Compact housing ideal for small part detection, robotic, and gripper applications • Stainless Steel barrel and plastic sensing face • Fully integrated electronics • High switching frequency (≥3 kHz)	3 smooth barrel	0.6 & 1	NA	IP67		✔			
			4 smooth barrel	0.8 & 1	NA						
			4	0.8 & 1.5	NA						
			5	1 & 1.5	NA						
	871FM Mini Flat Pack	• Compact sensor housings for applications with limited mounting area • 5x5 and 8x8 solutions offer metal housings while other solutions offer plastic housings • AC versions only available in the 28x16x11 and 40x26x12 mm packages	5x5	0.8 & 1.5	NA	IP67		✔			
			8x8	2	3						
			28x16x11	2	NA						
			25x50x10	5	8						
			31x18x10	NA	5						

Specialty Solutions

871C Analog	• Provide a 0-10V output proportional to the distance from the sensor face • Available in 12, 18, and 30 mm housings • 2 m cable connection	**871R & 8721S Ring & Slot**	• Ring sensors available in 12, 20, 50, and 100 mm diameter sizes • Slot sensors available with 30 mm gap • All ring and slot sensors 3-wire DC

LIMIT SWITCH
QUICK SELECTION GUIDE

	Product Family	Product Features	Contact Rating	Temperature Rating	Actuator Types	Enclosure Rating	QD Offered	Status Indicator Offered
Heavy Duty	**801**	• General purpose limit switch for a wide variety of applications • Multiple contact arrangements available (Including Slow Action and Snap Action) • Snap Action contacts provide high snap through force	NEMA A600	0° to 40 °C (32° to 104 °F)	• Fork lever • Roller lever • Maintained • Rod/Chain Lever	NEMA 1, Type 4 or Type 7, and 9		
NEMA General Purpose	**802T Plug-In & Non Plug-In**	• Rugged NEMA Type 4 and 13 oil-tight construction • Available in standard non plug-in and plug-in version • Plug-in design provides for quick and easy installation • 2- and 4-circuit versions • Simple mode change in head for easy set-up • Low energy versions available	2 Circuit: NEMA A600 4 Circuit: NEMA A300	-18 to 110 °C (0° to 230 °F) Optional -40° to 110 °C (-40° to 230 °F)	• Low operating force • Top and side push (with or without rollers) • Cat whisker • Wobble stick • Neutral position	NEMA 1,4, 6P (select side rotary styles), 13	✔	✔
Washdown	**802M/MC**	• Factory sealed to meet the demands of both wet and dry applications • Polymeric housing material is highly resistant to moisture as well as volatile cleaning agents • 802MC corrosion resistant versions are factory sealed and all exposed metal parts are constructed of stainless steel 316 • Standard units provided with prewired 5 ft.(1.52 m) STO cable	2 Circuit: NEMA A600 4 Circuit: NEMA B300	0° to 80 °C (32° to 180 °F)	• Lever • Maintained • Top and side push (with or without rollers) • 802MC corrosion resistant lever	NEMA 1, 4, 4X, 6P, 13 and IP67	✔	✔
Light Duty Conveyor	**802G**	• Plug-in gravity return switch, designed for conveyor-type applications with small or lightweight objects • Requires low operating torque • Adjustable switch point (can be set from 10° to 180° of rotation) • Three unique lever arms available	NEMA B600	0° to 110 °C (32° to 230 °F)	• Adjustable rod levers (Requires lever arms specifically designed for the 802G product family)	NEMA 1		✔

Hazardous Locations	**802X**	• NEMA 7 and 9 units appropriate for use in:
		  – Class 1, Groups B, C or D
		  – Class II, Groups E, F or G
		  – Class III
		• NEMA 4 watertight versions designed for indoor use
			NEMA A600
			NEMA P150
				-46° to 121 °C (-50° to 250 °F)	• Lever
					• Maintained
					• Top and side push (with or without rollers)
					• Wobble stick
					• Neutral position
						NEMA Types 7 and 9; NEMA 4/ non-hazardous locations		

	802XR	• Sealed limit switch features a single contact hermetically sealed in glass enclosure
		• Offers excellent contact reliability in contaminated atmospheres
		• Appropriate for use in:
		  – Class 1, Groups B, C or D
		  – Class ll, Groups E, F or G
			NEMA B600
			NEMA P300
				-29° to 121 °C (-20° to 250 °F)	• Lever
					• Top and side push (with or without rollers)
					• Wobble stick
						NEMA Types 7 and 9		

	802R	• Sealed limit switch features a single contact hermetically sealed in glass enclosure • Offers excellent contact reliability in contaminated atmospheres • Appropriate for use in: – Class 1, Div 2, Groups A, B, C, and D	NEMA B600 NEMA P300	-29° to 121 °C (-20° to 250 °F)	• Lever • Low operating force • Top and side push (with or without rollers) • Cat whisker • Wobble stick	NEMA 13		

LIMIT SWITCH
QUICK SELECTION GUIDE

Product Family	Product Features	Contact Rating	Temperature Rating	Actuator Types	Enclosure Rating	QD Offered	Status Indicator Offered
Compact & Precision							
802B	• Compact metal housing can be mounted in areas too small for traditional NEMA style solutions • 3 m pre-wired cable • 13 unique head configurations • AC or DC LED versions • Low current versions • Booted and panel-mount versions	NEMA B300	–10˚ to 70 ˚C (14˚ to 158 ˚F)	• Rotary arm • Center rotary arm • Top push (with or without rollers) • Top push bevel • Top push cross roller • Wobble stick	NEMA 1, 3, 4, 6, 12, 13 and IP67	✔	✔
802B Precision/ Small Precision	• Low trip and reset points for more precise sensing • 1/2" Conduit entry • Booted versions • Side and flange mounting available	NEMA A300	–10˚ to 80 ˚C (14˚ to 176 ˚F)	• Top push • Top push roller • Top push cross roller • Roller lever • One-way roller	Precision: NEMA 1, 3, 4, IP60 & IP65 Small Precision: NEMA 1, 3, 4, 6, 13 & IP67		
IEC Style Solutions/ General Purpose							
802K-M	• Internationally accepted 30 mm cast aluminum housing for safety and non-safety applications • Available with snap-acting, slow make before break or slow break before make contact blocks • Large selection of operator heads and actuators	NEMA A600 NEMA Q600	–25˚ to 65 ˚C (–18˚ to 176 ˚F)	• Roller plunger • Dome plunger • Short lever • Adjustable lever • Metal spring rod	IP66		
IEC Style Solutions / Safety Solutions							
440P-M	• Internationally accepted 30 mm cast aluminum housing for safety and non-safety applications • Positive operation, forced disconnection of contacts • Available with snap-acting, slow make before break or slow break before make contact blocks • Actuator head can be rotated in 90˚ increments • Category 1 device per EN954 -1 • Suitable for Category 3 and 4 systems when ganged together	NEMA A600 NEMA Q600	–25˚ to 80 ˚C (–18˚ to 176 ˚F)	• Roller plunger • Dome plunger • Short lever • Adjustable lever • Rod lever • Spring rod • Telescope arm	IP66	✔	
440P-C	• Internationally accepted 22 mm plastic housing for safety and non-safety applications • Positive operation, forced disconnection of contacts • Available with snap-acting, slow make before break or slow break before make contact blocks • Actuator head can be rotated in 90˚ increments • Category 1 device per EN954 -1 • Suitable for Category 3 and 4 systems when ganged together	NEMA A600 NEMA Q600	–25˚ to 80˚C (–18˚ to 176˚F)	• Roller plunger • Dome plunger • Hinge lever • Short lever • Offset hinge • Adjustable lever • Rubber roller	IP66 IP69K (pre-wired version)	✔	
440P-A	• Internationally accepted compact 22 mm metal housing for safety and non-safety applications • Positive operation, forced disconnection of contacts • Available with snap-acting, slow make before break or slow break before make contact blocks • Pre-wired 2 m cable, bottom or side exit • Category 1 device per EN954 -1 • Suitable for Category 3 and 4 systems when ganged together	NEMA B300 NEMA Q300	2˚ to 70 ˚C (36˚ to 158 ˚F)	• Short lever with wide roller • Roller plunger • Dome plunger • Cross roller plunger • Short lever	IP66/IP67		
NEMA Style Safety							
802T Direct Opening	• Rugged metal housing and plug-in body style utilize the same mounting dimensions as other NEMA style limit switches • Direct opening contacts ensure normally closed contacts (safety contacts) open even in the event of a contact weld condition, up to 10 Newtons • 2-Circuit versions suitable for Category 1 systems per EN954-1 • 4-Circuit versions suitable for Category 3 and 4 systems per EN954-1	2 Circuit: NEMA A600 4 Circuit: NEMA A300 NEMA Q300	–18˚ to 110 ˚C (0˚ to 230 ˚F)	• Lever • Top push roller • Side push vertical roller • Side push horizontal roller	NEMA 4, 6P, 12, 13, and IP67	✔	

Connection Systems

Consolidate component inventory and control cabling with Allen-Bradley connectivity. Take advantage of On-Machine connectivity to reduce Mean Time To Repair (MTTR), expedite commissioning and simplify device wiring by utilizing the broad offering of:

- Bulletin 889 Cordsets and Patchcords: Featuring industry standard overmolded connectors, Allen-Bradley cables provide secure connection for sensors and other field devices.

- Bulletin 879 V- and Y-Cables: These cable splitters consolidate two terminations into a single port. With similar configuration capabilities to cordsets, the split can occur right at a receptacle with a V-cable or at a pre-determined distance with a Y-cable.

- Bulletin 898 Distribution Boxes: These passive junction boxes lower labor costs by reducing installation and troubleshooting time. Distribution boxes reduce the number of terminations needed to be made in a cabinet.

- Bulletin 888 Receptacles: Increase your plug-and-play capabilities with easy to use receptacles. When used on panels or field devices, these solutions expedite maintenance and provide flexibility on system design.

Rockwell Automation® offers a breadth of quality Allen-Bradley® components to fit your specific needs. In order to assist you with your component selection, we offer a variety of configuration and selection tools.

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Call 1.800.223.3354 to contact your local Distributor today.
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