

#### FEATURES

##### Low Cost

Compatible with Standard 4-20mA Loops

##### Broad Family

Direct Sensor Interface to Thermocouples,  
RTDs and AD590s

Loop Powered Isolator

##### High Performance

RFI Immunity

#### APPLICATIONS

Monitoring and Control

Factory Automation

Energy Management



#### GENERAL DESCRIPTION

The 2B Series is a family of low cost, two-wire transmitters. These high performance transmitters are designed for industrial environments. They provide input protection, filtering and amplification, as well as isolation and cold junction compensation for thermocouples, and excitation and linearization for RTDs. They are true two-wire transmitters using the same wiring for power and output. The load resistance is connected in series with a dc power supply and the current drawn from the supply is the 4-20mA output signal.

The 2B Series Transmitters

2B24	Loop Powered Isolator
2B52/2B53	Thermocouple Temperature Transmitters
2B57A-1	AD590 Temperature Transmitter
2B58	Linearized RTD Temperature Transmitter
2B59	Low Cost RTD Temperature Transmitter

#### APPLICATIONS

The 2B Series two-wire transmitters provide low cost, accurate and reliable measurement and transmission in a wide variety of industrial applications. These transmitters are especially useful in process control and monitoring applications where the process sensor is located remotely from the receiver. They may then be used to provide signal conditioning near the point of measurement and transmit an accurate, noise immune, high level current signal over conventional copper wires resulting in improved performance and reduced cost.

#### USER BENEFITS

Two-wire transmitters process information in the form of a 4-20mA current. In this form, the analog signal information is unaffected by noise-induced voltages, by voltage drops or by contact potentials, and it may be transmitted 2,000 feet (610 meters) or more without degradation. Since the minimum output current is 4mA, there is a clear distinction between a zero measurement and an open-circuit transmission line.

**Low Cost:** Two-wire transmitters minimize total system installation cost. Inexpensive, unshielded copper wire, usually in the form of a twisted wire pair, may be used for signal transmission. DC power is furnished to the transmitter over the same two-wire line by a power supply at the receiving end. Since the transmitter may be close to the sensor, long runs of expensive shielded sensor wire are unnecessary. In addition, a number of wire pairs may be bundled together in cables without cause for concern about crosstalk between channels.

**High Noise Rejection:** Internal filtering circuitry in the transmitter eliminates errors caused by RFI/EMI and line frequency pickup.

**High Isolation (2B24 and 2B52):** Input to output isolation eliminates ground loop errors in installations requiring grounded sensors and permits direct transmission of signal to receiver where high common-mode voltages may exist.

**Environmental Protection:** High quality electronic components, protective coating and mechanical packaging combine to provide a high degree of reliability and protection against temperature, humidity and noise interference.