



Intelligence
is Simplicity



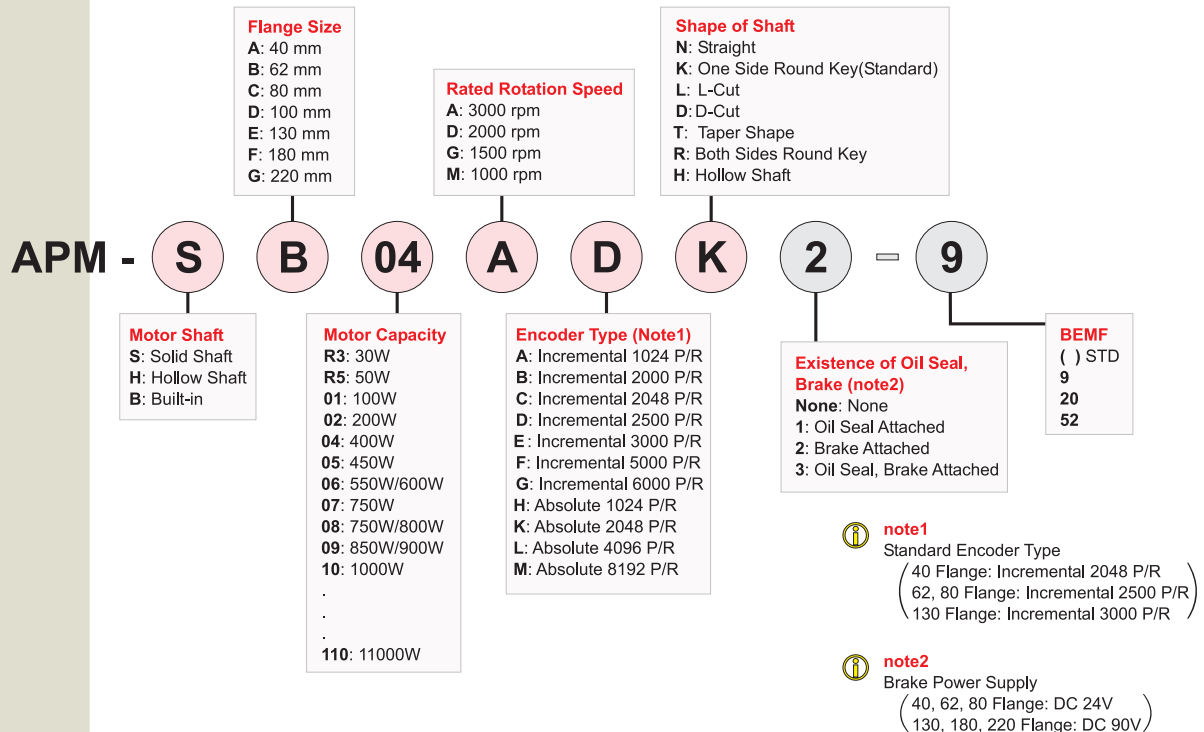
Elmo Harmonica, Cello, Bassoon

Servo Drives and Motor Packages

Elmo offers servo drive and motor solutions for the industrial market. Our servo drive and motor packages offer high-end features and performance that are highly cost-effective. The offering supports the need for quiet and reliable systems (audible and electrical). Several feedback options are available such as incremental encoder, analog encoder and absolute encoder.

Motor Specification & Features All Types	Structure	Totally enclosed, Non-ventilated IP55 or IP65 (Excluding the shaft through-section and connectors)
	Rated Time	Continuous
	Ambient Temp.	Operating Temp : 0° ~ 50°C Storage Temp : -20° ~ 80°C
	Ambient Humidity	Lower than 90% (avoid condensation)
	Atmosphere	Avoid direct sunlight, corrosive gas, inflammable gas, oil mist, and/or dust
	G-force	49 m/s2 (5G)

Servo Motor Model Configuration



Elmo Servo Drive and Motor Packages



Bassoon

115/230 VAC

Package		100W	200W	400W	600W		800W	900W	
Servo Amplifier BAS		3/230	3/230	5/230	5/230	5/230	5/230	5/230	
Nominal Supply Voltage	VAC	115/230	115/230	115/230	115	230	230	230	
Continuous Current Limit I _c (RMS) (sinusoidal commutation) *	A	2.3	2.3	3.5	3.5	3.5	3.5	3.5	
Servo Motor APM		SA01ACN	SB02ADK	SB04ADK	SC06ADK	SC06ADK-52	SC08ADK-52	SE09AEK-52	
Rated Sinusoidal RMS Current	A	1.4	1.6	2.9	3.5	2.4	3.3	3.4	
Rated Output Power	W	100	200	400	620	620	825	920	
Rated Torque (RMS)	N · m	0.32	0.64	1.27	1.91	1.91	2.55	2.86	
Maximum Torque	N · m	0.95	1.91	3.82	5.34	5.34	6.88	8.59	
BEMF	V/Krpm	12.7	29.2	29.5	35.2	52	52	52	
Rated / Maximum RPM	rpm	3000 / 5000							
Motor Inertia	kg · m ² × 10 ⁻⁴	0.045	0.182	0.321	1.092	1.092	1.509	6.659	
Flange Size	mm	40	62	62	80	80	80	130	
Motor Weight	kg	0.52	1.11	1.63	2.49	2.49	3.15	5.6	
Feedback Resolution	P/R	Incremental 5V line drive 2048 P/R	Incremental 5V line drive 2500 P/R					3000	

* Peak current is double continuous current.

Harmonica, Banjo, Cello, Trumpet

48VDC

Package		100W	200W	300W	450W
Servo Amplifier HAR		5/60	8/60	12/60	12/60
Servo Amplifier CEL		5/60	15/60	15/60	15/60
Nominal Supply Voltage	Vdc	48	48	48	48
Continuous Current Limit I _c (RMS)*	A	HAR	3.5	5.7	8.5
		CEL	3.5	10.6	10.6
Servo Motor APM		SA01ACN-9	SB02ADK-9	SB03ADK-9	SC05ADK-9
Rated Sinusoidal Current (RMS)	A	2.4	4.4	7.1	9.5
Rated Output Power	W	100	200	300	450
Rated Torque (RMS)	N · m	0.32	0.64	0.95	1.43
Maximum Torque	N · m	0.95	1.91	2.85	4.29
BEMF	V/Krpm	8.1	9.3	9.7	9.5
Rated / Maximum RPM	rpm	3000 / 5000			
Flange Size	mm	40	62	62	80
Inertia	kg · m ² × 10 ⁻⁴	0.04	0.18	0.32	1.09
Motor Weight	kg	0.52	1.11	1.63	2.49
Feedback Resolution	P/R	2048	Incremental 5V Line Drive 2500P/R		

* Peak current is double continuous current.



Harmonica, Banjo, Cello, Trumpet

85VDC

Package			30W	50W	100W
Servo Amplifier HAR			2/100	2/100	2/100
Servo Amplifier CEL			3/100	3/100	3/100
Nominal Supply Voltage	Vdc		85	85	85
Continuous Current Limit I _c (RMS)*	A	HAR	1.4	1.4	1.4
		CEL	2.1	2.1	2.1
Servo Motor APM			SAR3ACN	SAR5ACN	SA01ACN
Rated Sinusoidal Current (RMS)	A		1.07	1.2	1.4
Rated Output Power	W		30	50	100
Rated Torque (RMS)	N · m		0.10	0.16	0.32
Maximum Torque	N · m		0.28	0.48	0.95
BEMF	V/Krpm		7.8	10.1	12.7
Rated / Maximum RPM	rpm		3000 / 5000		
Motor Inertia	kg · m ² × 10 ⁻⁴		0.0164	0.0240	0.0426
Flange Size	mm		40	40	40
Motor Weight	kg		0.3	0.4	0.52
Feedback Resolution	P/R		Incremental 5V line drive 2048 P/R		

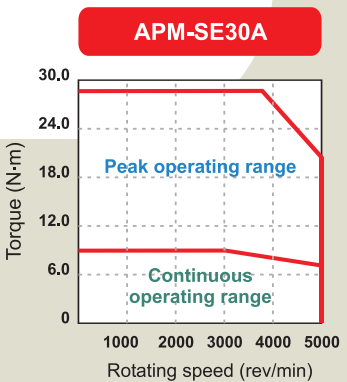
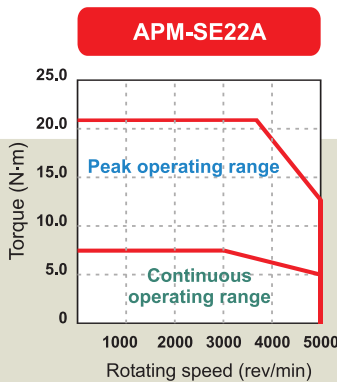
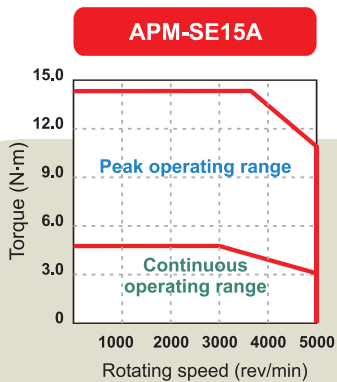
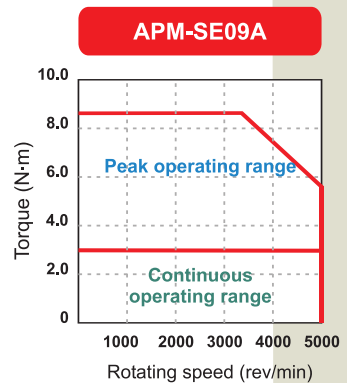
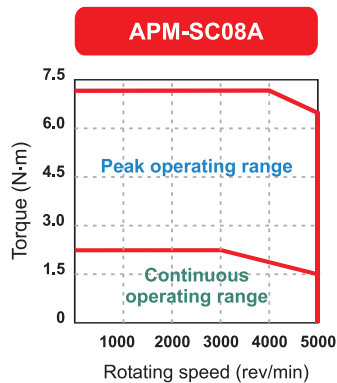
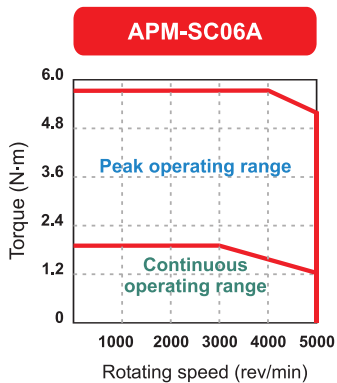
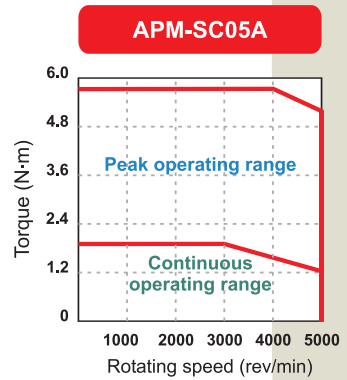
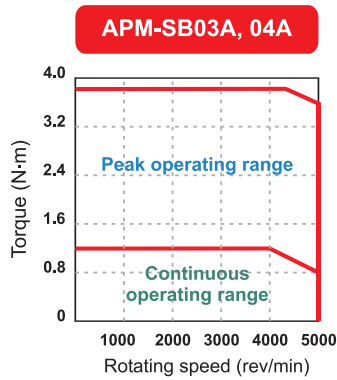
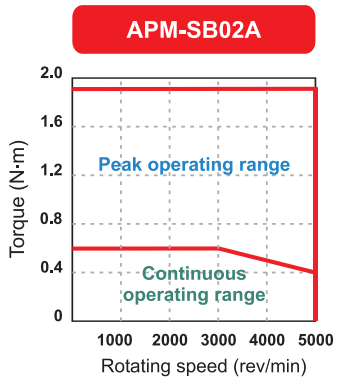
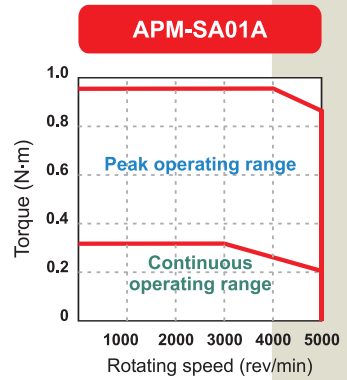
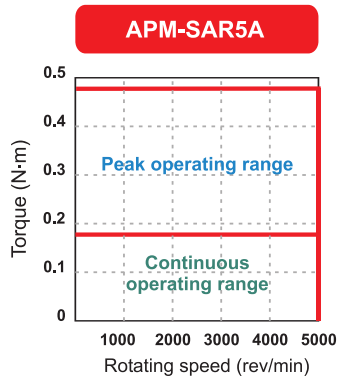
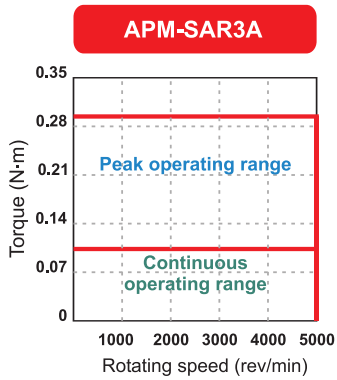
* Peak current is double continuous current.

180VDC

Package			200W	400W	600W	900W	1500W	2000W	2700W
Servo amplifier HAR			2/200	4/200	6/200	–	–	–	–
Servo amplifier CEL			2/200	–	6/200	10/200	15/200	15/200	15RMS/200
Nominal Supply Voltage	Vdc		180	180	180	180	180	180	180
Continuous Current Limit I _c (RMS) (sinusoidal commutation)*	A	HAR	1.4	2.8	4.2	–	–	–	–
		CEL	1.11	–	4.2	7.1	10.5	10.5	15
Servo Motor APM			SB02ADK	SB04ADK	SC06ADK	SE09AEK	SE15AEK	SE22AEK	SE30AEK
Rated Sinusoidal RMS Current	A		1.6	2.9	3.6	5	8.23	10.5	15
Rated Output Power	W		200	400	620	920	1520	2000	2700
Rated Torque (RMS)	N · m		0.64	1.27	1.91	2.86	4.77	7	9.55
Maximum Torque	N · m		1.9	3.8	5.34	8.6	14.3	21	28.6
BEMF	V/Krpm		29.2	29.5	35.2	35.3	38.6	37.76	37.33
Rated / Maximum RPM	rpm		3000 / 5000						
Motor Inertia	kg · m ² × 10 ⁻⁴		0.182	0.321	1.09	6.66	12	17.34	22.65
Flange Size	mm		62	62	80	130	130	130	130
Motor Weight	kg		1.11	1.63	2.49	5.6	7.2	8.7	10.2
Feedback Resolution	P/R		Incremental 5V line drive 2500 P/R			Incremental 5V line drive 3000 P/R			

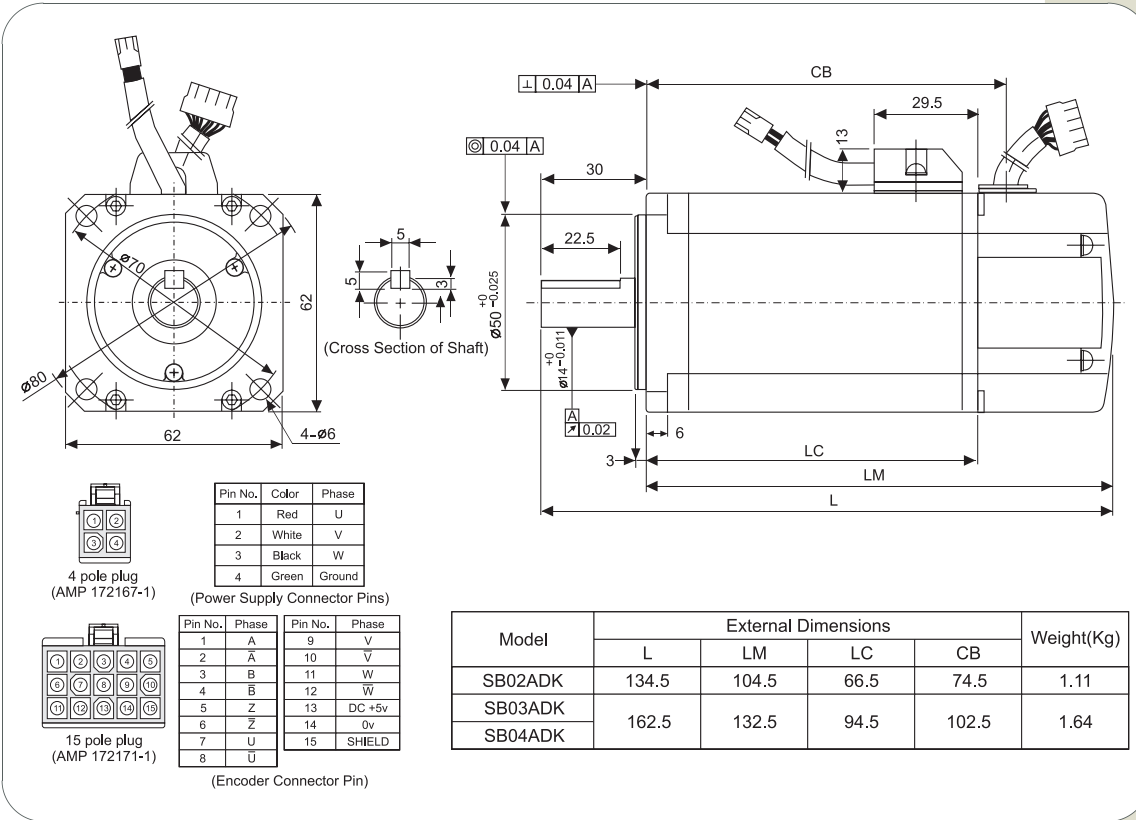
* Peak current is double continuous current.

Rotation Speed-Torque Characteristics



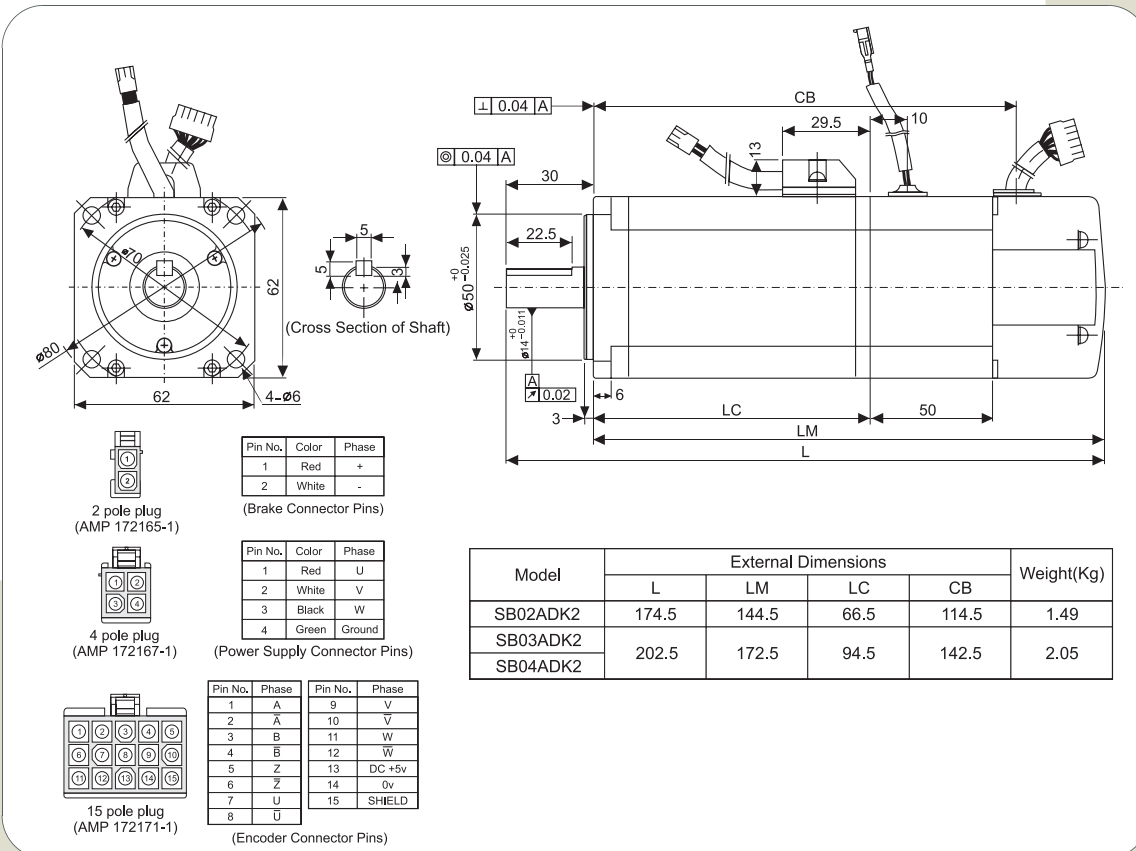
Standard Type

APM-SB02ADK, APM-SB03ADK, APM-SB04ADK



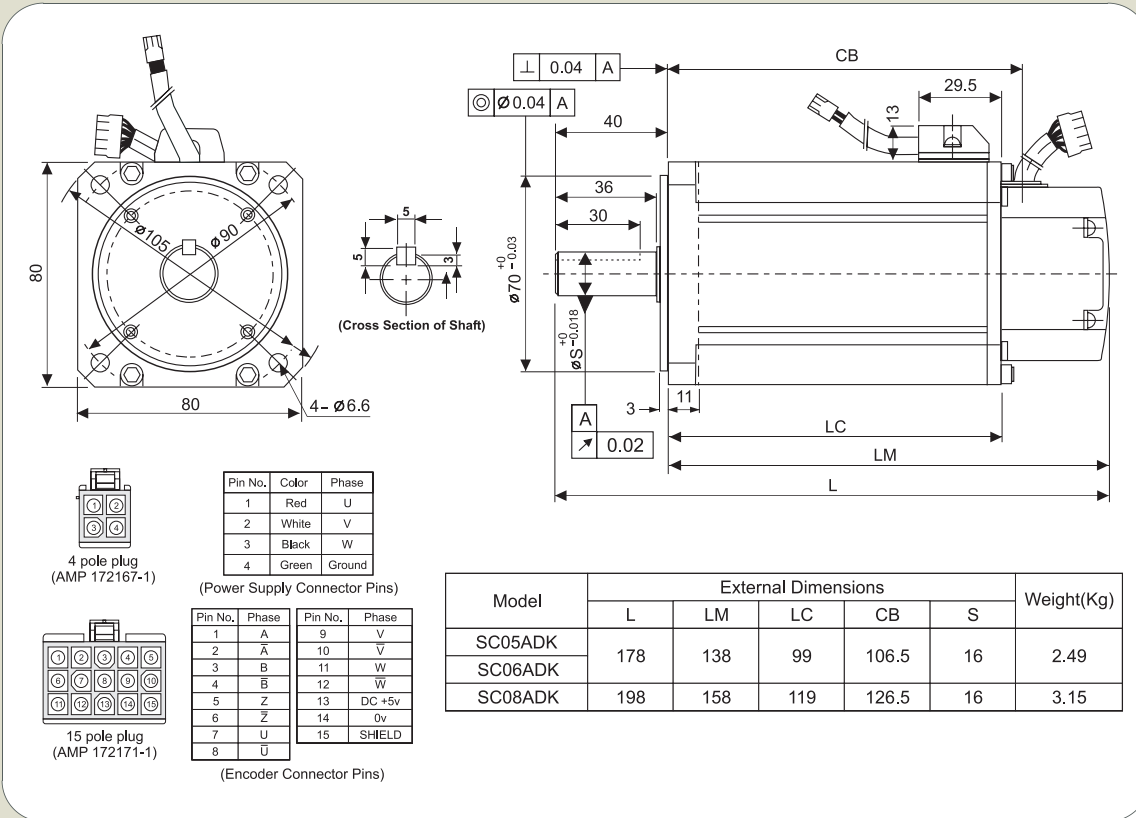
Brake-attached Type

APM-SB02ADK2, APM-SB03ADK2, APM-SB04ADK2



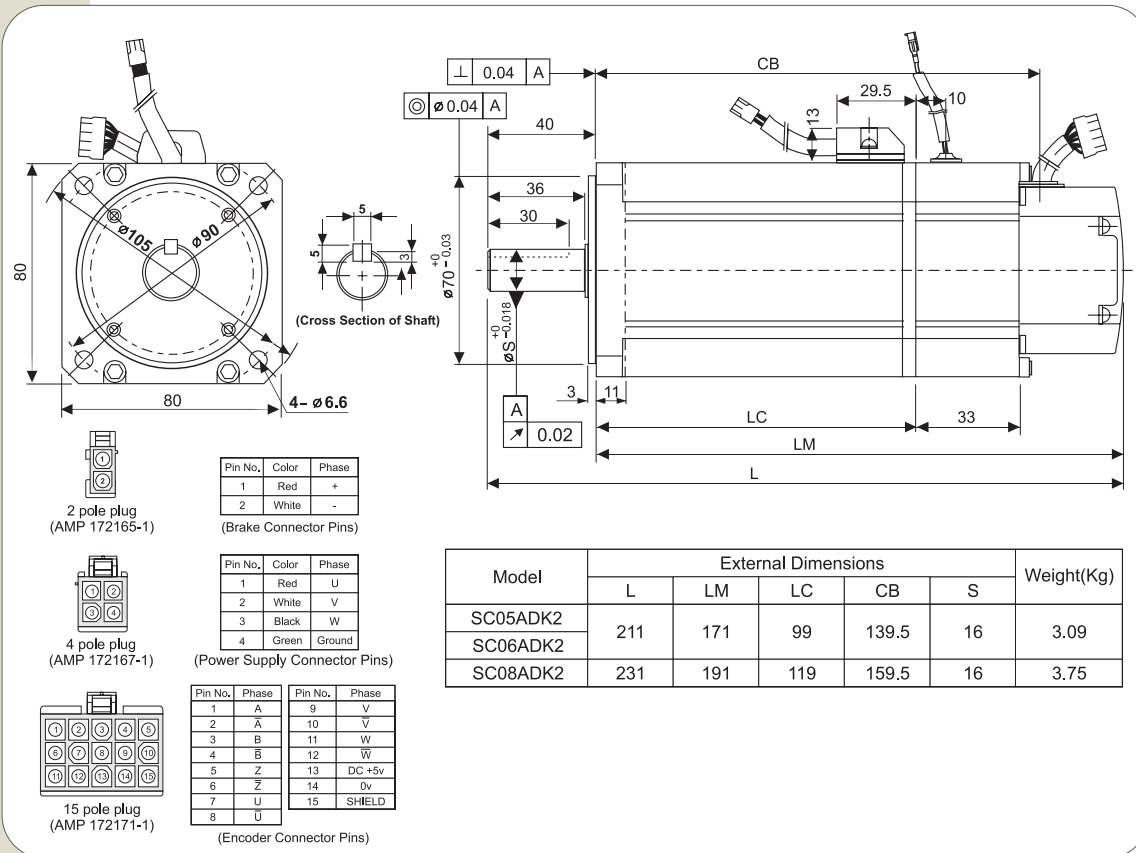
Standard Type

APM-SC05ADK, APM-SC06ADK, APM-SC08ADK



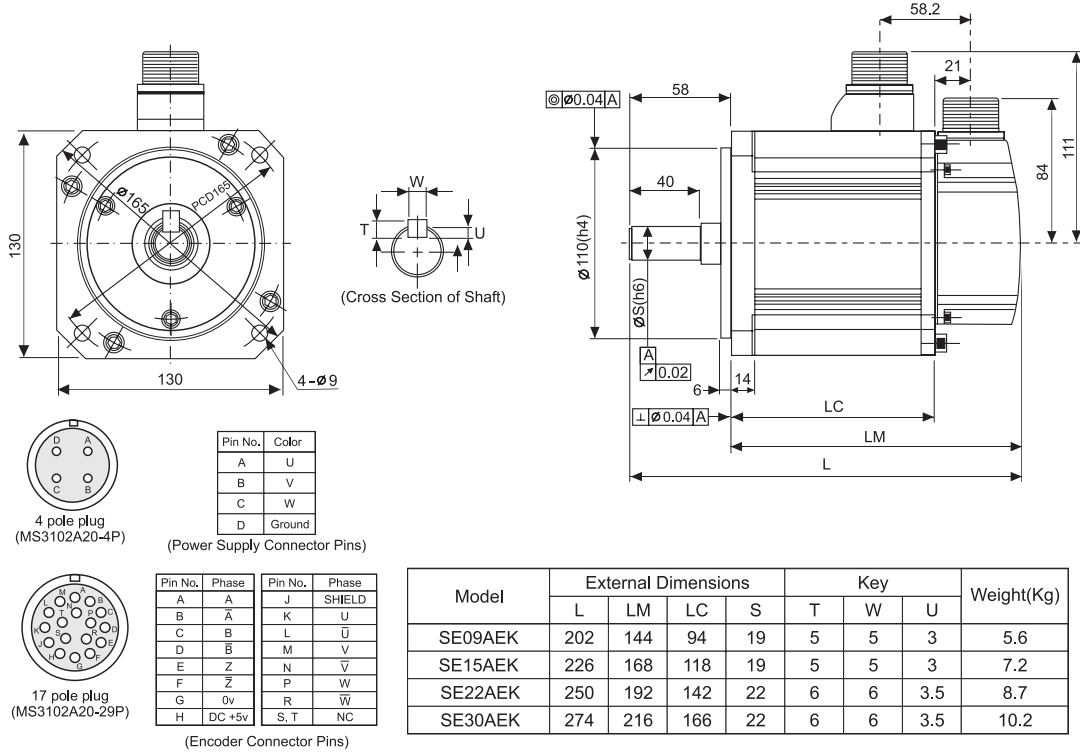
Brake-attached Type

APM-SC05ADK2, APM-SC06ADK2, APM-SC08ADK2



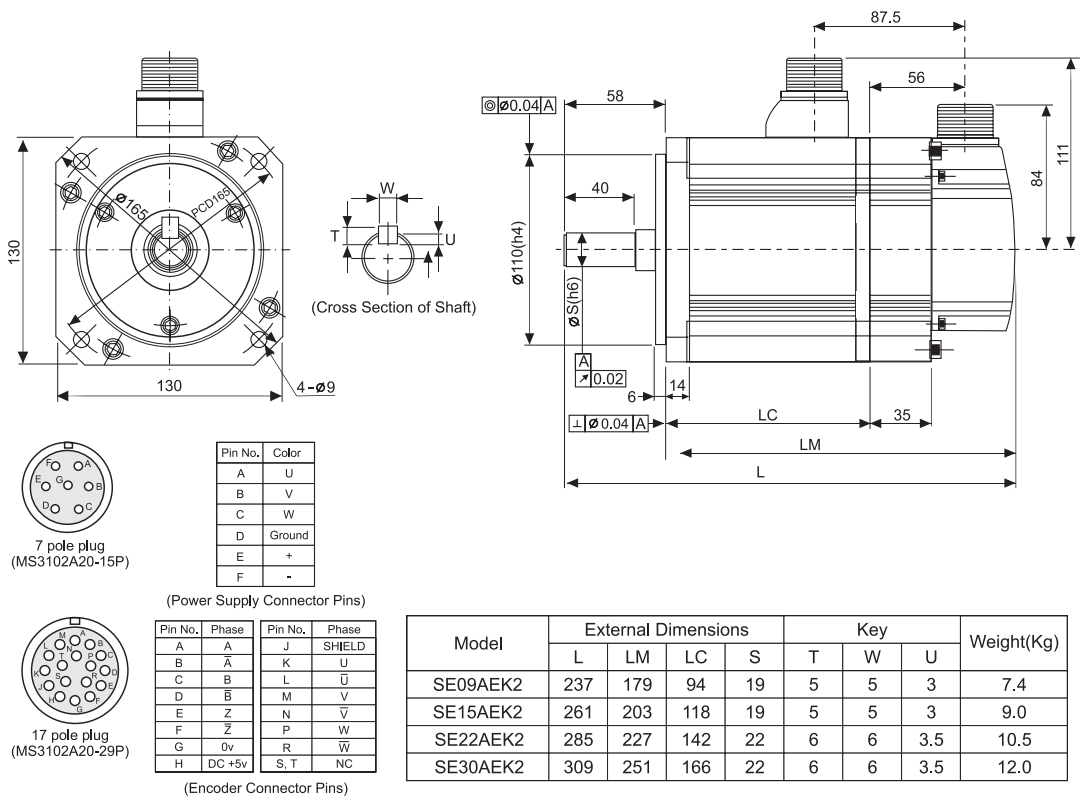
Standard Type

**APM-SE09AEK, APM-SE15AEK,
APM-SE22AEK, APM-SE30AEK**



Brake-attached Type

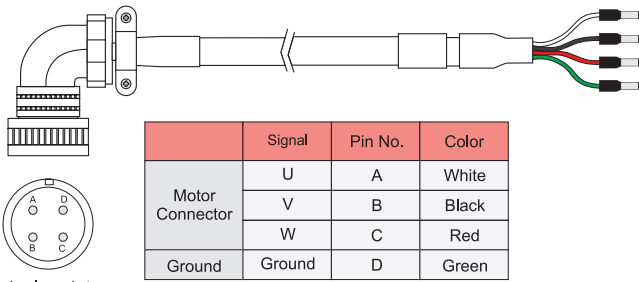
**APM-SE09AEK2, APM-SE15AEK2,
APM-SE22AEK2, APM-SE30AEK2**



Power Cable

Motor side connector (APM-SE)

Drive side connector

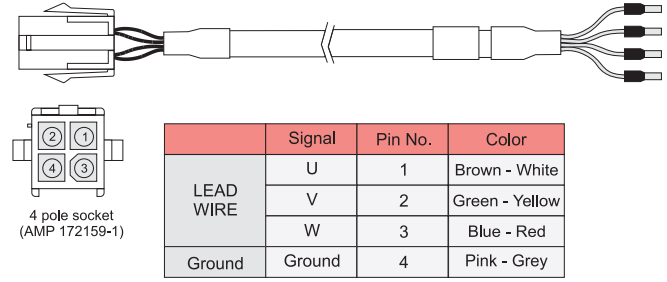


4 pole socket (MS3108B20-4S)

CBL-MTRPWR2

Motor side connector (APM-SAR, SA, SB, SC)

Drive side connector



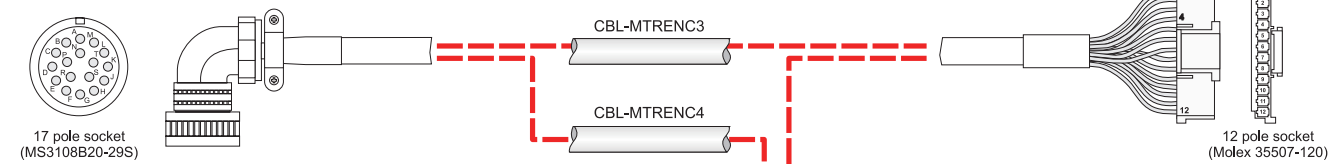
4 pole socket (AMP 172159-1)

CBL-MTRPWR1

Encoder Cable

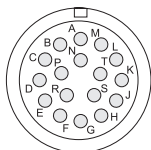
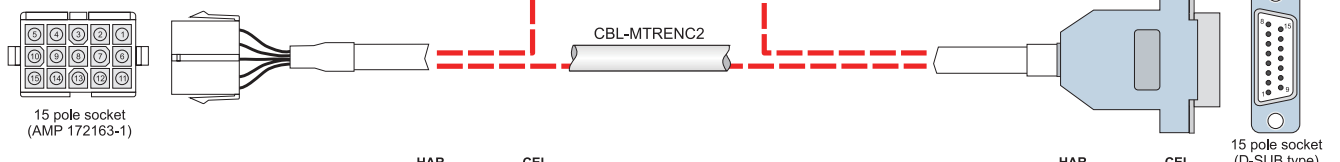
Motor side connector (APM-SE)

Drive side connector HAR, BAS

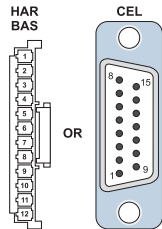


Motor side connector (APM-SAR, SA, SB, SC)

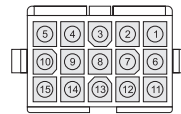
Drive side connector CEL, COR, TUB



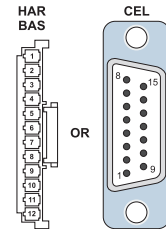
Motor



Drive



Motor



Drive

17-PIN Amphenol MS3012A20-29	Metronix Signal Name	Elmo Signal Name	12 pin Molex	15 Pin D-Sub
A	A	CHA	12	6
B	\bar{A}	CHA-	11	5
C	B	CHB	10	15
D	\bar{B}	CHB-	9	14
E	Z	INDEX	8	8
F	\bar{Z}	INDEX-	7	7
G	0V	SUPRET	5	3
H	+5V	+5V	6	4
J	SHIELD	SUPRET	4	HOUSING
K	U	HA	3	2
L	\bar{U}	HA-	NC	NC
M	V	HB	2	10
N	\bar{V}	HB-	NC	NC
P	W	HC	1	1
R	\bar{W}	HC-	NC	NC
S	NC	NC	NC	NC
T	NC	NC	NC	NC

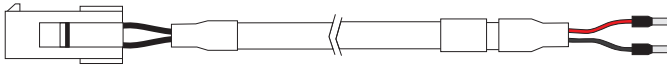
15-pole AMP 172163-1	Metronix Signal Name	Elmo Signal Name	12 pin Molex	15 Pin D-Sub
1	A	CHA	12	6
2	\bar{A}	CHA-	11	5
3	B	CHB	10	15
4	\bar{B}	CHB-	9	14
5	Z	INDEX	8	8
6	\bar{Z}	INDEX-	7	7
7	U	HA	3	2
8	\bar{U}	HA-	NC	NC
9	V	HB	2	10
10	\bar{V}	HB-	NC	NC
11	W	HC	1	1
12	\bar{W}	HC-	NC	NC
13	+5V	+5V	6	4
14	0V	SUPRET	5	3
15	SHIELD	SUPRET	4	HOUSING

NC = Not Connected

Brake Specifications

Applicable Motor Series	APM-SA, SAR	APM-SB	APM-SC	APM-SE
Use	Maintenance	Maintenance	Maintenance	Maintenance
Power Supply [V]	DC24V	DC24V	DC24V	DC90V
Rated Friction Torque [N.m]	0.32	1.47	3.23	9.2
Capacity [W]	6	6.5	9	7
Coil Resistance [Ω]	96	89	64	1150
Rated Current [A]	0.25	0.27	0.38	0.08
Braking type	Spring Brake	Spring Brake	Spring Brake	Spring Brake
Insulation Class	F - class	F - class	F - class	F - class

All Models of APM-SAR, SA, SB, SC Series

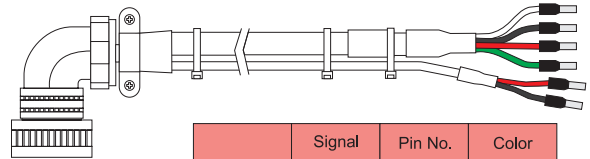


2 pole socket
(AMP 172157-1)

	Signal	Pin No.	Color
Brake Wire	+	1	Red
	-	2	Black

CBL-MTRBRK1

All Models of APM SE Series



7 pole socket
(MS3108B20-15S)

	Signal	Pin No.	Color
Motor Connector	U	A	White
	V	B	Black
	W	C	Red
	Ground	D	Green
Brake Connection	+	E	Red
	-	F	Black
	NC	G	

CBL-MTRBRK2

Flange	Model - APM	Page No.	Rated Output Power (W)	Drive	Standard Encoder	Speed (Rate/Max)	IP Rating	Application		
40	SAR3ACN	4, 6	30	CEL, HAR	2048 P/R	3000/5000	IP 55	High speed low inertia		
	SAR5ACN	4, 6	50	CEL, HAR						
	SA01ACN	3, 4, 6	100	BAS, CEL, HAR						
	SA01ACN-9	3, 6	100	CEL, HAR						
62	SB02ADK	3, 4, 7	200	BAS, CEL, HAR	2500 P/R		3000/5000		IP 55	High speed low inertia
	SB02ADK-9	3, 7	200	CEL, HAR						
	SB03ADK-9	3, 7	300	CEL, HAR						
	SB04ADK	3, 4, 7	400	BAS, HAR						
80	SC05ADK-9	3	450	CEL, HAR	2500 P/R	3000/5000		IP 55	High speed low inertia	
	SC06ADK	4, 8	620	CEL, HAR						
	SC06ADK-52	3, 8	620	BAS						
	SC08ADK-52	3, 8	825	BAS						
130	SE09AEK-52	3, 9	920	BAS	3000 P/R		3000/5000	IP 65		High speed low inertia
	SE09AEK	4, 9	920	CEL						
	SE15AEK	4, 9	1520	CEL						
	SE22AEK	4, 9	2000	CEL						
	SE30AEK	4, 9	2700	CEL						



the smart way to move

www.elmomc.com

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