



PROTECTION & RELIABILITY
OPTIMIZATION INSTRUMENTS

A CTC COMPANY

P R O D U C T M A N U A L

SC901 Series



Hazardous Area, Factory Set Vibration Signal Conditioners

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FIGURES

Introduction

This document contains information on the operation, installation and maintenance of the SC901 Series Signal conditioner for Hazardous Areas.

The SC901 Series signal conditioner accepts input from an accelerometer, amplifies and filters the signal, then outputs the data in an analog, 4-20 mA format.

Product Selection Guide

SC901 Series Selection Guide

SC901 - - - - -

Input Source	Full Scale Range	Full Scale Units		High Pass Filter		Low Pass Filter	
100A = 100 mV/g Accelerometer	001 = 0-1	I = IPS	P = Peak	002 = 2 Hz	100 = 100 Hz	050 = 50 Hz	01K = 1000 Hz
050A = 50 mV/g Accelerometer	002 = 0-2	M = mm/s	R = RMS	005 = 5 Hz	200 = 200 Hz	070 = 70 Hz	02K = 2000 Hz
500A = 500 mV/g Accelerometer	005 = 0-5			010 = 10 Hz	500 = 500 Hz	100 = 100 Hz	05K = 5000 Hz
	010 = 0-10			020 = 20 Hz	01K = 1000 Hz	200 = 200 Hz	20K = 20000 Hz
	020 = 0-20			050 = 50 Hz		500 = 500 Hz	
	050 = 0-50						
	100 = 0-100						

Example: SC901-100A-002IR-010-01K (standard ISO configuration)

Figure 1 – SC901 Series Selection Guide

FIGURES

Specifications

Environmental

- Operating Temperature Range: -40°F (-40°C) to 176°F (80°C)
- Humidity range: 0-95% Relative, Non-Condensing.

Electrical

- Power: 20-32 VDC unregulated.
- 8 pole low pass and high pass Filter.
- Filter roll off is better than 42 dB/octave.
- Accepts mV Input
- Filters the signal
- Normalizes the output to the specified full scale output.
- Performs a true RMS conversion
- Transmits this data in a 4-20 mA Analog Output format.

Physical

- 35mm DIN Rail Mountable
- Overall Dimensions: 3.1"high x 1.8" wide x 4.6" deep.

SECTION 2: INSTALLATION

Description

The conditioner is housed in a plastic enclosure suitable for 35mm-din rail/surface mounting (*Figure 2*). On the front of the conditioner are electrical connectors (WAGO 237 series positive force terminal blocks) for the ± 24 VDC input and \pm analog output, in addition to a transducer output BNC connector, and electrical connectors (WAGO 237 series positive force terminal blocks) for the \pm signal output and \pm sensor input. There is also a green indicator light (Sensor OK) which illuminates when the transducer is properly connected to the conditioner and working correctly. A user adjustable ZERO adjustment is located on the front panel for calibration, if required.

The conditioner contains an input conditioning circuit, a gain circuit to normalize the input to 2 V full scale, a high-pass and low-pass filter, a true RMS-to-DC converter, and a 4-20 mA generator. A buffered output connection allows the user to connect across the vibration sensor for on line vibration analysis and testing of the sensor.

SECTION 2: INSTALLATION

Mounting Instructions

The conditioner case is designed for quick mounting to a 35mm din rail. The case can be surface mounted via optional mounting feet.

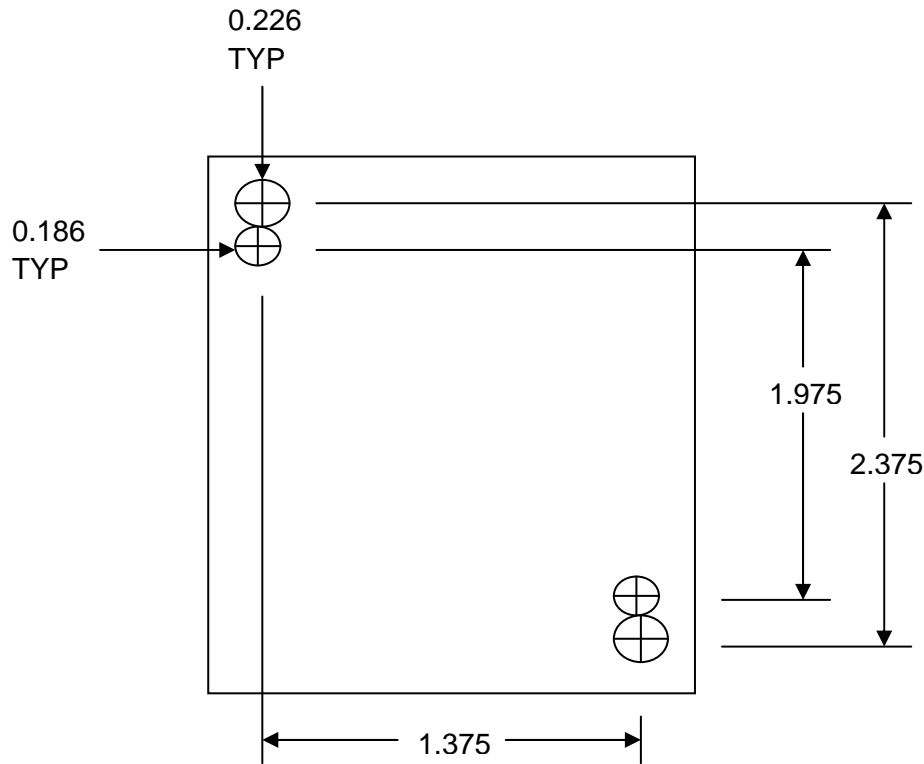


Figure 2 - Mounting Dimensions

Electrical Connections

1. Connect the 24 VDC input power to the two connectors (24 VDC INPUT \pm) on the top front of the signal conditioner.
2. Connect the cables from the transducer to the SENSOR INPUT \pm connectors at the bottom front of the signal conditioner. If power and transducer are connected correctly, the green XDCR OK light will go on.
3. Connect the desired vibration monitoring test equipment to either the *SIGNAL OUTPUT \pm connector, *BNC SIGNAL OUT connector, or *ANALOG OUTPUT \pm connector.

SECTION 2: INSTALLATION

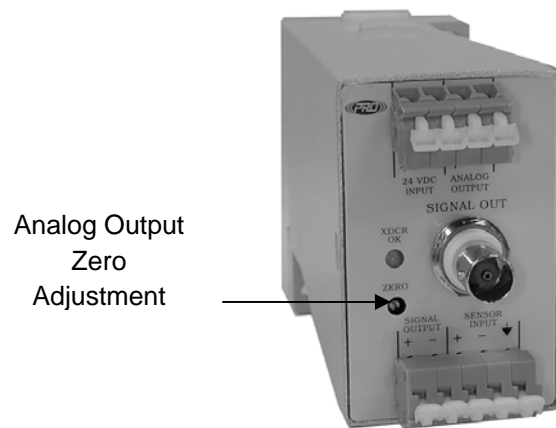


Figure 3 - Front Panel

SIGNAL OUTPUT \pm is an unfiltered connection showing the raw signal from the transducer.

BNC SIGNAL OUT serves the same function as the SIGNAL OUTPUT \pm connection.

ANALOG OUTPUT \pm is the filtered connection with a 4-20 mA signal proportional to full scale output.

SECTION 3: OPERATION

Operating Procedure

To operate the Signal conditioner, make sure that all wires are properly connected, then apply power.

CAUTION: Make sure that power input does not exceed specified limits or damage to the system may result.

Make sure the green Sensor OK light is illuminated.

If using BNC Signal Output interface with a portable data collector that supplies constant current power, turn the power supply off in the data collector prior to collecting data.

Analog Output Zero Adjustment

This section contains test setup and procedures for adjusting the zero. The zero adjustment has been factory set and normally requires no adjustments. If an adjustment becomes necessary, it can be accomplished as described below. For a current output during setup, monitor the output with a DC current meter connected to the output. A minimum series load resistor of 50 ohms should be used (maximum load resistor is 1 K). For the voltage output, monitor the output with a DC voltmeter.

1. Remove transducer input.
2. Adjust the ZERO ADJUST for a 4.00 mA reading.

SECTION 4: TROUBLESHOOTING

Common Problems

Blinking green sensor “OK light” indicates that sensor is not attached. Check sensor and cable connections.

Note: For specific problem resolution, please call an Applications Engineer at 1-800-999-5290.

S E C T I O N 5 : M A I N T E N A N C E

Maintenance

Once the (product) has been installed, minimal maintenance will be required. Basic visual checks to ensure integrity should be made periodically.

General

There are no customer replaceable parts. The (product) has been designed for trouble – free service under normal operating conditions.

Warranty

If any PRO product should ever fail, we will repair or replace it at no charge, as long as the product was not subjected to misuse, natural disaster, improper installation or modification which caused the defect.