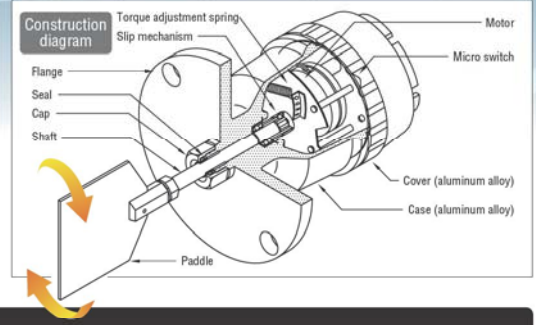


Rotary Paddle Type Level Switch

Operation Principle

When the substance being measured restricts the rotation of the paddle, the motor rotates around its axis. This activates the internal micro switch, which outputs a detection signal. At the same time, the power supplied to the motor is interrupted. (This state indicates that a detection has been made.)

When the substance being measured is no longer present and the restriction on the rotation of the paddle is removed, the force of the internal spring causes the paddle to return to its original movement. The detection signal is switched and, at the same time, the power to the motor is supplied, which makes the paddle start rotating again. (This state indicates that no detection has been made.)



Power supply voltage	100/110 VAC 50/60 Hz	DPL Type: 24 VDC \pm 10%
	200/220 VAC 50/60 Hz	
*Made-to-order	Other voltages are also available.	
Connection	Flange attachment JIS 5K 65A (aluminum) *1	
Power consumption	2.5 W	
Contact output	1C contact	PRL Type 250 VAC 5 A (resistive load) DPL Type 250 VAC 0.1 A (resistive load) PRL-Z Type 250 VAC 0.1 A (resistive load)
PRL-Z specifications	250 VAC 0.1 A	

Detection torque	Approx. 10.0 N-cm	
Slip torque	Approx. 30.0 N-cm	
Revolutions	PRL 1 RPM, DPL 2 RPM	
Material	Man unit case & flange	Die cast aluminum
	Shaft & paddle	SUS 304
	Seal	Nitrile rubber
Paddle size	Standard specs: W-1 (80 x 80 mm) *2 500/500N Type: S-1 (30 x 60 mm)	
Operating temperature	Inside tank: Max. 70°C Outside tank: Max. 55°C	

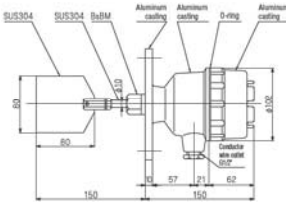
Operating pressure	Inside tank: 0 to 196 kPa	
Paint color	Munsell 10YR7.5/14	
Protection rating	IP65	
	*1 Other flange sizes and materials also available.	
	*2 Other paddle sizes also available. (See page 2)	
	Changing paddle size changes dimension L, so take careful note of detection position when selecting paddle. Selecting an F-type folding paddle will decrease dimension L by 30 mm.	
	*Small-diameter seal caps are also available to reduce the chance of blockages when detecting fine powders.	

Basic Type



PRL-100

Dimensions



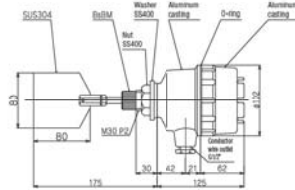
This is our most versatile model. It can be mounted on the side of the tank and used for low, mid, and high level detection.

Basic Type



PRL-101

Dimensions



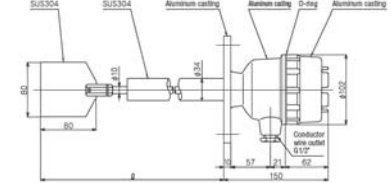
Connection: Threaded attachment M30 P2*
Dimension L is fixed. As the unit employs a threaded attachment, preparing special flanges will allow you to attach it in a variety of ways.

Protective Tube Type



PRL-101

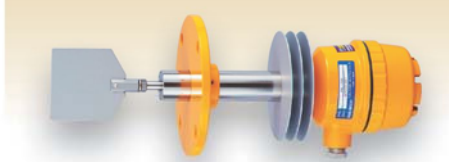
Dimensions



Standard length of dimension L: 250 mm, 300 mm, 600 mm, 1,000 mm
*Other lengths can be made in increments of 50 mm as required.
Dimension L can be made up to 2,000 mm long.

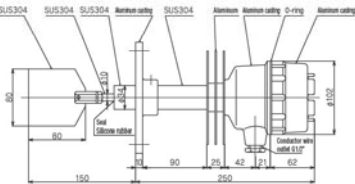
*A sliding flange model that allows dimension L to be adjusted on-site is also available. Specify maximum length required when ordering.

Heat-resistant Type



PRL-200

Dimensions



Operating temperature inside tank PRL-200 Max. 200°C
PRL-200S Max. 250°C to 400°C
Operating temperature outside tank Max. 55°C

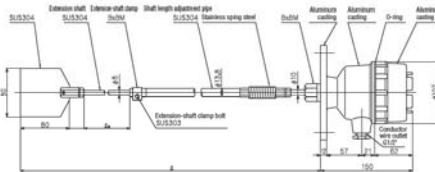
*Dimension L for PRL-200 is 150 mm.
If a longer length is required, order model number PRL-201.

Extension-shaft Type



PRL-100EB, 100ED

Dimensions



PRL-100EB dimension L 450 to 600 mm
650 to 1,000 mm
750 to 1,200 mm

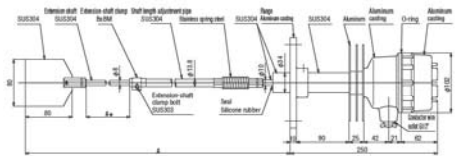
PRL-100ED dimension L 1,000 to 1,500 mm
1,200 to 2,000 mm
1,500 to 2,500 mm
1,700 to 3,000 mm

*Special model for vertical attachment.



PRL-200EB, 200ED

Dimensions



PRL-200EB dimension L 450 to 600 mm
650 to 1,000 mm
750 to 1,200 mm

PRL-200ED dimension L 1,000 to 1,500 mm
1,200 to 2,000 mm
1,500 to 2,500 mm
1,700 to 3,000 mm

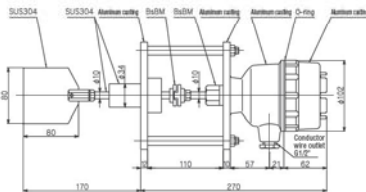
*Special model for vertical attachment.

Double Flange Type



PRL-100F

Dimensions



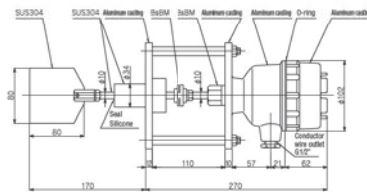
Shaft rotation can be checked visually from outside the tank. Dimension L can be made up to 2,000 mm long. Coupling parts can be made with acrylic piping for outdoor use.

Heat-resistant Double Flange Type



PRL-200F

Dimensions



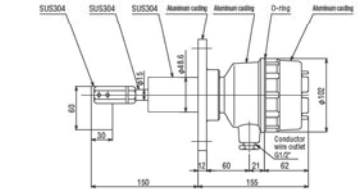
Heat-resistant up to 200°C (seal: silicone)
Models with a special paint scheme that allows rotation to be checked are also available.
Coupling parts can be made with acrylic piping for outdoor use.

Heavy Duty Type



PRL-500

Dimensions



Operating pressure: Inside tank 0 to 49 kPa

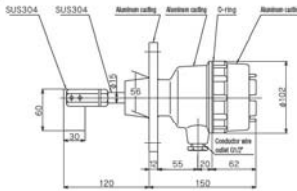
*If a longer length for dimension L is required, order model number PRL-501.
In this case the standard W-1 paddle (80 x 80 mm) is included.

Heavy Duty Type



PRL-500N

Dimensions



Operating pressure: Inside tank 0 to 49 kPa

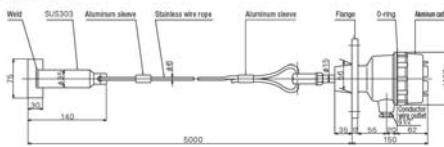
*Not available with different length for dimension L.
If a longer length for dimension L is required, select model number 501.

Mid/Low Level Type



PRL-500W

Dimensions

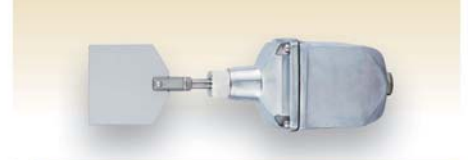


Dimension L can be made up to 10,000 mm long.

Operating pressure: Inside tank 0 to 49 kPa

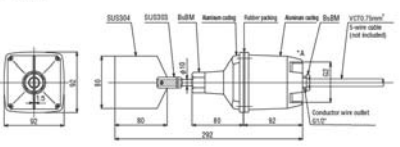
*Adjustable wire-length (clip type) models are also optionally available.
*Use for mid- and low-level detection.
*Paddle size is fixed and cannot be changed.

Suspended, Pipe-mounted Type



PRL-300

Dimensions

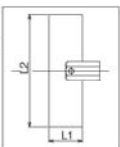


Can be used by screwing unit directly onto a pipe of your choice. Pipe must be supplied separately. Models with lead wire included are also available.
(Lead wire length must be specified in meters.)

Paddle Sizes

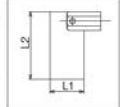
Standard paddle

Name	Size L ₁ x L ₂
W-1	80 x 80

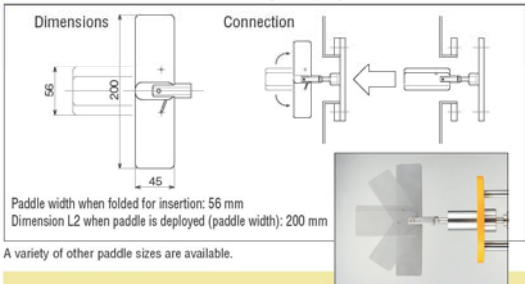


Single-bladed paddle

Name	Size L ₁ x L ₂
S-1	30 x 60
S-2	30 x 80
S-3	80 x 80
S-4	80 x 80



Drawing of F-type folding paddle (45 x 200)



Paddle width when folded for insertion: 56 mm
Dimension L₂ when paddle is deployed (paddle width): 200 mm
A variety of other paddle sizes are available.

Selecting a folding paddle facilitates attachment and removal of the unit during maintenance.

A single-bladed FS-type folding paddle 45 x 100 mm is also available.

Example Application Preventing blockages in fine powder detection and similar applications

Air purge model

When the substance being measured consists of fine particles that can easily infiltrate sealed parts, performing an air purge improves seal performance.

*Unit with air purge nozzle L-100 mm, Rc 1/4"

Restrictions apply to equipment that can be connected.

Redundant protection tube model

PRL-□□GS Type

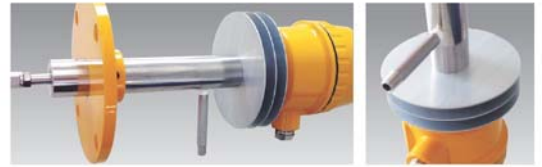
Special model with a redundant design consisting of a purge protection tube on top of a normal protection tube. The air purge is performed between the two tubes.

Blowing compressed air through the system also produces a cooling effect. (Dimension L: 500 mm or less)

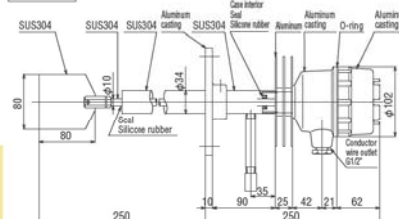
Also ideal for use in environments where blockages due to powder are common.

Others

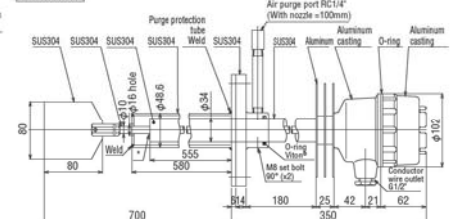
Models with overlapping seals and small-diameter caps are also available. Contact Towa Seiden for details.



Dimensions



Dimensions



Explosion-proof Rotary Paddle Type Level Switch

Standard Specifications

Power supply voltage	100 VAC 50/60 Hz
	110 VAC 50/60 Hz
	200 VAC 50/60 Hz
	220 VAC 50/60 Hz
Connection	Flange attachment JIS 5K 65A *1
Power consumption	2.5 W
Contact output	1C contact 250 VAC 5 A (resistive load)

Detection torque	Approx. 10.0 N-cm
Slip torque	Approx. 24.5 to 29.4 N-cm
Revolutions	1 RPM
Material	Main unit case & flange Die cast aluminum Shaft & paddle SUS 304 Seal Nitrile rubber

Ambient operating temperature	Use between -10°C to +40°C
Operating pressure	Inside tank: 0 to 196 kPa
Paint color	Munsell 10YR7.5/14
Pressure-resistant and explosion-proof rating	d2G4

*1 Other flange sizes and materials also available.

POINT

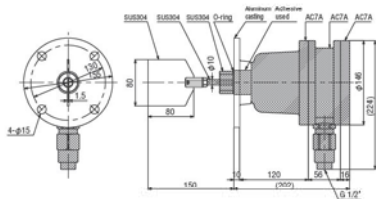
- An wiring tube cable gland is always attached to the conductor wire outlet. Specify one of the following:
Applicable cable range: $\phi 10$ to $\phi 12$, Cable gland model no.: SXC-16B-1
Applicable cable range: $\phi 8$ to $\phi 10$, Cable gland model no.: SXC-16B-2
- Wire correctly in accordance with the stipulations of explosion-proof regulations.

Basic Type



PRL-S7

Dimensions



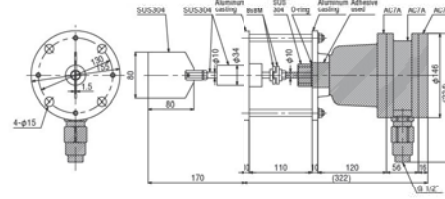
Dimension L for PRL-S7 is 150 mm.
If a longer length for dimension L is required, select the protection tube model PRL-S7-25.

Double Flange Type



PRL-F7

Dimensions



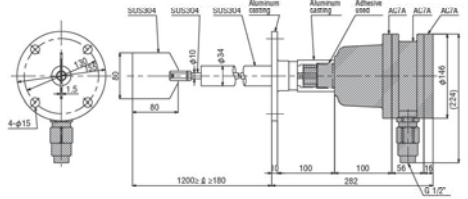
PRL-F7 is available as a heat-resistant model by changing the seal material to silicone. In this case, the model number is PRL-F7H.
PRL-F7 can also be made with acrylic piping for outdoor use. (Heat-resistant up to 200°C)

Protective Tube Type



PRL-G7-25

Dimensions



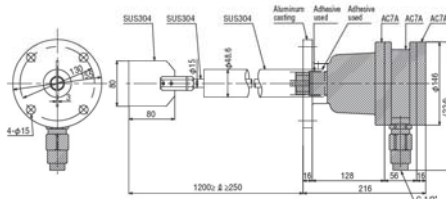
The minimum length of dimension L for PRL-G7-25 is 180 mm.
Specify this model if required length for dimension L is longer than that of PRL-S7.
Lengths can be made to order in increments of 50 mm.

Heavy Duty Type



PRL-G7-40

Dimensions



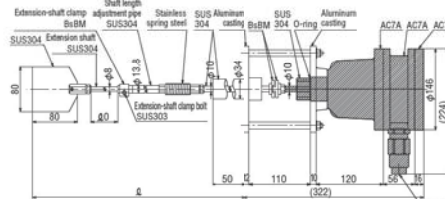
The minimum length of dimension L for PRL-G7-40 is 250 mm.
PRL-G7-40 is an improved spec, heavy duty model with a shaft diameter of 15 mm and a protection tube diameter of 48.6 mm.

Double Flange Extension-shaft Type



PRL-F7EB

Dimensions



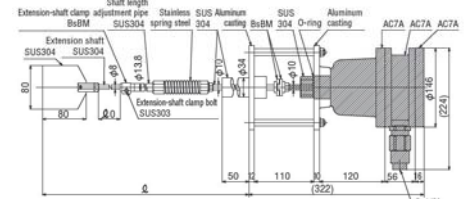
PRL-F7EB dimension L 470 to 620 mm
670 to 1,020 mm
770 to 1,220 mm

Double Flange Extension-shaft Type



PRL-F7ED

Dimensions



PRL-F7ED dimension L 1,020 to 1,520 mm
1,220 to 2,020 mm
1,520 to 2,520 mm
1,720 to 3,020 mm
Heat-resistant models are also available.

Conveyor Flow Switch

- This switch detects (monitors) the presence of a powder transported on a belt conveyor.
- As no motor is used the unit is simple and operation is stable.
- Paddle size and dimension L can be made to specified dimensions.
- Use PAF-1 for detecting flow in chutes.

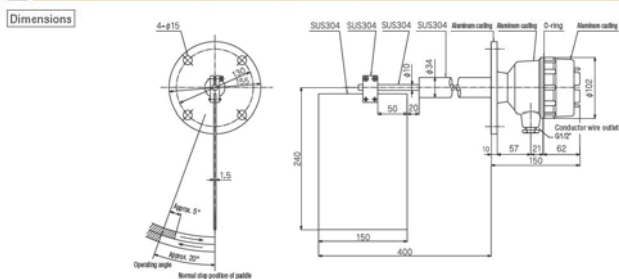
For Conveyor Use



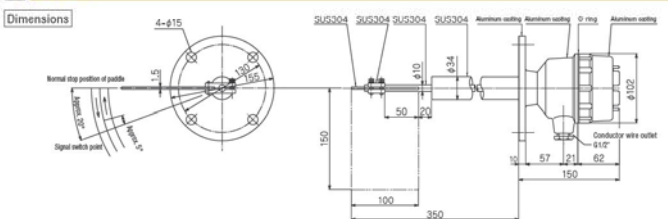
For Chute Use



PA-1



PAF-1



Conveyor Flow Switch

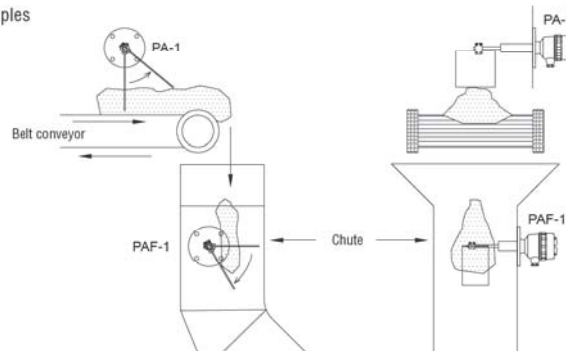
Connection	Flange attachment JIS 5K 65A
Contact output	1C contact 250 VAC 10 A (resistive load)
Operating angle	Approx. 20°

Material	Main unit case & flange Shaft & paddle Seal	Die cast aluminum SUS 304 Nitrile rubber
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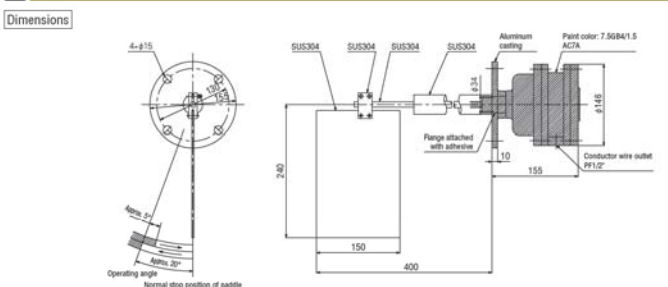
Paint color	PA-1, PAF-1 Munsell 10YR7.5/14
Protection rating	IP65

*When ordering, specify whether the paddle should move clockwise or counterclockwise when viewed from end on.

Attachment examples



PA-1E



Conveyor Flow Switch

Connection	Flange attachment JIS 5K 65A
Contact output	1C contact 250 VAC 10 A (resistive load)
Operating angle	Approx. 20°

Material	Main unit case & flange Shaft & paddle Seal	Die cast aluminum SUS 304 Nitrile rubber
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Paint color	Munsell 7.5BG 4/1.5
Protection rating	PA-1E d2G4

*When ordering, specify whether the paddle should move clockwise or counterclockwise when viewed from end on.