

# Spindle ball bearing SM 6018 C TA P4+

08.05.2024



## Components

|                              |                            |
|------------------------------|----------------------------|
| Bearing designation:         | SM 6018 C TA               |
| Bearing design:              | SM                         |
| Series / size:               | 6018                       |
| Ball material:               | Steel 100Cr6               |
| Cage:                        | TA                         |
| Seal:                        | 2RZ optional (with grease) |
| Precision:                   | P4+                        |
| Main dimensions [d x D x B]: | 90 x 140 x 24 mm           |

## Load data

|                       |                             |
|-----------------------|-----------------------------|
| Static load capacity  | $C_{0r}$ : 39000 N          |
| Dynamic load capacity | $C_r$ : 52000 N             |
| Fatigue load limit    | $C_U$ : 1881 N              |
| Speed limit           | $n_{grease}$ : 13125 1/min  |
| Speed limit           | $n_{oil}$ : 17500 1/min     |
| Light preload         | L: 270 N                    |
| Axial rigidity        | $C_{ax}$ : 96 N/ $\mu$ m    |
| Medium preload        | M: 800 N                    |
| Axial rigidity        | $C_{ax}$ : 145 N/ $\mu$ m   |
| Heavy preload         | S: 1590 N                   |
| Axial rigidity        | $C_{ax}$ : 193 N/ $\mu$ m   |
| Spring preload        | Ff: 2340 N (for $n_{max}$ ) |

## Geometrical Data

|                                          |                         |                                              |                           |
|------------------------------------------|-------------------------|----------------------------------------------|---------------------------|
| Bore diameter                            | d: 90 mm                | Oiling nozzle position                       | $d_T$ : 110.6 mm          |
| Outer diameter                           | D: 140 mm               | Pitch circle diameter                        | $d_m$ : 115 mm            |
| Width of single bearing                  | B: 24 mm                | Inner diameter of outer ring                 | $D_1$ : 124.2 mm          |
| Ball diameter                            | $D_w$ : 15.081 mm       | Undercut of associated component             | $r_{a \max}$ : 1.5 mm     |
| Number of balls                          | Z: 20                   | Undercut of associated component (open side) | $r_{b \max}$ : 0.6 mm     |
| Chamfer (min)                            | $r_{1,2 \min}$ : 1.5 mm | Abutment diameter inner ring                 | $d_{a,b \min}$ : 98.9 mm  |
| Chamfer (min), open side                 | $r_{3,4 \min}$ : 0.6 mm | Abutment diameter outer ring                 | $D_{a,b \max}$ : 132.6 mm |
| Outer diameter of inner ring             | $d_1$ : 105.8 mm        | Inner diameter of outer ring (open side)     | $D_2$ : 130.3 mm          |
| Outer diameter of inner ring (open side) | $d_2$ : -               | Bearing weight                               | m: 1.15 kg                |
|                                          |                         | Contact angle                                | Alpha 0: 17°              |



The given speed limits apply to individual bearings with spring preload. Correction factors must be considered for all properties which deviate from this.