

# PWS

## Rotating Paddle Level Sensor

- Miniature size
- Simple torque adjustment
- Reliable design
- Easy maintenance and repair
- Low cost

The PWS series of miniature bin level sensors is designed for use with plastic molding or injection machines and extruders. It can also be designed into equipment such as grain processing machines

and granulating equipment. These products are the most compact units of their type and are designed to provide reliable service.

There are two standard versions of the PWS bin level sensor: the PWS-X series for indoor use, and the PWS-Z for outdoor use.

The PWS-XL is a custom made long shaft version (maximum shaft length 39 in. (1000 mm). The PWS-XT is designed to resist temperatures up to 248°F (120°C).

### ■ Operational Description

When power is applied to an PWS sensor, a motor powers a revolving shaft to which a paddle is mounted. When the material level inside the

container reaches the revolving paddle, the rotation is halted and the motor rotates around the shaft and activates an isolated SPDT microswitch. This removes power from the motor so that it stops rotating and an alarm signal is provided. When the material level falls below the paddle the motor resets and the microswitch restores the revolving action.

### ■ Specifications

#### Performance

**Detection Torque Range**

**PWS-X:** 390 to 630 g/cm

**PWS-Z:** 270 to 500 g/cm

**Output Contact Rating:** 1 SPDT, 250 V 3A AC, 30 V 3A DC (resistive)

**Motor Rotation:** 1 rpm (50 Hz) or 1.2 rpm (60 Hz)

**Impact Resistance:** 35 g max.

**Max. Cable Pull Load:** 44 lb. (196 N)

**Max. Paddle Pull Load:** 132 lb. (588 N)

**Max. Load:** 28 lbs. (13 kg) – at paddle tip

#### Electrical

**Supply Voltage:** 24, 110, 220 VAC 50/60 Hz

**Power Consumption:** 1.5 VA

#### Physical

##### Materials

##### Housing:

**PWS-X:** ADC12 and Polycarbonate (IP40)

**PWS-Z:** ADC12 and ABS (IP65)

**Mounting Section:** Brass (galvanized)

**Spindle:** 304 SS

**Paddle:** Polycarbonate or 304 SS

##### Electrical Connection

**PWS-X:** 5 conductor cable, 300 mm

**PWS-Z:** G 1/2

#### Environmental

##### Operating Temperature

**PWS-X, Z, XL, ZL:** 14 to 128°F (10 to 50°C)

**PWS-XT:** 14 to 248°F (-10 to 120°C)

**Humidity:** 5 to 85% RH

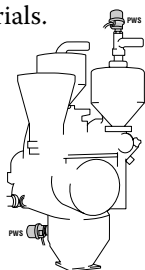
**Max. Pressure in Container:** 4.3 psi (0.3 bar)

Specifications are subject to change without notice.

## ■ Applications

The PWS series is designed for use in the plastic, chemical, food and other associated industries. It helps prevent hopper overflow, empty holding tanks, plugged chutes and damaged equipment.

An example would be a plastic pellet or powder coloring machine. The machine assures acceptable quality by accurately weighing and uniformly mixing materials. The PWS-X detects the low level in a hopper for the automatic feed control.

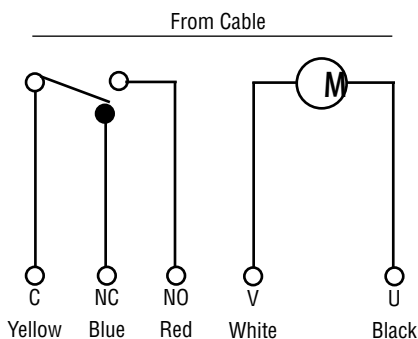


## ■ Technical Notes

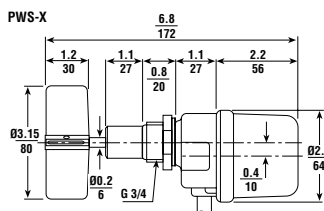
1. Detection torque can be easily adjusted on site by changing the spring position. The PWS has four torque setting (see chart below). The standard setting is "B". Adjust to "A" if there is a slight vibration on the hopper; adjust to "C" or "D" if the load is small.

	g/cm			
	A	B	C	D
PWS-X	630	560	470	390
PWS-Z	500	390	315	270

- **Wiring**

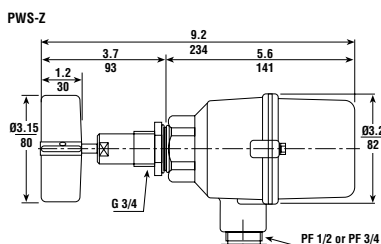


■ **Dimensions — in./mm**



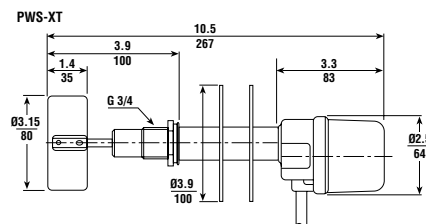
### Standard Type

- Polycarbonate paddle
- Weight: approx. 1.1 lbs. (0.5 kg)
- IP40 (indoor use)



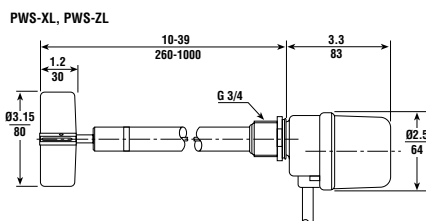
### Outdoor Type

- Polycarbonate paddle
- Weight: approx. 1.5 lbs. (0.7 kg)
- IP65 (outdoor use)



### Heat Resistant Type

- Max 248°F (120°C)
- Weight: approx. 3.3 lbs. (1.5 kg)



### Long Shaft Type

- Length: Max 39 in. (1000 mm)
- Weight: approx. 3.5 lbs. (1.6 kg)

**Note:** This drawing shows model PWS-XL only.

## ■ Ordering Information



## Configuration

- X** Indoor use (IP40) with cable (300 mm)  
**Z** Outdoor use (IP65) with terminal

## Operation

- (null)** No options  
**L** Extended shaft from 260 mm to 1000 mm  
**T** High temperature up to 120°C (PWS-Xt only)

### Supply Power

<b>A1</b>	110 VAC	<b>A4</b>	120 VAC
<b>A2</b>	220 VAC	<b>A5</b>	240 VAC
<b>A3</b>	24 VAC	<b>A6</b>	200 VAC

## Paddle Selection

<b>4</b>	<b>Four Vane</b>	PC	80 x 30 mm	More than 0.3 g/cm <sup>3</sup>
<b>2</b>	<b>Two Vane</b>	304 SS	80 x 35 mm	More than 0.3 g/cm <sup>3</sup>
<b>1</b>	<b>Single Vane</b>	304 SS	60 x 30 mm	More than 2.0 g/cm <sup>3</sup>
<b>1S</b>	<b>Special Two Vane</b>	304 SS	150 x 60 mm	From 0.02 to 0.2 g/cm <sup>3</sup>

**L** \_\_\_\_\_ Shaft Length (if required)