

June 2023

## Description

The versatile SIX can be used as a signal isolator, converter, and repeater. Ideal for installation in the plant and control room, the 2-wire (loop-powered) SIX derives its power from the process loop, eliminating the need to install an additional power supply.

**Isolator**—The SIX provides total isolation between the signal from a non-isolated transmitter and a receiving device. This eliminates faulty readings in process measurement and control equipment caused by ground loops, motor noise, and other electrical interference.

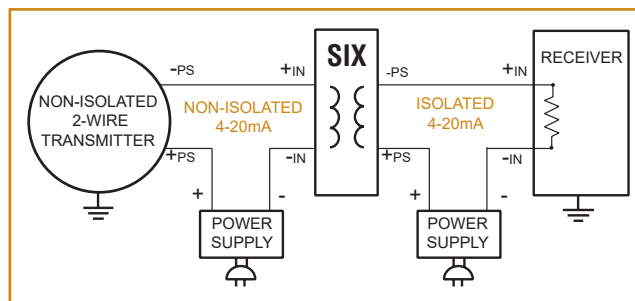
**Converter**—Acting as a precise interface, the SIX allows transmitters, transducers, controllers, recorders, and control systems with dissimilar signals to communicate with one another.

**Repeater/Diverter**—The SIX can be used to increase drive capability to a process loop, allowing installation of additional instruments on the loop. The SIX also is excellent for “diverting” a secondary signal from a process loop to a recorder, indicator, or other similar device.

### Solves “Bucking Power Supplies”

Many plants encounter problems when trying to interface a DCS with a 4-wire (line-powered) transmitter. Both units are supplying power to the same loop, which results in “Bucking Power Supplies” and a non-functioning loop. If neither power supply can be eliminated, install a SIX between the two. It operates with powered inputs from both sides, thus restoring normal operations to the loop.

**Figure 1.** The SIX provides isolation between a non-isolated transmitter and a receiving device.



The SIX's DIN-style housing mounts quickly and easily on G-type and Top Hat rails. Removable terminal blocks speed installation and maintenance.

## Features

- **Stops ground loops.** Complete isolation stops ground loops from affecting the integrity of a transmitted process signal.
- **Wide range of inputs and outputs.** Available models offer input and output combinations to handle common and unusual applications.
- **Low current impedance/high drive capability.** The SIX's exceptionally low 50 ohms (for 4-20mA input) impedance doesn't load existing loops and regenerates signals.
- **RFI/EMI protection.** Inherent 10V/m immunity protects the SIX in most applications. For especially noisy environments, choose the -RF option which provides superior 20V/m protection.

### Certifications



**Underwriter's Laboratories:** Ordinary (non-hazardous) or Hazardous Locations\* Class I, Division 2, Groups A, B, C & D T4



**CE Conformant** EMC Directive 2014/30/EU – EN 61326

\*Certification not applicable to models equipped with the -RF option.

# SIX

2-Wire Signal  
Isolator/Converter

## Specifications

### Performance

**Accuracy:** ±0.1% of span  
**Linearity:** ±0.1% of span  
**Isolation:** WITHOUT -RF OPTION:  
 1500Vrms between input and output; WITH  
 -RF OPTION: 500Vrms between input and  
 output  
**Maximum Input Overrange:** Current Inputs  
 250% of full scale; DC Voltage Inputs, 150%  
 of full scale  
**Input Impedance:** 50 ohms for 4-20mA  
 and 0-20mA inputs; 1.0Mohms for voltage  
 inputs 10V and below; see Input section for  
 additional ranges  
 Add 20 ohms for 50mA input  
**Frequency Response:** -3dB at 10Hz

### Performance (continued)

**Load Capability:**  $\frac{V_s - 12V}{0.02A} = \text{ohms}$

**Output Current Limiting:** 25mA typical;  
 30mA maximum

**Power Supply Effect:** <0.05% of span  
 over the full power supply range

**RFI/EMI Protection:** Less than ±0.1% of  
 span error when tested at 10V/m@ 20-  
 1000MHz; WITH -RF OPTION: Less than  
 ±0.1% of span error when tested at 20V/m  
 @80-1000MHz, 1kHz AM

**Output Tracking:** Assuming 4-20mA input  
 and 4-20mA output, the isolator output will  
 follow the input below 3mA when the input  
 fails.

### Ambient Temperature

**Operating Range:** -40°C to +85°C  
 (-40°F to +185°F)

**Storage Range:** -40°C to +85°C  
 (-40°F to +185°F)

**Ambient Temperature Effect:** ±0.007%  
 of span/°C typical; ±0.015% of span/°C  
 maximum

### Adjustments

**Type:** External multitrurn potentiometers

**Span:** ±10% of span

**Zero:** ±5% of span

### Weight

190g (6.7 oz)

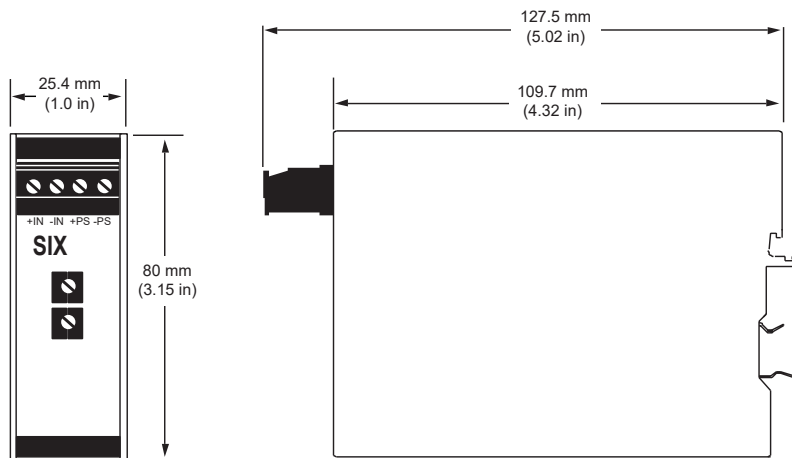
## Ordering Specifications

Unit	Input	Output	Power	Options	Housing	
<b>SIX</b>	-1MATO+1MA 0-1MA 0-20MA 4-12MA 12-20MA 4-20MA 10-50MA 0-50MV 0-100MV 0-200MV 0-500MV	-10VTO+10V 0-1V 0-2V 0-5V 0-10V 0-30V 0-50V 0-100V 0.2-1V 1-5V	<b>4-20MA</b> into 600 ohms with 24Vdc power supply <b>10-50MA</b> into 600 ohms with 42Vdc power supply	<b>12-42DC</b> (loop- powered on output side)	<b>-BI</b> Bailey input (must be specified with -10V To +10V input type) <b>-RF</b> Enhanced RFI/EMI filtering provides 20V/m@ 20-1000MHz, 1kHz AM protection with less than ±0.1% of span error <b>-VTD</b> Standard Factory Calibration with NIST Test Data Report	<b>DIN</b> DIN-style housing mounts on 32mm G-type (EN50035) and 35mm Top Hat (EN50022) rails <b>FLB2</b> Externally- mounted flange provides a secure mount and ensures resistance to vibration

**To order, specify:** Unit / Input / Output / Power / Options [Housing]

**Model Number Examples:** SIX / 4-20MA / 4-20MA / 12-42DC / -RF [DIN]

**Figure 2. Installation Dimensions and Terminal Designations.**



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