SV-NET Miniature AC Servos

TBL-*i*

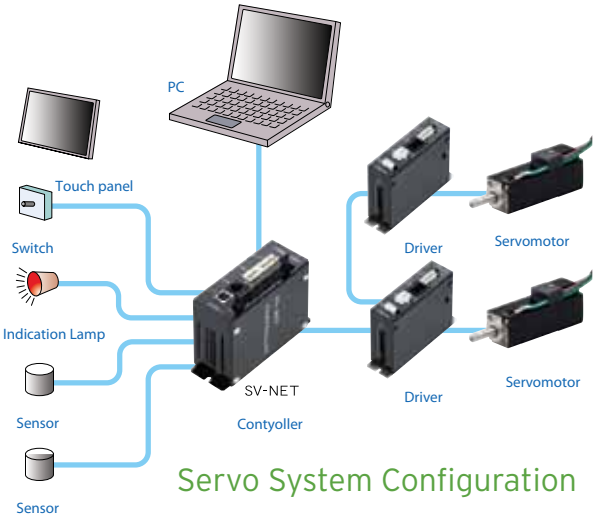
TBL-*V*

MYOSTAT MOTION CONTROL INC.

Myostat Motion Control Inc. • www.myostat.ca

TBL mini Series

The TBL-i and TBL-V miniature servos are the newest additions to the TBL line. These AC servos start at 5 watts, with a frame size of 14.5mm. With torque densities higher than DC Brushless motors, the TBL minis can be run without gearing providing smooth, quiet motion with higher efficiencies and greater accuracies.



Servo System Configuration

Both optical encoders and resolvers are available, providing flexibility and increasing mechanical reliability and robustness. Using resolvers as position encoders allows the TBL mini to be run in low temperature and high G environments, greatly expanding the range of applications in semiconductor, automotive, aerospace, medical, marine industries.

For even more torque in a small package, the TBL-V has zero backlash, high quality Harmonic Drive® gear box options, with 30:1, 50:1 and 100:1 ratios.

INDEX

TBL-i mini AC Servos

PRODUCT LINE-UP // Super small size Servo Motors

Mounting flange size: 14.5mm

3W

5W

10W

15W

Mounting flange size: 19.5mm

10W

16W

20W

30W

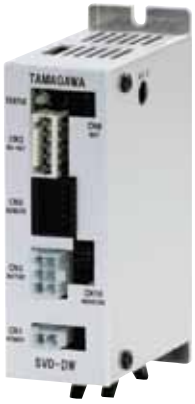
Mounting flange size: 22mm

13W

26W

40W

Servo Driver

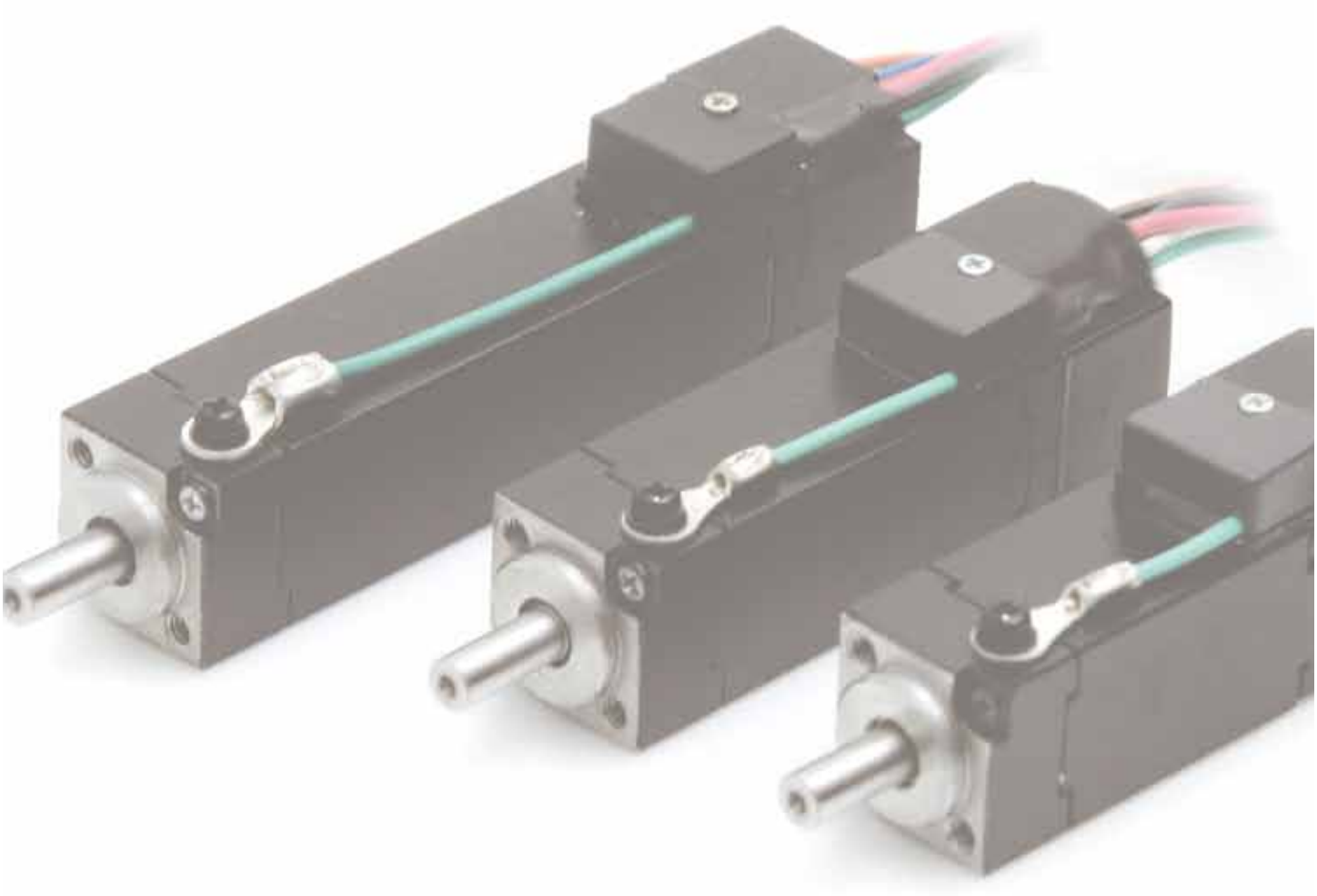


TA8410 Series

Servo Controller

TA8440 Series

14.5MM // 3 Watts - 15 Watts



Features // TS486

- 14.5mm square frame size
- Postion sensor options: resolver or optical incremental encoder
- Rated output: 3W, 5W, 10W, & 15W
- Rated speed 3,000r/min
- Maximum speed 6,000r/min

Model // TS486

TS486□N□□50E500

Output

TS4861 : 3W
TS4862 : 5W
TS4864 : 10W
TS4866 : 15W

Sensor type

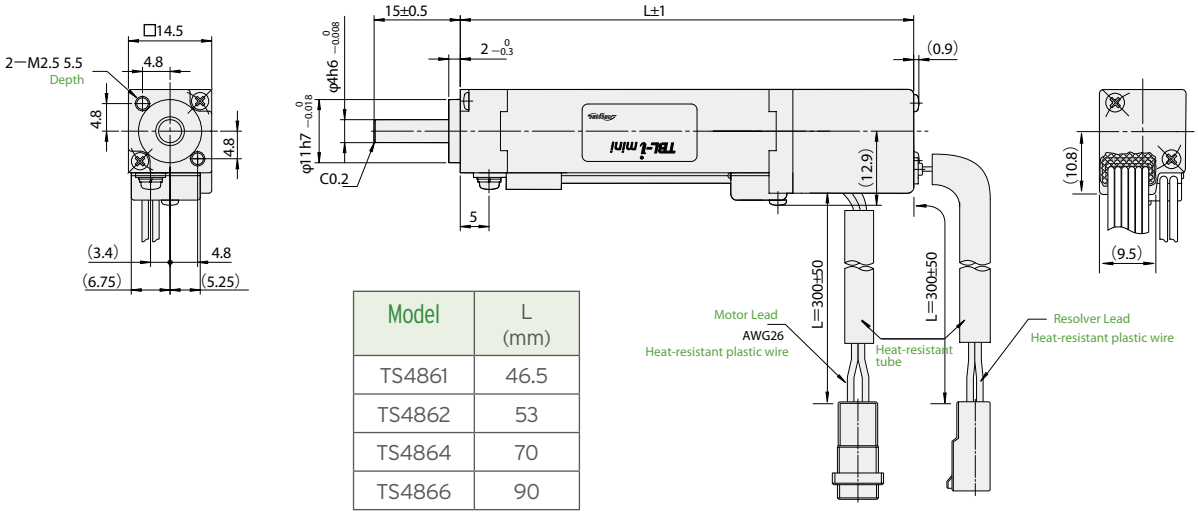
4050 : Resolver
2250 : 2,048C/T (wire-saving type) Incremental Encoder
2850 : 4,096C/T (wire-saving type) Incremental Encoder

Specifications // Sensor : Resolver and Incremental Encoder

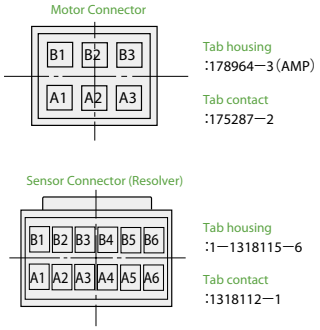
Rated Output	(W)	3	5	10	15
Model	Resolver	TS4861N4050E500	S4862N4050E500	TS4864N4050E500	TS4866N4050E500
	2,048C/T type	TS4861N2250E500	TS4862N2250E500	TS4864N2250E500	TS4866N2250E500
	4,096C/T type	TS4861N2850E500	TS4862N2850E500	TS4864N2850E500	TS4866N2850E500
Input Voltage	(V)	DC24V			
Rated torque	N•m(kgf•cm)	0.0095 (0.097)	0.0159 (0.162)	0.032 (0.3265)	0.0477 (0.4867)
Stall torque	N•m(kgf•cm)	0.0095 (0.097)	0.0159 (0.162)	0.032 (0.3265)	0.0477 (0.4867)
Peak torque	N•m(kgf•cm)	0.0285 (0.29)	0.0477 (0.486)	0.096 (0.98)	0.1431 (1.46)
Rated speed	r/min	3000	3000	3000	3000
Maximum speed	r/min	6000	6000	6000	6000
		3000※	3000※	3000※	3000※
Rotor moment of inertia	$[GD^2/4]kg•m^2$ $(gf•cm•s^2)$	$0.00064X10^{-4}$ (0.00063)	$0.00096X10^{-4}$ (0.00098)	$0.0017X10^{-4}$ (0.00173)	$0.0026X10^{-4}$ (0.002653)
Rated power rate	kW/s	1.46	2.6	6.1	8.75
Mechanical time constant	ms	2.63	1.83	1.32	1.17
Static friction torque	N•m(kgf•cm)	0.001 (0.01)	0.001 (0.01)	0.001 (0.01)	0.0015 (0.015)
Insulation class	–	B	B	B	B
Insulation resistance	MΩ MIN	10	10	10	10
Insulation strength	–	AC 600V 60s	AC 600V 60s	AC 600V 60s	AC 600V 60s
Shaft end play	mm MAX	0.5	0.5	0.5	0.5
Maximum radial shaft load	N(kgf)	8 (0.8)	8 (0.8)	8 (0.8)	8 (0.8)
Maximum thrust shaft load	N(kgf)	4 (0.4)	4 (0.4)	4 (0.4)	4 (0.4)
Direction of rotation	–	U→V→W CCW	U→V→W CCW	U→V→W CCW	U→V→W CCW
Sensor misalignment	°e MAX	±8	±8	±8	±8
Rated armature current of E.D.C.M.	A (rms)	0.68	1.0	1.573	2.14
Stall armature current of E.D.C.M.	A (rms)	0.62	0.94	1.526	2.07
Noload armature current of E.D.C.M.	A (rms)	0.06	0.06	0.047	0.07
Peak armature current of E.D.C.M.	A (rms)	1.92	2.875	4.62	6.28
Torque constant of E.D.C.M.	N•m/A±10% (kgf•cm/A)	0.0154 (0.1566)	0.0169 (0.1728)	0.02097 (0.214)	0.023 (0.235)
Voltage constant of E.D.C.M.	V/(r/min) ±10%	$1.609X10^{-3}$	$1.775x10^{-3}$	$2.198X10^{-3}$	$2.415X10^{-3}$
Armature resistance of E.D.C.M.	Ω± 10%	10.04	6.058	3.65	2.622
Armature inductance of E.D.C.M.	mH±30%	0.815	0.555	0.147	0.326
Electrical time constant	ms	0.081	0.092	0.11	0.12

※ Incremental Encoder 4,096C/T type is limited to 3,000r/min due to the response frequency of the sensor.

Outline // TS486□N4050 (Resolver type)



Model	L (mm)
TS4861	46.5
TS4862	53
TS4864	70
TS4866	90



Motor Connection

PIN No.	Function	Color
A1	U	Red
A2	V	Wht
A3	W	Blk
B1	C.G	Grn
B2	–	–
B3	–	–

Resolver Connection

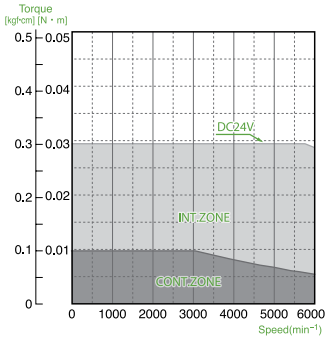
PIN No.	Function	Color
A1	S2	Yel
A2	S1	Red
A3	R1	Wht
A4	–	–
A5	–	–
A6	–	–

PIN No.	Function	Color
B1	S4	Blu
B2	S3	Blk
B3	R2	Org
B4	–	–
B5	–	–
B6	Shield	Shield

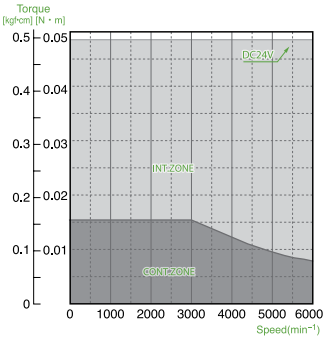
Torque - Speed Characteristics

DC bus voltage (line to line) DC24V. (Output torque is dependent on the driving circuit.)

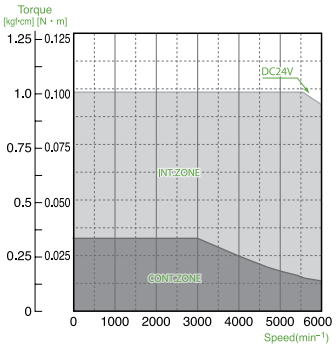
TS4861N4050E500



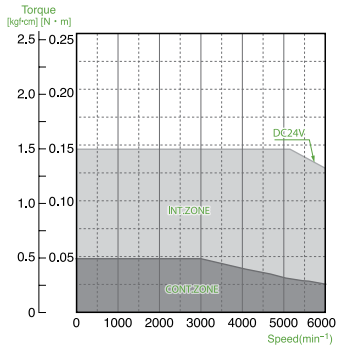
TS4862N4050E500



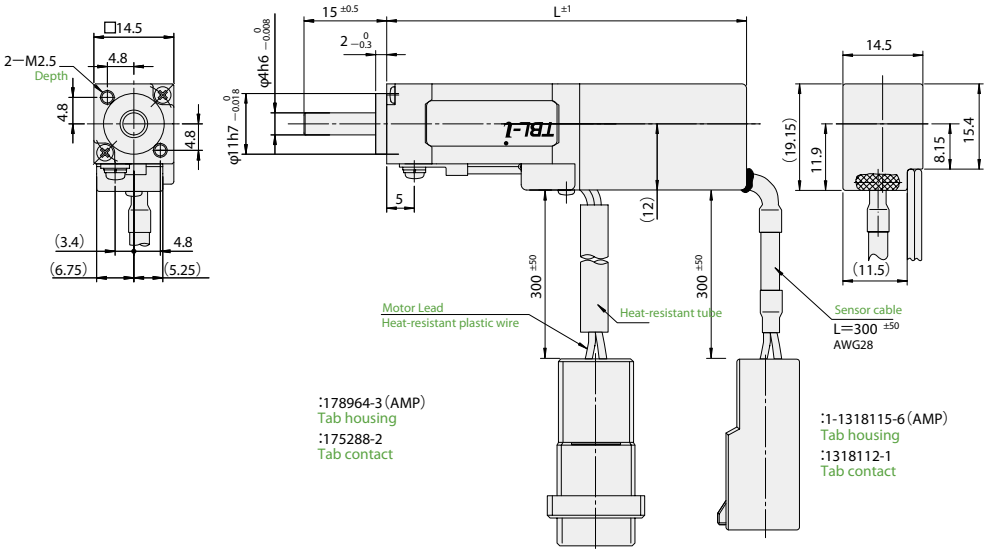
TS4864N4050E500



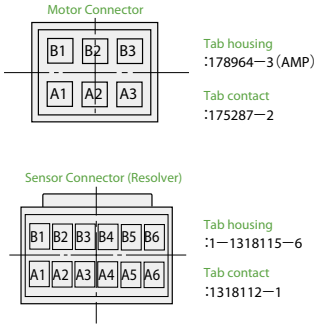
TS4866N4050E500



Outline // TS486□N2250 (2,048C/T), TS486□N2850 (4,096C/T)



Model	L (mm)
TS4861	65.5
TS4862	72
TS4864	89
TS4866	109



Motor Connection

PIN No.	Function	Color
A1	U	Red
A2	V	Wht
A3	W	Blk
B1	C.G	Grn
B2	–	–
B3	–	–

Resolver Connection

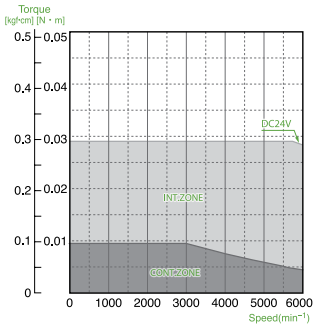
PIN No.	Function	Color
A1	UE, A	Yel
A2	VE, B	Red
A3	WE, Z	Wht
A4	–	–
A5	VCC	Red
A6	–	–

PIN No.	Function	Color
B1	$\overline{UE}$, $\overline{A}$	Blu/Blk
B2	$\overline{VE}$, $\overline{B}$	Grn/Blk
B3	$\overline{WE}$, $\overline{Z}$	Yel/Blk
B4	–	–
B5	GND	Blk
B6	Shield	Shield

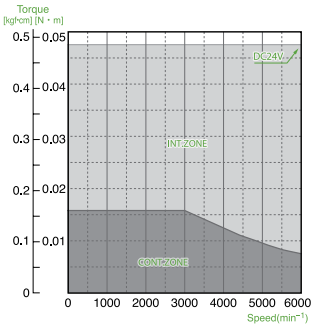
Torque - Speed Characteristics

DC bus voltage (line to line) DC24V. (Output torque is dependent on the driving circuit.)

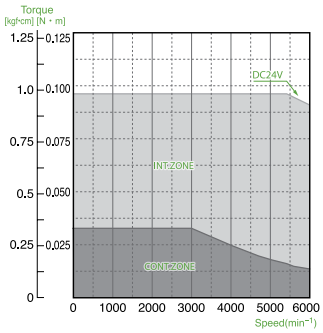
TS4861N2250E500



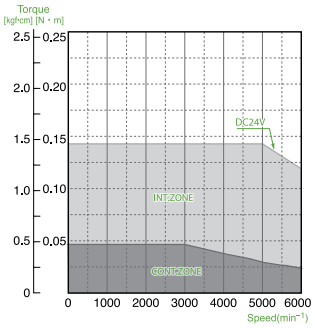
TS4862N2250E500



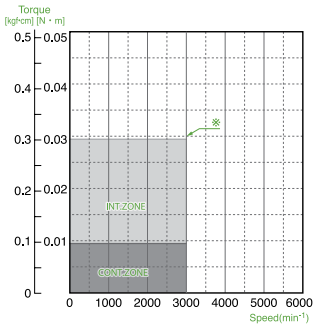
TS4864N2250E500



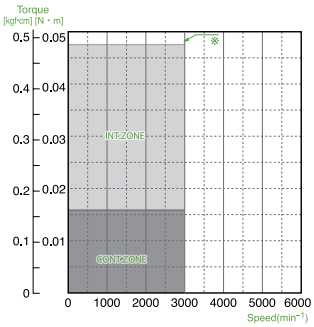
TS4866N2250E500



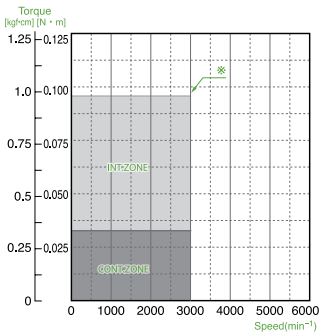
TS4861N2850E500



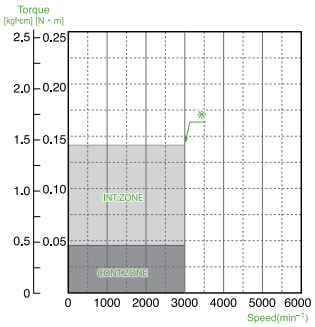
TS4862N2850E500



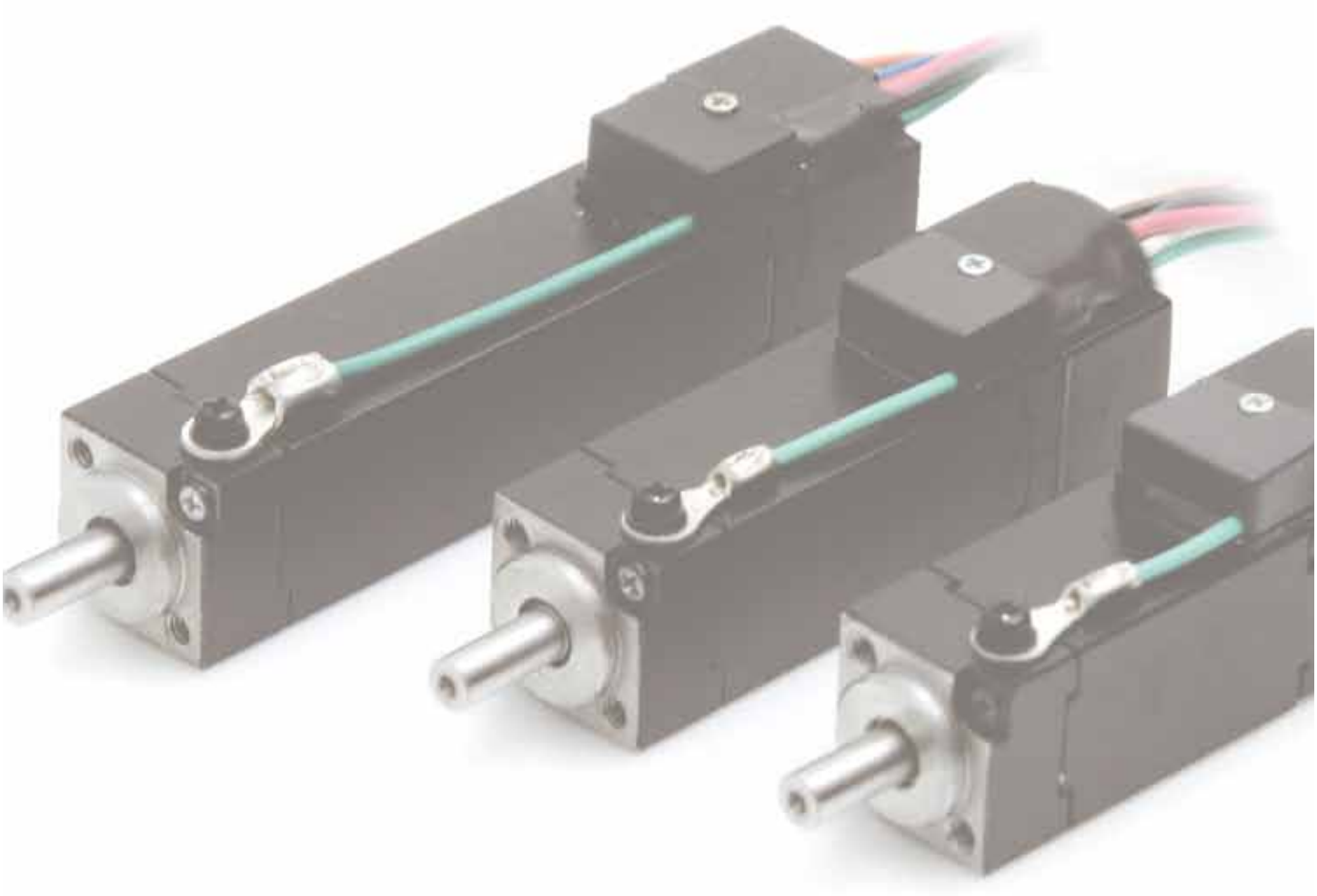
TS4864N2850E500



TS4866N2850E500



19.5MM // 10 watts - 30 watts



Features // **TS487**

- Super small motor size.
- Highly robust resolver for position feedback
- Rated output 10, 16, 20, 30W
- Rated speed 3,000r/min
- Maximum speed 6,000r/min

Model // **TS487**

TS487□N4050E500

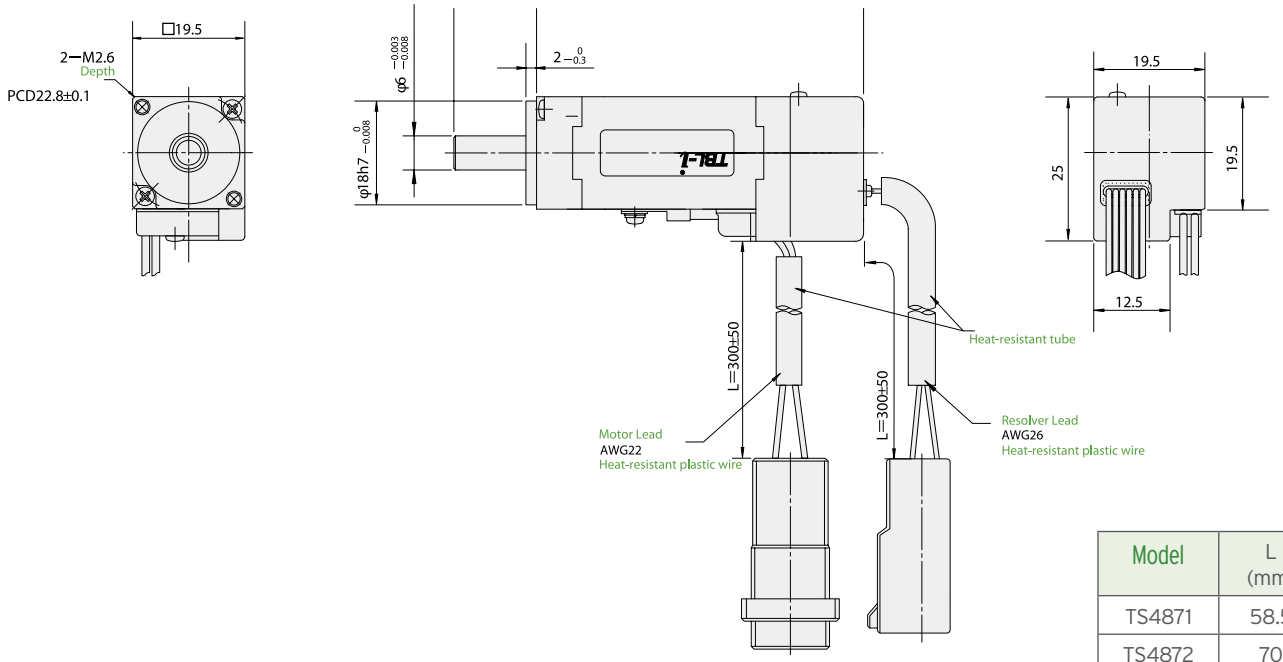
Output

TS4871 : 10W
TS4872 : 16W
TS4873 : 20W
TS4875 : 30W

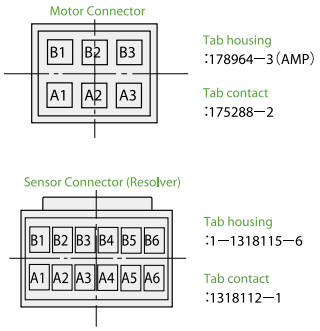
Specifications // Sensor : Resolver Type

Rated Output	(W)	10	16	20	30
Model	–	TS4871N4050E500	TS4872N4050E500	TS4873N4050E500	TS4875N4050E500
Input Voltage	(V)	DC24V			
Rated torque	N•m(kgf•cm)	0.032 (0.325)	0.051 (0.52)	0.064 (0.653)	0.096 (0.98)
Stall torque	N•m(kgf•cm)	0.032 (0.325)	0.05 (0.52)	0.064 (0.653)	0.064 (0.653)
Peak torque	N•m(kgf•cm)	0.096 (0.975)	0.153 (1.558)	0.192 (1.96)	0.288 (2.94)
Rated speed	r/min	3000	3000	3000	3000
Maximum speed	r/min	6000	6000	6000	6000
Rotor moment of inertia	$[GD^2/4]kg•m^2$ ($gf•cm•s^2$)	$0.0031X10^{-4}$ (0.003175)	$0.00496X10^{-4}$ (0.00506)	$0.00575X10^{-4}$ (0.00587)	$0.00945X10^{-4}$ (0.00964)
Rated power rate	kW/s	3.26	5.24	7.1	9.76
Mechanical time constant	ms	2.86	2.1	2.0	1.99
Static friction torque	N•m(kgf•cm)	0.0015 (0.015)	0.002 (0.02)	0.002 (0.02)	0.002 (0.02)
Insulation class	–	B	B	B	B
Insulation resistance	MΩ MIN	100	10	10	100
Insulation strength	–	AC 600V 60s	AC 600V 60s	AC 600V 60s	AC 600V 60s
Shaft end play	mm MAX	0.04	0.5	0.5	0.04
Maximum radial shaft load	N(kgf)	24 (2.45)	24 (2.45)	24 (2.45)	24 (2.45)
Maximum thrust shaft load	N(kgf)	24 (2.45)	24 (2.45)	24 (2.45)	24 (2.45)
Direction of rotation	–	U→V→W CCW	U→V→W CCW	U→V→W CCW	U→V→W CCW
Sensor misalignment	°e MAX	±8	±8	±8	±8
Rated armature current of E.D.C.M.	A (rms)	0.18	2.29	2.87	3.9
Stall armature current of E.D.C.M.	A (rms)	1.72	2.2	2.78	3.82
Noload armature current of E.D.C.M.	A (rms)	0.08	0.09	0.09	0.08
Peak armature current of E.D.C.M.	A (rms)	5.25	6.71	8.42	11.54
Torque constant of E.D.C.M.	N•m/A±10% (kgf•cm/A)	0.01858 (0.1896)	0.0231 (0.2358)	0.023 (0.235)	0.02513 (0.256)
Voltage constant of E.D.C.M.	V/(r/min) ±10%	$1.947X10^{-3}$	$2.422x10^{-3}$	$2.412X10^{-3}$	$2.634X10^{-3}$
Armature resistance of E.D.C.M.	Ω± 10%	3.326	2.338	1.889	1.389
Armature inductance of E.D.C.M.	mH±30%	0.735	0.6	0.51	0.332
Electrical time constant	ms	0.22	0.26	0.27	0.24

Outline // TS487□N40500E500 (Resolver type)



Model	L (mm)
TS4871	58.5
TS4872	70
TS4873	75
TS4875	101



Motor Connection

PIN No.	Function	Color
A1	U	Red
A2	V	Wht
A3	W	Blk
B1	C.G	Grn
B2	–	–
B3	–	–

Sensor (Resolver) Connection

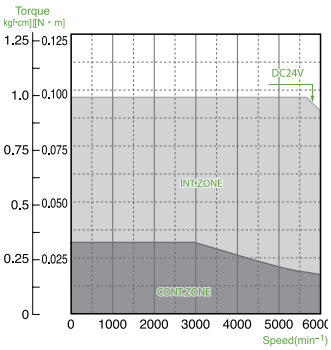
PIN No.	Function	Color
A1	S2	Yel
A2	S1	Red
A3	R1	Wht
A4	–	–
A5	–	–
A6	–	–

PIN No.	Function	Color
B1	S4	Blu
B2	S3	Blk
B3	R2	Org
B4	–	–
B5	–	–
B6	–	–

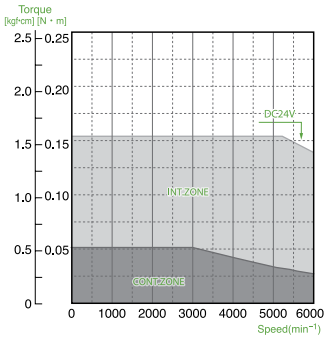
Torque - Speed Characteristics

DC bus voltage (line to line) DC24V. (Output torque is dependent on the driving circuit.)

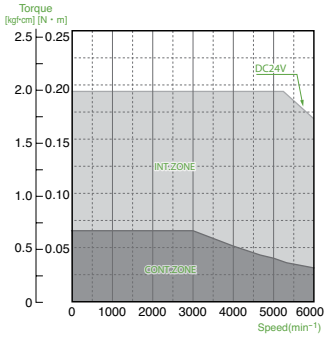
TS4871N4050E500



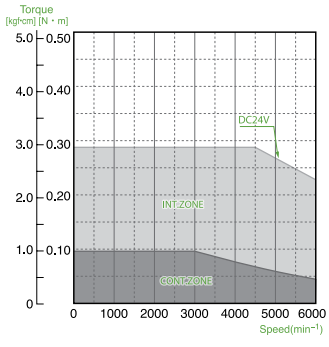
TS4872N4050E500



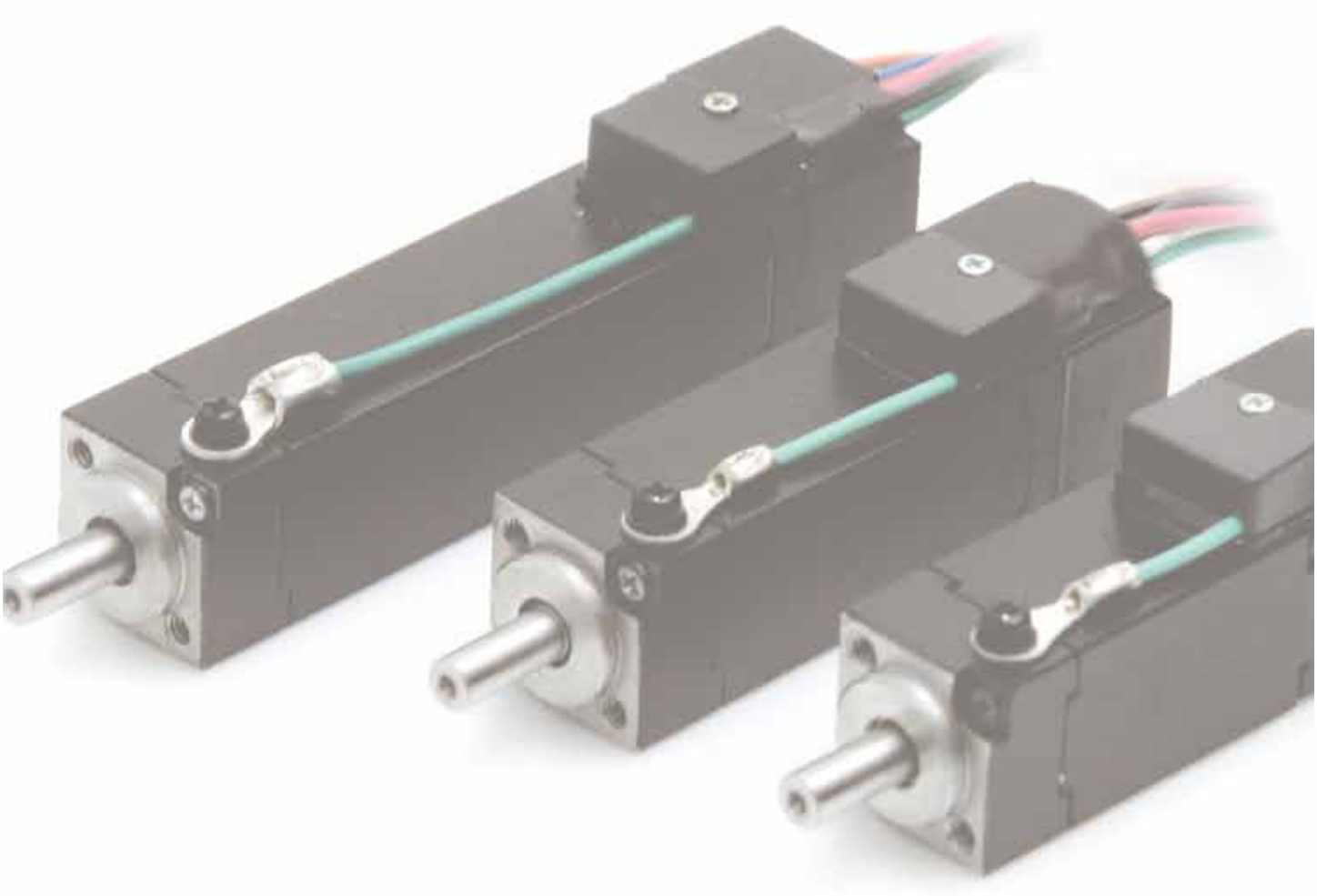
TS4873N4050E500



TS4875N4050E500



22MM // 13 Watts - 40 Watts



Features // TS463

- Super small motor size.
- Servo Motor sensor line-up are 2,000C/T and 2,048C/T incremental encoder type.
- Rated output 13, 26, & 40W
- Rated speed 4,000r/min
- Maximum speed 5000r/min

Model // TS463

TS463□N2□50E510

Output

TS4871 : 13W
TS4872 : 26W
TS4873 : 40W

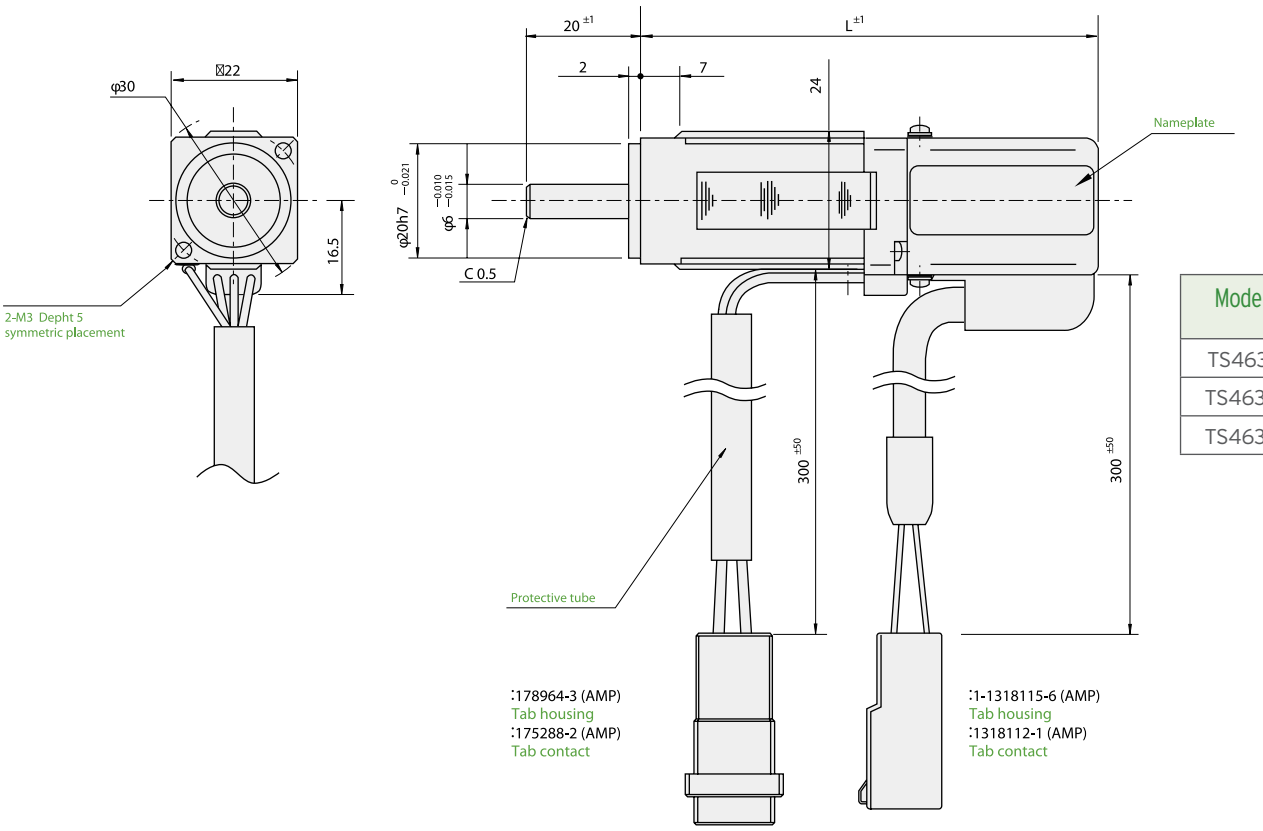
Sensor type

2050 : 2,000C/T (wire-saving type) Incremental Encoder
2250 : 2,048C/T (wire-saving type) Incremental Encoder

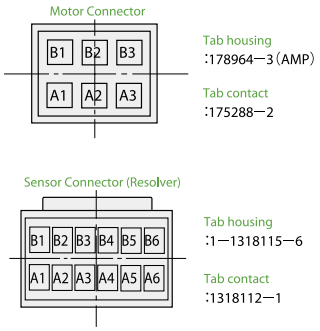
Specifications // Sensor : Incremental Encoder Type

Rated Output	(W)	13	26	40
Model	2,000C/T type	TS4631N2050E510	TS4632N2050E510	TS4873N4050E500
	2,048C/T type	TS4631N2250E510	TS4632N2250E510	TS4633N2250E510
Input voltage	(V)	DC24V		
Rated torque	N•m(kgf•cm)	0.031 (0.32)	0.062 (0.63)	0.095 (0.97)
Stall torque	N•m(kgf•cm)	0.031 (0.32)	0.062 (0.63)	0.095 (0.97)
Peak torque	N•m(kgf•cm)	0.094 (0.96)	0.185 (1.89)	0.285 (2.91)
Rated speed	r/min	4000	4000	4000
Maximum speed	r/min	5000	5000	5000
Rotor moment of inertia	$[GD^2/4]kg•m^2$ $(gf•cm•s^2)$	$0.003X10^{-4}$ (0.003)	$0.004X10^{-4}$ (0.004)	$0.006X10^{-4}$ (0.006)
Rated power rate	kW/s	3.4	9.7	15.4
Mechanical time constant	ms	2.2	1.2	1.2
Static friction torque	N•m(kgf•cm)	0.001 (0.01)	0.001 (0.01)	0.001 (0.01)
Insulation class	–	B	B	B
Insulation resistance	MΩ MIN	100	10	10
Insulation strength	–	AC 600V 60s	AC 600V 60s	AC 600V 60s
Shaft end play	mm MAX	0.04	0.5	0.5
Maximum radial shaft load	N(kgf)	24 (2.45)	24 (2.45)	24 (2.45)
Maximum thrust shaft load	N(kgf)	24 (2.45)	24 (2.45)	24 (2.45)
Direction of rotation	–	U→V→W CCW	U→V→W CCW	U→V→W CCW
Sensor misalignment	°e MAX	±8	±8	±8
Rated armature current of E.D.C.M.	A (rms)	1.44	2.92	4.0
Stall armature current of E.D.C.M.	A (rms)	1.1	2.52	3.6
Noload armature current of E.D.C.M.	A (rms)	0.34	0.4	0.4
Peak armature current of E.D.C.M.	A (rms)	3.66	8.0	11.2
Torque constant of E.D.C.M.	N•m/A±10% (kgf•cm/A)	0.029 (0.29)	0.025 (0.25)	0.026 (0.27)
Voltage constant of E.D.C.M.	V/(r/min) ±10%	$30X10^{-3}$	$2.6x10^{-3}$	$2.73X10^{-3}$
Armature resistance of E.D.C.M.	Ω± 10%	6.2	2.0	1.36
Armature inductance of E.D.C.M.	mH±30%	1.4	0.51	0.30
Electrical time constant	ms	0.22	0.26	0.22

Outline // TS463□N2□50E510 (Sensor : Incremental Encoder Type)



Model	L (mm)
TS4631	65
TS4632	80
TS4633	95



Motor Connection

PIN No.	Function	Color
A1	U	Red
A2	V	Wht
A3	W	Blk
B1	C.G	Grn/Yel
B2	–	–
B3	–	–

Encoder Connection

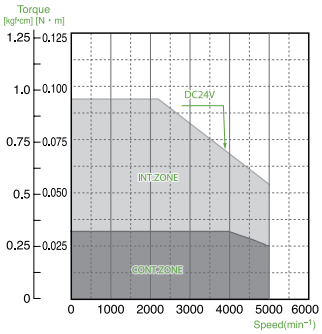
PIN No.	Function	Color
A1	UE, A	Blu
A2	VE, B	Grn
A3	WE, Z	Yel
A4	–	–
A5	VCC	Red
A6	–	–

PIN No.	Function	Color
B1	$\overline{UE}$, $\overline{A}$	Blu/Blk
B2	$\overline{VE}$, $\overline{B}$	Grn/Blk
B3	$\overline{WE}$, $\overline{Z}$	Yel/Blk
B4	–	–
B5	GND	Blk
B6	Shield	Shield

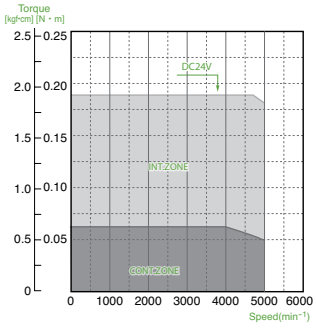
Torque - Speed Characteristics

DC bus voltage (line to line) DC24V. (Output torque is dependent on the driving circuit.)

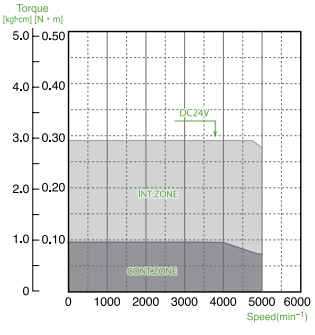
TS4631N2050E510
TS4631N2250E510



TS4632N2050E510
TS4632N2250E510



TS4633N2050E510
TS4633N2250E510



TBL-V Series AC Servo motor

PRODUCT LINE-UP // Super small size Servo motors

AC Servo Motor Sizes: 20mm & 28mm

20 mm

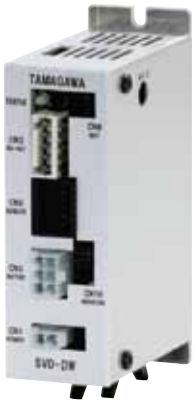
28 mm

AC Servo Motor with Reduction Gearing Sizes: 20.4mm & 30mm

20.4 mm

30 mm

Servo Driver



TBL-V Series AC Servo motor

20-28 MM // 5 Watts to 30 Watts

Features // TS47

- Small servo motors mechanically compatible with standard small stepper motor flange and shaft sizing.
- Highly reliable resolver: Equipped with the world's smallest resolver (Smartsyn).
- Able to withstand greater temperature, vibration & shock ranges.

Model // TS47

TS□□□□N□□□□E□□□

Output
TS4734 : 5W
TS4735 : 10W
TS4773 : 20W
TS4738 : 30W

Shaft Spec.
00: Round (Standard)
01: Single Flat

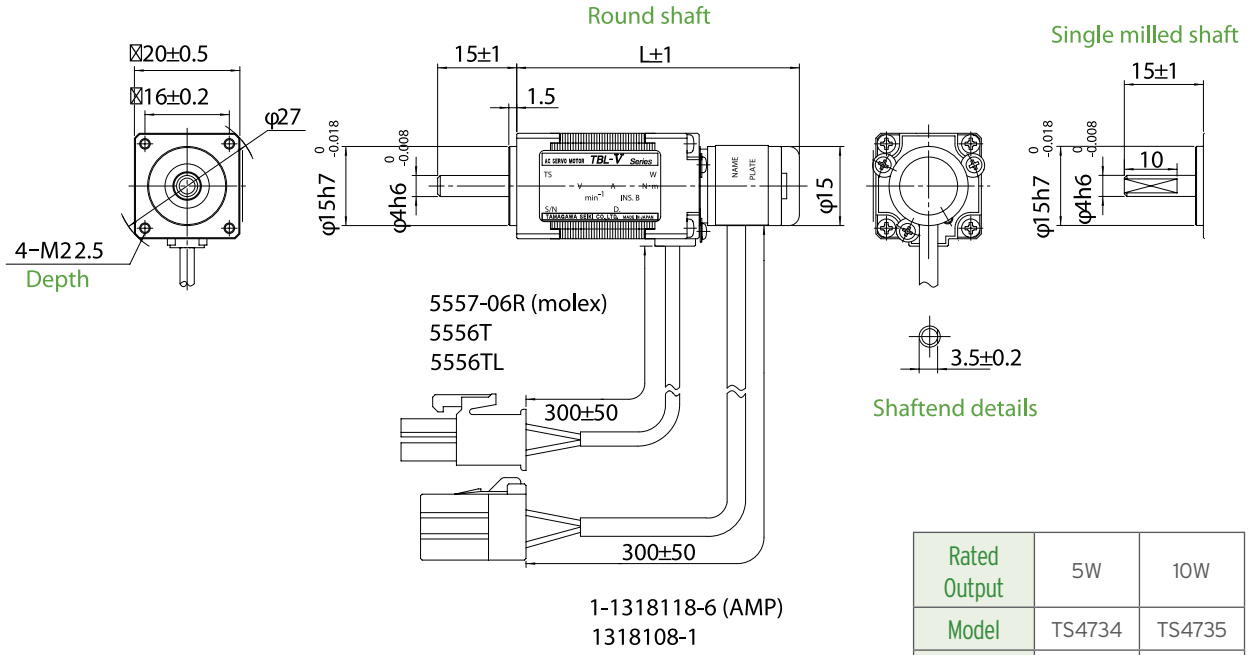
Sensor Spec.
30: Resolver (Smartsyn)

Power Supply.
100: AC100V
200: AC200V
500: DC 24V
600: DC 48V

Specifications // TS47

Mounting Flange		Model	Driver Voltage	Output	Rated Torque	Max Torque	Rated Current	Max Current	Rated Speed	Max Speed	Rotor Inertia	Mass
Stepper	(mm)		(V)	(W)	(N•m)	(N•m)	(Arms)	(Arms)	(r/min)	(r/min)	(kg•m^2)	(kg)
#8	20	TS4734	DC24, 48	5	0.010	0.029	1.4	3.2	5,000	8,000	0.0009x10^{-4}	0.09
			AC100, 200				0.7	1.7				
		TS4735	DC24, 48	10	0.019	0.057	1.1	3.0	5,000	8,000	0.0014x10^{-4}	0.10
			AC100, 200				0.6	1.6				
#11	28	TS4737	DC24, 48	20	0.038	0.115	2.7	6.9	5,000	8,000	0.0064x10^{-4}	0.18
			AC100, 200				0.9	2.4				
		TS4738	DC24, 48	30	0.057	0.172	2.6	7.1	5,000	8,000	0.0083x10^{-4}	0.19
			AC100, 200				0.9	2.4				

Outline // ☐20-mm Square (5W, 10W)



Rated Output	5W	10W
Model	TS4734	TS4735
L (mm)	43.6	53.6

Motor Connection

PIN No.	Function	Color
1	U	Red
2	V	Wht
3	W	Blk
4	C.G	Grn
5	–	–
6	–	–

Resolver Connection

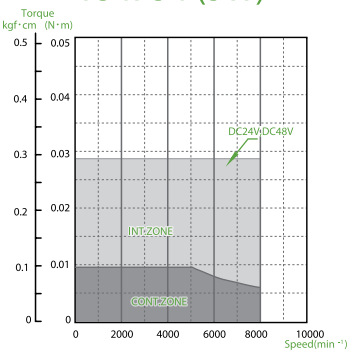
PIN No.	Function	Color
A1	S2	Yel
A2	S1	Red
A3	R1	Red/Wht
A4	–	–
A5	–	–
A6	–	–

PIN No.	Function	Color
B1	S4	Blu
B2	S3	Blk
B3	R2	Yel/Wht
B4	–	–
B5	–	–
B6	–	–

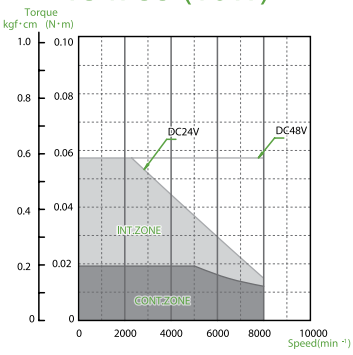
Torque - Speed Characteristics

DC24V • 48V

TS4734 (5W)

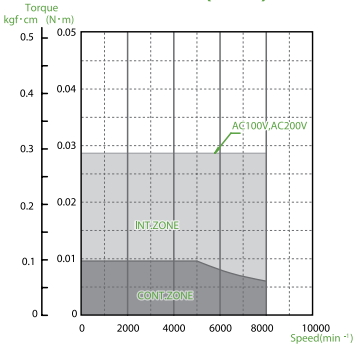


TS4735 (10W)

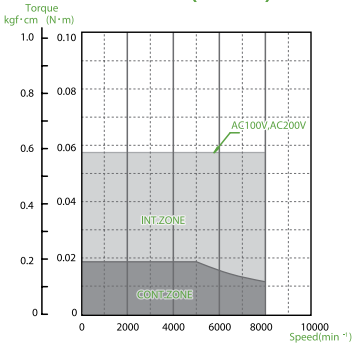


AC100V • 200V

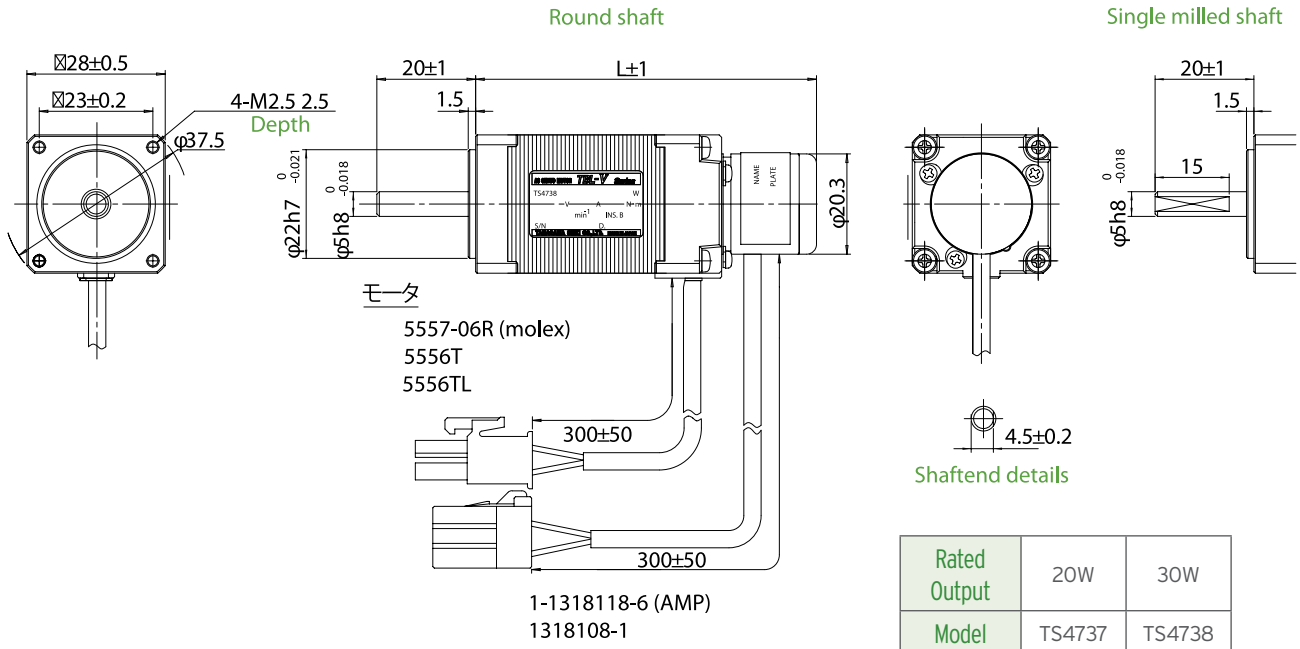
TS4734 (5W)



TS4735 (10W)



Outline // ☐28-mm Square (20W, 30W)



Rated Output	20W	30W
Model	TS4737	TS4738
L (mm)	59.0	69.0

Motor Connection

PIN No.	Function	Color
1	U	Red
2	V	Wht
3	W	Blk
4	C.G	Grn/Yel
5	–	–
6	–	–

Resolver Connection

PIN No.	Function	Color
A1	S2	Yel
A2	S1	Red
A3	R1	Red/Wht
A4	–	–
A5	–	–
A6	–	–

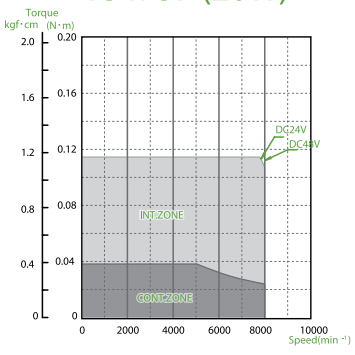
PIN No.	Function	Color
B1	S4	Blu
B2	S3	Blk
B3	R2	Yel/Wht
B4	–	–
B5	–	–
B6	–	–

Torque - Speed Characteristics

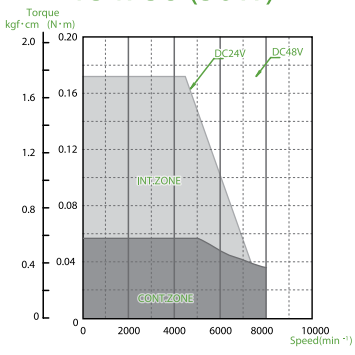
DC24V • 48V

AC100V • 200V

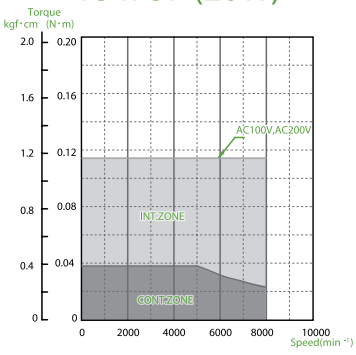
TS4737 (20W)



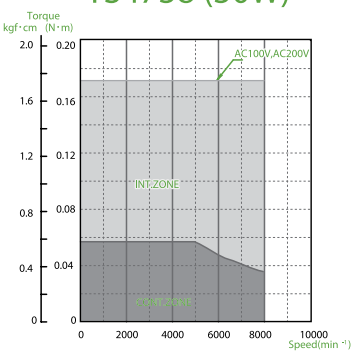
TS4738 (30W)



TS4737 (20W)



TS4738 (30W)

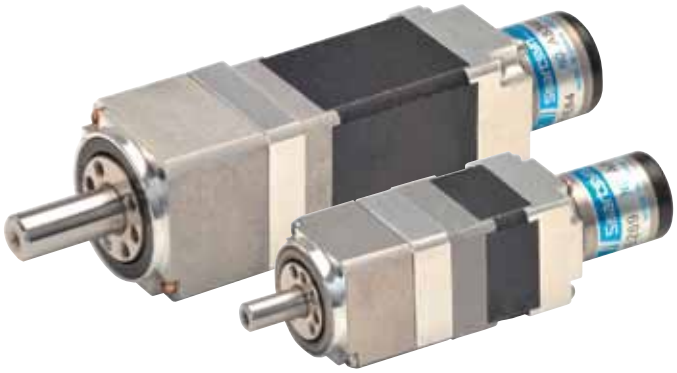


TBL-V Series AC Servo motor

20-28 MM // 5 Watts - 30 Watts, with Miniature HD® Reduction Gearbox

Features // TS47

- Equipped with a Harmonic Drive® reducer. A compact and high-power servo motor combined with a small non-backlash Harmonic reducer.
- High reliability resolver. Equipped with the world's smallest resolver (Smartsyn)



Model // TS47

TS□□□□N□□□□E□□□

Output
TS4734 : 5W
TS4735 : 10W
TS4737 : 20W
TS4738 : 30W

Gear Ratio
11: 1/30
12: 1/50
13: 1/100

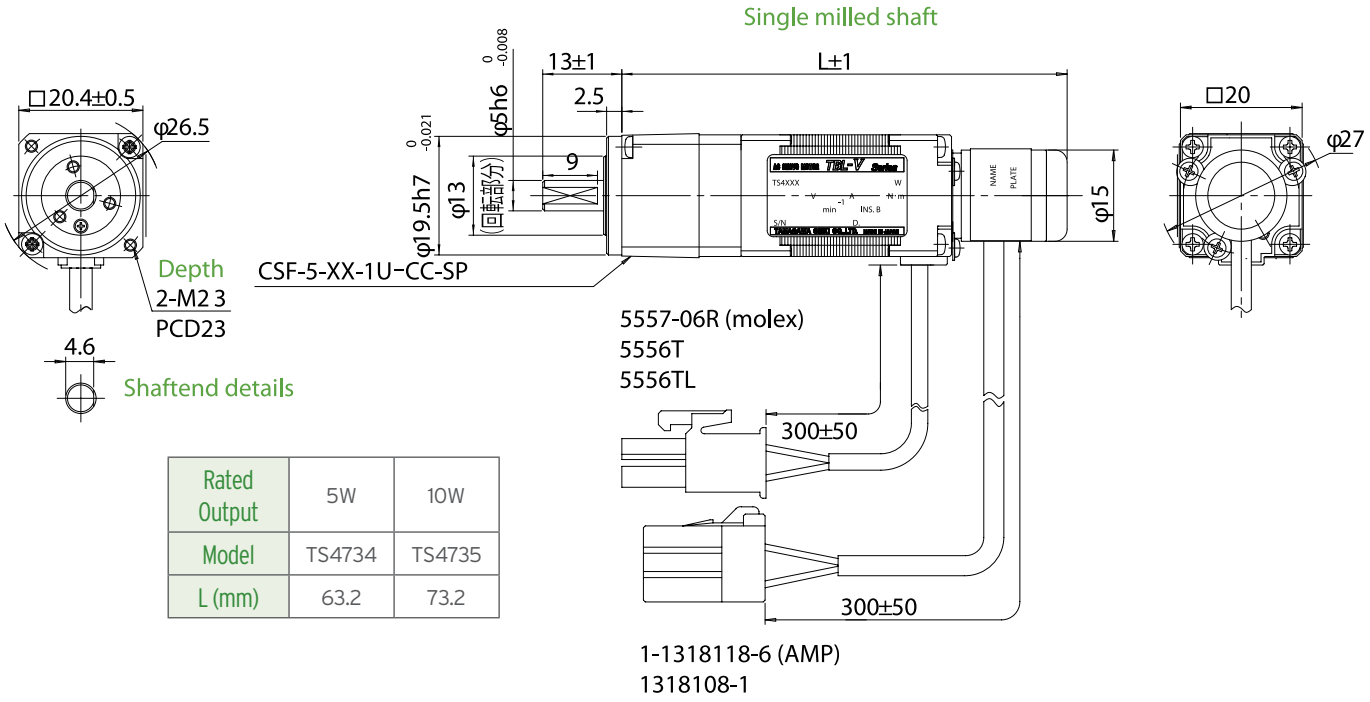
Sensor Spec.
30: Resolver (Smartsyn)

Power Supply.
100: AC100V
200: AC200V
500: DC 24V
600: DC 48V

Specifications // TS47

Motor (Reduction Gear Input)						Reduction Gear					
Motor Mount Flange	Model	Output	Rated Speed	Rated Current/ Max Currnet		Mounting Flange	Reduction Ratio	Rated Speed	Max Speed	Rated Torque	Peak Torque
				DC24,48V	AC100,200V						
(mm)		(W)	(r/min)	(Arms)	(Arms))	(mm)		(r/min)	(r/min)	(N•m)	(N•m)
20	TS4734	5	5,000	1.4/3.2	0.7/1.7	20.4	1/30	167	267	0.089	0.61
				1.4/3.2	0.7/1.7		1/50	100	160	0.21	1.1
				1.4/3.2	0.7/1.7		1/100	50	80	0.53	2.3
	TS4735	10	5,000	1.1/2.1	0.6./1.1		1/30	167	267	0.35	0.90
		9		1.0/2.3	0.5/1.2		1/50	100	160	0.53	0.81
		7		0.9/1.8	0.5/0.9		1/100	50	80	0.94	2.7
28	TS4737	20	5,000	2.7/6.9	0.9/2.4	30	1/30	167	267	0.63	2.7
				2.7/6.9	0.9/2.4		1/50	100	160	1.2	4.7
				2.7/6.5	0.9/2.4		1/100	50	80	2.6	9.0
	TS4738	30	5,000	2.6/5.7	0.9/2.0		1/30	167	267	1.2	3.3
		30		2.6/6.4	0.9/2.2		1/50	100	160	2.1	6.6
		24		2.2/4.5	0.7/1.6		1/100	50	80	3.3	9.0

Outline // 20mm Square (5W, 10W)



Rated Output	5W	10W
Model	TS4734	TS4735
L (mm)	63.2	73.2

Motor Connection

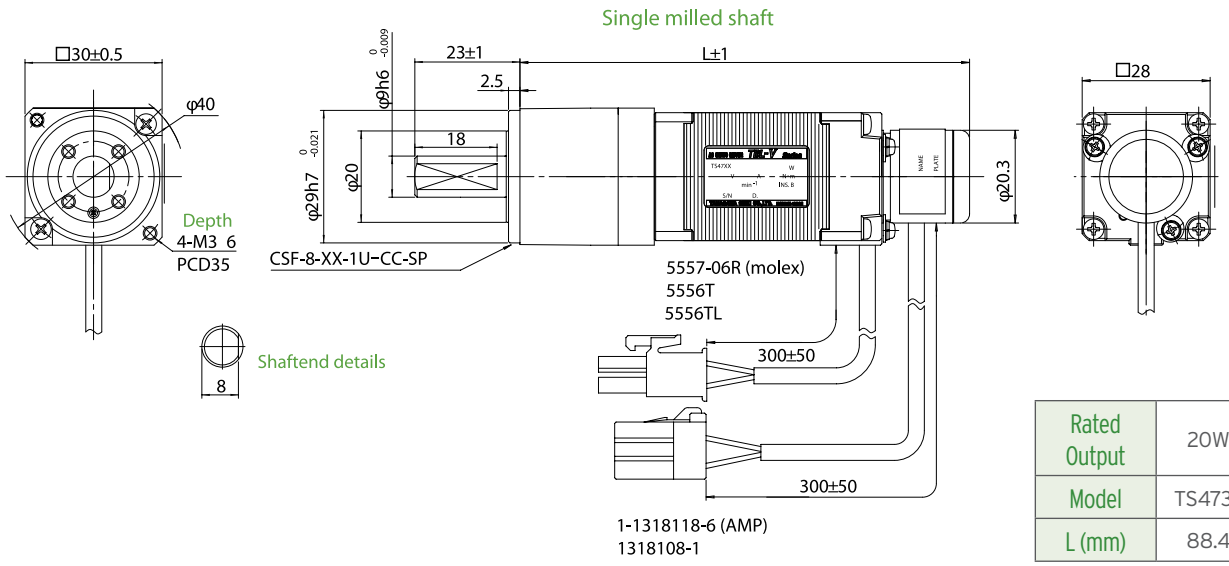
PIN No.	Function	Color
1	U	Red
2	V	Wht
3	W	Blk
4	C.G	Grn/Yel
5	–	–
6	–	–

Resolver Connection

PIN No.	Function	Color
A1	S2	Yel
A2	S1	Red
A3	R1	Red/Wht
A4	–	–
A5	–	–
A6	–	–

PIN No.	Function	Color
B1	S4	Blu
B2	S3	Blk
B3	R2	Yel/Wht
B4	–	–
B5	–	–
B6	–	–

Outline // 28mm Square (20W, 30W)



Rated Output	20W	30W
Model	TS4737	TS4738
L (mm)	88.4	98.4

Motor Connection

PIN No.	Function	Color
1	U	Red
2	V	Wht
3	W	Blk
4	C.G	Grn/Yel
5	–	–
6	–	–

Resolver Connection

PIN No.	Function	Color
A1	S2	Yel
A2	S1	Red
A3	R1	Red/Wht
A4	–	–
A5	–	–
A6	–	–

PIN No.	Function	Color
B1	S4	Blu
B2	S3	Blk
B3	R2	Yel/Wht
B4	–	–
B5	–	–
B6	–	–

SV-NET DC24V // TA8410 Servo Driver

Features // TA8410

- SV-NET network. CAN hardware based daisy chain networking minimizes wiring requirements while providing high bandwidth.
- Powerful functions. Stand alone intelligent driver functions include pulse interface and analog speed, torque, and position control, electronic gearing, position and acceleration limits.
- Interfaces with optional SV-NET TA8440 controller providing 8 axis of synchronous control.

Model // TA8410

TA8410N□3□□E□□□

Motor's Sensor
1: Encoder
7: Resolver

Combination Motor
Specification (Option Specification)

I/O Specification
5: Extention Board (Open Collector Output) + I/O IF
8: Extention Board (Line Driver Output) + I/O IF

Chassis Specification
1: Color BLACK: (Standard)
2: " RED:
3: " SILVER
4: " GREEN
5: " BLUE
6: " WHITE

Main Functions // TA8410

Control Commands	Position command input SV-NET or pulse command
	Speed command input SV-NET or analog command
	Current command input SV-NET or nalog command
Parameter Settings Functions	Control mode, Position loop gain, Speed loop gain, Speed integration gain, Feed forward, Resonance control filter, Analog command scale setting. Electronic gear setting, Smoothing, Acceleration limit.
Protective Functions	Sensor error, Drive power error, Over-heat, Over-speed, Overload. Excessive deviation
Applicable Sensors	Brushless resolver (Smartsyn/Singlsyn), Optical 17bit- INC/ABS (SVD-DW only), Optical Minimal wiring incremental, (SVD-DW only)
Input and Output Signals	Servo ON input, Alarm reset input, Alarm output, In-the-position output, A/B/Z output, (SVD-DW with built-in extension board only)

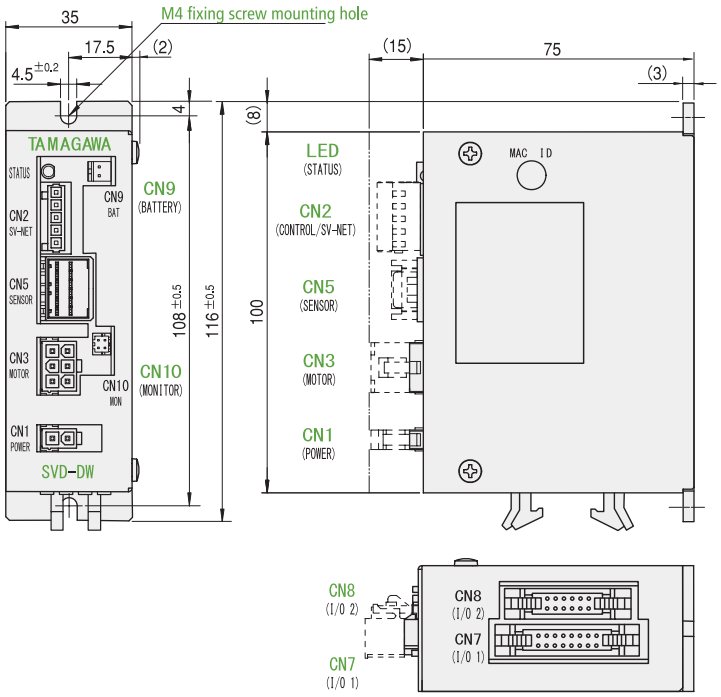
Specifications // TA8410

	TA8410 Series
Input Voltage ※1	DC24V±10%
Drive Power Voltage ※1	DC24V~48V±10%
Control Power Current	Communication Protocol:SV-NET Physics Layer: CAN
Sensor	Brushless Resolver (Singlsyn)
Driver Recognition Resolution	2048 (1/rev)
Combination Motor	TBL-i mini Series
Combination Motor Output [W]	3~15W
Operating Temperature Range	0~+40˚C
Storage Temperature Range	-10~+85˚C
Operating Humidity	90%RH or less (non-condensing)
Rotation Direction Definition ※2	The CW rotation is assumed to be a positive rotation in view of the motor axial end.
Suggested Load Inertia	Up to thirty times of Motor Inertia
Mass	Approx. 0.3kg
Complies with the ROHS directives	

※1 Avoid using the same DC24V power supply for the control signals and the drive. When the using a single power supply, inserting a diode into the power circuit is recommended so that the voltage variation on the drive power side does not adversely affect the control side.

※2 Definition of rotating direction can be changed by parameter.

Outline // TA8410



Motor/Driver Combinations // **TBL-i mini**

14.5 mm (Sensor:Resolver)	
Motor Model	Driver Model
TS4861 N4050 E500 (3W)	TA8410N73**E101
TS4862 N4050 E500 (5W)	TA8410N73**E102
TS4862 N4050 E500 (10W)	TA8410N73**E103
TS4862 N4050 E500 (15W)	TA8410N73**E104

19.5 mm (Sensor:Resolver)	
Motor Model	Driver Model
TS4871 N4050 E500 (10W)	TA8410N73**E124
TS4872 N4050 E500 (16W)	TA8410N73**E125
TS4873 N4050 E500 (20W)	TA8410N73**E126
TS4875 N4050 E500 (30W)	TA8410N73**E127

14.5 mm (Sensor:Incremental Encoder2,048C/T)	
Motor Model	Driver Model
TS4861 N2250 E500 (3W)	TA8410N13**E501
TS4862 N2250 E500 (5W)	TA8410N13**E502
TS4862 N2250 E500 (10W)	TA8410N13**E503
TS4862 N2250 E500 (15W)	TA8410N13**E504

22 mm (Sensor:Incremental Encoder2,000C/T)	
Motor Model	Driver Model
TS4631 N2050 E510 (13W)	TA8410N13**E321
TS4632 N2050 E510 (26W)	TA8410N13**E322
TS4633 N2050 E510 (40W)	TA8410N13**E323

14.5 mm (Sensor:Incremental Encoder4,096C/T)	
Motor Model	Driver Model
TS4861 N2850 E500 (3W)	TA8410N13**E401
TS4862 N2850 E500 (5W)	TA8410N13**E402
TS4862 N2850 E500 (10W)	TA8410N13**E403
TS4862 N2850 E500 (15W)	TA8410N13**E404

22 mm (Sensor:Incremental Encoder2,048C/T)	
Motor Model	Driver Model
TS4631 N2250 E510 (13W)	TA8410N73**E521
TS4632 N2250 E510 (26W)	TA8410N73**E522
ÐTS4633 N2250 E510 (40W)	TA8410N73**E523

Cables (optional) // **TBL-i mini**

Driver drive power cables	
Length	Cable Model
1m	EU9613N10
3m	EU9613N30
5m	EU9613N50

Motor Cables	
Length	Cable Model
1m	EU9614N10
3m	EU9614N30
5m	EU9614N50

Sensor Cables	
Length	Cable Model
1m	EU9615N10
3m	EU9615N30
5m	EU9615N50

Motor/Driver Combination // **TBL-V**

DC24/DC48V	
Motor model	Driver combination
TS4734 (5W-20mm)	TA8410N73**E215
TS4735 (10W-20mm)	TA8410N73**E216
TS4737 (20W-28mm)	TA8410N73**E217
TS4737 (30W-28mm)	TA8410N73**E218

AC100V/AC200V	
Motor model	Driver combination model
TS4734 (5W-20mm)	TA8411N72**E215/TA8411N76**E215
TS4735 (10W-20mm)	TA8411N72**E216/TA8411N76**E216
TS4737 (20W-28mm)	TA8411N72**E217/TA8411N76**E217
TS4737 (30W-28mm)	TA8411N72**E218/TA8411N76**E218

Motor/Driver Combination // **TBL-V with Gearing**

1/30 (N3011)

DC24V/DC48V	
Motor Model	Driver Combination Model
TS4734 (5W-20mm)	TA8410N73**E801
TS4735 (10W-20mm)	TA8410N73**E802
TS4737 (20W-28mm)	TA8410N73**E803
TS4738 (30W-28mm)	TA8410N73**E804

1/30 (N3011)

AC100V/AC200V	
Motor Model	Driver Combination Model
TS4734 (5W-20mm)	TA8411N72**E801/TA8411N76**E801
TS4735 (10W-20mm)	TA8411N72**E802/TA8411N76**E802
TS4737 (20W-28mm)	TA8411N72**E803/TA8411N76**E803
TS4738 (30W-28mm)	TA8411N72**E804/TA8411N76**E804

1/50 (N3012)

DC24V/DC48V	
Motor Model	Driver Combination Model
TS4734 (5W-20mm)	TA8410N73**E805
TS4735 (10W-20m)	TA8410N73**E806
TS4737 (20W-28mm)	TA8410N73**E807
TS4738 (30W-28mm)	TA8410N73**E808

1/50 (N3012)

AC100V/AC200V	
Motor Model	Driver Combination Model
TS4734 (5W-20mm)	TA8411N72**E805/TA8411N76**E805
TS4735 (10W-20mm)	TA8411N72**E806/TA8411N76**E806
TS4737 (20W-28mm)	TA8411N72**E807/TA8411N76**E807
TS4738 (30W-28mm)	TA8411N72**E808/TA8411N76**E808

1/100 (N3013)

DC24V/DC48V	
Motor Model	Driver Combination Model
TS4734 (5W-20mm)	TA8410N73**E809
TS4735 (10W-20mm)	TA8410N73**E810
TS4737 (20W-28mm)	TA8410N73**E811
TS4738 (30W-28mm)	TA8410N73**E812

1/100 (N3013)

AC100V/AC200V	
Motor Model	Driver Combination Model
TS4734 (5W-20mm)	TA8411N72**E809/TA8411N76**E809
TS4735 (10W-20mm)	TA8411N72**E810/TA8411N76**E8010
TS4737 (20W-28mm)	TA8411N72**E811/TA8411N76**E811
TS4738 (30W-28mm)	TA8411N72**E812/TA8411N76**E812

* Specifications for TA8411 Driver available upon request.

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Warranty

Tamagawa Seiki warrants their products to be free from defects in material or workmanship under normal use and service for a period of one year from the date of shipment from its factory. This warranty excludes any damage caused by careless use of the product by the user. Following the expiration of the warranty, Tamagawa Seiki offers repair service, with charge, to maintain the quality of the product. The user is advised that multiple safety measures should be incorporated into their product or system in order to prevent any damage caused by failure of our product.

ALL specifications are subject to change without notice

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