



Moving towards tomorrow

MECAPION AC Servo Motor

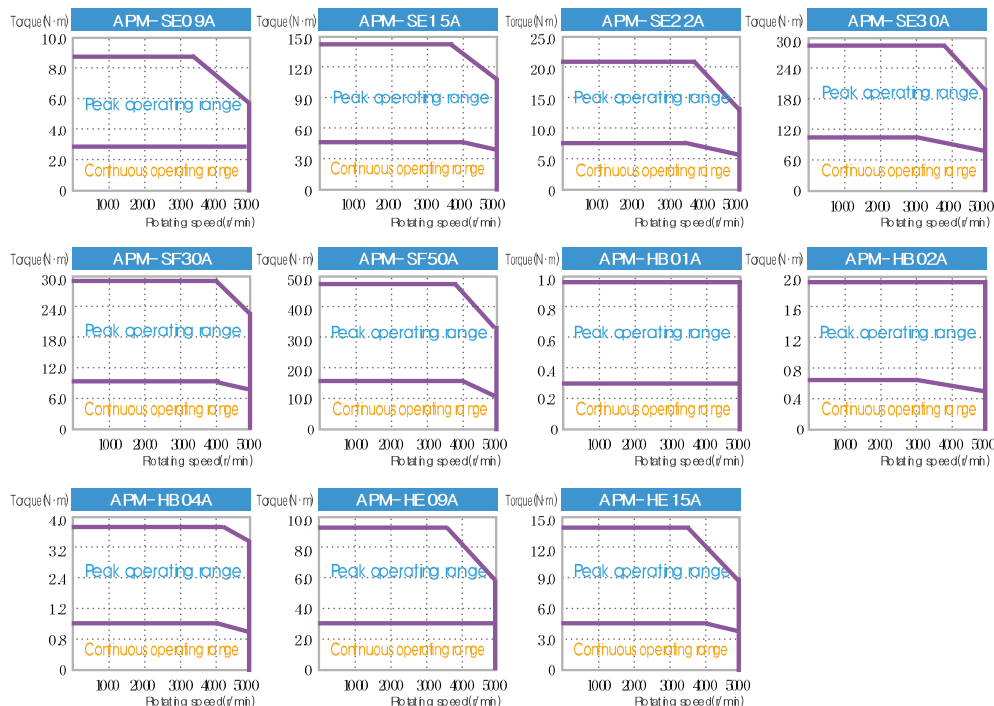
Servo Motor's Characteristics <Rated Speed 3000r/min>

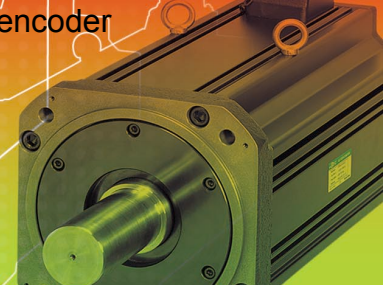
Servo Motor Model (APM-□□□□□)	SE09A	SE15A	SE22A	SE30A	SF30A	SF50A	HB 01A	HB 02A	HB 04A	HE09A	HE15A
Servo Drive Model (APD-□□□□□)	VS10	VS15	VS20	VS35	VS35	VS50	VS01	VS02	VS04	VS10	VS15
Flange Size (□)	□130				□180		□60			□130	
Rated Power [kW]	0.9	1.5	2.2	3.0	3.0	5.0	0.1	0.2	0.4	0.9	1.5
Rated Torque [N·m]	2.86	4.77	7.0	9.55	9.55	15.91	0.318	0.637	1.274	2.86	4.77
	29.2	48.7	71.4	97.4	97.4	162.3	3.25	6.50	13.0	29.2	48.7
Max. Instantaneous torque [N·m]	8.59	14.32	21.01	28.65	28.64	47.74	0.955	1.912	3.822	8.59	14.32
	87.7	146.1	214.3	292.2	292.2	487.0	9.74	19.5	39.0	87.7	146.1
Rated rpm [r/min]	3,000										
Max. rpm [r/min]	5,000										
Moment of inertia [kg·m ² ×10 ⁻⁴]	6.659	11.999	17.339	22.679	30.74	52.13	0.269	0.333	0.461	19.558	22.268
	6.792	12.238	17.685	23.132	31.35	53.16	0.274	0.339	0.470	19.943	22.707
Allowable Load Inertia Ratio	10 times of motor inertia				5 times of motor inertia		10 times of motor inertia			5 times of motor inertia	
Rated Power Rate [kW/S]	12.31	18.98	28.25	40.17	29.66	48.56	3.34	11.98	34.47	4.10	10.01
Speed, Position Transducer	Standard(Notel)	Incremental 3000[P/R]					Incremental 1024 [P/R]			Incremental 2048[P/R]	
	Option	Absolute, 11/13bit Manchester communication					-			-	
Specification & Features	Protective Method	Totally enclosed, Non ventilated IP65(Excluding the shaft-through section and connectors)									
	Rated Time	Continuous									
	Ambient Temp.	Operating Temp. : 0~40[°C] · Storage Temp. : -20~80[°C]									
	Ambient Temp.	Lower than 90[%] (Avoid condensation)									
	Atmosphere	Avoid direct sunlight, no corrosive gas, inflammable gas, oil mist, or dust									
Weight [kg]	Elevation/Vibration 49[m/s ²] (5G)										
	5.5	7.54	9.68	11.78	12.11	17.7	0.89	1.16	1.69	5.82	7.43



Note) Standard Encoder specification is 5[V] Line Driver.

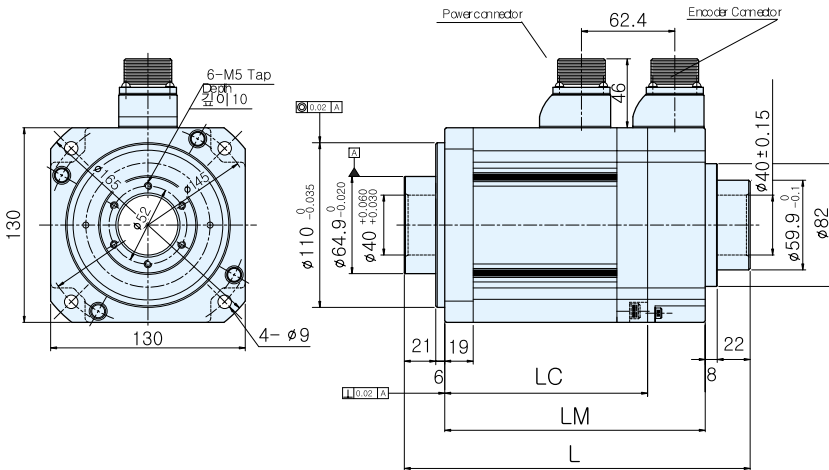
Rotation Speed-Torque's Characteristics





Servo Motor Dimension

HE Serise(Hollow Shaft Type) | **APM-HE09A, APM-HE15A**



Model	External Dimension				Weight (kg)
	L	LM	LC	Hollow shaft Dia	
HE09A	207	150	111.5	40	5.82
HE15A	231	174	135.5	40	7.43

Plug Specification



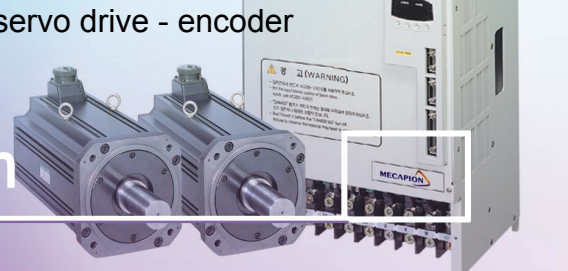
Specification : MS3102A20-4P (Standard)

Pin No.	Phase
A	U
B	V
C	W
D	Ground



Specification : MS3102A20-29P

Pin No.	Phase	Pin No.	Phase
A	A	M	V
B	A̅	N	V̅
C	B	P	W
D	B̅	R	W̅
E	Z	H	+5V
F	Z̅	G	0V
K	U	J	SHIELD
L	U̅		



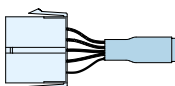
Options(Cable)

Incremental Encoder Cable

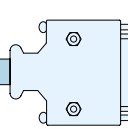
Model (★Note1) : **APC - E□□□AS**

Applicable Motor : All models of APM-SA Series, APM-SB Series, APM-SC Series, APM-HB Series

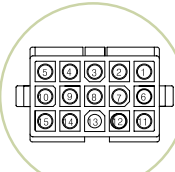
Motor Side Connector



Drive Side Connector(CN2)

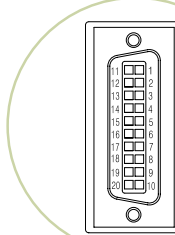


- Motor Side Connector**
CAP (15 Position) : 172163-1(Made by AMP)
SOCKET : 170861-1(Made by AMP)
- Drive Side Connector(CN2)**
CASE : 10320-52A0-008(Made by 3M)
CONNECTOR : 10120-3000VE(Made by 3M)
- Cable**
7P×0.2SQ(AWG24)



AMP 172163-1 CAP
(15 Circuits)

PIN NO.	Encoder signal	PIN NO.	Encoder signal
1	A	9	V
2	\bar{A}	10	\bar{V}
3	B	11	W
4	\bar{B}	12	\bar{W}
5	Z	13	+5V
6	\bar{Z}	14	0V
7	U	15	SHIELD
8	\bar{U}		



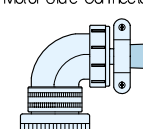
3M 10320-52A0-008
(15 Circuits)

PIN NO.	Encoder signal	PIN NO.	Encoder signal
1	W	11	Z
2	\bar{W}	12	SHIELD
3	V	13	\bar{B}
4	\bar{V}	14	Z
5	U	15	\bar{A}
6	\bar{U}	16	B
7	-	17	-
8	-	18	A
9	0V	19	+5V
10	-	20	-

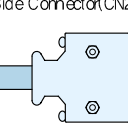
Model (★Note1) : **APC-E□□□BS**

Applicable Motor : All models of APM-SE Series, APM-SF Series, APM-SG Series, APM-HE Series

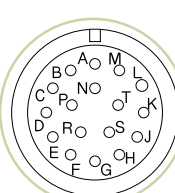
Motor Side Connector



Drive Side Connector(CN2)

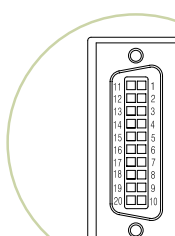


- Motor Side Connector(MSMilitary Standard)**
PLUG : MS3108B(MS3106B) 20-29S
- Drive Side Connector(CN2)**
CASE : 10320-52A0-008(Made by 3M)
CONNECTOR : 10120-3000VE(Made by 3M)
- Cable**
7P×0.2SQ(AWG24)



MS3108B20-29S
(15Circuits)

PIN NO.	Encoder signal	PIN NO.	Encoder signal
A	A	M	V
B	\bar{A}	N	\bar{V}
C	B	P	W
D	\bar{B}	R	\bar{W}
E	Z	H	+5V
F	\bar{Z}	G	0V
K	U	J	SHIELD
L	\bar{U}		



3M 10320-52A0-008
(15 Circuits)

PIN NO.	Encoder signal	PIN NO.	Encoder signal
1	W	11	Z
2	\bar{W}	12	SHIELD
3	V	13	\bar{B}
4	\bar{V}	14	Z
5	U	15	\bar{A}
6	\bar{U}	16	B
7	-	17	-
8	-	18	A
9	0V	19	+5V
10	-	20	-

Note1) □□□ of model indicates the kind and length of cable, and notation is as below

Standard Cable Length (m)	3	5	10	20
Robotic Cable	F03	F05	F10	F20
General Cable	N03	N05	N10	N20



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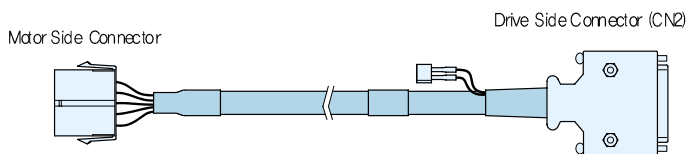
MECAPION AC Servo System

efesotomasyon.com

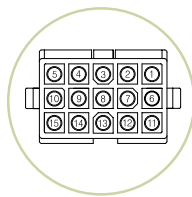
Absolute Encoder Cable

Model (★Note1) : **APC-E□□□AA**

Applicable Motor : All models of APM-SB Series, APM-SC Series

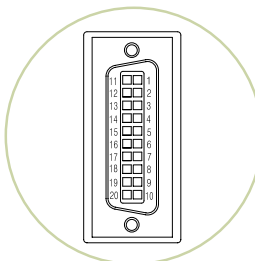


- Motor Side Connector**
CAP (15 Position) : 172163-1(Made by AMP)
SOCKET : 170361-1(Made by AMP)
- Drive Side Connector (CN2)**
CASE : 10320-52A0-008(Made by 3M)
CONNECTOR : 10120-3000VE(Made by 3M)
- Cable**
7P×0.25SQ(AWG24)
- BATTERY CONNECTOR**
5267-02A(Made by MOLEX)



AMP 172163-1 CAP
(15Circuits)

Pin No.	Encoder Phase	Pin No.	Encoder Phase
1	A	9	BATTERY
2	Ā	10	BATTERY OV
3	B	11	RX
4	B̄	12	R̄X
5	Z	13	+5V
6	Z̄	14	OV
7	CLR	15	SHIELD
8	FG		

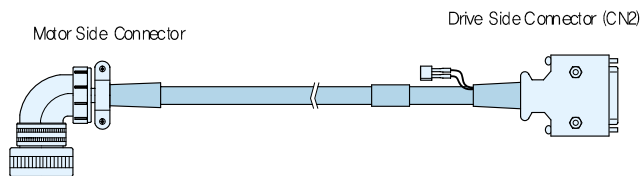


3M 10320-52A0-008
(15 Circuits)

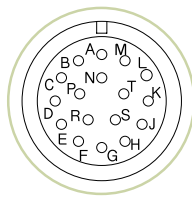
Pin No.	Encoder Phase	Pin No.	Encoder Phase
1	RX	11	Z̄
2	R̄X	12	SHIELD,FG
3	—	13	B̄
4	—	14	Z
5	—	15	Ā
6	—	16	B
7	—	17	—
8	—	18	A
9	OV	19	+5V
10	—	20	CLR

Model (★Note1) : **APC-E□□□BA**

Applicable Motor : All models of APM-SE Series, APM-SF Series, APM-SG Series

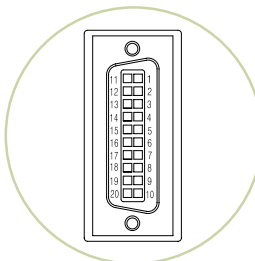


- Motor Side Connector (MS : Military Standard)**
FLUG : MS3108B3106B)20-29S
- Drive Side Connector (CN2)**
CASE : 10320-52A0-008(Made by 3M)
CONNECTOR : 10120-3000VE(Made by 3M)
- Cable**
7P×0.25SQ(AWG24)
- BATTERY CONNECTOR**
5267-02A(Made by MOLEX)



MS3108B20-29S
(15Circuits)

Pin No.	Encoder Phase	Pin No.	Encoder Phase
A	A	M	CLR
B	Ā	N	FG
C	B	P	RX
D	B̄	R	R̄X
E	Z	H	+5V
F	Z̄	G	OV
K	BATTERY	J	SHIELD
L	BATTERY OV		



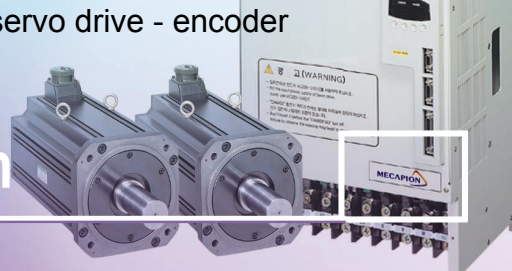
3M 10320-52A0-008
(15 Circuits)

Pin No.	Encoder Phase	Pin No.	Encoder Phase
1	RX	11	Z̄
2	R̄X	12	SHIELD,FG
3	—	13	B̄
4	—	14	Z
5	—	15	Ā
6	—	16	B
7	—	17	—
8	—	18	A
9	OV	19	+5V
10	—	20	CLR

Note1) □□ of model indicates the kind and length of cable, and notation is as below

Standard Cable Length (m)	3	5	10	20
Robotic Cable	F03	F05	F10	F20
General Cable	N03	N05	N10	N20





Options(Cable)

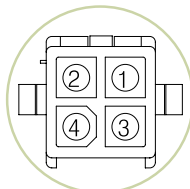
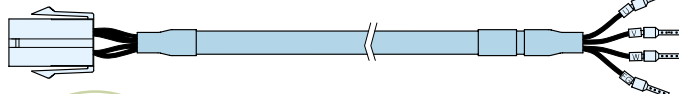
Power cable

Model (★Note1) : APC - P□□□CS

Applicable Motor : All models of APM-SA Series, APM-SB Series, APM-HB Series / APM-SC04A, SC06A, SC03D, SC05D

Motor Side Connector

Drive Side Connector



AMP 172159-1 CAP
(4Circuits)

Pin No.	Phase
1	U
2	V
3	W
4	Ground

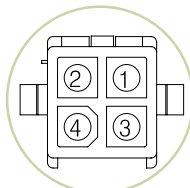
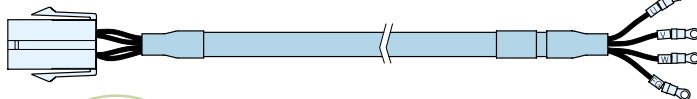
- Motor Side Connector**
CAP (4 Position) : 172159-1(Made by AMP)
SOCKET : 170362-1(Made by AMP)
- Drive Side Connector (U,V,W,FG)**
PIN : UA-F1512(Made by Suh-il Electronic)
Compressor : UA-510A
(Made by Suh-il Electronic)
- Cable**
4C×0.75SQ(AWG20)

Model (★Note1) : APC - P□□□DS

Applicable Motor : APM-SC08A, SC10A, SC06D, SC07D

Motor Side Connector

Drive Side Connector



AMP 172159-1 CAP
(4Circuits)

Pin No.	Phase
1	U
2	V
3	W
4	Ground

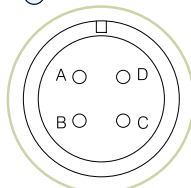
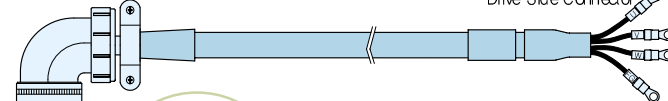
- Motor Side Connector**
CAP (4 Position) : 172159-1(Made by AMP)
SOCKET : 170362-1(Made by AMP)
- Drive Side Connector (U,V,W,FG)**
Connection terminals : 1.25×3(KET GP110012)
- Cable**
4C×0.75SQ(AWG18)

Model (★Note1) : APC - P□□□ES

Applicable Motor : All models of APM-SE Series, APM-HE Series

Motor Side Connector

Drive Side Connector



MS3108B20-4S
(4Circuits)

Pin No.	Phase
A	U
B	V
C	W
D	Ground

- Motor Side Connector(MS: Military Standard)**
PLUG : MS3108B(MS3106B)20-4S
- Drive Side Connector (U,V,W,FG)**
Connection terminals : 2.5×4(KET GP110721)
- Cable**
4C×2.0SQ(AWG14)

Note) For drive side connector of APM-SE03M Series cable, UA-F1512 pin is to be applied

Note1) □□□ of model indicates the kind and length of cable, and notation is as below

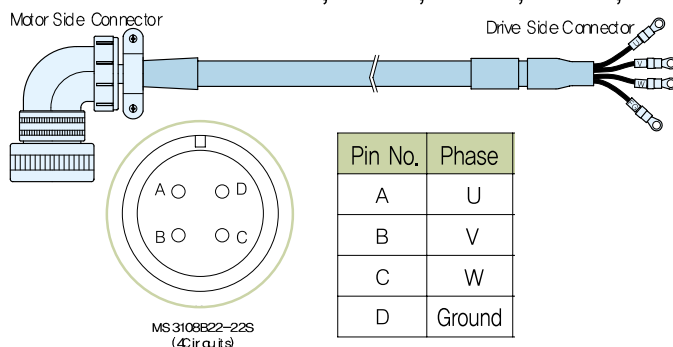
Standard Cable Length (m)	3	5	10	20
Robotic Cable	F03	F05	F10	F20
General Cable	N03	N05	N10	N20



Power cable

Model (★Note1) : **APC-P□□□FS**

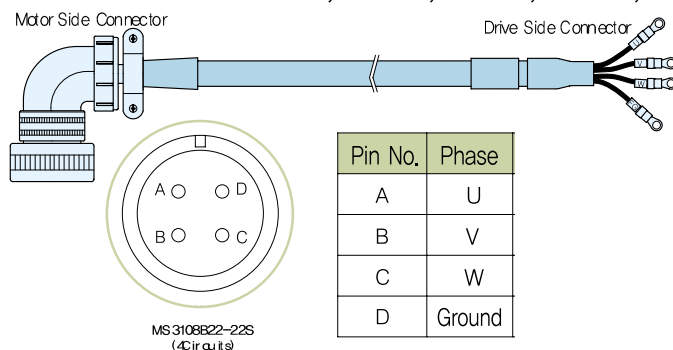
Applicable Motor : APM-SF30A, SF22D, SF35D, SF20G, SF30G, SF12M, SF20M, SF30M
SG22D, SG35D, SG20G, SG30G, SG12M, SG20M, SG30M



1. Motor Side Connector(MS: Military Standard)
PLUG : MS3108B(MS3106B)22-22S
2. Drive Side Connector(U, V, W, FG)
Connection terminals : 3.5x5(KET GP110028)
3. Cable
4Cx3.5SQ(AWG12)

Model (★Note1) : **APC-P□□□GS**

Applicable Motor : APM-SF50A, SF55D, SF75D, SF44G, SF60G, SF75G, SF44M
SG55D, SG75D, SG44G, SG60G, SG44M



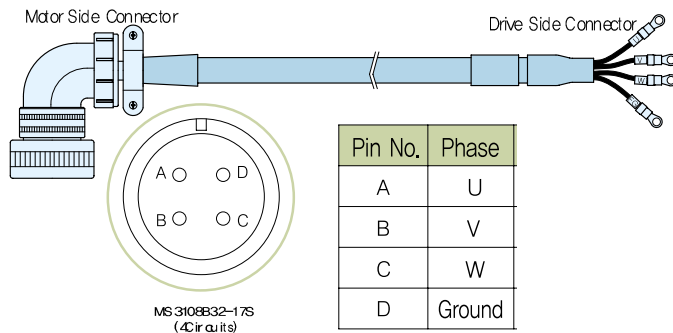
1. Motor Side Connector(MS: Military Standard)
PLUG : MS3108B(MS3106B)22-22S
2. Drive Side Connector(U, V, W, FG)
Connection terminals : 5.5x5(KET GP110028)
3. Cable
4Cx5.0SQ(AWG10)

Model (★Note1,2) : **APC-P□□□RS**

Applicable Motor : APM-SG110D, SG150G, SG60M

Model (★Note1,3) : **APC-P□□□SS**

Applicable Motor : SG85G, SG110G



★Note2

1. Motor Side Connector(MS: Military Standard)
PLUG : MS3108B(MS3106B)32-17S
2. Drive Side Connector(U, V, W, FG)
Connection terminals : 8.0x8(KET GP140841)
3. Cable
4Cx8.0SQ(AWG8)

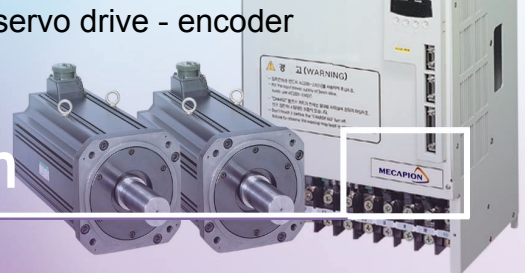
★Note3

1. Motor Side Connector(MS: Military Standard)
PLUG : MS3108B(MS3106B)32-17S
2. Drive Side Connector(U, V, W, FG)
Connection terminals : 11Cx8(KET GP140841)
3. Cable
4Cx14.0SQ(AWG6)

Note1) □□□ of model indicates the kind and length of cable, and notation is as below

Standard Cable Length (m)	3	5	10	20
Robotic Cable	F03	F05	F10	F20
General Cable	N03	N05	N10	N20



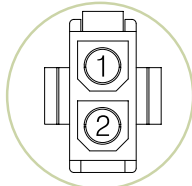
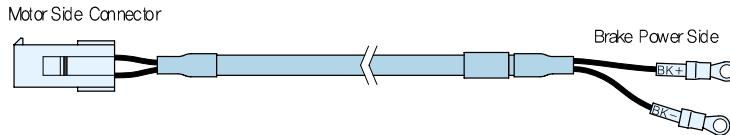


Options(Cable)

Brake cable

Model (★Note1) : APC-P□□□KB

Applicable Motor : All models of APM-SA Series, APM-SB Series, APM-SC Series



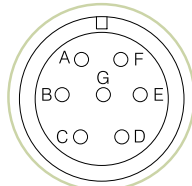
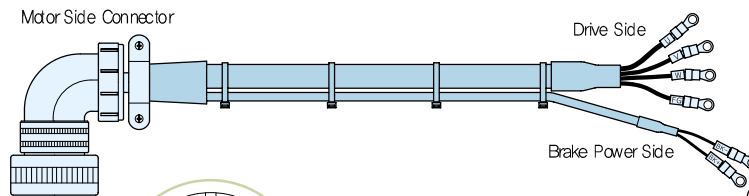
AMP 172157-1 CAP
(2Circuits)

Pin No.	Phase
1	BK+
2	BK-

- 1. Motor Side Connector**
CAP (2 Position) : 172157-1(Made by AMP)
SOCKET : 170362-1(Made by AMP)
- 2. Brake Power Side**
Connection terminals : 1.25×3(KET GP110012)
Cable : 2C×0.75SQ(AWG18)

Model (★Note1) : APC-P□□□MB

Applicable Motor : All models of APM-SE Series



MS 3108B20-15S
(6Circuits)

Pin No.	Phase
A	U
B	V
C	W
D	Ground
E	BK+
F	BK-

- 1. Motor Side Connector (MSMilitary Standard)**
PLUG : MS3108B(MS3106B)20-15S
- 2. Drive Side (U,V,W,FG)**
Connection terminals : 2.5×4(KET GP110721)
Cable : 4C×2.0SQ(AWG14)
- 3. Brake Power Side (+,-)**
Connection terminals : 1.25×3(KET GP11012)
Cable : 2C×0.75SQ(AWG18)

Note) For drive side connector of APM-SE03M Series cable, UA-F1512 pin is to be applied

Note1) □□□ of model indicates the kind and length of cable, and notation is as below

Standard Cable Length (m)	3	5	10	20
Robotic Cable	F03	F05	F10	F20
General Cable	N03	N05	N10	N20

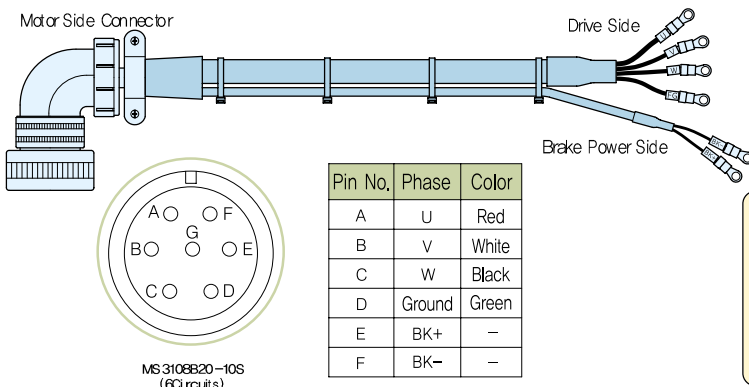
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MECAPION AC Servo System

Brake cable

Model (★Note1) : APC-P□□□NB

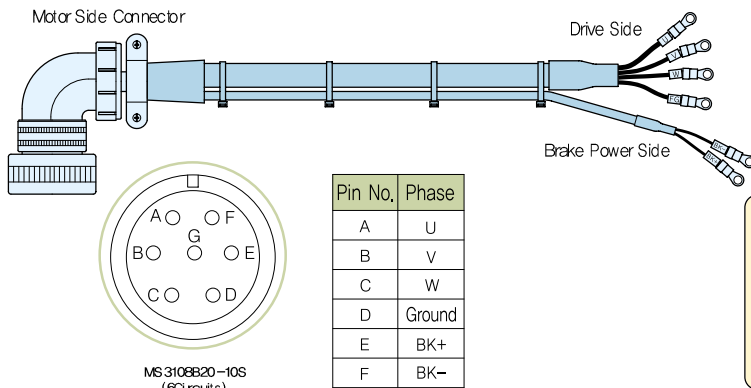
Applicable Motor : APM-SF30A, SF22D, SF35D, SF20G, SF30G, SF12M, SF20M, SF30M



1. Motor Side Connector (MS: Military Standard)
PLUG : MS3108B(MS3106B)24-10S
2. Drive Side (U,V,W,FG)
Connection terminals : 3.5x5(KET GP110028)
Cable : 4Cx3.5SQ(AWG12)
3. Brake Power Side (+,-)
Connection terminals : 1.25x3(KET GP110012)
Cable : 2Cx0.75SQ(AWG18)

Model (★Note1) : APC-P□□□PB

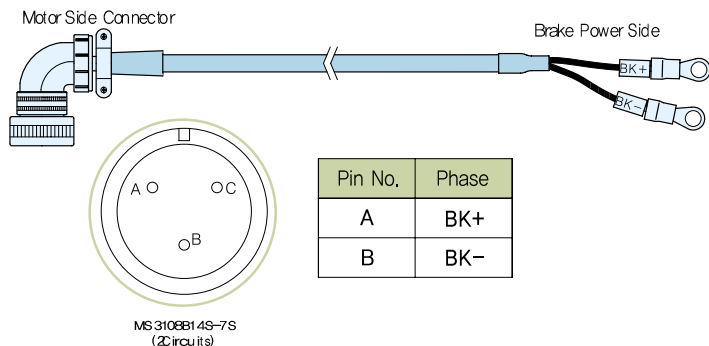
Applicable Motor : APM-SF50A, SF55D, SF75D, SF44G, SF60G, SF75G, SF44M



1. Motor Side Connector (MS: Military Standard)
PLUG : MS3108B(MS3106B)24-10S
2. Drive Side (U,V,W,FG)
Connection terminals : 3.5x5(KET GP110028)
Cable : 4Cx5.5SQ(AWG10)
3. Brake power Side (+,-)
Connection terminals : 1.25x3(KET GP110012)
Cable : 2Cx0.75SQ(AWG18)

Model (★Note1) : APC-P□□□SB

Applicable Motor : All models of APM-SG Series



1. Motor Side Connector
PLUG : MS3108B(MS3106B)14S-7S
2. Brake Power Side (+,-)
Connection terminals : 1.25x3(KET GP110012)
3. Cable
2Cx0.75SQ(AWG18)

Note1) □□□ of model indicates the kind and length of cable, and notation is as below

Standard Cable Length (m)	3	5	10	20
Robotic Cable	F03	F05	F10	F20
General Cable	N03	N05	N10	N20

