Position Analog Transmitter

Description

The Stevens Position Analog Transmitter (PAT) accepts water level input and provides several electrical outputs, depending on external connections. The PAT is primarily a 4-20 mA input device for the Stevens AXSYS MPU, DOT Logger or DataLog$_{ic}$ 3000.

The PAT can also provide 0.2 to 1 or 1 to 5 VDC output, depending on the external barrier strip connections. When operated with Stevens instruments, the PAT obtains its power from the receiving device. If operated as a stand-alone transmitter, the user must provide power, typically from 13 to 40 VDC.

The PAT is housed in an aluminum enclosure. The cover may be removed for access to zero and span adjustments as well as the gears for major range changes.

The basic PAT consists of a float pulley shaft coupled through a pair of gears to a precision potentiometer. English or metric ranges are selected by mounting either an 18 inch or 375 mm circumference float pulley.

The output of the potentiometer drives a circuit which converts the input shaft position to a 4 to 20 mA signal. Zero and span potentiometers provide a means to set the PAT range within limits for each model. Two precision resistors permit selecting one of two voltage output ranges with jumpers on the external barrier strip.

Features

- English or metric input
- Seven adjustable ranges
- Two-wire, 4 mA current output
- Three-wire, 0.2-1 or 1-5 VDC output
- Easy barrier connections
- Rugged metal enclosure

Applications

- Industrial and hydro power applications
- Gate positioning
- Ground water level
- Stilling well monitoring
- Weir and flumes

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Since 1911, Stevens Water Monitoring Systems, Inc. has provided complete water monitoring solutions including:

- Water Level Sensors
- Water Quality Sensors
- Soil Moisture Sensors
- Chart Recorders
- Staff Gages
- Telemetry Systems
- Data Collection Platforms

Position Analog Transmitter DATA SHEET

Technical Specifications

Input

Shaft and pulley clamp to accept standard Stevens 18 inch or 375 mm circumference float pulley.

Output

4-20 mA, 0.2 to 1 or 1 to 5 VDC as selected on terminal strip.

Range

Determined by selection of gears and potentiometer (see table).

Torque

Models 1, 2 and 3: 0.3 oz-in or less.
Models 4 through 7: 0.6 oz-in or less.

Accuracy

Thermal error less than 0.05% / °C. Other errors (not including float lag and line shift errors) are less than 0.75% for Models 2 and 3 and less than 0.38% for the other four models. Accuracy calculations are based on the maximum head for any range in the adjustment band.

Operating Temperature

-40 to +70°C (-40 to +158°F).

Power Requirements

Supplied by connected Stevens instrument. When receiver type is 4-20 mA, 12.4 to 40 VDC must be supplied by the receiver or a power supply in series with the receiver. When the receiver type is 0.2 to 1 VDC, 13.4 to 40.2 VDC must be supplied by a power supply. When the receiver type is 1 to 5 VDC, 17.4 to 41 VDC must be supplied by a power supply. The voltage supplied to the transmitter must be within these ranges, after taking loop circuit resistance into account.

Humidity

To 95% relative, non-condensing. This can be improved by installing fresh desiccant in the enclosure.

Size

5.0" W x 6.4" L x 5.85" H, exclusive of mounting flanges and input shaft.

Weight

1.8 lbs (0.816 kg).

Ordering Information

ORDERING INFORMATION		
Part #	Maximum Head	Adjustable Range
45197	0.8 feet (0.2 m)	0-0.2 to 0-0.8 ft (0.05 to 0.2 m)
	2.5 feet (0.6 m)	0-0.8 to 0-2.5 ft (0.2 to 0.6 m)
	10 feet (2.6 m)	0-2.5 to 0-10 ft (0.65 to 2.6 m)
46129	18 feet (4.6 m)	0-10 to 0-18 ft (2.6 to 4.6 m)
	32 feet (8.1 m)	0-18 to 0-32 ft (4.6 to 8.1 m)
	58 feet (14.5 m)	0-32 to 0-58 ft (8.1 to 14.5 m)
	105 feet (26 m)	0-58 to 0-105 ft (14.5 to 26 m)

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