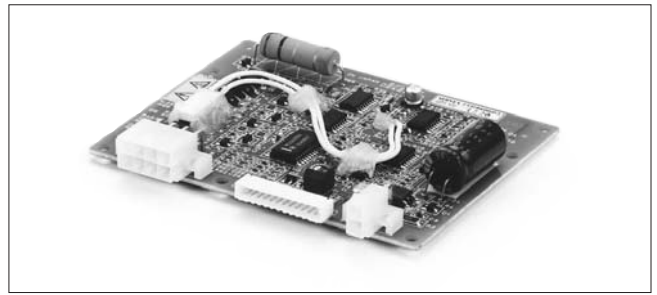


# High power simple

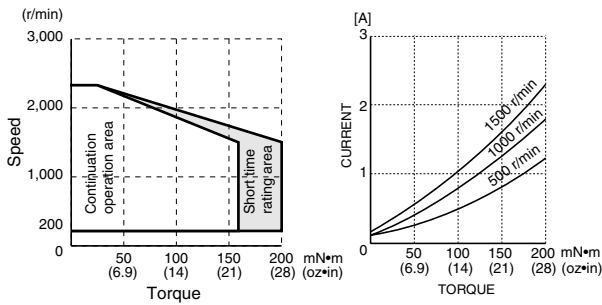


## ■ Specification

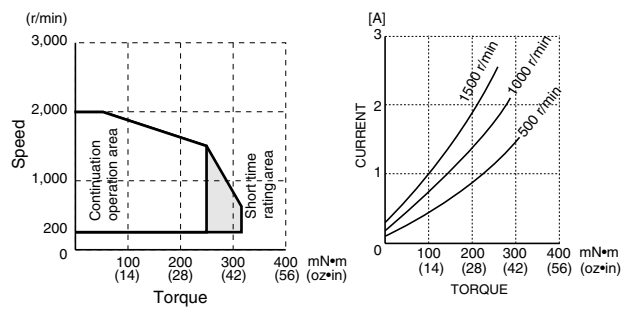
Model on motor		plain shaft type	FY8S25H-D3		FY9S40H-D3	
		Pinion shaft type	FY8PF25H-D3		FY9PF40H-D3	
Model on driver		FYD825HD3			FYD940HD3	
Rated voltage	V (DC)	24		24		
Rated output	W	25		40		
Speed control range	r/min	200~2300		200~2000		
Rated torque	mN · m	157		250		
	oz · in	22		36		
MAX. instantaneous torque 5sec	mN · m	200 (1500r/min MAX.)		300 (600r/min MAX.)		
	oz · in	28 (1500r/min MAX.)		43 (600r/min MAX.)		
Rated speed	r/min	1500		1500		
Speed setting method		① Speed setting by external speed setter (Sold separately: model code Q-R10KB)				
		② Speed setting by external voltage supply 0~10V				
Speed setting	(r/min)/V	300±5%				
Speed variation	Against load	±1%	0~rated torque at rated voltage and speed			
	Against voltage	±1%	DC24V±10% at rated speed, no load			
	Against temperature	±3%	20±20°C at rated voltage and speed, no load			
Input and output signal	Input	RUN, BRAKE, F/R IN, ALARM RST H: Open collector L: GND (0~0.8V)				
	Output	ALARM, HU OUT HV OUT Open collector output DC30V MAX. 10mA MAX.				
Speed pulse	Pulse/Revolution	5		5		
Current	Rated (Ave.)	2.3 MAX.		3.4 MAX.		
	MAX. (Peak)	10 MAX.		10 MAX.		
Protection functions		Over load protection When an exceeding torque than rated is applied to motor for more than about 5sec. Stop motor and output "L" from "ALARM".				
Others		Operation temperature 0~40°C (no condensation) continuous duty. The motor flange surface temp must be 80°C MAX. (Ambient temperature 40°C without heat sink) Motor dielectric strength Withstand for 1min. under AC500V 50Hz (Between case and coil) Motor insulation resistance 10MΩMIN. (Between case and coil DC500V tester)				
Gear ratio	Speed (r/min)		Applicable MAX. Torque for gearheads			
	at 200r/min	at 1500r/min	8H □ FBN-100		9H □ FBN-100	
			mN · m	oz · in	mN · m	oz · in
5	40	300	640	83	1000	140
15	14	100	1900	260	3100	440
25	8	60	2800	400	4600	650
30	6.7	50	3400	490	5600	790
50	4	30	5100	720	8300	1200

- □: rotation of gear head output shaft becomes reverse direction of motors.
- Although the rotation speed range in the high-speed area expands more than that shown in the above table, the allowable torque may decrease. Refer to the torque rotation speed graph.

**Torque-speed/Current (TYP.) characteristics**  
**(FY8S25H-D3/FY8PF25H-D3+FYD825HD3)**

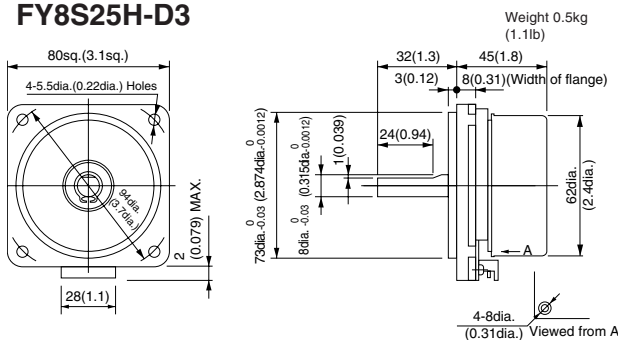


**Feature**  
**(FY9S40H-D3/FY9PF40H-D3+FYD940HD3)**

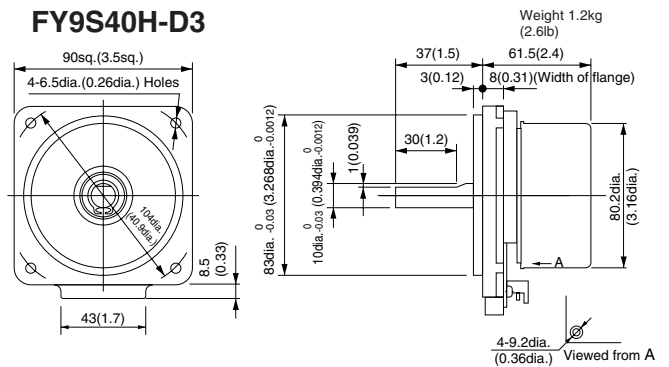


**Motor outlines (Plain shaft type) Unit: mm (inch)**

**FY8S25H-D3**

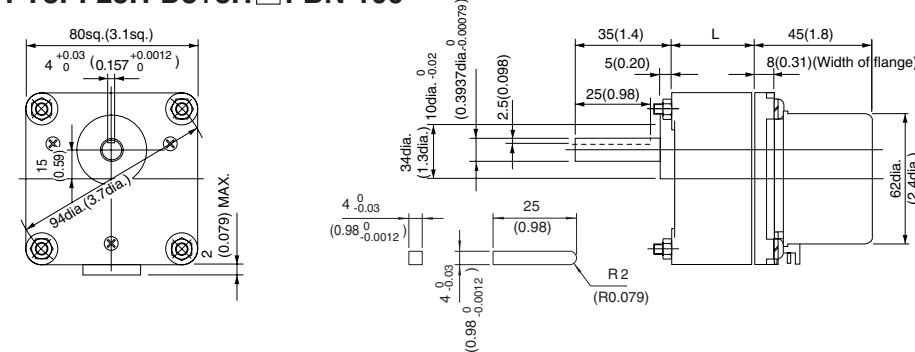


**FY9S40H-D3**



**Motor (Pinion shaft type) + Gear head outlines Unit: mm (inch)**

**FY8PF25H-D3+8H □ FBN-100**



L(Gear head length)•Weight•Screw(Accessory)

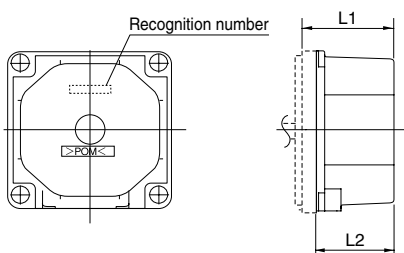
Gear ratio	Lmm(in.)	Weight Kg(lb)	Screw
1/5~1/15	30(1.2)	0.5(1.1)	M5X50(2)
1/25~1/50	40(1.6)	0.6(1.3)	M5X60(2.4)

**NOTE**

Rubber gaskets for insertion between gear head are sold separately to motor prevent oil leakage.

Model on rubber gasket  
 8H□FBN: H8packing (rubber)  
 9H□FBN: H9packing (rubber)

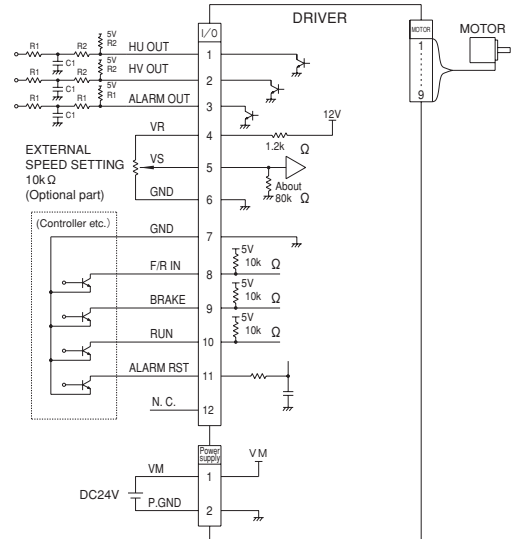
**Rotor cover (Sold separately)**



Model on rotor cover	L1mm (in)	L2mm (in)	Recognition number	Accessory washer nominal diameter	Adapting motor
F-RC844	50 (2.0)	43.5 (1.71)	AD09904	M5	Plain shaft type FY8S25H-D3
					Pinion shaft type FY8PF25H-D3
F-RC961	67.5 (2.66)	61 (2.40)	AD09903	M6	Plain shaft type FY9S40H-D3
					Pinion shaft type FY9PF40H-D3

## Input & output terminals and wiring diagram

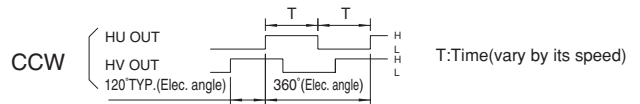
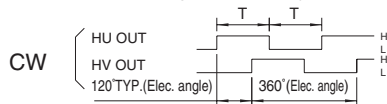
Item	Pin No.	Read Wire Color	Symbol	Input or Output	Function	Standard · Condition
Power supply	1	Red	VM	Input	Power supply positive for driver	DC24V±10%
	2	Black	P.GND	—	Power supply GND for driver	
I/O	1	Brown	HU OUT	Output	5 Pulse/Revolution ※1	H: Open collector DC30V MAX. L: 0~0.8V 10mA MAX.
	2	Red	HV OUT	Output		
	3	Orange	ALARM OUT	Output	H: Normal operation L: Alarm output	
	4	Yellow	VR	Output	Power supply positive for external speed setter	
	5	Green	VS	Input	Speed setting signal positive	0~10V
	6	Blue	GND	—	Speed setting signal GND	
	7	Purple	GND	—	GND for I/O Signal	
	8	Gray	F/R IN	Input	H: CCW L: CW (Viewed from motor output shaft side)	H: Open collector L: 0~0.8V
	9	White	BRAKE ※2	Input	H: BRAKE Deactivated L: BRAKE activated	
	10	Black	RUN	Input	H: Stop L: Start	
11	Brown	ALARM RST ※3	Input	H: Normal operation L: Reset		
	12	Red	N.C.	—	Not Connected	Must be operated in the open state.



Part name	Recommended value
R1	4.7KΩ
R2	1KΩ
C1	0.01μF

※1 "HU OUT" signal and "HV OUT" signal aer shown below.

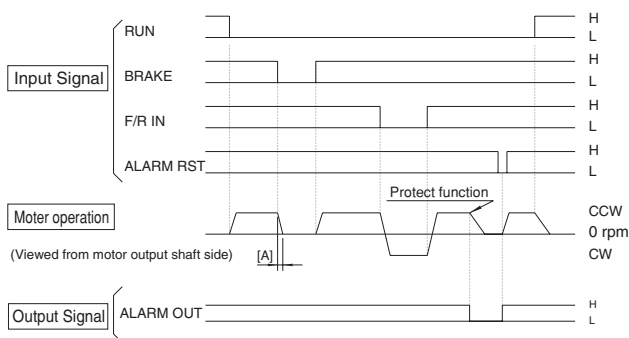
Motor rotation (viewed from motor output shaft side)



- ※2 • Brake specification: Short brake between terminals
- "BRAKE" has priority over "RUN".
- During rotation direction switching operation, "BRAKE" terminal voltage may reduce due to internal processing.

※3 In case of "L", the overload protection function is canceled. If overload operation is performed in this state, the motor may burn out.

## Control sequence



[Note for brake operation]  
Perform brake operation (area [A] above) within the speed limit range.  
Different operation from the above may cause fire or failure.

## Speed setting

Item	Setting Method
Speed setting by external speed setter (sold separately)	Connect as shown in Fig.1 and set by external speed setter. Use variable resistor 10[KΩ] as external speed setter.
Speed setting by external voltage supply	Connect as shown in Fig.2 and set speed by external voltage supply.

By these function, it is possible to set a speed at outside of Speed control range. But it must be out of our product warranty.

## Protection

Protection function	Protection		Alarm Release
	Setting	Action	
Overload Protection	When the load exceeds the rated torque for more than 5 seconds, the driver will cause the motor to stop and "ALARM" will output "L".	Motor is stopped, and "ALARM" outputs "L".	Cool down the driver fully, and disconnect power supply for more than 1 minute until "ALARM OUT" changes to "H".

Do not use this function to determine whether or not the load exceeds the rated torque. Please make sure to check the load is lower than the rated torque before use. When the overload protection function is canceled ("ALARM RST" is in the "L" state) and temperature rises rapidly due to motor restraint, the motor may burn out. Make sure to set "ALARM RST" to "H" before operating the motor.

Fig.1 Speed setting by external speed setter

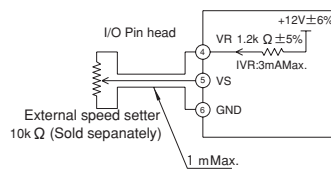
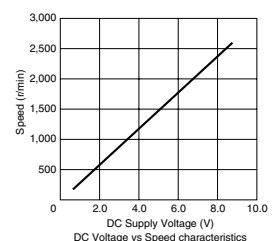
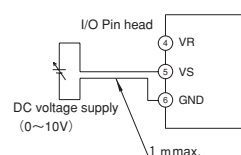
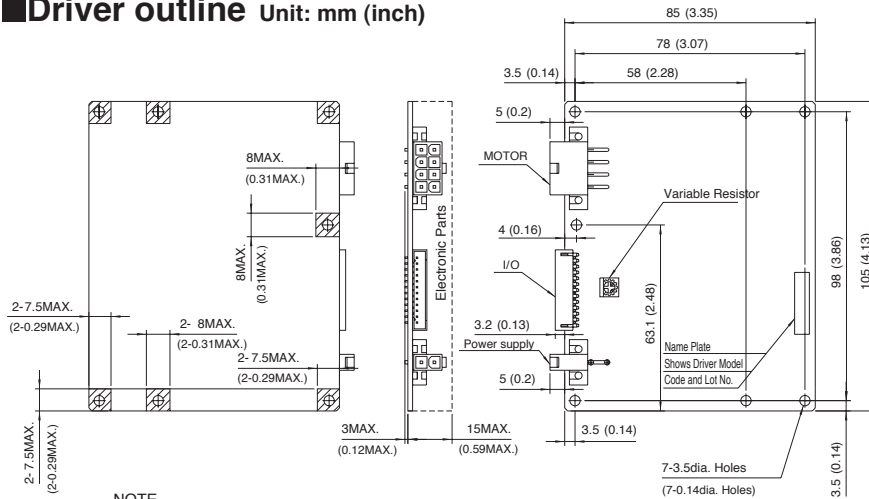


Fig.2 Speed setting by external voltage supply



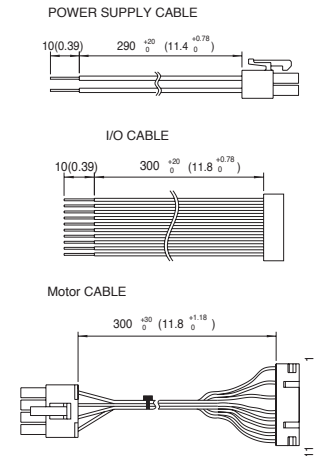
## Driver outline Unit: mm (inch)



### NOTE

- The adjustable part of variable resistor should not be touched.
- parts show the allowable limits of metal parts for driver mounting. Both surface are same limit.

## Accessory Unit: mm (inch)



### Connection guide (Motor side)

Pin No.	Name	Note
1	Coil U	-
2	-	-
3	Coil V	-
4	-	-
5	Coil W	-
6	-	-
7	HW	Open collector output
8	HV	Open collector output
9	HU	Open collector output
10	GND	-
11	12V	-

### Connection guide (Driver side)

Pin No.	Name	Lead wire color	Note
1	GND	Gray	-
2	VH(12V)	White	-
3	Coil U	Brown	-
4	Coil V	Red	-
5	HU	Purple	Open collector output
6	HV	Blue	Open collector output
7	HW	Green	Open collector output
8	Coil W	Orange	-

## Connector model code

Item	Driver or motor side	Pin head model code on driver or motor	Connector model code on cable		Maker
			Housing	Contact (reel)	
I/O connection	Driver	53325-1210	51090-1200	50212-8000	MOLEX
Power supply connection	Driver	5569-02A1	5557-02R	5556T	
Motor connection	Driver	5569-08A1	5557-08R	5556T2	
	Motor	IL-G-11P-S3L2-SA	IL-G-11S-S3C2-SA	IL-G-C2-SC-10000	JAE

## Motor/Driver/Cable/Rotor cover model code table Unit: mm (inch)

	Motor model code	Driver model code	Power supply cable model code	Motor cable model code	I/O Cable model code	Rotor cover model code
FYD series High power Simple driver	FY8S25H-D3	FYD825D3	FED-CNSL03 300 (11.8)	FYD-CNDL03 300 (11.8)	FYD-CNHL03 300 (11.8)	F-RC844
	FY8PF25H-D3	FYD825D3	FED-CNSL03 300 (11.8)	FYD-CNDL03 300 (11.8)	FYD-CNHL03 300 (11.8)	F-RC844
	FY9S40H-D3	FYD940HD3	FED-CNSL03 300 (11.8)	FYD-CNDL03 300 (11.8)	FYD-CNHL03 300 (11.8)	F-RC961
	FY9PF40H-D3	FYD940HD3	FED-CNSL03 300 (11.8)	FYD-CNDL03 300 (11.8)	FYD-CNHL03 300 (11.8)	F-RC961

NOTE) Power Supply Cable types for FYD series are the same as FED series, because they are used in commonly.