The 5-phase stepping Set

AP1 series
AC200V/230V
Micro-step (500 x 1 to 40 divisions)

Configuration of the 5-phase Stepping Motor Set, AP1 Series

Name	Quantity
AP1 series instruction manual	1 pc.
PM driver	1 pc.
Stepping motor	1 pc.
Interface connector (CN1)	1 set
Power supply connector (CN2)	1 set
Stepping motor power line connector (CN3)	1 set
PM driver front surface metal fittings (1 pair)	1 set

The standard combination of the 5-phase stepping Set AP1 series lineup applies two types stepping motors of STEPSYN M series and STEPSYN F series.

Stepping Motor Type	Characteristics
STEPSYN M Series	Conforms to UL Standards and CE Marking
STEPSYN F Series	Standard stepping motor for the set

Various sizes of stepping motor are available according to applications and purposes.

Characteristics

- **Conformity to UL Standards and CE Marking**
  The product conforms to UL Standards and CE Marking.
- **Micro-step function available**
  Smooth operation without vibration at low speeds can be realized.
- **Rush current prevention circuit**
  The built-in rush current prevention circuit in the power circuit section enables stabilized operation even during switching on.
- **Connector method for PM driver I/O cable**
  The connector method is adopted for the high voltage section terminal, where the terminal base was conventionally used. This method facilitates PM driver installation and maintenance.
- **Alarm output signal logic selectable**
  Logic of signal output during alarm circuit operation can be selected.

Built-in function

- **Auto micro function**
  Even setting division of resolution to a rough one or two divisions, operation can be as smooth and with as low vibration as for micro-step drive. However, this function and the micro-step function cannot be adopted at the same time.
- **Micro-step function**
  By manipulating the rotary switch that sets resolution, the micro-step drive can be used. However, this function and the auto micro function cannot be adopted at the same time.
- **Pulse input method selection function**
  Either "Pulse and direction mode" or "2-input mode" can be selected, using a dipswitch. Resolution setting function.
- **Resolution setting function**
  Nine types of resolution, ranging from one to 40 divisions, can be set for a basic stepping motor step angle by using rotary switches.
- **Operation current switch function**
  Operation current of the stepping motor can be set in the range from rated current to 55% of rated current by using rotary switches.
- **Current adjustment function during operation halt**
  When operation is halted, operation current for the stepping motor can be set at 40 to 70% of specified operation current by using a selection switch.

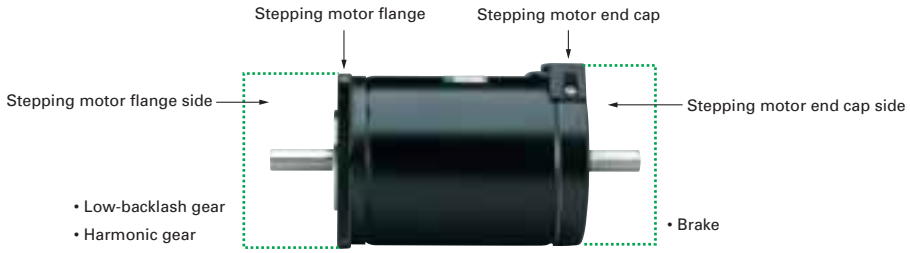
Explanation of set model number

① System on the stepping motor flange side

Code		Deceleration Ratio
C	Low-backlash gear	1 / 3.6, 1 / 7.2, 1 / 10, 1 / 20, 1 / 30, 1 / 36
H	Harmonic gear	1 / 50, 1 / 100
X	None on flange side	

② System on the stepping motor end cap side

Code		Function
B	Brake	Electromagnetic brake
E	Encoder	Please contact us regarding the encoder
X	None on end cap side	



③ Deceleration ratio of gear system
Example: deceleration ratio 1 / 3.6 → 3.6

Explanation for model number in the combined case:
The set model number of the PMAPA1S6A01 and 103F8581 type stepping motor is as follows when equipped with the system of harmonic gear (1/100) and brake:

AP13F851D – H B 100

Standard set model number

③ Gear deceleration ratio (1/100)
② Brake
① Harmonic gear

How to order:

Please order by using the "Set model number" in the list, Standard combined stepping motors for 5-phase stepping set "AP1" series.
When gear, brake, and/or encoder are necessary for the stepping motor STEPSYN F, select codes of your preferences from the above ①, ②, and ③ to describe them following to "Set model number".

PM Driver Specification

Model number			Standard specification
Standard specification	Input source		Single phaseAC200 / 230V+10, -15% 50 / 60Hz
	Source current		6A
	Environment	Protection class	Class Ⅰ
		Operating environment	Installation category (overvoltage category) : Ⅱ, pollution degree : 2
		Applied standards	EN50178, UL508C
		Operating ambient temperature	0 to +50˚C
		Conservation temperature	-20 to +70˚C
		Operating ambient humidity	35 to 85%RH (no condensation)
		Conservation humidity	10 to 90%RH (no condensation)
		Operating altitude	MAX. 1000m above sea level
		Vibration resistance	4.9m/s^2 Frequency range 10 to 55Hz, Direction: along X, Y and Z axes, for 2 hours each
		Impact resistance	Considering the NDS-C-0110 standard section 3.2.2 division "C", not influenced
		Withstand voltage	Not influenced when AC1500V is applied between power input terminal and cabinet for one minute
		Insulation resistance	10MΩ MIN. when measured with DC500V megohmmeter between input terminal and cabinet.
	Mass(Weight)		1.5kg(3.31 lbs)
Function	Protection function		Against PM driver overheat, main circuit power supply error, and over-current
	Selection function		Input method, auto current down, power down, auto micro, alarm output logic, step angle, operating current, non-operating current
	LED indicator		Power supply monitor, phase origin monitor, pulse monitor, alarm indicator
I/O signals	Command pulse input signal		Photo coupler input method, input resistance : 330Ω Input signal voltage: H = 4.0 to 5.5V, L = 0 to 0.5V Maximum input frequency: 200kpulse/s
	Power down input signal		Photo coupler input method, input resistance : 330Ω Input signal voltage: H = 4.0 to 5.5V, L = 0 to 0.5V
	Step angle selection input signal		Photo coupler input method, input resistance = 330Ω Input signal voltage: H = 4.0 to 5.5V, L = 0 to 0.5V
	FULL/HALF selection input signal		Photo coupler input method, input resistance = 330Ω Input signal voltage: H = 4.0 to 5.5V, L = 0 to 0.5V
	Phase origin monitor output signal		Open collector output by photo coupler Output signal standard, Vceo = 30V MAX, Ic = 5mA MAX
	Alarm output signal		Open collector output by photo coupler Output signal standard, Vceo = 30V MAX, Ic = 20mA MAX

• Refer to pages 133 and after for operation, connection, function, and dimensions of the PM driver.

Stepping motor specifications

Stepping motor type	STEPSYN M	STEPSYN F
Model name	103M858 □ / 103M8958 □	103F858 □ / 103F8958 □
Type	S1 (Continuous rating)	————
Insulation class	Class B (130˚C)[105˚C for UL class A]	Class B (130˚C)
Withstand voltage	AC1600V, 50/60Hz, 1 minute	AC1000V, 50/60Hz, 1 minute
Insulation resistance	MIN. 100MΩ against DC500V	
Protection grade	IP40	————
Vibration resistance	Amplitude 1.52mm (P-P), frequency range 10 to 55Hz, 5 minutes sweep time, along X, Y, and Z axes, for 2 hours	
Impact resistance	Conditions: 98m/S^2 acceleration, 11 minutes duration, half-wave/sine wave, three times each along X, Y, and Z axes, 18 times in total	
Operating ambient temperature	-10 to +50˚C (0 to 40˚C for the one with harmonic gear)	
Operating ambient humidity	20 to 90%(no condensation)	

Standard combined stepping motors for 5-phase stepping set "AP1" series

PM driver model number : PMAPA1S6A01

Combination model number for the STEPSYN M series (conforming to UL Standards and CE Marking)

System support	Dimensions of stepping motor	Single shaft		Double shaft	
		Set model number	Standard combined stepping motor number	Set model number	Standard combined stepping motor number
Standard type	ø 86mm	**AP13M851S**	103M8581-8041	**AP13M851D**	103M8581-8011
		AP13M852S	103M8582-8041	**AP13M852D**	103M8582-8011
		AP13M853S	103M8583-8041	**AP13M853D**	103M8583-8011
	ø 106mm	**AP13M892S**	103M89582-8041	**AP13M892D**	103M89582-8011
		AP13M893S	103M89583-8041	**AP13M893D**	103M89583-8011

Combination model number for the STEPSYN F series (Motor for a set)

System support	Dimensions of stepping motor	Single Shaft		Double shaft	
		Set Model Number	Standard combined stepping motor number	Set model number	Standard combined stepping motor number
Standard type	ø 86mm	**AP13F851S**	103F8581-8041	**AP13F851D**	103F8581-8011
		AP13F852S	103F8582-8041	**AP13F852D**	103F8582-8011
		AP13F853S	103F8583-8041	**AP13F853D**	103F8583-8011
	ø 106mm	**AP13F892S**	103F89582-8041	**AP13F892D**	103F89582-8011
		AP13F893S	103F89583-8041	**AP13F893D**	103F89583-8011
Low-backlash gear	ø 86mm	**AP13F851S-CX3.6**	103F8581-80CXA4	**AP13F851D-CX3.6**	103F8581-80CXA1
		AP13F851S-CX7.2	103F8581-80CXB4	**AP13F851D-CX7.2**	103F8581-80CXB1
		AP13F851S-CX10	103F8581-80CXE4	**AP13F851D-CX10**	103F8581-80CXE1
		AP13F851S-CX20	103F8581-80CXG4	**AP13F851D-CX20**	103F8581-80CXG1
		AP13F851S-CX30	103F8581-80CXJ4	**AP13F851D-CX30**	103F8581-80CXJ1
		AP13F851S-CX36	103F8581-80CXK4	**AP13F851D-CX36**	103F8581-80CXK1
Harmonic gear	ø 86mm	**AP13F851S-HX50**	103F8581-80HXL4	**AP13F851D-HX50**	103F8581-80HXL1
		AP13F851S-HX100	103F8581-80HXM4	**AP13F851D-HX100**	103F8581-80HXM1
Electromagnetic brake	ø 86mm	**AP13F851S-XB**	103F8581-80XB41		
		AP13F852S-XB	103F8582-80XB41		
		AP13F853S-XB	103F8583-80XB41		

Stepping motor data sheet

STEPSYN M series (conforming to UL Standards and CE Marking)

Set model number	Single shaft	AP13M851S	AP13M852S	AP13M853S	AP13M892S	AP13M893S
	Double shaft	AP13M851D	AP13M852D	AP13M853D	AP13M892D	AP13M893D
Holding torque	N·m(oz·in)	2.06(291.7)	4.02(569.3)	6.17(873.7)	10.8(1529.4)	16(2265.7)
Rotor inertia	$\times10^{-4}$kg·m^2(oz·in^2)	1.45(7.93)	2.9(15.86)	4.4(24.06)	14.6(79.83)	22(120.28)
Mass(Weight)	kg(lbs)	1.5(3.31)	2.5(5.51)	3.5(7.72)	7.5(16.53)	10.5(23.15)

STEPSYN F series (Standard)

Set model number	Single shaft	AP13F851S	AP13F852S	AP13F853S	AP13F892S	AP13F893S
	Double shaft	AP13F851D	AP13F852D	AP13F853D	AP13F892D	AP13F893D
Holding torque	N·m(oz·in)	2.06(291.7)	4.02(569.3)	6.17(873.7)	10.8(1529.4)	16(2265.7)
Rotor inertia	$\times10^{-4}$kg·m^2(oz·in^2)	1.45(7.93)	2.9(15.86)	4.4(24.06)	14.6(79.83)	22(120.28)
Mass(Weight)	kg(lbs)	1.5(3.31)	2.5(5.51)	3.5(7.72)	7.5(16.53)	10.5(23.15)

STEPSYN F series (with low-backlash gear)

Set model number	Single shaft	AP13F851S-CX3.6	AP13F851S-CX7.2	AP13F851S-CX10	AP13F851S-CX20	AP13F851S-CX30	AP13F851S-CX36
	Double shaft	AP13F851D-CX3.6	AP13F851D-CX7.2	AP13F851D-CX10	AP13F851D-CX20	AP13F851D-CX30	AP13F851D-CX36
Allowable torqueN·m	N·m(oz·in)	4.5(637.2)	9(1274.5)	9(1274.5)	12(1699.3)	12(1699.3)	12(1699.3)
Rotor inertia	$\times10^{-4}$kg·m^2(oz·in^2)	1.45(7.93)					
Basic step angle	°	0.2	0.1	0.072	0.036	0.024	0.02
Deceleration ratio		1 : 3.6	1 : 7.2	1 : 10	1 : 20	1 : 30	1 : 36
Backlash	°	0.4	0.25	0.25	0.17	0.17	0.15
Allowable number of rotations	min^{-1}	500	250	180	90	60	50
Mass(Weight)	kg(lbs)	2.7(5.95)					
Allowable thrust load	N	60					
Allowable radial load (Note1)	N	300					

* The direction of motor rotate and the gear output shaft is as follows: when deceleration ratio is 1:3.6 or 1:7.2, both motor and shaft rotate in the same direction, and for 1:10, 1:20, or 1:30 type, the motor and the shaft rotate in opposite direction.
(Note1) When load is applied at 1/3 length from output shaft edge.

STEPSYN F series (with harmonic gear)

Set model number	Single shaft	AP13F851S-HX50	AP13F851S-HX100
	Double shaft	AP13F851D-HX50	AP13F851D-HX100
Allowable torque	N·m(oz·in)	25(3540.2)	41(5805.9)
Rotor inertia	$\times10^{-4}$kg·m^2(oz·in^2)	1.65(9.02)	
Basic step angle	°	0.0144	0.0072
Deceleration ratio		1 : 50	1 : 100
Lost motion	Minute	0.4~3 (±0.28 N·m)(±39.65 oz·in)	0.4~3 (±0.28 N·m)(±39.65 oz·in)
Allowable number of rotations	min^{-1}	500	250
Mass(Weight)	kg(lbs)	3.3(7.28)	
Allowable thrust load	N	1400	
Allowable radial load (Note1)	N	1400	

* The gear output shaft rotates in the opposite direction of the motor.
(Note1) When load is applied at 1/3 length from output shaft edge.

STEPSYN F series (with electromagnetic brake)

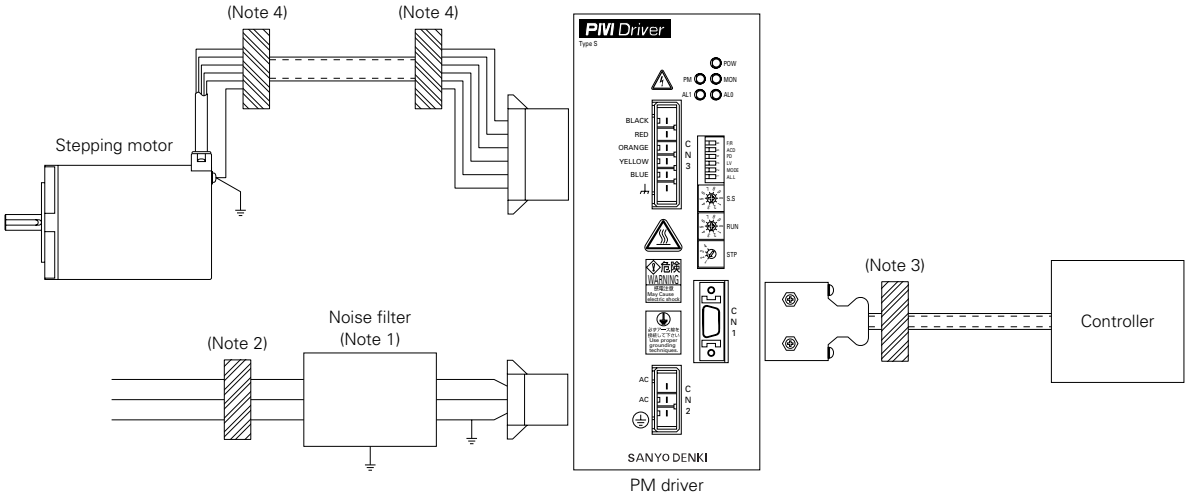
Set model number		Single shaft	AP13F851S-XB	AP13F852S-XB	AP13F853S-XB
		Double shaft	————	————	————
Holding torque		N·m(oz·in)	2.06(291.7)	4.02(569.3)	6.17(873.7)
Rotor inertia		$\times10^{-4}$kg·m^2(oz·in^2)	2.24(12.25)	3.69(20.17)	5.19(28.38)
Mass(Weight)		kg(lbs)	3.5(7.72)	4.5(9.92)	5.5(12.13)
Electromagnetic brake specification	Brake operation system		Non-energization operation system		
	SOURCE VOLTAGE	V	DC 24 ± 5%		
	EXCITING CURRENT	A	0.42		
	ELECTRIC POWER CONSUMPTION	W	10		
	Static friction torque	N·m(oz·in)	7(991.25)		
	Brake operating time	ms	50		
	Brake release time	ms	20		
	Polarity		Red:⊕,Black:⊖		

UL Standards and CE Marking

Product	UL Standards		CE Marking		
	Applied standards	File no.	Applied standards		
			Low voltage directive	EMC Directive	
				Emission	Immunity
PM driver	UL508C	E179775	EN50178	EN50081-2 (Class A)	EN50082-2 (Class A)
Stepping motor	UL1004 UL2111	E208878	EN60034-1 IEC34-5 (EN60034-5)		

- The UL standards and CE Marking of the stepping motor are applied to the "Type M stepping motor".
- The EMC Directive conformity is to be confirmed under the installation environment shown in Figure 1.
  Because the EMC Directive varies depending on the structure of user's control panel, the combination of the product with other devices, and the wiring, to which the PM driver and stepping motor are incorporated, conformity can not be assured for the products in the user's operating environment.
  Therefore, the user should finally confirm EMC conformity of the machine and the whole system.

●EMC conformity confirmation



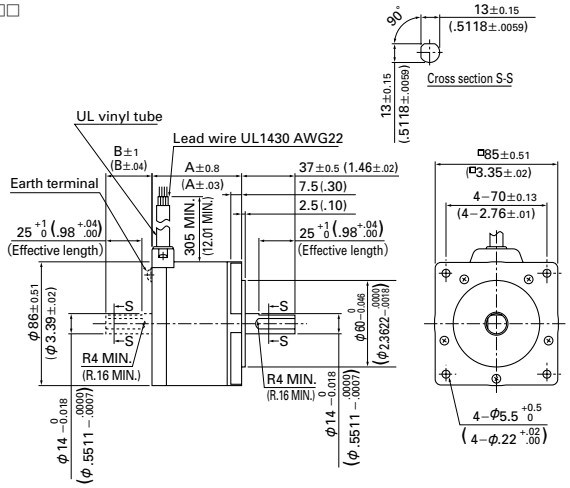
Figh1 Installation environment diagram

Recommended parts for EMC conformity

No.	Part name	Model	Specifications and size	Manufacturer
Note 1	Noise filter	RF1015-DLC	Rated voltage : AC 250V Rated current : 15A	RASMI ELECTRONICS LTD. ,
Note 2	Toroidal Core	T60 × 20 × 36	Core outer diameter : 60mm Core inner diameter : 36mm	TDK
Note 3	Toroidal Core	TRCN-40-27-15	Core outer diameter : 40mm Core inner diameter : 27mm	Kitagawa Industry
Note 4	Toroidal Core	TRCN-40-27-15	Core outer diameter : 40mm Core inner diameter : 27mm	Kitagawa Industry

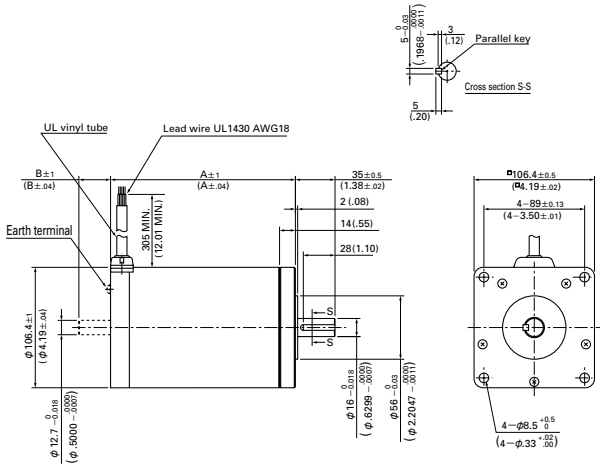
Dimensions [Unit: mm (inch)]

STEPSYN M
AP13M85□□
103M858□-80□□



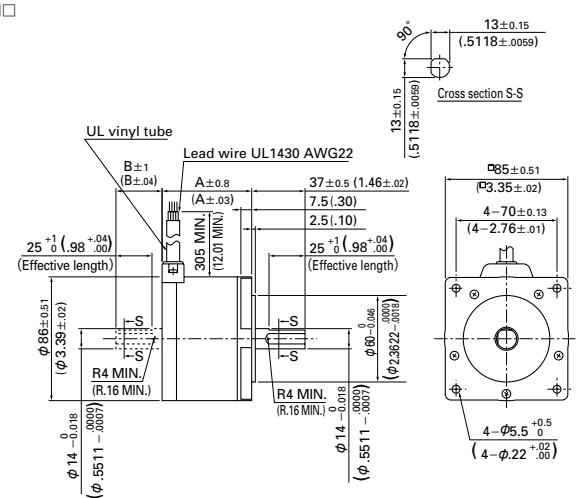
Model name	A	B
AP13M851S (103M8581-8041)	62.15 (2.45)	—
AP13M851D (103M8581-8011)	62.15 (2.45)	32 (1.26)
AP13M852S (103M8582-8041)	92.2 (3.63)	—
AP13M852D (103M8582-8011)	92.2 (3.63)	32 (1.26)
AP13M853S (103M8583-8041)	125.85 (4.95)	—
AP13M853D (103M8583-8011)	125.85 (4.95)	32 (1.26)

AP13M89□□
103M8958□-80□□



Model name	A	B
AP13M892S (103M89582-8041)	163.3 (6.43)	—
AP13M892D (103M89582-8011)	163.3 (6.43)	28 (1.10)
AP13M893S (103M89583-8041)	221.3 (8.71)	—
AP13M893D (103M89583-8011)	221.3 (8.71)	28 (1.10)

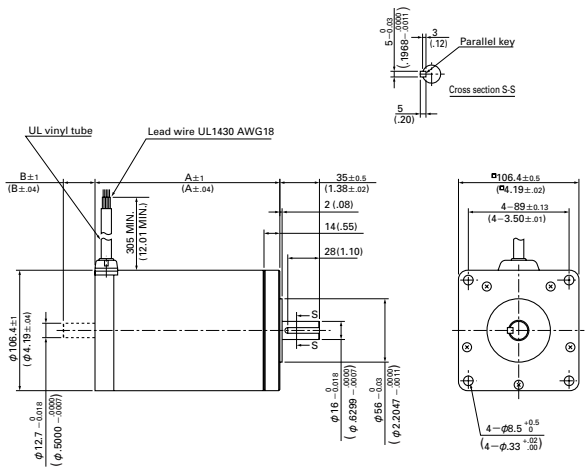
STEPSYN F
AP13F85□□
103F858□-80□□



Model name	A	B
AP13F851S (103F8581-8041)	62.15 (2.45)	—
AP13M851D (103M8581-8011)	62.15 (2.45)	32 (1.26)
AP13F852S (103F8582-8041)	92.2 (3.63)	—
AP13M852D (103F8582-8011)	92.2 (3.63)	32 (1.26)
AP13F853S (103F8581-8041)	125.85 (4.95)	—
AP13M853D (103F8583-8011)	125.85 (4.95)	32 (1.26)

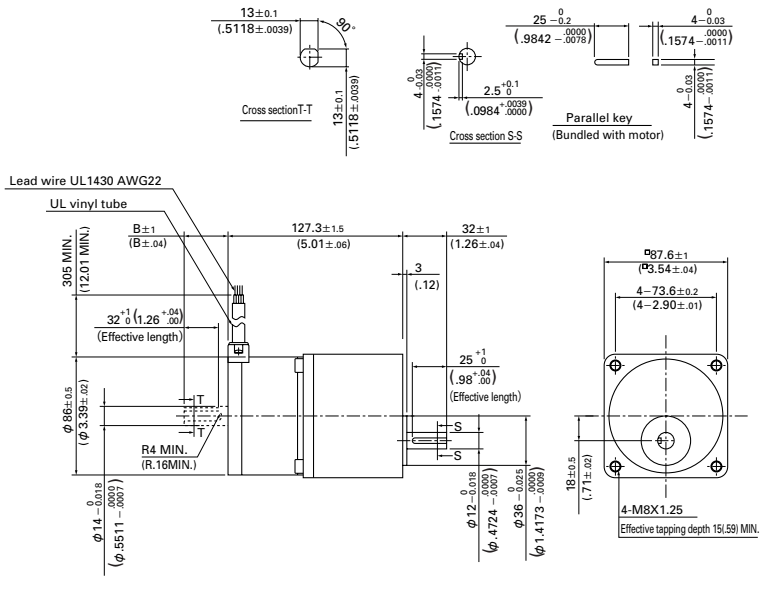
Dimensions [Unit: mm (inch)]

STEPSYN F
AP13F89□□
103F8958□-80□□



Model name	A	B
AP13F892S (103F89582-8041)	163.3 (6.43)	—
AP13F892D (103F89582-8011)	163.3 (6.43)	28 (1.10)
AP13F893S (103F89583-8041)	221.3 (8.71)	—
AP13F893D (103F89583-8011)	221.3 (8.71)	28 (1.10)

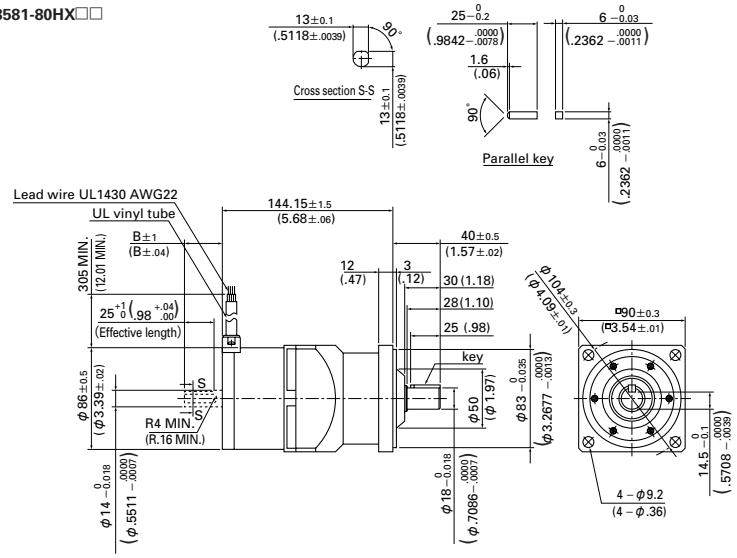
STEPSYN F with low-backlash gear
AP13F851S-CX□□
103F8581-80CX□□



Model name	B
AP13F851S-CX3.6 (103F8581-80CXA4)	—
AP13F851D-CX3.6 (103F8581-80CXA1)	32 (1.26)
AP13F851S-CX7.2 (103F8581-80CXB4)	—
AP13F851D-CX7.2 (103F8581-80CXB1)	32 (1.26)
AP13F851S-CX10 (103F8581-80CXE4)	—
AP13F851D-CX10 (103F8581-80CXE1)	32 (1.26)
AP13F851S-CX20 (103F8581-80CXG4)	—
AP13F851D-CX20 (103F8581-80CXG1)	32 (1.26)
AP13F851S-CX30 (103F8581-80CXJ4)	—
AP13F851D-CX30 (103F8581-80CXJ1)	32 (1.26)
AP13F851S-CX36 (103F8581-80CXK4)	—
AP13F851D-CX36 (103F8581-80CXK1)	32 (1.26)

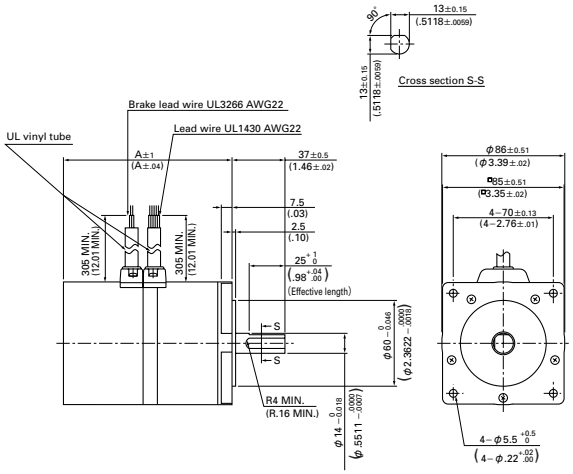
Dimensions [Unit: mm (inch)]

STEPSYN F with harmonic gear
AP13F851□-HX□□
103F8581-80HX□□



Model name	B
AP13F851S-HX50 (103F8581-80HXL4)	—
AP13F851D-HX50 (103F8581-80HXL1)	32 (1.26)
AP13F851S-HX100 (103F8581-80HXM4)	—
AP13F851D-HX100 (103F8581-80HXM1)	32 (1.26)

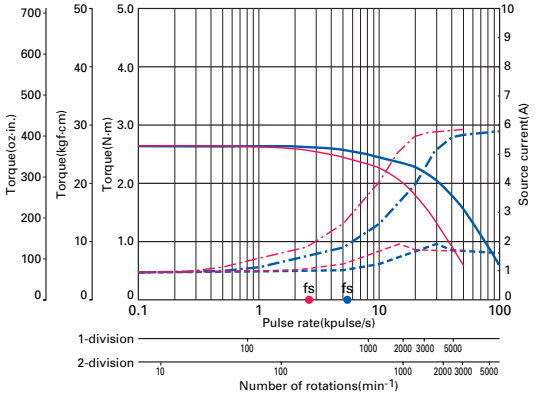
STEPSYN F with electromagnetic brake
AP13F85□S-XB
103F858□-80XB41



Model name	A
AP13F851S-XB (103F8581-80XB41)	116.7 (4.59)
AP13F852S-XB (103F8582-80XB41)	146.8 (5.78)
AP13F853S-XB (103F8583-80XB41)	180.4 (7.10)

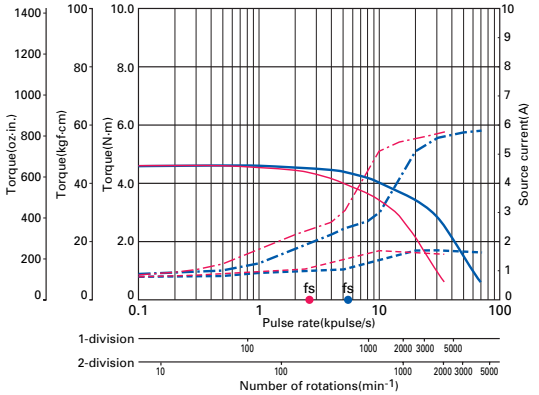
Pulse rate-torque characteristics/pulse rate-source current characteristics

● AP13M851□ / AP13F851□ / AP13F851S-XB : 200V



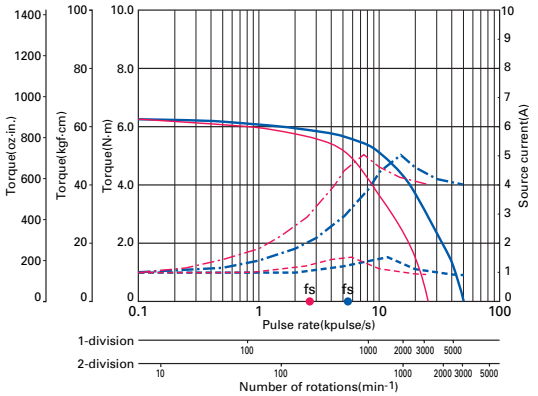
103M8581-80□□/103F8581-80□□/103F8581-80XB41
Source voltage : AC200V·Operating current : 1.5A/phase
—— Pull-out torque(JL1=7.4×10-4kg·m2 [40.46 oz·in2] Use the rubber coupling)
– · – Source current(TL=MAX) – – – Source current(TL=0)
fs : No load maximum starting pluse rate
■ 1-division is specified ■ 2-division is specified

● AP13M852□ / AP13F852□ / AP13F852S-XB : 200V



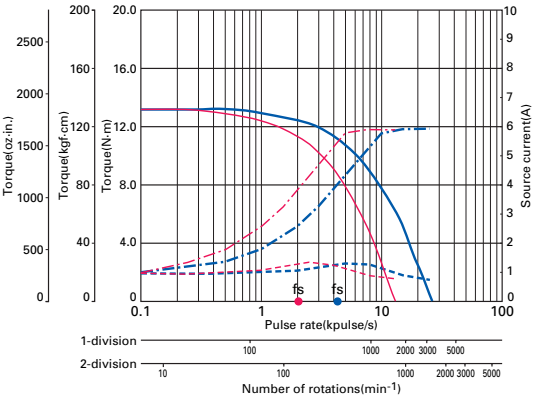
103M8582-80□□/103F8582-80□□/103F8582-80XB41
Source voltage : AC200V·Operating current : 1.5A/phase
—— Pull-out torque(JL1=15.3×10-4kg·m2 [83.65 oz·in2] Use the rubber coupling)
– · – Source current(TL=MAX) – – – Source current(TL=0)
fs : No load maximum starting pluse rate
■ 1-division is specified ■ 2-division is specified

● AP13M853□ / AP13F853□ / AP13F853S-XB : 200V



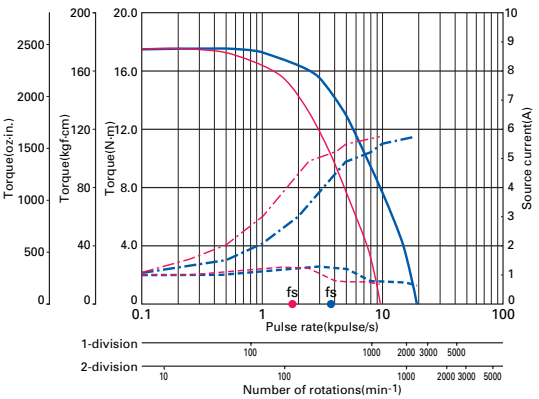
103M8583-80□□/103F8583-80□□/103F8583-80XB41
Source voltage : AC200V·Operating current : 1.5A/phase
—— Pull-out torque(JL1=43×10-4kg·m2 [235.10 oz·in2] Use the rubber coupling)
– · – Source current(TL=MAX) – – – Source current(TL=0)
fs : No load maximum starting pluse rate
■ 1-division is specified ■ 2-division is specified

● AP13M892□ / AP13F892□ : 200V



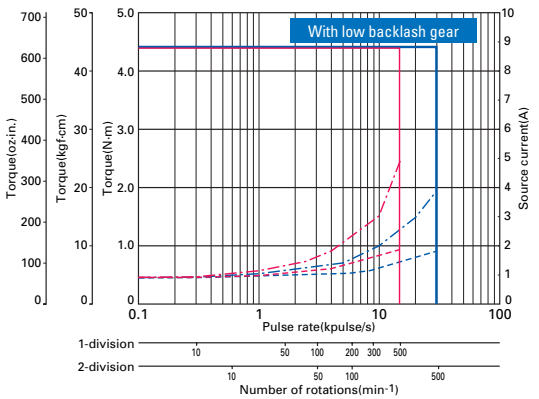
103M89582-80□□/103F89582-80□□
Source voltage : AC200V·Operating current : 1.5A/phase
——Pull-out torque(JL1=43×10-4kg·m2 [235.10 oz·in2] Use the rubber coupling)
– · – Source current(TL=MAX) – – – Source current(TL=0)
fs : No load maximum starting pluse rate
■ 1-division is specified ■ 2-division is specified

● AP13M893□ / AP13F893□ : 200V



103M89583-80□□/103F89583-80□□
Source voltage : AC200V·Operating current : 1.5A/phase
—— Pull-out torque(JL1=43×10-4kg·m2 [235.10 oz·in2] Use the rubber coupling)
– · – Source current(TL=MAX) – – – Source current(TL=0)
fs : No load maximum starting pluse rate
■ 1-division is specified ■ 2-division is specified

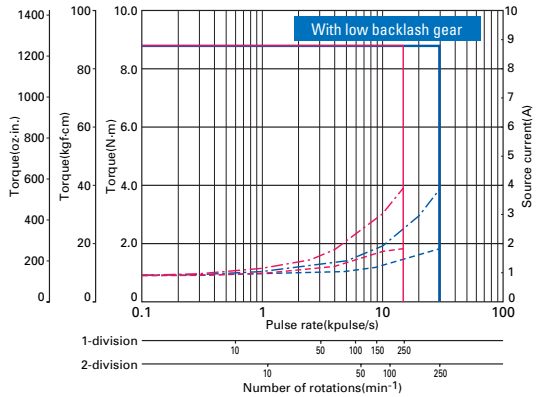
● AP13F851□-CX3.6 : 200V



103F8581-80CXA□
Source voltage : AC200V·Operating current : 1.5A/phase
—— Allowable torque(JL1=43×10-4kg·m2 [235.10 oz·in2] Use the rubber coupling)
– · – Source current(TL=MAX) – – – Source current(TL=0)
■ 1-division is specified ■ 2-division is specified

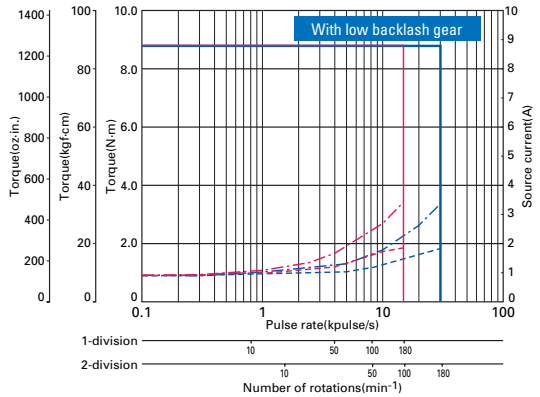
Pulse rate-torque characteristics/pulse rate-source current characteristics

● AP13F851□-CX7.2 : 200V



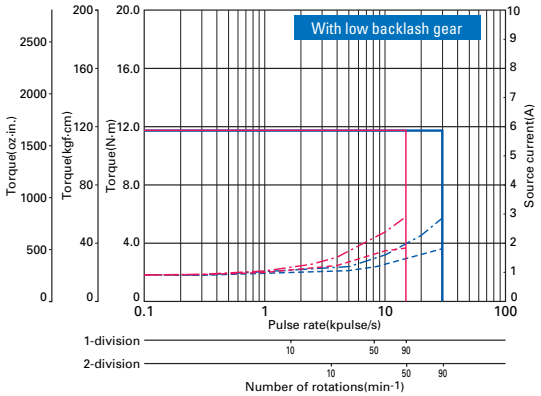
103F8581-80CXB□
Source voltage : AC200V·Operating current : 1.5A/phase
—— Allowable torque(JL1=43×10-4kg·m2 [235.10 oz·in2] Use the rubber coupling)
–·– Source current(TL=MAX) – – – Source current(TL=0)
■ 1-division is specified ■ 2-division is specified

● AP13F851□-CX10 : 200V



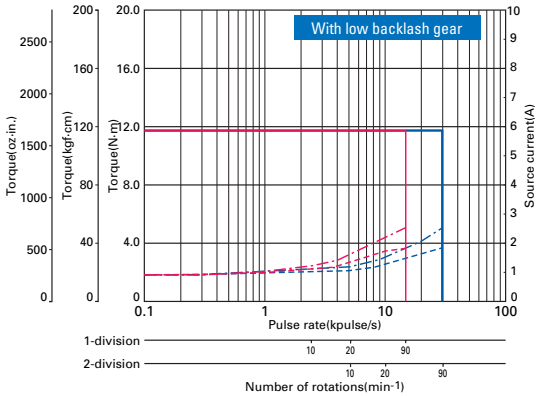
103F8581-80CXE□
Source voltage : AC200V·Operating current : 1.5A/phase
—— Allowable torque(JL1=43×10-4kg·m2 [235.10 oz·in2] Use the rubber coupling)
–·– Source current(TL=MAX) – – – Source current(TL=0)
■ 1-division is specified ■ 2-division is specified

● AP13F851□-CX20 : 200V



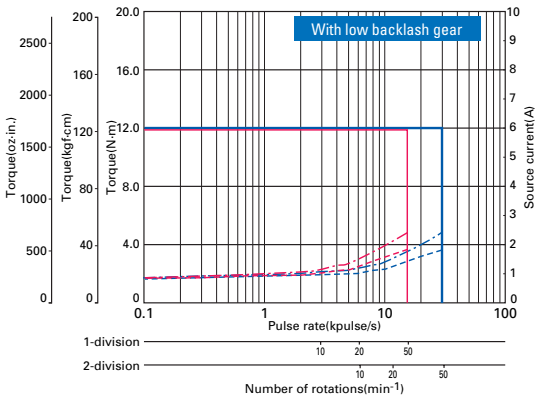
103F8581-80CXG□
Source voltage : AC200V·Operating current : 1.5A/phase
—— Allowable torque(JL1=43×10-4kg·m2 [235.10 oz·in2] Use the rubber coupling)
–·– Source current(TL=MAX) – – – Source current(TL=0)
■ 1-division is specified ■ 2-division is specified

● AP13F851□-CX30 : 200V



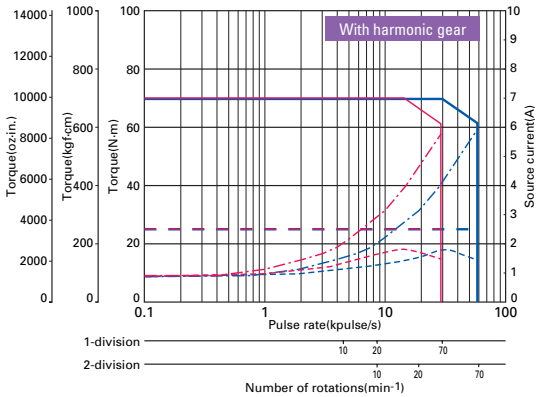
103F8581-80CXJ□
Source voltage : AC200V·Operating current : 1.5A/phase
—— Allowable torque(JL1=43×10-4kg·m2 [235.10 oz·in2] Use the rubber coupling)
–·– Source current(TL=MAX) – – – Source current(TL=0)
■ 1-division is specified ■ 2-division is specified

● AP13F851□-CX36 : 200V



103F8581-80CXK□
Source voltage : AC200V·Operating current : 1.5A/phase
—— Allowable torque(JL1=43×10-4kg·m2 [235.10 oz·in2] Use the rubber coupling)
–·– Source current(TL=MAX) – – – Source current(TL=0)
■ 1-division is specified ■ 2-division is specified

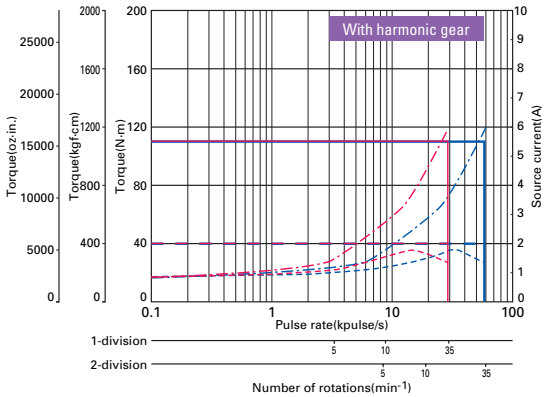
● AP13F851□-HX50 : 200V



103F8581-80HXL□
Source voltage : AC200V·Operating current : 1.5A/phase
—— Instantaneous allowable torque(JL1=43×10-4kg·m2 [235.10 oz·in2] Uses rubber coupling)
— — Allowable torque(JL1=43×10-4kg·m2 [235.10 oz·in2] Use the rubber coupling)
–·– Source current(TL=MAX) – – – Source current(TL=0)
■ 1-division is specified ■ 2-division is specified

Pulse rate-torque characteristics/pulse rate-source current characteristics

● **AP13F851□-HX100 : 200V**



103F8581-80HXM□
Source voltage : AC200V·Operating current : 1.5A/phase
—— Instantaneous allowable torque(J_{L1}=43×10^{-4}kg·m^2 [235.10 oz·in^2] Uses rubber coupling)
– –Allowable torque(J_{L1}=43×10^{-4}kg·m^2 [235.10 oz·in^2] Use the rubber coupling)
– · –Source current(T_L=MAX) – – –Source current(T_L=0)
■ 1-division is specified ■ 2-division is specified