STEPPING MOTOR DRIVER

MICRO STEP

MICRO STEP CATALOG 2026

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02-26 M37E

Pioneer in the Design, Development, Manufacturing & Sales of 5 Phase Micro-Stepping Driver.

MICROSTEP is the first stepping motor driver manufacturer developed and introduced “Micro Stepping Technology” in Japan.

Today, we committed ourselves in the 5 Phase Stepping Motor Dri vers and by direct sales and marketing, we provide products reflecting true needs of users. In 2002, we developed and introduced Multi-Axis Single Board Dr ivers and other Space-saving Drivers at very Competitive Price to the market. In 2003, we also introduced the first driver with DC5V power source in the industry and received high evaluation from the users.

Our high technology in developing Original ICs allowed us to create not only the products with high-performance and high-functionality, but also the various products with essential functions to meet with needs of cost reduction from various users.

Please contact us if there is any need of custom made drivers and its applied OEM products.

MICROSTEP Product lineup

Model	Power Source	Drive Method	Drive Current (A/Phase)	UL/CE	Feature	Page
MC-S0514L-HS	DC24V	Micro-Stepping	0.35A/0.75A/1.4A	CE	High Speed High Torque	6
MC-S0514-L				CE	Single axis, Small Sized Low Cost	8
MC-S0514-2L				CE	2 axis, Small Sized Low Cost	10
MC-S0514-3L				CE	3 axis, Small Sized Low Cost	10
MC-S0514-4L				CE	4 axis, Small Sized Low Cost	12
MC-S0524-L			1.2A/1.8A/2.4A	CE	High Performance Model	14
MC-S5035			0.35A	CE	Thin-type	16
MC-S0514ZU			0.35A～1.4A	CE	High Performance Model	18
MC-S0528			0.75A～2.8A	CE	Small Sized	20
MC-S3ML		Full/Half Step	0.12A～0.35A	CE	Small Sized	22
MC-S5ML			0.5A～1.4A	CE	Thin-type	24
MC-S5G			1.0～2.8A	—	Small Sized	26

Model	Power Source	Drive Method	Drive Current (A/Phase)	UL/CE	Feature	Page
MC-S5514T※	AC100V ～115V	Micro-Stepping	0.35A～1.4A	CE	Terminal Block Type	28
MC-S5514P※				CE	Connector Type	30
MC-S7514PCL※	AC100V ～230V			UL/CE	Connector Type	32
MC-S5528P※	AC100V		1.0A～2.8A	—	Connector Type	34
MC-S7528P※	AC200V			—	Connector Type	36
MC-0503※	DC5V	Micro-Stepping	0.25A	—	Constant Voltage Drive	38
MC-5M	DC24V	Full/Half Step	0.5A～1.4A	UL/CE	Small Sized	40
5 Phase Stepping Motor						42
Torque Characteristics	MC-S0514L-HS, MC-S0514-L, MC-S5035, MC-S0528, MC-S3ML, MC-S5ML, MC-S5G, MC-S7514PCL, MC-S5528P					44
Wire Harness						50

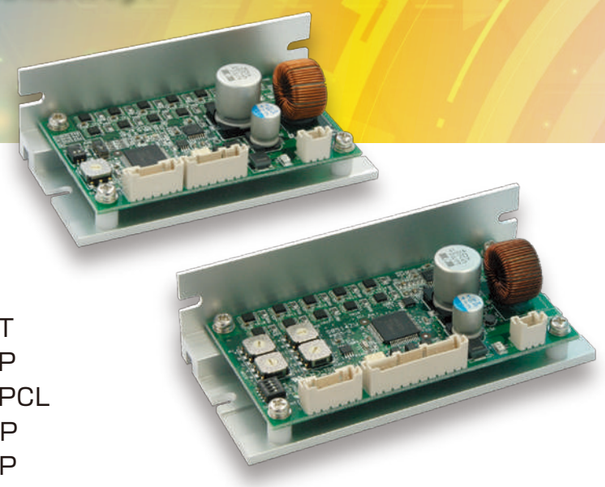
※These drivers are also available with“-3 Series” which provides Micro Stepping Resolution of 1, 2, 3, 6, 12, 18, 24, 32, 36, 48, 60, 72, 120, 160, 180, 240.(Model Nos. with a suffix“-3”) Please contact us for details.
“-3 Series” are not applied for UL and CE.

Selecting "S" Series

A Proposition from Microstep brings you every possibility.

P6~

- MC-S0514L-HS
- MC-S0514-L
- MC-S0514-2L
- MC-S0514-3L
- MC-S0514-4L
- MC-S0524-L
- MC-S5035
- MC-S0514ZU
- MC-S0528
- MC-S3ML
- MC-S5ML
- MC-S5G
- MC-S5514T
- MC-S5514P
- MC-S7514PCL
- MC-S5528P
- MC-S7528P



While having the same performance and quality with the existing models,"S series" 5 phase stepping motor drivers are designed for a simple and easy to install in your equipment. Also, our high cost-performance driver contributes to downsizing of your equipment by its Space Saving and Low Cost design. "S" series from Microstep is the standard model of driver going forward.

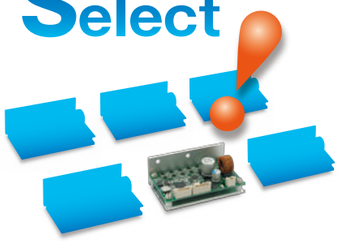
Standard

While having the same performance and quality with existing models such as MC-0514-L, it accomplished Compact and Low Cost design to meet with your needs. "S series" developed by our brand-new design is the new industrial standard going forward.

Small & Low cost

Achieved 40% smaller area by its brand-new design. While various equipment is making progress toward higher performance and compact design, "S series" provides solution to users by its space saving and high cost-performance.

Select



Among the various choices in 5 phase stepping motor drivers, the Concept of" S" is the Keyword to realize High Cost-Performance for the on-board equipment.

The Evolution called "V"

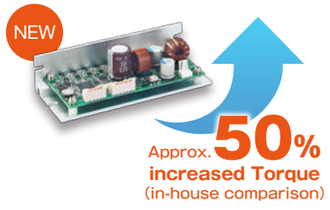
Introducing "V-Up Drivers" from the S series.

P6・7

- MC-S0514L-HS

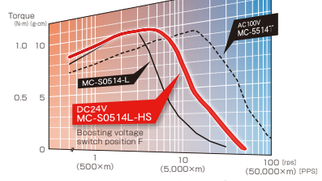
Our "V-Up 5 Phase Stepping Motor Drivers" are now renewed as "S" series. It allows to achieve High Torque in the High Speed Range without increasing the input voltage. It also contributes significant cost reduction and downsizing of your equipment. Please do look forward the performance of the new "V" from Microstep.

Voltage



By increasing its capacity of DC24V power supply, it allows approx. 1.5 times drastic increase in the motor torque without increasing input voltage. (compared to our conventional drivers.)

Velocity



*Comparison with our motor model "BK-M566"
*m = Resolution in Micro Step (ex. M=1 : Full Step / m=2 : Half Step

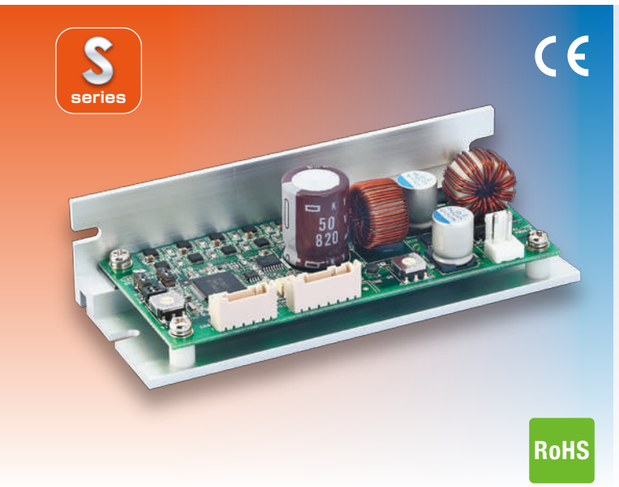
V-Up Drivers offers stable High Torque in High Speed Range. It also provides a significant Cost Reduction as an alternative driver to your existing machine utilizing AC Powered Driver.

Value & Small

Conventional V-Up Drivers are now renewed as model" MC-S0514L-HS" from S series. The Resized Driver contributes to your machine to be more Compact & Light Weighted and it provides a true value in performance.

5 Phase Stepping Motor Driver

MC-S0514L-HS



FEATURE

V-UP driver offers High Speed & High Torque.

Thanks to "Voltage Boosting Circuit" that we newly developed, V-UP driver provides high speed and High Torque.

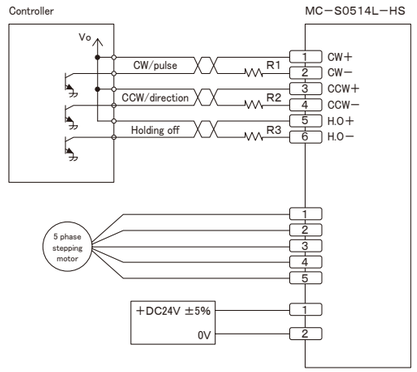
- More low-priced and compact size micro step driver.
- Boosting Voltage is selectable from 16 drive voltages.
- Drive Current : 0.35A/phase, 0.75A/phase, 1.4A/phase.
- Low vibration drive (Full or Half step).
- Optical-isolator input.
- Automatic current reduction.
- Small size.

※Optional Parts ; Wire assembled conector ▶Page 50

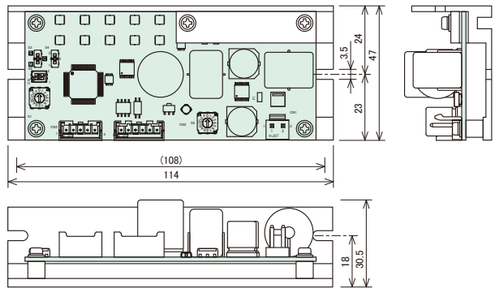
SPECIFICATION

Name	5 phase stepping motor driver
Model	MC−S0514L−HS
Driving method	Micro step
Input power	DC24V ±5%　6A Max.
Drive current	0.35A/phase , 0.75A/phase , 1.4A/phase Switching
Division	2 series : 1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100, 125, 200, 250 3 series : 1, 2, 3, 6, 12, 18, 24, 32, 36, 48, 60, 72, 120, 160, 180, 240
Maximum frequency	500 kpps
Input signal	Optical-isolator input　[1]:3～5V, [0]:-3～0.5V Input resistance　CW, CCW:220Ω　H.O:220Ω
Function	Pulse input mode selector , Micro step angle select , Automatic current reduction
Operating temperature range	0～40℃
Operating humidity range	0～85%
Weight	120g

SAMPLE WIRING DIAGRAM



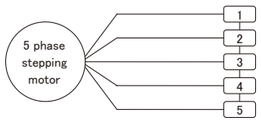
DIMENSIONS (unit:mm)



MOTOR

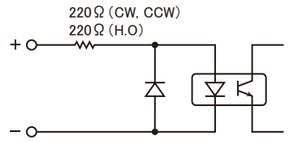
- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

See table below for the pin no. of the connector and color of motor leads.

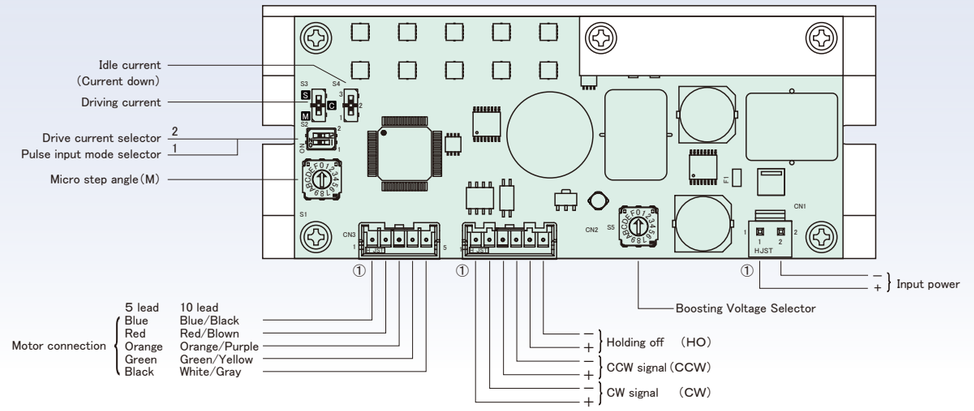


Connector No.	5 lead	10 lead
1	Blue	Blue/Black
2	Red	Red/Blown
3	Orange	Orange/Purple
4	Green	Green/Yellow
5	Black	White/Gray

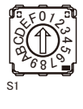
INPUT CIRCUIT



NAME AND FUNCTION



SETTING MICROSTEP RESOLUTION



Resolution for 2 series : When DIP Switch SW2 is OFF.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	4	5	8	10	20	40	80	16

A	B	C	D	E	F
25	50	100	125	200	250

$$\text{Micro Step Angle} = \frac{\text{Base Step Angle}}{\text{Division}}$$

Resolution for 3 series : When DIP Switch SW2 is ON.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	3	6	12	18	24	32	36	48

A	B	C	D	E	F
60	72	120	160	180	240

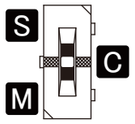
SETTING THE BOOSTING VOLTAGE

Select and set the boosting voltage from the table below.

SW No.	0	1	2	3	4	5	6	7	8	9
Drive Voltage (V)	24	25	27	28	30	32	33	35	36	37

A	B	C	D	E	F
39	40	42	43	45	47

SETTING DRIVE CURRENT



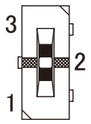
DIP Switch " S3 "
for 0.75A/phase : Switch to " S ".
for 0.35A/phase : Switch to " C "(Center).
for 1.4A/phase : Switch to " M ".

DIP SW FUNCTION

No.	Mode	ON	OFF
1	Pulse mode	One pulse	Two pulse
2	Drive current selector	3 series	2 series

SETTING IDLE CURRENT

(CURRENT DOWN)

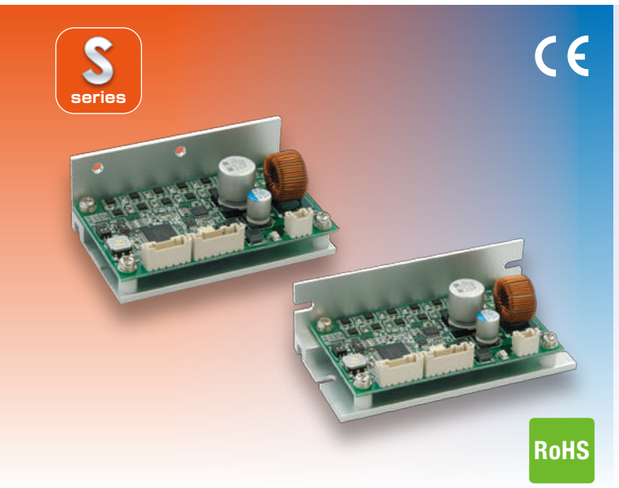


25% (Position 3)
75% (Position 2, Center)
50% (Position 1)

※Figures are of ratios to the drive current.

5 Phase Stepping Motor Driver

MC-S0514-L



FEATURE

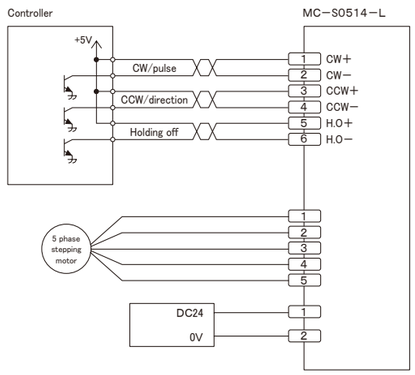
- More low-priced and compact size micro step driver.
- Drive Current :
  0.35A/phase, 0.75A/phase, 1.4A/phase.
- Low vibration drive(Full or Half step).
- Optical-isolator input.
- Automatic current reduction.
- Small size.

※Optional Parts ; Wire assembled conector ▶Page 50

SPECIFICATION

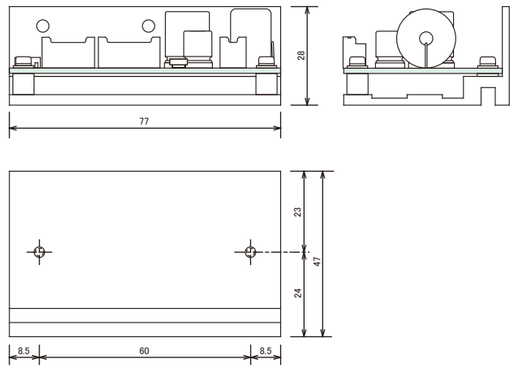
Name	5 phase stepping motor driver
Model	MC−S0514−L
Driving method	Micro step
Input power	DC24V ±5%　3A Max.
Drive current	0.35A/phase , 0.75A/phase , 1.4A/phase Switching
Division	2 series : 1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100, 125, 200, 250 3 series : 1, 2, 3, 6, 12, 18, 24, 32, 36, 48, 60, 72, 120, 160, 180, 240
Maximum frequency	500 kpps
Input signal	Optical-isolator input　[1]:3～5V, [0]:-3～0.5V Input resistance　CW, CCW:220Ω　H.O:220Ω
Function	Pulse input mode selector , Micro step angle select , Automatic current reduction
Operating temperature range	0～40℃
Operating humidity range	0～85%
Weight	81g (type 2)

SAMPLE WIRING DIAGRAM

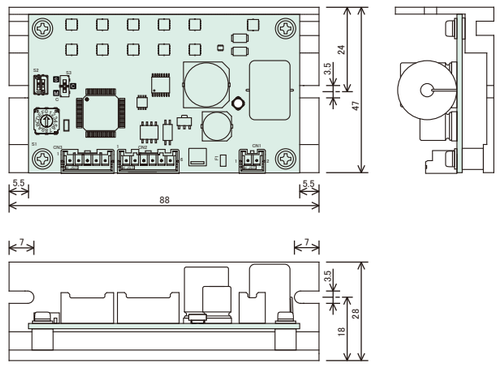


DIMENSIONS (unit:mm)

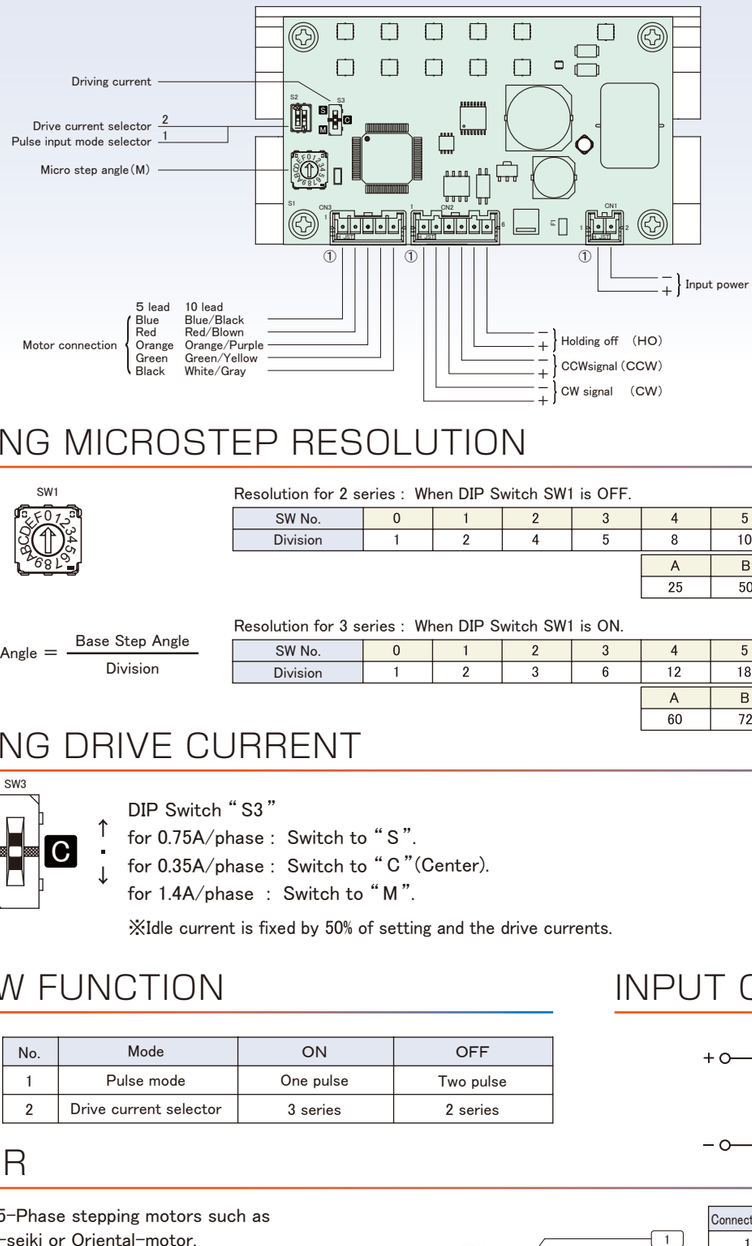
Type 1



Type 2



NAME AND FUNCTION



SETTING MICROSTEP RESOLUTION

Resolution for 2 series : When DIP Switch SW1 is OFF.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	4	5	8	10	20	40	80	16

A	B	C	D	E	F
25	50	100	125	200	250

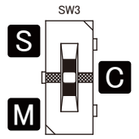
$$\text{Micro Step Angle} = \frac{\text{Base Step Angle}}{\text{Division}}$$

Resolution for 3 series : When DIP Switch SW1 is ON.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	3	6	12	18	24	32	36	48

A	B	C	D	E	F
60	72	120	160	180	240

SETTING DRIVE CURRENT



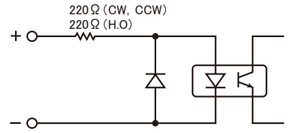
DIP Switch “S3”
for 0.75A/phase : Switch to “S”.
for 0.35A/phase : Switch to “C”(Center).
for 1.4A/phase : Switch to “M”.

※Idle current is fixed by 50% of setting and the drive currents.

DIP SW FUNCTION

No.	Mode	ON	OFF
1	Pulse mode	One pulse	Two pulse
2	Drive current selector	3 series	2 series

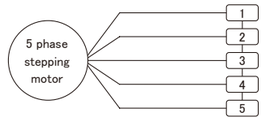
INPUT CIRCUIT



MOTOR

- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

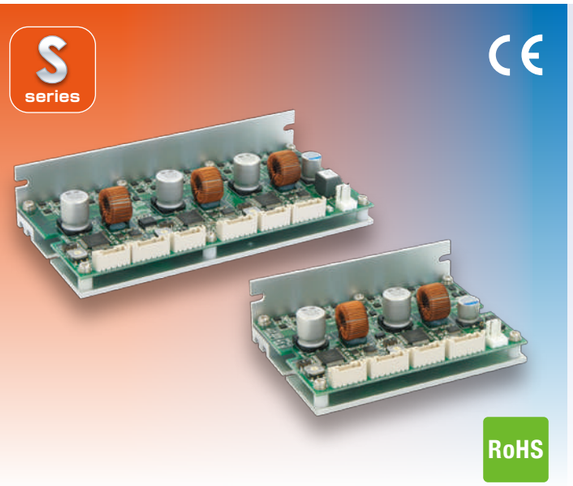
See table below for the pin no. of the connector and color of motor leads.



Connector No.	5 lead	10 lead
1	Blue	Blue/Black
2	Red	Red/Blown
3	Orange	Orange/Purple
4	Green	Green/Yellow
5	Black	White/Gray

2 axis/3 axis One Board 5 phase Microstep Driver

MC-S0514-2L/S0514-3L



FEATURE

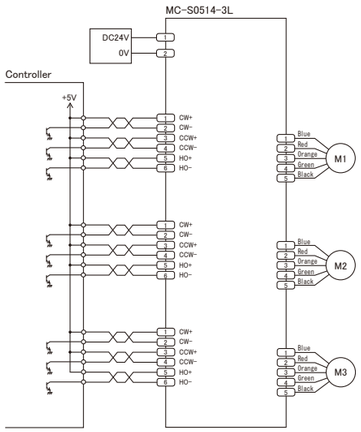
- More low-priced micro step driver for 2 or 3 axes.
- Drive Current :
  0.35A/phase, 0.75A/phase, 1.4A/phase.
- Low vibration drive(Full or Half step).
- Optical-isolator input.
- Automatic current reduction.
- Small size.

※Optional Parts ; Wire assembled conector ▶Page 50

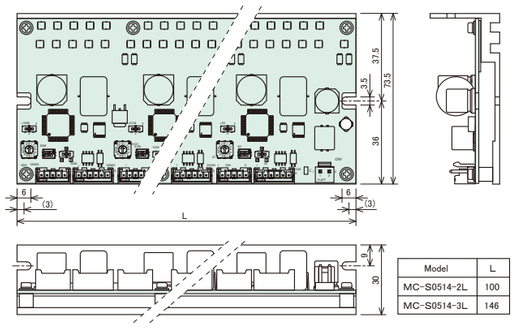
SPECIFICATION

Name	5 phase stepping motor driver	
Model	MC−S0514−2L	MC−S0514−3L
Driving method	Micro step	
Input power	DC24V ±5% 6A Max.	DC24V ±5% 8A Max.
Drive current	0.35A/phase , 0.75A/phase , 1.4A/phase Switching	
Division	2 series : 1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100, 125, 200, 250 3 series : 1, 2, 3, 6, 12, 18, 24, 32, 36, 48, 60, 72, 120, 160, 180, 240	
Maximum frequency	500 kpps	
Input signal	Optical-isolator input [1]:3～5V, [0]:-3～0.5V Input resistance CW, CCW:220Ω H.O:220Ω	
Function	Pulse input mode selector , Micro step angle select , Automatic current reduction	
Operating temperature range	0～40℃	
Operating humidity range	0～85%	
Weight	145g	220g

SAMPLE WIRING DIAGRAM



DIMENSIONS (unit:mm)

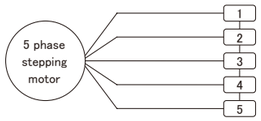


Model	L
MC-S0514-2L	100
MC-S0514-3L	146

MOTOR

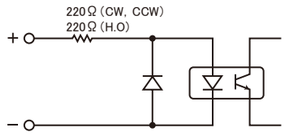
- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

See table below for the pin no. of the connector and color of motor leads.



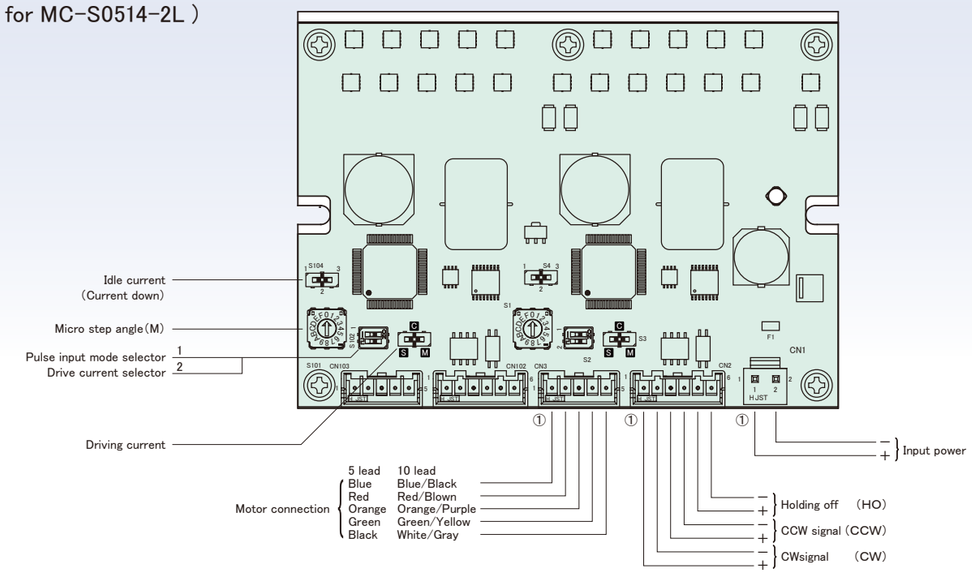
Connector No.	5 lead	10 lead
1	Blue	Blue/Black
2	Red	Red/Blown
3	Orange	Orange/Purple
4	Green	Green/Yellow
5	Black	White/Gray

INPUT CIRCUIT



NAME AND FUNCTION

(for MC-S0514-2L)



SETTING MICROSTEP RESOLUTION

Resolution for 2 series : When DIP Switch SW2 is OFF.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	4	5	8	10	20	40	80	16

A	B	C	D	E	F
25	50	100	125	200	250

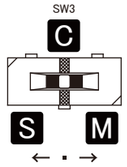
$$\text{Micro Step Angle} = \frac{\text{Base Step Angle}}{\text{Division}}$$

Resolution for 3 series : When DIP Switch SW2 is ON.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	3	6	12	18	24	32	36	48

A	B	C	D	E	F
60	72	120	160	180	240

SETTING DRIVE CURRENT



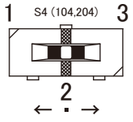
DIP Switch “S3”
for 0.75A/phase : Switch to “S”.
for 0.35A/phase : Switch to “C”(Center).
for 1.4A/phase : Switch to “M”.

DIP SW FUNCTION

No.	Mode	ON	OFF
1	Pulse mode	One pulse	Two pulse
2	Drive current selector	3 series	2 series

SETTING IDLE CURRENT

(CURRENT DOWN)

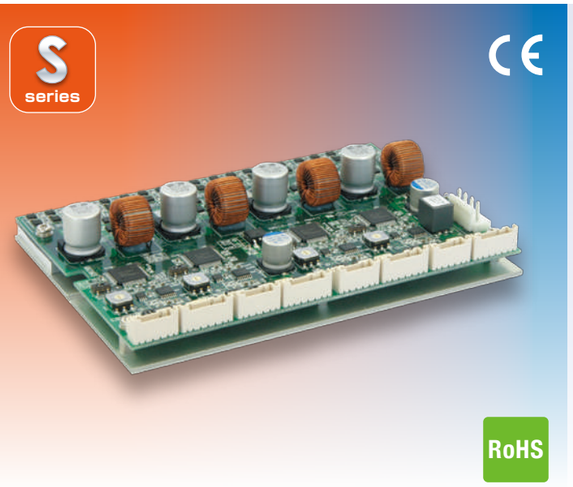


50% (Position 1)
75% (Position 2, Center)
25% (Position 3)

※Figures are of ratios to the drive current.

4 axis One Board 5 phase Microstep Driver

MC-S0514-4L



FEATURE

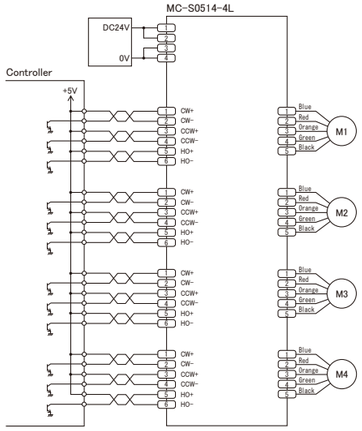
- More low-priced micro step driver for 4 axes.
- Drive Current :
  0.35A/phase, 0.75A/phase, 1.4A/phase.
- Low vibration drive(Full or Half step).
- Optical-isolator input.
- Automatic current reduction.
- Small size.

※Optional Parts ; Wire assembled conector ▶Page 50

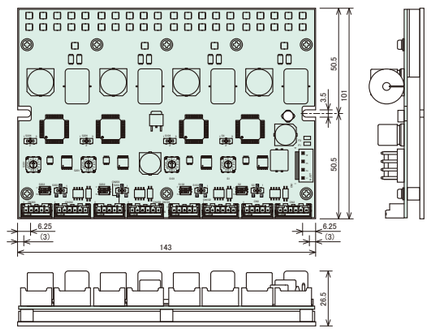
SPECIFICATION

Name	5 phase stepping motor driver
Model	MC−S0514−4L
Driving method	Micro step
Input power	DC24V ±5%　10A Max.
Drive current	0.35A/phase , 0.75A/phase , 1.4A/phase Switching
Division	2 series : 1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100, 125, 200, 250 3 series : 1, 2, 3, 6, 12, 18, 24, 32, 36, 48, 60, 72, 120, 160, 180, 240
Maximum frequency	500 kpps
Input signal	Optical-isolator input　[1]:3～5V, [0]:-3～0.5V Input resistance　CW, CCW:220Ω　H.O:220Ω
Function	Pulse input mode selector , Micro step angle select , Automatic current reduction
Operating temperature range	0～40℃
Operating humidity range	0～85%
Weight	275g

SAMPLE WIRING DIAGRAM



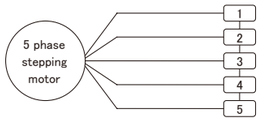
DIMENSIONS (unit:mm)



MOTOR

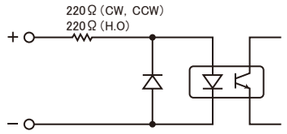
- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

See table below for the pin no. of the connector and color of motor leads.

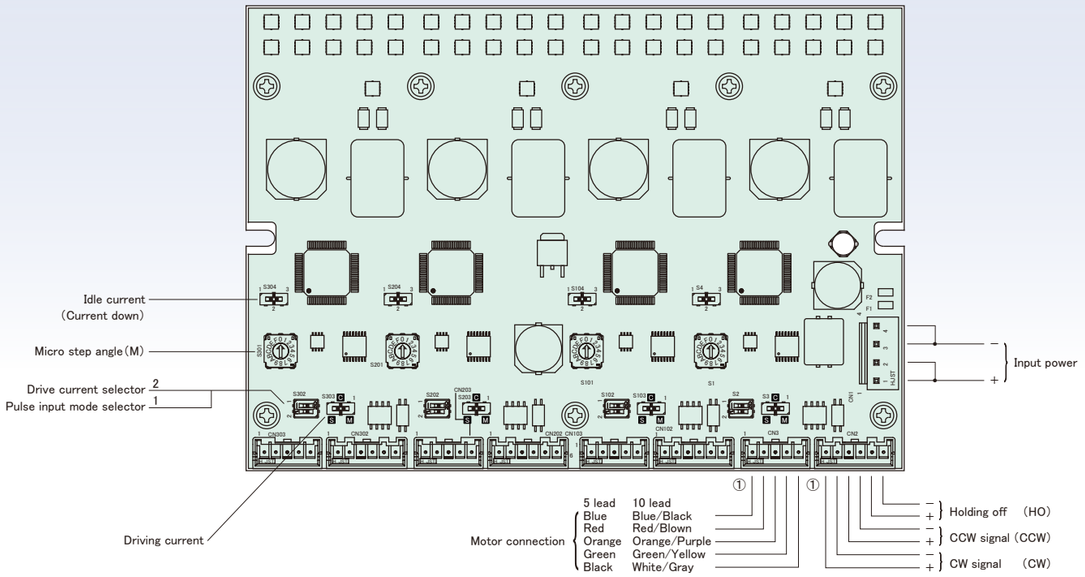


Connector No.	5 lead	10 lead
1	Blue	Blue/Black
2	Red	Red/Blown
3	Orange	Orange/Purple
4	Green	Green/Yellow
5	Black	White/Gray

INPUT CIRCUIT



NAME AND FUNCTION



SETTING MICROSTEP RESOLUTION

SW1,101,201,301

Resolution for 2 series : When DIP Switch SW2 is OFF.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	4	5	8	10	20	40	80	16

A	B	C	D	E	F
25	50	100	125	200	250

$$\text{Micro Step Angle} = \frac{\text{Base Step Angle}}{\text{Division}}$$

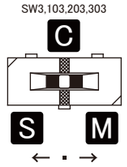
Resolution for 3 series : When DIP Switch SW2 is ON.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	3	6	12	18	24	32	36	48

A	B	C	D	E	F
60	72	120	160	180	240

SETTING DRIVE CURRENT

SW3,103,203,303



DIP Switch “S3”
for 0.75A/phase : Switch to “S”.
for 0.35A/phase : Switch to “C”(Center).
for 1.4A/phase : Switch to “M”.

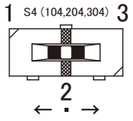
DIP SW FUNCTION

SW2,102,202,302

No.	Mode	ON	OFF
1	Pulse mode	One pulse	Two pulse
2	Drive current selector	3 series	2 series

SETTING IDLE CURRENT

(CURRENT DOWN)

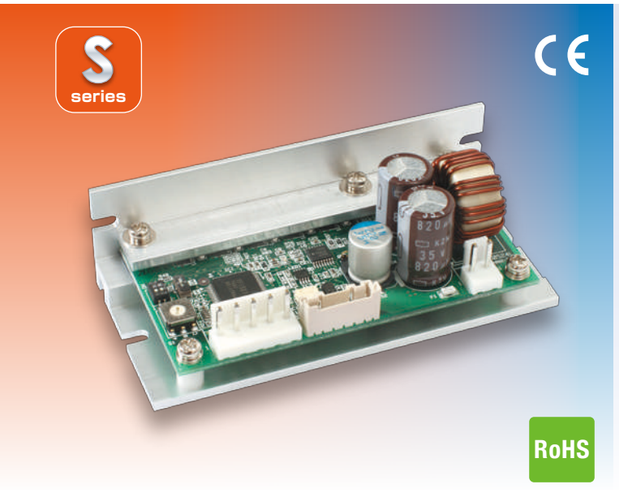


50% (Position 1)
75% (Position 2, Center)
25% (Position 3)

※Figures are of ratios to the drive current.

5 Phase Stepping Motor Driver

MC-S0524-L

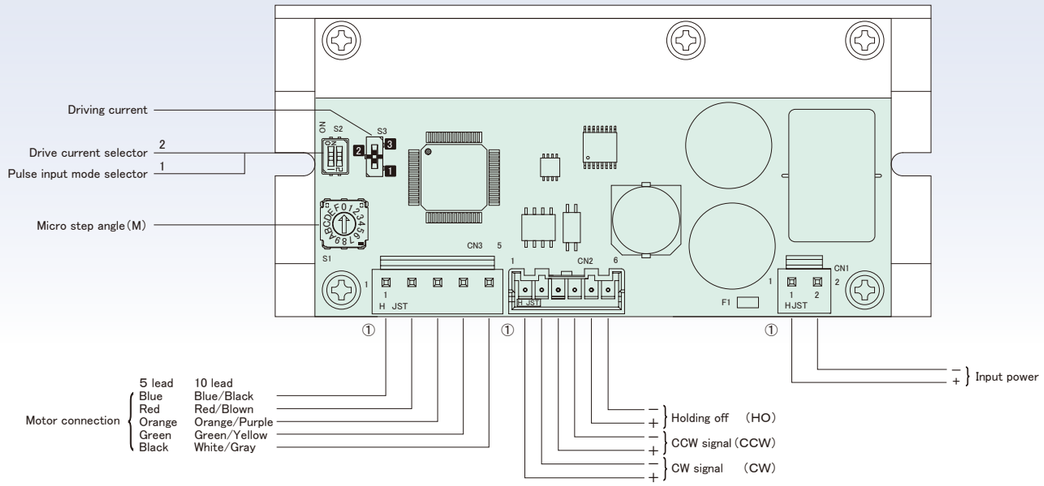


FEATURE

- More low-priced and compact size micro step driver.
- Drive Current : 0.12A/phase, 0.18A/phase, 2.4A/phase.
- Low vibration drive (Full or Half step).
- Optical-isolator input.
- Automatic current reduction.
- Small size.

※Optional Parts ; Wire assembled conector ▶Page 50

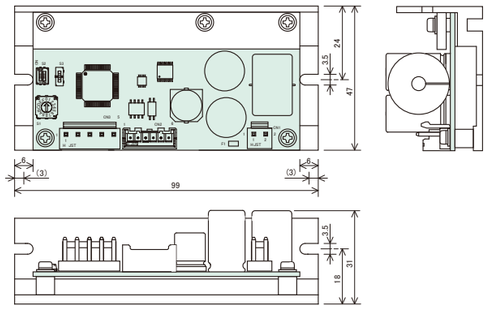
NAME AND FUNCTION



SPECIFICATION

Name	5 phase stepping motor driver
Model	MC−S0524−L
Driving method	Micro step
Input power	DC24V ±5% 5A Max.
Drive current	1.2A/phase , 1.8A/phase , 2.4A/phase Switching
Division	2 series : 1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100, 125, 200, 250 3 series : 1, 2, 3, 6, 12, 18, 24, 32, 36, 48, 60, 72, 120, 160, 180, 240
Maximum frequency	500 kpps
Input signal	Optical-isolator input [1]:3～5V, [0]:-3～0.5V Input resistance CW, CCW:220Ω H.O:220Ω
Function	Pulse input mode selector , Micro step angle select , Automatic current reduction
Operating temperature range	0～40℃
Operating humidity range	0～85%
Weight	115g

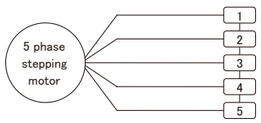
DIMENSIONS (unit:mm)



MOTOR

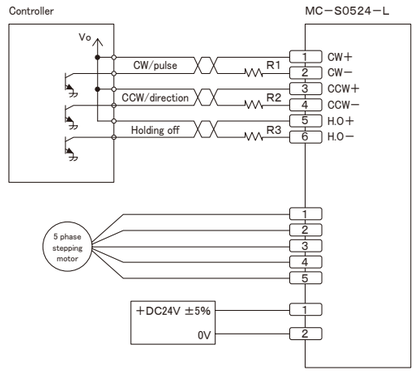
- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

See table below for the pin no. of the connector and color of motor leads.

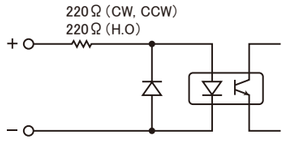


Connector No.	5 lead	10 lead
1	Blue	Blue/Black
2	Red	Red/Blown
3	Orange	Orange/Purple
4	Green	Green/Yellow
5	Black	White/Gray

SAMPLE WIRING DIAGRAM



INPUT CIRCUIT



SETTING MICROSTEP RESOLUTION

Resolution for 2 series : When DIP Switch SW2 is OFF.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	4	5	8	10	20	40	80	16

A	B	C	D	E	F
25	50	100	125	200	250

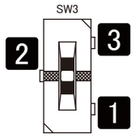
$$\text{Micro Step Angle} = \frac{\text{Base Step Angle}}{\text{Division}}$$

Resolution for 3 series : When DIP Switch SW2 is ON.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	3	6	12	18	24	32	36	48

A	B	C	D	E	F
60	72	120	160	180	240

SETTING DRIVE CURRENT



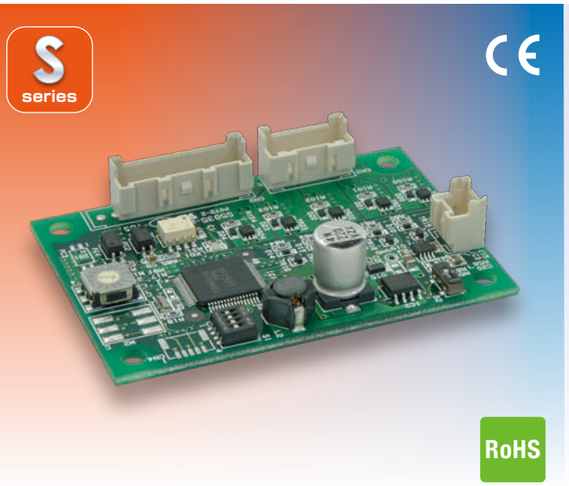
DIP Switch “S3”
for 2.4A/phase : Switch to “1”.
for 1.2A/phase : Switch to “2”(Center).
for 1.8A/phase : Switch to “3”.

DIP SW FUNCTION

No.	Mode	ON	OFF
1	Pulse mode	One pulse	Two pulse
2	Drive current selector	3 series	2 series

5 Phase Stepping Motor Driver

MC-S5035

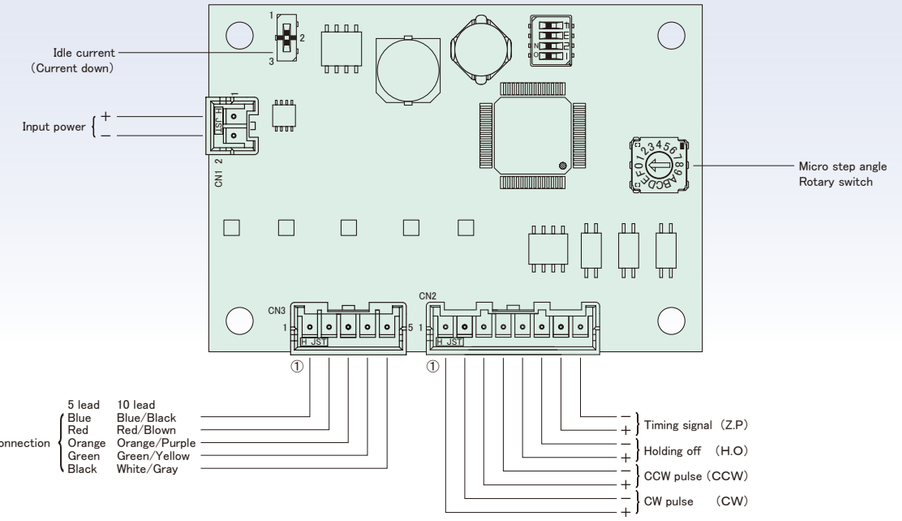


FEATURE

- More low-priced and compact size micro step driver.
- Maximum resolution is 1/250 (125,000 pulse per rotation).
- Low vibration drive(Full or Half step).
- Optical-isolator input.
- Automatic current reduction.
- Easy setting(resolution & current).

※Optional Parts ; Wire assembled conector ▶Page 50

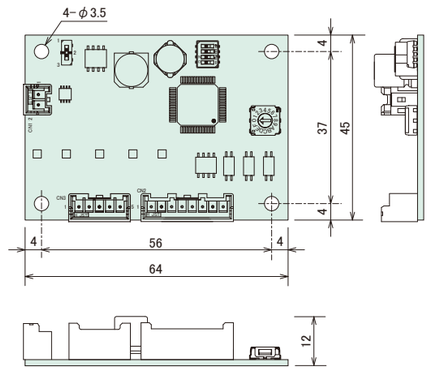
NAME AND FUNCTION



SPECIFICATION

Name	5 phase stepping motor driver
Model	MC−S05035
Driving method	Micro step
Input power	DC24V ±5%　0.8A Max.
Drive current	0.35A/phase
Division	2 series : 1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100, 125, 200, 250 3 series : 1, 2, 3, 6, 12, 18, 24, 32, 36, 48, 60, 72, 120, 160, 180, 240
Maximum frequency	500 kpps
Input signal	Optical-isolator input　[1]:3～5V, [0]:−3～0.5V Input resistance　CW, CCW:220Ω　H.O:220Ω
Output signal (Z.P)	Optical-isolator open corrector output Condition ; DC30V or less, 50mA or less
Function	Pulse input mode selector , Micro step angle select , Automatic current reduction
Operating temperature range	0～40℃
Operating humidity range	0～85%
Weight	16.4g

DIMENSIONS (unit:mm)



SETTING MICROSTEP RESOLUTION

Resolution for 2 series :　When DIP Switch SW2 is OFF.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	4	5	8	10	20	40	80	16

A	B	C	D	E	F
25	50	100	125	200	250

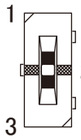
$$\text{Micro Step Angle} = \frac{\text{Base Step Angle}}{\text{Division}}$$

Resolution for 3 series :　When DIP Switch SW2 is ON.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	3	6	12	18	24	32	36	48

A	B	C	D	E	F
60	72	120	160	180	240

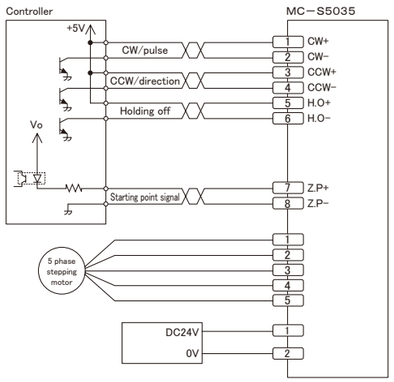
SETTING IDLE CURRENT (CURRENT DOWN)



↑ 25% (Position 1)
▪ 75% (Position 2, Center)
↓ 45% (Position 3)

※Figures are of ratios to the drive current.

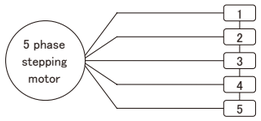
SAMPLE WIRING DIAGRAM



MOTOR

- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

See table below for the pin no. of the connector and color of motor leads.

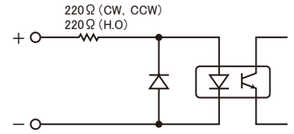


Connector No.	5 lead	10 lead
1	Blue	Blue/Black
2	Red	Red/Blown
3	Orange	Orange/Purple
4	Green	Green/Yellow
5	Black	White/Gray

DIP SW FUNCTION

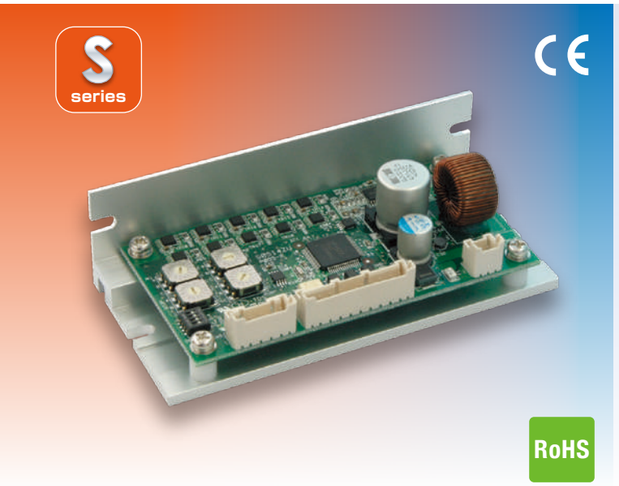
No.	Mode	ON	OFF
1	Pulse mode (CK)	One pulse	Two pulse
2	Drive current selector (2・3)	3 series	2 series
3	Internal function confirmation (OP)	Turning off when using	
4	Idle current reduction (CD)	Not active	Actived

INPUT CIRCUIT



5 Phase Stepping Motor Driver

MC-S0514ZU



FEATURE

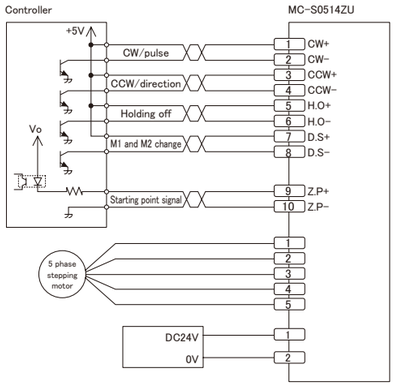
- More low-priced and compact size micro step driver.
- Drive current 0.35 to 1.4A/phase.
- Drive and Holding current selectable from 16 values.
- 2 microstep resolution can be selected from 16 choices. 2 selected resolution is switchable.
- Low vibration drive(Full or Half step).
- Small size.

※Optional Parts ; Wire assembled conector ▶Page 50

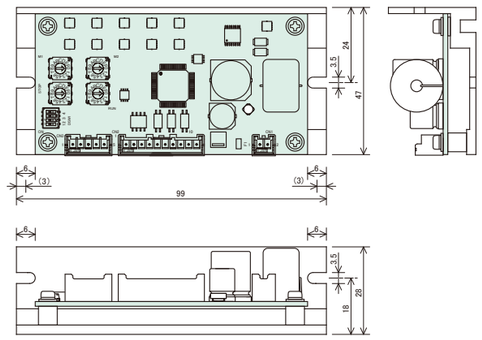
SPECIFICATION

Name	5 phase stepping motor driver
Model	MC−S0514ZU
Driving method	Micro step
Input power	DC24V ±5%　3A Max.
Drive current	0.35～1.4A/phase Switching
Division	2 series : 1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100, 125, 200, 250 3 series : 1, 2, 3, 6, 12, 18, 24, 32, 36, 48, 60, 72, 120, 160, 180, 240
Maximum frequency	500 kpps
Input signal	Optical-isolator input　[1]:3～5V, [0]:−3～0.5V Input resistance　CW, CCW:220Ω　H.O:220Ω
Output signal (Z.P)	Optical-isolator open corrector output Condition ; DC30V or less, 50mA or less
Function	Pulse input mode selector , Micro step angle select , Automatic current reduction
Operating temperature range	0～40℃
Operating humidity range	0～85%
Weight	93g

SAMPLE WIRING DIAGRAM



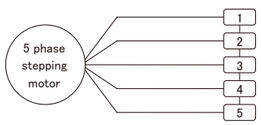
DIMENSIONS (unit:mm)



MOTOR

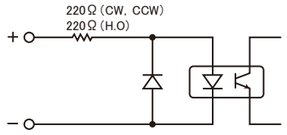
- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

See table below for the pin no. of the connector and color of motor leads.

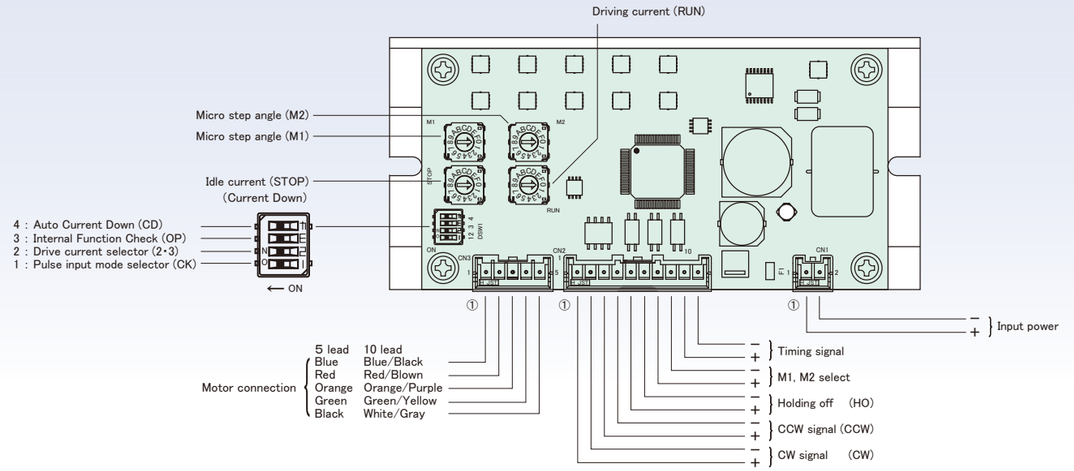


Connector No.	5 lead	10 lead
1	Blue	Blue/Black
2	Red	Red/Blown
3	Orange	Orange/Purple
4	Green	Green/Yellow
5	Black	White/Gray

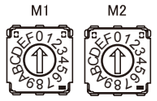
INPUT CIRCUIT



NAME AND FUNCTION



SETTING MICROSTEP RESOLUTION



Micro Step Angle = Base Step Angle / Division

Resolution for 2 series :　When DIP Switch SW2 is OFF.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	4	5	8	10	20	40	80	16

A	B	C	D	E	F
25	50	100	125	200	250

Resolution for 3 series :　When DIP Switch SW2 is OFF.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	3	6	12	18	24	32	36	48

A	B	C	D	E	F
60	72	120	160	180	240

① When only one microstep angle is used, use M1 rotary switch to set the division. input terminal D.S shall not be connected or signal must be ZERO(0) state if it is connected.
② Input signal at D.S Terminal. Zero(0) = M1 division, One(1) = M2 divison. Speed of Forward & Backward speed can be changed by this function.

SETTING DRIVE CURRENT

The desired drive current is obtained by setting RUN SW as follows.

Drive Current
(RUN : Rotary Switch)

SW No.	0	1	2	3	4	5	6	7	8	9
Current(A)	0.35	0.44	0.52	0.59	0.67	0.75	0.83	0.9	0.98	1.05

A	B	C	D	E	F
1.12	1.19	1.27	1.34	1.4	1.48

Example ; Drive current = 1.4A/phase. RUN SW = E

SETTING IDLE CURRENT (CURRENT DOWN)

Idle current is established by setting STOP SW as follows.
Current (%) = Percentage against Drive Current.

Idle Current
(STOP : Rotary Switch)

SW No.	0	1	2	3	4	5	6	7	8	9
Current(%)	25	30	35	41	45	50	55	59	63	67

A	B	C	D	E	F
71	75	79	83	87	91

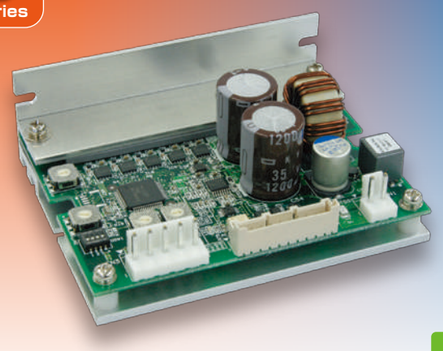
Example ; When the drive current is set at 1.4A/Phase, idol current will be 0.7A/Phase at the switch position no. 5 (50%).

DIP SW FUNCTION

No.	Mode	ON	OFF
1	Pulse mode (CK)	One pulse	Two pulse
2	Drive current selector (2・3)	3 series	2 series
3	Internal function confirmation (OP)	Turning off when using	
4	Idle current reduction (CD)	Not active	Actived

5 Phase Stepping Motor Driver

MC-S0528



FEATURE

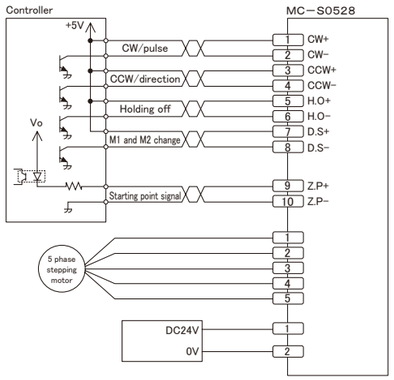
- Driving current is 2.8A/phase and compact size micro step driver.
- Maximum resolution is 1/250 (125,000 pulse per rotation).
- Low vibration drive(Full or Half step).
- Optical-isolator input.
- Automatic current reduction.
- Easy setting(resolution & current).
- Small size.

※Optional Parts ; Wire assembled conector ▶Page 50

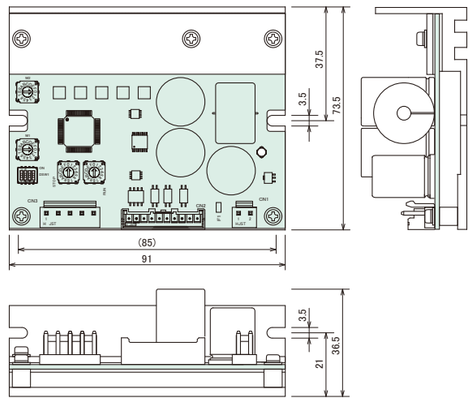
SPECIFICATION

Name	5 phase stepping motor driver
Model	MC−S0528
Driving method	Micro step
Input power	DC24V ±5%　7A Max.
Drive current	0.75～2.8A/phase
Division	2 series : 1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100, 125, 200, 250 3 series : 1, 2, 3, 6, 12, 18, 24, 32, 36, 48, 60, 72, 120, 160, 180, 240
Maximum frequency	500 kpps
Input signal	Optical-isolator input　[1]:3～5V, [0]:−3～0.5V Input resistance　CW, CCW:220Ω　H.O:220Ω
Output signal (Z.P)	Optical-isolator open corrector output Condition ; DC30V or less, 50mA or less
Function	Pulse input mode selector , Micro step angle select , Automatic current reduction
Operating temperature range	0～40℃
Operating humidity range	0～85%
Weight	148g

SAMPLE WIRING DIAGRAM



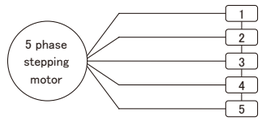
DIMENSIONS (unit:mm)



MOTOR

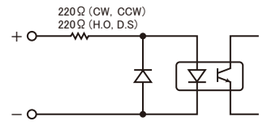
- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

See table below for the pin no. of the connector and color of motor leads.

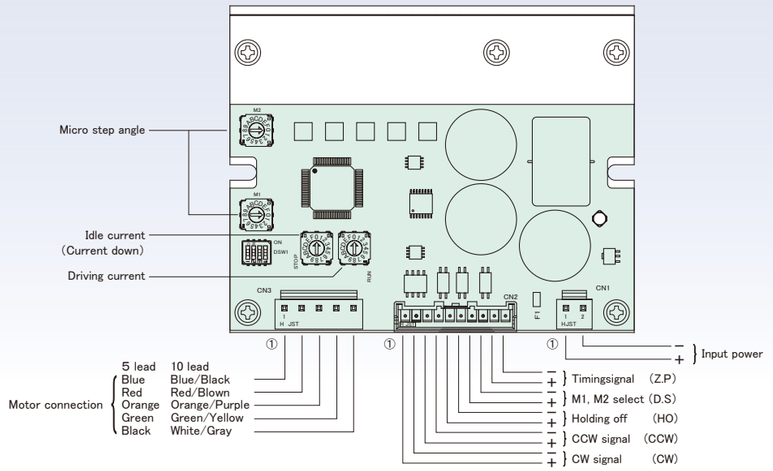


Connector No.	5 lead	10 lead
1	Blue	Blue/Black
2	Red	Red/Blown
3	Orange	Orange/Purple
4	Green	Green/Yellow
5	Black	White/Gray

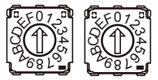
INPUT CIRCUIT



NAME AND FUNCTION



SETTING MICROSTEP RESOLUTION



Resolution for 2 series : When DIP Switch SW2 is OFF.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	4	5	8	10	20	40	80	16

A	B	C	D	E	F
25	50	100	125	200	250

Micro Step Angle = Base Step Angle / Division

Resolution for 3 series : When DIP Switch SW2 is ON.

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	3	6	12	18	24	32	36	48

A	B	C	D	E	F
60	72	120	160	180	240

① When only one microstep angle is used, use M1 rotary switch to set the division. input terminal D.S shall not be connected or signal must be ZERO(0) state if it is connected.
② Input signal at D.S Terminal. Zero(0) = M1 division, One(1) = M2 divison. Speed of Forward & Backward speed can be changed by this function.

SETTING DRIVE CURRENT

The desired drive current is obtained by setting RUN SW as follows.

Drive Current (RUN : Rotary Switch)

SW No.	0	1	2	3	4	5	6	7	8	9
Current(A)	0.75	0.9	1.07	1.27	1.45	1.61	1.79	1.97	2.11	2.26

A	B	C	D	E	F
2.41	2.56	2.8	2.93	3.1	3.2

Example ; Drive current = 2.8A/phase. RUN SW = C

SETTING IDLE CURRENT (CURRENT DOWN)

Idle current is established by setting STOP SW as follows.

Idle Current (STOP : Rotary Switch)

SW No.	0	1	2	3	4	5	6	7	8	9
Current(%)	25	30	35	41	45	50	55	59	66	67

A	B	C	D	E	F
71	76	79	83	87	90

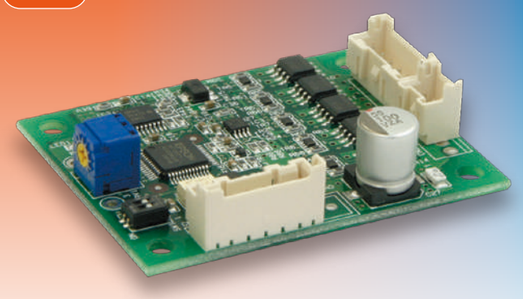
Example ; When the drive current is set at 1.4A/Phase, idol current will be 0.7A/Phase at the switch position no. 5 (50%).

DIP SW FUNCTION

No.	Mode	ON	OFF
1	Pulse mode (CK)	One pulse	Two pulse
2	Drive current selector (2・3)	3 series	2 series
3	Internal function confirmation (OP)	Turning off when using	
4	Idle current reduction (CD)	Not active	Actived

5 Phase Stepping Motor Driver

MC-S3ML

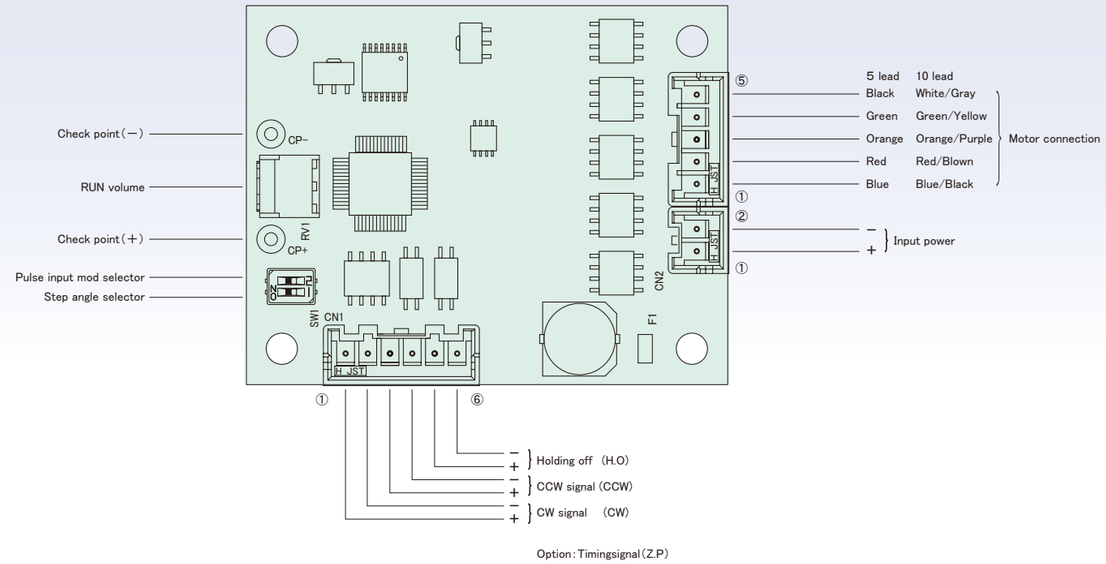


FEATURE

- Maximum drive current 0.35A/phase.
- Single power supply DC24V.
- Optical-isolator input.
- Automatic current reduction.
- Compact size driver.
- Low price.

※Optional Parts ; Wire assembled conector ▶Page 50

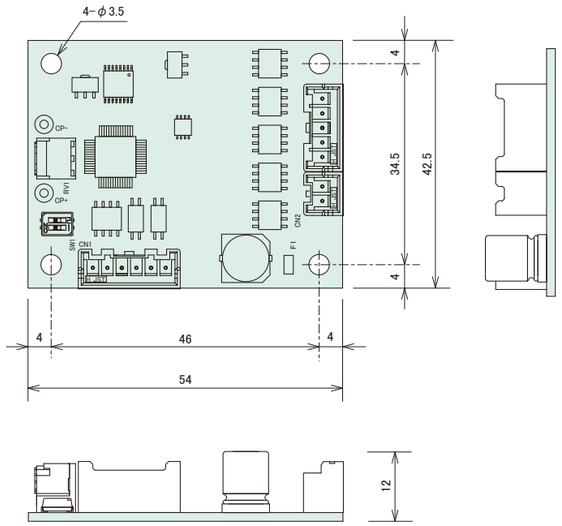
NAME AND FUNCTION



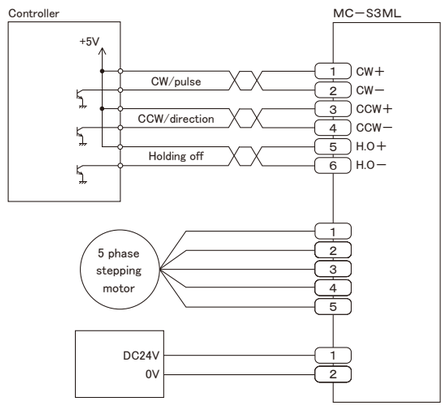
SPECIFICATION

Name	5 phase stepping motor driver
Model	MC−S3ML
Drive method	Full / Half Step
Input power	DC24V ±5% 0.8A Max.
Drive current	0.12A～0.35A/phase
Maximum frequency	70 kpps
Input signal	Optical-isolator input [1]:3～5V , [O]:−3～0.5V Input resistance CW, CCW, H.O:220Ω
Function	Pulse input mode selector , Full/half step select , Automatic current reduction at motor standstill
Operating temperature range	0～40℃
Operating humidity range	0～85%
Weight	13g

DIMENSIONS (unit:mm)



SAMPLE WIRING DIAGRAM



SETTING DRIVE CURRENT

To obtain the desired drive current,connect a potentiometer to CP(+,−)and use the following formula:

Potentiometer voltage(V) = Desired drive current ×8

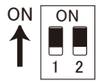
Factory setting is 0.35A/phase.

① Turn RUN Volume Control all the way to the left before the system is powered.

② Insert the cw signal (or the ccw signal)with a frequency of 10 pps or more, slowly turn the run volume and adjust it to the calculated voltage value. (Caution: Motor starts torotate once the signal is input)

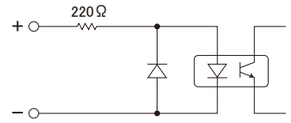
③ At the Motor Standstill, the output current will be automatically reduced to 60% of the set current.

DIP SW FUNCTION



No.	Mode	ON	OFF
1	Step angle	0.72°/pulse	0.36°/pulse
2	Pulse mode	One pulse	Two pulse

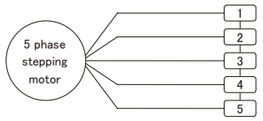
INPUT CIRCUIT



MOTOR

●5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

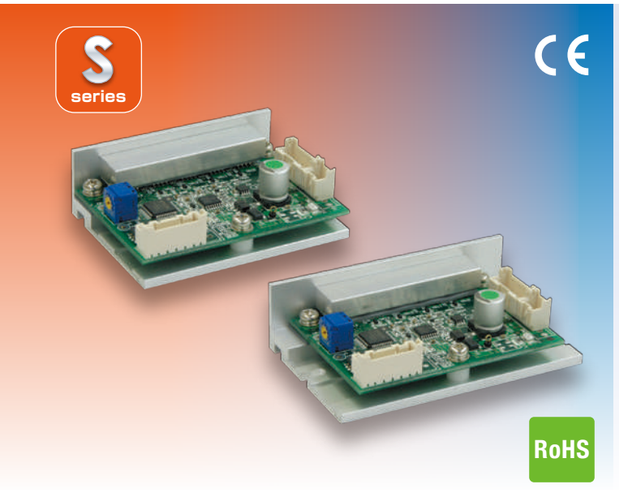
See table below for the pin no. of the connector and color of motor leads.



Connector No.	5 lead	10 lead
1	Blue	Blue/Black
2	Red	Red/Blown
3	Orange	Orange/Purple
4	Green	Green/Yellow
5	Black	White/Gray

5 Phase Stepping Motor Driver

MC-S5ML

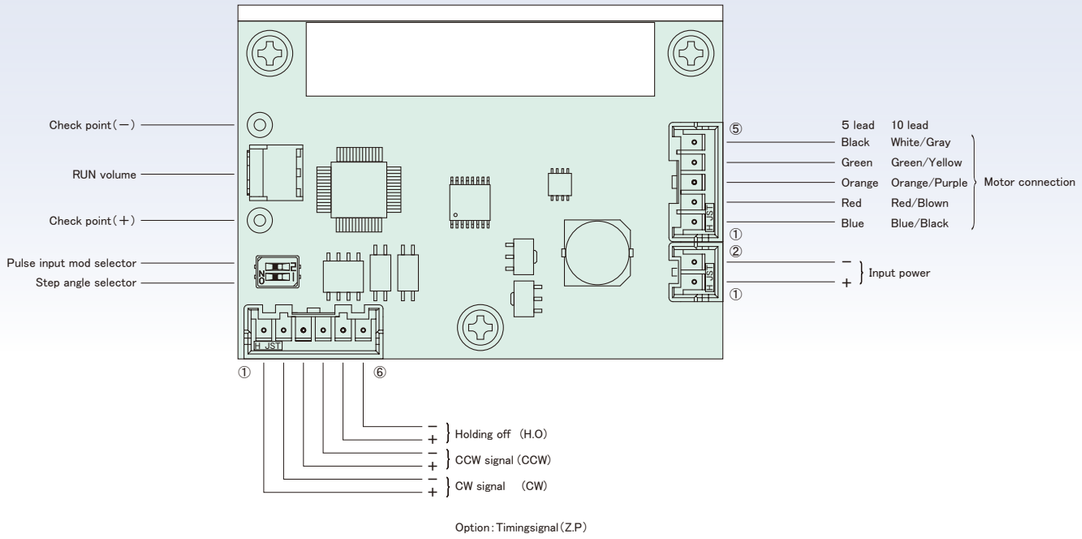


FEATURE

- Maximum drive current 1.4A/phase.
- Single power supply DC24V.
- Optical-isolator input.
- Automatic current reduction.
- Compact size driver.

※Optional Parts ; Wire assembled conector ▶Page 50

NAME AND FUNCTION



SETTING DRIVE CURRENT

To obtain the desired drive current,connect a potentiometer to CP(+,−)and use the following formula:

Potentiometer voltage(V) = Desired drive current × 2

Factory setting is 1.4A/phase.

① Turn RUN Volume Control all the way to the left before the system is powered.

② Insert the cw signal (or the ccw signal)with a frequency of 10 pps or more, slowly turn the run volume and adjust it to the calculated voltage value. (Caution: Motor starts torotate once the signal is input)

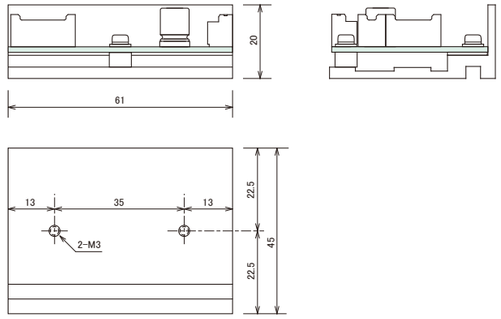
③ At the Motor Standstill, the output current will be automatically reduced to 50% of the set current.

SPECIFICATION

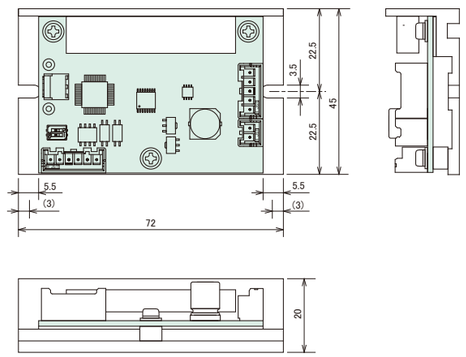
Name	5 phase stepping motor driver
Model	MC−S5ML
Drive method	Full / Half Step
Input power	DC24V ±5% 3A Max.
Drive current	0.5A～1.4A/phase
Maximum frequency	70 kpps
Input signal	Optical-isolator input [1]:3～5V , [0]:−3～0.5V Input resistance CW, CCW, H.O:220Ω
Function	Pulse input mode selector , Full/half step select , Automatic current reduction at motor standstill
Operating temperature range	0～40℃
Operating humidity range	0～85%
Weight	63g (type 2)

DIMENSIONS (unit:mm)

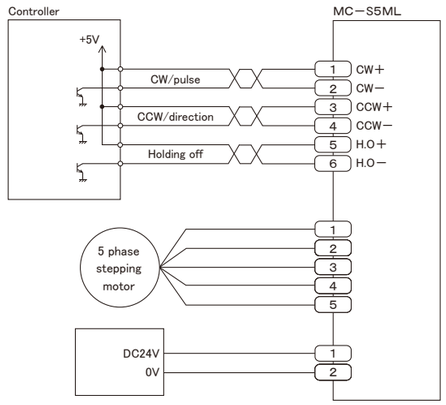
Type 1



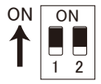
Type 2



SAMPLE WIRING DIAGRAM

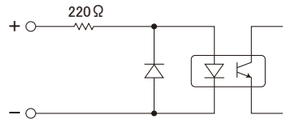


DIP SW FUNCTION



No.	Mode	ON	OFF
1	Step angle	0.72°/pulse	0.36°/pulse
2	Pulse mode	One pulse	Two pulse

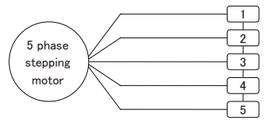
INPUT CIRCUIT



MOTOR

- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

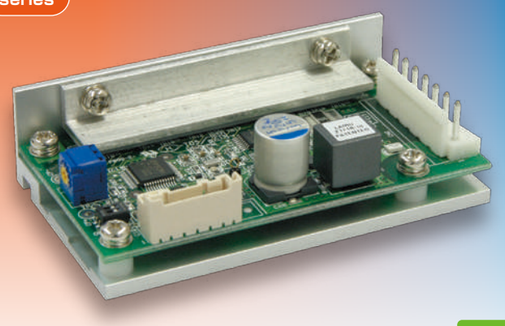
See table below for the pin no. of the connector and color of motor leads.



Connector No.	5 lead	10 lead
1	Blue	Blue/Black
2	Red	Red/Blown
3	Orange	Orange/Purple
4	Green	Green/Yellow
5	Black	White/Gray

5 Phase Stepping Motor Driver

MC-S5G

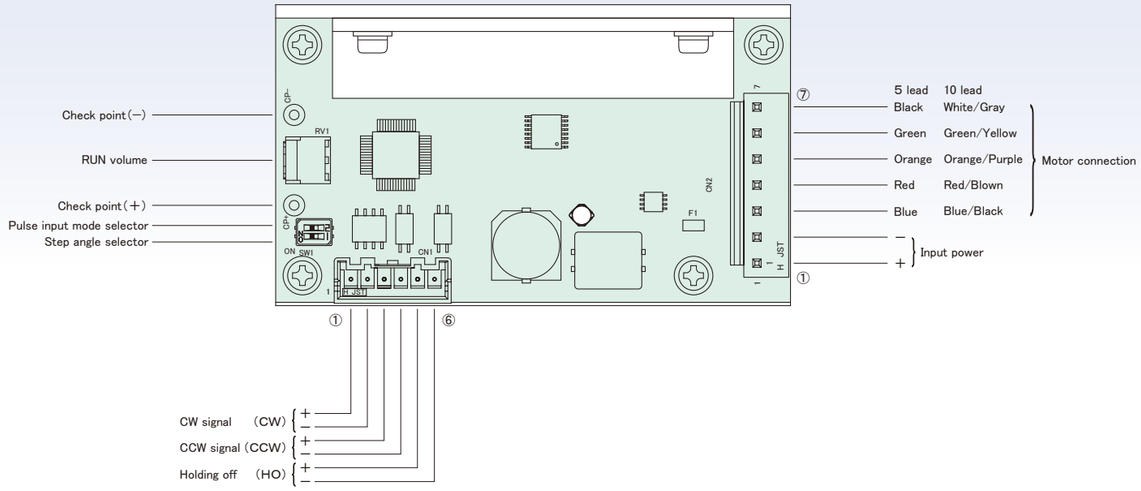


FEATURE

- A low heat generation circuit that suppresses heat generation of the driver is adopted.
- Maximum drive current 2.8A/phase.
- Single power supply DC24-36V.
- Optical-isolator input.
- Automatic current reduction.
- Compact size driver.

※Optional Parts ; Wire assembled conector ▶Page 50

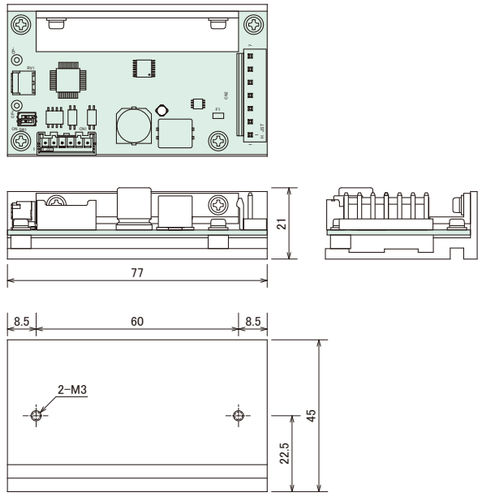
NAME AND FUNCTION



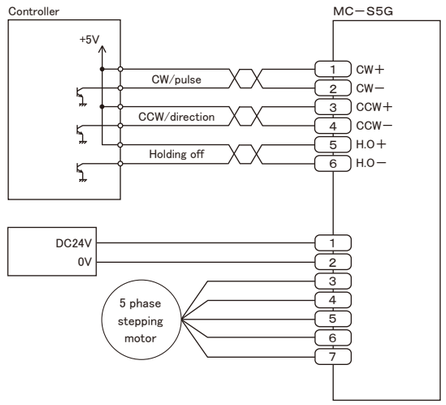
SPECIFICATION

Name	5 phase stepping motor driver
Model	MC−S5G
Drive method	Full / Half Step
Input power	DC24V ±5% 6A Max.
Drive current	1.0A～2.8A/phase
Maximum frequency	70 kpps
Input signal	Optical-isolator input [1]:3～5V , [O]:−3～0.5V Input resistance CW, CCW, H.O:220Ω
Function	Pulse input mode selector , Full/half step select , Automatic current reduction at motor standstill
Operating temperature range	0～40℃
Operating humidity range	0～85%
Weight	110g

DIMENSIONS (unit:mm)



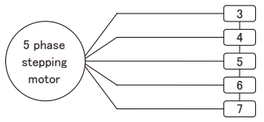
SAMPLE WIRING DIAGRAM



MOTOR

- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

See table below for the pin no. of the connector and color of motor leads.



Connector No.	5 lead	10 lead
3	Blue	Blue/Black
4	Red	Red/Blown
5	Orange	Orange/Purple
6	Green	Green/Yellow
7	Black	White/Gray

SETTING DRIVE CURRENT

To obtain the desired drive current,connect a potentiometer to CP(+,−)and use the following formula:

Potentiometer voltage (V) = Desired drive current × 1

Factory setting is 2.8A/phase.

① Turn RUN Volume Control all the way to the left before the system is powered.

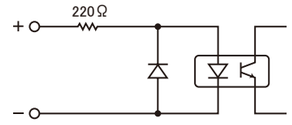
② Insert the cw signal (or the ccw signal)with a frequency of 10 pps or more, slowly turn the run volume and adjust it to the calculated voltage value. (Caution: Motor starts torotate once the signal is input)

③ At the Motor Standstill, the output current will be automatically reduced to 60% of the set current.

DIP SW FUNCTION

No.	Mode	ON	OFF
1	Step angle	0.72°/pulse	0.36°/pulse
2	Pulse mode	One pulse	Two pulse

INPUT CIRCUIT



5 Phase Stepping Motor Driver

MC-S5514T/S5514T-3

CE marking

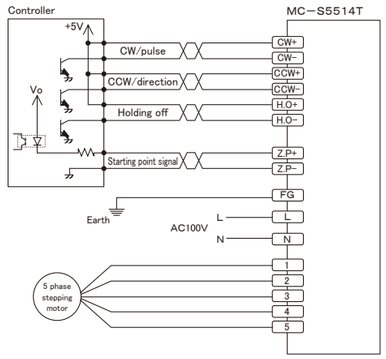
FEATURE

- It is 5 Phase-stepping motor driver of the AC100-115V input.
- Maximum resolution is 1/250 (125,000 pulse per rotation).
- Low vibration drive(Full or Half step). (Except MC-S5514T-3)
- Applies to a wide motor to 0.35A/phase-1.4A/phase.

SPECIFICATION

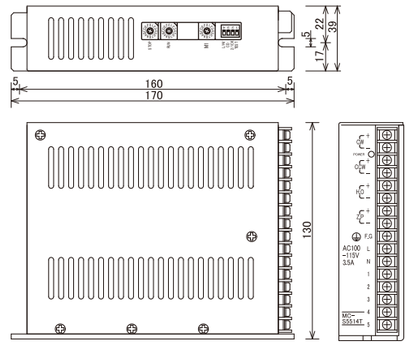
Name		5 phase stepping motor driver
Model		MC−S5514T , MC−S5514T−3
Driving method		Micro step
Input power		AC100～115V 50/60Hz 3.5A Max.
Drive current		0.35A～1.4A/phase
Division	MC−5514T	1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100, 125, 200, 250
	MC−5514T−3	1, 2, 3, 6, 12, 18, 24, 32, 36, 48, 60, 72, 120, 160, 180, 240
Maximum frequency		500 kpps
Input signal		Optical-isolator input [1]:3～5V , [O]:−3～0.5V Input resistance CW, CCW, H.O:220Ω
Output signal (Z.P)		Optical-isolator open corrector output Condition ; DC30V or less, 50mA or less
Function		Pulse input mode selector , Micro step angle select , Automatic current reduction , Driving voltage select Initial sysytem check
Insulation resistance		The value is 50MΩ or more,that measured by DC500V Megger Between the AC input and the case.
Withstand voltage		It is not abobe even if AC1500V is impressed between the AC input and the case for one minute.
Operating temperature range		0～40℃
Operating humidity range		0～85%
Weight		750g

SAMPLE WIRING DIAGRAM



DIMENSIONS (unit:mm)

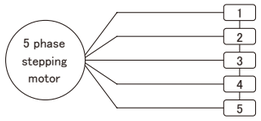
The size does not contain the projection thing such as the screws.



MOTOR

- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

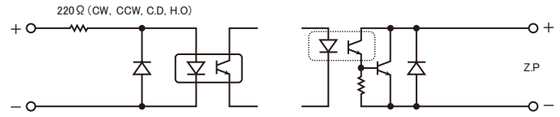
See table below for the pin no. of the connector and color of motor leads.



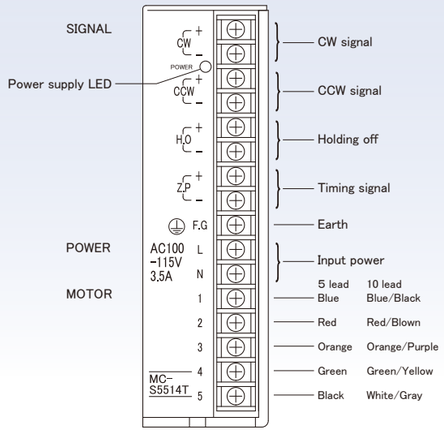
Connector No.	5 lead	10 lead
1	Blue	Blue/Black
2	Red	Red/Blown
3	Orange	Orange/Purple
4	Green	Green/Yellow
5	Black	White/Gray

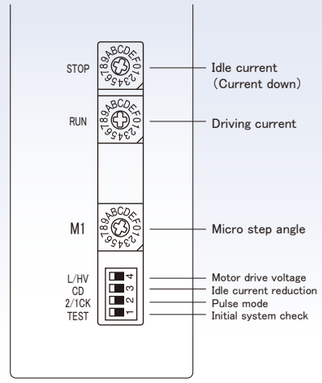
Note : Please use the wire rod of AWG20(0.5mmsq) or more for connecting the motor.

INPUT/OUTPUT CIRCUIT



NAME AND FUNCTION





SETTING MICROSTEP RESOLUTION

MC-S5514T

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	4	5	8	10	20	40	80	16

A	B	C	D	E	F
25	50	100	125	200	250

MC-S5514T-3

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1※	2※	3	6	12	18	24	32	36	48

A	B	C	D	E	F
60	72	120	160	180	240

$$\text{Micro Step Angle} = \frac{\text{Base Step Angle}}{\text{Division}}$$

72 divided steps → 0.01 degree

※Does not drive at the low vibration in this case.

SETTING DRIVE CURRENT

The desired drive current is obtained by setting RUN SW as follows.

Drive Current
(RUN : Rotary Switch)

SW No.	0	1	2	3	4	5	6	7	8	9
Current(A)	0.35	0.44	0.53	0.61	0.7	0.75	0.87	0.96	1.05	1.13

A	B	C	D	E	F
1.22	1.3	1.4	1.48	1.57	1.65

Example ; Drive current = 1.4A/phase.
RUN SW = C

SETTING IDLE CURRENT (CURRENT DOWN)

Idle current is established by setting STOP SW as follows.

Idle Current
(STOP : Rotary Switch)

SW No.	0	1	2	3	4	5	6	7	8	9
Current(%)	28	32	37	41	45	49	53	57	62	66

A	B	C	D	E	F
70	74	78	82	87	91

Example ; When the drive current is set at 1.4A/Phase, idol current will be 0.7A/Phase at the switch position no. 5 (50%).

DIP SW FUNCTIONS

No.	Indication	Mode	ON	OFF
1	TEST	Initial system check	Rotating (60pps).	Always set to off
2	2/1CK	Pulse mode	One pulse	Two pulse
3	C.D	Idle current reduction	Not active	Actived
4	L/HV	Motor drive voltage	※High speed and high torque	Standard

※Please note heat of the motor when driving by high speed and a high torque.

5 Phase Stepping Motor Driver

MC-S5514P/S5514P-3

CE marking

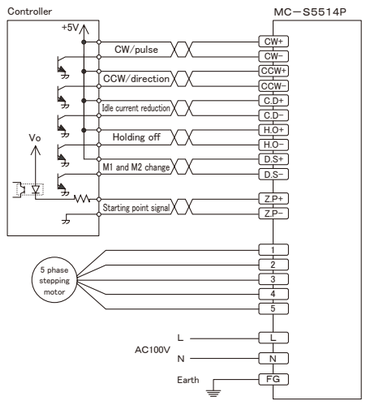
FEATURE

- It is 5 Phase-stepping motor driver of the AC100-115V input.
- Maximum resolution is 1/250 (125,000 pulse per rotation).
- Low vibration drive(Full or Half step). (Except MC-S5514P-3)
- Applies to a wide motor to 0.35A/phase-1.4A/phase.
- I/O uses the connector.

SPECIFICATION

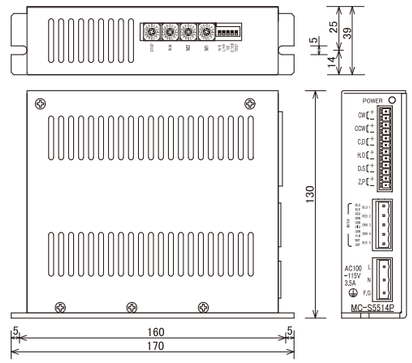
Name		5 phase stepping motor driver
Model		MC−S5514P , MC−S5514P−3
Driving method		Micro step
Input power		AC100～115V 50/60Hz 3.5A Max.
Drive current		0.35A～1.4A/phase
Division	MC-5514P	1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100, 125, 200, 250
	MC-5514P-3	1, 2, 3, 6, 12, 18, 24, 32, 36, 48, 60, 72, 120, 160, 180, 240
Maximum frequency		500 kpps
Input signal		Optical-isolator input [1]:3～5V , [0]:−3～0.5V Input resistance CW, CCW, C.D, H.O, D.S:220Ω
Output signal (Z.P)		Optical-isolator open corrector output Condition ; DC30V or less, 50mA or less
Function		Pulse input mode selector , Micro step angle select , Automatic current reduction , Driving voltage select Initial sysytem check
Insulation resistance		The value is 50MΩ or more,that measured by DC500V Megger Between the AC input and the case.
Withstand voltage		It is not abobe even if AC1500V is impressed between the AC input and the case for one minute.
Operating temperature range		0～40℃
Operating humidity range		0～85%
Weight		750g

SAMPLE WIRING DIAGRAM



DIMENSIONS (unit:mm)

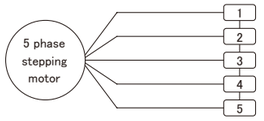
The size does not contain the projection thing such as the screws.



MOTOR

- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

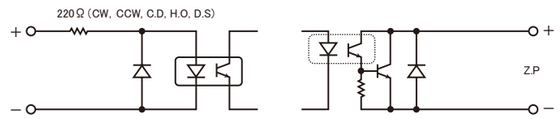
See table below for the pin no. of the connector and color of motor leads.



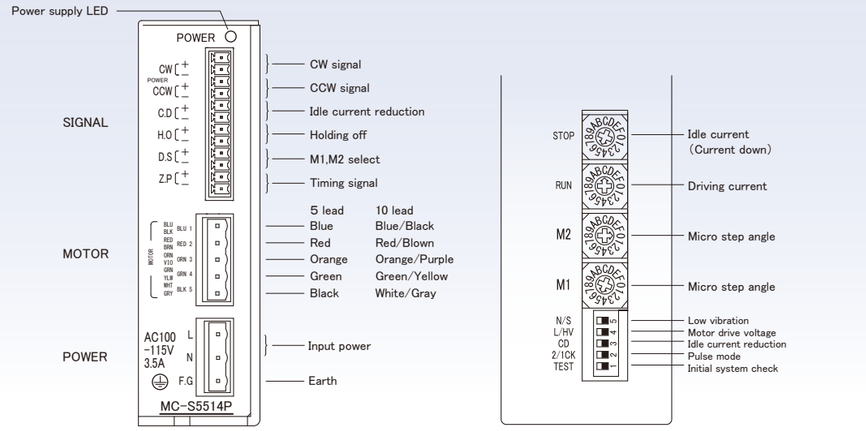
Connector No.	5 lead	10 lead
1	Blue	Blue/Black
2	Red	Red/Blown
3	Orange	Orange/Purple
4	Green	Green/Yellow
5	Black	White/Gray

Note : Please use the wire rod of AWG20(0.5mmsq) or more for connecting the motor.

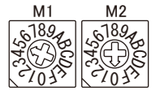
INPUT/OUTPUT CIRCUIT



NAME AND FUNCTION



SETTING MICROSTEP RESOLUTION



MC-S5514P

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	4	5	8	10	20	40	80	16
					A	B	C	D	E	F
					25	50	100	125	200	250

MC-S5514P-3

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1※	2※	3	6	12	18	24	32	36	48
					A	B	C	D	E	F
					60	72	120	160	180	240

$$\text{Micro Step Angle} = \frac{\text{Base Step Angle}}{\text{Division}}$$

72 divided steps → 0.01 degree

※Does not drive at the low vibration in this case.

① When only one microstep angle is used, use M1 rotary switch to set the division. input terminal D.S shall not be connected or signal must be ZERO(0) state if it is connected.
② Input signal at D.S Terminal. Zero(0) = M1 division, One(1) = M2 divison. Speed of Forward & Backward speed can be changed by this function.

SETTING DRIVE CURRENT

The desired drive current is obtained by setting RUN SW as follows.

Drive Current
(RUN : Rotary Switch)

SW No.	0	1	2	3	4	5	6	7	8	9
Current(A)	0.35	0.44	0.53	0.61	0.7	0.75	0.87	0.96	1.05	1.13
					A	B	C	D	E	F
					1.22	1.3	1.4	1.48	1.57	1.65

Example ; Drive current = 1.4A/phase.
RUN SW = C

SETTING IDLE CURRENT (CURRENT DOWN)

Idle current is established by setting STOP SW as follows.

Idol Current
(STOP : Rotary Switch)

SW No.	0	1	2	3	4	5	6	7	8	9
Current(%)	28	32	37	41	45	49	53	57	62	66
					A	B	C	D	E	F
					70	74	78	82	87	91

Example ; When the drive current is set at 1.4A/Phase, idol current will be 0.7A/Phase at the switch position no. 5 (50%).

DIP SW FUNCTIONS

No.	Indication	Mode	ON	OFF
1	TEST	Initial system check	Rotating (60pps).	Always set to off
2	2/1CK	Pulse mode	One pulse	Two pulse
3	C.D	Idle current reduction	Not active	Actived
4	L/HV	Motor drive voltage	※High speed and high torque	Standard
5	N/S	Low viblation	Low viblatino drive	Standard drive

※Please note heat of the motor when driving by high speed and a high torque.

5 Phase Stepping Motor Driver

MC-S7514PCL/S7514PCL-3

UL standard recognition
CE marking
SEMI-F47

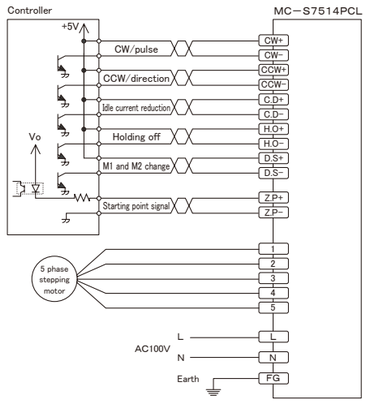
FEATURE

- It is 5 Phase-stepping motor driver of the AC200-230V input.
- Maximum resolution is 1/250 (125,000 pulse per rotation).
- Low vibration drive(Full or Half step). (Except MC-S7514PCL-3)
- Applies to a wide motor to 0.35A/phase-1.4A/phase.
- I/O uses the connector.

SPECIFICATION

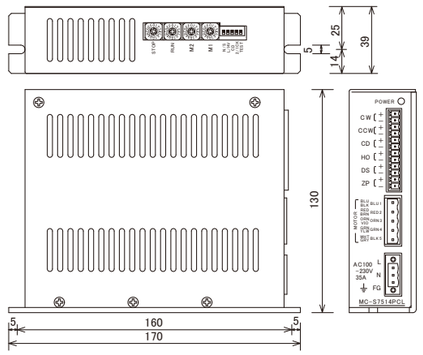
Name		5 phase stepping motor driver
Model		MC−S7514PCL , MC−S7514PCL−3
Driving method		Micro step
Input power		AC100～230V ±10V 50/60Hz 3.5A Max.
Drive current		0.35A～1.4A/phase
Division	MC−7514PCL	1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100, 125, 200, 250
	MC−7514PCL-3	1, 2, 3, 6, 12, 18, 24, 32, 36, 48, 60, 72, 120, 160, 180, 240
Maximum frequency		500 kpps
Input signal		Optical-isolator input [1]:3～5V , [0]:−3～0.5V Input resistance CW, CCW, C.D, H.O, D.S:220Ω
Output signal (Z.P)		Optical-isolator open corrector output Condition ; DC30V or less, 50mA or less
Function		Pulse input mode selector , Automatic current reduction , Micro step angle select , Driving voltage select , Initial sysytem check
Insulation resistance		The value is 50MΩ or more,that measured by DC500V Megger Between the AC input and the case.
Withstand voltage		It is not abobe even if AC1500V is impressed between the AC input and the case for one minute.
Operating temperature range		0～40℃
Operating humidity range		0～85%
Weight		750g

SAMPLE WIRING DIAGRAM



DIMENSIONS (unit:mm)

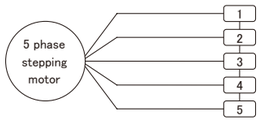
The size does not contain the projection thing such as the screws.



MOTOR

- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

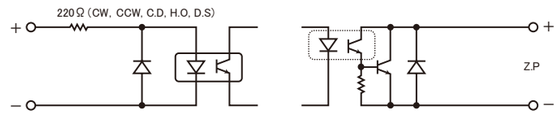
See table below for the pin no. of the connector and color of motor leads.



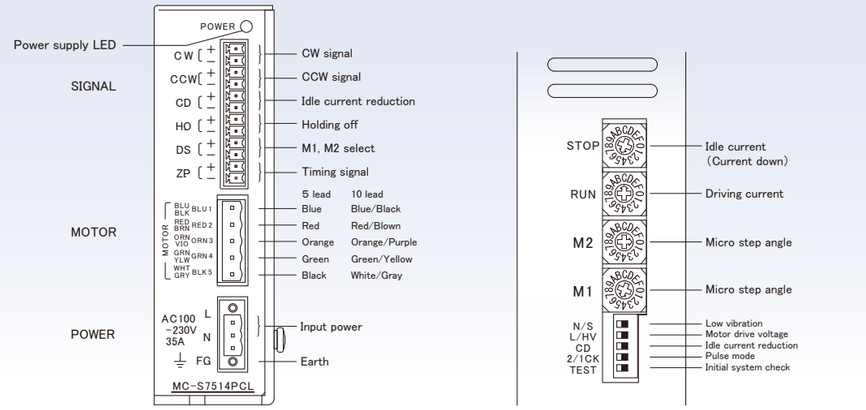
Connector No.	5 lead	10 lead
1	Blue	Blue/Black
2	Red	Red/Blown
3	Orange	Orange/Purple
4	Green	Green/Yellow
5	Black	White/Gray

Note : Please use the wire rod of AWG20(0.5mmsq) or more for connecting the motor.

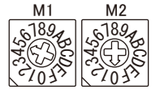
INPUT/OUTPUT CIRCUIT



NAME AND FUNCTION



SETTING MICROSTEP RESOLUTION



MC-S7514PCL

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	4	5	8	10	20	40	80	16
					A	B	C	D	E	F
					25	50	100	125	200	250

MC-S7514PCL-3

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1※	2※	3	6	12	18	24	32	36	48
					A	B	C	D	E	F
					60	72	120	160	180	240

$$\text{Micro Step Angle} = \frac{\text{Base Step Angle}}{\text{Division}}$$

72 divided steps → 0.01 degree
※Does not drive at the low vibration in this case.

① When only one microstep angle is used, use M1 rotary switch to set the division. input terminal D.S shall not be connected or signal must be ZERO(0) state if it is connected.
② Input signal at D.S Terminal. Zero(0) = M1 division, One(1) = M2 divison. Speed of Forward & Backward speed can be changed by this function.

SETTING DRIVE CURRENT

The desired drive current is obtained by setting RUN SW as follows.

Drive Current
(RUN : Rotary Switch)

SW No.	0	1	2	3	4	5	6	7	8	9
Current(A)	0.35	0.44	0.53	0.61	0.7	0.75	0.87	0.96	1.05	1.13
					A	B	C	D	E	F
					1.22	1.3	1.4	1.48	1.57	1.65

Example ; Drive current = 1.4A/phase.
RUN SW = C

SETTING IDLE CURRENT (CURRENT DOWN)

Idle current is established by setting STOP SW as follows.

Idle Current
(STOP : Rotary Switch)

SW No.	0	1	2	3	4	5	6	7	8	9
Current(%)	28	32	37	41	45	49	53	57	62	65
					A	B	C	D	E	F
					70	74	78	82	87	91

Example ; When the drive current is set at 1.4A/Phase, idol current will be 0.7A/Phase at the switch position no. 5 (50%).

DIP SW FUNCTIONS

No.	Indication	Mode	ON	OFF
1	TEST	Initial system check	Rotating (60pps).	Always set to off
2	2/1CK	Pulse mode	One pulse	Two pulse
3	C.D	Idle current reduction	Not active	Actived
4	L/HV	Motor drive voltage	※High speed and high torque	Standard
5	N/S	Low viblation	Low viblatino drive	Standard drive

※Please note heat of the motor when driving by high speed and a high torque.

5 Phase Stepping Motor Driver

MC-S5528P/S5528P-3

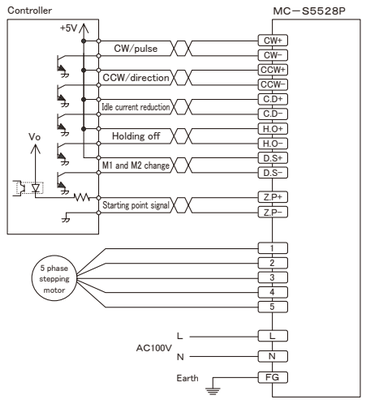
FEATURE

- Maximum drive current 2.8A/phase.
- It is 5 Phase-stepping motor driver of the AC100-115V input.
- Maximum resolution is 1/250 (125,000 pulse per rotation).
- Low vibration drive(Full or Half step). (Except MC-S5528P-3)
- I/O uses the connector.

SPECIFICATION

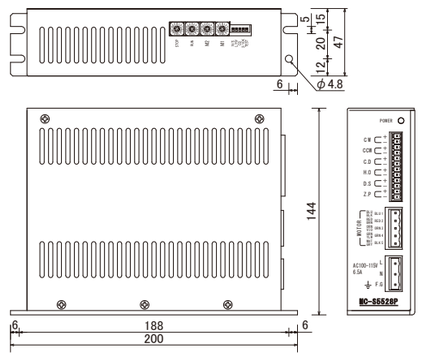
Name		5 phase stepping motor driver
Model		MC−S5528P , MC−S5528P−3
Driving method		Micro step
Input power		AC100～115V ±10% 50/60Hz 6.5A Max.
Drive current		2.8A/phase Max.
Division	MC-S5528P	1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100, 125, 200, 250
	MC-S5528P-3	1, 2, 3, 6, 12, 18, 24, 32, 36, 48, 60, 72, 120, 160, 180, 240
Maximum frequency		500 kpps
Input signal		Optical-isolator input [1]:3～5V , [0]:-3～0.5V Input resistance CW, CCW, C.D, H.O, D.S:220Ω
Output signal (Z.P)		Optical-isolator open corrector output Condition ; DC30V or less, 50mA or less
Function		Pulse input mode selector , Automatic current reduction , Micro step angle select , Driving voltage select , Initial sysytem check
Insulation resistance		The value is 50MΩ or more,that measured by DC500V Megger Between the AC input and the case.
Withstand voltage		It is not abobe even if AC1500V is impressed between the AC input and the case for one minute.
Operating temperature range		0～40℃
Operating humidity range		0～85%
Weight		1.1kg

SAMPLE WIRING DIAGRAM



DIMENSIONS (unit:mm)

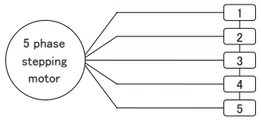
The size does not contain the projection thing such as the screws.



MOTOR

- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

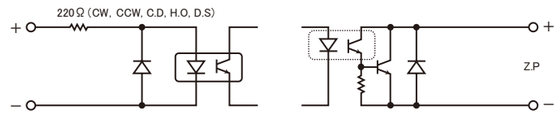
See table below for the pin no. of the connector and color of motor leads.



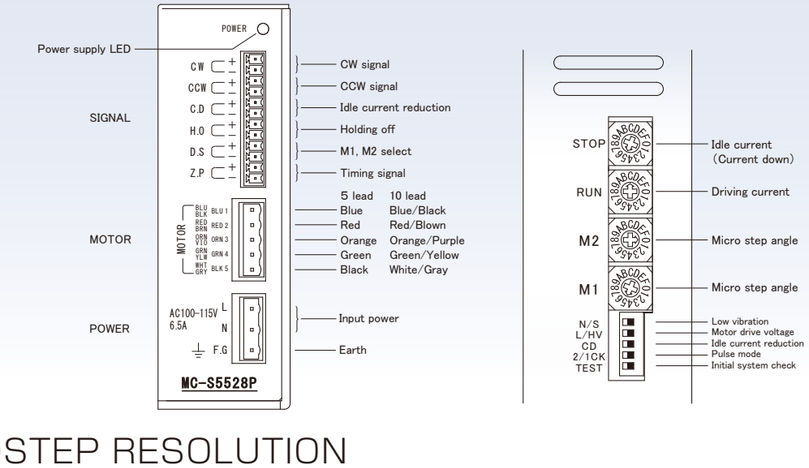
Connector No.	5 lead	10 lead
1	Blue	Blue/Black
2	Red	Red/Blown
3	Orange	Orange/Purple
4	Green	Green/Yellow
5	Black	White/Gray

Note : Please use the wire rod of AWG18(0.75mmsq) or more for connecting the motor.

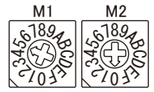
INPUT/OUTPUT CIRCUIT



NAME AND FUNCTION



SETTING MICROSTEP RESOLUTION



MC-S5528P

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	4	5	8	10	20	40	80	16
					A	B	C	D	E	F
					25	50	100	125	200	250

MC-S5528P-3

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1※	2※	3	6	12	18	24	32	36	48
					A	B	C	D	E	F
					60	72	120	160	180	240

Micro Step Angle = Base Step Angle / Division

72 divided steps → 0.01 degree

※Does not drive at the low vibration in this case.

① When only one microstep angle is used, use M1 rotary switch to set the division. input terminal D.S shall not be connected or signal must be ZERO(0) state if it is connected.
② Input signal at D.S Terminal. Zero(0) = M1 division, One(1) = M2 divison. Speed of Forward & Backward speed can be changed by this function.

SETTING DRIVE CURRENT

The desired drive current is obtained by setting RUN SW as follows.

Drive Current
(RUN : Rotary Switch)

SW No.	0	1	2	3	4	5	6	7	8	9
Current(A)	1.0	1.15	1.3	1.45	1.6	1.75	1.9	2.05	2.2	2.35
					A	B	C	D	E	F
					2.5	2.65	2.8	2.95	3.1	3.25

Example ; Drive current = 2.8A/phase.
RUN SW = C

SETTING IDLE CURRENT (CURRENT DOWN)

Idle current is established by setting STOP SW as follows.

Idle Current
(STOP : Rotary Switch)

SW No.	0	1	2	3	4	5	6	7	8	9
Current(%)	25	30	35	40	45	50	55	60	65	70
					A	B	C	D	E	F
					75	80	85	90	95	100

Example ; When the drive current is set at 1.4A/Phase, idol current will be 0.7A/Phase at the switch position no. 5 (50%).

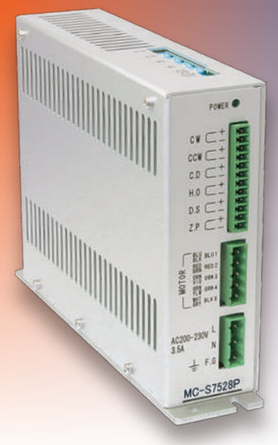
DIP SW FUNCTIONS

No.	Indication	Mode	ON	OFF
1	TEST	Initial system check	Rotating (60pps).	Always set to off
2	2/1CK	Pulse mode	One pulse	Two pulse
3	C.D	Idle current reduction	Not active	Actived
4	L/HV	Motor drive voltage	※High speed and high torque	Standard
5	N/S	Low viblation	Low viblatino drive	Standard drive

※Please note heat of the motor when driving by high speed and a high torque.

5 Phase Stepping Motor Driver

MC-S7528P/S7528P-3 〈Special order product〉



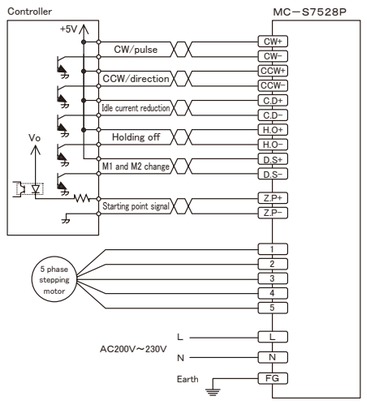
FEATURE

- Maximum drive current 2.8A/phase.
- It is 5 Phase-stepping motor driver of the AC200-230V input.
- Maximum resolution is 1/250 (125,000 pulse per rotation).
- Low vibration drive(Full or Half step).
- I/O uses the connector.

SPECIFICATION

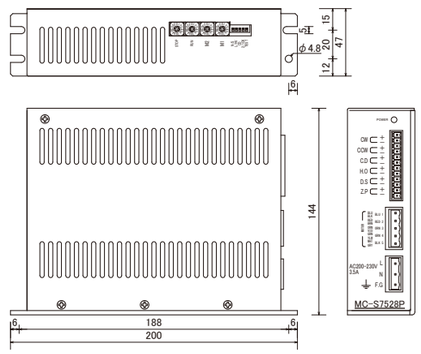
Name		5 phase stepping motor driver
Model		MC−S7528P
Driving method		Micro step
Input power		AC200～230V ±10% 50/60Hz 3.5A Max.
Drive current		2.8A/phase Max.
Division	MC−5528P	1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100, 125, 200, 250
	MC−5528P−3	1, 2, 3, 6, 12, 18, 24, 32, 36, 48, 60, 72, 120, 160, 180, 240
Maximum frequency		500 kpps
Input signal		Optical-isolator input [1]:3～5V , [0]:−3～0.5V Input resistance CW, CCW:220Ω C.D, H.O, D.S:220Ω
Output signal (Z.P)		Optical-isolator open corrector output Condition ; DC30V or less, 50mA or less
Function		Pulse input mode selector , Automatic current reduction , Micro step angle select , Driving voltage select , Initial sysytem check
Insulation resistance		The value is 50MΩ or more,that measured by DC500V Megger Between the AC input and the case.
Withstand voltage		It is not abobe even if AC1500V is impressed between the AC input and the case for one minute.
Operating temperature range		0～40℃
Operating humidity range		0～85%
Weight		1.1kg

SAMPLE WIRING DIAGRAM



DIMENSIONS (unit:mm)

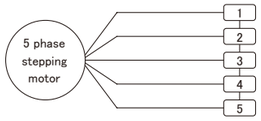
The size does not contain the projection thing such as the screws.



MOTOR

- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

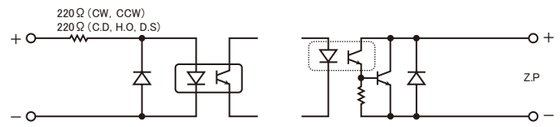
See table below for the pin no. of the connector and color of motor leads.



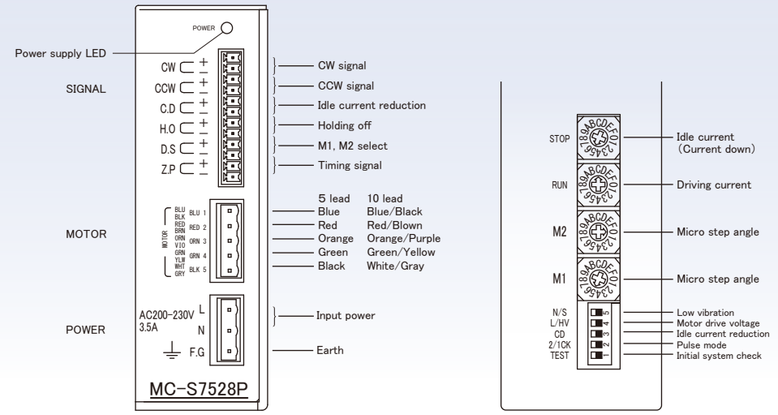
Connector No.	5 lead	10 lead
1	Blue	Blue/Black
2	Red	Red/Blown
3	Orange	Orange/Purple
4	Green	Green/Yellow
5	Black	White/Gray

Note : Please use the wire rod of AWG18(0.75mmsq) or more for connecting the motor.

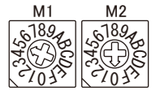
INPUT/OUTPUT CIRCUIT



NAME AND FUNCTION



SETTING MICROSTEP RESOLUTION



MC-S7528P

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	4	5	8	10	20	40	80	16
					A	B	C	D	E	F
					25	50	100	125	200	250

MC-S7528P-3

SW No.	0	1	2	3	4	5	6	7	8	9
Division	1	2	3	6	12	18	24	32	36	48
					A	B	C	D	E	F
					60	72	120	160	180	240

$$\text{Micro Step Angle} = \frac{\text{Base Step Angle}}{\text{Division}}$$

72 divided steps → 0.01 degree

① When only one microstep angle is used, use M1 rotary switch to set the division. input terminal D.S shall not be connected or signal must be ZERO(0) state if it is connected.
② Input signal at D.S Terminal. Zero(0) = M1 division, One(1) = M2 divison. Speed of Forward & Backward speed can be changed by this function.

SETTING DRIVE CURRENT

The desired drive current is obtained by setting RUN SW as follows.

Drive Current
(RUN : Rotary Switch)

SW No.	0	1	2	3	4	5	6	7	8	9
Current(A)	1.0	1.15	1.3	1.45	1.6	1.75	1.9	2.05	2.2	2.35
					A	B	C	D	E	F
					2.5	2.65	2.8	2.95	3.1	3.25

Example ; Drive current = 2.8A/phase.
RUN SW = C

SETTING IDLE CURRENT (CURRENT DOWN)

Idle current is established by setting STOP SW as follows.

Idle Current
(STOP : Rotary Switch)

SW No.	0	1	2	3	4	5	6	7	8	9
Current(%)	25	30	35	40	45	50	55	60	65	70
					A	B	C	D	E	F
					75	80	85	90	95	100

Example ; When the drive current is set at 1.4A/Phase, idol current will be 0.7A/Phase at the switch position no. 5 (50%).

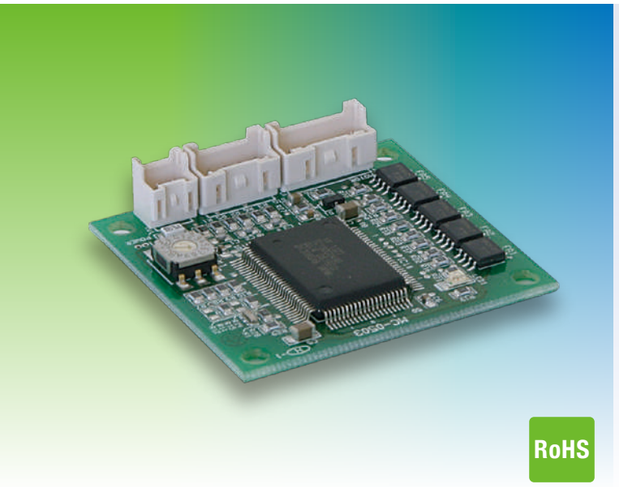
DIP SW FUNCTIONS

No.	Indication	Mode	ON	OFF
1	TEST	Initial system check	Rotating (60pps).	Always set to off
2	2/1CK	Pulse mode	One pulse	Two pulse
3	C.D	Idle current reduction	Not active	Actived
4	L/HV	Motor drive voltage	※High speed and high torque	Standard
5	N/S	Low viblation	Low viblatino drive	Standard drive

※Please note heat of the motor when driving by high speed and a high torque.

DC5V Input 5 Phase Microstep Driver

MC-0503/0503-3

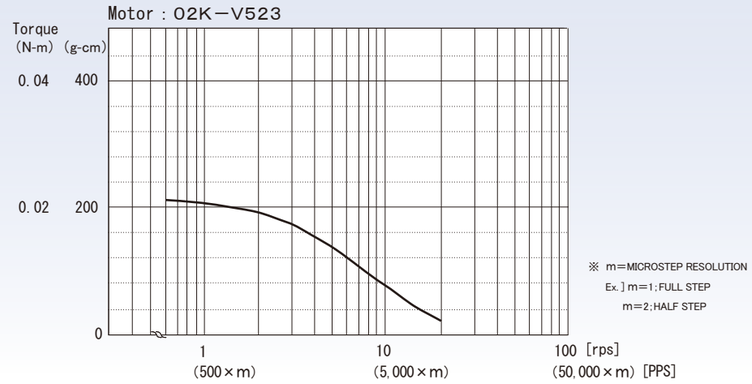


FEATURE

- The MC-0503 is an ultra-small 5-phase micro stepping driver with 5 Vdc.

※The drive motor is our V series 5-phase stepping motor.

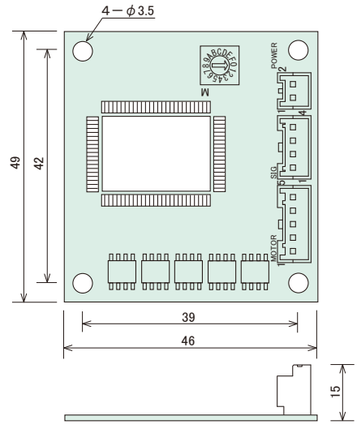
TORQUE CHARACTERISTIC



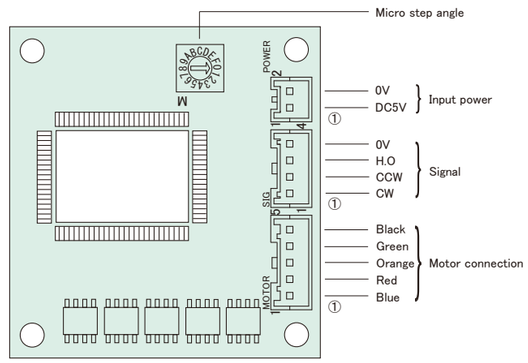
SPECIFICATION

Name		5-phase stepping motor driver
Model		MC−0503 , MC−0503−3
Drive motor		Our V series 5-phase stepping motor
Driving method		Micro stepping driver
Input power		DC5V ±10% 1.8A Max.
Division	MC-0503	1, 2, 4, 5, 8, 10, 16, 20, 25, 40, 50, 80, 100, 125, 200, 250
	MC-0503-3	1, 2, 3, 6, 12, 18, 24, 32, 36, 48, 60, 72, 120, 160, 180, 240
Maximum frequency		200 kpps
Inputsignal		C･MOS input [1]:0～1V , [0]:4～5V CW, CCW, H.O
Function		2-pulse input system ,Step angle change-over
Operating temperature range		0 to 40°C (32～104°F) Non-freezing
Operating humidity range		0 to 85% Non-condensing
Weight		15g (0.53oz)

DIMENSIONS (unit:mm)



NAME AND FUNCTION

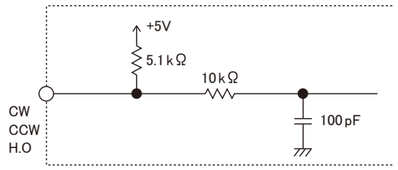


V SERIES MOTOR SPECIFICATION

Model	02K-V523(Single axis), 02K-V523W(Both axes)
Holding Torque (N-m)	0.018
Rated Current (A/phase)	0.25
Winding Resistance (Ω)	9.0
Rotor Inertia (gcm²)	4.2
Motor Lengh;L (mm)	30.5
Mass (g)	70
Size (mm)	24□

※Conversino Table for Torque
(g-cm)＝980×(N-m), (kg-cm)＝9.8×(N-m)

INPUT CIRCUIT



SETTING MICROSTEP RESOLUTION

MC-0503

SW No.	0	1	2	3	4	5	6	7	8	9
Division (m)	1	2	4	5	8	10	20	40	80	16

A	B	C	D	E	F
25	50	100	125	200	250

Ex.] m=1 ; Full step, m=2 ; Half step

MC-0503-3

SW No.	0	1	2	3	4	5	6	7	8	9
Division (m)	1※	2※	3	6	12	18	24	32	36	48

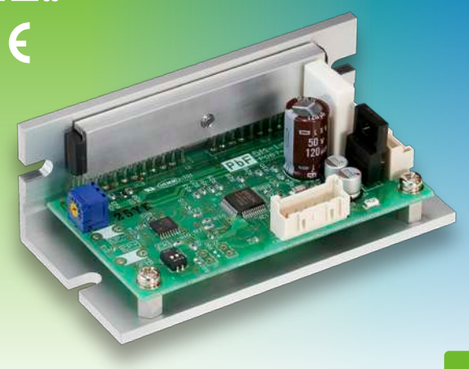
A	B	C	D	E	F
60	72	120	160	180	240

$$\text{Micro Step Angle} = \frac{\text{Base Step Angle}}{\text{Division}}$$

72 divided steps → 0.01 degree
※Does not drive at the low vibration in this case.

5 Phase Stepping Motor Driver

MC-5M



UL standard recognition
CE marking

FEATURE

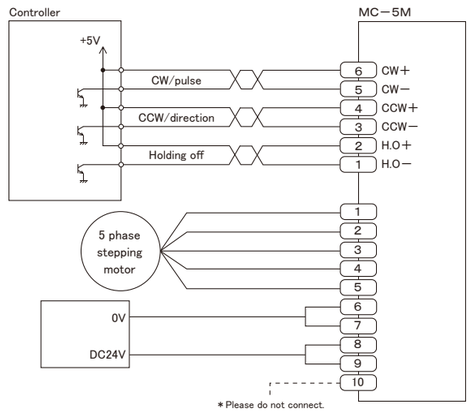
- Maximum drive current 1.4A/phase.
- Single power supply DC24-36V.
- Optical-isolator input.
- Automatic current reduction.
- Compact size driver.
- I am preparing two kinds of base boards so that an attachment variation can also be chosen.

※Optional Parts ; Wire assembled conector ▶Page 50

SPECIFICATION

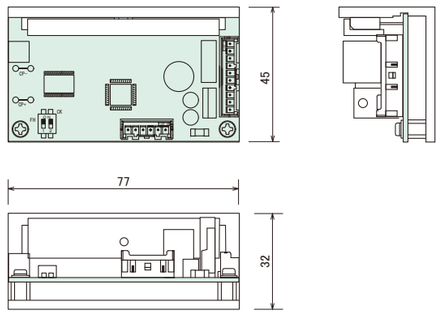
Name	5 phase stepping motor driver
Model	MC−5M
Drive method	Full / Half Step
Input power	DC20～40V 3A Max.
Drive current	0.5A～1.4A/phase
Maximum frequency	70 kpps
Input signal	Optical-isolator input [1]:4～8V , [0]:−8～0.5V Input resistance CW, CCW, H.O:390Ω
Function	Pulse input mode selector , Full/half step select , Automatic current reduction at motor standstill
Operating temperature range	0～40℃
Operating humidity range	0～85%
Weight	90g

SAMPLE WIRING DIAGRAM

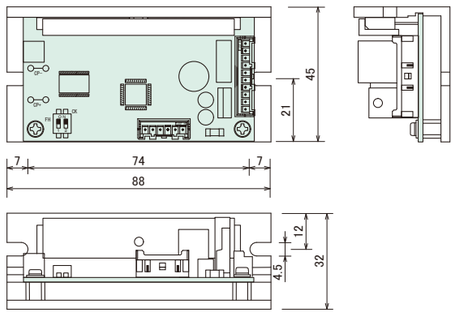


DIMENSIONS (unit:mm)

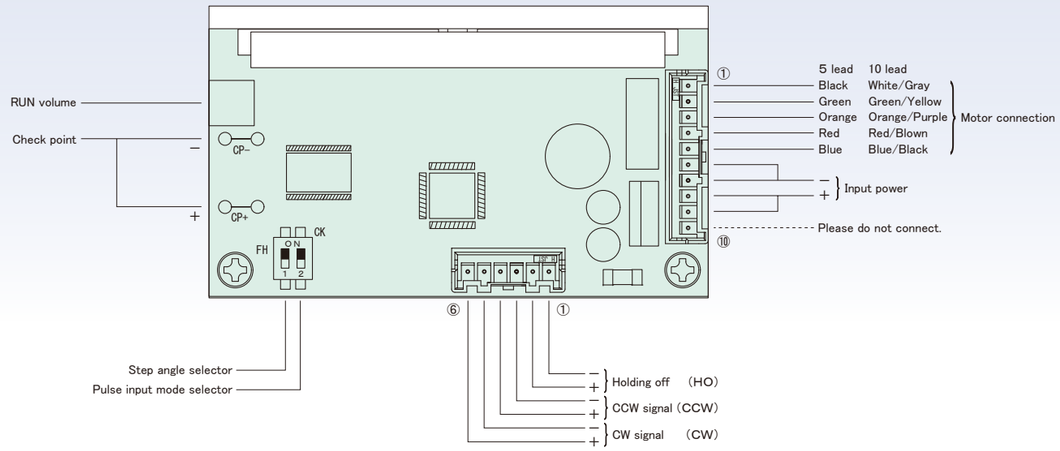
Type 1



Type 2



NAME AND FUNCTION



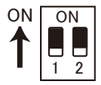
SETTING DRIVE CURRENT

To obtain the desired drive current,connect a potentiometer to CP(+,−)and use the following formula:
Potentiometer voltage(V) = Desired drive current × 2

Factory setting is 1.4A/phase.

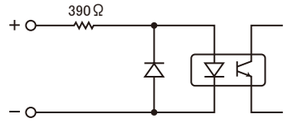
① Turn RUN Volume Control all the way to the left before the system is powered.
② Insert the cw signal (or the ccw signal)with a frequency of 10 pps or more, slowly turn the run volume and adjust it to the calculated voltage value. (Caution: Motor starts torotate once the signal is input)
③ At the Motor Standstill, the output current will be automatically reduced to 65% of the set current.

DIP SW FUNCTIONS



No.	Mode	ON	OFF
1	Step angle	0.72°/pulse	0.36°/pulse
2	Pulse mode	One pulse	Two pulse

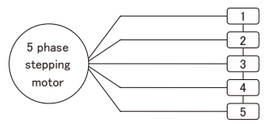
INPUT CIRCUIT



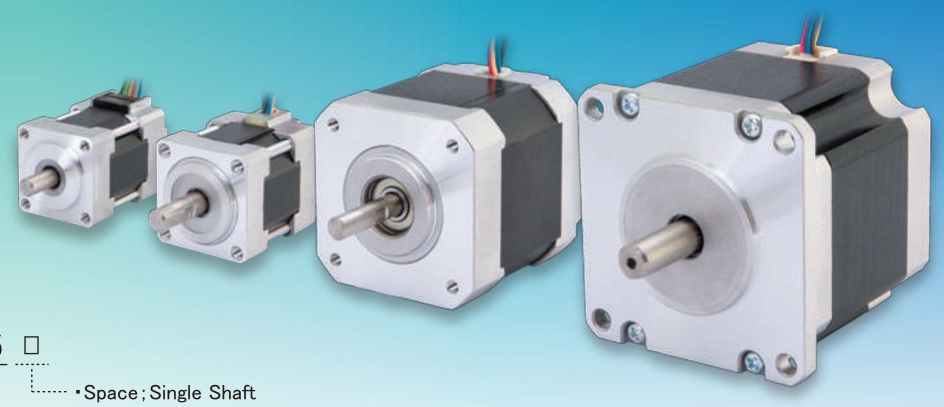
MOTOR

- 5/10 lead 5-Phase stepping motors such as Tamagawa-seiki or Oriental-motor.

See table below for the pin no. of the connector and color of motor leads.



Connector No.	5 lead	10 lead
1	Black	White/Gray
2	Green	Green/Yellow
3	Orange	Orange/Purple
4	Red	Red/Blown
5	Blue	Blue/Black



A TABLE MAJOR OF SPECIFICATION

8K－M566□

- ・Holding tprque (8K)
- ・Drive Current (M)
  - C;0.35A/phase
  - S;0.75A/phase
  - M;1.4A/phase
  - G;2.8A/phase
- ・5 Phase Stepping Motor (5)
- ・Size (6) — Ex.] 6;60□
- ・Length (6) — Ex.] 6;60mm
- ・Space;Single Shaft / W ;Dual Shafts (□)

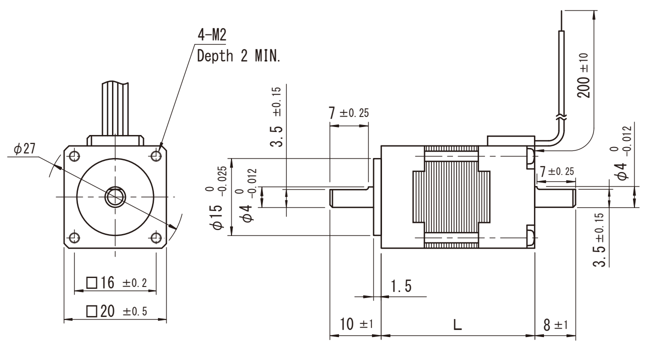
RoHS

※Conversino Table for Torque (g-cm)＝980×(N-m), (kg-cm)＝9.8×(N-m)

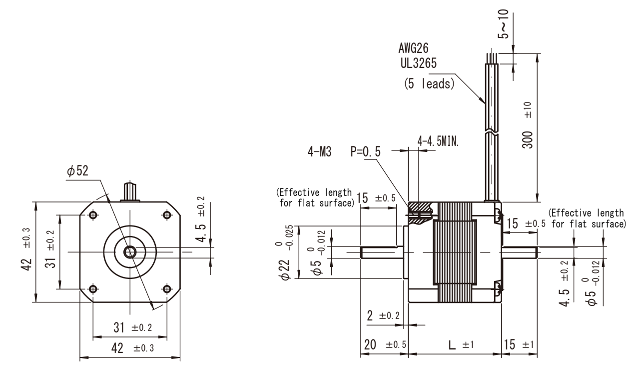
Type Number (Dual Shafts add W)	Holding Torque N-m	Rated Current A/phase	Winding Resistance Ω	Rotor Inertia gcm²	Motor Length; L mm	Mass	Size mm
01K−C513	0.013	0.35	6.1	1.9	30	50g	20□
02K−C515	0.024		11.4	4	46.5	85g	20□
02K−C523	0.018		4.5	4.2	30.5	70g	24□
04K−C525	0.029		6.7	8.3	46.5	120g	24□
1K−C543	0.13		7.5	35	33	200g	42□
2K−C544	0.18		9.5	54	39	240g	42□
3K−C545	0.24		10.3	68	47	310g	42□
02K−S523	0.018	0.75	1.1	4.2	30.5	70g	24□
04K−S525	0.029		1.7	8.3	46.5	120g	24□
1K−S543	0.13		1.7	35	33	200g	42□
2K−S544	0.18		2.2	54	39	240g	42□
3K−S545	0.24		2.2	68	47	310g	42□
4K−S564	0.46		2.6	175	48.5	500g	60□
8K−S566	0.82		3.4	220	56.5	700g	60□
3K−M545	0.24	1.4	0.65	68	47	310g	42□
4K−M564	0.46		0.8	175	48.5	500g	60□
8K−M566	0.82		1.1	220	56.5	700g	60□
16K−M569	1.53		1.8	440	86.5	1.2kg	60□
16K−G569	1.53	2.8	0.65	440	86.5	1.2kg	60□

DIMENSIONS (unit:mm)

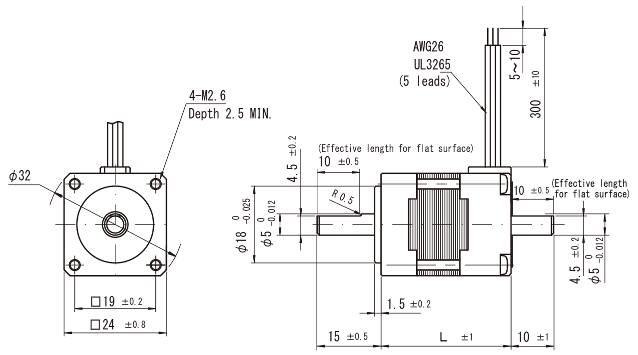
20mm□



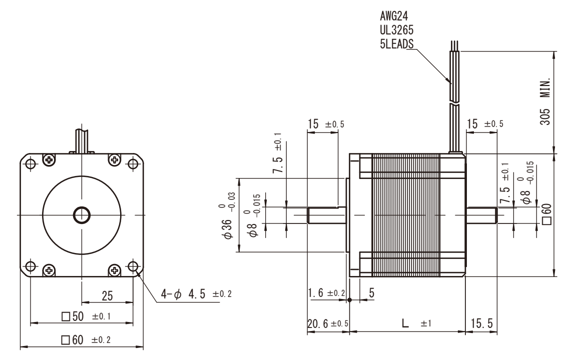
42mm□



24mm□

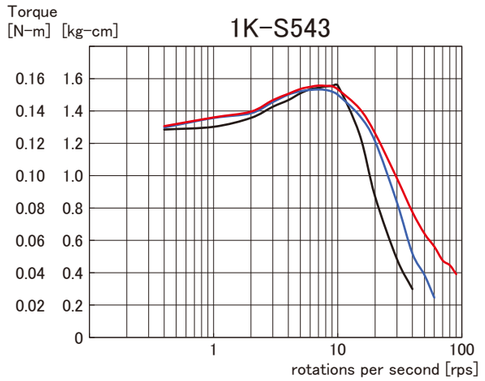


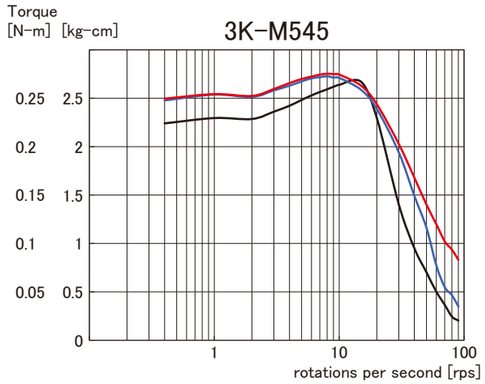
60mm□

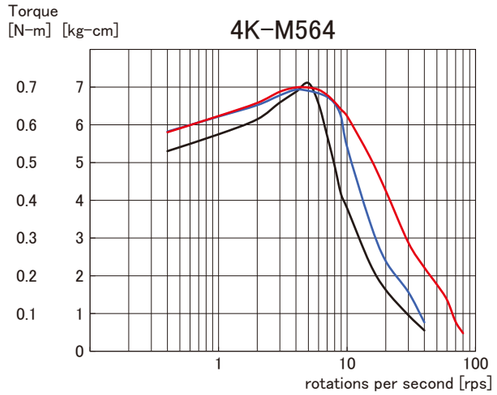


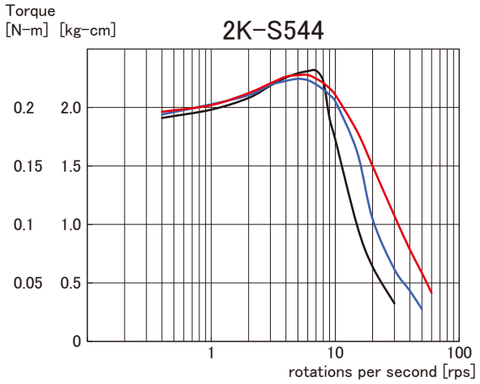
MC-S0514-L-HS

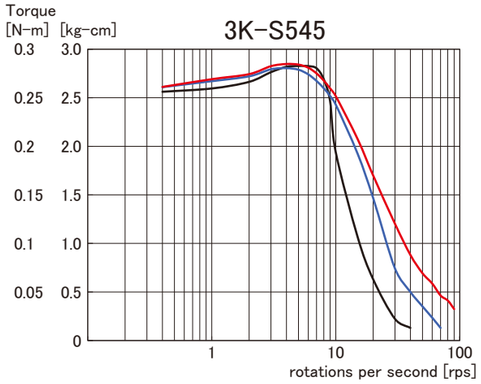
MC-S0514-L　DC24V Drive
MC-S0514L-HS　Boosting Voltage s/w : 8
MC-S0514L-HS　Boosting Voltage s/w : F

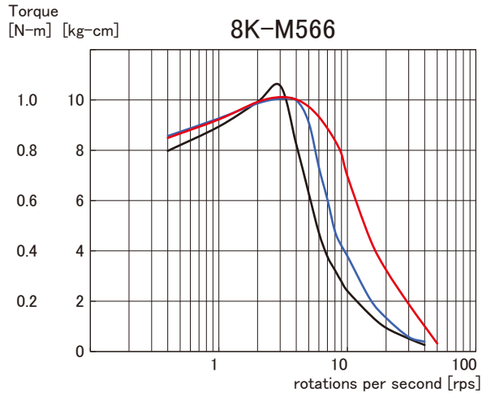


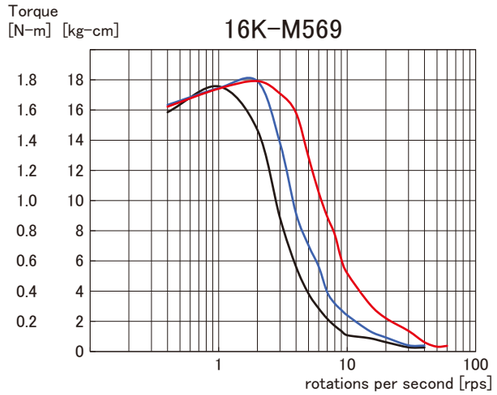


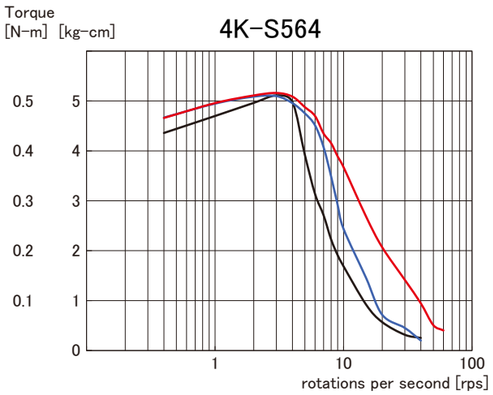


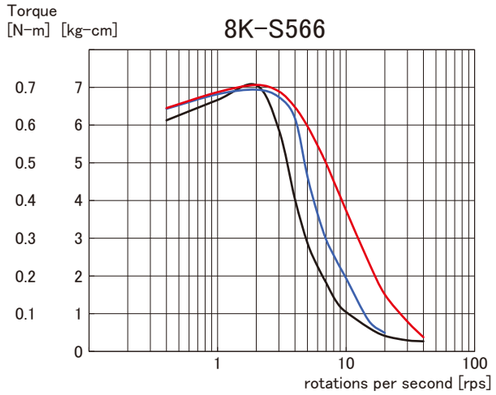






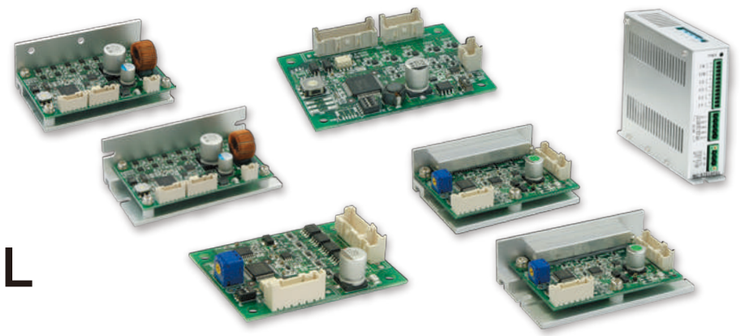


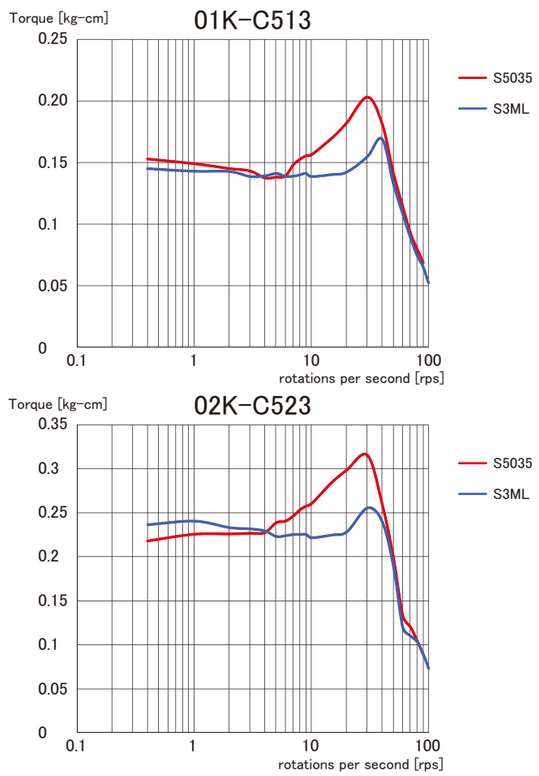


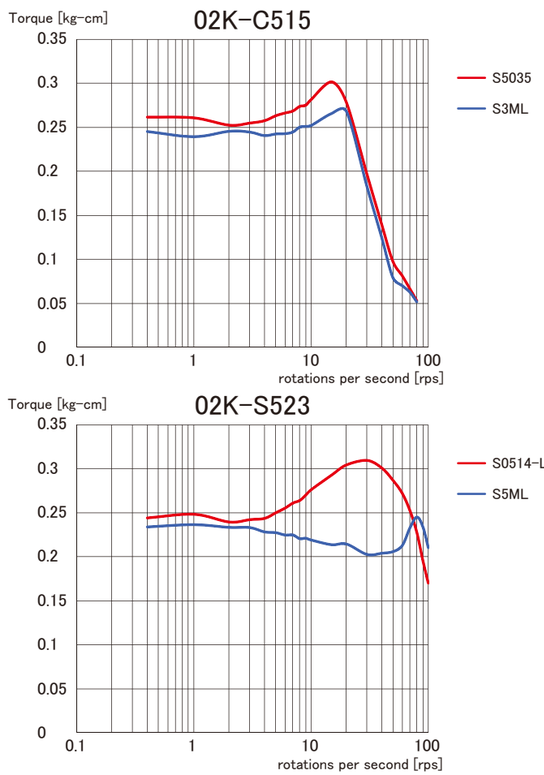


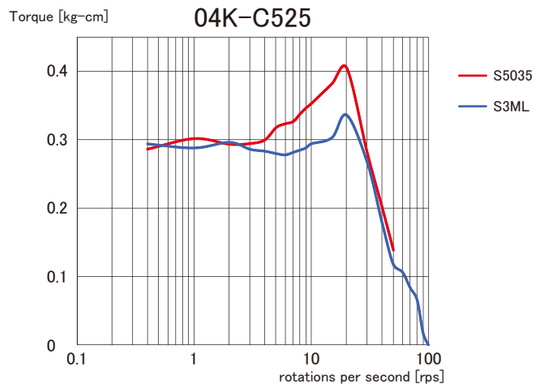
Torque Characteristics

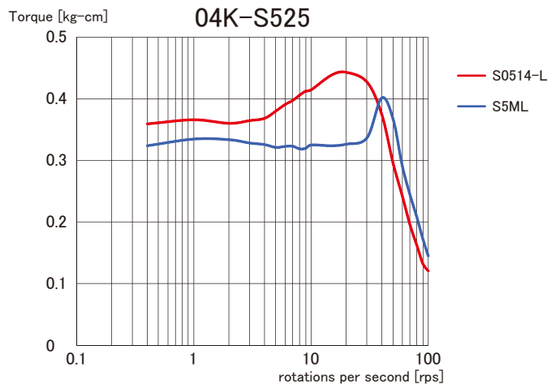
MC-S0514-L
MC-S5035
MC-S3ML
MC-S5ML
MC-S7514PCL

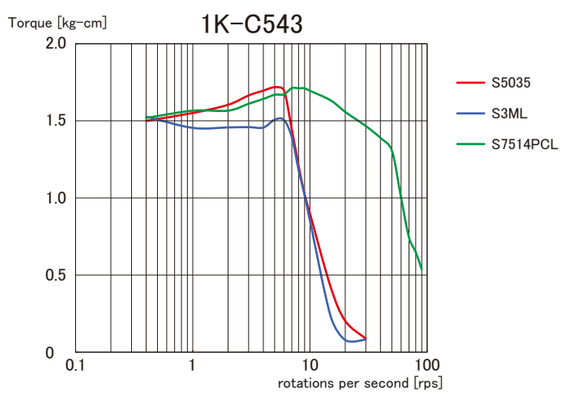


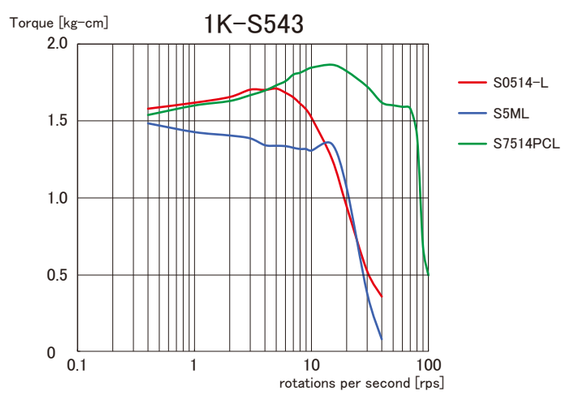


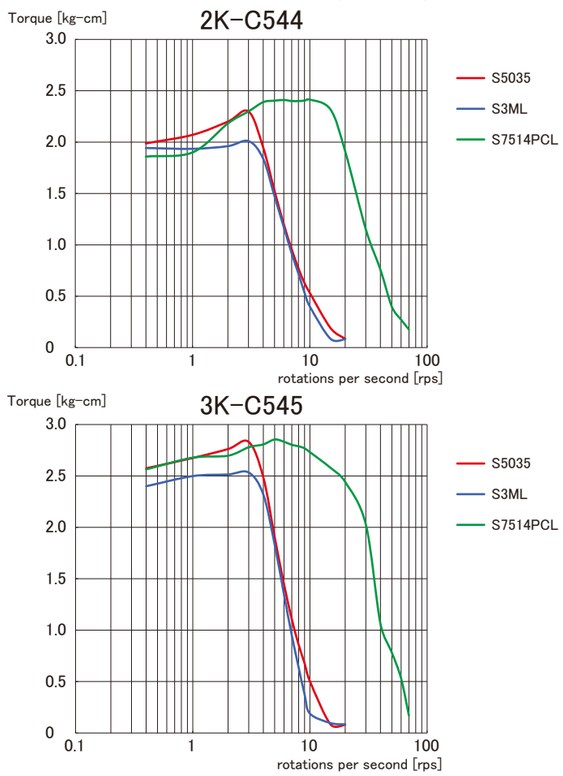


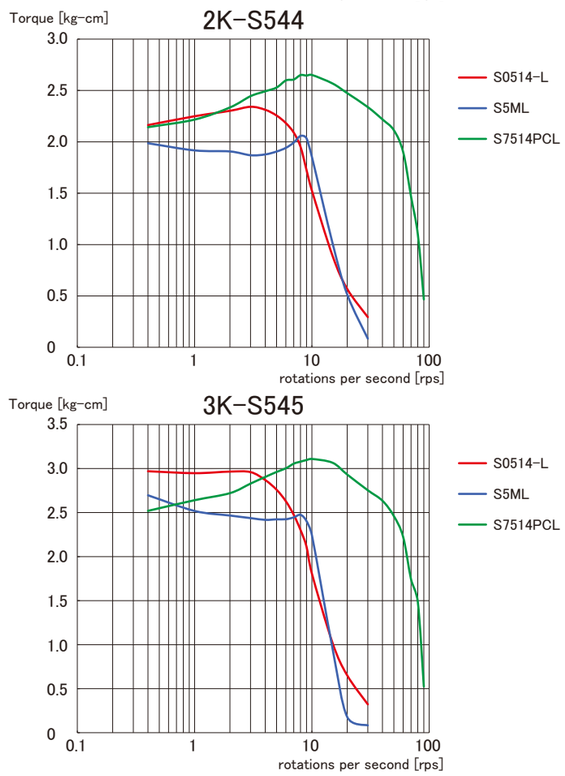


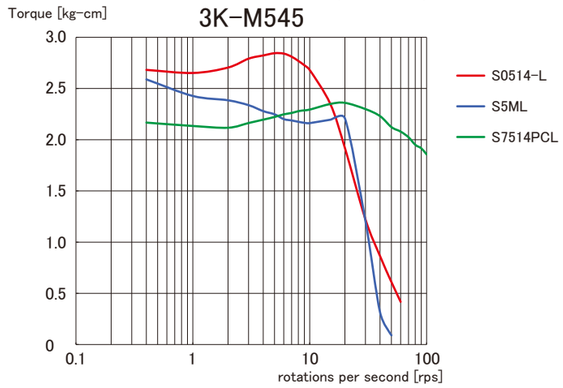






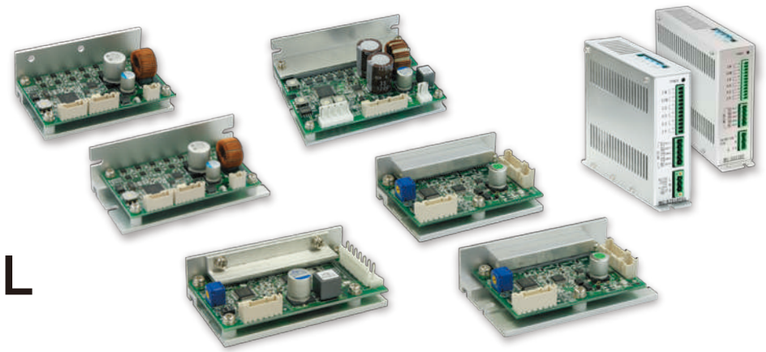


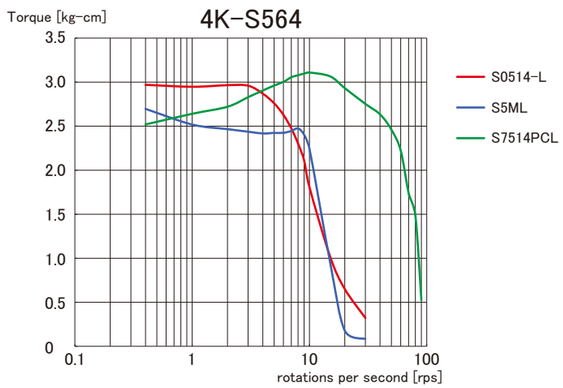


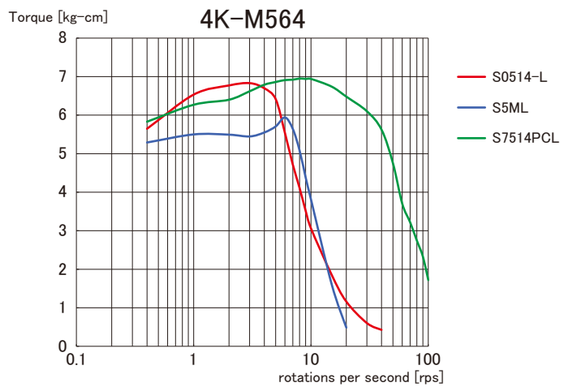


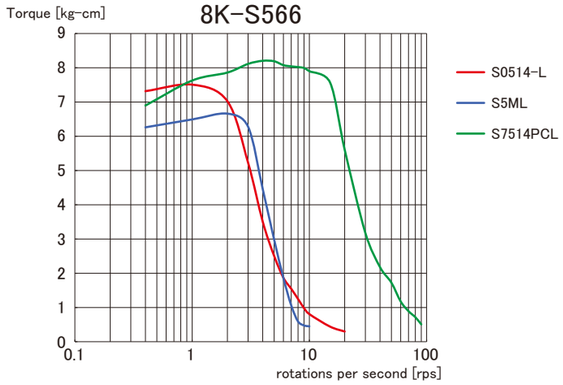
Torque Characteristics

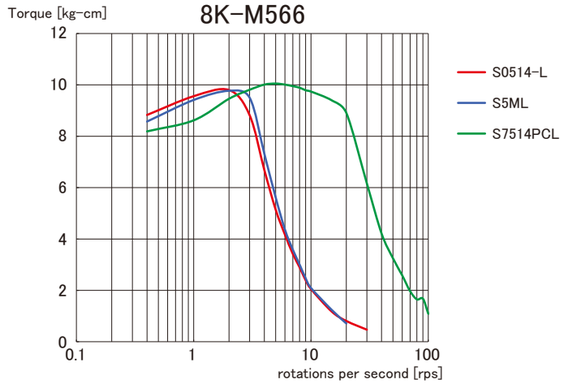
MC-S0514-L
MC-S0528
MC-S5ML
MC-S5G
MC-S7514PCL
MC-S5528P

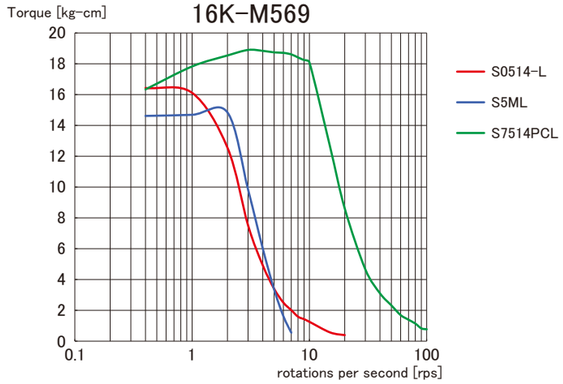


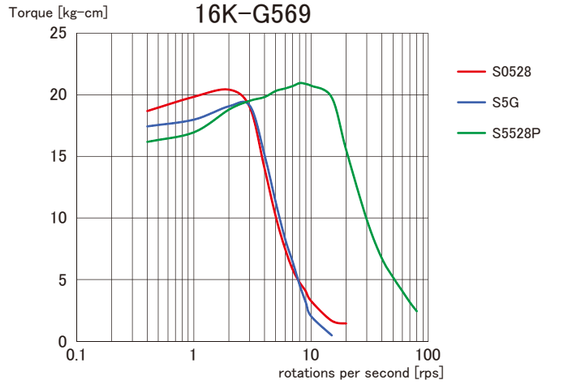




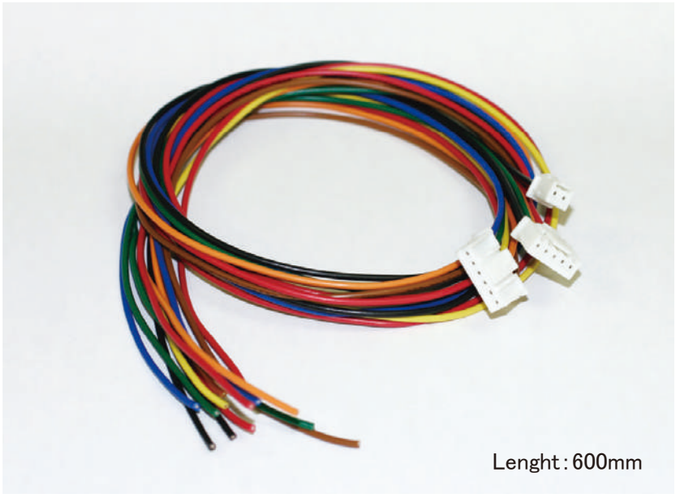








Wire Harness



Model	Driver Model	Content of Set		
S0514L-HS harness	MC-S0514L-HS	1 signal wiring(AWG22)	1 power supply wiring(AWG18)	1 motor wiring(AWG22)
S0514-L harness	MC-S0514-L	1 signal wiring(AWG22)	1 power supply wiring(AWG22)	1 motor wiring(AWG22)
S0514-2L harness	MC-S0514-2L	2 signal wiring(AWG22)	1 power supply wiring(AWG18)	2 motor wiring(AWG22)
S0514-3L harness	MC-S0514-3L	3 signal wiring(AWG22)	1 power supply wiring(AWG18)	3 motor wiring(AWG22)
S0514-4L harness	MC-S0514-4L	4 signal wiring(AWG22)	1 power supply wiring(AWG18)	4 motor wiring(AWG22)
S0524-L harness	MC-S0524-L	1 signal wiring(AWG22)	1 power supply wiring(AWG20)	1 motor wiring(AWG20)
S5035 harness	MC-S5035	1 signal wiring(AWG22)	1 power supply wiring(AWG22)	1 motor wiring(AWG22)
S0514-ZU harness	MC-S0514ZU	1 signal wiring(AWG22)	1 power supply wiring(AWG22)	1 motor wiring(AWG22)
S0528 harness	MC-S0528	1 signal wiring(AWG22)	1 power supply wiring(AWG18)	1 motor wiring(AWG18)
S3ML harness	MC-S3ML	1 signal wiring(AWG22)	1 power supply wiring(AWG22)	1 motor wiring(AWG22)
S5ML harness	MC-S5ML	1 signal wiring(AWG22)	1 power supply wiring(AWG22)	1 motor wiring(AWG22)
S5G harness	MC-S5G	1 signal wiring(AWG22)	1 power supply wiring and motor wiring(AWG18)	
5M harness	MC-5M	1 signal wiring(AWG22)	1 power supply wiring and motor wiring(AWG22)	

MEMO