

Motorized Stage

Rotary Stage $\phi 39/\phi 59/\square 40/\square 60$:KRW04/KRW06

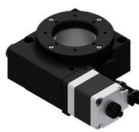
KRW04360T-LC



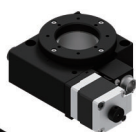
KRW04360M-LC



KRW06360T-LC



KRW06360M-LC



KRW06360T-LC-Z

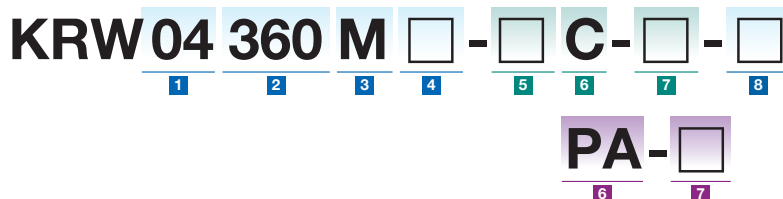


RoHS

Freely
customize
the motor

Vertical specifications(Z) are not included.

*All image is for illustrative purposes only.



Cable P.1-207~
Electrical specification P.C-055~

1 Stage size

04	$\phi 39\text{mm}(\square 40\text{mm})$
06	$\phi 59\text{mm}(\square 60\text{mm})$

*Square specification size (stage surface shape) in parentheses

2 Travel distance

360	360°
-----	------

3 Connector specifications

T	Pig tail	
M	Panel mount	

4 Stage surface shape

Code	Specification
Blank	Circular
S	Square

5 Motor location specification

Code	Specification
L	L position
R	Opposite hand

6 Motor option

Code	Specification
C	Standard
G	High resolution

8 Mounting

Code	Specification
Blank	Horizon
Z	Vertical

*Z : $\phi 59\text{mm}$ /Compatible only with Standard Motor specification

6 Motor option

Code	Specification
PA	α STEP (AR Series)
ZA	α STEP (AZ Series)
EA	for EtherCAT
UG	Servo motor (MINAS A6)
UA	Servo motor (J4)

7 Cable option (Motor:C・G)

Code	Specification	Cable type
Blank	Cable is not included (Standard)	—
A	2m	D214-2-2E
B	2m One end loose	D214-2-2EK
C	4m	D214-2-4E
D	4m One end loose	D214-2-4EK
E	Only connector (Cable is not included)	—
F	Robot cable 2m	D214-2-2R
G	Robot cable 2m one end loose	D214-2-2RK
H	Robot cable 4m	D214-2-4R
J	Robot cable 4m one end loose	D214-2-4RK

7 Cable option (Motor:PA・ZA・EA・UG・UA)

Code	Specification
Blank	Sensor cable 2m One end loose wire
3	Sensor cable 3m One end loose wire
5	Sensor cable 5m One end loose wire
3A	Driver (Amplifier)/Cable set 3m
5A	Driver (Amplifier)/Cable set 5m

Driver (Amplifier)・Cable option combination

Code	Driver (Amplifier)・Cable	Blank	3	5	3A		5A	
	Motor	PA/ZA/EA/UG/UA			PA/ZA	EA/UG/UA	PA/ZA	EA/UG/UA
Cable	Sensor	2m	3m	5m	3m		5m	
	Motor	Not included			3m		5m	
	Encoder				—	3m	—	5m
Driver (Amplifier)		Not included			Included			

Selection Example

Model	Stage size 06: $\phi 59\text{mm}$	+	Connector specifications M: Panel mount	+	Stage surface shape Blank: Circular	+	Motor location specification L: L position	+	Motor option C: Standard	+	Cable option B: 2m One end loose
-------	--------------------------------------	---	--	---	--	---	---	---	-----------------------------	---	-------------------------------------

▷ KRW06360M-LC-B

Motorized Rotary Stage

X

XY

Z

Horizontal
Z

XYZ

Goniometer

Rotary

Unit

Controller

Ball
Screw

Worm
Gear

Direct
Drive

$\phi 39$

$\phi 40$

$\phi 59$

$\phi 60$

$\phi 75$

$\phi 100$

$\phi 180$

Other

Specification

SPEC							
Model	KRW04360T-LC	KRW04360M-LC	KRW06360T-LC	KRW06360M-LC	KRW06360T-LC-Z	KRW06360M-LC-Z	
Opposite hand	KRW04360T-RC	KRW04360M-RC	KRW06360T-RC	KRW06360M-RC	KRW06360T-RC-Z	KRW06360M-RC-Z	
Mechanical specification	Travel distance			360°			
	Stage size(*1)	φ39mm (40×40mm)		φ59mm (60×60mm)			
	Connector type	Pig tail	Panel mount	Pig tail	Panel mount	Pig tail	Panel mount
	Travel mechanism (Reduction ratio)	Worm gear(1/120)		Worm gear(1/180)			
	Guide	Deep groove ball bearing					
Accuracy specification	Main materials-Finishing	Aluminum—Black almite finishing					
	Weight	0.42kg	0.39kg	0.62kg	0.59kg	0.72kg	0.69kg
	Resolution/Pulse	0.006°		0.004°			
	MAX speed	30°/sec		20°/sec			
	Positioning accuracy			0.05°			
	Repeatability positioning accuracy			±0.01°			
	Load capacity	3kgf [29.4N]				1kgf [9.8N]	
	Moment stiffness	0.74"/N・cm				0.2"/N・cm	
	Lost motion			0.05°			
	Backlash	0.1°		0.05°			
Sensor	Parallelism			50μm			
	Eccentricity			5μm			
	Runout			30μm			
	Limit sensor			—			
	Origin sensor			有			
	Slit origin sensor			—			
Provided screw (Hexagon-headed bolt)		3 of M3—30		3 of M4—30		4 of M4—6	

* Might be changed specification due to motors.

*1 The figure in parenthesis is the stage surface size when the Stage surface shape option: square (S) is selected.

Resolution・MAX speed・Weight

Motor code		C	G
Specification		Standard	High resolution
Motor model *1		C005C-90215P-1	PK523HPMB-C1
Step angle		0.72°	0.36°
Resolution/Pulse	KRW04	0.006°	0.003°
	KRW06	0.004°	0.002°
MAX speed	KRW04	30°/sec	
	KRW06	20°/sec	
Weight	KRW04360T (Pig tail)	0.42kg	
	KRW04360M (Panel mount)	0.39kg	
	KRW06360T (Pig tail)	0.62kg	
	KRW06360M (Panel mount)	0.59kg	
	KRW06360T-Z (Pig tail)	0.72kg	—
	KRW06360M-Z (Panel mount)	0.69kg	—

Motor code		PA	ZA	EA	UG	UA
Specification		αSTEP (AR)	αSTEP (AZ)	for EtherCAT	MINAS A6	J4
Motor model ※1		ARM24SAK	AZM24AK	STM28W100A	MSMF5AZL1A2	HG-KR053
Resolution/Pulse	KRW04	0.003° (1000P/R setting)			23 Bit encoder (8388608P/R) ※2	22 Bit encoder (4194304P/R) ※3
	KRW06	0.002° (1000P/R setting)				
MAX speed	KRW04	30°/sec				
	KRW06	20°/sec				
Weight	KRW04360T (Pig tail)	0.46kg	0.46kg	0.43kg	0.63kg	0.65kg
	KRW04360M (Panel mount)	0.43kg	0.43kg	0.40kg	0.60kg	0.62kg
	KRW06360T (Pig tail)	0.66kg	0.66kg	0.63kg	0.83kg	0.85kg
	KRW06360M (Panel mount)	0.63kg	0.63kg	0.60kg	0.80kg	0.82kg

*1 Model is our own management model.

*2 Optional encoder cable is for incremental system.

*3 When constructing an absolute system, it is necessary to install a battery in the amplifier.

Motorized Rotary Stage

X

XY

Z

Horizontal
Z

XYZ

Goniometer

Rotary

Unit

Controller

Ball
ScrewWorm
GearDirect
Drive

φ39

φ40

φ59

φ60

φ75

φ100

φ180

Other

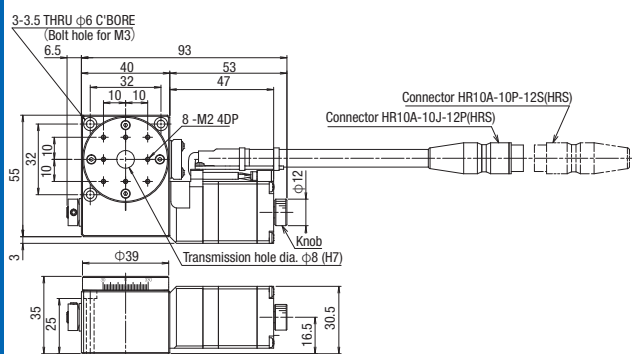
C
048

Motorized Stage

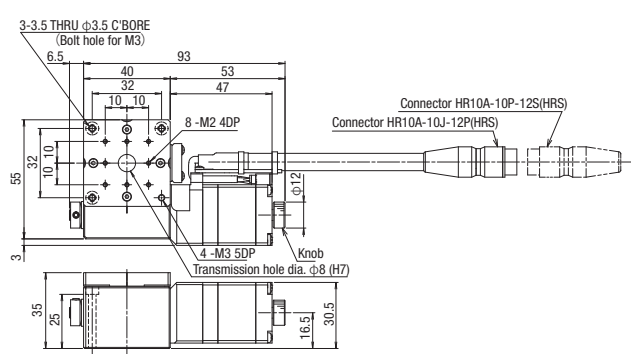
Rotary Stage $\phi 39/\phi 59/\square 40/\square 60$: KRW04/KRW06

Dimensions

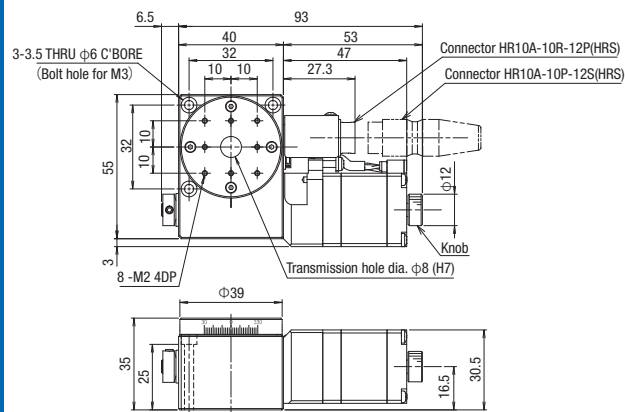
KRW04360T-LC



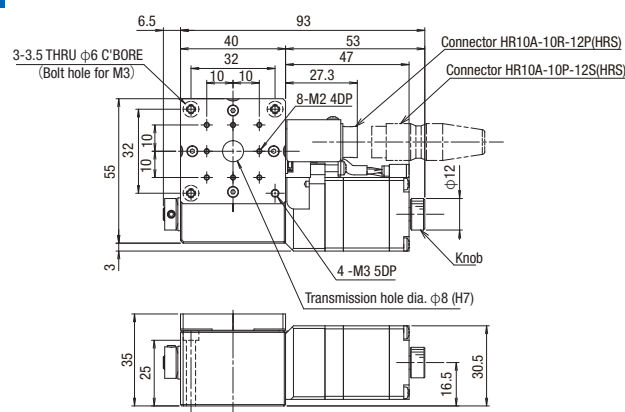
KRW04360TS-LC



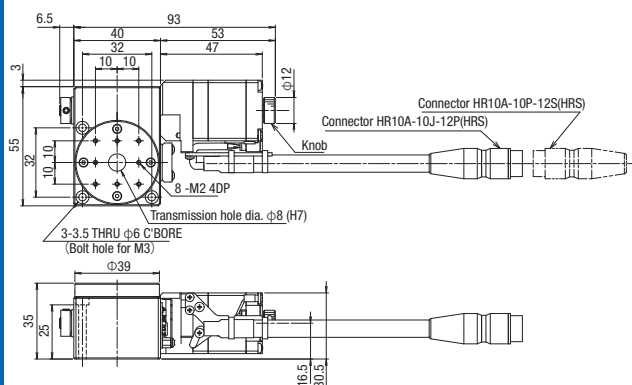
KRW04360M-LC



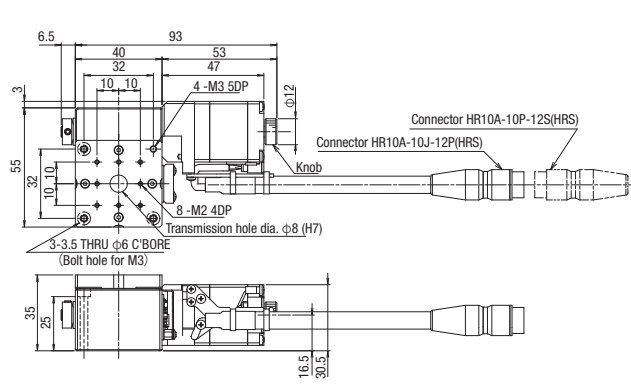
KRW04360MS-LC



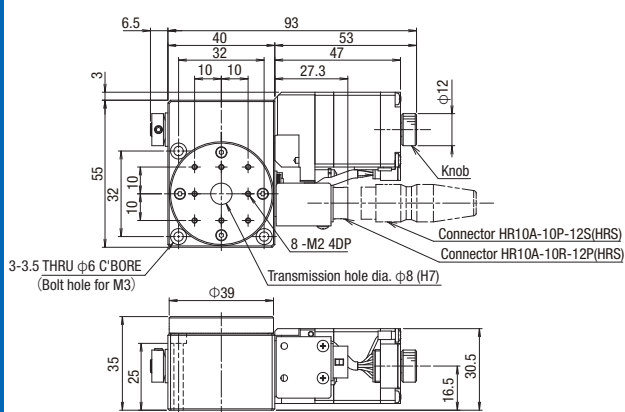
KRW04360T-RC



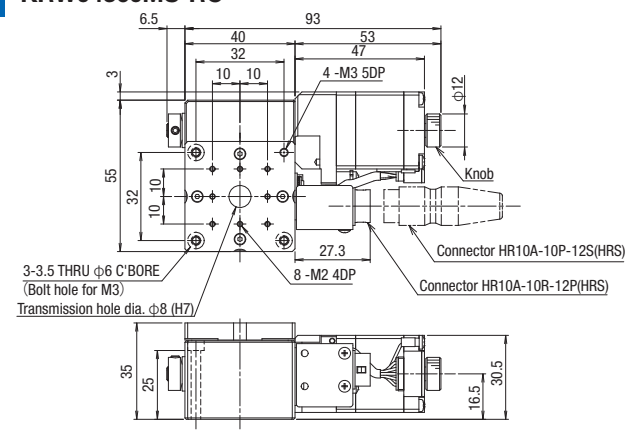
KRW04360TS-RC



KRW04360M-RC



KRW04360MS-RC



Motorized Rotary Stage

X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Unit

Controller

Ball Screw

Worm Gear

Direct Drive

$\phi 39$

$\phi 40$

$\phi 59$

$\phi 60$

$\phi 75$

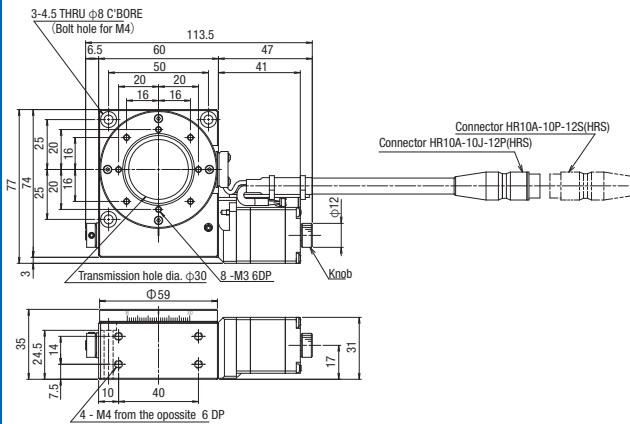
$\phi 100$

$\phi 180$

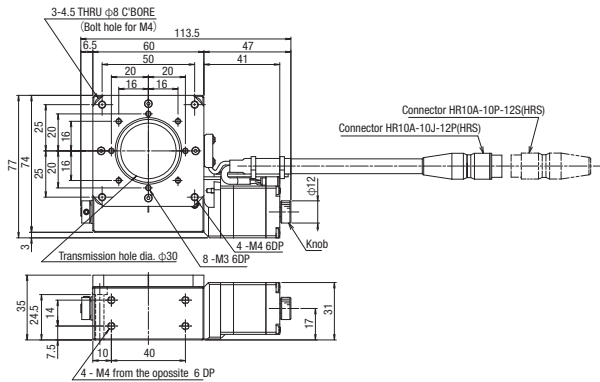
Other

Dimensions

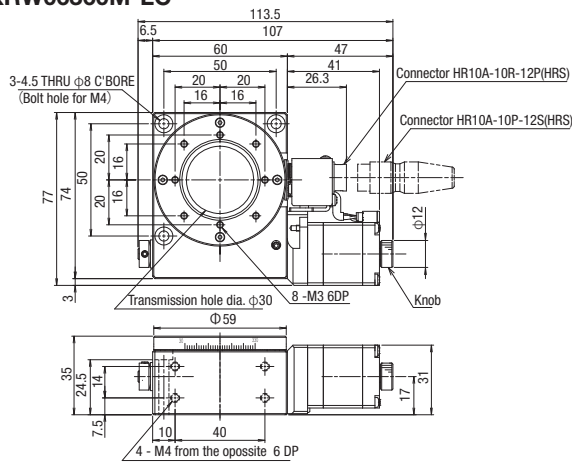
KRW06360T-LC



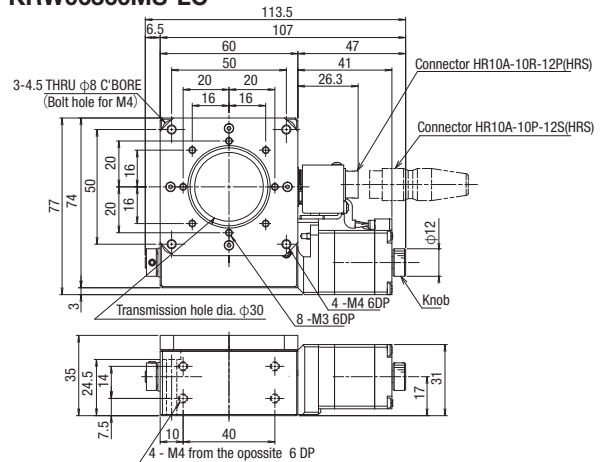
KRW06360TS-LC



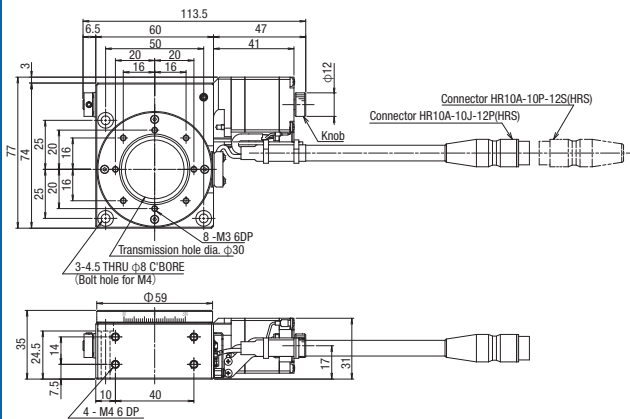
KRW06360M-LC



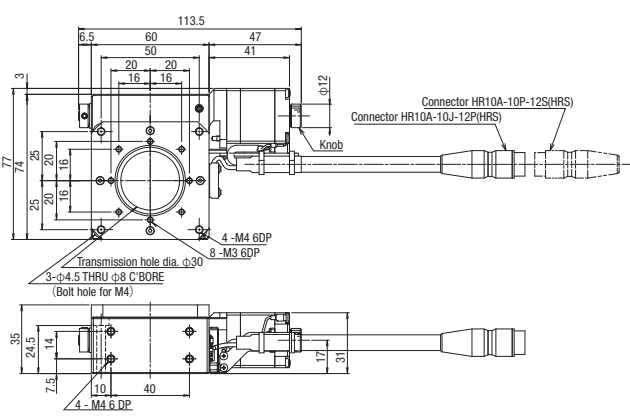
KRW06360MS-LC



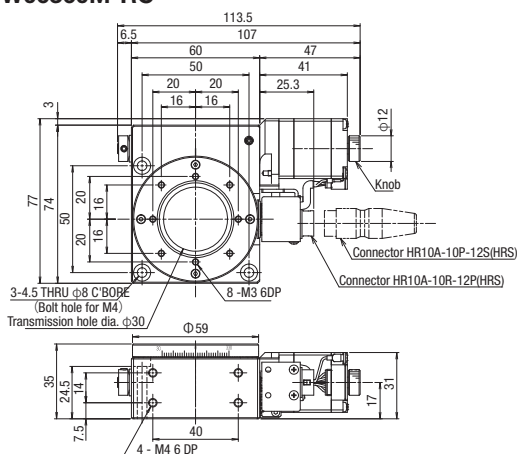
KRW06360T-RC



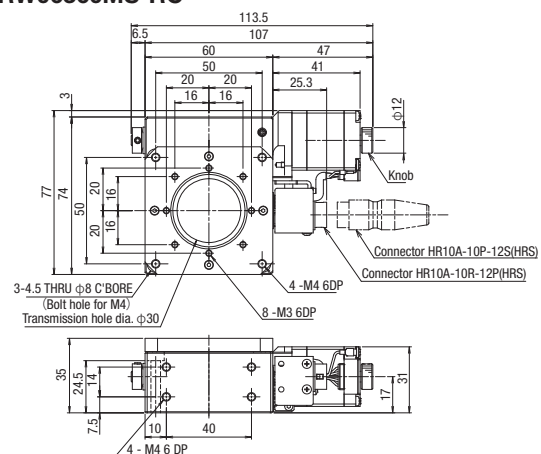
KRW06360TS-RC



KRW06360M-RC



KRW06360MS-RC



Motorized Rotary Stage

X

XY

Z

Horizontal
Z

XYZ

Goniometer

Rotary

Unit

Controller

Ball
Screw

Worm
Gear

Direct
Drive

$\phi 39$

$\phi 40$

$\phi 59$

$\phi 60$

$\phi 75$

$\phi 100$

$\phi 180$

Other

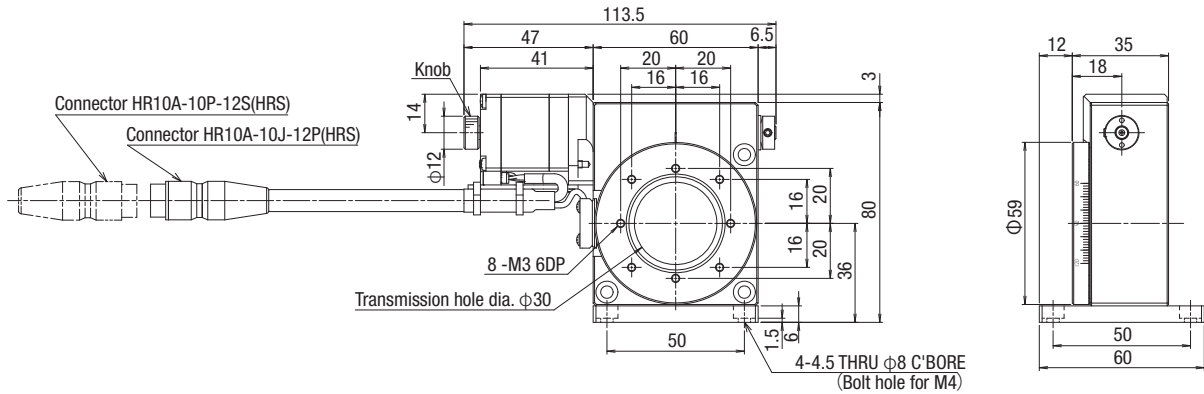
C
050

Motorized Stage

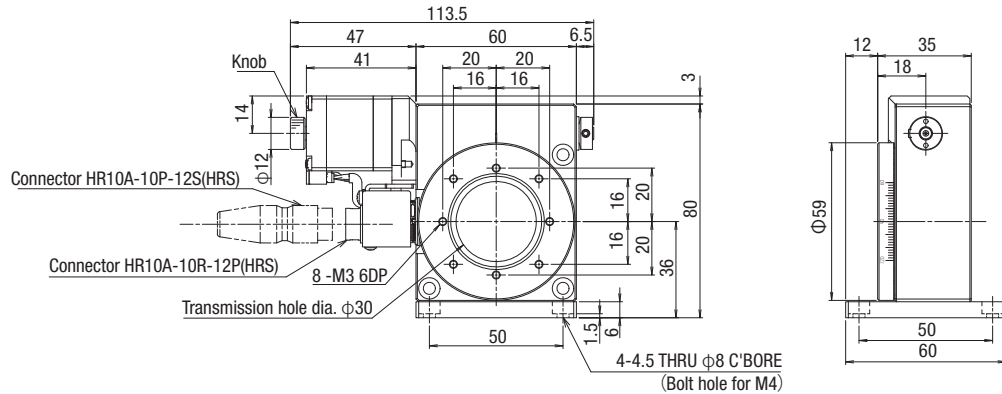
Rotary Stage $\phi 39/\phi 59/\square 40/\square 60$: KRW04/KRW06

Dimensions

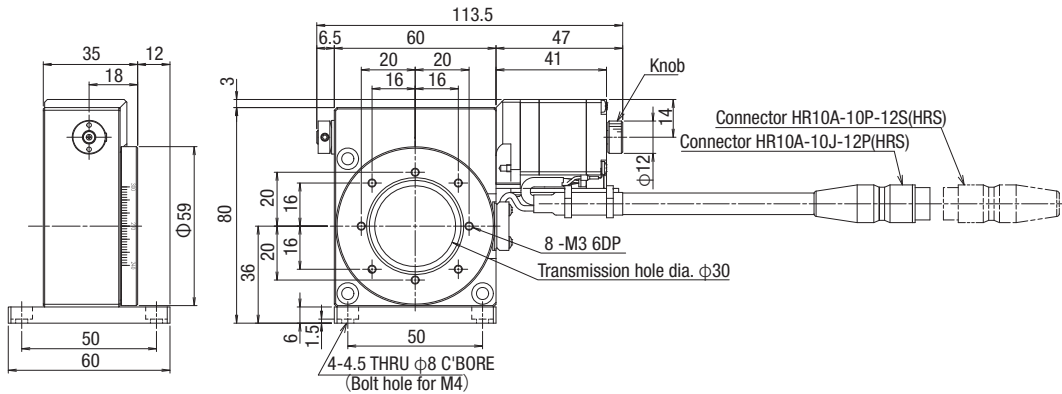
KRW06360T-LC-Z



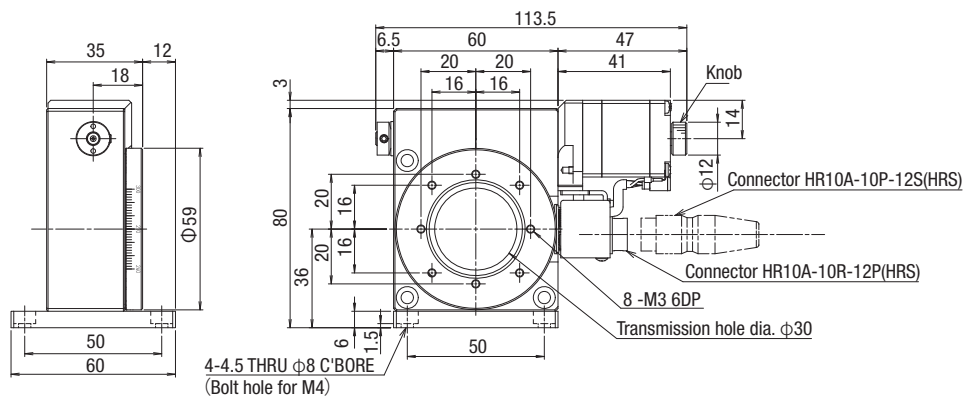
KRW06360M-LC-Z



KRW06360T-RC-Z



KRW06360M-RC-Z



Motorized Rotary Stage

X

XY

Z

Horizontal
Z

XYZ

Goniometer

Rotary

Unit

Controller

Ball
Screw

Worm
Gear

Direct
Drive

$\phi 39$

$\phi 40$

$\phi 59$

$\phi 60$

$\phi 75$

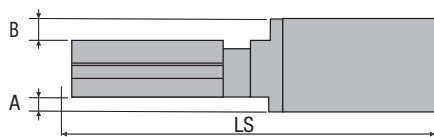
$\phi 100$

$\phi 180$

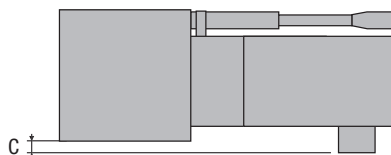
Other

Dimensions

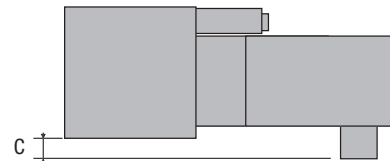
Side view



Top view :Connector :T(Pigtail)



Top view :Connector :M(Panel Mount)



C Standard motor

Motor model C005C-90215P-1

G High resolution

Motor model PK523HPMB-C1

Model	Stage size	Motor	Motor size	A(mm)	B(mm)	C(mm)	LS(mm)
KRW04360*-C	φ39/□40	C	□28	—	—	3	99.5
KRW04360*-G		G					
KRW06360*-C	φ59/□60	C	□28	—	—	3	113.5
KRW06360*-G		G					

PA αSTEP(AR Series)

Motor model ARM24SAK

ZA αSTEP(AZ Series)

Motor model AZM24AK

Model	Stage size	Motor	Motor size	A(mm)	B(mm)	C(mm)	LS(mm)
KRW04360*-PA	φ39/□40	PA	□28	—	—	8.5	112.5
KRW04360*-ZA		ZA				13	122
KRW06360*-PA	φ59/□60	PA	□28	—	—	8.5	126.5
KRW06360*-ZA		ZA				13	136

EA Motor for EtherCAT

Motor model STM28W100A

Model	Stage size	Motor	Motor size	A(mm)	B(mm)	C(mm)	LS(mm)
KRW04360*-EA	φ39/□40	EA	□28	—	—	8.9	127.8
KRW06360*-EA	φ59/□60						141.8

UG Servo motor MINAS A6 (Panasonic)

Motor model MSMF5AZL1A2

UA Servo motor J4 (Mitsubishi Electric corporation)

Motor model HG-KR053

Model	Stage size	Motor	Motor size	A(mm)	B(mm)	C(mm)	LS(mm)
KRW04360*-UG	φ39/□40	UG	□38	2.5	0.5	21	154.5
KRW04360*-UA		UA	□40	4.2	2	17.8	148.9
KRW06360*-UG	φ59/□60	UG	□38	2	1	21	169
KRW06360*-UA		UA	□40	3.7	2.5	17.8	163.4

X

XY

Z

Horizontal
Z

XYZ

Goniometer

Rotary

Unit

Controller

Ball
Screw

Worm
Gear

Direct
Drive

φ39

φ40

φ59

φ60

φ75

φ100

φ180

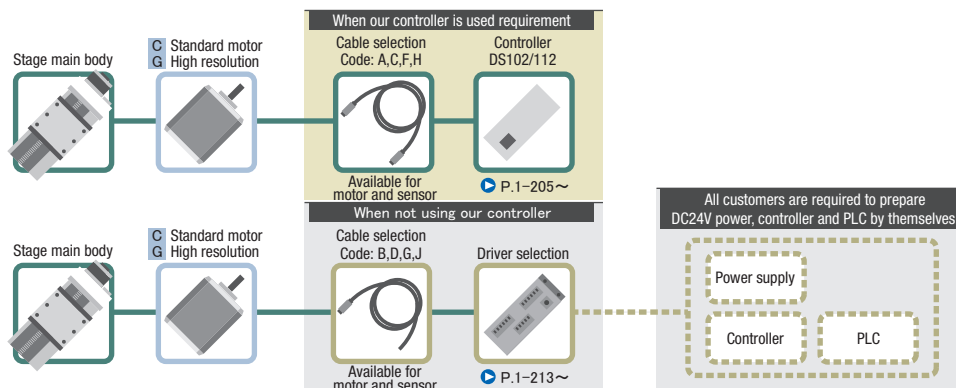
Other

C
052

Rotary Stage $\phi 39/\phi 59/\square 40/\square 60$:KRW04/KRW06

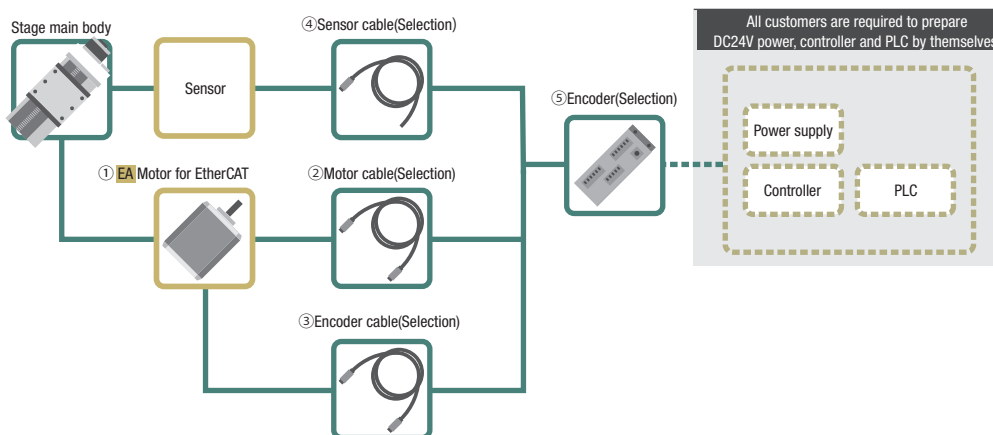
Motor option

- C** Standard motor
Motor model
C005C-90215P-1
- G** High resolution
Motor model
PK523HPMB-C1



Motor option

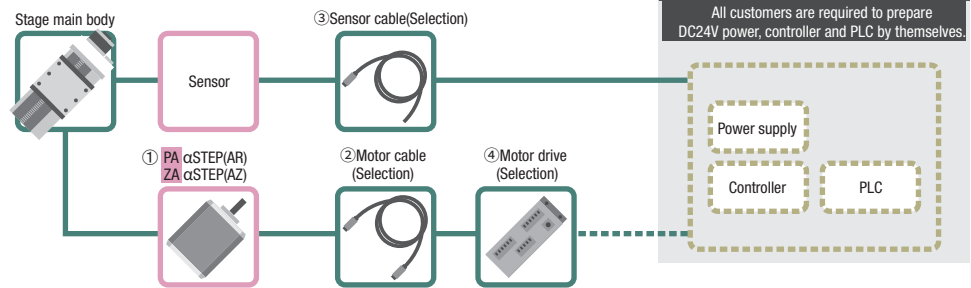
- EA** Motor for EtherCAT
Motor model
STM28W100A



Code	① Motor model	② Motor cable selection	③ Encoder cable selection	④ Sensor cable selection	⑤ Driver selection
EA	STM28W100A	3A : D214-3-3R2 5A : D214-3-5R2 Blank • 3 • 5 : Not included	3A : D214-3-3RE2 5A : D214-3-5RE2 Blank • 3 • 5 : Not included	3A • 3 : HR10AP-S-SB-6-3 5A • 5 : HR10AP-S-SB-6-5 Blank : HR10AP-S-SB-6-2	3A • 5A : DS1000A-EC-28 Blank • 3 • 5 : Not included

Motor option

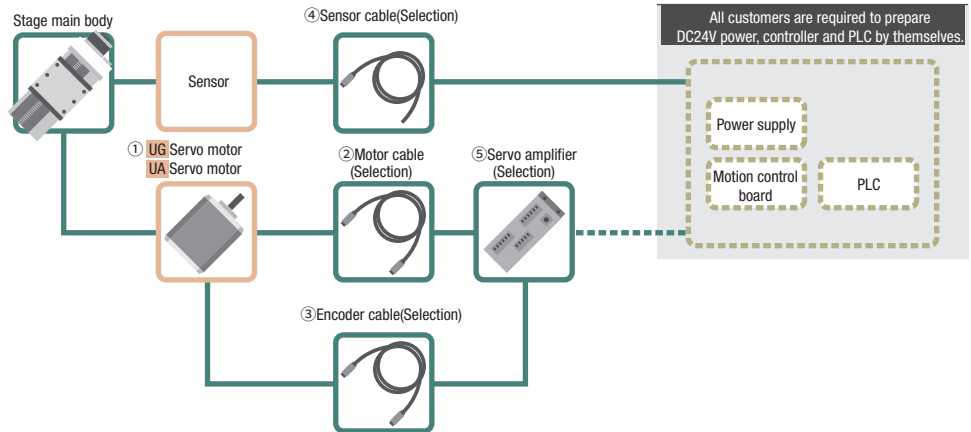
PA	αSTEP (AR Series) Motor model ARM24SAK
ZA	αSTEP (AZ Series) Motor model AZM24AK



Code	①Motor model	②Motor cable selection	③Sensor cable selection	④Driver selection
PA	ARM24SAK	3A : CC030VA2R2 5A : CC050VA2R2 Blank • 3 • 5 : Not included	3A • 3 : HR10AP-S-SB-6-3 5A • 5 : HR10AP-S-SB-6-5 Blank : HR10AP-S-SB-6-2	3A • 5A : ARD-K Blank • 3 • 5 : Not included
ZA	AZM24AK	3A : CC030VZ2R2 5A : CC050VZ2R2 Blank • 3 • 5 : Not included		3A • 5A : AZD-K Blank • 3 • 5 : Not included

Motor option

UG	Servo motor Motor model MSMF5AZL1A2
UA	Servo motor Motor model HG-KR053



Code	①Motor model	②Motor cable selection	③Encoder cable selection	④Sensor cable selection	⑤AC servo amplifier selection
UG	MSMF5AZL1A2	3A : MFMCA0030EED 5A : MFMCA0050EED Blank • 3 • 5 : Not included	3A : MFECA0030EAD 5A : MFECA0050EAD Blank • 3 • 5 : Not included	3A • 3 : HR10AP-S-SB-6-3 5A • 5 : HR10AP-S-SB-6-5 Blank : HR10AP-S-SB-6-2	3A • 5A : MADLT05SF Blank • 3 • 5 : Not included
UA	HG-KR053	3A : SVPM-J3HF1-B-3-02S 5A : SVPM-J3HF1-B-5-02S Blank • 3 • 5 : Not included	3A : SVEM-J3HF1-B-3 5A : SVEM-J3HF1-B-5 Blank • 3 • 5 : Not included		3A • 5A : MR-J4-10A Blank • 3 • 5 : Not included

X

XY

Z

Horizontal
Z

XYZ

Goniometer

Rotary

Unit

Controller

Ball
Screw

Worm
Gear

Direct
Drive

φ39

φ40

φ59

φ60

φ75

φ100

φ180

Other

C
054

Electrical specification: KRW04/KRW06

Motor • Electrical specification(5 phase stepping motor/αSTEP)

Motor code		C	G	PA	ZA
Model		KRW04/KRW06			
Motor Specification (*1)	Type	5 phase stepping motor (0.75A/Phase)		αSTEP (AR Series)	αSTEP (AZ Series)
	Feature	Standard		Small step-out, incremental	Small step-out, absolute
	Model (*2)	C005C-90215P-1		ARM24SAK	AZM24AK
	Manufacturer	Oriental Motor Co., Ltd.			
	Step angle	0.72°		0.36°(1000P/R時)	
	Mass	0.11kg		0.15kg	0.15kg
	Motor size	□size		□28mm	
	L size	37mm		45mm	54.5mm
	Max. Holding Torque	0.048N • m		0.055N • m	0.095N • m
	Driver model	CVD507-K-A9		ARD-K	AZD-K
Input power (Voltage • frequency)		DC24V±10% 1.4A(MAX)		DC24V±10%	DC24V±5%
Connector	Pigtail	HR10A-10J-12P(73) (Hirose Electric Co., Ltd.)		Motor:43025-1000 (MOLEX) or 1-794617-0(TE Connectivity) Sensor:HR10A-7J-6P(73)(HRS)	Motor:DF62B-13EP-2.2C(HRS) Sensor:HR10A-7J-6P(73)(HRS)
	Panel Mount	HR10A-10R-12P(73) (Hirose Electric Co., Ltd.)		Motor:43025-1000 (MOLEX) or 1-794617-0(TE Connectivity) Sensor:HR10A-7R-6P(73)(HRS)	Motor:DF62B-13EP-2.2C(HRS) Sensor:HR10A-7R-6P(73)(HRS)
	Receiving connector	HR10A-10P-12S(73) (Hirose Electric Co., Ltd.)		Motor:43020-1000 (MOLEX) or 1-794615-0(TE Connectivity) Sensor:HR10A-7P-6S(73) (HRS)	Motor:DF62C-13S-2.2C(HRS) Sensor:HR10A-7P-6S(73)(HRS)
Sensor board	Limit sensor	—			
	Origin sensor	Available			
	Slit origin sensor	—			
	Sensor model	Photo microsensor EE-SX4320 (Omron Co., Ltd.)			
	Power-supply voltage	DC5~24V±5%			
	Current consumption	Total 35mA or less			
	Control output	NPN open collector output DC30V 10mA or less			
	Output logic	On detection (light shield condition): Output transistor OFF (Non-continuity)			

*1 See page P.1-213~ for details of single motor specification.

*2 Model is our own management model.

Pin allocation • Connection diagram

C • G

Available for motor and sensor

[Pin allocation (common)]

Pigtail : HR10A-10J-12P(73) (HRS)

Panel Mount : HR10A-10R-12P(73) (HRS)

[Pin allocation (common)]

1	Motor lead (Blue)	Blue
2	Motor lead (Red)	Red
3	Motor lead (Orange)	Orange
4	Motor lead (Green)	Green
5	Motor lead (Black)	Black
6	Not used (or CWLS)	
7	Not used (or CCWLS)	
8	N.C.	
9	Power input V+	
10	ORG output	
11	Power input GND	
12	F.G.	

5-phase stepper motor

Sensor board

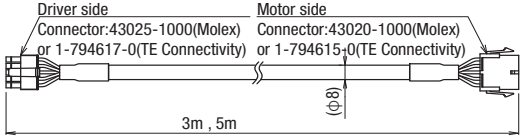
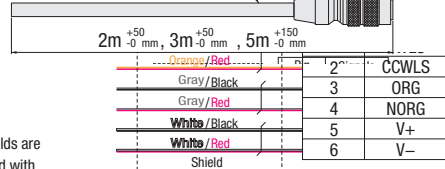
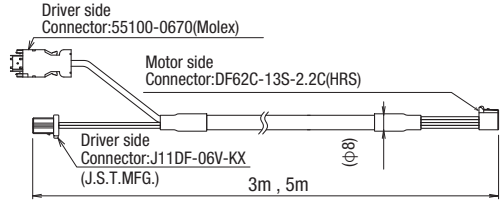
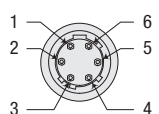
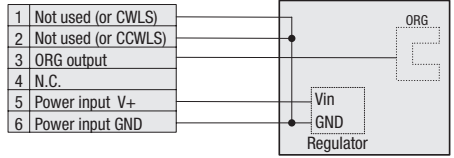
ORG

Vin

GND

Regulator

6pin,7pin are connected to GND inside the sensor board. If 6pin,7pin are not used, it is recommended to insulate them or connect them to GND.

Motor Code	Motor • Encoder	Sensor (common)
PA	[Receiver cable] Model:CC030VA2R2(3m)/CC050VA2R2(5m) *Flexible cable 	[Receiver cable] Model:HR10AP-S-SB-6-□ (□ is the length) *for fixing Sensor side Connector (Female): HR10A-7P-6S (73) (HRS) ULAWM20276 AWG28 3P Black  *The shields are connected with the connector shell.
ZA	[Receiver cable] Model:CC030VZ2R2(3m)/CC050VZ2R2(5m) *Flexible cable 	[Pin allocation (common)] Pigtail:HR10A-7J-6P(73) (HRS) Panel Mount:HR10A-7R-6P(73) (HRS)  [結線図]  1pin,2pin are connected to GND inside the sensor board. If 1pin,2pin are not used, it is recommended to insulate them or connect them to GND.

X

XY

Z

Horizontal
Z

XYZ

Goniometer

Rotary

Unit

Controller

Ball
ScrewWorm
GearDirect
Drive

φ39

φ40

φ59

φ60

φ75

φ100

φ180

Other

C
056

Motor • Electrical specification(Motor for EtherCAT/Servo motor)

Motor code		EA	UG	UA
Motor Specification (※1)	Model		KRW04/KRW06	
	Type	2 phase closed Loop stepping motor	Servo motor	Servo motor
	Feature	Small step-out ,incremental,EtherCAT	High speed	High speed
	Model (*2)	STM28W100A	MSMF5AZL1A2	HG-KR053
	Manufacturer	SURUGA SEIKI	Panasonic	Mitsubishi Electric corporation
	Step angle	0.36°(1000P/R時)	Both absolute and incremental 23 bits encoder (8388608P/R) (*3)	Both absolute and incremental 22 bits encoder (4194304P/R) (*4)
	Mass	0.12kg	0.32kg	0.34kg
	Motor size	□size	□38mm	□40mm
		L size	59.3mm	66.4mm
	Max. Holding Torque	0.085N・m	—	—
Connector	Maximum torque	—	0.48N・m	0.56N・m
	Driver model	DS1000A-EC-28	MADLT05SF	MR-J4-10A
	Input power (Voltage・frequency)	DC24V±10%	Three and Single phase AC200-240V 50/60Hz	Three and Single phase AC200-240V 50/60Hz
	Pigtail	Motor:B06B-ZESK-D (JST) Encoder:SM08B-GHS-TB (JST) Sensor:HR10A-7J-6P(73)(HRS) Driver I/O Connector Housing:PUDP-24V-S Driver I/O Contact:SPUD-002T-P0.5:SPUD-002T-P0.5	Motor: 172167-1 (TE Connectivity) Encoder: 172169-1 (TE Connectivity) Sensor:HR10A-7J-6P(73)(HRS)	Motor: Manufacturer standard Encoder: Manufacturer standard Sensor:HR10A-7J-6P(73) (HRS)
Sensor board	Panel Mount	Motor:B06B-ZESK-D (JST) Encoder:SM08B-GHS-TB (JST) Sensor:HR10A-7R-6P(73)(HRS) Driver I/O Connector Housing:PUDP-24V-S Driver I/O Contact:SPUD-002T-P0.5	Motor: 172167-1 (TE Connectivity) Encoder: 172169-1 (TE Connectivity) Sensor:HR10A-7R-6P(73)(HRS)	Motor: Manufacturer standard Encoder: Manufacturer standard Sensor:HR10A-7R-6P(73)(HRS)
	Receiving connector	Motor:ZER-06V-S (JST) Encoder:GHR-08V-S (JST) Sensor:HR10A-7P-6S(73)(HRS)	Motor: 172159-1 (TE Connectivity) Encoder: 172161-1 (TE Connectivity) Sensor:HR10A-7P-6S(73)(HRS)	Motor:JN4FT04SJ1-R (JST) Encoder: 1674320-1 (TE Connectivity) Sensor:HR10A-7P-6S(73)(HRS)
	Limit sensor	—	—	—
	Origin sensor	—	Available	—
Sensor board	Slit origin sensor	—	—	—
	Sensor model	—	Photo microsensor EE-SX4320 (Omron Co., Ltd.)	—
	Power-supply voltage	—	DC5~24V±5%	—
	Current consumption	—	Total 35mA or less	—
	Control output	—	NPN open collector output DC30V 10mA or less	—
	Output logic	—	On detection (light shield condition): Output transistor OFF (Non-continuity)	—

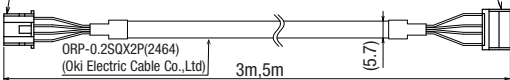
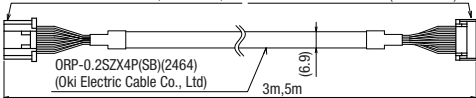
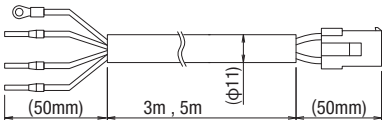
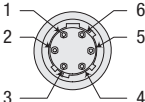
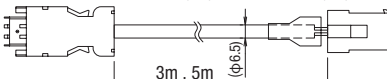
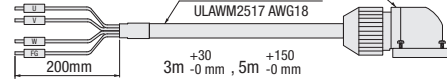
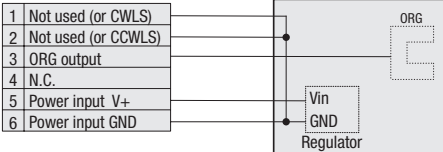
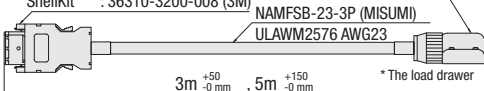
*1 See page P.1-213~ for details of single motor specification.

*2 Model is our own management model.

*3 Optional encoder cable is for incremental system.

*4 When constructing an absolute system, it is necessary to install a battery in the amplifier.

Pin allocation • Connection diagram

Motor Code		Motor • Encoder	Sensor (common)																		
EA	Motor	【Receiver cable】Model:D214-3-3R2(3m)/D214-3-5R2(5m) *Flexible cable Driver side Connector:PAP-04V-S(J.S.T.MFG.) Contact:SPHD-002T-P0.5(J.S.T.MFG.) Motor side Connector:ZER-06V-S(J.S.T.MFG.) Contact:SZE-002T-P0.3(J.S.T.MFG.) 	【Receiver cable】Model:HR10AP-S-SB-6-□ (□ is the length) *for fixing Sensor side Connector (Female): HR10A-7P-6S (73) (HRS) ULAWM20276 AWG28 3P Black  <table><tr><td>Orange/Red</td><td>2</td><td>CCWLS</td></tr><tr><td>Gray/Black</td><td>3</td><td>ORG</td></tr><tr><td>Gray/Red</td><td>4</td><td>NORG</td></tr><tr><td>White/Black</td><td>5</td><td>V+</td></tr><tr><td>White/Red</td><td>6</td><td>V-</td></tr><tr><td>Shield</td><td></td><td></td></tr></table>	Orange/Red	2	CCWLS	Gray/Black	3	ORG	Gray/Red	4	NORG	White/Black	5	V+	White/Red	6	V-	Shield		
	Orange/Red	2	CCWLS																		
Gray/Black	3	ORG																			
Gray/Red	4	NORG																			
White/Black	5	V+																			
White/Red	6	V-																			
Shield																					
Encoder	【Receiver cable】Model:D214-3-3RE2(3m)/D214-3-5RE2(5m) *Flexible cable Driver side Connector:PUDP-10V-S(J.S.T.MFG.) Contact:SPUD-002T-P0.5(J.S.T.MFG.) Motor side Connector:GHR-08V-S(J.S.T.MFG.) Contact:SSHL-002T-P0.2(J.S.T.MFG.) 																				
UG	Motor	【Receiver cable】Model:MFMCA0030EED(3m)/MFMCA0050EED(5m) *Flexible cable 	【Pin allocation (common)】 Pigtail:HR10A-7J-6P(73) (HRS) Panel Mount:HR10A-7R-6P(73) (HRS) 																		
	Encoder	【Receiver cable】Model:MFECA0030EAD(3m)/MFECA0050EAD(5m) *for fixing 																			
UA	Motor	【Receiver cable】Model:SVPJ-J3HF1-B-□-02S *Flexible cable Loose wire on the servo amplifier side Motor side Connector: JN4FT04SJ1-R (JAE) NA3CTR-18-4(MISUMI) ULAWM2517 AWG18 	【Connection diagram】 																		
	Encoder	【Receiver cable】Model:SVEM-J3HF1-B-□ *Flexible cable Motor (encoder)side Connector:1674320-1 (TE Connectivity) Servo amplifier side Receptacle : 36210-0100FD (3M) ShellKit : 36310-3200-008 (3M) NAMFSB-23-3P (MISUMI) ULAWM2576 AWG23 	1pin,2pin are connected to GND inside the sensor board. If 1pin,2pin are not used, it is recommended to insulate them or connect them to GND.																		

Electrical specification: KRW04/KRW06

Timing chart

	Origin detected scale position [deg.]
KRW04360T(M)-L	0 (The end face of the origin: CCW side edge of shield plate) 8 (Opposite end face : CW side edge of shield plate)
KRW06360T(M)-L	0 (The end face of the origin: CCW side edge of shield plate) 8 (Opposite end face : CW side edge of shield plate)

*Return to origin means that is performed return to origin type 4 using DS102/DS112 series. (DS102/DS112 are dedicated products for 5-phase motors.)

*The coordinate is a basis of design value. Dimension error may occur about plus or minus 0.5 deg.

	Origin detected scale position [deg.]
KRW04360T(M)-R	0 (The end face of the origin: CW side edge of shield plate) 8 (Opposite end face : CCW side edge of shield plate)
KRW06360T(M)-R	0 (The end face of the origin: CW side edge of shield plate) 8 (Opposite end face : CCW side edge of shield plate)

*Return to origin means that is performed return to origin type 3 using DS102/DS112 series. (DS102/DS112 are dedicated products for 5-phase motors.)

*The coordinate is a basis of design value. Dimension error may occur about plus or minus 0.5 deg.

Return to origin method

Suruga's motorized stages is different from the wire connection as the number of sensors depending on models. It is necessary to choose type to suit correctly as return to origin operation is divided into same types. Selected wrong type may be operated incorrectly. Choose your best one whatever you need according to be recommended as below.

■ KRW04360/KRW06360 recommended return to origin Return to origin sequence P.1-201~

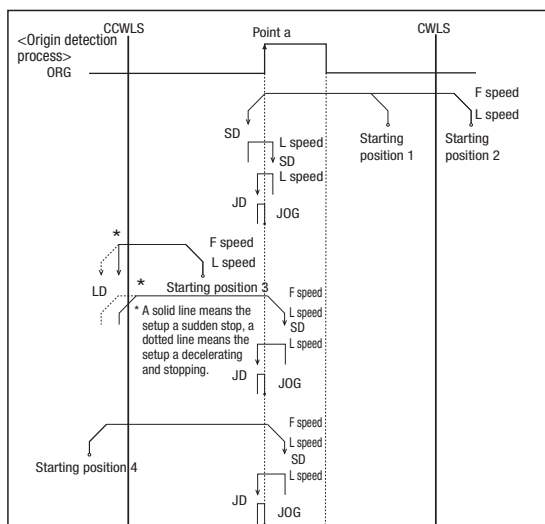
Type 3: Detect in the direction of CCW and perform detected process for CCW edge of ORG signal.

Type 4: Detect in the direction of CW and perform detected process for CW edge of ORG signal.

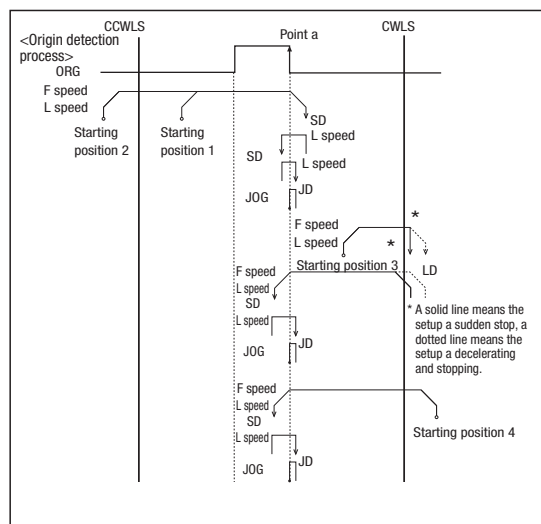
Type 9: After finished Type3, perform detected process for CCW edge of TIMING signal.

Type 10: After finished Type4, perform detected process for CW edge of TIMING signal.

[Type3]



[Type4]



X

XY

Z

Horizontal
Z

XYZ

Goniometer

Rotary

Unit

Controller

Ball
Screw

Worm
Gear

Direct
Drive

φ39

φ40

φ59

φ60

φ75

φ100

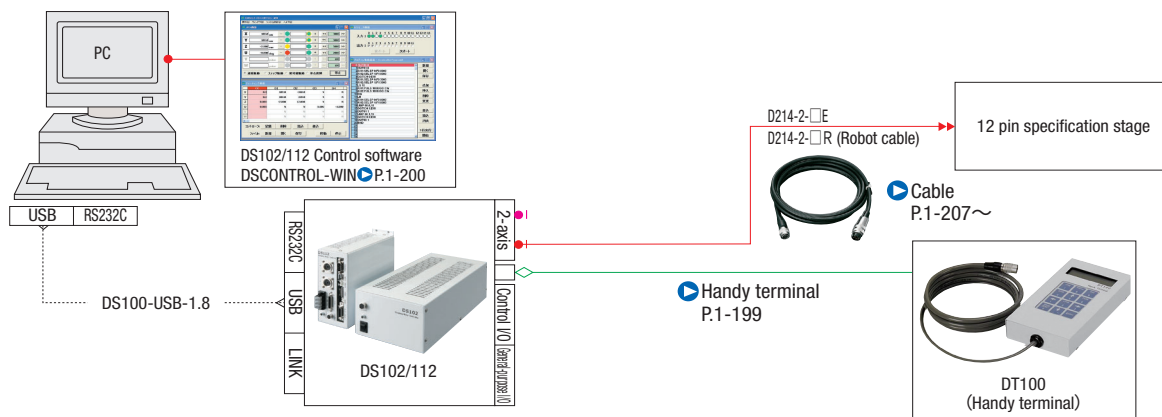
φ180

Other

Connectin example

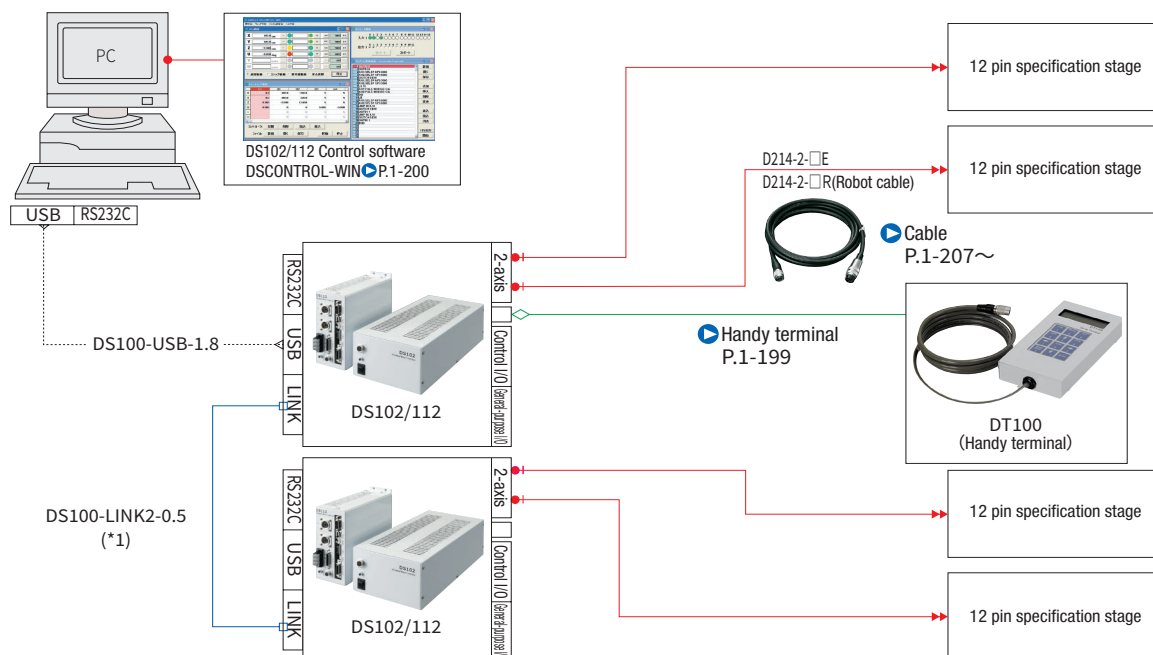
■ Connection example 1 Motorized Stage 1axis: When holding a terminal device (using control software)

*USB cable connection between PC and controller.



■ Connection example 2 Motorized Stage 4axis: When holding a terminal device (using control software)

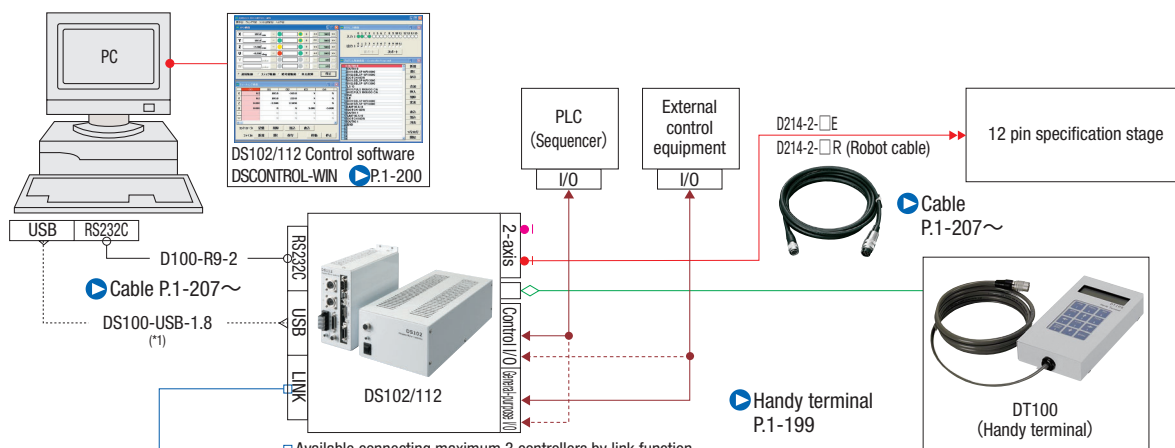
*USB cable connection between PC and controller.



(*1) It is possible to control up to 3 controllers (for a maximum of 6-axis control) with link function.

■ Connection example 3 When controlling from the PLC I/O Unit.

*USB cable connection between PC and controller.



(*1) Using the USB hub, it is controllable in a single PC up to four link networks (24-axis).