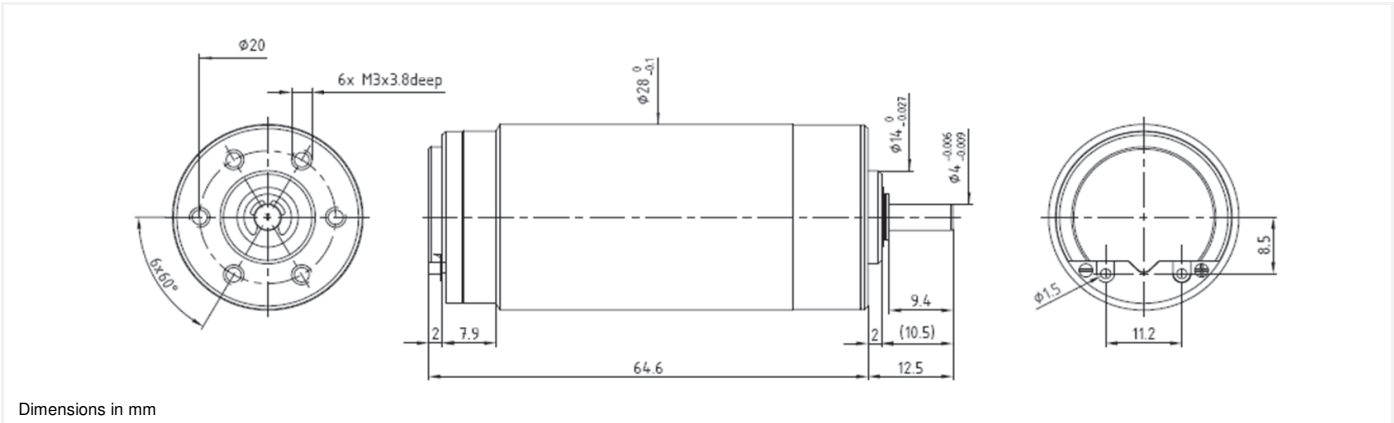


28DT12

Graphite-Copper commutation

Ø28mm

41 mNm



28DT12 \*\*\*\* .1

| Electrical Data             | ****         | 222P        | 219P        | 222E        | 219E        |             |
|-----------------------------|--------------|-------------|-------------|-------------|-------------|-------------|
| 1 Nominal Voltage           | V            | 12          | 15          | 24          | 28          | Volt        |
| 2 No-Load Speed             | $n_0$        | 6,840       | 7,100       | 6,851       | 6,870       | rpm         |
| 3 No-Load Current           | $I_0$        | 210.0       | 180.0       | 110.0       | 90.0        | mA          |
| 4 Terminal Resistance       | R            | 1.9         | 2.9         | 6.2         | 9.9         | $\Omega$    |
| 5 Output Power              | $P_{2max}$   | 24.0        | 24.0        | 27.0        | 24.0        | W           |
| 6 Stall Torque              | mNm          | 102 (14.45) | 101 (14.31) | 126 (17.85) | 107 (15.16) | mNm (oz-in) |
| 7 Efficiency                | $\eta_{max}$ | 67          | 66          | 69          | 68          | %           |
| 8 Max Continuous Speed      | $n_{e,max}$  | 9,000       | 9,000       | 9,000       | 9,000       | rpm         |
| 9 Max Continuous Torque     | $M_{e,max}$  | 37 (5.1)    | 36 (5.1)    | 41 (5.81)   | 37 (5.24)   | mNm (oz-in) |
| 10 Max Continuous Current   | $I_{e,max}$  | 2.50        | 2.00        | 1.40        | 1.10        | A           |
| 11 Back-EMF Constant        | $k_E$        | 1.70        | 2.04        | 3.40        | 3.95        | mV/rpm      |
| 12 Torque Constant          | $k_M$        | 16.20       | 19.50       | 32.50       | 37.70       | mNm/A       |
| 13 Motor Regulation         | $R/k^2$      | 7.0         | 8.0         | 6.0         | 7.00        | $10^3/Nms$  |
| 14 Friction Torque          | $T_F$        | 3.4 (0.49)  | 3.4 (0.49)  | 3.4 (0.49)  | 3.4 (0.49)  | mNm (oz-in) |
| 15 Rotor Inductance         | L            | 0.20        | 0.30        | 0.75        | 1.10        | mH          |
| 16 Mechanical Time Constant | $t_m$        | 14.0        | 14.4        | 12.0        | 12.6        | ms          |
| 17 Rotor Inertia            | J            | 20.00       | 18.00       | 20.00       | 18.00       | $g.cm^2$    |

| General Data                            |                     |   |  |  |  |                             |
|---|---------------------|---|--|--|--|-----------------------------|
| 18 Thermal Resistance (rotor/body)      | $R_{th1} / R_{th2}$ | 3.5/8   |  |  |  | $^{\circ}C/W$               |
| 19 Thermal Time Constant (rotor/stator) | $t_{w1}/t_{w2}$     | 18/630  |  |  |  | S                           |
| 20 Operating Temperature Range:         | motor               | -30 $^{\circ}C$ to 85 $^{\circ}C$ (-22 $^{\circ}F$ to 185 $^{\circ}F$ ) |  |  |  | $^{\circ}C$ ( $^{\circ}F$ ) |
|   | rotor               | 100 $^{\circ}C$ (212 $^{\circ}F$ )                                      |  |  |  | $^{\circ}C$ ( $^{\circ}F$ ) |
| 21 Shaft Load Max.:                     |                     | With sleeve bearings  |  |  |  |                             |
| (5mm from bearing)                      | -radial             | 8.0 (28.8)  |  |  |  | N (oz)                      |
|   | -axial              | 500 (1,798.5)   |  |  |  | N (oz)                      |
| 22 Shaft Play:                          | -radial             | <0.025 (0.001)  |  |  |  | mm (inch)                   |
|   | -axial              | 0.15 (0.0059)   |  |  |  | mm (inch)                   |
| 23 Weight                               | g                   | 200 (7.06)  |  |  |  | g (oz)                      |

| Execution Table |              |                     |              |
|-----------------|--------------|---------------------|--------------|
| Gearbox         | Single Shaft | Double Shaft for E9 | HEDS         |
| R32             | 4            | 106                 | 103          |
| R40             | 1            | 98                  | Upon Request |

