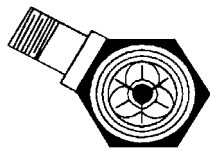


# INSTALLATION & OPERATION MANUAL

## SP714 REV. B Pulse Amplifier

DOC#: MN-714-B



**SPONSLER CO., INC.**

*Precision Industrial Flow Measuring Devices and Controls*

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## **SPECIFICATIONS**

<b>Temperature:</b>	Operating -40 to 85°C Storage -65 to 125°C
<b>Input Voltage:</b>	6-28 VDC; 5 mA @ 24 VDC Protected against polarity reversal
<b>Signal Input:</b>	Frequency 0-10 KHz Amplitude 20 mVp-p minimum sine or square wave Sensitivity field adjustable Impedance 10K @ 10KHz
<b>Output:</b>	6-28 VDC squarewave proportional to input voltage Minimum load @ 250 ohms Short circuit protection
<b>Features:</b>	Individual LED indicators for power and output signal Built in test oscillator that injects 4 Hz test signal when test P/B depressed Mounts directly on flowmeter
<b>Enclosure:</b>	FM Approved, CSA Certified Class I Groups B, C, D Class II Groups E, F, G Weight 1.7 lbs.

The SP714 is a meter-mounted device that amplifies and conditions low amplitude signals such as those developed by a magnetic pickup coil. The amplitude of the squarewave output equals the input supply voltage of the SP714. Signal amplification and conditioning permits trouble free interfacing between low amplitude signal sources and electronic devices requiring pulse inputs.

The sensitivity adjustment permits the SP714 to discriminate between an input signal and noise by increasing (CCW) or decreasing (CW) the input signal amplitude necessary to be processed as a valid signal. This, in conjunction with direct mounting, allows the SP714 to operate effectively in noisy environments.

The SP714 contains a built in test oscillator that enables the operator to verify the amplifiers operation without a signal source. The power LED illuminates when the input supply voltage is present.

## **BENCH TEST CALIBRATION PROCEDURE**

**Required Equipment:** Power Supply 6-28 VDC, Frequency Generator, Oscilloscope

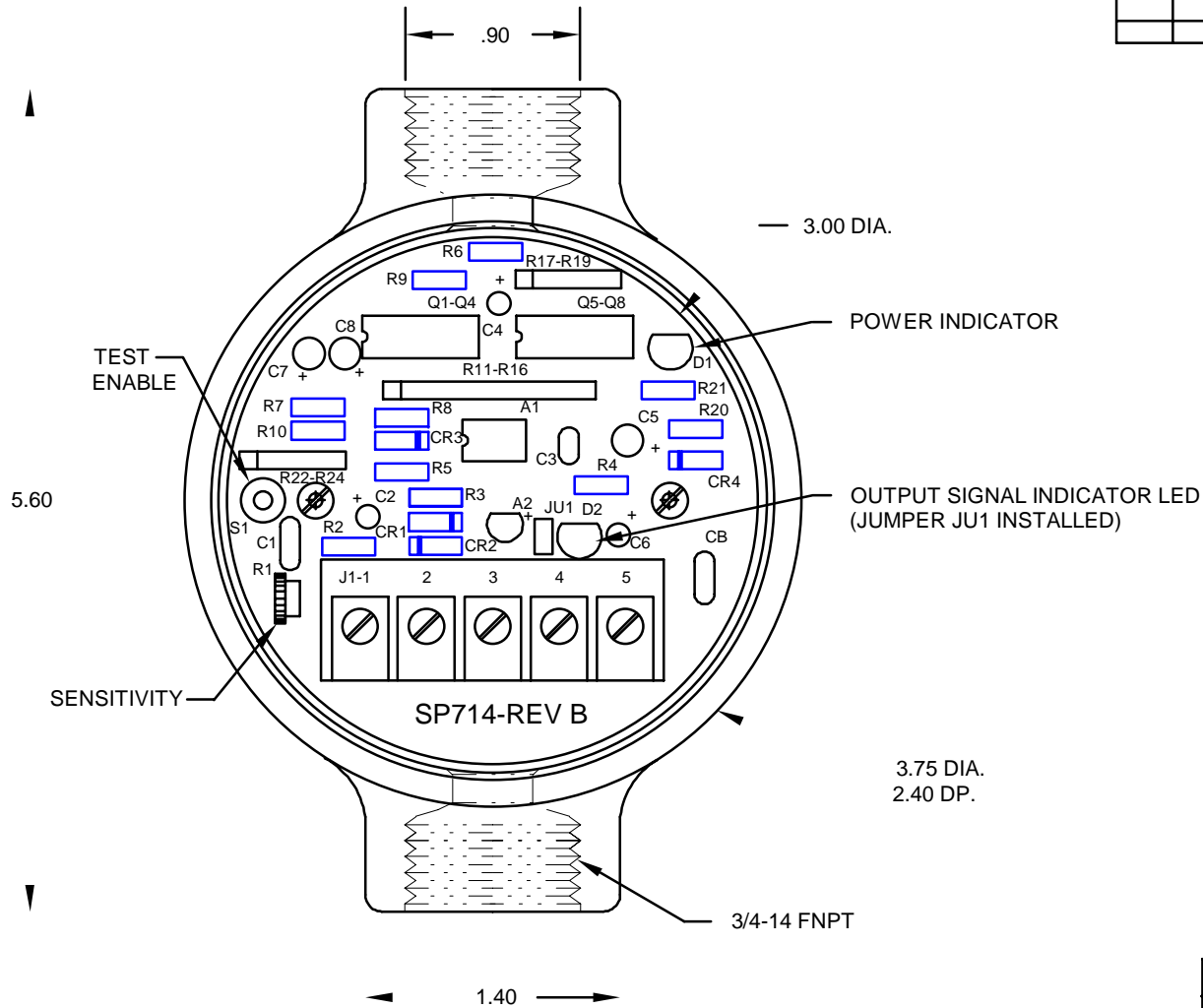
### **Test Procedure:**

- A) Connect power supply positive & negative leads to J1-3,5; Respectively
- B) Connect oscilloscope positive & negative leads to J1-4,5; Respectively
- C) Connect frequency generator positive & negative leads to J1-1,2; Respectively. Set function to sinewave, amplitude to zero
- D) Install jumper @ JU1, Set "Sensitivity" adjust (R1) to zero
- E) Turn power supply "ON", observe LED D1 illuminates and oscilloscope displays a .6V DC level maximum
- F) Depress S1, LED D2 flashes and the oscilloscope will display a 4Hz squarewave with a positive amplitude  $.6V < \text{power supply positive potential}$  and the negative amplitude will be  $.6V > \text{power supply negative potential}$
- G) Release S1, Set "Sensitivity" adjust (R1) fully clockwise. On the frequency generator set the amplitude to 20mV and the frequency between 1 to 10KHz
- H) Oscilloscope will display a squarewave at the same frequency selected in step G. The squarewave amplitude will be the same as step F.
- I) While observing the oscilloscope display, momentarily short pins J1-4 & 5 together. The oscilloscope display will be a slight squarewave with an amplitude .6 or less. When the short is removed the oscilloscope display will return to the normal amplitude squarewave.

### **Field Test:**

- A) Insure that ALL connections are correct and secure.
- B) LED D1 should be illuminated, if not check supply voltage @ J1-3,5. Note that J1-3 must be positive in respect to J1-5 to function.
- C) Install jumper JU1 if not already installed, set "Sensitivity"; R1 Mid range.
- D) Depress S1 and observe LED D2 flashes - No go; Remove wire @ J1-1 Retest, No go- replace pulse amplifier.
- E) Given proper flow exists, LED D2 should be flashing (High flow rate will make D2 appear to be illuminated steadily) If D2 is "OFF" rotate "Sensitivity" adjust (R1) clockwise until D2 illuminates. If D2 remains "OFF" check pickup coil and flowmeter.

DATE	REV	REVISION RECORD	AUTH	DR	CK



TERMINAL LOCATION

- 1 SIGNAL IN +
- 2 SIGNAL IN -
- 3 INPUT VOLTAGE +
- 4 SIGNAL OUT +
- 5 INPUT VOLTAGE -

NOTE: DIMENSIONS ARE IN INCHES

<b>SPONSLER CO. INC.</b>	
FILE NAME: \SELECT\SP714.DWG	TN
SP714 REV. B PULSE	5-5-97
	NONE
EM SP714	