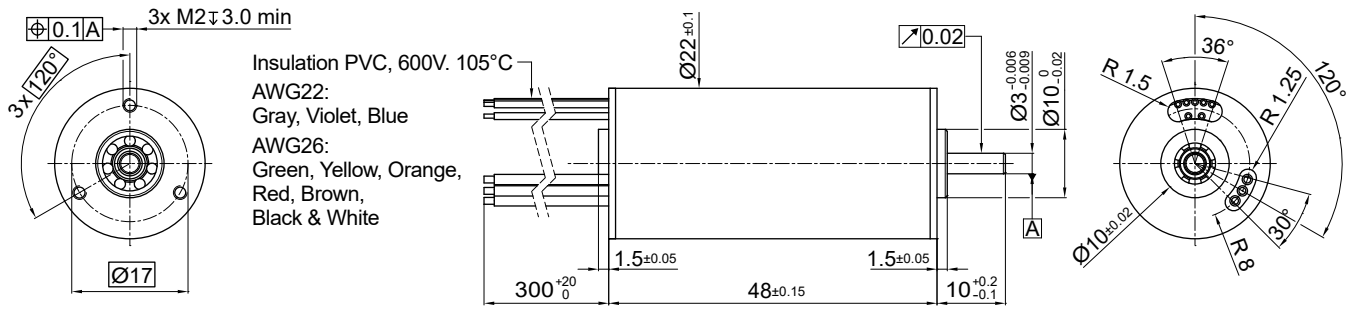


22ECT48 Ultra EC™

Ø 22 mm • 4-pole • 54 W



Dimensions in mm.

| Electrical Data                            | Symbol      | 22ECT48 10B-xxx.01 |             |             | Unit   |
|--|-------------|--------------------|-------------|-------------|--|
|  |             | 14                 | 23          | 35          |  |
| 1 Nominal Voltage                          | $U_N$       | 12                 | 24          | 24          | Volt   |
| 2 Optimization Direction                   | -           | Symmetrical        | Symmetrical | Symmetrical | -  |
| 3 No Load Speed                            | $n_0$       | 10,140             | 11,950      | 7,950       | rpm  |
| 4 Typical No Load Current                  | $I_0$       | 155                | 120         | 70          | mA   |
| 5 Max. Continuous Mechanical Power (@25°C) | $P_{max}$   | 54.0               | 54.0        | 54.0        | W  |
| 6 Max. Continuous Current                  | $I_{e,max}$ | 3.7                | 2.2         | 1.5         | A  |
| 7 Max. Continuous Torque                   | $M_{e,max}$ | 41.6 (5.9)         | 41.1 (5.82) | 40.8 (5.78) | mNm (oz-in)                                    |
| 8 Back EMF Constant                        | $k_E$       | 1.17               | 1.95        | 2.94        | V/1000 rpm                                     |
| 9 Torque Constant                          | $k_M$       | 11.2               | 18.6        | 28.1        | mNm/A  |
| 10 Motor Regulation                        | $R/k^2$     | 2.9                | 3.0         | 3.0         | 10 <sup>3</sup> /Nms                           |
| 11 Motor Regulation                        | $k/R^{1/2}$ | 18.4 (2.61)        | 18.2 (2.58) | 18.1 (2.57) | mNm/W <sup>1/2</sup> (oz-in/W <sup>1/2</sup> ) |
| 12 Internal Resistance - phase to phase    | $R_l$       | 0.37               | 1.04        | 2.40        | ohms   |
| 13 Line to Line Resistance at Connectors   | $R_L$       | 0.40               | 1.07        | 2.43        | ohms   |
| 14 Inductance Phase to Phase               | $L$         | 0.04               | 0.11        | 0.24        | mH   |
| 15 Mechanical Time Constant                | $\tau_m$    | 1.8                | 1.9         | 1.9         | ms   |
| 16 Electrical Time Constant                | $\tau_e$    | 0.11               | 0.10        | 0.10        | ms   |

| General Data                                  |           |  |                             |                   |
|---|-----------|--|-----------------------------|-------------------|
| 17 Maximum Motor Speed                        | $n_{max}$ |  | 20,000                      | rpm               |
| 18 Ambient Working Temperature Range          | -         |  | -30 to + 100 (-22 to + 212) | °C (°F)           |
| 19 Ambient Storage Temperature Range          | -         |  | -40 to + 100 (-40 to + 212) | °C (°F)           |
| 20 Ball Bearings Preload                      | -         |  | 6.8                         | N                 |
| 21 Axial Static Force w/o Shaft Support (max) | -         |  | 45                          | N                 |
| 22 Maximum Winding Temperature                | -         |  | 125 (257)                   | °C (°F)           |
| 23 Thermal Resistance                         | $R_{th}$  |  | 2.1 / 12                    | °C/W              |
| 24 Thermal Time Constant                      | $\tau_w$  |  | 962                         | s                 |
| 25 Weight                                     | -         |  | 98 (3.46)                   | g (oz)            |
| 26 Rotor Inertia                              | $J$       |  | 6.3                         | g-cm <sup>2</sup> |
| 27 Hall Sensor Electrical Phasing*            | -         |  | 120                         | Electrical °      |

\*Available without hall sensor

| Wire   | Description   |
|--------|---------------|
| Gray   | Phase 1       |
| Violet | Phase 2       |
| Blue   | Phase 3       |
| Green  | 3.5 to 24V DC |
| Yellow | GND           |
| Orange | Sensor 1      |
| Red    | Sensor 2      |
| Brown  | Sensor 3      |
| Black  | NTC 10 kohm   |
| White  | NTC 10 kohm   |

with hall effect sensor

