

ISMG Servo Motor

for energy saving servo pump applications

High overload capacity

IPM (Interior Permanent Magnet) rotor structure, with excellent electromagnetic performance



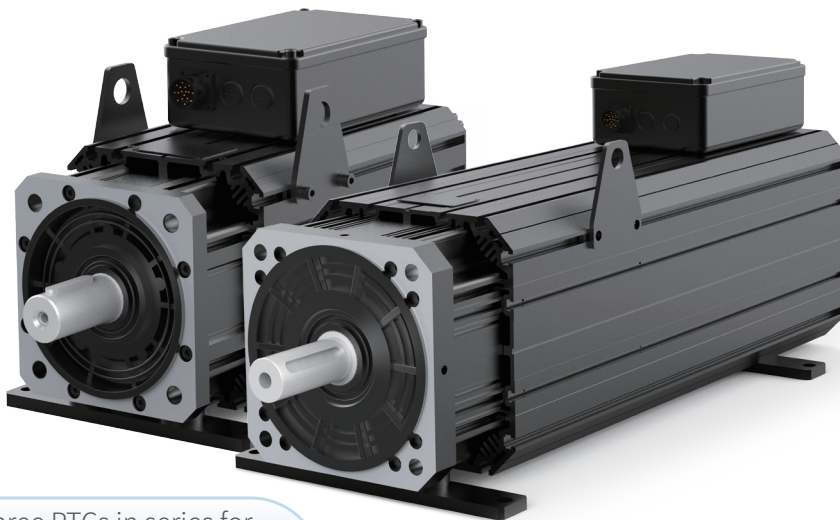
Reduced iron and copper losses, higher efficiency and improved cooling

Robust resolver feedback

Higher efficiency keeps motor cool during operation, and reduces the risk of demagnetization

Forced ventilation

Three PTCs in series for consistent temperature protection. KTY for precise temperature monitoring.



Product ordering code

ISMG1-30D 15C D- R1 A 1 F A

| Code | Frame |
|-------|-----------------|
| ISMG1 | 200 X 200 frame |
| ISMG2 | 266 X 266 frame |

| Code | Rated power |
|------|-------------|
| C | x 100 |
| D | x 1000 |
| E | x 10000 |
| E.g. | 95C: 9500 W |

| Code | Rated speed |
|------|---------------|
| C | x 100 |
| E.g. | 15C: 1500 rpm |

| Code | Voltage class |
|------|---------------|
| D | 380V |

| Code | Encoder type |
|------|--------------|
| R1 | Resolver |

| Code | Shaft connection |
|------|--|
| A | Keyed + tapped hole, IPM rotor structure |

| Code | Version |
|------|-----------|
| A | Version A |

| Code | Cooling |
|------|----------------|
| F | Forced cooling |

| Code | Brake, gear, oil seal |
|------|-----------------------|
| 1 | Oil seal |

Servo motor specifications

| Series | | ISMG1 | | | | | | | | | | | | | | |
|---|----------------------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Model | ISMG1-xxxxxxx-RIA1FA | 95C15CD | 11D17CD | 12D20CD | 14D15CD | 16D17CD | 18D20CD | 17D15CD | 20D17CD | 23D20CD | 22D15CD | 24D17CD | 28D20CD | 30D15CD | 34D17CD | 41D20CD |
| Frame size [mm] | | 200 x 200 | | | | | | | | | | | | | | |
| Length [mm] | | 375 | | | 410 | | | 445 | | | 480 | | | 550 | | |
| Rated voltage [V] | | 380 | | | | | | | | | | | | | | |
| Rated frequency [Hz] | | 100 | 113.33 | 133.33 | 100 | 113.33 | 133.33 | 100 | 113.33 | 133.33 | 100 | 113.33 | 133.33 | 100 | 113.33 | 133.33 |
| Rated speed [RPM] | | 1,500 | 1,700 | 2,000 | 1,500 | 1,700 | 2,000 | 1,500 | 1,700 | 2,000 | 1,500 | 1,700 | 2,000 | 1,500 | 1,700 | 2,000 |
| Back EMF [V] | | 318.2 | 309.1 | 303 | 303 | 309.1 | 323.2 | 303 | 300.5 | 303 | 318.2 | 309.1 | 303 | 303 | 309.1 | 323.2 |
| Rated power [kW] | S1 | 7.9 | 8.9 | 10.5 | 11.8 | 13.4 | 15.7 | 14.5 | 16.4 | 19.3 | 18.1 | 20.5 | 24.1 | 23.6 | 26.7 | 31.4 |
| | S4 | 9.5 | 11 | 12 | 14 | 16 | 18 | 17 | 20 | 23 | 22 | 24 | 28 | 30 | 34 | 41 |
| Rated current [A] | S1 | 15.4 | 18.1 | 21.6 | 24.4 | 27.1 | 30.4 | 29.9 | 34.1 | 39.8 | 35.5 | 41.5 | 49.8 | 48.7 | 54.2 | 60.7 |
| | S4 | 18.5 | 21.7 | 26 | 29.2 | 32.5 | 36.4 | 35.7 | 40.7 | 47.6 | 41.7 | 48.7 | 58.4 | 63.3 | 70.4 | 78.9 |
| Rated torque [Nm] | S1 | 50 | | | 75 | | | 92 | | | 115 | | | 150 | | |
| | S4 | 60 | | | 90 | | | 110 | | | 135 | | | 195 | | |
| Peak torque [Nm] | | 130 | | | 180 | | | 230 | | | 280 | | | 380 | | |
| Inertia [10 ⁻³ kg·m ²] | | 7.5 | | | 9 | | | 10.5 | | | 12 | | | 15 | | |
| Mass [kg] | | 45.2 | | | 51.9 | | | 59 | | | 66 | | | 79.8 | | |
| Poles | | 8 | | | | | | | | | | | | | | |

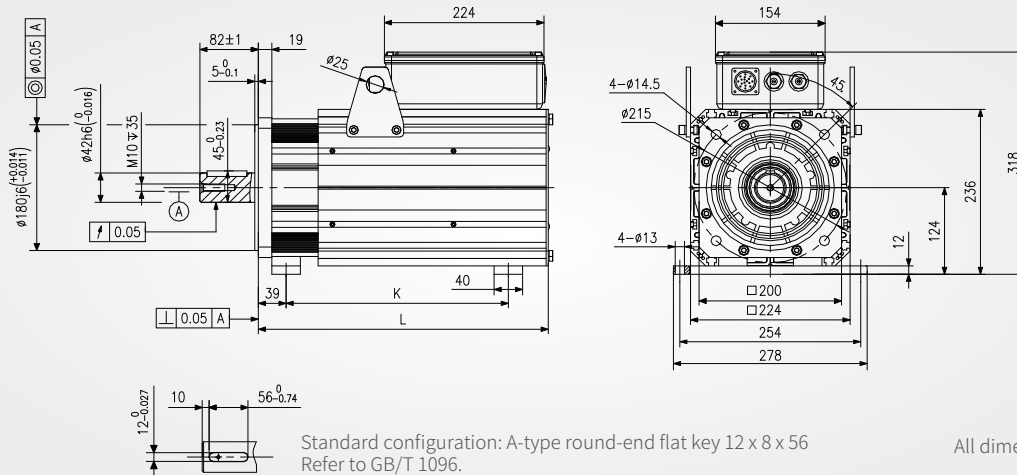
| Series | | ISMG2 | | | | | | | | | | | | | | |
|---|----------------------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Model | ISMG2-xxxxxxx-RIA1FA | 31D15CD | 36D17CD | 42D20CD | 42D15CD | 48D17CD | 57D20CD | 52D15CD | 60D17CD | 70D20CD | 60D15CD | 68D17CD | 80D20CD | 80D15CD | 91D17CD | 11E20CD |
| Frame size [mm] | | 266 x 266 | | | | | | | | | | | | | | |
| Length [mm] | | 525 | | | 575 | | | 625 | | | 675 | | | 775 | | |
| Rated voltage [V] | | 380 | | | | | | | | | | | | | | |
| Rated frequency [Hz] | | 100 | 113.33 | 133.33 | 100 | 113.33 | 133.33 | 100 | 113.33 | 133.33 | 100 | 113.33 | 133.33 | 100 | 113.33 | 133.33 |
| Rated speed [RPM] | | 1,500 | 1,700 | 2,000 | 1,500 | 1,700 | 2,000 | 1,500 | 1,700 | 2,000 | 1,500 | 1,700 | 2,000 | 1,500 | 1,700 | 2,000 |
| Back EMF [V] | | 318.2 | 309.1 | 303 | 303 | 309.1 | 323.2 | 303 | 300.5 | 303 | 318.2 | 309.1 | 303 | 303 | 343.4 | 323.2 |
| Rated power [kW] | S1 | 26.7 | 30.3 | 35.6 | 36.1 | 40.9 | 48.2 | 44.8 | 50.7 | 59.7 | 53.4 | 60.5 | 71.2 | 69.1 | 78.3 | 92.1 |
| | S4 | 31 | 36 | 42 | 42 | 48 | 57 | 52 | 60 | 70 | 60 | 68 | 80 | 80 | 91 | 110 |
| Rated current [A] | S1 | 52.5 | 61.4 | 73.6 | 74.7 | 83 | 93.1 | 94.1 | 107.5 | 125.6 | 104.9 | 122.7 | 147.2 | 142.9 | 142.9 | 178.1 |
| | S4 | 61.7 | 72.2 | 86.6 | 87.7 | 97.5 | 109.3 | 110.6 | 126.4 | 147.6 | 118.8 | 139 | 166.7 | 165.6 | 165.6 | 206.5 |
| Rated torque [Nm] | S1 | 170 | | | 230 | | | 285 | | | 340 | | | 440 | | |
| | S4 | 200 | | | 270 | | | 335 | | | 385 | | | 510 | | |
| Peak torque [Nm] | | 330 | | | 440 | | | 550 | | | 660 | | | 825 | | |
| Inertia [10 ⁻³ kg·m ²] | | 29.6 | | | 36.8 | | | 43.4 | | | 50 | | | 64 | | |
| Mass [kg] | | 122 | | | 141.3 | | | 158.4 | | | 175.4 | | | 217 | | |
| Poles | | 8 | | | | | | | | | | | | | | |

S1 operating mode (continuous duty): Operation with constant load with a duration long enough to reach thermal steady-state condition

S4 operating mode (periodic intermittent duty with influence on the start-up process): Sequence of identical duty cycles without thermal steady-state being reached. Each cycle is composed of a significant starting time, a period of operation at constant load and a period de-energized and at rest. ISMG series motors comply with S4 25%

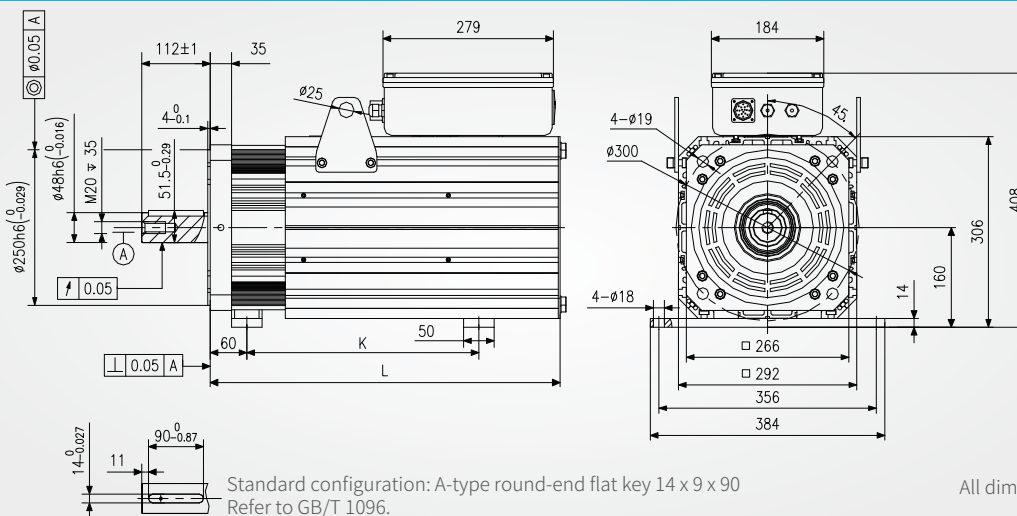
Servo motor dimensions

ISMG1 (200 x 200)



| Motor model | ISMG1-95C15CD-R1A1FA | ISMG1-14D15CD-R1A1FA | ISMG1-17D15CD-R1A1FA | ISMG1-22D15CD-R1A1FA | ISMG1-30D15CD-R1A1FA |
|-------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | ISMG1-11D17CD-R1A1FA | ISMG1-16D17CD-R1A1FA | ISMG1-20D17CD-R1A1FA | ISMG1-24D17CD-R1A1FA | ISMG1-34D17CD-R1A1FA |
| | ISMG1-12D20CD-R1A1FA | ISMG1-18D20CD-R1A1FA | ISMG1-23D20CD-R1A1FA | ISMG1-28D20CD-R1A1FA | ISMG1-41D20CD-R1A1FA |
| K | 285 | 312 | 354 | 396 | 471 |
| L | 375 | 410 | 445 | 480 | 550 |

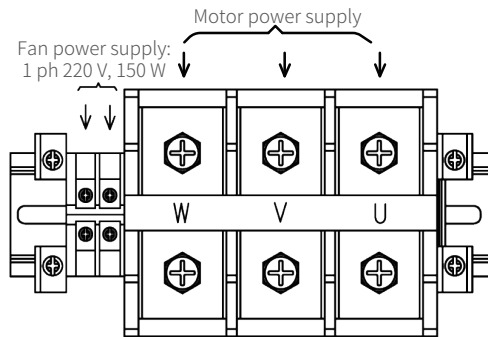
ISMG2 (266 x 266)



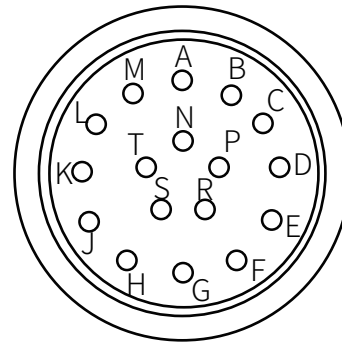
| Motor model | ISMG2-31D15CD-R1A1FA | ISMG2-42D15CD-R1A1FA | ISMG2-52D15CD-R1A1FA | ISMG2-60D15CD-R1A1FA | ISMG2-80D15CD-R1A1FA |
|-------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | ISMG2-36D17CD-R1A1FA | ISMG2-48D17CD-R1A1FA | ISMG2-60D17CD-R1A1FA | ISMG2-68D17CD-R1A1FA | ISMG2-91D17CD-R1A1FA |
| | ISMG2-42D20CD-R1A1FA | ISMG2-57D20CD-R1A1FA | ISMG2-70D20CD-R1A1FA | ISMG2-80D20CD-R1A1FA | ISMG2-11E20CD-R1A1FA |
| K | 360 | 370 | 476 | 476 | 583 |
| L | 525 | 575 | 625 | 675 | 775 |

Wiring diagram

Terminals of main circuit



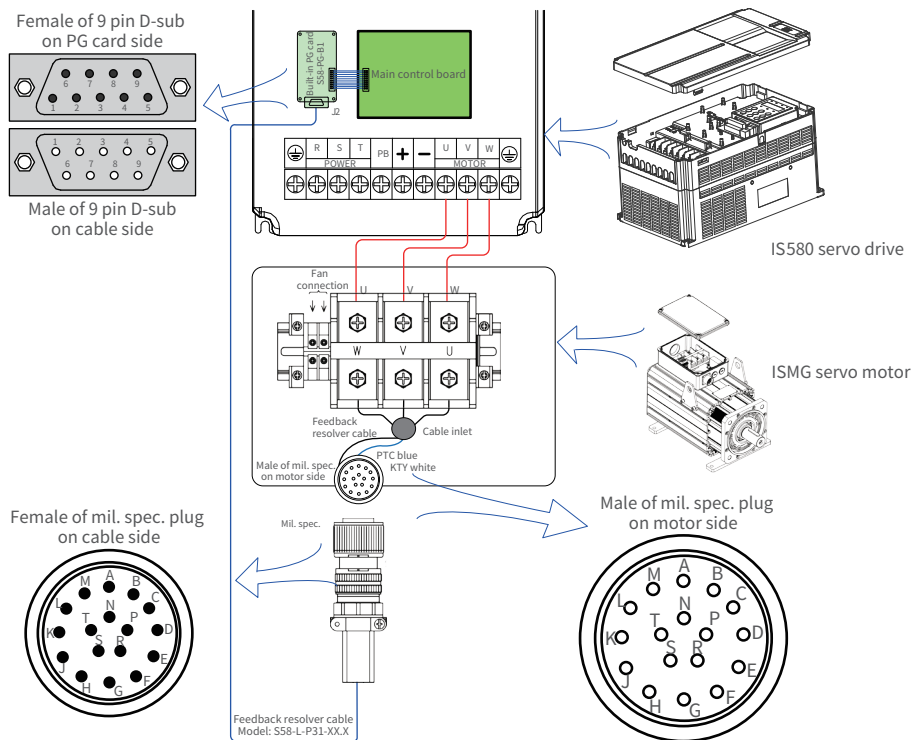
17P mil. spec. plug on motor side



Resolver cable -
Model: S58-L-P31-XX.X
Standard lengths (m):
3.0, 6.0, 8.0, 12.0 & 15.0

| | | | | | | | | | | | |
|-------------------|--------------|-----------|--------------|-------|--------------|------|-------|-----------------|-------|-------|-----------|
| 17P Aviation plug | A | B | C | D | E | F | G | H | L | K | J |
| DB9 connector | 1 | 2 | 3 | 4 | 5 | 9 | 7 | 8 | | 6 | Housing |
| Signal definition | REF- | REF+ | Cos+ | Cos- | Sin+ | Sin- | PTC-M | KTY-N | PTC-N | KTY-M | Shielding |
| Wire colour | Yellow/white | Red/white | Red | Black | Yellow | Blue | Brown | Orange | | Grey | Shielding |
| Remark | Twisted pair | | Twisted pair | | Twisted pair | | | KTY, PTC common | | | |

ISMG servo motor connection diagram with IS580 servo drive



For more information, please contact our local offices.

INOVANCE

Hong Kong SAR
(export office)

Tel: +852 2751 6080
info@inova-automation.com

South Korea-Seoul

Tel: +82 (0) 10 7428 5732
info@inova-automation.com

India

Head Office Chennai
Tel: +91 (0) 44 4380 0201
Ahmedabad Tel: +91 (0) 79 4003 4274
Mumbai Tel: +91 (0) 22 4971 5883
Delhi Tel: +91 (0) 11 4165 4524
Sales Network in Kolkata, Bengaluru,
Coimbatore, Hyderabad, Pune
info.inovaindia@inova-automation.com

Germany-Stuttgart

Tel: +49 (0) 7144 8990
sales.de@inovance.eu

Italy-Milano

Tel: +39 (0) 2268 22318
sales.it@inovance.eu

France-Bordeaux

Tel: +33 (0) 5594 01050
sales.fr@inovance.eu

Turkey-Istanbul

Tel: +90 (0) 21 6706 1789
info.turkey@inova-automation.com