

**STANDARD FEATURES:**

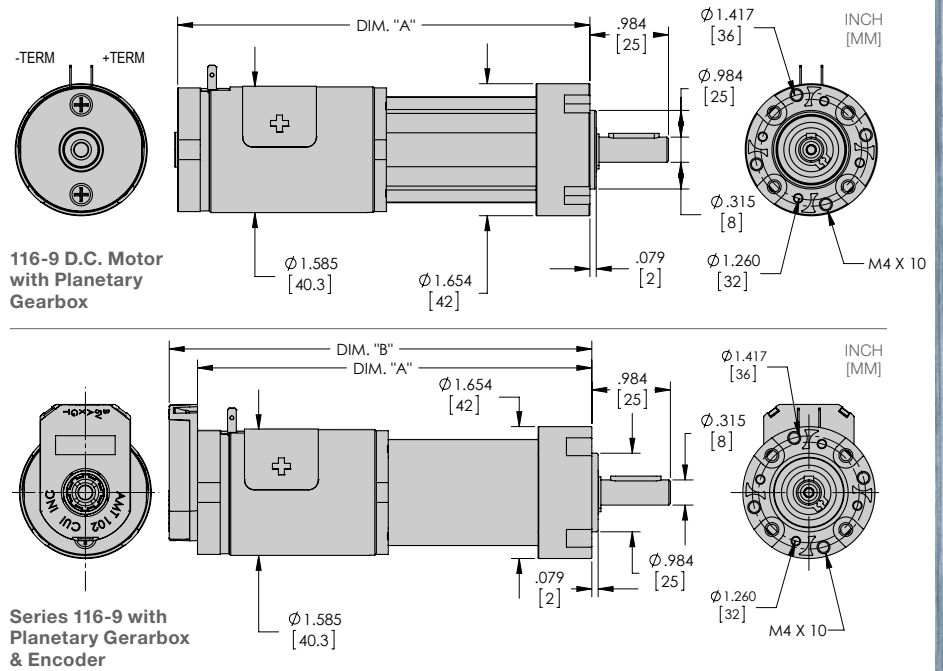
- Ball bearings
- High starting torque
- Precision die cast end bells
- Class B rated
- Reversible
- Stainless steel output shafts
- Plastic housing

**OPTIONAL FEATURES:**

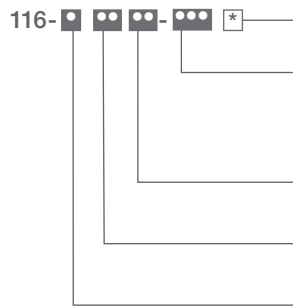
- Encoders up to 2048 CPR
- Voltage ranges to 48VDC
- EMI noise suppression
- Customized shafts
- Customized lead harnesses
- Custom mounting
- Rear shaft extensions
- Integral lead wires
- Gearboxes
  - Planetary  
Ratios up to 2653:1  
(See Series 116-8; 116-9)
  - Spur  
12:1; 48:1; 192:1; 768:1  
(See Series 116-4)
- Housing available in metal  
(See Series 116-8)

**TYPICAL APPLICATIONS:**

- Printers
- Plotters
- Pumps
- Fans
- Cutting Tools
- Medical Devices
- Robotics
- Beverage Dispensing
- Gaming/Recreational Machines



**Series 116**  
**Part Numbering**  
**Example**



**ENCODER OPTION C, D, OR M**

Counts Per Revolution (CPR) (C =100, D = 500 or M = 1000)  
(Others Are Available - See Factory) \*\*\*Otherwise Leave Blank\*\*\*

**Gear Ratio**

Motor Type 4 & 5 (12, 48, 192, or 768)  
Motor Type 6 & 8 (5, 27, 130, or 642)  
Motor Type 7 & 9 (5, 27, 130)

**Motor Speed**

(16, 32, or 48) (e.g. 32 = 3200 RPM)

**Rated Voltage**

(12 or 24)

**Motor Type:**

- 4 = Motor, Terminals, 2" Spur Gearbox, Encoder Optional
- 5 = Motor, Integral Leads, 2" Spur Gearbox, Encoder Optional
- 6 = Motor, Integral Leads, Metal Planetary Gearbox, Encoder Optional
- 7 = Motor, Integral Leads, Plastic Planetary Gearbox, Encoder Optional
- 8 = Motor, Terminals, Metal Planetary Gearbox, Encoder Optional
- 9 = Motor, Terminals, Plastic Planetary Gearbox, Encoder Optional**

# Series 116-9

## 1.6" DC Planetary Gear Motor (Plastic)

Continued



### PERFORMANCE

| PART NUMBER   | RATIO | VOLTS NOM | NO LOAD SPEED | NO LOAD CURRENT | LOAD SPEED | LOAD TORQUE | LOAD CURRENT | MAX. THEORETICAL TORQUE<br>(* INDICATES GEARBOX LIMIT) |        |      | DIM "A"<br>MAX INCH<br>[mm] | DIM "B"<br>MAX INCH<br>[mm] |
|---------------|-------|-----------|---------------|-----------------|------------|-------------|--------------|--|--------|------|-----------------------------|-----------------------------|
|               |       |           | WNL           | INL             | W          | TL          | IL           | IN-OZ  | R.P.M. | AMPS |                             |                             |
|               |       |           | R.P.M.        | AMPS            | R.P.M.     | IN-OZ       | AMPS         |  |        |      |                             |                             |
|               |       |           | NOM.          | MAX.            | NOM.       | NOM.        | MAX.         | REF.   | REF.   | REF. |                             |                             |
| 116-91216-5   | 5:1   | 12        | 490           | 0.2             | 340        | 24          | 1.1          | 80   | 0      | 3.0  | 4.2<br>[107]                | 4.6<br>[117]                |
| 116-91232-5   |       |           | 700           | 0.6             | 575        | 21          | 1.7          | 113*   | 14     | 7.0  |                             |                             |
| 116-91248-5   |       |           | 970           | 0.8             | 825        | 18          | 2.2          | 113*   | 75     | 9.0  |                             |                             |
| 116-91216-27  | 27:1  |           | 90            | 0.3             | 62         | 122         | 1.3          | 283*   | 23     | 3.0  | 4.7<br>[120]                | 5.1<br>[130]                |
| 116-91232-27  |       |           | 140           | 0.5             | 113        | 107         | 1.8          | 283*   | 70     | 4.0  |                             |                             |
| 116-91248-27  |       |           | 180           | 0.9             | 150        | 92          | 2.4          | 283*   | 90     | 5.0  |                             |                             |
| 116-91216-130 | 130:1 |           | 19            | 1.4             | 13         | 425         | 1.2          | 566*   | 11     | 2.0  | 5.2<br>[132]                | 5.6<br>[142]                |
| 116-91232-130 |       |           | 28            | 0.7             | 24         | 425         | 1.7          | 566*   | 22     | 2.0  |                             |                             |
| 116-91248-130 |       |           | 38            | 0.9             | 31         | 425         | 2.6          | 566*   | 28     | 3.0  |                             |                             |
| 116-92416-5   | 5:1   | 24        | 490           | 0.2             | 357        | 24          | 0.6          | 90   | 0      | 2.0  | 4.2<br>[107]                | 4.6<br>[117]                |
| 116-92432-5   |       |           | 700           | 0.4             | 593        | 21          | 1.0          | 113*   | 135    | 4.0  |                             |                             |
| 116-92448-5   |       |           | 1050          | 0.3             | 950        | 18          | 1.0          | 113*   | 420    | 5.0  |                             |                             |
| 116-92416-27  | 27:1  |           | 90            | 0.2             | 65         | 122         | 0.6          | 283*   | 30     | 2.0  | 4.7<br>[120]                | 5.1<br>[130]                |
| 116-92432-27  |       |           | 140           | 0.3             | 111        | 107         | 0.8          | 283*   | 55     | 2.0  |                             |                             |
| 116-92448-27  |       |           | 200           | 0.4             | 181        | 92          | 1.1          | 283*   | 140    | 3.0  |                             |                             |
| 116-92416-130 | 130:1 |           | 19            | 0.2             | 14         | 425         | 0.6          | 566*   | 12     | 11.0 | 5.2<br>[132]                | 5.6<br>[142]                |
| 116-92432-130 |       |           | 29            | 0.3             | 24         | 425         | 0.9          | 566*   | 23     | 1.0  |                             |                             |
| 116-92448-130 |       |           | 41            | 0.4             | 36         | 425         | 1.3          | 566*   | 34     | 2.0  |                             |                             |

For Integral Leads, Replace 116-9 with 116-7.

For Encoder, Add C, D, or M to end of part number. (C=100 CPR, D=500 & M=1000)



# Series 116-9

## 1.6" DC Planetary Gear Motor (Plastic)

Continued

116-9

1.6" DC Planetary Gear Motor (Plastic)

| CHARACTERISTICS |           |            |          |          |
|-----------------|-----------|------------|----------|----------|
| Stages          | 1 Stage   | 2 Stages   | 3 Stages | 4 Stages |
| Max Torque      | 35.4 inlb | 106.2 inlb | 221 inlb | 221 inlb |
| GB Eff          | 80%       | 75%        | 70%      | 65%      |
| Max Backlash    | 0.70 Deg  | 0.75 Deg   | 0.80 Deg | 0.85 Deg |
| Max Radial Load | 45 lbf    | 72 lbf     | 101 lbf  | 112 lbf  |
| Max Axial Load  | 13.5 lbf  | 22.5 lbf   | 33.7 lbf | 45 lbf   |
| GB Weight       | 0.88 lb   | 2 lb       | 2.43 lb  | 2.87 lb  |

| AVAILABLE RATIOS |         |         |         |
|------------------|---------|---------|---------|
| 1 Stage          | 2 Stage | 3 Stage | 4 Stage |
| 5:1              | 19:1    | 71:1    | 264:1   |
|                  | 22:1    | 95:1    | 305:1   |
|                  | 27:1    | 100:1   | 352:1   |
|                  | 35:1    | 115:1   | 369:1   |
|                  |         | 130:1   | 408:1   |
|                  |         | 139:1   | 426:1   |
|                  |         | 150:1   | 480:1   |
|                  |         | 181:1   | 493:1   |
|                  |         | 236:1   | 516:1   |
|                  |         |         | 556:1   |
|                  |         |         | 596:1   |
|                  |         |         | 642:1   |
|                  |         |         | 672:1   |
|                  |         |         | 721:1   |
|                  |         |         | 777:1   |
|                  |         |         | 875:1   |
|                  |         |         | 939:1   |
|                  |         |         | 1012:1  |
|                  |         |         | 1223:1  |
|                  |         |         | 1594:1  |