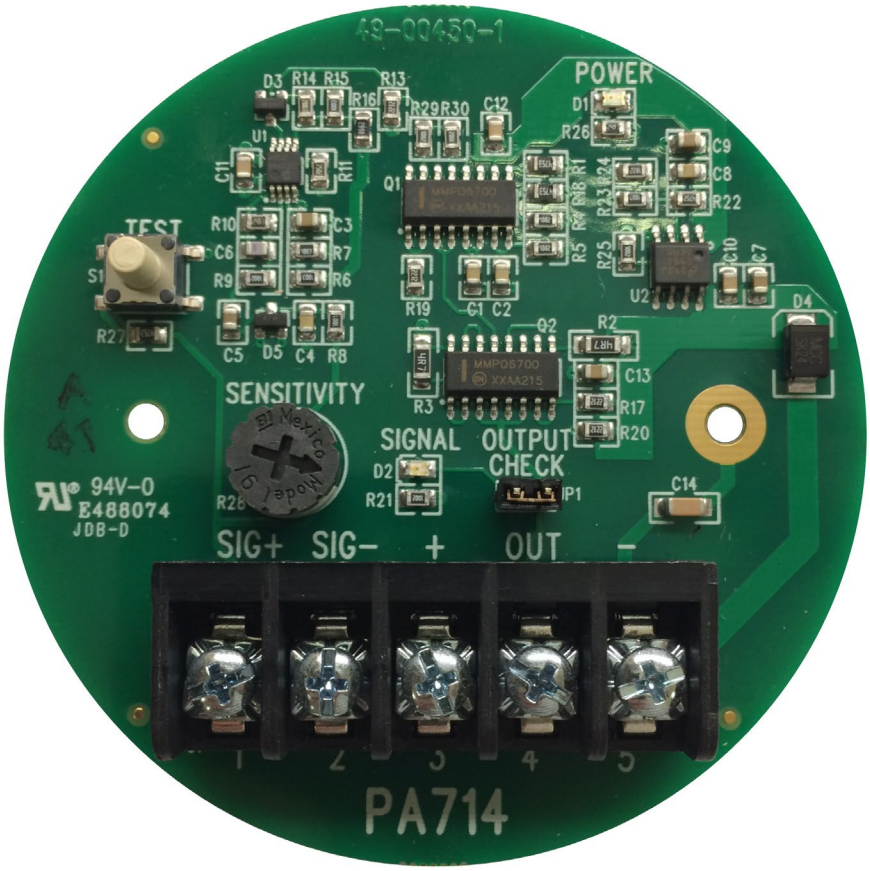
PA714
Pulse Amplifier
Installation and Operation Manual



Turbines, Inc.™

SPECIFICATIONS

Temperature: Operating -40 to 85°C
Storage -65 to 125°C

Input Voltage: 6-28 VDC; 5 mA @ 24 VDC
Protected against polarity reversal

Signal Input: Frequency 0-10 KHz
Amplitude 20 mVp-p minimum sine or square wave
Sensitivity field adjustable
Impedance 10K @ 10KHz

Output: 6-28 VDC squarewave proportional to input voltage
Minimum load @ 250 ohms
Short circuit protection

Features: 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

Enclosure: FM Approved, CSA Certified
Class I Groups B, C, D
Class II Groups E, F, G
Weight 1.7 lbs.

The PA714 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 PA714. Signal amplification and conditioning permits trouble free interfacing between low amplitude signal sources and electronic devices requiring pulse inputs.

The sensitivity adjustment permits the PA714 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 PA714 to operate effectively in noisy environments.

The PA714 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

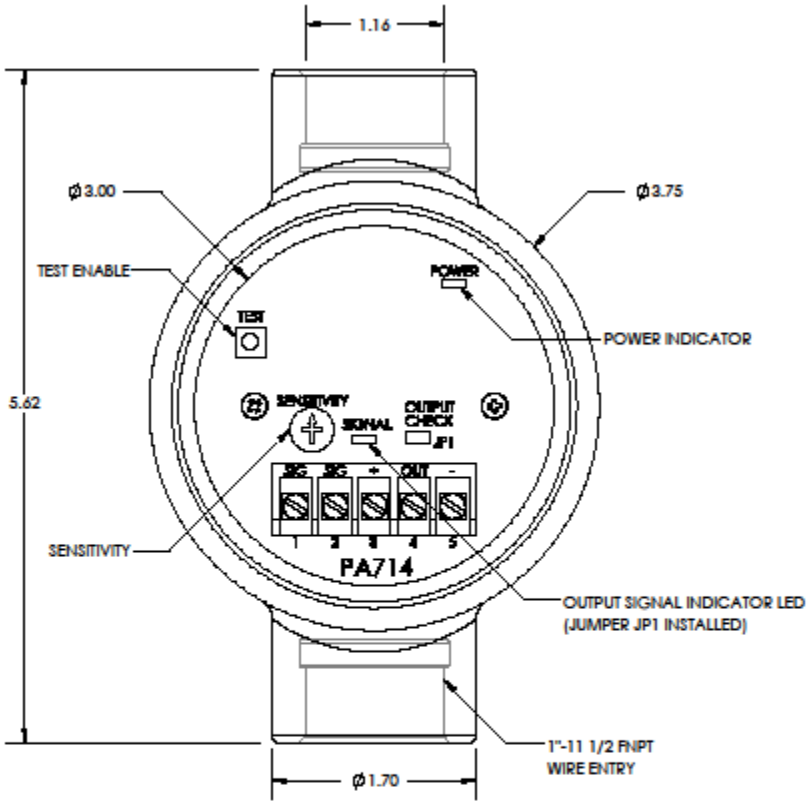
Required Equipment: Power Supply 6-28 Vdc, Frequency Generator, Oscilloscope

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**" (**R1**) fully counterclockwise
E) Turn power supply "ON", set voltage between 6-26Vdc, 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 < power supply positive potential and the negative amplitude will be .6V > power supply negative potential
G) Release **S1**, Set "**Sensitivity**" (**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 terminals 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**" (**R1**) clockwise until **D2** illuminates. If **D2** remains "OFF" check pickup coil and flowmeter.



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

REV.	DATE	ECN	APPROVAL

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DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL ±1/64"
ANGULAR: ±1/2°
TWO PLACE DECIMAL ±.010
THREE PLACE DECIMAL ±.005

MATERIAL

FINISH

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	EDWARD HUEY	4/22/21
CHECKED		
ENG APPR.		

TITLE
PA714 PULSE AMPLIFIER

R&D Turbines R & D, LLC

SIZE	DWG. NO.	REV.	LEV.
A	PA714		
SCALE:1:2	WEIGHT:	SHEET 1 OF 1	