

ROTARY POSITIONER



Super High-Precision Encoders and Optimum Control Technology (LQ Control) Lead to the Development of a Super High-Precision Rotary-Type Positioning System

Canon has now developed a compact, super high-precision laser rotary encoder using semiconductor laser and integrated a motor unit directly. The result is a new high-precision positioning control system. That obtains a sinusoidal wave with 81,000 periods per revolution from the laser rotary encoder and digitally divides it into 4096 parts. This achieves a resolution of 0.0039 angle-seconds. By connecting our system controller equipped with optimum control, higher precision can be attained in positioning.

FEATURES

- By motor encoder and optimum control (LQ control), the unit achieves high steady speed, high resolution, high precision, and high stationary stability.
- With the use of an encoder, the wavelength is unaffected by temperature, air pressure, humidity, and other similar factors. Hence, it is superior in environment resistance.
- Canon has developed its own built-in type high-precision laser encoders, enabling the system to be smaller yet more precise.
- By connecting the unit with system controller SC-01, the system can be made even smaller with lower costs.

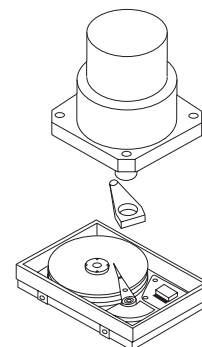
APPLICATION EXAMPLES

● Servo Track Writer

When a HDD (Hard Disc Drive) is just assembled, its magnetic disc contains no standard data or information, so it is necessary to record track information (equivalent to the grooves on compact discs) magnetically for each HDD.

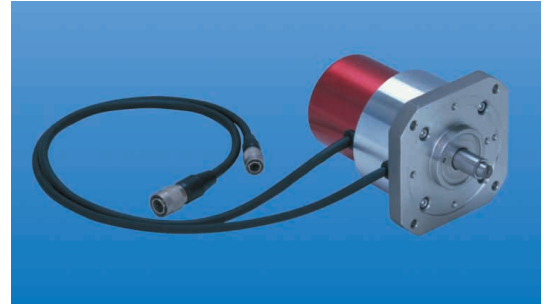
Such HDDs, without any standards, require that the R/W head be forced to move to certain positions with high precision. Canon's rotary positioners play a crucial role as they carry out this positioning of R/W head with high precision.

Encoder Motor KP-1M160



KP-1M

High rigidity, compact-size rotary positioner



SPECIFICATIONS

■ Configuration

- Encoder-Motor KP-1M
- Cable 2m

■ System Specifications

- Pulses 81,000 sinusoidal wave signal/rotation
- Moveable range ± 35 degrees (centered around the Z phase)
- Stroke (guaranteed) ± 20 degrees (centered around the Z phase)
- Resolution 0.0039 arc-sec (16"/ 4096)
- On-track stability ± 0.05 arc-sec or less
- Maximum angular speed
60degrees / sec
- Z phase pulse repeatability
 ± 16 arc-sec or less
- Load inertia 100gcm² or less
- External load 200gcm or less

■ Environmental Requirements

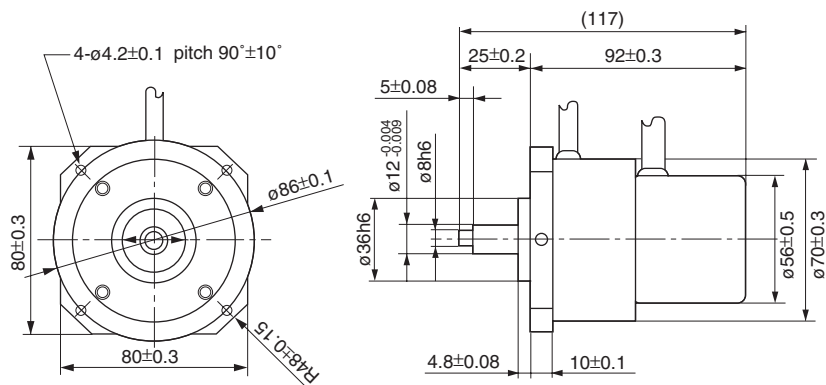
- Power supply +5V $\pm 5\%$ (1.5A)
+12V $\pm 5\%$ (max1.5A)
-12V $\pm 5\%$ (50mA)
- Operating temperature & humidity 18~28°C, 40~60%RH (no condensation)
- Storage temperature & humidity (packed) 0 ~50°C, 20~80%RH (no condensation)

■ Weight

- Encoder-Motor approx. 1.2kg

*The above specifications apply to cases in which is used together with the System Controller SC-01.

EXTERNAL DIMENSIONS



ROTARY POSITIONER ENCODER MOTOR

KP-1M160

High stiffness, high precision rotary positioner



SPECIFICATIONS

■ Configuration

- Encoder-Motor KP-1M160
- Cable 2m

■ System Specifications

- Pulses 81,000 sinusoidal wave signal/ rotation
- Moveable range ± 35 degrees (centered around the Z phase)
- Stroke (guaranteed) ± 30 degrees (centered around the Z phase)
- Resolution 0.0039 arc-sec (16"/ 4096)
- On-track stability ± 0.05 arc-sec or less
- Maximum angular speed 60degrees / sec
- Z phase pulse repeatability ± 16 arc-sec or less
- Load inertia 1,500gcm² or less
- External load 500gcm or less

■ Environmental Requirements

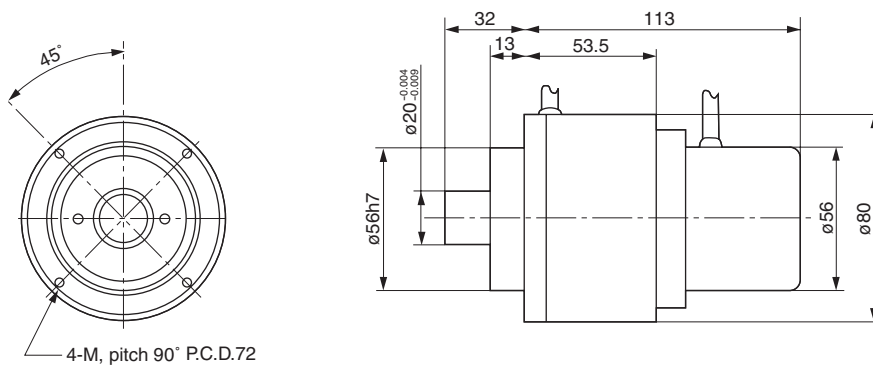
- Power supply +5V $\pm 5\%$ (1.5A)
+12V $\pm 5\%$ (max1.5A)
-12V $\pm 5\%$ (50mA)
- Operating temperature & humidity 18 ~28°C, 40~60%RH (no condensation)
- Storage temperature & humidity (packed) 0 ~50°C, 20~80%RH (no condensation)

■ Weight

- Encoder-Motor 1.6kg

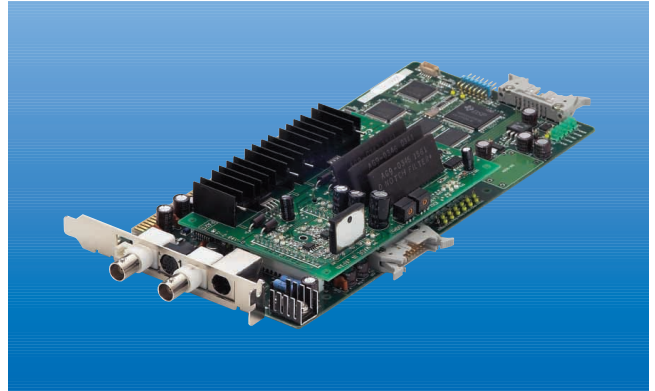
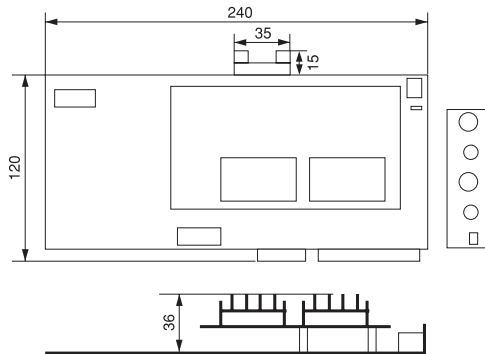
*The above specifications apply to cases in which is used together with the System Controller SC-01.

EXTERNAL DIMENSIONS



SC-01A/PC-N1

EXTERNAL DIMENSIONS



SPECIFICATIONS

■ Software maintenance	To be downloaded from the ISA bus when started up.
■ Operation	ISA Bus
■ DSP	150MHz
■ Sampling	50kHz
■ A/D converter	14bits
■ Interpolation	4096
■ Power supply	+5V ±5% (max1.5A) +12V ±5% (max1.5A) -12V ±5% (max100mA)
■ Weight	approx. 220g

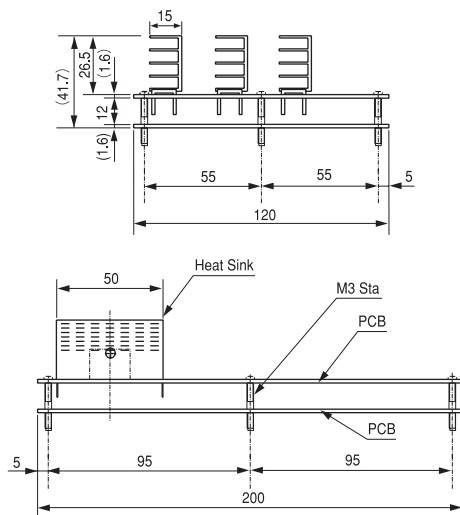
■ Dimensions	240 (L) x 120 (W) x 36 (H) mm (requires two ISA slot space.)
■ Option	Motor Driver PMD-1A

Operating Environment

■ Operating temperature	23°C ±5°C
■ Operating humidity	40~60%RH (no condensation of moisture)
■ Storage temperature	0~60°C
■ Storage humidity	20~85%RH (no condensation of moisture)

LC1L

EXTERNAL DIMENSIONS



SPECIFICATIONS

■ Software maintenance	Re-write FLASH memory
■ Operation	ISA Bus
■ DSP	30MHz
■ Sampling	22kHz
■ A/D converter	12bits
■ Interpolation	4096
■ Power supply	+5V ±5% (max1.5A) +12V ±5% (max1.5A) -12V ±5% (max50mA)

■ Weight	approx. 400g
■ Dimensions	330 (L) x 120 (W) x 36 (H) mm (requires two ISA slot space.)

Operating Environment

■ Operating temperature	23°C ±5°C
■ Operating humidity	40~60%RH (no condensation of moisture)
■ Storage temperature	0~60°C
■ Storage humidity	20~85%RH (no condensation of moisture)