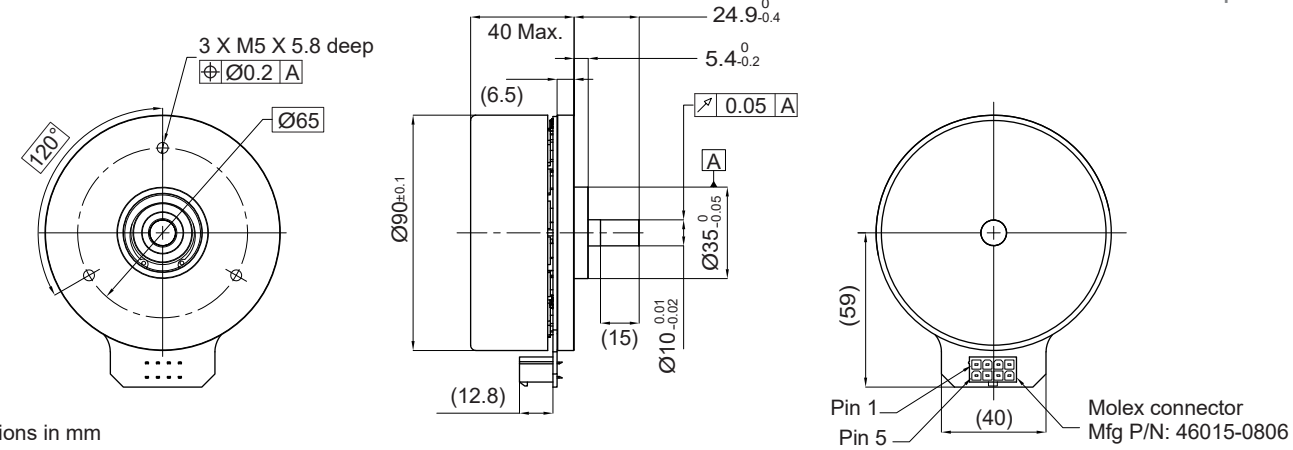
Portescap
A REGAL REXNORD BRAND

## 90ECF

Ø 90 mm • 22-pole • 260 W




Dimensions in mm

| Electrical Data | Symbol | 90ECF40 8B xx 34 | 90ECF40 8B xx 13 | Unit |
|---|---|---|---|---|
| 1 Nominal Voltage | $U_N$ | 48 | 18 | Volt |
| 2 Optimization Direction | - | Symmetrical | Symmetrical | - |
| 3 No Load Speed | $n_0$ | 2,000 | 1,922 | rpm |
| 4 Typical No Load Current | $I_0$ | 250 | 733 | mA |
| 5 Max. Continuous Mechanical Power (@25°C) | $P_{max}$ | 260 | 260 | W |
| 6 Max. Continuous Current | $I_{e\,max}$ | 4.1 | 12.1 | A |
| 7 Max. Continuous Torque | $M_{e\,max}$ | 1000 (140.2) | 1080 (154.3) | mNm (oz-in) |
| 8 Back EMF Constant | $k_E$ | 24.5 | 9.37 | V/1000 rpm |
| 9 Torque Constant | $k_M$ | 225 (31.86) | 89.47 (12.67) | mNm/A (oz-in/A) |
| 10 Motor Regulation | $R/k^2$ | 0.0152 | 0.0125 | $10^3$/Nms |
| 11 Motor Regulation | $k/R^{½}$ | 256 (36.3) | 283 (40) | mNm/$W^{½}$ (oz-in/$W^{½}$) |
| 12 Internal Resistance - phase to phase | $R_l$ | 0.77 | 0.1 | ohms |
| 13 Line to Line Resistance at Connectors | $R_L$ | 0.78 | 0.114 | ohms |
| 14 Inductance Phase to Phase | L | 1.07 | 0.14 | mH |
| 15 Mechanical Time Constant | $\tau_m$ | 7 | 6.1 | ms |
| 16 Electrical Time Constant | $\tau_e$ | 1.34 | 1.4 | ms |
| **General Data** | | | | |
| 17 Maximum Motor Speed | $n_{max}$ | 5,000 | | rpm |
| 18 Ambient Working Temperature Range | - | -40 to +100 (-40 to +212) | | °C (°F) |
| 19 Ambient Storage Temperature Range | - | -40 to +100 (-40 to +212) | | °C (°F) |
| 20 Ball Bearings Preload | - | 90 | | N |
| 21 Axial Static Force w/o Shaft Support (max) | - | 50 | | N |
| 22 Maximum Winding Temperature | - | 125 (257) | | °C (°F) |
| 23 Thermal Resistance | $R_{th}$ | 3.5 | | °C/W |
| 24 Thermal Time Constant | $\tau_w$ | 270 | | s |
| 25 Weight | - | 960 (34) | | g (oz) |
| 26 Rotor Inertia | J | 5083 | | g-$cm^2$ |
| 27 Hall Sensor Electrical Phasing* | - | 120 | | Electrical ° |

*Also available without Hall sensors

| Pad Allocation | |
|---|---|
| Pad 1 | Hall sensor 1 |
| Pad 2 | Hall sensor 2 |
| Pad 3 | 4.5 to 24V DC |
| Pad 4 | Phase 3 |
| Pad 5 | Hall sensor 3 |
| Pad 6 | GND |
| Pad 7 | Phase 1 |
| Pad 8 | Phase 2 |