

Condition Sensors and Switches



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



LISTEN.
THINK.
SOLVE.®

Condition Sensing

Rockwell Automation offers an impressive line of Allen-Bradley® condition sensing products to meet your application needs. With models capable of detecting pressure, temperature, flow and level, Allen-Bradley solid-state and electromechanical condition sensing 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

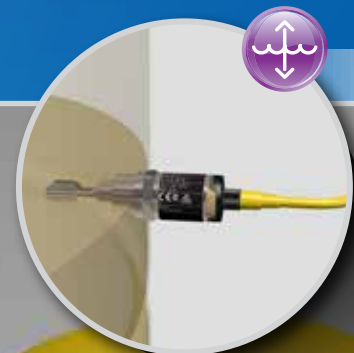
- Monitoring injection molding temperature
- Automotive and machine tool
- Hydraulics and batch processing
- Ovens, machine coolants and die temperatures

Flow

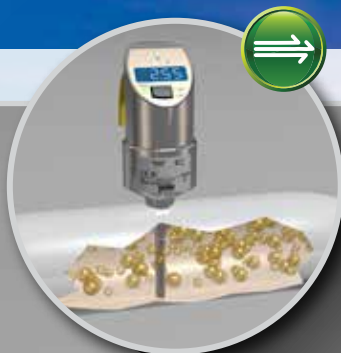
- Pump dry run protection
- Ideal for monitoring cooling water circulation systems and pump functionality
- Process leak, lubrication systems and filter monitoring in the beverage industry

Level

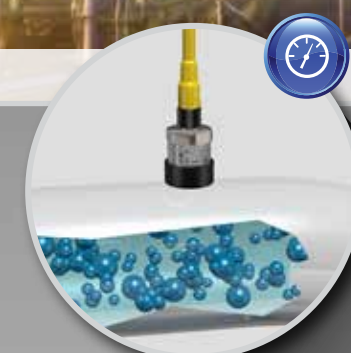
- Liquid level monitoring, not affected by foam
- Filtering systems
- Coolant and lubricant tanks
- Pump protector program support
- Overspill protection and leakage monitoring



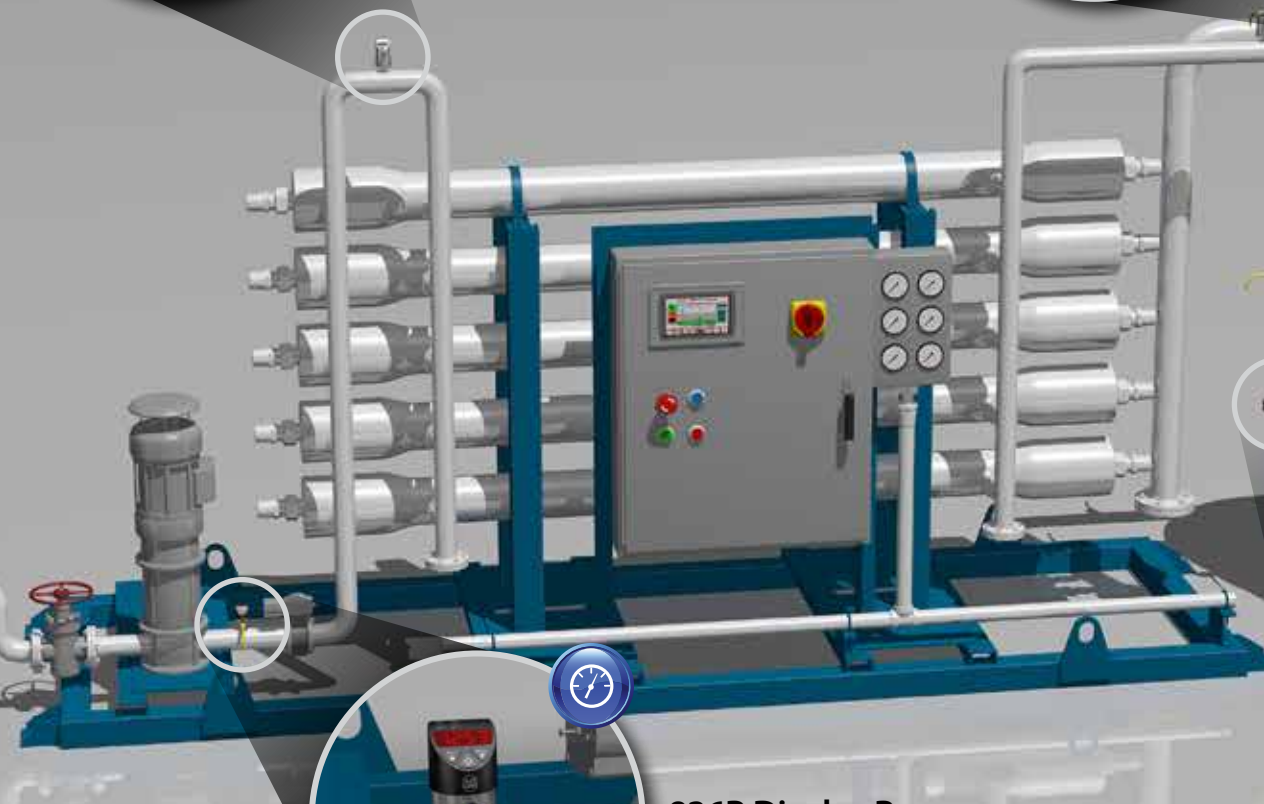
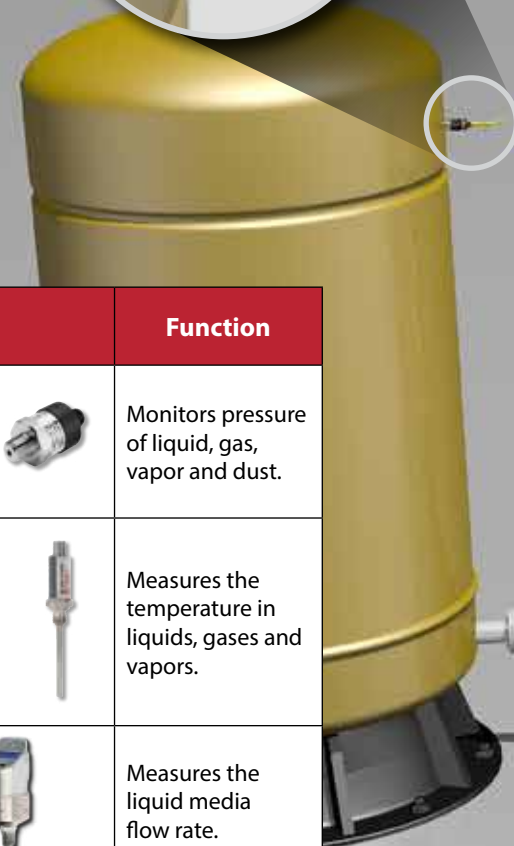
840E Level Switch



839E Flow Sensor



836P Non-Display Pressure



836P Display Pressure



837T Display Temperature

	Product	Function
	836P Solid-State Pressure Sensor Display and Non-display models	Monitors pressure of liquid, gas, vapor and dust.
	837T Solid-State Temperature Sensor Display and Non-display models	Measures the temperature in liquids, gases and vapors.
	839E Solid-State Flow Sensor	Measures the liquid media flow rate.
	840E Solid-State Level Switch	Monitors liquid leveling in tanks, containers and pipelines.

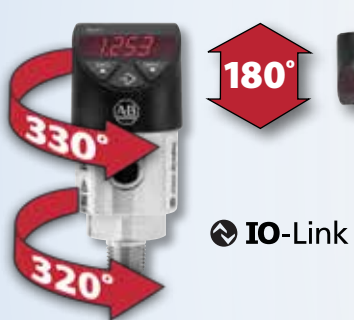
Solid-State Condition Sensors

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.

Pressure

Solid-State 836P

Allen-Bradley 836P pressure sensors are capable of measuring pressure of liquid, gas, vapor and dust. The product family consists of different pressure ranges from -1...689 bar (-14.5...10,000 psi), offering both discrete and analog outputs. We also offer a large number of process connections.




Display

- Compact design
- Wide selection of process connections
- 316L sensing element
- -1...551 bar (-14.5...8,000 psi)
- Rotatable housing and head
- Rotate display 180° via firmware
- Embedded IO-Link 1.1 communications protocol

Non-display

- Miniature housing – smallest footprint in the market
- -1...689 bar (-30 in. Hg to 10,000 psi)
- 4...20 mA



	Pressure Ranges (bar (psi))	Electrical Outputs	Enclosure Rating	Process Connections
836P Display 	Gauge: 0...551 (0...8,000) Absolute: 0...20 (0...300) Vacuum: -1...20 (-14.5...300)	2PNP, 1PNP +4...20 mA	IP65 and IP67	Male NPT 1/4", BSPP G 1/4", G 1/2"B, SAE 7/16"-20UNF Female NPT 1/4", BSPP G 1/4", SAE 7/16"-20UNF Sanitary* 1 1/2" Tri-Clamp 2" Tri-Clamp
836P Non-display	Gauge: 0...689 (0...10,000) Absolute: 0...20 (0...300) Vacuum: -1...20 (-30 in. Hg...300)	4...20 mA	IP67	Male NPT 1/4", SAE 7/16" - 70UNF BSPP G 1/4" Female NPT 1/4", BSPP G 1/4", G 1/2"B

* Available Summer 2016.

Temperature

Solid-State 837T

Allen-Bradley 837T temperature sensors are capable of measuring temperature in liquids, gases and vapors in the range from -50 to 250°C (-58 to 482°F). Several different probe insertion lengths are available for display and non-display models.



Display

- Rugged, corrosion-resistant housing
- 304 stainless steel
- Media temperature range from -20... 80°C (-4...178°F)
- Operating temperature from 40... 85°C (-40...185°F)
- Four-digit 14-segment digital display
- 316Ti stainless steel probe
- Embedded IO-Link 1.1 communications protocol




Non-display

- Rugged, corrosion-resistant housing
- Media temperature range from -50...250°C (-58...482°F)
- Operating temperature from -40... 85°C (-40...185°F)
- 316Ti stainless steel probe




837RTD Remote Temperature Probe

- Tough, stainless steel housing with IP67 enclosure rating
- Compact design
- Measuring ranges from -50...200°C (-58... 392°F)
- High vibration resistance

	Probe Lengths (mm (in.))	Electrical Outputs	Enclosure Rating	Process Connections
837T Display 	25 (0.98), 50 (1.96), 100 (3.93), 150 (5.90), 200 (7.87), 250 (9.84), 350 (13.77)	2PNP, 1PNP +4...20 mA	IP65 and IP67	Male NPT 1/4", NPT 1/2" BSPP G 1/4", BSPP G 1/2"
837T Non-display	50 (1.96), 75 (2.95), 100 (3.93), 120 (4.72), 150 (5.90), 200 (7.87), 250 (9.84), 300 (11.81), 350 (13.77), 400 (15.74)	4...20 mA	IP67	NPT 1/4" BSPP G 1/2"
837RTD Remote Temperature Probe	28 (1.10), 30 (1.18), 40 (1.57), 50 (1.96), 60 (2.36), 65 (2.55)	-	IP67	NT 1/4", G 1/4"

What is IO-Link ?

When it comes to linking end point devices on the plant floor to The Connected Enterprise, Rockwell Automation offers a wide range of smart IO-Link enabled sensors that deliver information, advanced functionality and flexibility. All this while increasing efficiency machine- and plant-wide. Through IO-Link you can access all sensor configuration parameters, process data and diagnostics while monitoring your machine's health as it runs. Plus, IO-Link simplifies setup and commissioning while offering enhanced flexibility for your current – and future – processes.

 Look for this symbol for IO-Link enabled sensors



Solid-State Condition Sensors

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 %

	Probe Lengths (mm (in.))	Electrical Outputs	Enclosure Rating	Process Connections
839E	30 (1.18), 100 (3.94)	2PNP,1PNP +4...20 mA	IP66	Male NPT 1/4", NPT 1/2" BSPP G1/4", BSPP G1/2"

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

	Power Supply	Electrical Outputs	Enclosure Rating	Process Connections
Solid State 840E	DC-PNP with M12 connector AC with NPT 1/2" valve connector"	NO/NC	IP65 (AC version) IP66/67 (DC version)	Male NPT 1/2" NPT 3/4" BSPP G1/2"

Electromechanical Condition Sensing Switches

Pressure

836 Pressure and 836T Pressure

Allen-Bradley 836 and 836T electromechanical pressure controls are rugged, reliable NEMA-style switches that offer exceptional performance for AC loads and DC loads over 250 mA.



- Adjustable differential ranges from 0.2...125 psi (0.01...8.62 bar)
- Copper alloy or stainless steel bellows
- Standard and custom refrigeration controls available



- Externally adjustable differential from 1.5...3000 psi (0.10...206.84 bar)
- Bellows type available in copper alloy or stainless steel
- Piston type actuators available with or without seal

	Pressure Ranges (psi (bar))	Electrical Outputs	Enclosure Rating	Process Connections
836 Pressure	30 in. Hg vacuum to 900 (-1.02 to 62.05) Independently adjustable trip/reset and differential settings	Non-inductive 5A, 240V / 3A, 600V Control Circuit AC-125 VA, 24...600V DC - 57.5VA, 115...230V Pilot light indicator (optional)	Open Type, Type 1, Type 4 & 13, Type 4X, Type 7 & 9 and 4 & 13 combination	1/4" NPTF 3/8" NPTF 7/16"-20 SAE Flare for 1/4" copper tubing
836T Pressure	30 in. Hg vacuum to 5000 (-1.02 to 344.74) Independently adjustable trip/reset and differential settings	2 circuit - NEMA A600 4 circuit - NEMA B300/R300. Pilot light indicator (optional)	Style T - Type 1, 4 & 13 Industrial IP66, Type 7 & 9 and 4 & 13 combination Style D - Type 1, 4 & 13 Industrial IP66	1/4" NPT, 1/2" NPT 1/4" NPTF Internal, 3/8" NPTF Internal, SAE 7/16 -20 UNF-2B SAE 9/16 -18 UNF-2B

Temperature

837 Temperature

Allen-Bradley 837 electromechanical temperature controls are rugged, industrial-grade solutions that use vapor pressure technology to sense changes in temperature.



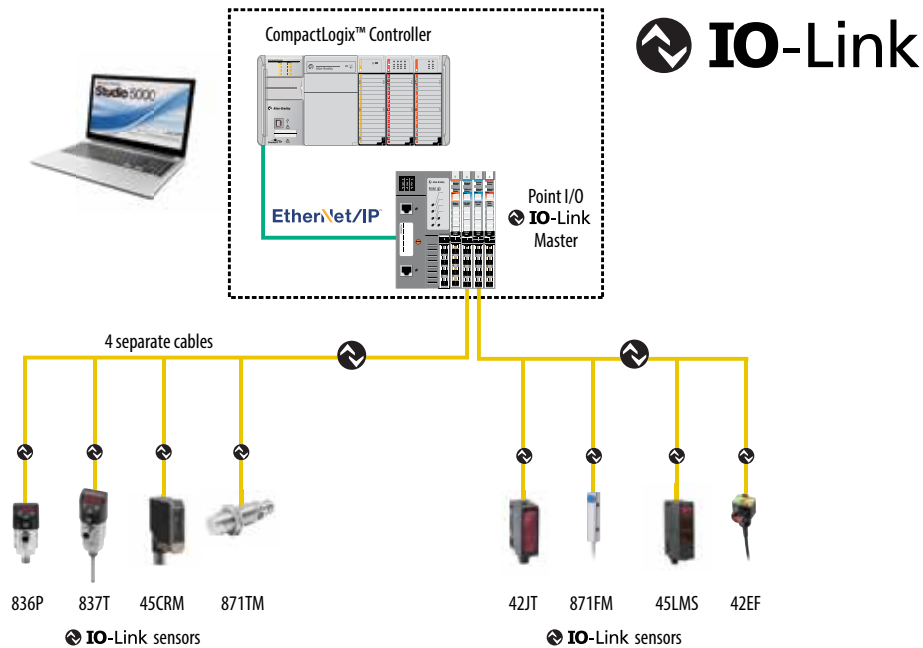
- Adjustable temperature ranges from -60...+570°F (-51.1...+298.9°C)
- Adjustable differential from +2...+87°F (-16.7...30.6°C)
- Wide variety of contact arrangements
- Packing glands in brass and thermostat wells in either brass or stainless steel are available

	Probe Lengths (ft (m))	Electrical Outputs	Enclosure Rating	Process Connections
837 Temperature	Direct Horizontal Immersion, Direct Vertical Immersion, or Remote Bulb and Capillary with 3,6,12,20 or 30 foot capillary lengths (.9,1.8,3.7,6.1, or 9.1 meter capillary lengths)	Non-inductive 5A, 240V / 3A, 600V Control circuit AC-125 VA, 24...600V DC - 57.5 VA, 115...230V Pilot light indicator (optional)	Open Type, Type 1, Type 4 & 13, Type 4X, Type 7 & 9 and 4 & 13 combination	Direct immersion 1/2" NPTF



Our Integrated Smart Sensor Solution

When it comes to linking plant-floor devices to The Connected Enterprise, Rockwell Automation offers a wide range of smart sensors that deliver information, advanced functionality and flexibility. All this while increasing efficiency machine- and plant-wide. These Allen-Bradley sensors use IO-Link technology for visibility of field devices through our Integrated Architecture.



Local Distributor

Visit our website to find your local Distributor.
www.rockwellautomation.com/distributor



The Connected Enterprise

Learn more about the Connected Enterprise transforms real-time data, from intelligent assets and multi-disciplined control from a plant, or a remote site into actionable information.
www.rockwellautomation.com/go/lit/ce



Product Selection Toolbox

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



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