A2V MECATRONIQUE

STEPPING MOTOR CONTROL SYSTEM

S-SERVOII-ST

S-SERVO II-ST is a stepping motor control system with high precision position monitoring. Step Out alarm and perfect position completion check are available in real time due to high precision encoder. S-SERVO II-ST automatically control current according to load, acceleration and deceleration for Heat Reduction, Energy Saving and torque improvement at low speed (up to 30% improvement).

Their main characteristics are :

- Completely free from the Concern of Loss of Position
- Perfect Positiooning and Completion
- Don't Care what the Phase of Motor is
- Reduce the Motor Temperature and Energy Usage
- Torque Improvement by Run Current Control

Technical Data

Motor Model		Drive Model	Number of phases	Current	Holding Torque	Rotor Inertia	Weights	Length (L)	Permissible Overhung Load (Distance from end of shaft)			
									3mm	8mm	13mm	18mm
Units			-	A	Nm	g.cm²	g	mm	N			
SM-20	20M	SV2-PD-20	2	0,6	0,018	3,0	92	33	18	30	-	-
	20L		2	0,6	0,037	3,3	105	38	18	30	-	-
SM-28	28S	SV2-PD-28	2	0,67	0,069	9,0	146	32	30	38	53	-
	28M		2	0,67	0,098	13	203	45	30	38	53	-
	28L		2	0,67	0,118	18	227	50	30	38	53	-
SM-35	35M	SV2-PD-35	2	0,8	0,078	10	152	26	22	26	33	46
	35L		2	1,0	0,137	14	210	36	22	26	33	46
SM-42	42S	SV2-PD-42	2	1,3	0,216	35	278	33	22	26	33	46
	42M		2	1,68	0,353	54	341	39	22	26	33	46
	42L		2	1,68	0,431	68	416	47	22	26	33	46
	42XL		2	1,2	0,650	114	566	60	22	26	33	46
SM-56	56S	SV2-PD-56	2	2,8	0,539	120	506	41	52	65	85	123
	56M		2	2,8	1,00	300	742	56	52	65	85	123
	56L		2	2,8	1,72	480	1075	76	52	65	85	123
SM-60	60S	SV2-PD-60	2	4,0	0,88	240	700	47	70	87	114	165
	60M		2	4,0	1,28	490	864	56	70	87	114	165
	60L		2	4,0	2,40	690	1418	85	70	87	114	165

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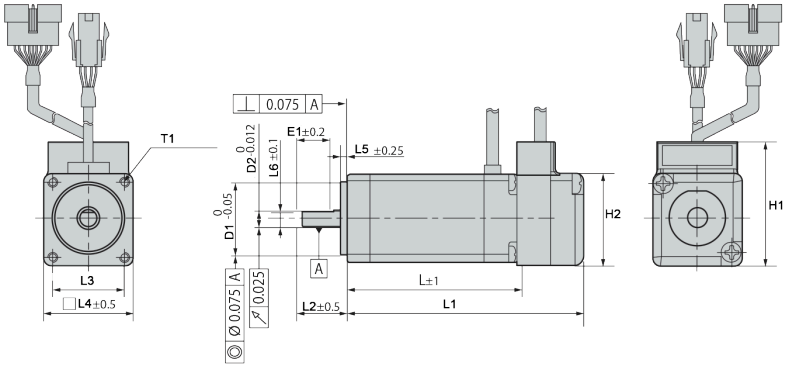
SPECIFICATIONS

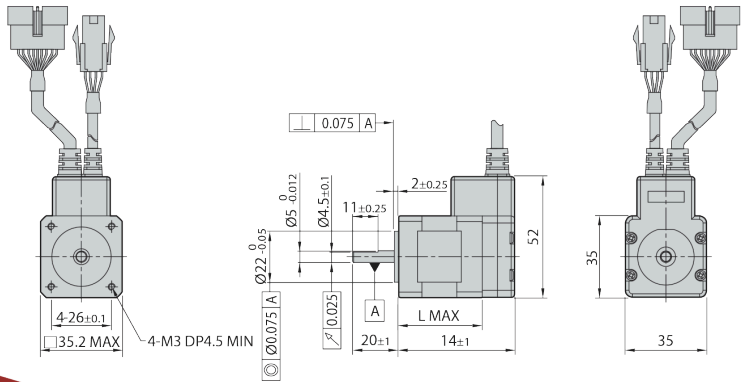
SPECIFICATIONS OF MOTOR		
Drive Method		BI-POLAR
Permissible Thrust Load (N)		Lower than motor weight
Insulation Resistance (Mohm)		100 MIN.(at 500 VDC)
Insulation Class		CLASS B(130°C)
Operating Temperature (°C)		0 to 55
SPECIFICATIONS OF DRIVE		
Input Voltage		24 VDC ±10%
Control Method		Closed loop control with 32bit MCU
Curent Consumption		Max 500mA (Except motor current)
Ope-rating Condition	Ambient Temperature	In use : 0 - 50°C / In storage : -20 - 70°C
	Humidity	In use : 35 - 85% RH (Non-Condensing) / In storage : 10 -90% RH (Non-Consending)
	Vib.Resist	0,5g
Function *2	Rotation Speed	0 - 3,000 (rpm) *1
	Resolution (ppr)*4	500 1,000 1,600 2,000 3,200 3,600 4,000 5,000 6,400 8,000 10,000 20,000 25,000 36,000 40,000 50,000 (Selectable by DIP Switch) *5
	Protection Functions	Over Current Error, Over Speed Error, Position Tracking Error, Over Load Error, Over Temperature Error, Over Regenerated Voltage Error, Motor Connect Error, Encoder Connect Error, In-Position Error, ROM Error, Position Overflow Error
	LED Display	Power status, In-Position status, Enable status, Alarm status
I/O Signal *3	Input Signals	Position Command Pulse, Enable, Alarm Reset (Photocoupler Input)
	Output Signals	In-Position, Alarm (Photocoupler Output), Brake

* 1 : Up to the resolution of 10,000[ppr], maximum speed can be reached by 3,000[rpm] and with the resolution more than 10,000[ppr], maximum speed shall be reduced accordingly.
* 2 : Please refer to Settings and Operating to obtain detailed function information.
* 3 : Please refer to Control Input/Output Explanation to obtain detailed Input/Output signal information.
* 4 : When selected resolution is more than encoder resolution, motor shall be operated by microstep between pulses.
* 5 : Please refer to the manual for detail information.

DRAWING



Dimensions	L	L1	L2	L3	L4	L5	L6	D1	D2	H1	H2	E1	T1
SM-20M	33	L+15±1	10	4-16±0.1	20	1.5	3,5	Ø16	Ø4	27,6	20,6	7	4-M2 DP2,5
SM-20L	38												
SM-28S	32	L+13,6±1	15	4-23±0,15	28	2	4,5	Ø22	Ø5	31	28	10	4-M2,5 DP2,5
SM-28M	45												
SM-28L	50												



Dimensions	L
SM-35MM	26
SM-35LM	36

When ordering 28mm Stopper type of motor, please add"M"after standard motor model number.

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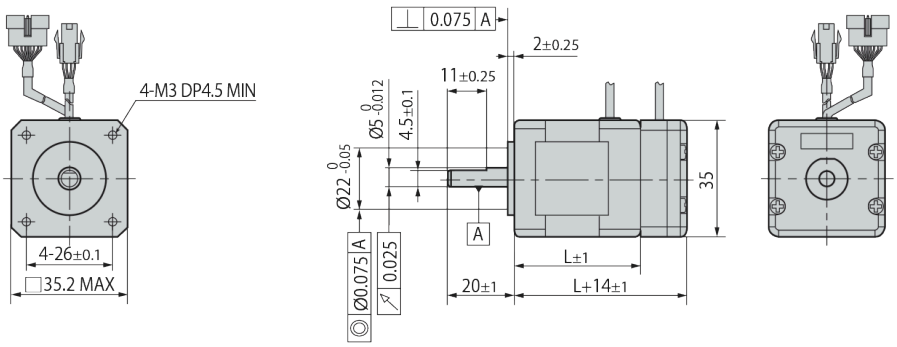

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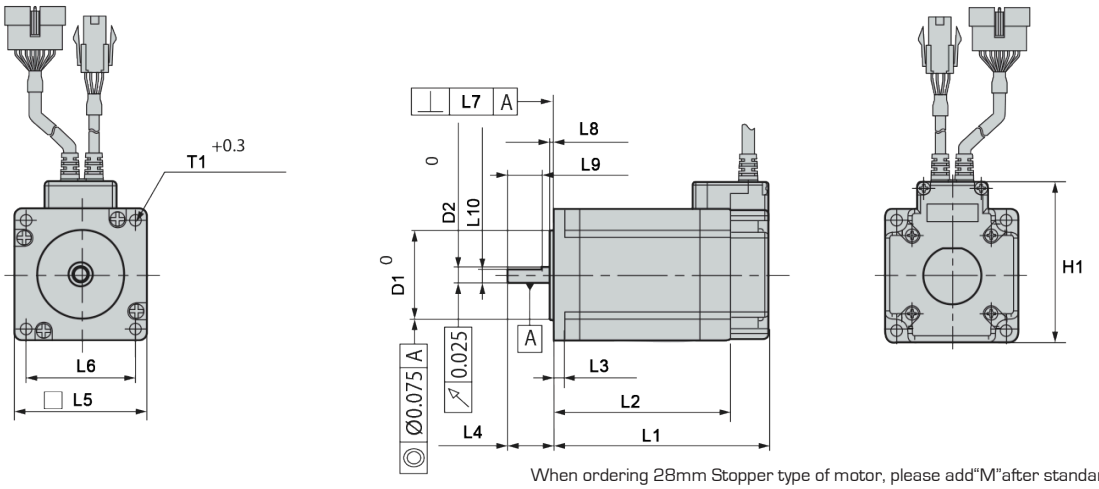

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Dimensions	L	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	H1	D1	D2	T1
SM-28SM	32	L+13,6±1	L±1	-	20±1	35,2 MAX	4-26±0,1	0,075	10±2	2±0,25	4,5±0,1	47,2	Ø22-0,05	Ø5-0,012	4-M2,5 DP2,5
SM-28MM	45														
SM-28LM	50														
SM-42S	33	L+16±1	L±1	-	24±0,5	42,3 MAX	4-31±0,1	0,1	2±0,25	20±0,2	4,5±0,1	59	Ø22-0,005	Ø5-0,011	4-M3 DP4,-5MIN
SM-42M	39														
SM-42L	47														
SM-42XL	60														
SM-56S	41	L+16±1	l±1	5±0,25	20±0,5	57±0,5	4-47,14±0,15	0,1	1,6±0,25	15±02	5,8±0,1	68,5	Ø38,1-0,039	Ø35-0,013	4-Ø5-0 THRU
SM-56M	56														
SM-56L	76														
SM-60S	47	L+16±1	L±1	6,3±0,25	20,6±0,5	60±0,5	4-50±0,25	0,1	1,6±0,2	15±0,2	2-7,5±0,1	70	Ø36-0,039	Ø8-0,013	4-Ø5-0 THRU
SM-60M	56														
SM-60L	85														

PART NUMBER COMPOSITION

Ezi-SERVO II ST-56L-A-BK-PN05-X

1 2 3 4 5 6 7

1 Drive Series Type
ST : Stand Alone
MI : MINI Type
2X : 2 axes
3X : 3 axes

2 Motor Flange size
20 : 20mm
28 : 28mm
35 : 35mm
42 : 42mm
56 : 56mm
60 : 60mm

3 Motor Length
S : Small
M : Medium
L : Large

4 Encoder Resolution
A : 10,000[ppr]
D : 16,000[ppr]
F : 4,000[ppr]

5 Brake
Blank : Without
Brake BK : Brake

6 Reduction Gear Ratio
Blank - Without Gear PN03 - 1:3
PN05 - 1:5
PN08 - 1:8
PN10 - 1:10
PN15 - 1:15
PN25 - 1:25
PN40 - 1:40
PN50 - 1:50

7 User Code

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