IQ920

Fixed step mV/V and variable output load cell simulator

Manual – English 1.00

Introduction

The IQ920 is a portable load cell simulator that generates fixed calibrated mV/V output step signals as well as a variable output that can be used to test, troubleshoot and calibrate load cell installations.

The IQ920 has an equivalent bridge impedance of 350 Ohms and can generate a fixed mV/V output signal between 0 and +3.5mV/V. The IQ920 also provides a variable output between -3.5 and 3.5mV/V via a 10 turn potentiometer. The IQ920 is a passive simulator for use with both DC or AC excitation up to 15V.

Its high accuracy is due to very stable temperature compensated resistors which are also epoxy sealed to provide additional protection against the environment.

1 Features

- **Portable on site passive load cell simulator**
- **Generates fixed calibrated mV/V output steps as well as a variable output that can be used to test, troubleshoot and calibrate load cell installations**
- **Eight calibrated fixed step outputs from 0mV/V to 3.5mV/V in 0.5mV/V steps**
- **Provide a variable output from -3.5mV/V to +3.5mV/V via a 10 turn potentiometer**
- **Equivalent bridge impedance of 350Ohms**
- **Binding posts accept banana plugs or 14 gauge wire**
- **Accepts excitation voltage up to 15Vac/dc**
- **Bi-color LED to indicate the presence of DC polarity excitation or AC excitation**
- **Uses very stable temperature compensated resistors which are epoxy sealed for additional protection against the environment**
- **1 year limited warranty**

2 Specifications

Enclosure:	
Unit Dimensions	121x85x56mm (4.76x3.34x2.2") (To top of binding posts)
Electrical:	
Maximum excitation voltage	15Vdc or ac (RMS)
Bridge Impedance	350 Ohms
Fixed Output range	0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5mV/V
Variable output	10 turn Potentiometer -3.5 to +3.5mV/V 100ppm/$^{\circ}$C temperature coefficient
Accuracy	+-0.02% of selected range
Fixed step Temperature coefficient	5ppm/$^{\circ}$C
Binding posts	4mm Banana connectors 14 wire gauge wire Binding posts are silver plated
Bi-color LED	Green: DC Positive excitation Red: DC Negative excitation Orange: AC excitation
Operating temperature	-10°C to 40°C (14°F to 104°F), Use at 25°C for optimum accuracy
Weight	230g

3 Bi-color LED

The Bi-color LED indicates the presence of DC or AC excitation.

Green: DC Positive excitation
Red: DC Negative excitation
Orange: AC Excitation

4 Additional Notes

- **Keep the terminals clean and dry as this can cause irregular readings**
- **Allow the simulator to stabilise to ambient temperatures before using, especially if the simulator has been subjected to extreme temperatures.**
- **Clean the binding posts if they become corroded**
- **Higher accuracy is achieved at room temperature with normal humidity**
- **Calibration of the load cell simulator should be carried out yearly in order to maintain accuracy**

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5 Calibrating a load cell system

The system is connected to a load cell rated at 2mV/V with a capacity of 2000kg. The load cell certificate specifies the actual output to be 2.005mV/V.

1) Divide the load cell capacity by the load cell certificates actual output. 2000Kg / 2.005 = 997.506kg/mV

2) Calculate the weight to be expected when 2mV/V is applied to the system. Use the value calculated from step 1. 997.506 x 2 = 1995.012kg

3) Select 0mV/V on the simulator and connect it to the system

4) Calibrate the zero of the system

5) Select 2mV/V on the simulator

6) Calibrate the span of the system and enter 1995.012 (Calculated from step 2) for the span setting

7) Additional points can be calculated and checked (E.g. for linearity)

8) Remove the simulator and connect the actual load cell to the system

9) Tare the system to remove the dead weight

6 Ordering Information

IQ920 – Fixed step mV/V and variable output load cell simulator

7 Notice

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8 Warranty

This product carries a warranty for a period of one year from date of purchase against faulty workmanship or defective materials, provided there is no evidence that the unit has been mishandled or misused. Warranty is limited to the replacement of faulty components and includes the cost of labor. Shipping costs are for the account of the purchaser.

> **Note:** Product warranty excludes damages caused by unprotected, unsuitable or incorrectly wired electrical supplies and or sensors, and damage caused by inductive loads.

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