

Condition Sensors

Designed to Produce High-Quality Results
in a Variety of Rugged Environments



LISTEN.
THINK.
SOLVE.®

 Allen-Bradley • Rockwell Software

Rockwell
Automation

CONDITION SENSING

Rockwell Automation® offers an impressive line of Allen-Bradley® Condition Sensing products to meet virtually every application need. With models capable of detecting **pressure**, **temperature**, **flow** and **level**, Allen-Bradley® Solid-State and Electromechanical sensors and switches offer exceptional control for automatic operation of machines and processes.

APPLICATIONS

Pressure

- Pump control
- Monitoring of pneumatic/hydraulic systems
- Machine tools
- Monitoring clamping pressure
- Air compressors
- Lubricant and coolant pressures



Temperature

- Monitoring injection molding temperature
- Automotive and machine tool
- Hydraulics and batch processing
- Ovens, machine coolants and die temperatures



Flow

- Pump dry run protection
- Ideal for monitoring cooling water circulation systems and pump functionality
- Process leak, lubrication systems and filter monitoring in the beverage industry

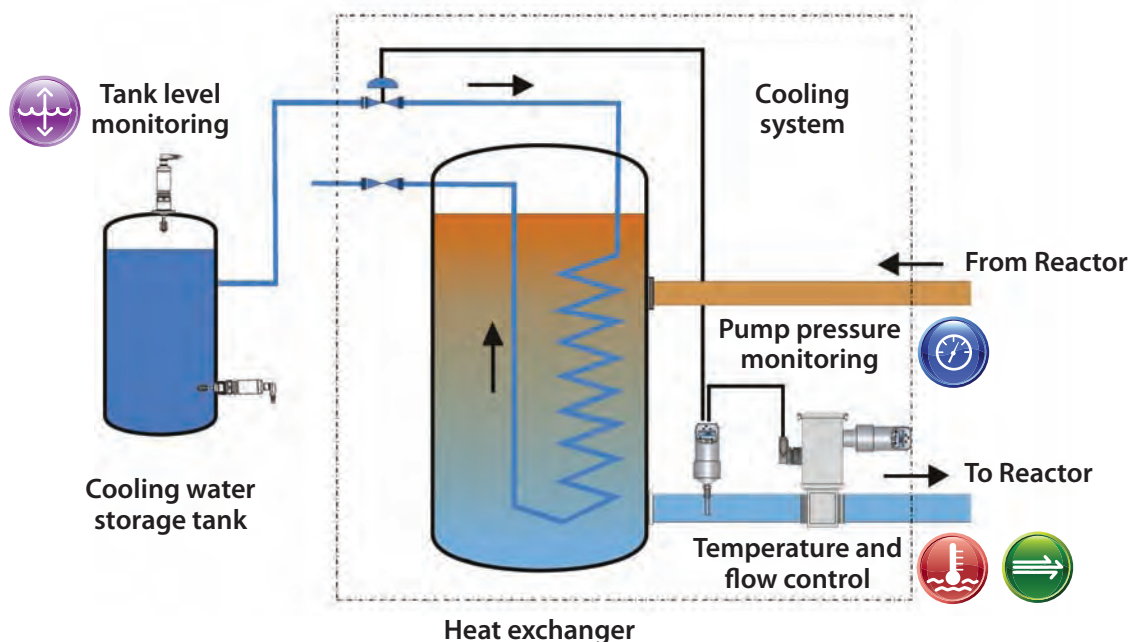


Level

- Liquid level monitoring, not affected by foam
- Filtering systems
- Coolant and lubricant tanks
- Pump protector program support
- Overspill protection and leakage monitoring



The illustration below demonstrates measurement of **pressure**, **temperature**, **flow**, and **level** using solid-state condition sensors to monitor a cooling circuit.



Rockwell Automation® knows Condition Sensing controls are vital components in today's control systems. High-accuracy, new technology, and rigid standards are combined to manufacture these reliable world-class products.

SOLID-STATE CONDITION SENSORS AND SWITCHES

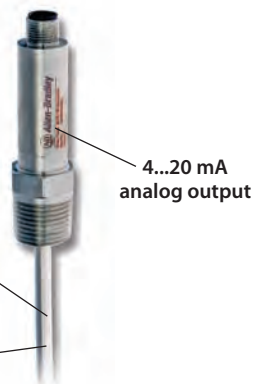


If you are looking for high accuracy, repeatability, a compact-fit and transmitter-based options, our microprocessor-based solid-state sensors are the ideal solution.

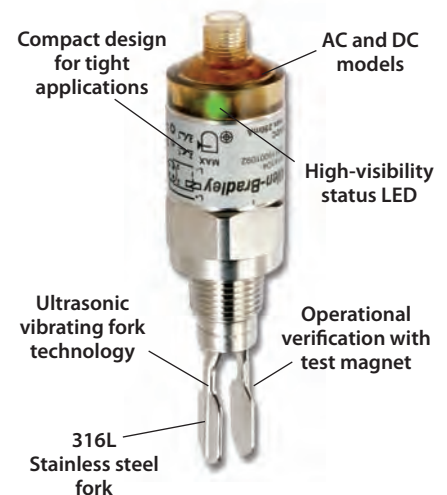
Display Model
(836E Pressure shown)



Non-display Model
(837E Temperature shown)



Level Model
(840E shown)



ELECTROMECHANICAL CONDITION SWITCHES

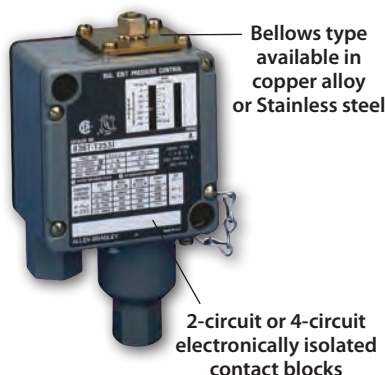


For AC loads and DC loads over 250 mA, these rugged NEMA-style electromechanical condition switches offer exceptional performance.

836 Pressure



836T Pressure



837 Temperature



PRESSURE



Solid-State 836E

Allen-Bradley® 836E pressure sensors are capable of measuring pressure of liquid, gas, vapor and dust. The product family consists of different pressure ranges from -15 to 6000 psi, offering both discrete and analog outputs. We offer a large number of process connections as well as sanitary adapters.

Display



- Rugged, corrosion-resistant 316L Stainless steel housing with IP66 enclosure rating
- Operating pressures from -15...6000 psi (gauge)
- Four-digit 14-segment digital display
- Independently programmable dual PNP NO/NC outputs or 4...20 mA analog output with single PNP NO/NC
- 316L Stainless steel sensing element
- 4x turndown in pressure sensing range using PC software
- Selectable units of measurement: kPa, psi, bar, or %

Non-display



- Rugged, corrosion-resistant 304 Stainless steel housing with IP65 enclosure rating
- Operating pressures from 0...6000 psi (gauge)
- 4...20 mA analog output
- 316L Stainless steel sensing element

Display

Pressure Ranges (psig)	Process Connections
-15...15 0...60 0...150 0...600 0...1500 0...6000	Male NPT 1/4" BSPP G 1/4" SAE 7/16"-20UNF Female NPT 1/4" BSPP G 1/4" SAE 7/16"-20UNF Sanitary Base switch 3/4" adapter 1...1.5" adapter 2" adapter
Electrical Outputs	
2PNP 1PNP + 4...20 mA	
Enclosure Rating	
IP60 up to 60 psi, IP66 for all others	

Non-display

Pressure Ranges (psig)	Process Connections
0...15 0...50 0...150 0...500 0...1500 0...6000	Male NPT 1/4" NPT 1/2" 1/2" MNPT + 1/4" FNPT BSPP G 1/2" BSPP G 1/4" Flush mount
Electrical Outputs	
4...20 mA	
Enclosure Rating	
IP65	

PRESSURE



Electromechanical 836 and 836T

Allen-Bradley® 836 Pressure Controls are designed to control or monitor the operating conditions of many types of pneumatic or hydraulic applications. When properly applied they can improve processes and systems, protect expensive equipment, and help safeguard operators. Precisely engineered for exceptional repeat accuracy, the 836T Pressure Controls are designed to meet the traditional requirements of the transportation and machine tool industries.



836

- Adjustable differential ranges from 0.2 ... 125 psi
- Copper alloy or Stainless steel bellows
- Wide variety of contact arrangements
- Standard and custom refrigeration controls available



836T

- Externally adjustable differential from 1.5 ... 3000 psi
- Bellows type available in copper alloy or Stainless steel
- Piston type actuators available with or without seal
1 ... 70 psi adjustable difference range
- Adjustable differential from 1 ... 50 psi

836

Pressure Ranges (psig)	Process Connections
30 in. Hg vac to 900 psi (Independently adjustable trip/reset and differential settings)	1/4" FNPT 3/8" FNPT 7/16"-20 SAE copper tubing
Electrical Outputs	
Non-inductive - 5A, 240V / 3A, 600V Control Circuit - AC-125 VA, 24....600V DC - 57.5VA, 115....230V Pilot Light Indicator (Optional)	
Enclosure Rating	
Open Type, Type 1, 4X, 4 & 13, 7 & 9 and 4 & 13 combination	

836T

Pressure Range	Process Connections
30 in. Hg vac to 5000 psi (Independently adjustable trip/reset and differential settings)	NPT 1/4" NPT 1/2", 1/2" MNPT + 1/4" FNPT BSPP G1/2" BSPP G1/4", Flush mount
Electrical Outputs	
2 Circuit - NEMA A600 4 Circuit - Nema B150 Pilot Light Indicator (Optional)	
Enclosure Rating	
Type 4 & 13 and 7 & 9 and 4 & 13 combination Style T - Type 1, 4 & 13, IEC IP66	

TEMPERATURE



Solid-State 837E

Allen-Bradley® Temperature sensors are capable of measuring temperature in liquids, gases and vapors in the range from -50 to 150°C (-58 to 302°F). Three different probe insertion lengths are available for Display and Non-display models.



Display

- Rugged, corrosion-resistant 316L Stainless steel housing with IP66 enclosure rating
- Media temperature range from -50...150°C (-58...302°F)
- Operating temperature from -40...85°C (-40...185°F)
- Four-digit 14-segment digital display
- Independently programmable dual PNP N.O./N.C. outputs or 4...20 mA analog output with single PNP N.O./N.C. output
- 316L Stainless steel probe
- Selectable units of measurement: °C, °F, or °K



Non-display

- Rugged, corrosion-resistant 316L Stainless steel housing with IP67 enclosure rating
- Media temperature range from -50...150°C (-58...302°F)
- Operating temperature from -40...85°C (-40...185°F)
- 4...20 mA analog output PC programmable via the M12 connector
- 316L Stainless steel probe

837E Display

Probe lengths	Process Connections
50 mm 100 mm 200 mm	Male NPT 1/4" NPT 1/2" BSPP G 1/4" BSPP G 1/2"
Electrical Outputs	Sanitary Base switch 1...1.5" adapter 2" adapter
2PNP 1PNP + 4...20 mA	
Enclosure Rating	
IP66	

837E Non-display

Probe lengths	Process Connections
50 mm 100 mm 200 mm	Male NPT 1/4" NPT 1/2" BSPP G 1/4"
Electrical Outputs	Sanitary 1...1.5" adapter 2" adapter
4...20 mA	
Enclosure Rating	
IP67	

Electromechanical 837

Allen-Bradley® 837 Electromechanical Temperature Controls are rugged, industrial-grade solutions that use vapor pressure technology to sense changes in temperature.



- Packing glands in brass and thermostat wells in either brass or Stainless steel are available
- Adjustable ranges from -60° ... +570°F
- Adjustable differential from 2° ... 87°F
- Wide variety of contact arrangements

837 Electromechanical

Probe lengths	Process Connections
Direct Immersion (Horizon and Vertical) or Remote Bulb and Capillary Sensing Element (Standard lengths - 3, 6, 12, 20 and 30-foot lengths)	NPT 1/2 & 3/4 and Direct immersion
Electrical Outputs	
Non-inductive - 5A, 240V / 3A, 600V Control Circuit - AC-125 VA, 24...600V DC - 57.5 VA, 115...230V Pilot Light Indicator (Optional)	
Enclosure rating	
Open Type, Type 1, 4X, 7 & 9, 4 & 13, and 4 & 13 combination	

FLOW



Solid-State 839E

Allen-Bradley® 839E Flow Sensors monitor and display liquid media flow rate in the range from 0.03 to 3 m/s (0.1 to 9.84 ft/s). Available with two different probe insertion lengths, this sensor is capable of measuring both flow and temperature.



- Rugged, corrosion-resistant 316L Stainless steel housing with IP66 enclosure rating
- Flow rates of liquid media (calorimetric measuring principle) in the range from 0.03...3 m/s (0.1...9.84 ft/s)
- Four-digit 14-segment digital display
- Dual N.O./N.C. programmable PNP outputs or 4...20 mA analog output with single PNP output
- 316L Stainless steel probe
- Selectable units of measurement: °C, °F, or %

839E

Probe lengths	Process Connections
30 mm 100 mm	Male NPT 1/4" NPT 1/2" BSPP G1/4" BSPP G1/2"
Enclosure rating	Sanitary Base switch 1...1.5" adapter 2" adapter
IP66	
Electrical outputs	
2PNP 1PNP + 4...20 mA	

LEVEL



Solid State 840E

Allen-Bradley® 840E level switches are microprocessor based and designed to withstand harsh industrial conditions and wash-down applications such as liquid level monitoring in tanks, containers and pipelines. Available in both AC and DC versions, these switches are not affected by foam and are immune to vibration and build-up.



- Rugged, corrosion-resistant 316L Stainless steel housing with IP66/67 rating for DC type and IP65 for AC type enclosure
- DC PNP version with M12 connector
- AC version with NPT 1/2" valve connector
- 316L Stainless steel sensing element
- On-site control via high-visibility status LED
- Discrete NO/NC level switch is based on ultrasonic vibrating fork technology
- Easy-to-install

Solid State 840E

Power supply	Process Connections
DC-PNP with M12 connector AC with NPT 1/2" valve connector"	Male NPT 1/2" NPT 3/4" BSPP G1/2"
Enclosure Rating	
IP65 (AC version) IP66/67 (DC version)	
Electrical Outputs	
NO/NC	

ACCESSORIES

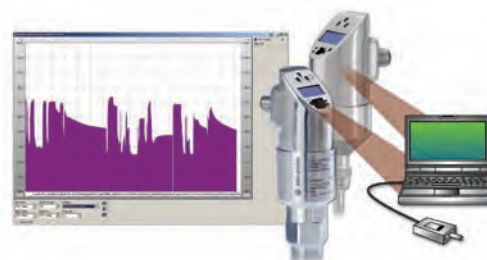
Sanitary Connections

- Ideal for Food & Beverage and pharmaceutical applications
- Available for solid-state pressure, temperature and flow sensors
- 1½" and 2" sanitary clamps (standard tri-clamp configuration) are available for the 836E, 837E and 839E models. Also a ¾" clamp is available for the 836E display sensor.
- Flush fittings for contact with consumables
- 3A approved



ReadWin 2000 Software

- Free programming software for solid-state sensors
- Quick setup for multiple sensors
- Store parameters for easy sensor replacement
- Charting feature stores and displays historical device parameters



Connectivity

Rockwell Automation® offers a complete line of Allen-Bradley® patchcords and cordsets for use with condition sensors. Refer to our *Sensors* catalog for the full range of connectivity solutions.

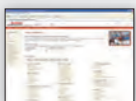


Rockwell Automation® offers a breadth of quality Allen-Bradley® components to fit your specific needs. In order to assist you with your component selection, we offer a variety of configuration and selection tools.



Local Distributor

Call 1.800.223.3354 to contact your local Distributor today.
<http://www.rockwellautomation.com/distributor/>



Condition Sensors Website

Check out our Website to learn how our Condition Sensors can help you. Connect to our online catalog from the web to perform product searches, download pages in pdf format, receive helpful installation tips and so much more.
<http://ab.rockwellautomation.com/Sensors-Switches/Condition-Sensors>



Product Selection Toolbox

Our powerful range of product selection and system configuration tools assist you in choosing and applying our products.
<http://www.rockwellautomation.com/en/e-tools/>



Catalogs

Within our catalogs you'll find an extensive selection of essential Allen-Bradley component products.
<http://www.ab.com/catalogs/>

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe/Middle East/Africa: Rockwell Automation, Vorstlaan/Boulevard du Souverain 36, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846