

# 2209 E-2RS1TN9 Self-aligning ball bearing with seals on both sides

## Self-aligning ball bearing with seals on both sides



Self-aligning ball bearings, with seals on both sides, have two rows of balls, a common sphered raceway in the outer ring and two deep uninterrupted raceway grooves in the inner ring. They are insensitive to angular misalignment of the shaft relative to the housing. The integral sealing can significantly prolong bearing service life because it keeps lubricant in the bearings and contaminants out.

- Accommodate static and dynamic misalignment
- Excellent high-speed performance
- Excellent light load performance
- Low friction
- Integral sealing results in reduced maintenance requirements and prolonged bearing service life

## Overview

### Dimensions

Bore diameter	45 mm
Outside diameter	85 mm
Width	23 mm

## Performance

Basic dynamic load rating	22.9 kN
Basic static load rating	7.8 kN
Reference speed	15 000 r/min
Limiting speed	5 300 r/min

## Properties

Retaining feature, inner ring	None
Locating feature, bearing outer ring	None
Number of rows	2
Bore type	Cylindrical
Cage	Non-metallic
Radial internal clearance	CN
Tolerance class	Normal
Material, bearing	Bearing steel
Coating	Without
Sealing	Seal on both sides
Sealing type	Contact
Lubricant	Grease

Relubrication feature

Without

# Technical Specification

Bore type

Cylindrical



## Dimensions

d	45 mm	Bore diameter
D	85 mm	Outside diameter
B	23 mm	Width
$d_2$	≈ 52.9 mm	Recess diameter inner ring
$D_2$	≈ 75.25 mm	Recess diameter outer ring
$r_{1,2}$	min. 1.1 mm	Chamfer dimension

## Abutment dimensions

$d_a$	min. 52 mm	Abutment diameter shaft
$d_a$	max. 53 mm	Abutment diameter shaft
$D_a$	max. 78 mm	Abutment diameter housing
$r_a$	max. 1.1 mm	Fillet radius



## Calculation data

Basic dynamic load rating	C	22.9 kN
Basic static load rating	$C_0$	7.8 kN
Fatigue load limit	$P_u$	0.4 kN
Reference speed		15 000 r/min

Limiting speed		5 300 r/min
Permissible angular misalignment	$\alpha$	1.5 °
Calculation factor	$k_r$	0.045
Limiting value	$e$	0.21
Calculation factor	$Y_0$	3.2
Calculation factor	$Y_1$	3
Calculation factor	$Y_2$	4.6

## Mass

Mass bearing		0.53 kg
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