

# ISMG Servo Motor

for energy saving servo pump applications

High overload capacity

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



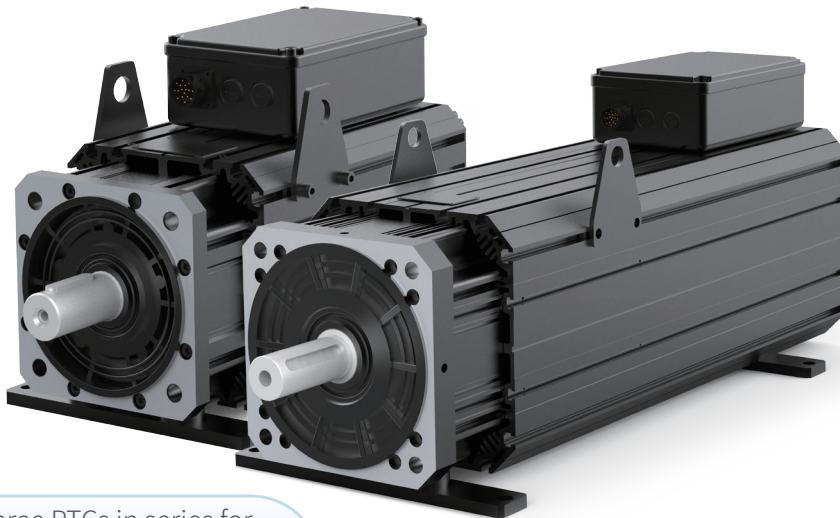
Reduced iron and copper losses, higher efficiency and improved cooling

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 <sup>2</sup> ]		7.5			9			10.5			12			15		
Mass [kg]		45.2			51.9			59			66			79.8		
Poles		8														

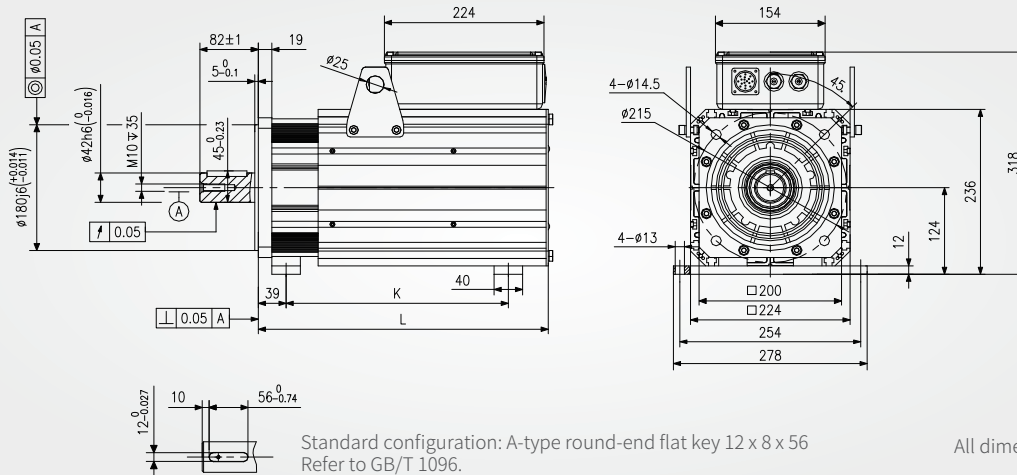
Series		ISMG2														
Model	ISMG2-xxxxxxx-RIA1FA	31D15CD	36D17CD	42D20CD	42D15CD	48D17CD	57D20CD	52D15CD	60D17CD	70D20CD	60D15CD	68D17CD	80D20CD	80D15CD	91D17CD	11E20CD
Frame size [mm]		266 x 266														
Length [mm]		525			575			625			675			775		
Rated voltage [V]		380														
Rated 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 <sup>2</sup> ]		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%

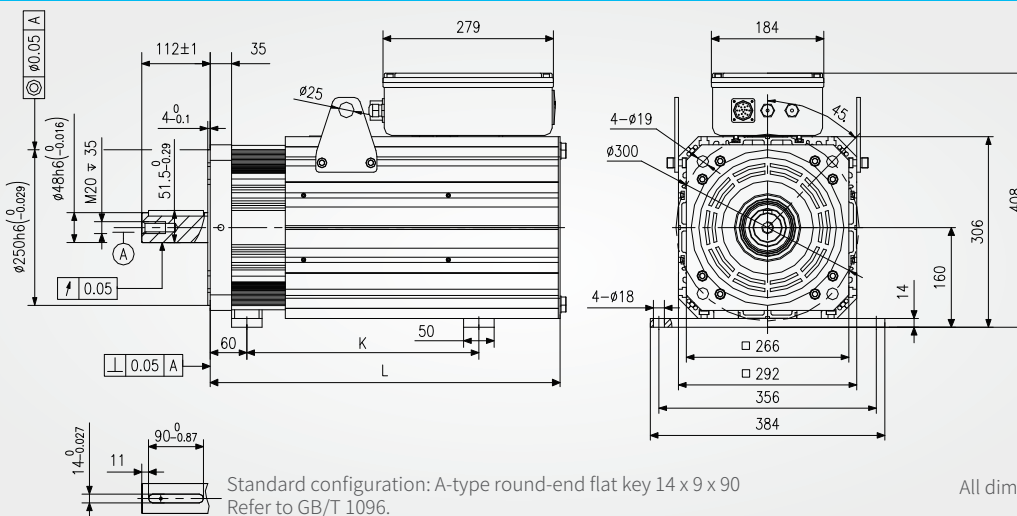
## Servo motor dimensions

### 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

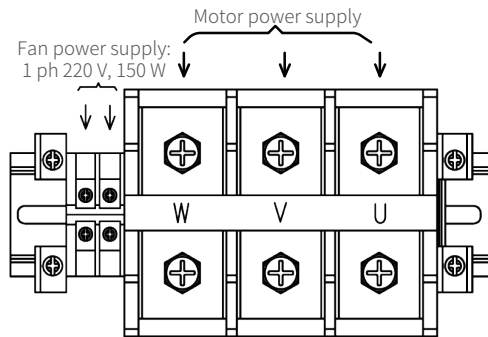
### ISMG2 (266 x 266)



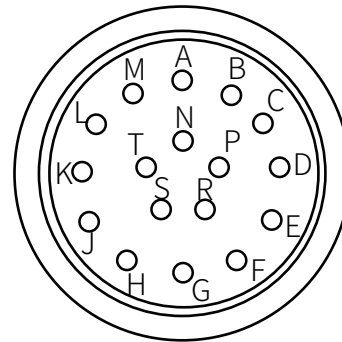
Motor model	ISMG2-31D15CD-R1A1FA	ISMG2-42D15CD-R1A1FA	ISMG2-52D15CD-R1A1FA	ISMG2-60D15CD-R1A1FA	ISMG2-80D15CD-R1A1FA
	ISMG2-36D17CD-R1A1FA	ISMG2-48D17CD-R1A1FA	ISMG2-60D17CD-R1A1FA	ISMG2-68D17CD-R1A1FA	ISMG2-91D17CD-R1A1FA
	ISMG2-42D20CD-R1A1FA	ISMG2-57D20CD-R1A1FA	ISMG2-70D20CD-R1A1FA	ISMG2-80D20CD-R1A1FA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

## Wiring diagram

Terminals of main circuit



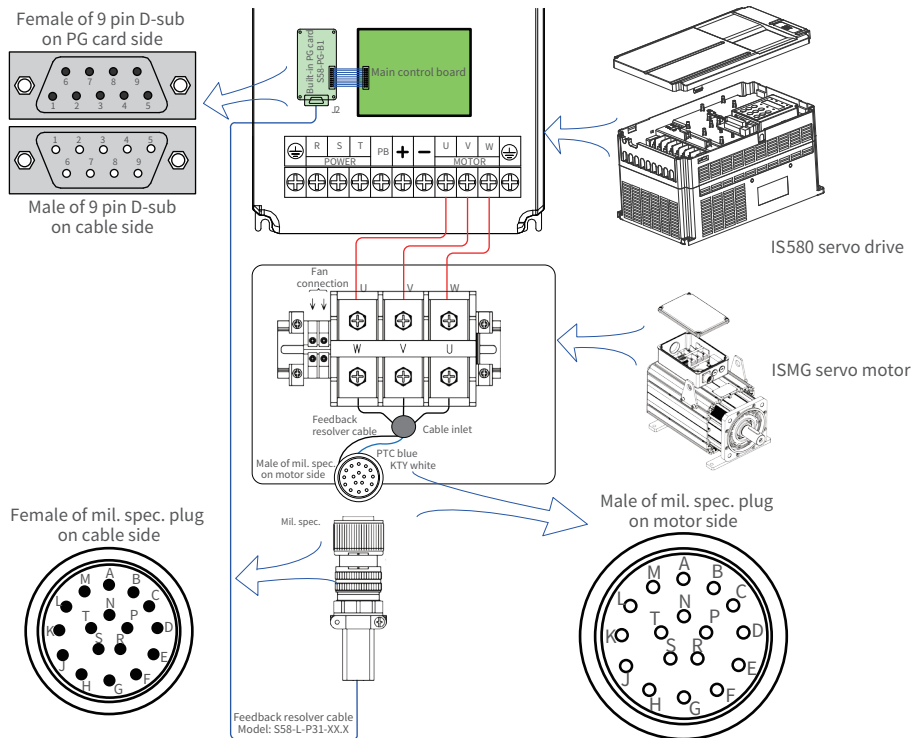
17P mil. spec. plug on motor side



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



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