

[Technical Data]

Radial Bearing (Class 0) Tolerances and Allowances

Excerpts from JIS B 1514

About IP Codes for Sensor Switches

Radial Bearing(Class 0) Tolerances and Allowances

(1) Inner Wheel

Unit μm

Nominal Inner Diameter of Bearing <i>d</i> (mm)		$\triangle dmp$		Diameter Series			<i>Vdmp</i>	<i>Kia</i>	Single Bearing		Bearings in Combinations		<i>VBs</i>
				9	0, 1	2, 3, 4			$\triangle Bs$				
				<i>Vdp</i>									
More	or Less	Above	Below	Max.			Max.	Max.	Above	Below	Above	Below	Max.
0.6 ⁽¹⁾	2.5	0	−8	10	8	6	6	10	0	−40	−	−	12
2.5	10	0	−8	10	8	6	6	10	0	−120	0	−250	15
10	18	0	−8	10	8	6	6	10	0	−120	0	−250	20
18	30	0	−10	13	10	8	8	13	0	−120	0	−250	20
30	50	0	−12	15	12	9	9	15	0	−120	0	−250	20
50	80	0	−15	19	19	11	11	20	0	−150	0	−380	25
80	120	0	−20	25	25	15	15	25	0	−200	0	−380	25
120	180	0	−25	31	31	19	19	30	0	−250	0	−500	30
180	250	0	−30	38	38	23	23	40	0	−300	0	−500	30
250	315	0	−35	44	44	26	26	50	0	−350	0	−500	35
315	400	0	−40	50	50	30	30	60	0	−400	0	−630	40
400	500	0	−45	56	56	34	34	65	0	−450	−	−	50
500	630	0	−50	63	63	38	38	70	0	−500	−	−	60
630	800	0	−75	−	−	−	−	80	0	−750	−	−	70
800	1000	0	−100	−	−	−	−	90	0	−1000	−	−	80
1000	1250	0	−125	−	−	−	−	100	0	−1250	−	−	100
1250	1600	0	−160	−	−	−	−	120	0	−1600	−	−	120
1600	2000	0	−200	−	−	−	−	140	0	−2000	−	−	140

①(1)0.6mm is included in this class.

②Applies to each orbit ring made for bearing combination.

(2) Outer Ring

Nominal Outer Diameter of Bearing D (mm)		$\triangle Dmp$		Open Bearing		Sealed Bearing, Shielded Bearing		V_{Dmp} ⁽⁴⁾	K_{ea}	$\triangle Cs$		V_{cs}
				Diameter Series								
				9	0,1	2,3,4	2,3,4					
				$V_{Dp} f$								
More	or Less	Above	Below	Max.				Max.	Max.	Above	Below	Max.
2.5(3)	6	0	−8	10	8	6	10	6	15	Depends on $\triangle Bs$ tolerance against d of the same bearing.	Depends on $\triangle Bs$ tolerance against d of the same bearing.	
6	18	0	−8	10	8	6	10	6	15			
18	30	0	−9	12	9	7	12	7	15			
30	50	0	−11	14	11	8	16	8	20			
50	80	0	−13	16	13	10	20	10	25			
80	120	0	−15	19	19	11	26	11	35			
120	150	0	−18	23	23	14	30	14	40			
150	180	0	−25	31	31	19	38	19	45			
180	250	0	−30	38	38	23	—	23	50			
250	315	0	−35	44	44	26	—	26	60			
315	400	0	−40	50	50	30	—	30	70			
400	500	0	−45	56	56	34	—	34	80			
500	630	0	−50	63	63	38	—	38	100			
630	800	0	−75	94	94	55	—	55	120			
800	1000	0	−100	125	125	75	—	75	140			
1000	1250	0	−125	—	—	—	—	—	160			
1250	1600	0	−160	—	—	—	—	—	190			
1600	2000	0	−200	—	—	—	—	—	220			
2000	2500	0	−250	—	—	—	—	—	250			

③(3) 2.5mm is included in this class.

④Applies when a retaining ring is not installed.

Dimensional Tolerance

$\triangle dmp$: Tolerance of Mean Inner Diameter within the Plane

$\triangle Dmp$: Tolerance of Mean Outer Diameter within the Plane

$\triangle Bs$: Measured Inner Ring Tolerance or Height Tolerance of Center Orbiting Plate

$\triangle Cs$: Measured Outer Ring Tolerance

Dimensional Inequality

Vdp : Inner Diameter Inequality within the Plane

$Vdmp$: Mean Inner Diameter Inequality within the Plane

Vdp : Outer Diameter Inequality within the Plane

$Vdmp$: Mean Outer Diameter Inequality within the Plane

VBs : Inequality of Inner Ring Widths

Vcs : Inequality of Outer Ring Widths

Rotation Precision

Kia : Radial Deviation of Inner Rings

Kea : Radial Deviation of Outer Rings

About IP Codes for Sensor Switches

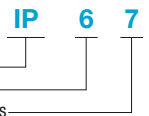
IP codes in this catalog are based on "Protection Statement for Equipments" of IEC 529:1989.

Sealing ability may be affected by the conditions or environment in which it is used, such as cutting oil, chemicals, or existence of dust.

(International Protection)

First Characteristic Numeral (0-6): Ingress of Solid Foreign Objects

Second Characteristic Numeral(0-8): Ingress of Water with Harmful Effects



Characteristic Numeral	Ingress of Solid Foreign Objects	Ingress of Water with Harmful Effects
0	Non-Protected	Non-Protected
1	Protected against solid foreign objects 50mm in diameter or greater.	Protected against vertically falling water drops.
2	Protected against solid foreign objects 12.5mm in diameter or greater.	Protected against vertically falling water drops angled within 15 degree.
3	Protected against solid foreign objects 2.5mm in diameter or greater.	Protected against spraying water.
4	Protected against solid foreign objects 1.0mm in diameter or greater.	Protected against splashing water.
5	Dust-protected: Prevents the penetration of dust in amounts interfering with equipment operation.	Protected against water jetting from any direction.
6	Dust-tight: No ingress of dust.	Protected against powerful water jetting from any direction.
7	-	Protected against ingress of water in quantities causing harmful effects when the enclosure is temporarily immersed.
8	-	Protected against ingress of water in quantities causing harmful effects when the enclosure is continuously immersed in water under conditions more severe than No. 7, as determined by the parties concerned.