

Bulletin 931 Signal Conditioners




Technical Data



LISTEN.
THINK.
SOLVE.®

Introduction to Signal Conditioners4
 Catalog Number Explanation6
 Product Overview7
 Product Selection11
 Accessories37
 Dimensions38
 Glossary41

Product Line Overview

			
Bulletin	931-H	931-S	931-U
Type	High-Density Signal Conditioners	Standard Signal Conditioners	Universal Signal Conditioners
Features	<ul style="list-style-type: none"> Cost-effective analog signal conditioning in a high-density (6 mm wide) housing 	<ul style="list-style-type: none"> Provide solutions for a wide variety of analog signals Available in compact sizes ranging from 12.5 mm to 22.5 mm wide. 	<ul style="list-style-type: none"> Programmable— allowing the devices to be used on a wide variety of analog signals Two models are available, one housing is 12.5 mm wide, the other is 45 mm wide
Product Selection by Function Type			
Current/Voltage	Page 11	Page 14	Page 35
RTD	Page 21	Page 23	Page 35
Thermocouple	Page 24	Page 26	Page 35
Line-Monitoring	—	Page 27	—
Bridge	—	Page 32	—
Frequency	—	Page 33	Page 35
HART	Page 34	—	—

Analog Signal Conditioner Functionality

Analog Signal Conditioners are designed for use with Rockwell Automation I/O systems to provide reduced installation and maintenance costs in process applications. The products are available with two way isolation (between input and output) or three way isolation (between input, output and power).

- Isolation of analog measurement and control signals with 2 way isolation (between input and output) or 3 way isolation (between input, output and power).
- Conversion of analog signals from voltage to current. (i.e. 0...10V to 4...20 mA, etc.)
- Amplification, linearization, and transmission of low level sensor signals (i.e., mV signals from thermocouples, etc.).
- Transmission of analog signals over long distances
- Provides local display using a splitter or remote status indications and alarms via relay contact closures based on the analog signals.



Typical Applications

Analog Signal Conditioners are used wherever temperature, pressure, level, flow, weight, speed, etc. is measured and controlled as part of a continuous or batch production process. Analog Signal Conditioners help to prevent these measurements from being degraded on their way from the field to the control room by providing protection from external influences or problems that result from the installation methods used. Typical industries include power plants, steel production, water and wastewater plants, oil and gas production, and chemical processing.



Integrated Architecture

Scalable . . . Multi-disciplined . . . Information Enabled

The Rockwell Automation Integrated Architecture™ system improves your productivity and reduces total cost of ownership by providing unparalleled functionality, flexibility and scalability. Using sophisticated control, networking, visualization and information technologies, the Integrated Architecture addresses a full range of control and information needs for discrete, motion, process and batch control, drive control, and safety applications.

Analog Signal Processing

Analog signals involve the measurement of constantly changing physical operating characteristics which come in many different forms, the most common of which are temperature and pressure. These signals are often found in processes that involve harsh industrial environments or are exposed to the elements. Such environmental conditions can significantly affect the quality of the transmitted signal and are also constantly changing themselves. Additionally, such industrial processes often require that these signals are able to be accurately transmitted over long distances. For these and a variety of other reasons, analog signal conditioning is often required between the measuring instrumentation and the control system. Analog signal conditioning is a long established practice in many process industries such as oil and gas processing, pharmaceutical and chemicals industries and standardized electrical signals are normally used. Currents of 0...20 mA or 4...20 mA and voltages of 0...10 V DC are the most often specified by controls engineers.