



The 5-Phase Stepping Driver

PMM-BA-5603-1
PMM-BA-5643-1

AC100V/115V

Full-step/half-step

(500 x 1 division) (500 x 2 divisions)

● Applicable motor



Characteristics

● Flexible

These drivers can drive various stepping motors of small to large capacities without adjustment for wide range uses.

● Small size and high torque

Dedicated ICs are mounted to realize the small size and high torque as a result of parts consolidation and high reliability.

● Two types interface

Two lineup types are:

Terminal block type :PMM-BA-5603-1

Connector type :PMM-BA-5643-1

Built-in function

● Low-vibration control

Our original control system employment enables a smooth and low-vibration operation.

● Pulse input system selection function

Either single or double input system can be selected by using dipswitches.

● Operation current switchover function

Stepping motor operation current ranging from the rated one to 40% can be set by using the rotary switch.

PM driver specifications

Item		PMM-BA-5603-1	PMM-BA-5643-1
Standard specifications	Environment	Input source	Single phase AC100/115V+10, -15% 50/60Hz
		Source current	4A
		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)
		Vibration resistance	0.5G Tested under the following conditions: Frequency range: 10 to 55 Hz, 0.5 G along the X, Y, and Z axes for 2 hours
		Impact resistance	No abnormality for the NDS-C-0110 Standard, Section 3.2.2, Division "C".
		Withstand voltage	No abnormality against an AC 1500 V application between the power input terminal and the cabinet for one minute.
		Insulation resistance	Minimum 10 MΩ when applying the DC 500 V Megger between the power input terminal and the cabinet.
Function	Weight	1.2kg	
	Protection function	Against PM driver overheat	
	Selection function	Automatic current reduction, excitation mode, pulse input system, operation current, and low vibration	
I/O signals	LED indicator	Power supply monitor, phase origin monitor, pulse monitor, and alarm monitor.	
	Command pulse input signal	Photocoupler input system, input resistance 330 Ω Input signal voltage: "H" level: 4.0 to 5.5 V, "L" level: 0 to 0.5 V Maximum input frequency: 100 kpulses/s	
	Power down input signal	Photocoupler input system, input resistance 330 Ω Input signal voltage: "H" level: 4.0 to 5.5 V, "L" level: 0 to 0.5 V	
	Phase origin monitor output signal		Open collector output by photocoupler Output signal standard Vce0: Maximum 30 V, Ic: Maximum 5 mA
	Alarm output signal	Relay contact output (normal open) Contact capacity: Maximum 1 A at DC 24 V or maximum 0.5 A at AC 120 V	

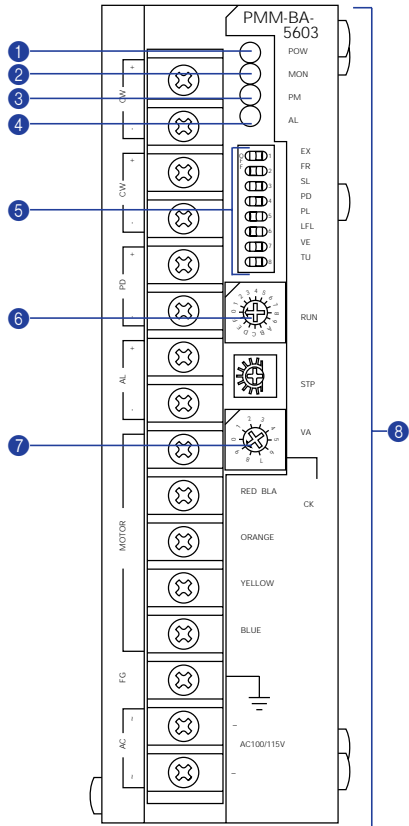
Standard combined stepping motor

Stepping motor dimensions	Stepping motor model number		Holding torque [N·m]	Rotor inertia [$\times 10^{-4}$ kg·m ²]	Weight [kg]	Page
	Single-axis shaft	Dual-axis shaft				
□42mm	103H5505-7040	103H5505-7010	0.127	0.03	0.23	Page 311
	103H5508-7040	103H5508-7010	0.176	0.053	0.28	
	103H5510-7040	103H5510-7010	0.255	0.065	0.37	
□50mm	103H6500-7041	103H6500-7011	0.235	0.057	0.38	Page 313
	103H6501-7041	103H6501-7011	0.39	0.105	0.44	
□60mm	103H7851-7051	103H7851-7021	0.65	0.275	0.6	Page 315
	103H7852-7051	103H7852-7021	0.98	0.4	0.78	
	103H7853-7051	103H7853-7021	1.86	0.84	1.36	
∅60mm	103H7521-7051	103H7521-7021	0.46	0.148	0.51	Page 317
	103H7522-7051	103H7522-7021	0.735	0.18	0.6	
	103H7523-7051	103H7523-7021	1.568	0.423	1.1	
∅86mm	103H8581-7041	103H8581-7011	2.06	1.45	1.5	Page 319
	103H8582-7041	103H8582-7011	4.02	2.9	2.5	
	103H8583-7041	103H8583-7011	6.17	4.4	3.5	
∅106mm	103H89582-7041	103H89582-7011	10.8	14.6	7	Page 321
	103H89583-7041	103H89583-7011	16	22	10.4	

- For the general specifications and dimensions of each stepping motor, refer to the reference pages.

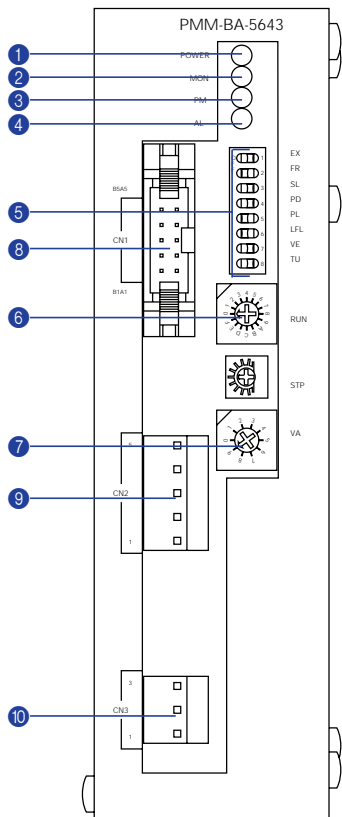
Operation, connection, and function

- Each section name of the PM driver
PMM-BA-5603-1



- ① Internal power establishment (POW)..... Indicates that the internal power is established.
- ② Phase origin monitor (MON) Indicates that the excitation phase is at the origin (in the state when the power is turned ON).
- ③ Input pulse monitor (PM) Indicates that the input pulse is applied.
- ④ Alarm monitor (AL) Turns ON when the internal alarm circuit operates.
- ⑤ Function selection dipswitch Functions can be selected according to the specification. (EX,F/R,SL,PD,PL,LFL,VE,TU)
- ⑥ Operation current selection switch (RUN) Stepping motor current value during operation can be selected.
- ⑦ Selection switch for low vibration (VA) Low-vibration operation and the stepping motor heat generation reduction can be performed.
- ⑧ Terminal block (TB) I/O signals, the single-phase AC power source, and the stepping motor power cable are connected.

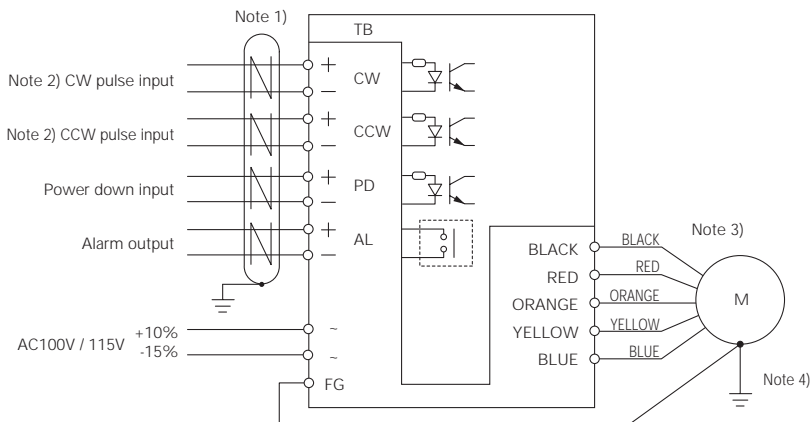
PMM-BA-5643-1



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- ⑥ Operation current selection switch (RUN) ... Stepping motor current value during operation can be selected.
- ⑦ Selection switch for low vibration (VA) Low-vibration operation and the stepping motor heat generation reduction can be performed.
- ⑧ Connectors for I/O signal I/O signals are connected.
- ⑨ Stepping output connector (CN2) The stepping motor power cable is connected.
- ⑩ Power source input connector (CN3) Single-phase AC power source is connected.

Operation, connection, and function

External wiring diagram PMM-BA-5603-1



Note 1) Use shielded twisted-pair cables.

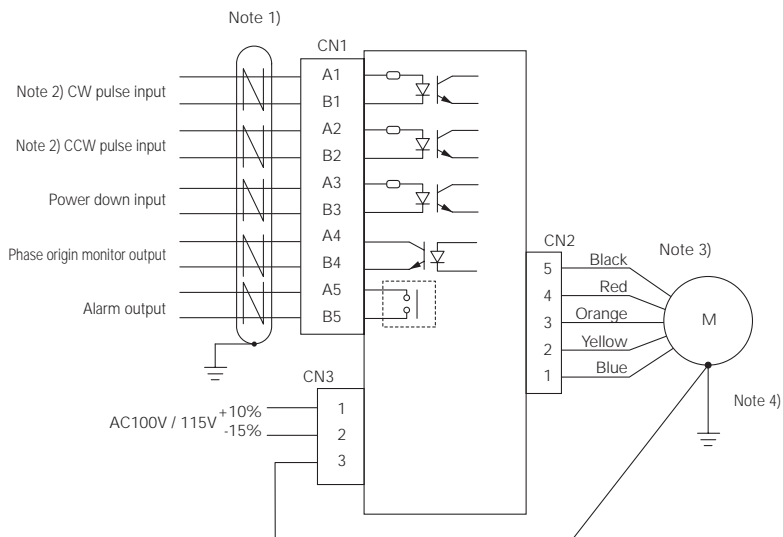
Note 2) Either "double input system (CW and CCW)" or "single input system (CK and U/D)" can be selected by using the function selection switch F/R

Note 3) Refer to the following table when connecting the 103H785 □ type stepping motor:

Product	Terminal block silk/stepping motor connector pin number				
PM driver (TB)	BLACK	RED	ORANGE	YELLOW	BLUE
Stepping motor connector	1	4	3	2	5

Note 4) Ground the stepping motor flange section and the stepping motor fastening screw by fixing them together. Use a single point grounding.

PMM-BA-5643-1



Note 1) Use shielded twisted-pair cables.

Note 2) Either "double input system (CW and CCW)" or "single input system (CK and U/D)" can be selected by using the function selection switch F/R

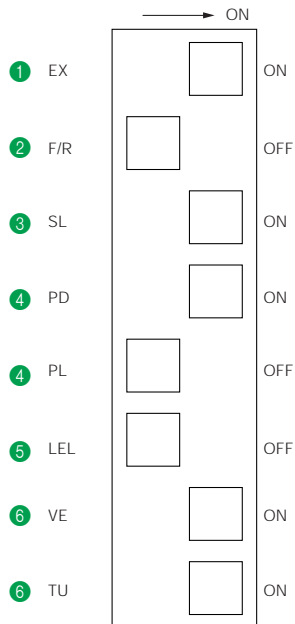
Note 3) Refer to the following table when connecting the 103H785 □ type stepping motor:

Product	Connector pin number				
PM driver (connector)	5	4	3	2	1
Stepping motor connector	1	4	3	2	5

Note 4) Ground the stepping motor flange section and the stepping motor fastening screw by fixing them together. Use a single point grounding.

Operation, connection, and function

● Function selection dipswitch ---⑤



- Settings at the shipment are shown above.
- Turn OFF the PM driver power before changing switch settings to change the function selection dipswitch settings.

① EX (excitation system selection) Excitation mode is selected.

EX	Excitization system
ON	Half step (0.36°/pulse)
OFF	Full step (0.72°/pulse)

② F/R (pulse input system selection) A pulse input system is selected.

F/R	Pulse input system
ON	Single input system (CK and U/D)
OFF	Double input system (CW and CCW)

③ SL (automatic current reduction selection) Automatic current reduction function is selected.

SL	Automatic current reduction
ON	Operates.
OFF	Does not operate.

④ PD and PL (power down and power low selection) The stepping motor windings current value at the power down signal input is selected.

PD	PL	Stepping motor current
ON	OFF	OA(power OFF)
OFF	ON	The current value (power low) using the stopping current adjustment control (STP)

⑤ LEL selection (Note) This switch is not used. Do not turn it ON.

⑥ VE and TU selection (Note) This switch is not used. Do not turn it OFF.

● Operation current selection switch (RUN) ---⑥

The operation current value of stepping motor can be selected.

Scale	0	1	2	3	4	5	6	7
Stepping motor current (A total)	3.0	2.9	2.8	2.6	2.5	2.4	2.3	2.2
Scale	8	9	A	B	C	D	E	F
Stepping motor current (A total)	2.1	1.9	1.8	1.7	1.6	1.5	1.3	1.2

- "0" is set at the shipment.
- 0.75 A/phase is set at scale 0.

● Low-vibration selection switch (VA) ---⑦

The vibration and the stepping motor heat generation can be reduced.

Scale	Function
9	Standard
3	
2	
1	
0	

- "9" is set at the shipment. Settings from 0 to 3 are valid.
- Sometimes the high-speed torque may decrease.

Operation, connection, and function

● I/O signal function --- 8

Signal name (Abbreviation)	Silk print/Pin Number		Function
	Terminal block type	Connector type	
CW pulse input (CW)	CW+	A1	When using double input system Drive pulse for the CW direction rotation is input.
	CW-	B1	
Pulse column input (CK)	CK+	A1	When using single input system Drive pulse train for the stepping motor rotation is input.
	CK-	B1	
CCW pulse input (CCW)	CCW+	A2	When using double input system Drive pulse for the CCW direction rotation is input.
	CCW-	B2	
Rotation direction input (U/D)	U/D+	A2	The rotation direction signal of stepping motor is input for the single input system. Internal photocoupler ON CW direction Internal photocoupler OFF CCW direction
	U/D-	B2	
Power down input (PD)	PD+	A3	Inputting the PD signal cuts OFF the current flowing through the stepping motor (turns OFF the power). (The power down input can be changed to the power low function by selecting dipswitches.) PD input signal ON (internal photocoupler ON) PD function enabled PD input signal OFF (internal photocoupler OFF) PD function disabled
	PD-	B3	
Phase origin monitor output (MON)	-	A4	It is turned ON when the excitation phase is at the origin (in the state when the power is turned ON) It is turned ON once per 10 pulses when setting to 2-division (full step). It is turned ON once per 20 pulses when setting to 1-division (half step).
		B4	
Alarm output (AL)	AL1	A5	The signal is externally output when one of several alarm circuits operates in the PM driver. At this time, the stepping motor is in the unexcited state.
	AL2	B5	

- The terminal block type indicates "PMM-BA-5603-1" and the connector type indicates "PMM-BA-5643-1" in the table.
- The CW direction of stepping motor means the clockwise direction rotation as viewed from the output shaft side (flange side). The CCW direction means the counterclockwise direction rotation as viewed from the output shaft side (flange side).

● Connectors to be used

PMM-BA-5643-1

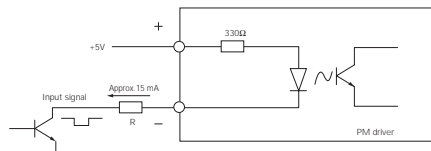
Used for	PM driver side		Applicable connector model number	Manufacturer
	Model number			
I/O signals (CN1)	HIF3BD-10PA-2.54DS		Applicable socket :HIF3BD-10DA-2.54R	Hirose Electric Co., Ltd.
Stepping motor (CN2)	5274-05A		Applicable housing:5195-05 Applicable contact:5194PBT	Molex Japan
AC power source (CN3)	5274-03A		Applicable housing:5195-03 Applicable contact:5194PBT	Molex Japan

- The applicable connectors should be either prepared by the user or ordered from the optional connector set or connector cables (refer to Option in page 201).
- PMM-BA-5603-1 using the terminal block interface does not require connectors.

PMAPATS6A01
PMAFATS6B01
PMMI-MA-50034
PMMI-MA-50064
PMM-BA-5603-5643
PMM-BA-5604-5644
PMDPB156P01
PMDPC153P01
PMMI-MD-50030-50031
PMM-BD-53130-53131
PMDPA1A3P20
PMDPA1C3P20

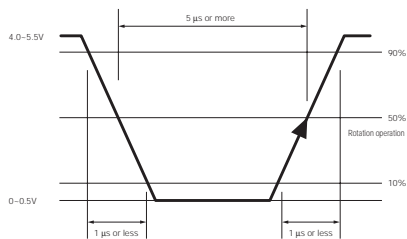
Operation, connection, and function

● Input circuit configuration (CW and CCW)



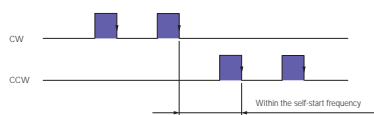
- Pulse duty is 50 % or less.
- When the peak value of the input signal is 5V, the external limit resistance R is 0 Ω. If the peak value exceeds 5V, set the input current to approx. 15mA using the external limit resistance R.

Input signal specifications



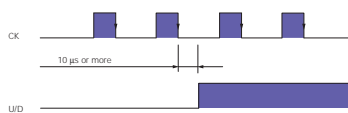
Timing of the command pulse

- Double input system (CW and CCW)



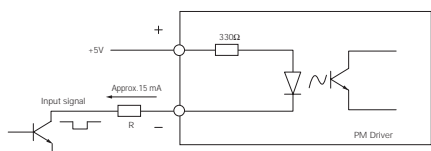
- The internal photocoupler turns ON at [pulse], and the internal circuit (stepping motor) operates at the leading edge of the photocoupler "ON".
- When applying the pulse to CW, set the internal photocoupler on the CCW side to "OFF".
- When applying the pulse to CCW, set the internal photocoupler on the CW side to "OFF".

- Single input system (CK and U/D)



- The internal photocoupler turns ON at [pulse], and the internal circuit (stepping motor) operates at the leading edge of the CK photocoupler "ON".
- Before switching the U/D input signals, turn OFF the internal photocoupler on the CK side.

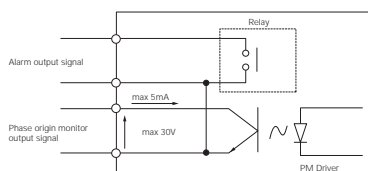
● Input circuit configuration (PD)



- When the peak value of the input signal is 5V, the external limit resistance R is 0 Ω. If the peak value exceeds 5V, set the input current to approx. 15mA using the external limit resistance R.

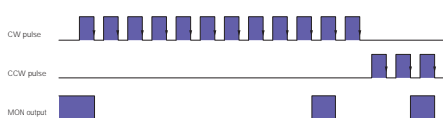
Operation, connection, and function

● Output circuit configuration (MON and AL)



- Alarm output signal
Contact type: Relay contact output (normal open)
Contact capacity: Maximum 1 A at DC 24 V or maximum 0.5 A at AC 120 V
- Phase origin monitor output signal
Contact type: For open collector output by photocoupler
Contact capacity: Maximum 5 mA at DC 30 V
- Phase origin monitor output signal is compatible with PMM-BA-5643-1.
(There is no phase origin monitor output signal for PMM-BA-5603-1.)
- I/O connectors B4 and B5 of PMM-BA-5643-1 are common inside.

● Timing of the MON output (at full step)

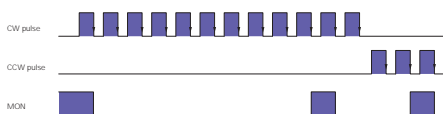


- The internal photocoupler turns "ON" at [shaded square].

● State Indication (LED)

Indication	Color	Explanation
POW turns on.	Green	Internal power has been established.
MON turns on.	Green	Excitation phase is at the origin (the power is turned on). When 1-division is specified (full step), turns on once in 10 pulses. When 2-division is specified (half step), turns on once in 20 pulses.
PM turns on.	Green	Command pulse is input. Turns on for Approx. 100ms for every one pulse input.

● Timing of MON illumination (at full step)



- The internal photocoupler turns "ON" at [shaded square] and MON illuminates.

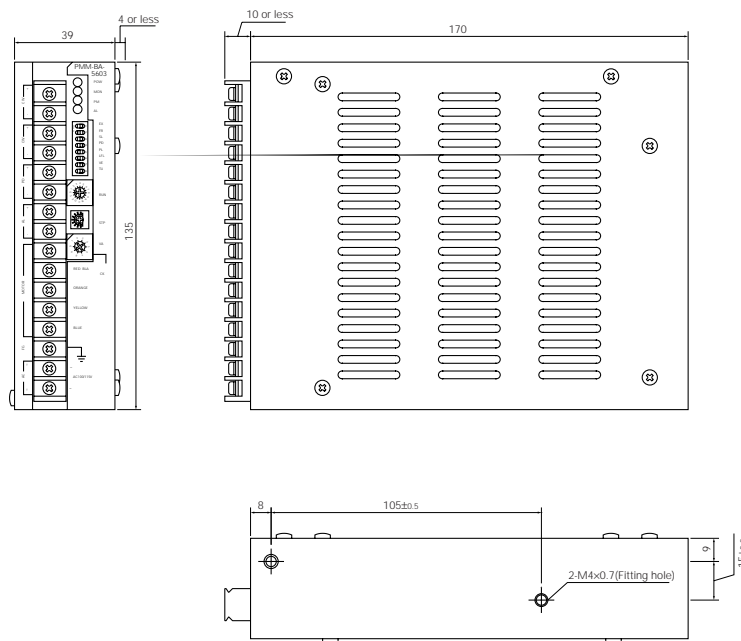
● Alarm Indication (LED)

Indication	Color	Explanation
AL turns on.	Red	The overheat protection alarm circuit of the internal device operates. The circuit operates when both the internal temperature of the PM driver and the ambient temperature become 80°C or more.

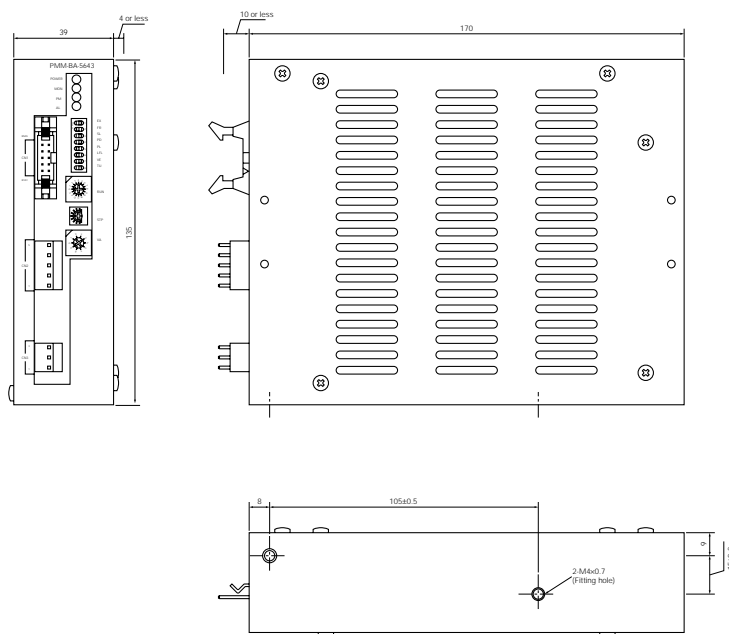
- Each alarm circuit operation turns on the alarm LED and cuts off the stepping motor current to result in the unexcited state. At the same time, the alarm output circuit photocoupler of I/O signal connector (CN1) turns ON and the signal is output externally. The alarm automatically stops to turn ON the stepping motor current when the internal semiconductor temperature becomes 80°C or less. Turn OFF the main power and try to radiate the generated heat by the forced-air-cooling of PM driver cabinet and so on before the automatic recovery from the alarm state when an alarm occurs.

Dimensions (Unit: mm)

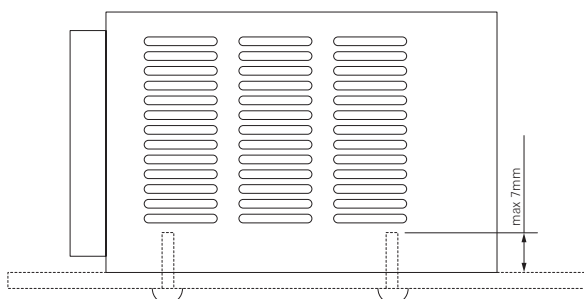
PMM-BA-5603-1



PMM-BA-5643-1



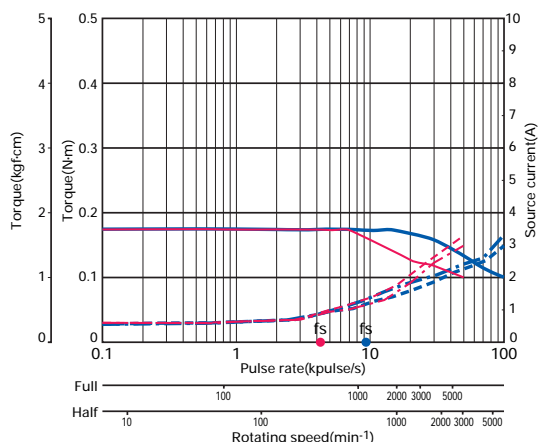
Installation direction and position



- Install the PM driver vertically.
- As shown in the figure, fix the PM driver by using the M4 screws through fitting holes on the bottom surface of PM driver (no fitting metals are necessary).
- Use such screws that enter inside the drive equipment for maximum 7 mm.

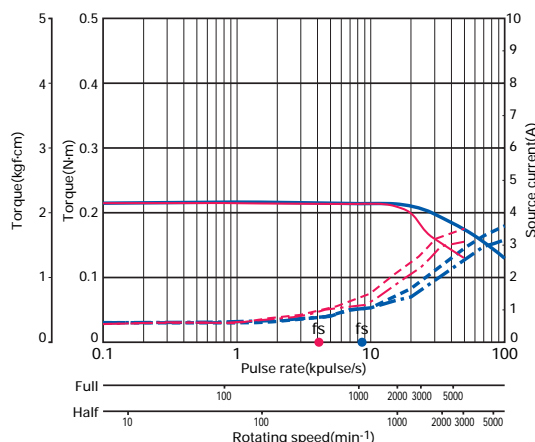
Pulse rate-torque characteristics/pulse rate-source current characteristics

●103H5505-70 □□ :100V



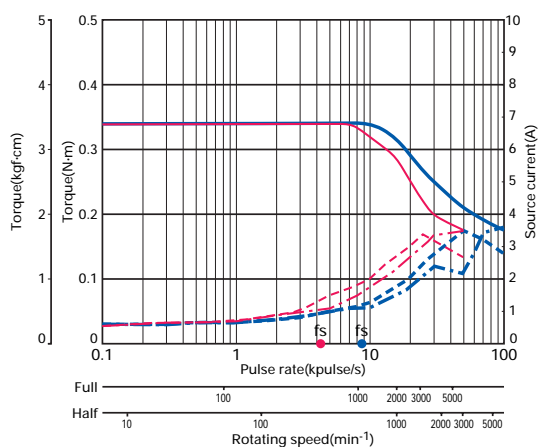
Source voltage:AC100V-Winding current:0.75 A/phase
 — Getaway torque($J_{L1}=0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=MAX$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step

●103H5508-70 □□ :100V



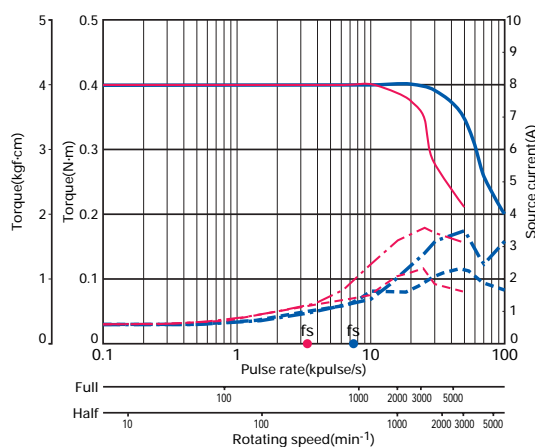
Source voltage:AC100V-Winding current:0.75 A/phase
 — Getaway torque($J_{L1}=0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=MAX$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step

●103H5510-70 □□ :100V



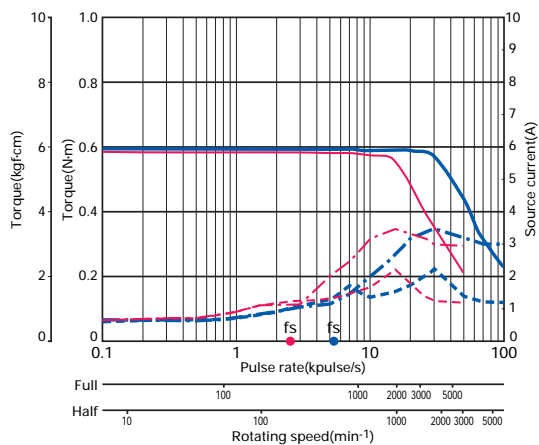
Source voltage:AC100V-Winding current:0.75 A/phase
 — Getaway torque($J_{L1}=0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=MAX$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step

●103H6500-70 □□ :100V



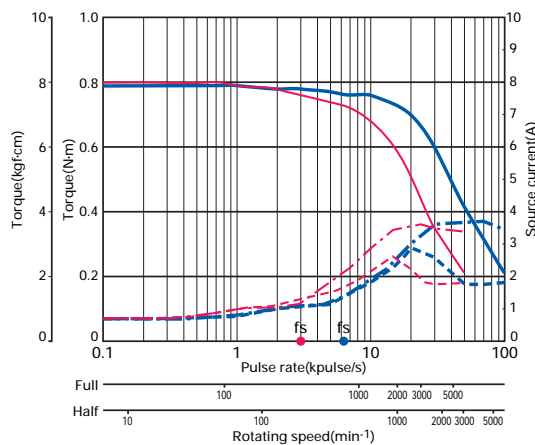
Source voltage:AC100V-Winding current:0.75 A/phase
 — Getaway torque($J_{L1}=0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=MAX$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step

●103H6501-70 □□ :100V



Source voltage:AC100V-Winding current:0.75 A/phase
 — Getaway torque($J_{L1}=0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=MAX$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step

●103H7851-70 □□ :100V



Source voltage:AC100V-Winding current:0.75 A/phase
 — Getaway torque($J_{L1}=2.6 \times 10^{-4} \text{kg} \cdot \text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=MAX$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step

PMAPATS6A01

PMAPATS6B01

PMM-MA-50034

PMM-MA-50064

PMM-BA-5603-5643

PMM-BA-5604-5644

PMDPB156P01

PMDPC153P01

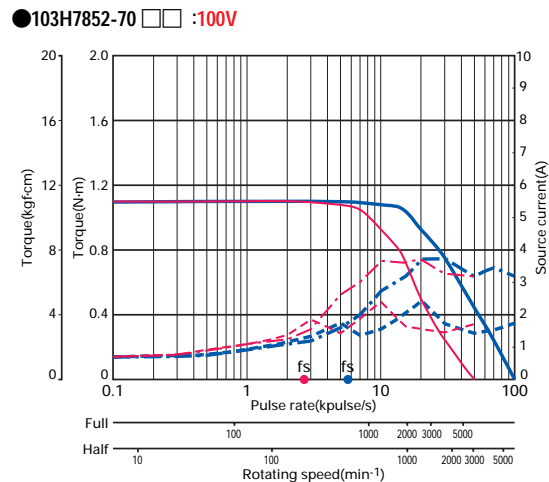
PMM-MD-53030-53031

PMM-BD-53130-53131

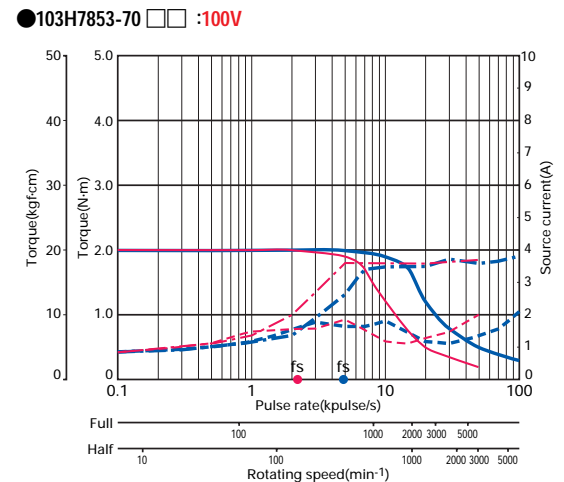
PMDPA1A3P20

PMDPA1C3P20

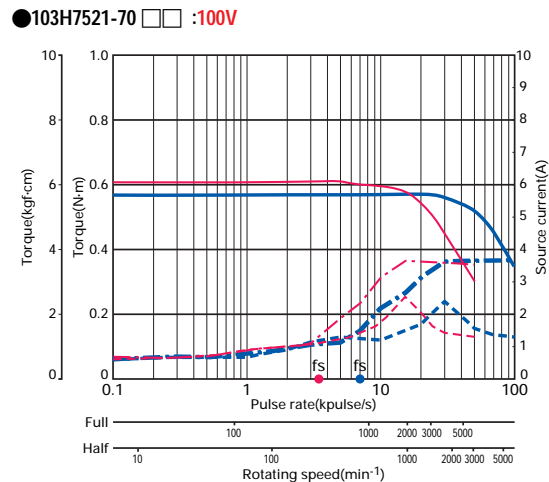
Pulse rate-torque characteristics/pulse rate-source current characteristics



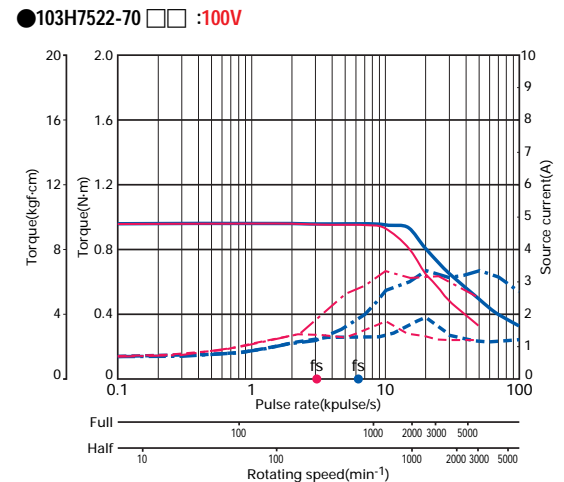
Source voltage:AC100V·Winding current:0.75 A/phase
 — Getaway torque($J_{L1}=2.6 \times 10^{-4} \text{kg}\cdot\text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=\text{MAX}$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step



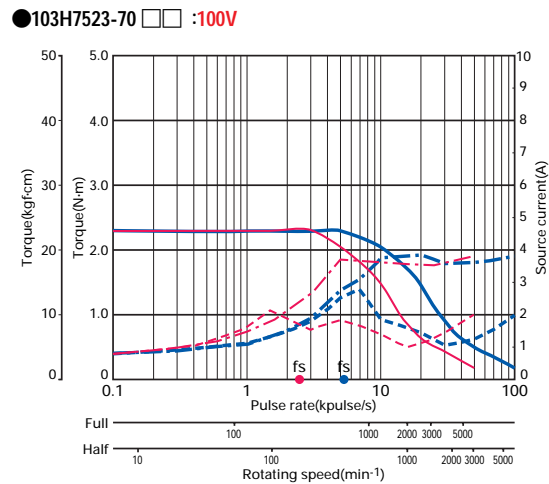
Source voltage:AC100V·Winding current:0.75 A/phase
 — Getaway torque($J_{L1}=7.4 \times 10^{-4} \text{kg}\cdot\text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=\text{MAX}$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step



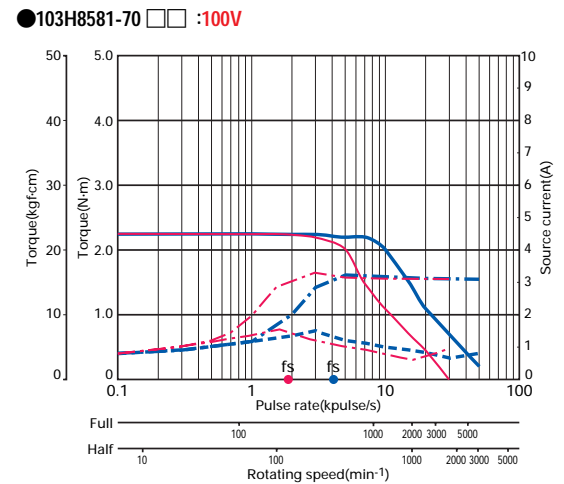
Source voltage:AC100V·Winding current:0.75 A/phase
 — Getaway torque($J_{L1}=0.94 \times 10^{-4} \text{kg}\cdot\text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=\text{MAX}$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step



Source voltage:AC100V·Winding current:0.75 A/phase
 — Getaway torque($J_{L1}=2.6 \times 10^{-4} \text{kg}\cdot\text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=\text{MAX}$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step



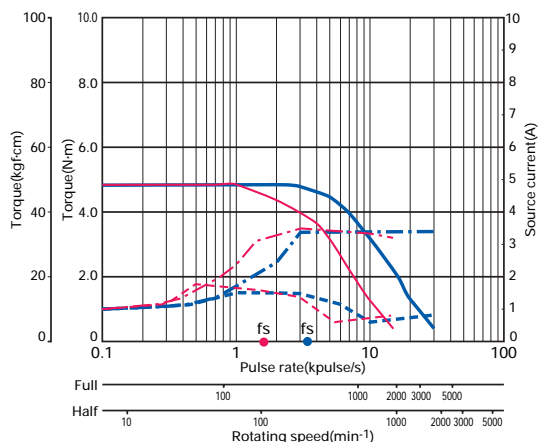
Source voltage:AC100V·Winding current:0.75 A/phase
 — Getaway torque($J_{L1}=7.4 \times 10^{-4} \text{kg}\cdot\text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=\text{MAX}$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step



Source voltage:AC100V·Winding current:0.75 A/phase
 — Getaway torque($J_{L1}=7.4 \times 10^{-4} \text{kg}\cdot\text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=\text{MAX}$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step

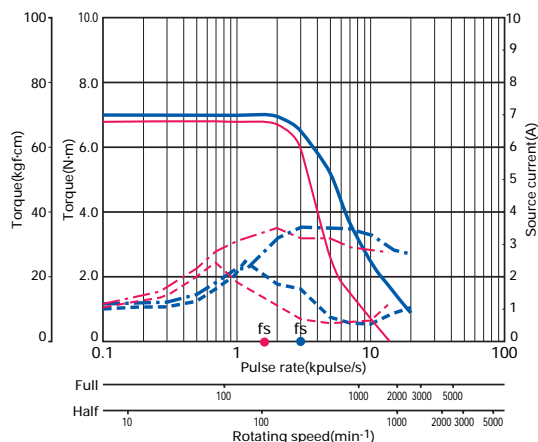
Pulse rate-torque characteristics/pulse rate-source current characteristics

●103H8582-70 □□ :100V



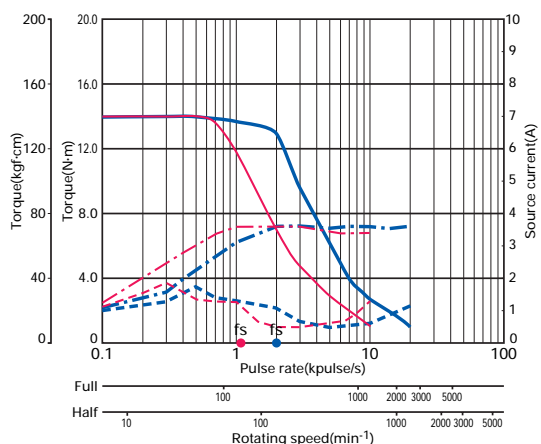
Source voltage:AC100V-Winding current:0.75 A/phase
 — Getaway torque($JL1=15.1 \times 10^{-4} \text{kg}\cdot\text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=MAX$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step

●103H8583-70 □□ :100V



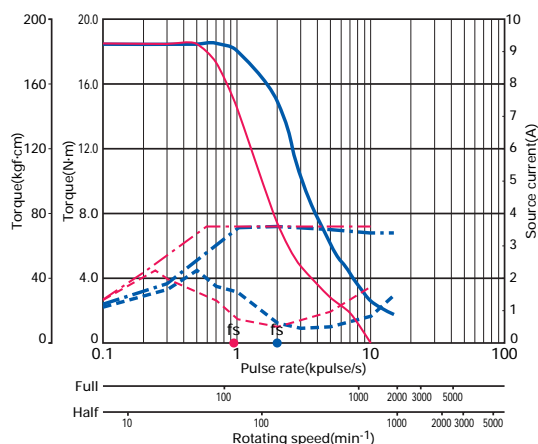
Source voltage:AC100V-Winding current:0.75 A/phase
 — Getaway torque($JL1=44 \times 10^{-4} \text{kg}\cdot\text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=MAX$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step

●103H89582-70 □□ :100V



Source voltage:AC100V-Winding current:0.75 A/phase
 — Getaway torque($JL1=44 \times 10^{-4} \text{kg}\cdot\text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=MAX$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step

●103H89583-70 □□ :100V



Source voltage:AC100V-Winding current:0.75 A/phase
 — Getaway torque($JL1=44 \times 10^{-4} \text{kg}\cdot\text{m}^2$ using the rubber coupling)
 - - - Source current($T_L=MAX$) - - - Source current($T_L=0$)
 fs:Maximum self-start frequency when not loaded ■ Full step ■ Half step

PMAPATS6A01

PMAPATS6B01

PMMI-MA-50034

PMMI-MA-50064

PMMI-BA-5603
-5643

PMMI-BA-5604
-5644

PMDPB156P01

PMDPC153P01

PMMI-MD-53030
-53031

PMMI-BD-53130
-53131

PMDPA1A3P20

PMDPA1C3P20

Option

PMM-BA-5643-1

● Connector set

Model number	Used for	Set content	Combination stepping motor model number
PM-AP-049	I/O signal (CN1)	Applicable socket:HIF3BA-10DA-2.54R	Type 103H785 □
	Power source (CN3)	Applicable housing:5195-03 Applicable contact:5194PRTL	
	Stepping motor (CN2)	Applicable housing:5195-05 Applicable contact:5194PRTL Applicable housing:VHR-5N Applicable contact:SVH-21T-P1.1	
PM-AP-035	I/O signal (CN1)	Applicable socket:HIF3BA-10DA-2.54R	Type 103H55 □□ 103H650 □ 103H752 □ 103H858 □ 103H8958 □
	Power source (CN3)	Applicable housing:5195-03 Applicable contact:5194PRTL	
	Stepping motor (CN2)	Applicable housing:5195-05 Applicable contact:5194PRTL	

● Connector cable

Model number	Application
PM-C10S0100-03	Connector cable for I/O signals (CN1)
PM-C05M0100-□□	Connector cable for stepping motors (CN2)
PM-C03P0100-01	Connector cable for AC power source (CN3)

□□ are spaces to be filled by the serial number 05 or 06 (refer to Supplement table 1).

- The connector cable is a 1-meter cable assembled with the connector.

Applicable connector cable		
CN1	CN2	CN3
Cable 2	Cable 3 or 4	Cable 1

PMM-BA-5603-1

● Terminal block cover

Model number	Quantity
PM-AP-020	One

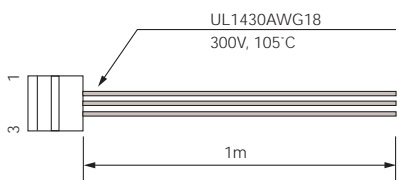
Stepping motor cable model number (Supplement table 1)

Serial No.	Stepping motor model number
05	103H5505-70 □□
	103H5508-70 □□
	103H5510-70 □□
	103H6500-70 □□
	103H6501-70 □□
	103H7521-70 □□
	103H7522-70 □□
	103H7523-70 □□
	103H8581-70 □□
	103H8582-70 □□
	103H8583-70 □□
	103H89582-70 □□
	103H89583-70 □□
	06
103H7852-70 □□	
103H7853-70 □□	

Option

● Cable 1 (power source cable CN3)

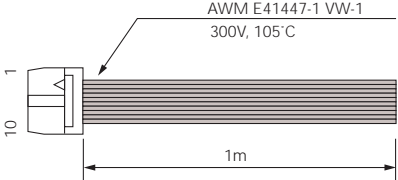
Driver side	
Pin number	Color
1	White
2	Black
3	Green



Cable model number	Length
PM-C03P0100-01	1m

● Cable 2 (I/O signal cable CN1)

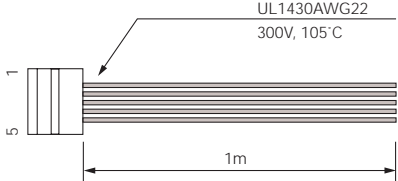
Driver side	
Pin number	Color
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Purple
8	Gray
9	White
10	Black



Cable model number	Length
PM-C10S0100-03	1m

● Cable 3 (stepping motor extension cable 1 CN2)

Driver side	
Pin number	Color
1	Black
2	Red
3	Orange
4	Yellow
5	Blue

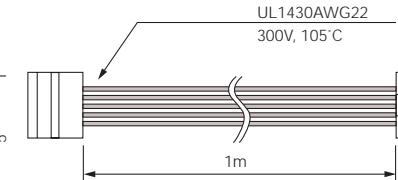


Cable model number	Length
PM-C05M0100-05	1m

Applicable stepping motor		
103H5505-70	103H6500-80	103H8581-70
103H5508-70	103H6501-80	103H8582-70
103H5510-70	103H7521-80	103H8583-70
	103H7522-80	103H89582-70
	103H7523-80	103H89583-70

● Cable 4 (stepping motor extension cable 2 CN2)

Driver side	
Pin number	Color
1	Black
2	Red
3	Orange
4	Yellow
5	Blue



Stepping motor side	
Pin number	Color
1	Black
2	Red
3	Orange
4	Yellow
5	Blue

Cable model number	Length
PM-C05M0100-6	1m

Applicable stepping motor	
103H7851-70	
103H7852-70	
103H7853-70	

PMAPATS6A01
PMAFATS6B01
PMM-MA-50034
PMM-MA-50064
PMM-BA-5603-5643
PMM-BA-5604-5644
PMDPB156P01
PMDPC153P01
PMM-MD-50030-50031
PMM-BD-53130-53131
PMDPA1A3P20
PMDPA1C3P20