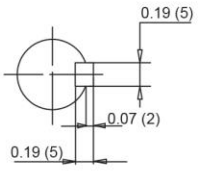


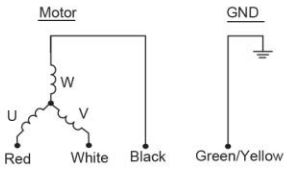
Oil Seal Eliminated



Section A-A
Key Attached

Connection

Drawing 106-8744



Direction of rotation C.C.W for those sequence UVX. as seen from front shaft

Sensor

Incremental Encoder Resolution 2000P/R
Rectangular Wave

| Signal | Color |
|------------|--------------|
| +5 VDC | RED |
| GND | BLACK |
| A+ Channel | BLUE |
| A- Channel | BROWN |
| B+ Channel | GREEN |
| B- Channel | PURPLE |
| C+ Channel | WHITE |
| C- Channel | YELLOW |
| U+ Channel | BLUE/BLACK |
| U- Channel | BROWN/BLACK |
| V+ Channel | GREEN/BLACK |
| V- Channel | PURPLE/BLACK |
| W+ Channel | RED/BLACK |
| W- Channel | YELLOW/BLACK |
| Case Earth | SHIELD |

Endurable Load on Motor Shaft

| Assembling | | | Coaration | |
|---------------------|-------------------|----|---------------------|-------------|
| Radial Play | Trust Play (Kg) | | Radial Play | Thrust Play |
| F _a (Kg) | F | F1 | F _a (Kg) | (Kg) |
| 60 | 80 | 30 | 35 | 20 |



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Sanyo Denki P5 Series Brushless 400 watt AC Servomotor
P50B08040

1. Characteristics of Motor

| Servomotor Specifications | | | | |
|---------------------------|--------------------------|-----------------|---|--|
| Terms | Item | Symbol | Unit | Specification |
| ★★ | Continuous Stall Torque | T _S | N.m (lb-in) | 1.372 (12.14) |
| ★★ | Peak Stall Torque | T _{PS} | N.m (lb-in) | 3.92 (34.73) |
| ★★ | Maximum Speed | N.Max | Min ⁻¹ | 6000 |
| ★★ | Continuous Stall Current | I _S | Amps(rms) | 9.2 |
| ★★ | Peak Armature Current | I _{PS} | Amps(rms) | 29.0 |
| ★ | Torque Constant | K _T | N.m/A (lb-in/amp) | 0.171± 10% (1.52) |
| ★ | Voltage Constant | K _E | mV/min ⁻¹ (V/krpm) | 17.88 ± 10% (17.88) |
| | Rotor Inertia | J _M | Kg.m ² (lb-in-sec ²) | 0.823 x 10 ⁻⁴ (0.729 x 10 ⁻⁵) |
| ★ | Resistance | R _a | Ohms, Ω | 0.69 |
| ★ | Inductance | L _a | mH | 3.5 |
| ★ | Mech. Time Constant | T _m | msec | 1.9 |
| ★ | Elect. Time Constant | T _e | msec | 5.0 |
| | Insulation | - | - | F |
| ★★ | Max. Temperature Rise | θ | K | 115 |
| | Insulation Resistance | - | MΩ | 10Min.(DC500V megger) |
| | Dielectric Strength | - | V | 1500 (AC 1min) |
| | Mass | W | kg (lb) | 2.10 (4.62) |

| Encoder Specifications | | | |
|------------------------|-----------------------|---|--|
| | Pulses per Revolution | PPR | 2000 |
| | Encoder Channels | | Complimentary w/ index |
| | Frequency Response | kHz | 0 ~ 300 |
| | Input Voltage | V | +5 + 0.25 VDC |
| | Input Current | Amps | 450 mA Max. |
| | Output Signal | Line Driver | AM26LS31 equivalent |
| | Operating Temperature | °C | -10 to 85 |
| | Rotor Inertia | kg-m ² (lb-in-sec ²) | 0.005x10 ⁻⁴ (0.443x10 ⁻⁷) |
| | Mass | Kg (oz) | 0.35 (12.4) |

3. Environmental Condition

| Item | Operation | Storage |
|------------------------------|-----------|---------|
| Temperature (°C) | 0~40 | -20~65 |
| Humidity (%) | 20~90 | 20~90 |
| No dew condensation required | | |

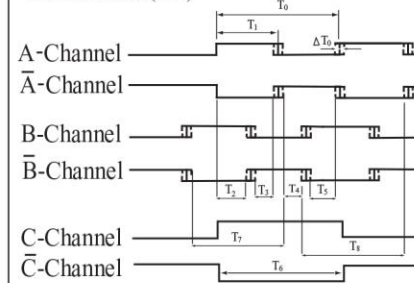
- Remarks 1. ★★ Indicates motor temperature rise saturation point combine with Amplifier. ★ Indicates coil temperature at 20 C. All values are at typical ones.
2. The ratings measured by alminum heat sink sized 305x305x12t.
3. Total rotor inertia and mass shall be added respectively.

2. Characteristics of Encoder

| | Item | Rated Characteristics | Remarks |
|---------|----------------------------------|--|---|
| ENCODER | Pulse Per Revolution | See Outline Drawings | |
| | Frequency Response | 0~300 kHz | |
| | Pulse Dutycycle | T ₁ = (1/2) T ₀ ± (1/8) T ₀ | Above characteristics exclude motor flutter |
| | Interchannels Phase Relationship | T ₂ ~T ₅ = (1/4) T ₀ ± (1/8) T ₀ | Above characteristics exclude motor flutter |
| | C-Channel | T ₆ = T ₀ ± 0.4 T ₀ | |
| CS | Pulse Per Revolution | 2 | |
| COMMON | Input Voltage | +5V ± 0.25V DC | |
| | Input Current | 450 mA Max. | |
| | Output Signal | Line Driver AM26LS31 Equivalent | Recommendable line receiver :AM26LS32 |
| | Insulation Resistance | 50MΩMIN DC250V between frame and lead wire. (without shield wire) | To avoid circuit destruction, user's test prohibited. |
| | Operating Temp. Range | -10°C To 85°C | |
| | Rotor Inertia | 0.005x10 ⁻⁴ (kg.m ²) | |
| | Mass | 0.35 (kg) | |

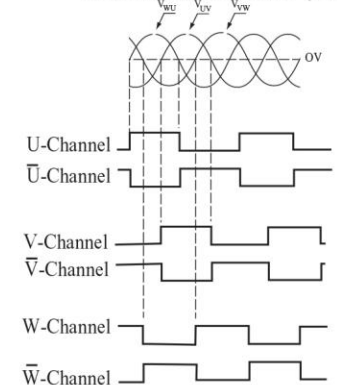
Output waveform is C.C.W as viewed From Front Shaft.

Incremental (EN)



(One pulse per revolution)
(Ramp up and down of C-Channel, should be limited within T₇ or T₈)

Communication Sensor (CS)



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