

Servo Amplifier

R Y H 2 0 1 F 5 - V V 2

| Code | [Basic type] |
|------|---------------------|
| RYH | ALPHA5 Smart series |

| Code | [Applicable motor output] |
|------|---------------------------------------|
| 201 | $20 \times 10^1 = 200W, 100W, 50W$ |
| 401 | $40 \times 10^1 = 400W$ |
| 751 | $75 \times 10^1 = 750W, 500W$ |
| 152 | $15 \times 10^2 = 1.5kW, 1.0kW, 850W$ |
| 202 | $20 \times 10^2 = 2.0kW$ |
| 302 | $30 \times 10^2 = 3.0kW$ |

| Code | [Series] |
|------|--------------------------|
| F | 1500 to 3000r/min series |

| Code | [Order of development] |
|------|------------------------|
| 5 | 5 |

| Code | [Input voltage] |
|------|-----------------|
| 2 | 3-phase 200V |

| Code | [Upper interface] |
|------|---|
| V | General-purpose interface (pulse, analog voltage) |

| Code | [Major functions] |
|------|------------------------------------|
| V | Position, speed and torque control |

Servomotor

G Y S 5 0 0 D 5 - H B 2 - B

| Code | [Basic type] |
|------|-------------------|
| GYS | Ultra-low inertia |
| GYC | Low inertia |
| GYG | Middle inertia |

| Code | [Rated output] |
|------|-----------------------------------|
| 500 | $50 \times 10^0 = 0.05kW$ |
| 101 | $10 \times 10^1 = 0.1kW$ |
| 201 | $20 \times 10^1 = 0.2kW$ |
| 401 | $40 \times 10^1 = 0.4kW, 0.375kW$ |
| 501 | $50 \times 10^1 = 0.5kW$ |
| 751 | $75 \times 10^1 = 0.75kW$ |
| 851 | $85 \times 10^1 = 0.85kW$ |
| 102 | $10 \times 10^2 = 1.0kW$ |
| 132 | $13 \times 10^2 = 1.3kW$ |
| 152 | $15 \times 10^2 = 1.5kW$ |
| 202 | $20 \times 10^2 = 2.0kW$ |
| 302 | $30 \times 10^2 = 3.0kW$ |

| Code | [Rated speed] |
|------|------------------|
| D | 3000r/min series |
| C | 2000r/min series |
| B | 1500r/min series |

| Code | [Order of development] |
|------|------------------------|
| 5 | 5 |

| Code | [Brake] |
|-------|--------------|
| Blank | Not provided |
| B | Provided |

| Code | [Input voltage] |
|------|-----------------|
| 2 | 3-phase 200V |

| Code | [Oil seal/shaft] | Applicable motor GYS, GYC, GYG |
|------|--|--------------------------------------|
| A | Without an oil seal, straight shaft with a key | Δ (*O) |
| B | Without an oil seal, straight shaft without a key | \odot |
| C | Without an oil seal, straight shaft with a key, tapped | \circ |
| E | With an oil seal, straight shaft with a key | Δ |
| F | With an oil seal, straight shaft without a key | Δ |
| G | With an oil seal, straight shaft with a key, tapped | Δ |

\odot : Standard item \circ : Semi-standard item
 Δ : Made-to-order item
 * Applicable with GYS and GYC motors of 0.1kW or less

| Code | [Encoder] |
|------|----------------|
| H | 18-bit ABS/INC |
| R | 20-bit INC |

Servo Amplifier Specifications

Common specifications

| Applicable motor rated speed | | 3000r/min | | | | | | 2000r/min | | | | | | 1500r/min | | | | | | | | | | | |
|--|--|--|-----|-----|-----|------|-----|---------------------------|-----|-----|-----|------|-----|-----------------------|-----|-----|---------|-----|--|-----------------------|--|--|---------|--|--|
| Applicable motor output [kW] | | 0.05 | 0.1 | 0.2 | 0.4 | 0.75 | 1.0 | 1.5 | 2.0 | 3.0 | 0.5 | 0.75 | 1.0 | 1.5 | 2.0 | 0.5 | 0.85 | 1.3 | | | | | | | |
| Amplifier type | | RYH□□□F5-VV2 | | | 201 | 401 | 751 | 152 | 202 | 302 | 751 | | | 152 | | | 202 | | | | | | | | |
| Outer frame number | | 1a | | | 1b | 2a | 2b | 3a | 3b | 2a | | | 2b | | | 3a | | | | | | | | | |
| Mass [kg] | | 0.8 | | | | | | 1.2 | | | 1.3 | | | 2.2 | | | 2.2 | | | | | | | | |
| Protective construction / cooling | | Open / natural cooling | | | | | | Open / mechanical cooling | | | | | | | | | | | | | | | | | |
| Power supply | | Single-phase, 3-phase | | | | | | 3-phase | | | | | | Single-phase, 3-phase | | | 3-phase | | | Single-phase, 3-phase | | | 3-phase | | |
| Voltage / frequency | | 200 to 240VAC 50/60Hz | | | | | | | | | | | | | | | | | | | | | | | |
| Allowable voltage fluctuation | | 3-phase : 170 to 264 VAC, Single-phase : 180 to 264 VAC | | | | | | | | | | | | | | | | | | | | | | | |
| Control system | | Fully-digital sinusoidal PWM drive | | | | | | | | | | | | | | | | | | | | | | | |
| Max voltage for regenerative resistance [V] | | Built-in resistor | | | - | | | 20 | | | 30 | | | 20 | | | 30 | | | 20 | | | 30 | | |
| | | External resistor | | | 17 | | | 50 | | | 260 | | | 50 | | | 260 | | | 50 | | | 260 | | |
| Feedback | | INC 20bit/rev, ABS/INC 18bit/rev | | | | | | | | | | | | | | | | | | | | | | | |
| Overload capability | | 300% / 3 sec. | | | | | | | | | | | | | | | | | | | | | | | |
| Speed fluctuation ratio* | | Load fluctuation: Within ± 0.01% (load fluctuation 0 to 100% at rated operation speed) | | | | | | | | | | | | | | | | | | | | | | | |
| | | Power supply fluctuation: 0% (power supply fluctuation -10 to +10% at rated operation speed) | | | | | | | | | | | | | | | | | | | | | | | |
| | | Temperature fluctuation: Within ± 0.2% (25 ± 10°C at rated operation speed) | | | | | | | | | | | | | | | | | | | | | | | |
| Capability and function | | Closed loop control with speed adjuster, acceleration/deceleration time setting, manual feed rate/max. rotation speed, speed command zero clamp, etc. | | | | | | | | | | | | | | | | | | | | | | | |
| VV type | | Number of position data sets: 15-point (position, speed, acceleration/deceleration time setting, timer, M code and various statuses) | | | | | | | | | | | | | | | | | | | | | | | |
| | | Position control: Closed loop control with position adjuster, electronic gear, output pulse setting, feed forward, homing, interrupt positioning, auto startup, etc. | | | | | | | | | | | | | | | | | | | | | | | |
| | | Torque control: Closed loop control with current adjuster (proportional open loop control of current and torque), torque limit, speed limit at torque control, etc. | | | | | | | | | | | | | | | | | | | | | | | |
| | | Accessory functions: Easy tuning, profile operation, sequence test mode, auto tuning, auto notch filter, vibration suppressing online learning, etc. | | | | | | | | | | | | | | | | | | | | | | | |
| Protective function (Alarm display) | | Over Current (oc1, oc2), Over Speed (oS), High Voltage (Hu), Encoder Trouble (Et1, Et2), Circuit Trouble (ct), Data Error (dE), Combination Error (cE), Resistor Tr Heat (tH), Encoder Communication Error (Ec), Cont (CONTRol signal) Error (ctE), Over Load (oL1, oL2), Power Low Voltage (LuP), Resistor Heat (rH1, rH2, rH3), Over Flow (oF), Amp Heat (AH), Encoder Heat (EH), Absolute Data Lost (dL1, dL2, dL3), Absolute Data Over Flow (AF), Initial Error (iE) | | | | | | | | | | | | | | | | | | | | | | | |
| Operation and display section of main body(keypad) | | 4-digit alphanumeric display with 7-segment LED 4 operation switches (MODE, SET, UP and DOWN) | | | | | | | | | | | | | | | | | | | | | | | |
| Working conditions | | Installation place: Indoors at altitude ≤ 1000m, free from dust, corrosive gases and direct sunlight | | | | | | | | | | | | | | | | | | | | | | | |
| | | Temperature / humidity: In case of compliance with CE marking: pollution degree 2, over voltage category III | | | | | | | | | | | | | | | | | | | | | | | |
| | | -10 to 55°C/10 to 90%RH (without condensation) | | | | | | | | | | | | | | | | | | | | | | | |
| | | Vibration / shock resistance: Vibration resistance: 3mm: 2 to 9Hz or less, 9.8m/s²: 9 to 20Hz or less, 2m/s²: 20 to 55Hz or less, 1m/s²: 55 to 200Hz or less | | | | | | | | | | | | | | | | | | | | | | | |
| | | Shock resistance: 19.6m/s² (2G) | | | | | | | | | | | | | | | | | | | | | | | |
| Standards | | UL/cUL (UL508c), CE marking (low voltage directive EN61800-5-1), RoHS directive (Some of the models are in the process to be certified.) | | | | | | | | | | | | | | | | | | | | | | | |

*This value represents the average value of the speed fluctuation that is generated from load fluctuation, power supply fluctuation, and temperature fluctuation as the percentage to the rated rotation speed.

Interface specifications

| Item | Specifications | |
|-------------------------|--|----------------------------|
| Command interface | Positioning function | RS-485 (Modbus-RTU), Di/Do |
| | Position control | Pulse input |
| | Speed control | Analog voltage input |
| | Torque control | Analog voltage input |
| Communication interface | Two RS-485 ports (for parameter editing and monitor) | |
| | Fuji's original protocol Modbus-RTU | |
| | 9600/19200/38400/115200 bps, connection of max. 31 units | |

| Terminal name | Symbol | Specifications |
|---|----------------------|--|
| Pulse input | CA,*CA CB,*CB | Differential input: max. input frequency ≤ 1.0MHz Open collector input: max. input frequency ≤ 200kHz (In case of signals at 90-degree phase difference, the above relationship is true for the four-fold frequency.) Pulse format Command pulse/Command direction Forward/Reverse pulse Two signals at 90-degree phase difference } Select one of these formats with a parameter setting. |
| | PPI | Pull-up power input at open collector input (24VDC ± 5%) |
| Pulse output | FFA,*FFA FFB,*FFB | Differential output: max. output frequency ≤ 1MHz Two signals at 90-degree phase difference Pulse output count setting n (pulses/rev): 16 ≤ n ≤ 262144 |
| | FFZ,*FFZ | Differential output: 1 pulse/rev |
| | FZ | Open collector output: 1 pulse/rev |
| | M5 | Reference potential (0V) |
| Analog monitor voltage output | MON1 MON2 | 0V to ± 10VDC Resolution: 14bits / ± full scale The output data depends on internal parameter. |
| | M5 | Reference potential (0V) |
| Common for sequence I/O | COMIN | Common for sequence input signal |
| | COMOUT | Common for sequence output signal |
| Sequence input signal | CONT1 to CONT5 | 12VDC-10% to 24VDC+10% Current consumption 8mA (per contact; used at circuit voltage of 12 to 24VDC) Function of each signal depends on parameter setting Compatible with both sink and source input methods |
| | COMIN | Reference potential |
| Sequence output signal | OUT1 to OUT3 | 30VDC / 50mA (max.) Function of each signal depends on parameter setting Compatible with both sink and source output methods |
| | COMOUT | Reference potential |
| | VREF | Speed command voltage input Input range: from -10 to 0 to -10V, input impedance 20kΩ Resolution: 15 bits / ± full scale |
| Analog voltage input (for speed and torque control) | TREF | Torque command voltage input Input range: from -10 to 0 to +10V, input impedance 20kΩ Resolution: 14 bits / ± full scale |
| | M5 | Reference potential (0V) |

Servomotor Specifications

GYS motor

Standard specifications

| Motor type (-B) indicates the brake-incorporated type. | GYS500D5 -□□2(-B) | GYS101D5 -□□2(-B) | GYS201D5 -□□2(-B) | GYS401D5 -□□2(-B) | GYS751D5 -□□2(-B) | GYS102D5 -□□2(-B) | GYS152D5 -□□2(-B) | GYS202D5 -□□2(-B) | GYS302D5 -□□2(-B) |
|--|--|---|---|---|---|---|---|---|--|
| Rated output [kW] | 0.05 | 0.1 | 0.2 | 0.4 | 0.75 | 1.0 | 1.5 | 2.0 | 3.0 |
| Rated torque [N · m] | 0.159 | 0.318 | 0.637 | 1.27 | 2.39 | 3.18 | 4.78 | 6.37 | 9.55 |
| Rated speed [r/min] | 3000 | | | | | | | | |
| Max. speed [r/min] | 6000 *1 | | | | 5000 | | | | |
| Max. torque [N · m] | 0.478 | 0.955 | 1.91 | 3.82 | 7.17 | 9.55 | 14.3 | 19.1 | 28.7 |
| Inertia [kg · m ²] () indicates brake-incorporated type. | 0.0192×10 ⁻⁴ (0.0223×10 ⁻⁴) | 0.0371×10 ⁻⁴ (0.0402×10 ⁻⁴) | 0.135×10 ⁻⁴ (0.159×10 ⁻⁴) | 0.246×10 ⁻⁴ (0.270×10 ⁻⁴) | 0.853×10 ⁻⁴ (0.949×10 ⁻⁴) | 1.73×10 ⁻⁴ (2.03×10 ⁻⁴) | 2.37×10 ⁻⁴ (2.67×10 ⁻⁴) | 3.01×10 ⁻⁴ (3.31×10 ⁻⁴) | 8.32×10 ⁻⁴ (10.42×10 ⁻⁴) |
| Recommended load inertia ratio | 30 times or less *2 | | | | 20 times or less *2 | | | | |
| Rated current [A] | 0.85 | 0.85 | 1.5 | 2.7 | 4.8 | 7.1 | 9.6 | 12.6 | 18.0 |
| Max. current [A] | 2.55 | 2.55 | 4.5 | 8.1 | 14.4 | 21.3 | 28.8 | 37.8 | 54.0 |
| Winding insulation class | Class B | | | | Class F | | | | |
| Rating | Continuous | | | | | | | | |
| Degree of enclosure protection | Totally enclosed, self-cooled (IP 67, excluding the shaft-through and connectors) | | | | | Totally enclosed, self-cooled (IP 67, excluding the shaft-through)*3 | | | |
| Terminals (motor) | Cable 0.3m (with connector) | | | | | Cannon connector | | | |
| Terminals (encoder) | Cable 0.3m (with connector) | | | | | Cannon connector | | | |
| Overheat protection | Not provided (The servo amplifier detects temperature.) | | | | | | | | |
| Mounting method | By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53) | | | | | | | | |
| Shaft extension | Straight shaft | | | | | | | | |
| Paint color | N1.5 | | | | | | | | |
| Encoder | 18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental) | | | | | | | | |
| Vibration level | V5 or below | | | | | Up to rated rotation speed: V10 or below Over rated rotation speed and up to 5000r/min: V15 or below | | | |
| Installation place, altitude and environment | For indoor use (free from direct sunlight), 1000m or below, locations without corrosive and flammable gases, oil mist and dust | | | | | | | | |
| Ambient temperature, humidity | -10 to +40°C, within 90% RH (without condensation) | | | | | | | | |
| Vibration resistance [m/s ²] | 49 | | | | | 24.5 | | | |
| Mass [kg] () indicates brake-incorporated type. | 0.45 (0.62) | 0.55 (0.72) | 1.2 (1.7) | 1.8 (2.3) | 3.4 (4.2) | 4.4 (5.9) | 5.2 (6.8) | 6.3 (7.9) | 11.0 (13.0) |
| Compliance with standards | UL/cUL (UL1004), CE marking (EN60034-1, EN60034-5), RoHS directive | | | | | | | | |

*1 The maximum rotation speed is 5000r/min when using the motor in combination with Fuji's gear head.

*2 The load inertia ratio to the inertia of servo motor. If the moment of load inertia ratio value exceeds the list value, please contact us.

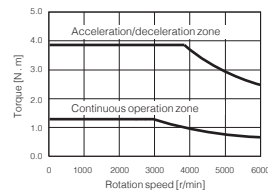
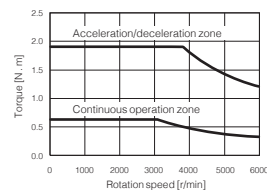
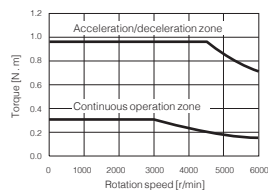
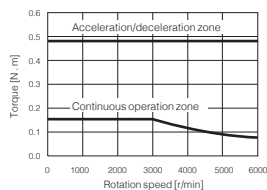
*3 If the motor is used in the environment rated to IP67 protection degree, use the wiring connector suitable for the protection degree.

Brake specifications (motor equipped with a brake)

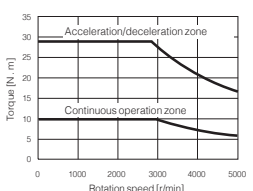
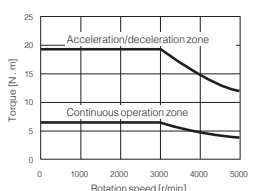
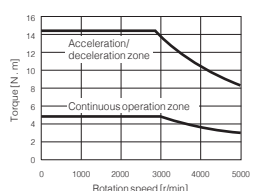
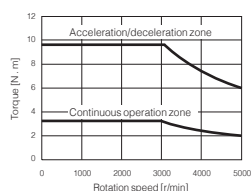
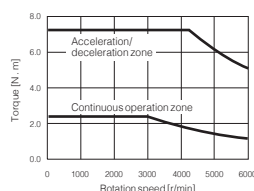
| Motor type | GYS500D5 -□□2-B | GYS101D5 -□□2-B | GYS201D5 -□□2-B | GYS401D5 -□□2-B | GYS751D5 -□□2-B | GYS102D5 -□□2-B | GYS152D5 -□□2-B | GYS202D5 -□□2-B | GYS302D5 -□□2-B |
|--------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Static friction torque [N · m] | 0.34 | | 1.27 | | 2.45 | | 6.86 | | 17 |
| Rated DC voltage [V] | DC24±10% | | | | | | | | |
| Attraction time [ms] | 35 | | 40 | | 60 | | 100 | | 120 |
| Release time [ms] | 10 | | 20 | | 25 | | 40 | | 30 |
| Power consumption [W] | 6.1 (at 20 °C) | | 7.3 (at 20 °C) | | 8.5 (at 20 °C) | | 17.7 (at 20 °C) | | 12 (at 20 °C) |

Torque characteristics diagrams (at 3-phase 200 [V] or single-phase 230 [V] source voltage)

| GYS500D5-□□2 | GYS101D5-□□2 | GYS201D5-□□2 | GYS401D5-□□2 |
|--------------|--------------|--------------|--------------|
| 0.05kW | 0.1kW | 0.2kW | 0.4kW |



| GYS751D5-□□2 | GYS102D5-□□2 | GYS152D5-□□2 | GYS202D5-□□2 | GYS302D5-□□2 |
|--------------|--------------|--------------|--------------|--------------|
| 0.75kW | 1.0kW | 1.5kW | 2.0kW | 3.0kW |



These characteristics indicate typical values of each servomotor combined with the corresponding servo amplifier.

The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

- Model GYS500D, 101D : 200×200×6 [mm]
- Model GYS201D, 401D : 250×250×6 [mm]
- Model GYS751D : 300×300×6 [mm]
- Model GYS102D, 152D, 202D : 350×350×8 [mm]
- Model GYS302D : 400×400×12 [mm]

Servomotor Specifications

GYC motor

Standard specifications

| Motor type (-B) indicates the brake-incorporated type. | GYC101D5 -□□2(-B) | GYC201D5 -□□2(-B) | GYC401D5 -□□2(-B) | GYC751D5 -□□2(-B) | GYC102D5 -□□2(-B) | GYC152D5 -□□2(-B) | GYC202D5 -□□2(-B) |
|--|--|---|---|---|---|---|---|
| Rated output [kW] | 0.1 | 0.2 | 0.4 | 0.75 | 1.0 | 1.5 | 2.0 |
| Rated torque [N · m] | 0.318 | 0.637 | 1.27 | 2.39 | 3.18 | 4.78 | 6.37 |
| Rated speed [r/min] | 3000 | | | | | | |
| Max. speed [r/min] | 6000 *1 | | | | 5000 | | |
| Max. torque [N · m] | 0.955 | 1.91 | 3.82 | 7.17 | 9.55 | 14.3 | 19.1 |
| Inertia [kg · m ²] () indicates brake-incorporated type. | 0.0577×10 ⁻⁴ (0.0727×10 ⁻⁴) | 0.213×10 ⁻⁴ (0.288×10 ⁻⁴) | 0.408×10 ⁻⁴ (0.483×10 ⁻⁴) | 1.21×10 ⁻⁴ (1.66×10 ⁻⁴) | 3.19×10 ⁻⁴ (5.29×10 ⁻⁴) | 4.44×10 ⁻⁴ (6.54×10 ⁻⁴) | 5.69×10 ⁻⁴ (7.79×10 ⁻⁴) |
| Recommended load inertia ratio | 30 times or less *2 | | | | 20 times or less *2 | | |
| Rated current [A] | 1.0 | 1.5 | 2.6 | 4.8 | 6.7 | 9.6 | 12.6 |
| Max. current [A] | 3.0 | 4.5 | 7.8 | 14.4 | 20.1 | 28.8 | 37.8 |
| Winding insulation class | Class B | | | | Class F | | |
| Rating | Continuous | | | | | | |
| Degree of enclosure protection | Totally enclosed, self-cooled (IP 67, excluding the shaft-through and connectors) | | | | Totally enclosed, self-cooled (IP 67, excluding the shaft-through) *3 | | |
| Terminals (motor) | Cable 0.3m (with connector) | | | | Cannon connector | | |
| Terminals (encoder) | Cable 0.3m (with connector) | | | | Cannon connector | | |
| Overheat protection | Not provided (The servo amplifier detects temperature.) | | | | | | |
| Mounting method | By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53) | | | | | | |
| Shaft extension | Straight shaft | | | | | | |
| Paint color | N1.5 | | | | | | |
| Encoder | 18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental) | | | | | | |
| Vibration level | V5 or below | | | | Up to rated rotation speed: V10 or below Over rated rotation speed and up to 5000r/min: V15 or below | | |
| Installation place, altitude and environment | For indoor use (free from direct sunlight), 1000m or below, locations without corrosive and flammable gases, oil mist and dust | | | | | | |
| Ambient temperature, humidity | -10 to +40°C, within 90% RH (without condensation) | | | | | | |
| Vibration resistance [m/s ²] | 49 | | | | 24.5 | | |
| Mass [kg] () indicates brake-incorporated type. | 0.75 (1.0) | 1.3 (1.9) | 1.9 (2.6) | 3.5 (4.3) | 5.7 (8.0) | 7.0 (9.8) | 8.2 (11.0) |
| Compliance with standards | UL/cUL (UL1004), CE marking (EN60034-1, EN60034-5), RoHS directive | | | | | | |

*1 The maximum rotation speed is 5000r/min when using the motor in combination with Fuji's gear head.

*2 The load inertia ratio to the inertia of servo motor. If the moment of load inertia value exceeds the list value, please contact us.

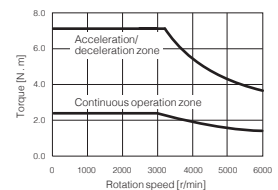
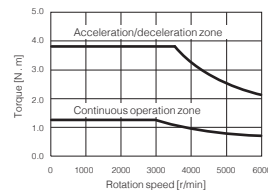
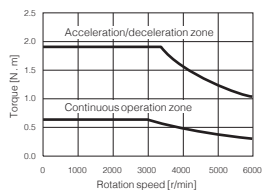
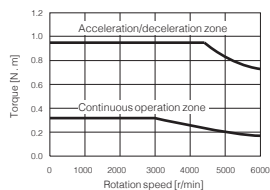
*3 If the motor is used in the environment rated to IP67 protection degree, use the wiring connector suitable for the protection degree.

Brake specifications (motor equipped with a brake)

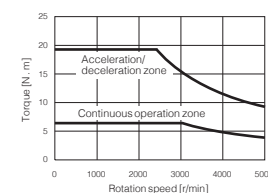
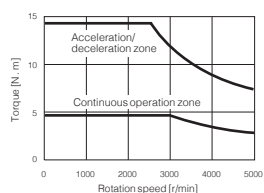
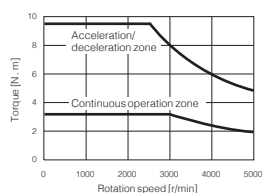
| Motor type | GYC101D5 -□□2-B | GYC201D5 -□□2-B | GYC401D5 -□□2-B | GYC751D5 -□□2-B | GYC102D5 -□□2-B | GYC152D5 -□□2-B | GYC202D5 -□□2-B |
|--------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Static friction torque [N · m] | 0.318 | 0.637 | 1.27 | 2.39 | 3.18 | 4.78 | 6.37 |
| Rated DC voltage [V] | DC24±10% | | | | | | |
| Attraction time [ms] | 60 | 80 | 80 | 50 | 120 | 120 | 120 |
| Release time [ms] | 40 | | | 80 | 30 | | |
| Power consumption [W] | 6.5 (at 20 °C) | 9.0 (at 20 °C) | 9.0 (at 20 °C) | 8.5 (at 20 °C) | 12 (at 20 °C) | 12 (at 20 °C) | 12 (at 20 °C) |

Torque characteristics diagrams (at 3-phase 200 [V] or single-phase 230 [V] source voltage)

| GYC101D5-□□2 0.1kW | GYC201D5-□□2 0.2kW | GYC401D5-□□2 0.4kW | GYC751D5-□□2 0.75kW |
|-----------------------|-----------------------|-----------------------|------------------------|
|-----------------------|-----------------------|-----------------------|------------------------|



| GYC102D5-□□2 1.0kW | GYC152D5-□□2 1.5kW | GYC202D5-□□2 2.0kW |
|-----------------------|-----------------------|-----------------------|
|-----------------------|-----------------------|-----------------------|



These characteristics indicate typical values of each servomotor combined with the corresponding servo amplifier.

The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

- Model GYC101D, 201D, 401D : 250×250×6 [mm]
- Model GYC751D : 300×300×6 [mm]
- Model GYC102D : 300×300×12 [mm]
- Model GYC152D, 202D : 400×400×12 [mm]

Servomotor Specifications

GYG motor [2000r/min, 1500r/min]

Standard specifications

| Motor type (-B) indicates the brake-incorporated type. | 2000r/min | | | | | 1500r/min | | |
|--|--|--|--|--|--|--|--|--|
| | GYG501C5 -□□2(-B) | GYG751C5 -□□2(-B) | GYG102C5 -□□2(-B) | GYG152C5 -□□2(-B) | GYG202C5 -□□2(-B) | GYG501B5 -□□2(-B) | GYG851B5 -□□2(-B) | GYG132B5 -□□2(-B) |
| Rated output [kW] | 0.5 | 0.75 | 1.0 | 1.5 | 2.0 | 0.5 | 0.85 | 1.3 |
| Rated torque [N·m] | 2.39 | 3.58 | 4.77 | 7.16 | 9.55 | 3.18 | 5.41 | 8.28 |
| Rated speed [r/min] | 2000 | | | | | 1500 | | |
| Max. speed [r/min] | 3000 | | | | | | | |
| Max. torque [N·m] | 7.2 | 10.7 | 14.3 | 21.5 | 28.6 | 9.5 | 16.2 | 24.8 |
| Inertia [kg·m ²] () indicates brake-incorporated type. | 7.96×10 ⁻⁴ (10.0×10 ⁻⁴) | 11.55×10 ⁻⁴ (13.6×10 ⁻⁴) | 15.14×10 ⁻⁴ (17.2×10 ⁻⁴) | 22.33×10 ⁻⁴ (24.4×10 ⁻⁴) | 29.51×10 ⁻⁴ (31.6×10 ⁻⁴) | 11.55×10 ⁻⁴ (13.6×10 ⁻⁴) | 15.15×10 ⁻⁴ (17.3×10 ⁻⁴) | 22.33×10 ⁻⁴ (24.5×10 ⁻⁴) |
| Recommended load inertia ratio | 10 times or less *1 | | | | | | | |
| Rated current [A] | 3.5 | 5.2 | 6.4 | 10.0 | 12.3 | 4.7 | 7.3 | 11.5 |
| Max. current [A] | 10.5 | 15.6 | 19.2 | 30.0 | 36.9 | 14.1 | 21.9 | 34.5 |
| Winding insulation class | Class F | | | | | | | |
| Rating | Continuous | | | | | | | |
| Degree of enclosure protection | Totally enclosed, self-cooled (IP 67, excluding the shaft-through)*2 | | | | | | | |
| Terminals (motor) | Cannon connector | | | | | | | |
| Terminals (encoder) | Cannon connector | | | | | | | |
| Overheat protection | Not provided (The servo amplifier detects temperature.) | | | | | | | |
| Mounting method | By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53) | | | | | | | |
| Shaft extension | Straight shaft | | | | | | | |
| Paint color | N1.5 | | | | | | | |
| Encoder | 18-bit serial encoder (absolute/incremental), 20-bit serial encoder (incremental) | | | | | | | |
| Vibration level | V10 or below | | | | | | | |
| Installation place, altitude and environment | For indoor use (free from direct sunlight), 1000m or below, locations without corrosive and flammable gases, oil mist and dust | | | | | | | |
| Ambient temperature, humidity | -10 to +40°C, within 90% RH (without condensation) | | | | | | | |
| Vibration resistance [m/s ²] | 24.5 | | | | | | | |
| Mass [kg] () indicates brake-incorporated type. | 5.3 (7.5) | 6.4 (8.6) | 7.5 (9.7) | 9.8 (12.0) | 12.0 (14.2) | 6.4 (8.6) | 7.5 (9.7) | 9.8 (12.0) |
| Compliance with standards | UL/cUL (UL1004), CE marking (EN60034-1, EN60034-5), RoHS directive | | | | | | | |

*1 The load inertia ratio to the inertia of servo motor. If the moment of load inertia ratio value exceeds the list value, please contact us.

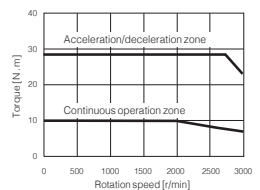
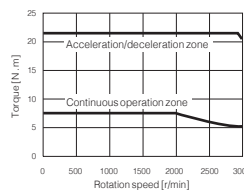
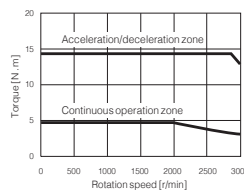
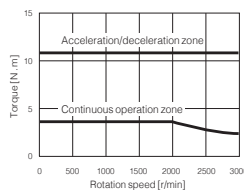
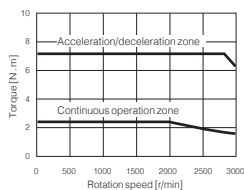
*2 If the motor is used in the environment rated to IP67 protection degree, use the wiring connector suitable for the protection degree.

Brake specifications (motor equipped with a brake)

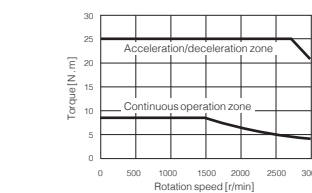
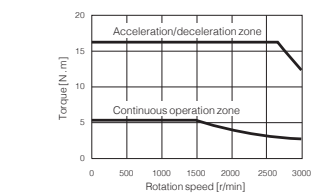
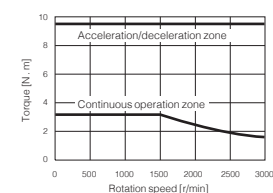
| Motor type | GYG501C5 -□□2-B | GYG751C5 -□□2-B | GYG102C5 -□□2-B | GYG152C5 -□□2-B | GYG202C5 -□□2-B | GYG501B5 -□□2-B | GYG851B5 -□□2-B | GYG132B5 -□□2-B |
|------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Static friction torque [N·m] | 17 | | | | | | | |
| Rated DC voltage [V] | DC24±10% | | | | | | | |
| Attraction time [ms] | 120 | | | | | | | |
| Release time [ms] | 30 | | | | | | | |
| Power consumption [W] | 12 (at 20 °C) | | | | | | | |

Torque characteristics diagrams (at 3-phase 200 [V] or single-phase 230 [V] source voltage)

| GYG501C5-□□2 | GYG751C5-□□2 | GYG102C5-□□2 | GYG152C5-□□2 | GYG202C5-□□2 |
|--------------|--------------|--------------|--------------|--------------|
| 0.5kW | 0.75kW | 1.0kW | 1.5kW | 2.0kW |



| GYG501B5-□□2 | GYG851B5-□□2 | GYG132B5-□□2 |
|--------------|--------------|--------------|
| 0.5kW | 0.85kW | 1.3kW |



These characteristics indicate typical values of each servomotor combined with the corresponding servo amplifier.

The rated torque indicates the value obtained when the servo amplifier is installed to the following aluminum heat sink.

- Model GYG501C, 751C, 102C : 300 × 300 × 12 [mm]
- Model GYG152C, 202C : 400 × 400 × 12 [mm]
- Model GYG501B, 851B : 300 × 300 × 12 [mm]
- Model GYG132B : 400 × 400 × 12 [mm]